

18th November 2014: Drivers of demand



Aims

The three witnesses who joined us this month helped us to think about some of the drivers of demand including economics and politics, and the impacts of consumer choices on health and the environment.

Witnesses

Professor Ian Bateman, Professor of Environmental Sciences at the University of East Anglia joined **Bojana Bajželj** who leads the land use components of the BP FORSEER modelling project in the Department of Engineering and **Professor Theresa Marteau**, the Director of the Behaviour and Health Research Unit.

Research gaps

In his introduction, Ian assumed that our ultimate objective is to ensure non-declining wellbeing over time. He admitted that this seems negative, but argued that as people's long term welfare depends on natural systems, focusing on human wellbeing means that those natural systems have to be safeguarded. He focused on:

The demand and supply of food: While accepting that research is needed into the supply side – the role of land management, GM, agritech and precision agriculture – he argued that more research is needed into the demand side and the role that spatial and temporal variation in economic drivers and their impacts will play.

The impacts of the choices we make on the environment: A lot of research concentrates on adaptation but not enough on the dynamics of adaptation and the secondary effects those will have e.g. how will people respond to the changes in climate and how will those responses change land use and water availability?

Trying to make better decisions based on what we know about demand, supply & impacts: Economics has an important part to play, both in how we build 'value' into models (as opposed to price - the amount of money we pay) and how we use them to make decisions. He argued that developing truly integrated models that combine natural sciences, economics and policy and include both temporal and spatial dimensions of changes in natural capita will also be crucial.

Bojana's models indicate that future demand for natural resources is substantially higher than future supply. Her future research questions focused on **finding alternatives to expanding agricultural land** such as reducing agricultural waste, ways to value non-agricultural land. She also asked whether sustainable intensification has the potential to close the yield gap and this question was a recurring theme over the year.

Theresa focused her introduction on **demand and behaviour change** and ways in which our behaviour is driven by immediate gratification and the environment we live in. She argued that there is an inevitable tension between generating wealth – selling us goods we don't need – and generating planetary health and human health. Further research related to shifting consumption and changing behaviour needs to be connected to the politics, economic, commercial and philosophical issues surrounding why and how these choices are made.

Wicked problems and questions generated by the open discussion included:

- **How far can models be expected to answer questions related to sustainability?** Do we push them too far and expect too much of them? Not everything can be modelled, so what happens when there are elements of a system which are important drivers of change or influencers but which cannot be included?
- **The dangers inherent in simplifying complex systems versus the need to do it**, both in order to construct models and explain what we see in the world and to be able to communicate messages about sustainability.
- Discussions about consumer choice and behaviour highlighted **inherent tensions between some of the questions that researcher want to answer and those of interest to companies and retailers.**
- What are **the impacts of alternative land use strategies & how can land be used more intelligently?**
- At the moment, **we are not rewarding and valuing other uses of land in the same way as land used for agriculture** - how could we address this?
- **How will people's affluence change their behaviour?** How will that change diets and land use?
- **What are the 'levers' for changing people's behaviour** towards making more sustainable choices?