

Investigating individual land-use decision making in a virtual environment

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An understanding of individual land-use choice behaviour is fundamental to the creation of more realistic land-use change models and the development and acceptance of effective land-use policy. The aim of this research is to investigate the use of a virtual decision making environment to compliment and extend the existing tools for investigating land-use choice behaviour. In particular, the research is investigating a) the extent to which people's economic and environmental attitudes are correlated with their land-use choice behaviour; b) the influence that having knowledge of the choices made by neighbouring farmers in the region (social context) has on people's land-use choice behaviour and c) how variations in the mode of visual representation of information (visual context) influence people's land-use choice behaviour.

Subjects in the study participated in six choice experiments using different configurations of the virtual environment. In each experiment participants were asked to make land-use choices for 3 parcels of land over a series of 5 time-steps, each representing 5 years in the real world. In each experiment the information provided to the participant, such as the behaviour of their neighbours and the visual impact of their choices on the landscape, was varied. The economic and environmental consequences of subjects' land-use choices under varying conditions in the virtual environment were then compared to their value priorities, as determined by a short version of Schwartz's value survey. It is anticipated that greater knowledge about the role that values play in land-use choice behaviour will lead to policy that is better targeted, and communicated, thus maximising the potential benefits. If the link between people's values and behaviour is strong, for example, policy campaigns designed to change people's values and attitudes should result in subsequent changes in behaviour.

Overall, the results indicate that the virtual land-use decision making environment could be a useful tool for gaining a better understanding of individual decision making. This information could then be used as the basis of improved models of individual land-use choice behaviour, and the development of more effective land-use policy in response to significant changes in decision contexts such as climate change.