

Center for Community-Based Resource Management (CBRM)

Natural Resources Institute, University of Manitoba

CBRM Database

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Case Study Name:	Effects of farmers' decisions on the landscape structure of the Dutch rural region: An agent-based approach		
Authors:	Diego Valbuena, Peter H. Verburg, A. Veldkamp, Arnold K. Bregt, Arend Ligtenberg		
Document Type:	Journal paper		
Year:	2010		
Language:	English		
Document Location:	<i>Landscape and Urban Planning</i>		
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Region:	Europe		
Country:	Germany, The Netherlands		
Ecosystem Type:	Woodlands, semi-natural and natural areas, farmland		
Social Characteristics:	Urban communities, lands bordering protected areas		
Scale of Study:	Community / district, regional, national		
Resource Type:	Agriculture, urban commons, protected area		

Type of Initiative:	Research driven, community initiative
Community-Based Work:	Development planning, resource management, conservation
Keywords:	Dutch, land use change, rural change, decision making, modelling, scenarios
Summary:	<p>The development of rural regions is a result of multiple (spatial) interactions between socio-economic and biophysical processes. These interactions differ largely between rural regions as processes within the region are different and they also respond differently to the pressures the region is facing from outside. In particular, the diversity of farmers' decision-making in rural regions may have an important influence on how the region responds to endogenous and exogenous processes. This response can affect the use and the structure of the landscape. The aim of this paper is to explore how future responses of farmers' decision-making to endogenous and exogenous processes can affect the regional landscape structure. This is achieved by implementing different future scenarios in an agent-based modelling approach for a rural region in the Netherlands. The results show how the response of farming to global or regional processes either polarise or interconnect agriculture and semi-nature areas in the rural region. The results also demonstrate how different types of decision-making can influence passively or actively the structure of the landscape. The added value of including the diversity of farmers' decision-making in regional LUCC research is discussed.</p>