

**Sustainable Development Commission response
to the Defra discussion paper, *Ensuring the UK's
Food Security in a Changing World***



The Sustainable Development Commission (SDC) welcomes the opportunity to comment on Defra's discussion paper, *Ensuring the UK's Food Security in a Changing World*.

The SDC is the Government's independent watchdog on sustainable development, reporting to the Prime Minister, the First Ministers of Scotland and Wales and the First Minister and Deputy First Minister of Northern Ireland. Through advocacy, advice, appraisal and capability building in government departments and agencies, we help put sustainable development at the heart of Government policy.

This response will seek to position the food security debate within the framework of sustainable development, and, where relevant, will make recommendations to Government on how to address the global and UK food security challenges with a view to enabling a sustainable food system.

Sustainable development as the overarching framework for the UK's food security policy

The SDC welcomes the discussion stimulated by the Defra paper on food security, covering its definitions, the context, and an indication of Government's approach. In responding to this consultation document, the SDC seeks to highlight the gaps that we perceive, and to make suggestions of ways to improve the language and intent. We are, in parallel, also participating in Defra's work on risks, indicators and the development of the vision of a sustainable food system (as we recommended in our publication *Green Healthy and Fair* March 2008).

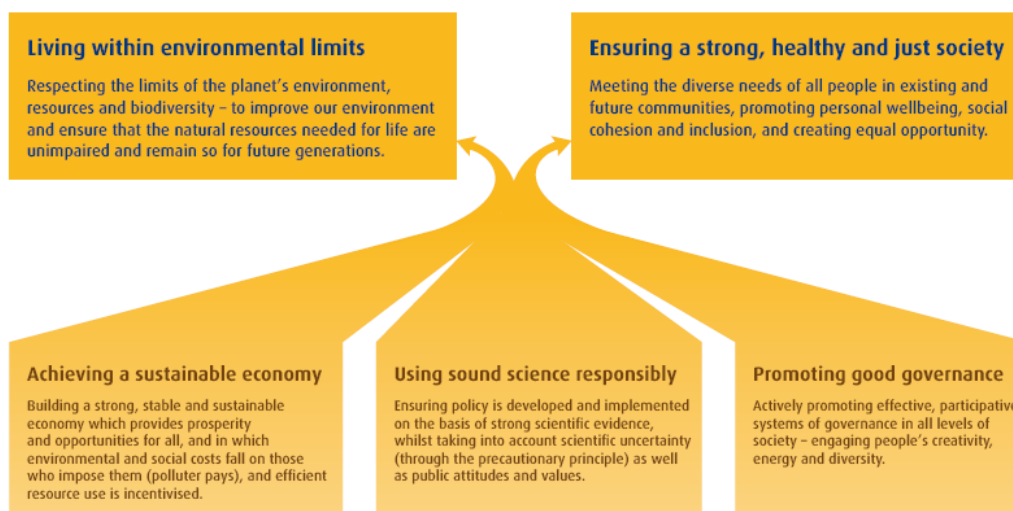
Food security is a challenging and complex problem that can be addressed in a number of ways. The Defra paper outlines three elements that must be addressed: availability, access and

affordability. While we would not disagree that any of these issues are crucial, we would question the omission of the importance of sustainability. In our view, tackling food security without explicitly aiming to achieve a sustainable food system is a fundamental error. The goal of achieving a sustainable food system is not articulated in the Defra paper.

The Defra paper defines food security as: "We believe that global food security means everyone having enough to eat". In our view this should additionally say: "... in a way that does not compromise future generations' ability to feed themselves sustainably and healthily". The omission of sustainability as a core feature of a secure food system implies that sustainability is in fact not core, that perhaps it is something of a luxury which can be dispensed with if times get tough. In tackling an issue like food security, the short and long term sustainability issues are very important, as our ability to feed ourselves must not compromise the ability of others, including future generations, to feed themselves. Issues such as damage to productive land leading to irreversible soil erosion, run off pollution in water supplies and the accelerated build up of greenhouse gases must be addressed.

In 2005 Government published its five principles of sustainable development to provide the overarching framework for all government policy development. We strongly **recommend** that, in order to begin to respond to this challenge, the UK's food security policy should be developed under this overarching framework:

The principles of sustainable development



Source: *Securing the Future*, HMG, 2005

Government's sustainable development principles are intended to be applied without 'trade-offs' so that solutions are found which reconcile the priorities of "a strong, healthy, and just society" whilst also "living within environmental limits." Taking a sustainable development approach to food security policy would enable food security to be integrated with other priorities, such as tackling climate change and securing a healthy natural environment, rather than sitting alongside.¹

The goal of sustainable development is to enable all people throughout the world to satisfy their basic needs and enjoy a better quality of life without compromising the quality of life of future generations. It is therefore important that the definition of food security encompasses all people, rather than just 'consumers' as some may be too poor to buy food and therefore do not create a market demand as 'consumers'.

Sustainable development also provides a lens through which to analyse production and consumption in the context of a sustainable food system. In particular, in seeking to achieve integration of economic, environmental and social outcomes, the focus should be on the following:

- **Production capacity** to stress the production base, supply chain governance and necessary skills (at a time of fragile employment on land)

- **Ecological carrying capacity** to indicate food's impact on the environment, land and natural resources (in a time of climate change stress)
- Relationship between production and consumption, especially at a time of rising diet-related health costs and consumer expectations of low prices which fail to internalise full environmental costs).²

Global challenges

Global hunger and rising food prices

The discussion paper highlights that despite a doubling of global population in the last 40 years, agricultural production has expanded faster still. However, it should be noted that in the shorter term, food supply responds relatively slowly to increases in demand.³ As the world population continues to grow, this therefore raises questions about ensuring sustainability of supply. Rising demand for food has significant implications in relation to 'high-impact' food products such as meat and dairy (see below).

Whilst the UK has committed to providing assistance to developing countries in the form of social protection, food aid, agricultural inputs and funding for agricultural research, the implications of higher food prices suggest that assistance must go beyond this to include:

- investment in rural development programmes
- helping countries to devise integrated strategies for managing scarcity in land, water, energy, food and the effects of climate change
- gaining a clearer picture of the trade dimensions of the current food prices issue to develop a renewed strategic stance on agricultural trade, particularly in the light of the WTO talks collapse.⁴

Energy prices

Whilst the discussion paper highlights recent high oil prices as a key contributor to food price inflation, it should also be pointed out that natural gas prices have also been observed to follow a similar pattern. This is significant given that the price of natural gas accounts for 75-90% of fertilizer production costs, which could result in reduced agricultural production particularly in developing countries, with the knock-on effect of increased food prices and food shortages.⁵

The environmental costs of fossil-fuel dependent agriculture must also be addressed, and, in particular, the manufacture of nitrogen and the energy and CO₂ intensity of this process. Nitrogen balances are a critical part of trying to understand food security. Furthermore, high energy prices have been a contributory factor in increased biofuel production which has several associated environmental costs (see Land use section below).

Meat and dairy production/consumption

The discussion paper identifies supply pressures from emerging economies such as India and China where meat consumption is rising, leading to a multiplier effect in the consumption of grain for animal feed, as a cause of recent food price inflation.

In the UK, the livestock industry accounts for the greatest share of agriculture's impact on the environment,⁶ contributing 8% of UK greenhouse gas emissions with meat production accounting for over two-thirds of that figure.⁷ While sheep and beef meat have the highest climate impact of all types of meat, with a global warming potential of 17 and 13

kg CO₂-eq per kg of meat, pigs and poultry have less than half of that.⁸ A higher consumption ratio of white to red meat may result in fewer direct greenhouse gas emissions but it also diverts edible grain away from human consumption.⁹

Defra's milk roadmap¹⁰ brought to the fore the opportunities and challenges for the UK dairy farming sector in responding to the impacts of milk production and consumption, and it is interesting to observe the efforts being made by, for example Dairy UK, to reduce methane emissions through better management of the cattle feed. Given the impacts of meat production and consumption and food security, the SDC **recommends** that Defra develops the proposed meat roadmap in order to identify how the meat sector can operate sustainably whilst ensuring food security.

Climate change

Changing rainfall patterns accounting for crop failures through drought and weather-related crop destruction, have played a part in the current food crisis, and are likely to be of increasing importance. Developing countries are likely to be most severely affected agricultural output could potentially decline by as much as 20% compared to 6% in developed countries.¹¹ We believe this issue cannot be overemphasised and **recommend** that Defra develops a more complete approach to climate change in its final paper.

Land use

The availability of land for rain-fed cultivation represents a significant challenge for future food security. 21% of the arable area currently available globally is now classed as irreversibly destroyed (for most purposes by land degradation).¹² It is clear that '[t]here are conflicts between desirable aims. Organic farming for example, while massively reducing fossil fuel use in the manufacture of fertilizer, is also more dependent on carbon-emitting tillage than herbicide-based, no-tillage systems.'¹³

As the discussion paper points out, biofuels raises important questions about the purpose of agricultural land. The SDC recognises that biofuels may have a part to play in reducing transport related CO₂ emissions. However, this

will depend on the appropriate safeguards being in place, including:

- Rigorous standards for sustainability of every source and supply of biofuels. The direct and indirect environmental, social and economic effects must be covered. Preferably, these should be agreed internationally in order to avoid the use of less sustainable fuels in countries with less rigorous standards than the UK
- The sustainability standards must cover complex issues such as the risk of deforestation and societal impacts and should include a whole life-cycle analysis of greenhouse gas emissions, including land-use change
- Incentives or subsidies for biofuels should be graduated to provide the greatest incentive for the greatest carbon savings.

Without these safeguards there is a risk that the increased use of biofuels for transport could result in limited reductions or even increases in emissions of greenhouse gases compared with the use of fossil fuel equivalents. In addition, unacceptable social and other environmental impacts are likely. In particular, before any further mandates for the use of biofuels are implemented, consideration should be given to whether a target driven approach sufficiently safeguards sustainability, or whether other policy instruments, such as incentives for greenhouse gas emissions savings from crops and waste, would be more appropriate.

Water

Climate change, greater demand from competing interests, and closer regulation of water supply are increasing the cost and scarcity of water. This is focusing attention on the amount of embedded water in products – the water used in production and processing. Globally, agriculture is by far the biggest user of water, accounting for 70% of global water use.¹⁴ Large-scale irrigated agriculture in areas where there is high competition for water and low rainfall, can cause depletion of groundwater, intrusion of seawater (high salinity), water and soil contamination by pesticides and fertilizers, soil degradation and loss of inhabitable land.¹⁵ A recent briefing report by the Stockholm International Water Institute, the Food and Agricultural Organisation

and the International Water Management Institute found that up to half of all food may be wasted along the food chain, from field to fork, causing water, food and hunger crises. Depending on the crop, an estimated 15-35% of food may be lost in the field. Another 10-15% is discarded during processing, transport and storage.¹⁶

The SDC therefore **recommends** that Defra recognises the scale of this issue at global level and gives it high priority in its food security policy.

Global trade

Whilst the SDC strongly supports the UK Government's line on shifting CAP subsidies away from food production, in order to ensure a sufficiently robust base for policy making, the following key policy questions must also be addressed:

- Where do we get our food from?
- What is our land for?
- What is the impact of food dynamics on the wider economy, and vice versa?

The recent collapse of the Doha round of WTO talks also indicate that future trade with some developing countries may be at risk. 'Fair' relationships within supply chains are necessary to fulfil the potential to contribute to poverty reduction internationally through supporting trade with developing countries.

Both government and retailers have been content to rely on the voluntary efforts of the Fairtrade and Ethical Trading Initiative movements, to build the profile for fairly traded products. However, such standards do not primarily address environmental impacts, and in our view a more holistic approach would be to include avoidance of natural resource and biodiversity degradation into standards. Government's international development programmes, through DFID, support developing countries gaining access to supermarket trade, and this effort is skewed towards increasing the amount of trade rather than maximising value – economically, socially and environmentally – for producers.

We **recommend** that Government's international development policy goals are articulated in a way that integrates its

sustainable development goals, thereby achieving international development and environmental sustainability at the same time, through its programmes. This articulation should acknowledge that longer term goals of full internalisation of the cost of carbon cannot be achieved in the short term, and therefore government policy is to support the concept of fair trade with environmental sustainability.

Domestic challenges

Sustainability of supply

It is imperative that food security and self-sufficiency are not confused with each other. Indeed, the discussion paper identifies that '[a]s a measure of domestic food security, self-sufficiency does not cover the processing and distribution of food, it does not allow for the imported energy on which domestic agriculture is directly and indirectly reliant, and it does not take account of the resilience of the supply chain'.¹⁷ In view of the importance of energy prices to the viability of the supply chain, and impact on food prices, efforts need to be focussed on improving the efficiency of the system and reducing reliance on fossil fuel energy sources. In this context, reducing the distances that food travels can be a sustainable, solution that encourages locally sourced products and can improve a local economy.

Ensuring security of supply involves addressing risks to the supply chain and risks to the consumer. Government's role in responding to such risks is crucial, as dependence on the food retailers to overcome any supply chain hiatus may prove to be insufficient. Current "just in time" delivery patterns leave retailers and consumers vulnerable to interruption in supplies, with their associated price hikes, and ultimately may require Government intervention to secure a resolution. We therefore welcome the creation of the Food Chain Emergency Liaison Group to look at building the resilience of food supply chains and contingency planning for dealing with disruptions to food supplies.

Skills and labour

The SDC welcomes the Government's commitment to capacity-building within the

farming industry through projects such as Skills For Farming and Fresh Start. However, there is still a gap in the UK in terms of research, food science and technology. The recent IAASTD report found that agricultural knowledge, science and technology 'can contribute to radically improving food security and enhancing the social and economic performance of agricultural systems as a basis for sustainable rural and community livelihoods and wider economic development. It can help to rehabilitate degraded land, reduce environmental and health risks associated with food production and consumption and sustainably increase production'.¹⁸ We would therefore recommend that this focus on food security stimulates a closer examination of the allocation of research funding, not just in Defra, but also through DIUS and the research councils, which currently appear to have little interest in this area of research.

The UK also has difficulties in attracting sufficient land workers for gathering harvests. If the UK is to have a thriving farming industry contributing to global, regional or local markets, closer attention is needed on this worker supply issue.

Over the longer term, the average age of farmers in the UK is rising, and the maintenance of skills for managing the land, especially as land come out of food production, could be a significant problem in the future if that land is then needed for food production. We believe this requires a joint approach between Government and the farming sector.

Climate change adaptation

The SDC commends Defra for the Agricultural Change and Environment Observatory Programme and the government as a whole for setting up the Adapting to Climate Change Programme. The discussion paper identifies that domestic farming will need to be able to respond to changes, including market and climate changes. Therefore, in line with the PMSU's Food Matters report and the emphasis on lower-impact food, steps should be taken to define what low-impact farming is.

However, climate change adaptation measures should not preclude the need for continued efforts to reduce greenhouse gas emissions

across the food supply chain. In particular, the SDC recommends that Defra work to develop a strategic plan for greenhouse gas emissions across the whole food supply system.

Our recommendations were outlined in *Green, Healthy and Fair* and the recommendations were:

- Defra (with BERR) to work with the food industry to develop a strategic plan for greenhouse gas emissions reductions across the whole food supply system through to 2020; these 2020 targets to support UK trajectory for at least a 60% cut in CO2 emissions by 2050
- Defra (with BERR) to develop policy scenarios for meeting 2020 emissions goals, with a roadmapping approach to identify policies to achieve sector emissions reductions
- The proposed (by SDC) Defra/BERR 2020 strategic plan to include a contribution the sector could make from emissions reductions from its own operations (including buildings, refrigeration, transport)
- Defra to work with the farming and food supply chain to develop a long term vision for reducing greenhouse gas emissions from farming and how this

fits into the 2020 strategic plan [now being developed].

Waste

Food waste throughout the food chain from post-harvest to post-purchase waste in the developed world is significant. Losses in processing, transport and storage are conservatively estimated at 10–15% in quantity terms, but could amount to 25–50% of the total economic value because of reduced quality.¹⁹ Food retailers are estimated to directly generate 1.6 million tonnes of food waste,²⁰ including from products past their sell-by-date, and promotions and price signals to consumers that encourage food waste, e.g. ‘buy one get one free’ offers. Waste not only has an environmental impact, it also has a monetary impact. The value of ‘edible’ waste is calculated at £250-£400 a year per household²¹ and the overall retail value of the food waste that goes to landfill is calculated to be £6 billion per year.²²

The SDC welcomes the proposed action in the *Food Matters* report on reducing food waste and recovering energy. It is essential that Defra clearly identifies the opportunities in the food system to do this.

Endnotes

- ¹ See paragraph 2.2 of discussion paper.
- ² See Barling D, Lang T and Sharpe R, *The root of the problem*, RSA Journal, Spring issue 2008 at p. 29.
- ³ International Food Policy Research Institute (2007) *The World Food Situation: New Driving Forces and Required Actions*: <http://www.ifpri.org/pubs.fpr/pr18.pdf>
- ⁴ Evans, A, *Rising Food Prices: Drivers and Implications for Development*, Briefing Paper, April 2008: <http://www.chathamhouse.org.uk/publications/papers/view/-/id/612/>
- ⁵ World Development Report (2008) *Agriculture for Development*: http://siteresources.worldbank.org/INTWDR2008/Resources/WDR_00_book.pdf at p.66.
- ⁶ Cabinet Office (2007), *Food: an analysis of the issues*, p. 86.
- ⁷ Food Ethics Council (2007), *Meat consumption: Trends and environmental implications* – A report of the Business Forum meeting on 20th November 2007, p.1: <http://www.foodethicscouncil.org/files/businessforum201107.pdf?PHPSESSID=fa80a13813a4407473fd042a2aae611c>
- ⁸ Greenpeace (2008), *Cool Farming: Climate impacts of agriculture and mitigation potential*, p.8.
- ⁹ Food Ethics Council (2007), *Meat consumption: Trends and environmental implications* – A report of the Business Forum meeting on 20th November 2007, p.4: <http://www.foodethicscouncil.org/files/businessforum201107.pdf?PHPSESSID=fa80a13813a4407473fd042a2aae611c>
- ¹⁰ <http://www.defra.gov.uk/environment/consumerprod/pdf/milk-roadmap.pdf>
- ¹¹ Von Braun, J. (2008) *The World Food Situation: New Driving Forces and Required Actions*, Food Policy Report, International Food Policy Research Institute at p.3.
- ¹² FAO TERRESTAT (2000), *World Soil Resources Report 90: Land Resource Potential and Constraints at Regional and Country Levels*
- ¹³ Discussion led by Pete Smith, *Carbon and the Climate: Implications for Rural Land Use*, The First Andrew Raven Memorial Weekend at Ardtornish: <http://www.ardtornish.co.uk/PDF/andrew-raven.pdf>
- ¹⁴ UNEP (2000) *Global Environmental Outlook 2000*; WWF (2003) *Thirsty Crops*.
- ¹⁵ Ethical Corporation (2005) *The sustainability of European food supply chains* (2005) Defra.
- ¹⁶ See Lundqvist, J, C de Fraiture and D.Molden. *Saving Water: From Field to Fork – Curbing Losses and Wastage in the Food Chain*. SIWI Policy Brief. SIWI, 2008 at p.23.
- ¹⁷ Paragraph 4.15.
- ¹⁸ International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD) Report (2008), *Executive Summary of the Synthesis Report* at p.7.
- ¹⁹ Lundqvist, J, C de Fraiture and D.Molden. *Saving Water: From Field to Fork – Curbing Losses and Wastage in the Food Chain*. SIWI Policy Brief. SIWI, 2008 at p.23.
- ²⁰ See: www.wrap.org.uk/retail/food_waste/nonhousehold_food.html
- ²¹ WRAP (2007) *Understanding food waste: Research summary*. Banbury: WRAP. See: www.wrap.org.uk/downloads/FoodWasteResearchSummaryFINALADP29_3_07_25a4c08b.525df8fc.pdf
- ²² WRAP (2007) *Minimisation of food waste*. Presentation, see: www.wrap.org.uk/downloads/WRAP_Food_Waste_Minimisation_adp_-_27_10_071.60cf2f70.pdf