



Food Futures

Strategies for resilient food and farming



Soil Association

Introduction

The world's agriculture and food systems face unprecedented challenges. We are approaching a 'perfect storm' of climate change, resource depletion, diet-related ill health and population growth which is forcing us to look again at how we produce and consume food

The current intensive, industrial model based on high inputs of fossil fuel derived inputs, global sourcing and centralised distribution is neither sustainable nor resilient against future shocks. Over the next 20 years we must make fundamental changes to the way we farm, process, distribute, prepare and eat our food. Global food shortages will be inevitable unless we act now to change our food and farming systems.

We are at a critical crossroads. We can continue with a 'business as usual' model for food and farming – characterised by a reliance on high oil and chemical inputs, and intensification of food production, with its attendant pressures on resources, wildlife, landscapes, animal welfare and the global expansion of unhealthy diets. Or we can seek to re-balance our diets, and turn to resource-efficient and more environmentally-friendly farming methods.

Faced with these challenges we need to develop new models of sustainable and resilient food systems for the 21st century. The Soil Association has already created a model of sustainable, organic production through which the future of food and farming could be transformed. Building on this experience, we are proposing a new route map – the basis of a strategy which could secure the future of our food and farming systems.

This document outlines what the Soil Association believes should be the key elements of a strategy that will enable the transition to a food secure future. Crucially it needs to link changes in diet with the changes needed to create a more sustainable food and farming system. By meeting these challenges head-on we can become more food secure, help to meet our Government-agreed climate target of a cut of 80% in greenhouse gas emissions by 2050, begin to tackle UK diet and health-related crises, and encourage greater resilience in our food and farming systems.



Why change is needed

Our current food systems are precarious and vulnerable to external 'shocks'. A combination of one or more external factors, such as extreme weather conditions, global conflict or trade disputes could easily disrupt the continuity of food supplies

In 2000, when truck drivers blockaded fuel depots in protest at rising fuel costs, it was reported that London came to within three days of running out of food – or 'nine meals from anarchy'. The modest challenge these protests presented to our food system exposed the fragility of our food distribution network.

A continued shift away from mixed farming towards monocultures means greater reliance on rapidly diminishing reserves of mineral phosphate and nitrogen fertiliser derived from fossil fuels. Peaks in both oil and phosphorus reserves are expected well before 2050. In 2007/08, oil price pressures drove a doubling in the price of nitrogen fertiliser and phosphate prices increased 700% in a 14-month period.

The high levels of soil organic matter maintained by organic farming retain more moisture and give greater resilience to flooding and drought. Studies show that in the US organic crops can out-yield conventional crops in drought years. As water tables fall, organic crops fare better because their roots grow deeper compared to conventional crops that find nutrients from artificial fertilisers near the surface of the soil.

Current dietary trends are incompatible with the need for Government-agreed 80% greenhouse gas reductions. Livestock is already responsible for 18% of global greenhouse gas emissions, nearly our whole carbon 'allowance' for the year 2050. But if current dietary trends continue, global meat and dairy consumption is projected to double again by that time. This doubling will be largely met by intensive systems based on feeding animals soya and grains, which rely on oil-based inputs and drive tropical deforestation.

The answer from the business-as-usual camp is to call for a further 'productivity push' – increasing the amount of meat and milk produced by each

farm animal for the same greenhouse gas emissions. It ignores the fact that we have reached the end of the line for productivity increases in terms of animal health and welfare and the risks of pathogenic disease creation and antibiotic resistance. Some dairy cows in the US are already forced to produce so much milk that they survive only one year's milking.

The solution lies elsewhere – in extensive grass-fed livestock production as part of organic, mixed farming systems. According to the lead IPCC co-author on land use and climate change, about 90% of agriculture's potential to cut greenhouse gas emissions lies in soil carbon sequestration – restoring the peatlands and adding carbon-rich organic matter to agricultural soils rather than relying on artificial fertiliser (P. Smith, 2007). Leading UK soil scientists are agreed that organic farming will increase soil carbon wherever it is practised (*Soil Carbon Symposium*, Newcastle University, October 2008). The available research shows that on average organic farming 'locks away' between 21% and 28% more carbon than non-organic practices.

The Cabinet Office acknowledged in 2008 that 'existing patterns of food consumption will result in our society being loaded with a heavy burden of obesity and diet-related ill health' and 'existing patterns of food production are not fit for a low-carbon, resource-constrained future.' According to the International Obesity Taskforce, health systems in low and middle-income countries are already overwhelmed by the impact of meat and dairy-heavy diets. Thanks to farm subsidies promoting over-supply of animal and trans-fats (WHO/FAO, *Diet, Nutrition and the Prevention of Chronic Diseases*, 2003) and a massively increased presence from Western fast-food giants, dietary fat intake has significantly increased in India and China, where vegetarian diets used to predominate. Diet-related heart disease and stroke have already taken over

Why change is needed

as the two leading causes of death in low and middle-income countries (WHO/World Bank, *Global Burden of Disease*, Lopez et al, 2006).

In the UK, 25% of adults and 10% of children are now obese. Diet-related diseases already cost the NHS £6 billion a year and the number of people admitted to hospital for obesity-related illnesses has more than tripled in the last five years (NHS Information Centre, 2009). In the US, an estimated one in three people born today will die prematurely of Type 2 Diabetes (American Diabetic Association). Among minority groups, the figure is one in two.

Water scarcity is already an important constraint on food production worldwide and climate change will exacerbate this. This is another reason why the trend towards doubled meat consumption is unsustainable. The water intensity of a calorie of pork is 40 times that of a calorie of beans (Zygmunt, 2007). It takes 2,400 litres of water to produce just one hamburger from an intensive feed-lot system in the US (WWF, *Rich Countries, Poor Water*, 2006). Growing water scarcity is one of the key reasons why the IAASTD's (International Assessment of Agricultural Knowledge, Science and Technology for Development) 2008 report, by 400 scientists and signed by 60 governments including the UK concluded that agro-ecological farming – exemplified by organic systems – represents the best prospect for feeding the world.

Food travels much further than it did 30 years ago – with an almost 25% increase in average 'food miles' during that time. Much of that is due to the dismantling of regional food networks and infrastructure. Thousands of abattoirs, markets, butchers, bakers and greengrocers have disappeared as the food system has become more centralised. 1000 local shops closed every week during the 1990s as food retailing concentrated and centralised. Low-inventory and 'just-in-time' food models are

vulnerable to disruption. Rebuilding our local food economies must be central to any plans for food resilience. Rebuilding localised food networks is also good for regional economies: for example, every £10 spent through a local, organic box scheme generates £25 for the local economy, compared with £14 for the same amount spent in a supermarket chain (nef, 2001).

In 1900, around 40% of the UK population was employed in agriculture. By the start of the Second World War that had fallen to some 15%; today it's less than 2%. Over 210,000 new jobs would be created in England and Wales if all farming switched to organic methods, according to research published in 2008 by the Centre for Agricultural Strategy at Reading University. Such a boost to employment in farming would also create around 105,000 more jobs in associated industries such as agricultural suppliers and local shops. This means 315,000 more people could be employed in total – more than the entire workforce supported by the UK car industry. Enough meaningful, fulfilling new jobs could be created to cut unemployment in England and Wales by more than 15%.

Strategies for a food secure future

A CLEAR VISION FOR FOOD AND FARMING

In response to the unprecedented challenges facing us we need a strategy which details how food and farming need to change. Without a clear plan which details responsibilities at every level, there is little time to meet the challenges facing us. UK Governments should lead a food strategy which meets health and greenhouse gas targets and increases resource efficiency.

Key actions

- ▶ Adopt a clear vision for food and farming that acknowledges that business-as-usual is unrealistic, and that we cannot address the new fundamentals of food in the round without re-balancing diets and ensuring a transition to resource-efficient mixed and organic farming systems.
- ▶ UK Governments should introduce a strategic food plan which details responsibilities across national Governments, in local authorities and amongst health agencies.
- ▶ The vision and strategy should be based around the principle of partnership, recognising that there are some things that only Governments can do – but that everyone from individual consumers to international development agencies will need to be part of the solution.

CLIMATE CHANGE

Organic farming offers the best, currently available, practical model for addressing climate-friendly food production. This is because it sequesters higher levels of carbon in the soil, is less dependent on oil-based fertilisers and pesticides and confers resilience in the face of climatic extremes.

Key actions

- ▶ Raise the target for agriculture's contribution to greenhouse gas cuts in the Department for Energy and Climate Change's 'Low Carbon Transition Plan' equivalent to other sectors (currently only 6%, compared to 20–40% cuts in other areas) and make this target mandatory not voluntary.
- ▶ Make the minimisation of soil carbon losses a condition of Common Agricultural Policy subsidy for all farms, via the Good Agricultural and Environmental Condition (GAEC) requirements.
- ▶ Incentivise farming practices that maximise carbon storage (typical of organic systems), via increased farm payments in the UK's agri-environment schemes.

ENERGY USE AND RESOURCE-USE EFFICIENCY

Relying on crop rotations, clover and manures and composts to build fertility, rather than fossil fuel dependent artificial fertilisers, organic farmers make greater use of sunshine to produce our food, so are much less dependent on 'ancient sunlight' in the form of oil and other fossil-fuels.

Key actions

- ▶ Increase research and development funding to support sustainable farming practices from 11% to 50% of the UK's agriculture research budget.
- ▶ Launch a major new advisory programme aimed at farmers to support them in the transition to less resource-intensive food production, reducing agriculture's reliance on oil, gas and phosphate-derived inputs.
- ▶ Prioritise public and private research efforts towards agro-ecological farming methods, like organic, as recommended in the IAASTD report. A key sign of this policy shift would be for England

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to join the Republic of Ireland, Wales and Scotland in declaring the intention for the British Isles to be a GM-free zone.

HEALTHY AND SUSTAINABLE DIETS

We need to champion public health policies in this country that promote diets that are both healthy and climate-friendly – which means much less meat and much more seasonal and organic fruit, vegetables, wholegrains and starchy carbohydrates. To minimise tropical deforestation and maximise soil carbon sequestration in pasture-land, red meat and dairy reared on grass is preferable to intensive pork and poultry reared on grain.

Key actions

- ▶ Take an integrated approach to food and health that links promotion of healthy diets to the outputs of a more sustainable food system.
- ▶ Support the Soil Association's 'Food for Life' catering standards as best practice in schools, hospitals, prisons and nurseries. These standards offer stepping stones towards reduced use of trans-fats and processed food and increased use of fresh, seasonal, local and organic ingredients, towards a gold standard of 75% unprocessed, 50% locally-sourced and 30% organic.
- ▶ Establish Government-supported longitudinal studies into the benefits of healthier food as part of public procurement.

BUILD RESILIENCE THROUGH RE-LOCALISING STAPLE FOOD PRODUCTION

A new strategy for food and farming needs to reverse the trend of the past 60 years towards

centralised and globalised food systems. During the 1990s, 1,000 independent greengrocers, butchers and bakers closed every year – one key reason food travels 25% further than it did 30 years ago.

Key actions

- ▶ Planning policy should ensure that all new housing developments maximise opportunities for market gardens and allotments and offer facilities for farmers' markets, ensuring greater levels of self sufficiency and reducing food miles.
- ▶ Regional and local authorities should draw-up strategies to make their region and locality more 'Food Secure' – treating food security with the same urgency as economic or energy security. Re-localisation of food supplies needs to be integrated into local planning guidance and local policy statements/plans on climate change.
- ▶ UK Governments and the European Union need to collaborate to ensure that international regulatory barriers to the localisation of food supplies are removed.

RE-SKILLING

Shifting to lower-carbon, mixed-farming organic systems that are less dependent on oil and chemicals will require more people with the right skills working on the land again.

Key actions

- ▶ The new strategy for food needs to prioritise the need for more people to work in good quality jobs on the land. Training and apprenticeship programmes aimed at careers in sustainable agriculture should be expanded under current Government programmes.
- ▶ Local Authorities should provide 'growing belts'

for communities, as well as creating new allotments. We currently have around 300,000 allotments in the UK – but with huge waiting lists in most local authorities there is a hunger for many thousands more.

► Support the Food for Life Partnership's goal that every school child should have direct experience of food growing and production in school gardens and on farms.

INTERNATIONAL TRADE AND DEVELOPMENT

Food and farming policy should not be about putting up barriers to international trade, but encouraging re-localised food policy as an international norm. Current international food and farming models, which encourage mono-cropping for trade, leave many countries vulnerable to extreme weather events or other forms of instability. A global system of strategic food planning, that puts environmental and dietary health needs at its centre, would encourage sustainable food systems – whilst creating space for trade in those commodities that cannot be produced domestically.

Key actions

- Work with international governments and the World Trade Organisation to ensure trade policy enhances resilience in our food systems.
- Encourage international implementation of the principles in the 2008 report on food security and climate change by the IAASTD to which 60 governments were signatories.





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