

The challenges of food security and sustainability

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The problem of future food supplies, and the solutions, both from governments and the private sector was debated at a recent Prospect roundtable

by [Prospect Team](#), Prospect Magazine December 17, 2013



A Kenyan maize seller ©Karel Prinsloo/AP/Press Association Images

On Tuesday 10th December, *Prospect* held **a round table** entitled “How to overcome the challenges of food security and sustainability.” This subject was **especially timely** as the World Trade Organisation (WTO), which has reached a limited deal among members, **was held back from a more wide-ranging pact by entrenched national positions** on food subsidies.

The discussion was supported by the [Smith School of Enterprise and Environment at the University of Oxford](#), [Climate Change Capital](#) and the [Crop Protection Association](#). The debate examined the problem of future food supplies, and the solutions, both from governments and the private sector. The use of big data and technology, improving diets, cutting out waste in the food chain, sharing best practice and efficiency, **cutting red tape** to improve markets and trade and the systematic connection between water, food and climate were all discussed.

Among the group of 20 specialists from government, universities, the investment community and NGOs, there was agreement on the nature of the problem—with the global population expected to rise to 9bn by 2050, adequate provision of food is a global concern. This challenge is exacerbated by factors such as climate change and pressure to expand agriculture

production into forests. Efforts to increase production **are also impacting ecosystems** which provide the natural biological, physical and chemical services on which resilient agricultural systems ultimately rely.

“Markets and trade are the only way we are going to feed the world” said Alfred Evans, CEO of Climate Change Capital. “But you need an effective system with good price signals and policies to make them more effective. **There is a policy deficit and a lack of link-up between global organisations.**”

“International negotiations are **failing across different fronts,**” said Professor Sandy Thomas, Head of Foresight at the UK Government Office for Science. “National governments may be aware of these problems but **there isn’t a lot of political appetite for this issue** and voters aren’t demanding their governments act.”

But what is the scale of the problem, both internationally and at a country specific level? Professor Sir Gordon Conway, the agricultural ecologist who heads the Agriculture for Impact Programme at Imperial College London said one of the big demands would be for meat-based diets (from the **burgeoning** middle classes of developing countries). Extensive use of fertiliser, rising oil prices, and the fact that we are running out of good land and water pointed to a massive crisis in which the poor would suffer.

The problem of a lack of understanding about the systemic connection between water, food and climate was raised by James Cameron, the vice-chairman of the World Economic Forum’s Global Agenda Council on Measuring Sustainability and chairman of CCC. His concern was a lack of long term thinking— “a scarce resource” —when it came to investment. He was worried too about **the inability to value “public goods” or to change the value of assets.** For instance land liable to be made infertile by flooding was a “**stranded asset**” which was not reflected in its price.

Climate change, and its effect on food production, was **high on the agenda** too. Kevin Watkins, the executive director of the Overseas Development Institute, said that there was a “total disconnect” between climate discussions and food production. A three degree rise in temperature would be unthinkable. He asked whether we wanted cheap energy or our world leaders to **get to grips with** climate change.

He spoke of the climate change “adaptation apartheid” between rich and poorer countries. The last big drought in the US led to insurance pay outs of \$17bn to farmers which is more than all the contributions to sorting out climate change. He illustrated the point: “We have the Thames barrier while in Bangladesh they teach the children how to swim.”

Red tape also hinders investment in agricultural infrastructure, a point made by Stewart Lindsay, the director of sustainability and global corporate affairs at Bunge Ltd, the global

agribusiness and food company. He said that approximately \$60 trillion of investment was required in global infrastructure between 2013-2030. We need to maximise the efficiency of agriculture by connecting **infrastructure**—roads, rail and water systems. He said that the amounts involved were beyond the private sector and that governments must support large infrastructure initiatives as well as reduce bureaucracy. Storage infrastructure is often inadequate in developing countries causing sizeable losses to producers and excessive costs which lessen competitiveness in the market.

On the issue of diet, the panel agreed that the possibility of cultural change or “**demand suppression**” is important but will be hard to achieve. Professor Tim Lang, Professor of Food Policy at City University, London said “If we are going to have a meat based diet then there will not be enough food. We need to start thinking differently about the sorts of food we eat and the west is going to have to eat less and waste less.” On food waste, Robert Gladwin, the head of sustainability at BASF said that one in three calories of food was wasted, a crisis in production. Viki Hird, senior campaigner on land use, food and water security at Friends of the Earth, **questioned whether there was** a crisis in production, citing the huge waste in the system.

If trying to change the way the world consumes its food is out of reach of political leaders and policy makers then what should be done? “**Changing production will be key,**” said Nick Tapp, Head of Client Advisory at Craigmore Sustainables and a farmer himself. “But we don’t necessarily need to find new technologies to increase **yield**. Poor application of existing knowledge is much more damaging.” He cited the example of Kenyan potato yields, currently sitting at seven tonnes per hectare, the potential with virus free seed is 45 tonnes per hectare.

It was agreed that the failure of farmers to share data and **measure themselves against their peers** is problematic. In countries with survey data, New Zealand has the highest rate at just 40 per cent. The use of sharing of practice was raised by Horacio Sanchez-Caballero, Lead Coordinator of the Group of Producing Countries from the Southern Cone (Argentina, Brazil, Paraguay and Uruguay). He spoke of the **zero-tilling techniques** being used in his member countries where they were using less water and less fertiliser but getting better yields. “This technology needs to be spread throughout the world” he said. James Cameron, Vice-Chair of the World Economic Forum’s Global Agenda Council on Measuring Sustainability (you mention his title above) was upbeat, though, about the use of big data to provide information, the use of smart phones in places like Africa to improve decision making and the spread of technological skills that could result from that.

Land tenure was also identified as a key factor in improving investment, outcomes of farmers and global food security. Professor Cameron Hepburn, Professor of Environmental Science, Smith School, and University of Oxford spoke about the **positive impact** of resource

pricing and used the example of the water cap and trade scheme in the Murray-Darling Basin in Australia where **ownership of water resources has been clearly established**. "To solve this problem in Sub-Saharan Africa, security of tenure is vital for bigger and smaller actors," said Hannah Stoddart, Head of Economic Justice Policy, Oxfam UK. Nick von Westenholz, CEO of the Crop Protection Association said, "there are issues around security of tenure even in the UK and the rest of Europe. If you look at the way tenanted farms interpret signals to invest in comparison to farmers with three year tenancies, it's not surprising they don't look to the long term."

The panel agreed that feeding the world **in an equitable and sustainable manner** must involve food production and the food system **assuming a much higher priority** in political agendas across the world. Shaping the debate around issues like jobs, economic development and public health rather than about "joint sacrifice" would be most effective.

Panellists also agreed that government departments around the world should consider **moving** responsibility for water, food and energy **into one department** to improve effectiveness. 70 per cent of the world's freshwater (drawn from rivers, lakes, and aquifers) is used in agriculture. This would be particularly important **as we move into a new era of EU debate on** the Common Agricultural Policy, further WTO talks, and a first draft of the UN's Principles for Responsible Agriculture Investment available in April 2014.

Explain the following words and phrases from their context:

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