Project:	Comparative assessment of environmental, community and nutritional impacts of consuming fruit & vegetables produced locally and overseas
Project Investigator:	Gareth Edwards-Jones
Duration:	2004-08
Impact Summary:	The research made a significant contribution to debates on carbon footprinting at a time when this issue was coming to prominence, resulting in strong engagement and application of ideas in the commercial sector

Research Aims

- To identify the advantages and disadvantages of growing vegetables locally in the UK compared to overseas including environmental impacts, Greenhouse gas (GHG) emissions and consumer perspectives

Contribution to knowledge & understanding

- The research found that for some UK crops, GHGs from greenhouses were greater than emissions from transporting crops by truck from overseas
- Carbon footprinting of produce is very complicated and a simplistic approach could be inaccurate and have unfair consequences for developing countries
- The differences in nutritive quality of produce grown locally and overseas were not found to be sufficient to impact on people's health
- Consumer perspectives revealed an interest and support for local food but found that this was often balanced against the practicalities of access, cost and range of choice and variety

Implications for policy & practice (e.g. recommendations)

- Through the research's interaction with stakeholders, it had significant input to increasing the knowledge and capacity of horticultural workers, business owners and consultants
- Research results have been discussed with the Technical Directors of major retailers including Tesco, Sainsbury's, Safeway, Co-op, Morrisons and Waitrose. Research also presented at internal meetings at Unilever and Syngenta
- A paper was produced for the World Bank with recommendations on how to make emerging carbon labelling schemes fair for developing countries
- Gareth Edwards-Jones now sits on several Defra committees on food including the Food Policy Council and the Fruit and Vegetable Task Force

Applications of research for public policy/services and business performance

- The team contributed to several meetings with stakeholders which have provided continuing professional development points to relevant attendees
- Detailed written feedback was provided to all participating farmers on the environmental impacts of their business (including life cycle assessment, worker health, pesticide hazard rating) and as a result, some of these have changed their business for the better
- Post-project work for two trade organisations on carbon footprinting of products
- Researcher from project team moved to Unilever life cycle analysis team, using their expertise gained from the research to work on "virtual water" and life cycle analysis

Stakeholder engagement and contribution

- The research team spoke to a range of industry groups at over 20 industry and sector level conferences and attended a variety of food festivals, farmers' markets and other food promotion events
- Research results presented to Technical Directors of all major supermarkets and discussed with NGOs including Sustain, IIED, WWF, Soil Association, Best Foot Forward and the Food Ethics Council
- Results presented to Defra, Welsh Assembly, Countryside Council for Wales and Advance West Midlands
- Extensive interaction with farmers' unions and Horticultural Development Council about the project

- Growing interest in the concept of 'carbon footprints' particularly of food items from industry stakeholders led many to discuss these issues with the project team including Grampian Country Foods, National Fallen Stock company and confectionary manufacturers
- Stakeholders including farmers and growers, owners and managers of farm shops, greengrocers, restaurateurs and hoteliers, representatives of development agencies, local authorities and bodies concerned with initiatives involving local food participated in background interviews and supplied documentary material
- Farmers and growers in UK, Spain, Uganda and Kenya enabled research by allowing empirical work to take place on their farms

Stakeholder comments

"On a personal level, I have found the research and the subsequent onward communication of the RELU programme to be highly effective…The development of a better understanding of the real impact of "food miles" taking into account a broader spectrum of issues such as health, nutrition and local culture. Involvement with such a proactive programme has influenced how a company such as Marks & Spencer approaches crop and product development. … Work on water resources in the lifecycle analysis of food crop production has made us rethink our approach to developing crops in North Africa." (David Gregory, Technical Director, Marks and Spencer [now retired])

Soft networks (e.g. work shadowing, visiting fellowships)

- Two researchers gained insights into a related industry through work shadowing placements including one researcher who spent several weeks work shadowing with an industrial partner, sampling peas at different stages of the freezing process
- Through working with Universities in Uganda and Kenya, the research helped to increase the experiences of academics and students in these universities

Securing future impact (post-project/follow-on work)

- Further funding secured from two industry levy bodies (Horticultural Development Council and Meat Promotion Wales) to undertake further work on carbon footprints
- Funding awarded by Welsh Assembly Government for work on carbon footprints of livestock farms
- Project team are working with Waitrose to examine the carbon footprints of 50 of their fruit and vegetable products
- Presentations to industry and academia on the research are ongoing
- Funding also secured from an NGO (IIED) to explore the importance of a 'carbon map' to assess the sustainability of food systems
- Active communications were maintained with the African collaborators, with an academic from the University of Uganda spending 3 months at Bangor during the 2008/09 academic year with the aim being to develop further collaborative research projects.
- Project team is to work with the Kenyan Exporters Association on issues relating to carbon. This work will be funded by International Trade Centre (UNTAD/WTO)
- All researchers remain in academic posts with one of the project's PhD students (Paul Cross) taking up a lectureship post at Bangor University in 2010 and one further researcher moving into the commercial sector, joining Unilever life cycle analysis team to work on "virtual water" and life cycle analysis