

Meeting of RELU Researchers Involved in Farm Production Modelling

Eighteen researchers met in the University of Sheffield on the 1st of October to discuss approaches being taken to farm production modelling in six different RELU projects (*The Sustainability of Hill Farming*, *Modelling the Impacts of the Water Framework Directive*, *Sustainable Uplands: Frameworks for Adaptive Management*, *Integrated Management of Floodplains*, *Management Options for Biodiverse Farming*, *Implications of a Nutrition Driven Food Policy for the Countryside*). Modelling likely responses by farmers and the farming sector to ongoing policy changes is a question being tackled by a number of RELU projects, particularly those funded under RELU Phase II. Funding for the meeting was provided through the Programme Directorate.

The meeting coincided with the first visit to the Programme by the new RELU Exchange Fellow, Professor Jim Shortle (Distinguished Professor of Agricultural and Environmental Economics and Director of the Environment and natural Resources Institute at Penn State University). Professor Shortle's research in the US focuses on farm production modelling. The meeting gave Professor Shortle an opportunity to meet with each of the six projects individually to discuss the modelling approaches they are taking. During his stay, Professor Shortle also visited field sites in the Peak District and explored more focused opportunities for collaboration with *The Sustainability of Hill Farming* project.

The meeting opened with a seminar where Professor Shortle presented results from US-based projects connecting farmer decision-making to diffuse pollutants and water quality issues as well and to management of coastal wetlands in the Chesapeake Bay in the face of rising sea levels. This was followed by presentations from those investigators and post-doctoral researchers involved most directly in farm-scale modelling from each RELU project. Presentations focused on the detailed questions being addressed, the particular modelling approaches taken and data sources being used. In the afternoon session, the RELU teams and Professor Shortle participated in a "speed-dating" activity. This activity brought pairs of projects together in quick-fire meetings to explore opportunities for collaboration. The final activity in the day involved break-out sessions looking across the suite of projects to explore whether there were opportunities for further synthetic lessons to be drawn out.

Through the course of the day, the researchers heard about key innovations in farm production modelling being undertaken by RELU projects. One example is provided by *The Sustainability of Hill Farming* project, which examines how farm-scale linear programming models, which have typically treated farms in isolation, can be brought together to explore spatial interactions among farms. A second example is being undertaken in the *Sustainable Uplands* team, who are adapting choice experiment techniques to explore future management options with farmers. Perhaps the greatest source of innovations across the RELU projects however is not the disciplinary contributions to farm economics per se, but rather the range of applications of farm production modelling techniques to problems in biodiversity conservation, improving water quality and flood management.

In summarising the discussions in the meeting, the organiser, Dr. Paul Armsworth, noted that most of the projects presented are coming to a critical stage. Many project teams had constructed their modelling frameworks and already acquired some of the data needed to parameterise the models. But now the researchers were facing up to the core RELU challenge of opening out these somewhat disciplinary techniques to connect with broader interdisciplinary questions and to communicate the results of the research to the policy and practitioner community in the most effective way.