Foresight Exchange Workshop

“How to integrate agriculture and environmental stakes in foresights?”

Presentation n°9 (E. Millstone, SPRU)
The UK Foresight Project on The future of food and farming: challenges and choices for global sustainability

With the support of the following institutions:
UK Foresight Project on

The Future of Food and Farming: challenges and choices for global sustainability

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The Future of Food and Farming:
Challenges and choices for global sustainability

FINAL PROJECT REPORT
Why?

The project was commissioned by the UK government’s Chief Scientist, John Beddington, following a presentation he made in which he focused on the risk of ‘a perfect storm’; and it was strongly supported by the then Prime Minister – Gordon Brown.

A pivotal concept was ‘food security’, which was defined as encompassing considerations of

1) sufficiency, 2) safety, 3) sustainability and 4) equity.
The project assumed steps should be taken to diminish the risks of such a ‘perfect storm’

“The global food system will experience an unprecedented confluence of pressures over the next 40 years...global population size...many people are likely to be wealthier...competition for land, water and energy will intensify, while the effects of climate change will become increasingly apparent.”
The UK project on *The Future of Food and Farming* (2011) had as its primary aim:

“...to explore the pressures on the global food system between now and 2050 and identify the decisions that policy makers need to take today, and in the years ahead, to ensure that a global population rising to nine billion or more can be fed sustainably and equitably.” Where “Sustainability implies the use of resources at rates that do not exceed the capacity of the Earth to replace them.”
The project did focus on the **agriculture-environmental nexus**, and explicitly criticised UK historic practices of treating agriculture and environment separately, and implicitly the EC/EU and CODEX.

The argument had already been settled in the UK in 2001 with the creation of DEFRA (the Department for Environment Food and Rural Affairs), following the abolition of the Ministry of Agriculture, Fisheries and Food.
The study was unusually comprehensive and sophisticated - the ‘environment’ was characterised not just in thermodynamic and ecological terms, but also in economic and political terms.

**Methodology**

5 key challenges were identified as

1) Sustainable supply and demand
2) Volatility of supplies and prices
3) Hunger
4) Climate Change and
5) Maintaining biodiversity.
Those issues were addressed by commissioning:

22 reviews of potential ‘drivers of change’ (including eg Population, Climate Change, Energy, Water, Economics and Urbanisation)

56 ‘State of Science Reviews’

7 Regional Reviews (covering eg the UK, China, the Nile and Mekong basins, India and Brazil).

a set of 13 ‘additional reviews and working papers’, and workshops,

and 29 studies of *Sustainable Intensification* in African Agriculture.
Sustainable Intensification in African Agriculture – case examples

**AA1**: Agriculture service provision: Oxfam’s strategic cotton programme; Mali

**AA2**: Indigenous vegetable enterprises and market access: East Africa

**AA3**: Fertiliser tree systems: Southern Africa

**AA4**: Conservation agriculture: Zimbabwe

**AA5**: CARBAP and innovation in plantain banana: West and Central Africa

**AA6**: Livestock research for sustainable disease management; Mali and Burkina Faso

**AA7**: Conservation agriculture; Tanzania

**AA8**: Focal area approach: agricultural extension and market developments; Kenya

**AA9**: Focal area approach: agricultural extension and market developments; Kenya

**AA10**: Growing sustainable tea; Kenya

**AA11**: Harnessing sustainability, resilience and productivity; Likoti in Lesotho

**AA12**: Meru dairy goat and animal healthcare

**AA13**: On-farm biological control of the pearl millet head miner; Mali, Burkina Faso and Niger

**AA14**: Breeding and dissemination of improved sweet potato varieties

**AA15**: Promoting smallholder seed enterprises (SSE); Cameroon

**AA16**: Push-pull technology: a conservation agriculture approach

**AA17**: Quincho: the first most popular teff variety in Ethiopia

**AA18**: The adoption of fodder shrub innovations in East Africa

**AA19**: Revival of cassava production; Nakasongola District, Uganda

**AA20**: Sharing ideas between cultures with videos

**AA21**: Soybeans and sustainable agriculture; Southern Africa

**AA22**: Sustainable crop production intensification: Senegal and Niger River Basins of Francophone West Africa

**AA23**: The Ghana Grains Partnership

**AA24**: The Malawi Agricultural Input Subsidy Programme: 2005/6 to 2008/9

**AA25**: The Rakai Chicken Model; Uganda

**AA26**: The rise of peri-urban aquaculture; Nigeria

**AA27**: The System of Rice Intensification (SRI) as a sustainable agricultural innovation; Timbuktu region of Mali

**AA28**: Trees, agroforestry and multifunctional agriculture; Cameroon

**AA29**: Soil and water conservation techniques to rehabilitate degraded lands; North western Burkina Faso

**Working Papers**

**AWP1**: Designing innovative: Small-scale organic agricultural technologies

**AWP2**: Diffusion of tissue culture banana technology to smallholder farmers; Kisi District

**AWP3**: Egyptian aquaculture sector overview

**AWP4**: Orange-fleshed sweet potatoes for food, health and wealth; Uganda

**AWP5**: Partnership in managing bean root rots; Eastern and Central Africa

**AWP6**: Pigeonpeas for prosperity: East and Southern Africa

**AWP7**: Institutional collaboration in the development of rice production; Kpong Irrigation Project, Ghana

**AWP8**: Zooming-in Zooming-out: Videos to scale up sustainable technologies and build livelihood assets

**AWP9**: Experience du Projet de Conservation des Eaux Et Des Sols
Analysis and interpretation
A substantial amount of material and analysis was gathered; the task of distilling it into a 211 page Final Report and a 44 page Summary Report was very challenging.

That challenge was complicated by the uncertainties, and arguments and analyses that were often contrary, and sometimes even contradictory.

The manner in which that process was conducted was difficult to discern, and complicated by the change of government in the UK in May 2010.
The resulting ideas, reflections & outputs

None of the conclusions were new to scholars, but some represented new for the UK government.

**High-level conclusions** included: “...policy in all areas of the food system should consider the implications for volatility, sustainability, climate change and hunger...policy in other sectors outside the food system also needs to be developed in much closer conjunction with that for food. These areas include energy, water supply, land use, the sea, ecosystem services and biodiversity.” [then adding] “Achieving much closer coordination with all of these wider areas is a major challenge for policy-makers.”
Action needed on all four fronts simultaneously:

1. More food must be produced sustainably through the spread and implementation of existing knowledge, technology and best practice, and by investment in new science and innovation and the social infrastructure that enables food producers to benefit from all of these.

2. Demand for the most resource-intensive types of food must be contained.

3. Waste in all areas of the food system must be minimised.

4. The political and economic governance of the food system must be improved to increase food system productivity and sustainability.
The solution is not just to produce more food, or change diets, or eliminate waste. The potential threats are so great that they cannot be met by making changes piecemeal to parts of the food system. It is essential that policy-makers address all areas at the same time…Nothing less is required than a redesign of the whole food system to bring sustainability to the fore.
It is necessary to revitalise moves to end hunger. Greater priority should be given to rural development and agriculture as a driver of broad-based income growth, and more incentives provided to the agricultural sector to address issues such as malnutrition and gender inequalities.

It is also important to reduce subsidies and trade barriers that disadvantage low-income countries. Leadership in hunger reduction must be fostered in both high-, middle- and low-income countries.
Policy options should not be closed off...the Project’s Final Report has argued the importance of, within reason, excluding as few as possible different policy options on a priori grounds. Instead, it is important to develop a strong evidence base upon which to make informed decisions. [But that statement represented a political compromise amongst the project’s ‘Lead Expert Group’, eg between proponents of GM crops and agro-ecologists, and avoided setting priorities.]
Comments and issues for discussion

Too little was said about how agricultural R&D agendas can be coupled more directly to the needs, conditions, aspirations and expectations of the intended beneficiaries. (cf Farmer First)

This issue has been raised in CGIAR institutions; while experiments have taken place, measures to ensure that the needs of and challenges facing the rural poor directly influence R&D agendas have yet to be properly and systematically implemented.
Sustainable intensification

The concept of ‘sustainable intensification’ was used by the UK Foresight study, and elsewhere too, but the meaning and applications of those ideas remains far too vague.

Too often it is interpreted narrowly in physical and ecological terms that fail to include economic, social and cultural dimensions.

Clarity is needed about what is to be ‘sustained’ and what is to be changed.
The report acknowledged that: “…information on international production and the size of commodity stocks is generally poor and in some cases deliberately withheld.”

It also says: “There is a strong case for establishing an emergency food reserve and financing facility for the World Food Programme to help low-income countries facing sudden increases in bills for food imports when price spikes occur...
…This has already been proposed by others. It may also be appropriate for individual states to consider creating strategic reserves of food commodities.”

Help and encouragement should be given to developing countries to establish (or re-establish) public sector food stocks that can serve to buffer supply and price volatilities, so as to protect the vulnerable rather than enrich the powerful.
The impact of commercial speculation on food price volatility was discussed, but the report suspended judgement on its significance, and suggested no particular measures.

Indeed it says: “It is beyond the scope of the Project to make technical recommendations about the workings of commodity markets.”
I maintain that the **rules governing the buying and selling of food stocks and food futures need to be more not less restrictive.**

In particular ‘*naked short-selling*’ of food stocks or futures should be unlawful; buying and selling of wholesale food stocks should be restricted to companies that own or use physical stocks.