The crucial century, 1945-2045

Transforming food systems in a global context

Paul Rogers

Part 1. Why 1945

This series is about the need to transform the whole world food system and what is worth doing is to try and put that in context and maybe a pretty big context, a rather odd one, not looking in terms of decades but looking in terms almost of the centuries. Now obviously historians and we ourselves look at centuries like the 16th, 17th, 18th, 19th, 20th century. Now we talk a lot about what's going to happen in the 21st century. I'd like to actually take a different 100 year period and that goes not from 1900 to 1999 or 2000, from 1945 to 2045. Why is that? Well, I think if you look in broad terms, that the long-term human history almost, this is the century in which we have to come to terms with two different abilities that we have. One is the ability to develop technologies is which can actually destroy us and another is the ability to so damage the global environment that life becomes if not impossible then hugely limited not just for ourselves but for all living things.

So 1945 to 2045. Well 1945 obviously is easy, because that is the dawn of the nuclear age and really over the last 60 years we've tried to get to grips with that. And we're now in the period, particularly the second half of that hundred years, when we've got to deal with the risk of environmental destruction. And what I want to do is to try and tease that out, tease that out, look just for a few minutes at that first period and then look ahead to the major challenge we have. One can be cautiously optimistic but I stress cautiously optimistic about our capacity destroy ourselves one can not yet the optimistic about our capacity to destroy our environment. So let' start with 1945.

The first nuclear test was in July 1945 and shortly afterwards nuclear weapons used against Nagasaki and Hiroshima, 200,000 people were killed and it set off a nuclear arms race, and within what 30-40 years you had the extraordinary situation of what, 65,000, or so, nuclear weapons held only, mainly by the Soviets and the Americans and some of them on near hairtrigger alert.

Part 2. Proxy wars to the end of the cold war

We now know that there were far greater problems er of safety, of crises, at that time than we ever really realized. One of the extraordinary things or last 20 years has been the opening up of archives and former enemies speaking to each other. And it's very interesting on the American side how many of those, people like Robert McNamara, Kennedy's Secretary of Defence, became quite antinuclear towards the end of their lives because they really realised how dangerous it had been. So we were lucky. The idea that nuclear weapons kept peace is a nonsense. They postponed peace. Apart from anything else you had all the wars being fought - the proxy wars: Vietnam, Afghanistan, Korea and all the rest. And so what we were dealing with was a very dangerous and very costly period as well.

What was astonishing about it was the way in which huge, almost quantities of human ingenuity and cost were bound up in this. At the peak, 30 years ago, 85% of all world military expenditure was on weapons and on the military. And expenditure in terms of research efforts, its diversion from other things was really quite astonishing. There were, indirectly, quite big connections with issues like food and, and one very good example of this we had an extraordinary problem with the world food system in the early 1970s. Unexpected, and it lead to what was called the world food crisis in 1973-74. And that really was a period when we were on the edge of an intercontinental famine. The first time, probably in human history, that an intercontinental famine was really feasible. We avoided it but it's a a complex story of how we did but at the time the UN Food and Agriculture Organisation tried to assess what was needed to improve tropical food production. They costed it at a then figure of about $5 billion - about two thirds increase on what was already being spent. That was about 2% of the world spending on the military at the time. So you get an idea of the extraordinary division this sort of, the concentration in this area of activity.

But we're many years after that and one has to say very thankfully er that the nuclear age is if not under control it is diminished. We still have over 5000 nuclear weapons deployed but that's still a 10th of what there was. We're not entirely out of the woods, there is a risk of proliferation, there's still the possibility of accident but we're not actually staring over an abyss, which would be disastrous for humankind. That's rather slippery slope.

There are other major dangers that all the problems of biotechnology, engineered bio-weapons, there may be major troubles with nano-technologies as well and other forms of technology. But the first big example, the example, where we as humans have the capacity to almost destroy ourselves, we're slowly getting to grips with. If you like, wisdom may be slightly prevailing. And one very much hopes that will be the case. That in the first third, two thirds of this century we've made progress on one of the biggest challenges – we're not out of the woods but at least there are prospects for a better world.

Part 3. The big issues

But I think in a sense what we have to appreciate is that we are in a very changed world. I want to look more to the future in a way in terms of what are going to be the very big challenges. But before I do, one other thing to add, and it's, it's a little sort of anecdote but it's a very interesting one. After the end of the Cold War, Bill Clinton came to power as the present United States, back in, he was elected in 1992, and one of his first appointments was a new director of central intelligence, head of the CIA. A guy named James Woolsey and as is the custom in the United States as is the political process he was invited to appear before a Senate confirmation committee before his appointment could be ratified by the by the by Congress and one of the senators asked him how he would look at the post-Cold War world compared with the Cold War and he said I look at it this way

> 'We've slain the Dragon – the Soviet Union - but we now live in a jungle inhabited by poisonous snakes'.

And really that represented a change of thinking but it was still based on external threats and that really was very powerful during the 1990s and came to fore utterly in 2001 with 9/11 and the huge reaction we had, primarily a military action.

We need to bear that in mind in terms of looking to the future. The idea that the end of the Cold War brought more peaceful approaches to major problems I think is false. It changed our approach and we've learnt since that tens of thousands of boots on the ground doesn't work very well. Other new ideas of how to control things but is about control.

But what are the really big issues? What are the trends, which are going to be so dominant in the future? Given that we tend to think in terms of what we call the control paradigm, of actually controlling threats not understanding what is causing them. What will cause problems? I've no doubt that political violence and asymmetric warfare will be ongoing. But behind that I think there are three very important trends we have to look at. And they reflect very much a relationship also with food system.

The first of these trends is essentially very bluntly the world economic system is not delivering what it should deliver. What I mean by this is, is, is this. We've had patchy economic growth for basically the last 60 years until we moved more into a rather free-market era from 1980 onwards. The growth was patchy but it was fairly well distributed. There were huge differences in wealth and poverty but the divisions weren't widening. Since 1980, that has changed. And while we have economic growth of different sorts up some downs in 2008 crisis and the rest the Asian turn down back in the 1980s and 1990s, we actually see that there is a lack of economic justice. What is happening is that the fruits of economic growth are focused quite extraordinarily in about a fifth of the global population. That's still one of the half billion people but essentially the rest – the other what 5 1/2 billion - are really relatively sidelined.

Now let's be clear, the poor are not getting poorer, and the billion or so poorest are still at the similar level They're not really getting out of it. But what is more important is a much wider group that relatively speaking are actually sidelined in the development programme / process and I think this is something which is quite hard to grasp because in a sense you know most people in Britain are, are really divorced from this. But it's worth remembering that probably 2/3 to 3/4 of the world's population never flies. It's not even in that kind of business and in fact most of our understanding of the world and how it works is based on the one and a half billion and our experiences. And I think it is very important to realise this and also realise that this is not actually getting better if anything it is getting worse.

About 85% of all the world's wealth is actually in the hands of property between 10 and 15% of the world's population. In terms of income 83-84% is in the hands of about 20%. So the division is extraordinary. Now that itself is an enduring thing and the current economic system is not coping with it. It's not delivering socio-economic justice. There's an added element to this though and that is where there's been improvements in some aspects of development, which are utterly astounding and really welcome.

The most marvellous of these is actually in education. 40 years ago I have to admit I worked on a development project in East Africa when the government of the country I was working in was actually struggling to try and get more kids through four years of primary education. Go back to that country 40 years later and virtually every child gets four years of primary education at least and even the pernicious gender gap is closing. And many kids go on to high school and a lot more go on to universities. The country that I was in at that time had one small university, but it now it has about eight. So

there've been very good changes, there's much greater literacy, better communication but and it's a huge but, that means people are more aware of their own wider context - where they fit in. Erm, there was a phrase that was used a lot by pop sociologists in Britain, when would it be, probably the 1970s, this was called 'the revolution of rising expectations'. You know things were getting better and even the poorest were going to benefit what we're seeing now is the revolution of unfulfilled or frustrated expectations and the potential is for people to react very vigorously to that. And that can happen in many ways in many different countries. It underpins part of the Arab awakening of recent years. This feeling that you are not part of the sharing that you should be in society as a whole. It underpins the indignado campaign in Spain, the civil disruptions in Greece, the occupy movements in Western countries, the perception that more people are marginalised and they actually are - the divisions in Britain for example are growing wider at present not narrowing even in our country.

You have much more extreme examples, the Naxalites neo- Maoist rebellion in India is a classic example of a revolt from the margins. And essentially that if you like is the downside of the success of people knowing where they are. Seeing that they are part of a curious thing, a marginalised majority. Now that is an underlying theme, which of course links in with other things that are happening, notably urbanization - more than half the world's people now live in cities that has huge implications for the food system.
But what I'm trying to say is we have this dominant trend, which most people I think do not fully appreciate. They may concentrate on the 1% richest with the yachts of the rest but it's more than that are all part of that system. So that really is the first really big trend for future.
But to add to that is the other one and that is what we are now realising is the phenomenon of environmental limitations on overall global human activity.

Go back a little over 40 years, 42 years, and you have publication that seminal book *Limits to growth* and people at the time argued that it was doom watch - that this was, basically it did not take technical fixes and the rest, and maybe its facts and figures were wrong. What's fascinating is to go back and reread *Limits to growth* - what it was actually saying was we were going to have very big problems 50 to 60 years into the future, in other words over the next 20 years. It wasn't predicting immediate catastrophe. And recently people went back and looked at the data and they found that it was remarkably precinct.

Now there are all forms of problems with limits to growth - there are issues of resource depletion, resource conflict, conflict over water resources, but the big issue by far is where humans impact on the entire global eco-system, biosphere - we've only had one clear early example that until recently and that was a problem of ozone depletion back in the 1980s. And if the ozone layer had been depleted up in the upper atmosphere, ultraviolet from the sun would have grown more intense and caused problems right across the world. And it was solved to some extent quite quickly. There was only one major pollutant causing it – the chloroflurocarbons – and when it was fully appreciated it took just four years to get the Montréal Convention starting to phase them out. The rub in the ointment though is that it's going to take probably another 20 years before the ozone layer is completely back to normal. It takes that long with ecosystems. And to use the jargon, what we face is anthropogenic impacts on ecosystem homoeostasis. Human impacts on the stability, the natural stability, of a global ecosystem

And the big issue there without question is climate disruption caused by carbon emissions primarily carbon dioxide but also methane one or two others as well. And that is having a gathering effect right across the world. Time after time you see this, even though it is denied assiduously by groups - often largely funded by the oil companies or the free market people - who cannot accept that you have to have government interference to bring this kind of problem to an end.

Climate change and food link absolutely - its certainly accelerating, it is deeply asymmetric and while a lot of effect has been felt in paelo Arctic, the near Arctic, a very large part of effect is actually being seen right across the tropics and subtropics. I was at a talk fairly recently by somebody from Islamic relief – er a very strong, very good aid group which works, as it happens erm particularly in areas that are semi arid, right across the Middle East and beyond. And one of the things she said was the way that their field workers report back repeatedly to headquarters that the long-term issue for them is actually climate change and why don't people realise it. You see the issue is that if you get big changes in temperature and rainfall distribution, particularly a decrease in rainfall distribution, you get a decrease in the ecological carrying capacity of the tropical croplands to support human populations.

And there are pretty good indications - the Met office's Hadley Centre shows this – that, for example, on current trends we could actually find a drying out of the Amazonian rainforest over the next 30 to 40 years.

Now it's fair to say that the really big impacts of climate disruption may not be felt for 20, 30 or even 40 years but action to counter them has to happen very, very much quicker. In fact, we're already behind time with this. Governments, even fairly progressive western governments, talk a little bit bluntly about we will get down to 60% reduction in carbon emissions by 2050. We've got to get down to 80% by 2030. That's the kind of target for any industrial country, which has to include China. Now, China, of course, people always say that's the big one if they don't do it, why should we do it. But it's worth remembering that the Chinese per capita have a carbon output less than a third of countries like the United States and Western Europe. We are still the big polluters.

So we face this combination of a deeply divided world and one that is environmentally constrained but the key thing here, is that is on present trends.

And the risk is that the military response will be what, how do we keep ourselves and our alliances safe in a world which is going to get more fragile and in a sense uncertain. We don't look at the underlying reasons and meet those.

We have the risk that, in a sense, in responding to new threats, these new threats, particularly environmental constraints, we stick with the control paradigms.

I also sometimes use the term 'liddism' - you keep a lid on things rather than going underneath. I'll give you example of this. I was attending a seminar, not very long ago, and which is actually looking at new problems in European security and essentially what it was doing was seeing where those threats might come from and it was a mixed seminar with people from military backgrounds, economists, political scientists, and people with an environmental background as well. And the conversation during the

course of this broad discussion and very lively discussion focused on the problems that Europe would experience if climate change really kicked in Africa.

We already have this appalling problem of people desperate to get into Europe and often drowning in the Mediterranean but, what was being said by the environmental people was that, this is going to get far worse if sub-Saharan Africa cannot cope because of climate change. And we're going to get huge pressures on Europe as desperate people legitimately try to get a better life. And one of the military people said "I can understand that, I can see what you're talking about, and I think I accept that - maybe we shouldn't be building these two huge new aircraft carriers maybe that isn't the way forward, may be what we should do", and he was speaking from a British perspective, "maybe what we should be doing is putting money into subsidising the Spanish, the French, and Italian, and maybe the Greek Navy, to patrol the Mediterranean better". In other words to keep the people out and to protect Europe. In other words, it was, closing, it was classic, close the castle gates in the maritime setting.

And that in a sense is an illustration of the liddite thinking - that you try control things rather than going deep underneath a look at the problems in the first place and in a globalised world you cannot close the castle gates.

Now obviously this can be incredibly disempowering and pessimistic but let's look more to the future and what we have to do. There's a very important point to make here. I started off talking about the Cold War. If we were trying to look at the major, throw, world threats in 1983 then we will be looking at the nuclear issue. It was the lead one - the old Irish saying goes, it is the bond closest to your throat that you first cut loose. And the nuclear threat was that. Now we're not out of the woods on that as I said but things have improved a great deal. And people 20-30 years ago would be consumed with that fear. And similarly we need to look to the future in terms of human potential - what we can actually do. Now in a nutshell we have to get a transformation of the global economy to make it fairer and more able to respond to the big issue of environmental constraints.

We have to move to worldwide low carbon economies and most of the onus is on the really major countries - the big polluters if you like - to do that. But also other countries that are developing have to be helped and aided, monetarily aided probably, to actually develop in different ways to the tradition. Basically, low carbon ways, more sustainable. We've got to be gendered of course, that goes without saying but more sustainable as well. Now in a sense, that is a huge task that is very easily said but more difficult to implement but it is going to have to be done. And it is also the case that we have to respond to the environmental constraints by doing it really very rapidly and that has to be transformative.

Part 4. The third great transition

In some ways we're asking for an extraordinary great transition and I started trying to suggest that we look in terms of a century. If we look in terms of thousands of years, it is the third transition.

The first was the Neolithic, rev, revolution when we as humans learned to farm - we domesticated plants and animals. Prior to that about 12,000 years ago the worldwide population was actually only about 5 million - less than the population of Greater London now. Within a couple of thousand years it had gone up to 80 million because we

can produce our own food, we started living in villages, towns and ultimately cities, particularly cities in areas where you had really lush growth of crops and it was often the big deltas where the cities started - the Ganges and the Indus, the Nile and of course, the Euphrates and Tigris. And essentially that was a huge transition.

The second one obviously was the industrial revolution over the last 300 years, particularly 150 to 250 years ago leading to startling developments in industry and in food production, but also leading to the point where now a couple of hundred years later we're reaching the limits. And this is the third great transition we have to go through.

Let's try and finish by looking at it more positively. Is it possible to make these kinds of changes? Erm, it would take a long time to sketch out the details but I think we're in an incredibly interesting period and this is why I want to come back again to this idea of this century. Between now - about 2013 through 2015 - and 2045 about 30 years we have to be well on the way of this great transition. Erm, can it be done and what are the chances?

Well the first thing is that you can have remarkably quick adaptations on a small scale – and that's been proved time and time again. Let me give a personal example of how change can happen quickly without an utter catastrophe happening first – although it was quite bad in way.

I'll betray my age by saying that I was brought up in London, in the early 1950s as a schoolboy and I can remember very well the great smog of London in 1952. London was very smoky city there with all coal fires and all the industry. And on that particular occasion in midwinter a thermal inversion layer formed right across the London basin and kept all the smoke and fog down at ground level - the smog as we used to call it. And essentially that took over four days an incredible toll on people. It's reckoned at the time that about 4000 people died because of bronchitis, asthma and breathing problems. Epidemiologists who've gone back recently, they think it's probably nearer 12,000. Er, and what was extraordinary was its effect in London. The cinemas in West End closed when people couldn't even see the screen a few seats, from a few rows from the front. The last plane to land at what was rather a small airport then, the early Heathrow, landed safely before they closed the airport as the smog closed in, it got lost between the end of the runway and terminal building. They had to send vehicles out to find the plane, to bring it in. But this was an event, a catastrophe, for the who people suffered, but which was also experienced by the radio people, early television, media, the newspapers and the politicians. And it led to Britain taking much more rapid action, er, with bringing in the Clean Air Acts and now we just do not get that level of pollu, pollution or anything like it in our city centres.

There are a couple of other examples which are actually very interesting and one goes back much more distant past - I think if I remember rightly er it was 1858 and this was the great stink of London. This is where London had virtually no sewage system and ultimately virtually everything ended in the Thames. And it was particularly foul one very hot summer – so much so that you could not even walk near the Thames – crossing the bridge would make you sick and in fact Parliament I believe even see, ceased sitting for a while. What that did was to persuade the politicians they finally had to do something about London sewage, sewage system. The Metropolitan water board I believe was already planning it and they had an incredibly good engineering group

under a man was later knighted Sir Joseph Bazzlejet and they said you've got to put in proper big outfall sewers. Because of the great stink, London did. It was the first really big metropolis to do it. And it really had a huge impact on health not least being very partial in actually seeing an end to cholera. So there's an example of one thing causing a huge change.

And the final one which I think in some ways is really significant, curiously, is actually the founding of the European Union. Whatever you think about the European Union, its bureaucracy and the rest, the fact is that some of the early people who were so keen on it, people like Monet and Schumann, had the idea of getting European integration - this is back in the 1940s, early 1950s - to try and make a third European Civil War less likely. Two big Franco-German wars with the British involved and other countries as well. They were looking to integrate Europe economically sufficiently to make that far less likely. And the frank thing is, that it is far less likely now, whatever you think about European bureaucracy. Monet and Schumann were looking 20, 30, 40 years ahead and they were right to do so.

So those are examples where really major change can happen sometimes because of events, often a combination of events and people are really farsighted, you might even say visionary

I think is a very good chance that may happen with climate change. Before we get real catastrophe, we're going to get what some people call global weirding.

We're already getting it. Weather events are not necessarily becoming more frequent but they are becoming more extreme. And that, I think, is a very clear marker of what climate change is going to do. Very notable that what, a couple of years ago that when you had that superstorm Sandy affecting New York and the coastal East Coast of the United States, then the mayor of New York at the time actually pointed to this as an early warning climate change. Very brave to do in the American political climate at that time but there I think you actually have it - that there are indications we're going to see the effects much sooner than people think but they're not going to be global catastrophes. It gives us time to act. As to the details, well, one of the other very good things is there are many think tanks, university groups, and others who are already trying to think things through.

Erm, I, personally, have a lot of time for the work that the New Economics Foundation is doing. Its great transition project is looking at how you do this transition for an economy of the sort you have in Britain. And Tim Jackson's book *Prosperity Without Growth* is another good example. And there are many others that are already doing the work. That work, I, I have my own sort of personal definition of prophecy, and my definition is prophecy is suggesting the possible. And, if you like, the period we're in now, this decade and the next, are the decades when you have to have one heck of a lot of prophecy.

So in a sense, if we can just recap overall, we're dealing with extraordinary intensely interesting but very challenging issues. We're through to the third transition that, the humans, that human society has to go through. And its going to be a difficult one, because we're so addicted to the traditional idea of growth. But the planet cannot hope with, cope with that and socio-economic systems cannot cope either. And this is why we're going to have to make these changes. Now in all of this it goes without saying that

at the core of much of this is the food system and how it operates. It, it's one of the basic things that we're dependent on. And that comes in time and time again, interweaving in this wider narrative, which is why I think that this attempt through this series to try and bring these issues out is hugely important. Er, we don't have too many years to go. But I think in some ways we're in a period, which could be quite extraordinary.

Part 5 – Looking ahead

Let me try and end if I can on something more of a personal note. We've been looking at the period 1945 to 2045, and I've been arguing that, in a sense, while we still have the problems of our capacity destroy ourselves what is more salient now is the capacity to destroy our environment and the need to live in a more economically just way. And that really is a matter for the next 30 years. But you look at it even longer term than that. Let me do it this way my wife and I have two grandchildren, Zoe who is aged four and Ben, who is aged two. Because of the huge improvements in life expectancy, young Zoe and Ben could well be alive at the start of the 22nd century, late 80s and early 90s, and what I would like to think is that they can look back, not necessarily that distant, maybe in the 2060s, 2070s, and look back from the standpoint of a world in which we have learnt to deal with our capacity to destroy ourselves and we're living within the confines and the opportunities of the global environment - most crucially, in relation to controlling climate change and getting a fair world food system. And if they can look like that, look back like that, when they're in their 60s and 70s, it would be very nice to think that they could look back and think will those people if you like those prophets of suggesting the possible, that the 2010s, 2020s, are the people who actually enabled us to make the transition peacefully, and if that is the case then I think we could be pleased at the task that we are going to have to do and that is the task that we do indeed have to do.