



Response from the Soil Association to Defra discussion paper, Ensuring the UK's Food Security in a Changing World

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The Soil Association welcomes Defra's heightened focus on food security issues over recent months and the opportunity to respond to this consultation. Food Security merits greater attention and action from Government given:

- recent widespread public concern and media focus over rising fuel and food prices in the UK
- global events with protests about food scarcity and affordability occurring in over a dozen countries worldwide
- increasing awareness of the impacts of climate change directly on food-production globally
- the scientific consensus for reducing greenhouse gas emissions across all sectors of the national and global economy, including agriculture and the food-chain by 60-80%.

Summary points:

- Context of climate change underplayed: Despite the welcome statement that 'Climate change presents one of the greatest threats to increasing agricultural productivity' (Conclusion 5.5), this is not accompanied by any acceptance that the predominant model of agricultural food production and distribution in the UK and globally is unsustainable - given the challenges and constraints of scarcer, harder to extract, more costly oil.

There should be clearer acknowledgement of this fact. Defra uses the weaker 'by at least 50% by 2050' target for cutting global emissions as agreed by politicians at the 2008 G8 summit in Japan. Yet the scientific consensus (IPCC, Stern Review etc.) is to cut greenhouse gases by 60-80%

across all sectors of the economy - including food and farming, responsible for at least 18% of the UK's greenhouse gas emissions.

- **UK vulnerable to climate change impacts:** Defra's 2008 report is an improvement on the earlier 2006 paper. 'Food Security and the UK: An Evidence and Analysis Paper', which stated that, 'Climate change particularly is likely to bring new challenges for the food security, not of rich countries like the UK. But of less developed, tropical regions.' In contrast to that complacent statement, notwithstanding the need to cut greenhouse gas emissions generally, or the potential disruptions to global food producing areas and markets, it is worth noting that 57% of the UK's best farmland (Grade 1) lies below sea-level. Protecting this under predicted sea-level rise scenarios will become increasingly expensive and challenging. Sea levels will continue to rise and could be between 26 - 86 cm above the current level in south east England by the 2080s. That could make arable farming unviable on: 86% of the Fens; 10% of the remainder of East Anglia, and 7% of the North West due to flooding - unless expensive adaptations are made to flood defences. (IPCC and UK Government sources)
- **Oil prices and input costs set to rise in the long-term:** Whilst the oil price has dropped from the recent high of \$140 a barrel to just under \$100, long-term forecasts are for sustained higher prices – predicted by a recent Chatham House report to reach \$200 a barrel over the next 5-10 years (The Coming Oil Supply Crunch; 8 August 2008). Higher oil prices mean higher input costs – nitrogen fertiliser prices have doubled over the past year and 10-20% price hikes have been announced by major pesticide manufacturers. The cost of fertiliser in a tonne of wheat has risen 3-fold from £16 to over £50 in a year (fertiliser supplier).
- **Environmental costs of fossil-fuel dependent farming:** Whatever the economic impacts of higher fuel and other input costs on UK and global food production, the necessity to curb agriculture's greenhouse gas contribution means that the dominant model of farming's dependence on fossil-fuel derived inputs is unsustainable: e.g. the manufacture of a single tonne of Nitrogen fertiliser gives off 6.7 tonnes of carbon dioxide equivalent greenhouse gas (Sheffield Hallam University).

Defra's conclusion that the UK 'currently enjoys a high level of national food security' 'able to access the food we need on the global market' does not acknowledge that the system of farming our food security predominantly depends on (whether in the UK, across the EU or globally) is reliant on vast inputs of fossil-fuel in the form of oil and agrochemicals.

- **'Business as usual is no longer an option':** Defra's confidence in the ongoing stability and sustainability of that system contrasts with the recently published report of the International Assessment of Agricultural Knowledge,

Science and Technology for Development, which concludes that 'Business as usual is no longer an option'. The result of 4 years work by over 400 scientists, chaired by Defra's own current Chief Scientist, Professor Robert Watson, and signed up to by the UK Government, the IAASTD report should provide key scientific analysis and a foundation for Defra's ongoing work.

- **State of global/UK soils:** While the paper acknowledges that climate change is likely to increase the area of land in developing countries unsuitable for cropping as rainfall declines and soils suffer further degradation, this is not considered an issue also for developed countries. Yet according to the last extensive survey of UK soils, some 44% of the UK's arable soils were deemed to be suffering from erosion, 36% at moderate to serious risk (Soil Survey England & Wales, R. Evans et al). According to the UK Environment Agency, agriculture was responsible for 95% of the 2.3 million tonnes of UK soil lost between 1995-1998 (Environment Agency 2004, The State of Soils in England & Wales). Across Europe, soil erosion and degradation seriously affects near 157 million hectares (16% of Europe, nearly 3 times the total surface of France), making it the major environmental problem linked to the shift to intensive agriculture. Damage to agricultural soils is calculated to increase production costs by about 25% each year (53 Euros per hectare per year). When off-farm costs are added, the total cost of erosion from agriculture goes up to around 85.5 Euros per hectare of cropland per year. America's drive to become the world's major grain exporter has led to a 40% increase in soil erosion. Currently 90 percent of US crop land is losing topsoil faster than it can be replaced. (Lappe F.M., Collins J., Rossett P., 1998. 'World Hunger: Twelve Myths'). According to the UN, 10 million hectares of cropland are degraded or lost to erosion annually across the world. Globally, 300 million hectares, sufficient to feed Europe and 10 times the size of the UK is so severely degraded as to be incapable of producing food. UNEP has stated that 50% of world's arable land will be unuseable by 2050.
- **Labour force:** The paper notes the challenge agriculture faces 'to recruit and retain sufficient number of workers', but it does not relate the current very low proportion of the UK labour force working in food production to future scenarios of increasing costs and scarcity of the fossil-fuel resources that have substituted for human-labour – e.g. oil and oil derived inputs, such as artificial fertilisers and pesticides. Over past 60 years the number of farmers declined by over 200,000 (10/12 farmers leaving the industry per day); farm-labourers c. 1m to under 200,000 (over 35 a day left the land). From being the majority of 500,000 farms, mixed farms are now under 10,000.

Less than 1% of the UK population works in agriculture. It is salutary to consider the proportion of its population that was required to produce food when Cuba 'lost' its imports of fuel, fertiliser and pesticides following the

collapse of the Soviet Union – some 15-24% of the country's labour force had to be turned to growing food. In the UK in the early 1900s some 40% of the population was engaged in farming. An obvious, practical means to reducing UK farming's reliance on agrochemicals for fertility and pest and disease control would be to reintroduce and develop rotational mixed-farming; but that requires more labour input. Independent research for the Soil Association found that organic farming (a core principle of which is building fertility through rotations of crops and livestock) provides over 30% more jobs per farm than comparable non-organic farms. If all farming in the UK became organic, effectively a switch to mixed-farming, some 93,000 more people would be required in agriculture. 'Ensuring the UK's Food Security in a Changing World' does not acknowledge that the urgent need to cut greenhouse gas emissions and the inevitability of having to depend less on oil and oil-based inputs will require a greater input of human labour. Contrary to the prevailing orthodoxy of shedding labour that has dominated discussions over farming's 'efficiency' over the past decades, increasing labour in agriculture should be seen as economically and environmentally efficient, as well as providing the social benefits of employment and recreating vibrant rural communities.

- **Defra's 60% UK self-sufficiency figures misleading:** Certain sectors are much lower: <10% of fruit consumed in UK is grown here; 40-50% of our vegetables are imported. UK self-sufficiency has dropped 21% since 1995 (Defra). 70% of all animal feed used in EU imported. Therefore, the UK/EU is reliant on significant resources of other countries' soils, water and energy.

These and other issues will be addressed in more detail in an independent research report to be published in November.

The Soil Association was founded in 1946 by a group of pioneering farmers, agricultural scientists, health professionals, and concerned citizens who underwent the UK's last major food emergency when the country's vulnerability in depending on imports for food and fuel security was significantly exposed. The focus of the organisation was particularly on developing agricultural systems which produced nutritious, healthy food without undermining long-term soil fertility and ecosystems. Crucially, these systems were designed to minimise reliance on artificial inputs, such as chemical fertilisers and pesticides. In essence, over 40 years before the term was coined the Soil Association was promoting and practising 'sustainable development'.

As such, the issue of 'food security' has been at the core of the organisation's concern for the past 60 years plus of its existence. Our annual conferences for the past two years, 'Feeding Our Cities in the 21st Century', and 'One Planet Agriculture' have been focussed on UK and global food security issues. Our 2008 conference in November will develop the theme further. As part of our work to inform this year's Conference and underpin policy proposals and actions

arising from it, we have commissioned independent research considering UK food security. This research due to be published in November will provide our more detailed views on the subject.

Yours sincerely

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