**Research Project: Sustainable Food Systems - Food Supply in the 21st Century: The New Dynamic.**

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**Background**:
Food production and consumption systems are coming under an increasing range of pressures linked to demographic changes and shifting consumption patterns in countries such as India and China, rising oil prices, competition for land from energy sources, soil impoverishment and climate change and water stress. Developing more sustainable agricultural systems is an urgent policy challenge both globally and at a UK level. This project sought to understand the food supply and security dynamics involved in seeking to develop more sustainable food systems considering global, national (UK) and local systems.

**Aims & objectives**: This project sought to:
- Develop a methodology for evaluating food demand and supply arrangements;
- Construct models of the UK's future wheat and dairy supply networks;
- Outlines new practices required in domestic and overseas food production to maintain food security;
- Map key stakeholder relationships, both existing and future, within the UK's wheat and dairy supply networks;
- Suggest models of alternative UK wheat and dairy supply governance arrangements.

**About the research**:
The core work of this project was a joint project with Chatham House that began in 2007. The research focused on the future of food supply, examining the effects of global trends on the supply chains for two staples, wheat and dairy, in the UK market. The work was built around a core panel of stakeholders with research expertise drawn from centres of excellence around the country, whose perspectives on different potential versions of the future were built up through scenario-based analysis. The initial research also included a series of interviews and discussions with leading players within and around Britain's wheat and dairy supply networks.

At a more local level issues of food supply and food security were also studied within a PhD research project considering the phenomenon of 'food deserts', using rural communities in the USA as a context.

**Results and outputs**:
The work for Chatham House indicated widespread doubts about the ability of global food production to meet rising demand, with constraints on the availability of energy, water and land frequently identified as issues of particular significance. Overall, there was an expectation of significant structural change in existing food supply arrangements and the policies that support them; and a belief that Britain as a society has a number of important choices to make if it is to secure the kind of supply arrangements that best support its interests.

These preliminary findings informed subsequent research and the development of four global scenarios that could shape the future of the UK's food supply. The range of variables considered in this process included (a) global responses, including from major emerging economies such as China and India, (b) the role of science and technology and (c) the respective roles of government, industry and consumers and the best way to encourage desired behaviours and operating practices.

The work on 'food deserts' found that the term/metaphor was itself unhelpful because it implies that food is either available or not, instead the term 'food access' was found to be more meaningful and valuable when discussing food security at the local level because access could relate to physical, economic or informational constraints. It also produced methodological advances in using GIS to identify and analyse potential areas of low food access.

- Marsden, T. (2012), Towards a real sustainable agri-food security and food policy: Beyond the ecological fallacies, *Political Quarterly*, 83 (1), 139-145.
- Lee, R. and Marsden, T. (2011), Food futures: System transitions towards UK food security, *Journal of Human Rights and the Environment,* 2 (2), 201-216.
- Marsden, T. (2010), Food 2030: Towards a redefinition of food? A Commentary on the new UK food strategy, *The Political Quarterly*, 81 (3), 443-446.
- McEntee, J. and Agyeman, J. (2010), Towards the development of a GIS method for identifying rural food deserts, *Applied Geography,* 30 (1), 165-176.
- McEntee, J.C. (2009), Highlighting food inadequacies: Does the food desert metaphor help this cause? *British Food Journal,* 111 (4), 349-363.
- Feindt, P. & Flynn, A. (2009), Policy stretching and institutional layering: British food policy between security, safety, quality, health & climate change, *British Politics,* 4 (3), 386-414.
- Lee, R. and Marsden, T. et al. (2009), *Food Futures: Rethinking UK Strategy*, Chatham House Report.
- Lee, R. and Marsden, T. (2009), The globalization and re-localization of material flows: Four phases of food regulation, *Journal of Law and Society,* 36 (1), 129-144.

This BRASS work also generated two books: Marsden, Lee, Flynn and Thankappan, S. (2010), *The New Regulation and Governance of Food: Beyond the Food Crisis* , and Marsden T. and Morley, A. (2013) (eds.), *Sustainable Food Systems: A New Paradigm* (in press – all chapters of which relate to BRASS food-related research work).

**Impacts achieved/potential for impact**:
The Chatham House report received considerable UK media interest and helped to shift political and policy thinking on national food strategies. Its results led to a major international Chatham House conference in 2008 with over a 150 delegates from the food, financial and government sectors. Additionally Profs Lee and Marsden presented this work at both the Cabinet Office and the No. 10 Policy Unit. The Cabinet Office's investigation of the global food crisis was initiated as a result of the Chatham House report, leading to the publication of the *Food Matters: Towards a Strategy for the 21st Century* by the last Labour UK Government in 2008. The work for Chatham House led to a research contract to work with the Welsh Government and Food and Drink Advisory Partnership to develop the new *10 Year Food and Drink Strategy for Wales,* and a considerable amount of the data and insight gathered for the food security work informed that strategy. This in turn led to the agri-food sector being regarded as a key sector in subsequent Welsh Government economic development policy (e.g. the setting up of a *Food Industry Task Group* in 2012).

The work on rural food deserts (or areas of limited food access) involved the development of an innovative Geographical Information Systems based methodology for identifying areas where limited food access and relative poverty combine to create serious risks to social welfare. This method provides a much more robust way of identifying potential 'food deserts' with the potential to better target social assistance, inform policy decisions and improve retailer strategies.