



# Sustainable landscape governance: Lessons from a catchment based study in whole landscape design

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## ABSTRACT

This paper investigates the implementation of governance for sustainable landscapes, based on a catchment case study in lowland England. A participatory research process, spanning six and a half years, employed formal and informal in-depth interviews, focus group work and workshop techniques with 71 stakeholders representative of a wide range of interests in the catchment. A scenario design process within a GIS framework was used as a focus for capturing the key issues and visions of the stakeholders. Two contrasting but plausible scenarios for 2020 emerged from this process; one scenario was driven by the sustainable intensification of agricultural production and world trade, the other by the enhanced protection of ecosystem services and multi-objective land use. It was clear from discussions with stakeholders that the mechanisms for delivering an integrated approach to landscape management are not currently in place, although there have been some policy successes that could be built upon. There is also a need for new approaches to land tenure which include tax incentives and improved forms of cooperation and leadership in both policy and contiguous landscape stewardship. The methodology itself was appreciated by the stakeholders who found it useful to think more holistically. In addition, the study demonstrates an approach that individual practitioners and researchers can develop the skills to implement.

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## 1. Introduction

The implementation of governance for sustainable landscapes is a key component of sustainable development thinking, with academics and practitioners increasingly attempting to form integrative frameworks and methodologies to address the challenges involved (MacFarlane, 1998, 2000; Dolman et al., 2001; Matthews and Selman, 2006; Pearson et al., 2010). However, defining what a sustainable landscape might be is not straightforward, not least because of the differing contexts in which it is framed. This is despite the term being routinely used, often with an assumed common understanding of its meaning (Selman, 2008). Certainly the unification of the natural and socio-economic domains is critical, as is the delivery of well-being for future generations, yet the manifold dimensions of sustainable landscape design raise challenging questions regarding the nature of how to design and manage them (Antrop, 2006). There is nevertheless a growing ideology that spatially explicit holistic planning and implementation will be required, with a focus on the provision of multiple objectives and ecosystem services, and the connection between social and

natural components of landscape systems (Millennium Ecosystem Assessment, 2005; Selman, 2006). Various approaches to achieving this are being implemented and studied, such as integrated coastal zone management (Shipman and Stojanovic, 2007), integrated catchment management (Macleod et al., 2007), the ecosystem approach (Millennium Ecosystem Assessment, 2005; Defra, 2007a) and whole landscape design (MacFarlane, 1998, 2000; Dolman et al., 2001).

The increasing emphasis on more connected approaches reflects the contemporary understanding of the management challenges that have to be addressed (OECD, 2006; Kidd and Shaw, 2007). These new approaches often incorporate varying degrees of trans-disciplinary research that includes multiple stakeholder values, social learning, participatory decision making and scenario analysis to deal with future uncertainty (Peterson et al., 2003; Tress et al., 2005; Macleod et al., 2007). They also take greater account of ecological units, such as catchments and species’ ranges, within new administrative frameworks and spatial planning strategies that are informed by ecological principles (Folke et al., 2007; Kidd and Shaw, 2007). These “experimental” approaches are in their infancy, and examples of successful joined-up landscape scale governance in practice are rare (Olsson et al., 2004). Nonetheless, these approaches are increasingly being favoured by policies and governance arrangements, although these are complex and currently in a state of flux. Despite this “new

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paradigm”, landscape planning is still embedded in sectoral approaches (OECD, 2006), and the ability of apparently well functioning institutions of developed countries to deliver sustainability is questionable (O’Riordan and Stoll-Kleemann, 2002; Russel, 2007).

### 1.1. Multiple objectives and the landscape perspective as an integrating framework

Evidence for the sustainability of landscapes is often related to their multifunctionality, an important paradigm within sustainable development thinking (Selman, 2008). Landscapes can be seen as “bundles” of multifunctional services as well as practices and outputs, particularly in highly productive human dominated systems (Mander et al., 2007). This multifunctionality can come in two basic forms, spatial and integrated multifunctionality (Brandt et al., 2000). The former pursues different goals in a corresponding matrix of separate land use types, while the latter pursues different goals on the same parcel of land, either achieving them simultaneously, or sequentially through time (Brandt et al., 2000). These multiple functions are in essence similar to the increasing interest placed on the implementation of an ecosystem based approach stimulated recently by the Millennium Ecosystem Assessment (2005). Such an approach also emphasises generating markets, new income streams and institutional arrangements around multifunctional land use.

The paradigms of multifunctional land use and ecosystem service provision are inducing a shift in land use strategies, and are an important part of the ongoing sustainable development debate (Brandt and Vejre, 2003; OECD, 2006). New forms of holistic landscape planning for sustainability will, however, require a joined up delivery framework, necessitating increased levels of integration between the natural and social sciences, land and water managers, planners and policy makers across multiple landscape scales and levels of governance from landowner to national strategic governance (Macleod et al., 2007; Selman, 2008).

### 1.2. Aims of this research

The aim of this paper is to illustrate an approach that could move landscapes and people towards a sustainable outcome by looking at what it would mean in practice to attempt to do so. The study was driven by the question; what policies, institutional arrangements and governance mechanisms could facilitate the delivery of a sustainable landscape? Evidence is presented through a catchment based case study involving multiple stakeholders over a six and a half year period in a lowland farmed landscape in the county of Norfolk, England.

## 2. Methods

### 2.1. Case study policy context

Approximately 70% of the English landscape is farmed (Defra, 2008), and landowners and other stakeholders have had to operate within a shifting tapestry of policies, regulations and institutional arrangements, particularly during the last five years. The key drivers for this have been world trade policy and reforms to the Common Agricultural Policy (CAP), European Union (EU) Directives (e.g. the Water Framework, Nitrate, and Habitat Directives) and “surprise” global events, such as a food “crisis” in 2008, an economic “crisis” in 2009 and a growing realisation that climate change could be more serious than previously thought (New et al., 2009).

The 2003 CAP reforms have led to the emergence of a new policy paradigm of multifunctional agriculture, supported by associated policies and institutional frameworks. This is set within the

context of commodity market liberalisation and declining farm profitably, the decoupling of farm subsidies from production support and the linking of them to environmental measures, biofuel policy, food security and the “sustainable intensification” of agriculture that maintains ecosystem functionality (Gorton et al., 2008; Royal Society, 2009; Foresight, 2010). CAP reform together with the EU environmental directives and the adoption of an ecosystem based approach (Defra, 2007a) are driving a need for greater integrated planning based on hydrological boundaries and the inclusion of socio-economic systems in parallel with environmental systems, as well as the incorporation of wider public participation in the land use planning process (Moss, 2004; Stringer et al., 2006; Macleod et al., 2007).

The governance structures currently in place within England to deliver sustainable landscape planning are still fragmented in the sense that policy and operational responsibilities are divided between an array of organisations (Fig. 1), with sometimes competing and contradictory objectives and a disconnection between national, regional and local scales of governance (OECD, 2006; Kidd and Shaw, 2007). This is despite the establishment of a new “integrated” agency, Natural England in 2006, that combined the responsibilities of what were formerly three separate organisations into one, integrating wildlife and conservation activities with public access, recreation, landscape protection and the delivery of agri-environment policy to deliver a broad sustainability remit (Defra, 2006).

Catchment scale planning and management is the main responsibility of the Environment Agency, although numerous other agencies and stakeholders are ultimately responsible for delivery, including multiple land managers and their advisors, private water companies, and Natural England (Kidd and Shaw, 2007). The Environment Agency is responsible for the development of River Basin Management, Abstraction and Flood Management Plans. These are either focused on specific issues (e.g. abstraction licensing) or have a regional scale emphasis that has made little significant impact on landscapes, although they have been informed by a degree of stakeholder consultation. The Environment Agency also administer Nitrate Vulnerable Zones (NVZs) which were expanded in 2007 to cover approximately 70% of England (Defra, 2007b), imposing additional nitrogen related measures on land management.

Although the Environment Agency is the lead body delivering the EU Nitrate and Water Framework Directives, with key monitoring and regulatory responsibilities, Natural England administers a key implementation mechanism through the Catchment Sensitive Farming Delivery Initiative. This was launched in April 2005 and now covers approximately 40% of England’s agricultural area (Defra, 2010). The initiative directly addresses the issues of diffuse agricultural pollution, placing particular emphasis on the reduction of nitrogen, phosphate and silt pollution. The approach is voluntary, and implementation is through project officers who are appointed for specific catchments. Capital grants have been made available and workshops for farmers, agronomists and other farm advisors have been arranged to raise awareness of the issues and facilitate the utilisation of mechanisms within new agri-environmental schemes to reduce diffuse pollution.

At the strategic level England has a national strategy that outlines sustainable development principles. These have been agreed by all levels of government (HM Government, 2005), recognising that sustainable land use cannot be achieved without addressing how societies as a whole can learn to live sustainably and nurture the land and its dependent communities. Spatial planning was also given a central coordinating position in the Government White Paper “Planning for a Sustainable Future” (Communities and Local Government et al., 2007). This has generated a degree of regional spatial planning that is still far from integrated and which is hampered by a planning system administered by local authorities that

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