



# Agri-environmental diversification: Linking environmental, forestry and renewable energy engagement on Scottish farms



Lee-Ann Sutherland <sup>a,\*</sup>, Luiza Toma <sup>b</sup>, Andrew P. Barnes <sup>b</sup>, Keith B. Matthews <sup>c</sup>,  
Jon Hopkins <sup>a</sup>

<sup>a</sup> Social, Economic and Geographical Sciences Group, James Hutton Institute, Craigiebuckler, Aberdeen, AB15 8QH, United Kingdom

<sup>b</sup> Land Economy and Environment Research Group, SRUC, Edinburgh, EH9 3JG, United Kingdom

<sup>c</sup> Information and Computational Sciences Group, James Hutton Institute, Craigiebuckler, Aberdeen, AB15 8QH, United Kingdom

## ARTICLE INFO

### Article history:

Received 20 October 2015

Received in revised form

6 June 2016

Accepted 7 July 2016

Available online 30 July 2016

### Keywords:

Post-productivism

Multifunctionality

Agri-environmental schemes

Farm household adjustment

Single Farm Payment

## ABSTRACT

In this paper we broaden the debate on agri-environmental scheme participation to include farm woodland expansion and renewable energy production, developing a conceptualisation of 'agri-environmental diversification'. Utilising structural equation modelling, we assess a telephone survey of 2416 Scottish farmers, undertaken in 2013. Findings demonstrate the path dependencies of farming participants, with those already engaged in each of these activities the most likely to plan to be involved in future. Similar factors have influenced the uptake of all three activities since 2005, and intention to increase involvement by 2020. Farmers who are: younger, better educated, information-seeking, certified as organic, receive subsidies, have non-farming income and plan to continue farming in the medium term, are more likely to plan for future engagement in the three activities. Environmental attitudes are also important, but a stronger relationship was found between observation of environmental gains from agri-environmental schemes and the three forms of agri-environmental diversification, suggesting that scheme involvement enables farmers to learn to produce, recognise and value environmental goods. We argue that when assessed within the broader perspective of agri-environmental diversification, agri-environmental scheme participation may represent an initial step on a farming trajectory that involves multiple forms of agri-environmental engagement.

© 2016 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

## 1. Introduction

Although recent CAP reforms have added additional 'greening' measures tied to farm supports, food shortages in the late 2000s and concerns about population increases have created market incentives (real and perceived) for farmers to return to highly productivist behaviour (if indeed they ever transitioned to post-productivism – see Gorton et al., 2008; Walford, 2003; Wilson, 2001). At the same time, other forms of agri-environmental (AE) engagement have risen on national and European policy agendas. Climate change in particular has become a key feature in EU policy, reflected in binding national renewable energy production targets

(EREC, 2011). Climate change policies have led to new interest in carbon sequestration through woodland expansion, as well as energy production from renewable sources. Both can be undertaken as forms of farm diversification, although the literature in these areas is less developed than for more traditional diversification activities. In this paper we assess the relationship between engagement in AE schemes, farm afforestation and renewable energy production, in order to better understand the drivers of agri-environmental engagement and place it within the context of whole-farm development. To do so, we bring together the literature on AE scheme engagement and farm diversification, developing a conceptualisation of "agri-environmental diversification".

To date, AE scheme participation has been assessed in isolation from farm diversification activities. AE engagement became a major topic in rural studies in the 1980s and 1990s: voluntary AE schemes were instituted in a number of EU countries in the 1980s, and became widespread following the 1992 MacSherry reforms to the Common Agricultural Policy (CAP) (Burton et al., 2008). The

\* Corresponding author.

E-mail addresses: [Lee-Ann.Sutherland@hutton.ac.uk](mailto:Lee-Ann.Sutherland@hutton.ac.uk) (L.-A. Sutherland), [Luiza.Toma@sruc.ac.uk](mailto:Luiza.Toma@sruc.ac.uk) (L. Toma), [Andrew.Barnes@sruc.ac.uk](mailto:Andrew.Barnes@sruc.ac.uk) (A.P. Barnes), [Keith.Matthews@hutton.ac.uk](mailto:Keith.Matthews@hutton.ac.uk) (K.B. Matthews), [Jonathan.Hopkins@hutton.ac.uk](mailto:Jonathan.Hopkins@hutton.ac.uk) (J. Hopkins).

academic literature focused on identifying factors underlying scheme uptake, particularly farmer motivations, following the rationale that understanding motivations was essential to maximising farmer uptake. Findings from these studies have been mixed, demonstrating that there is a relationship between environmental values and action but that engagement in AE schemes is often primarily instrumental, representing efforts to access subsidy funding, rather than reflecting environmental values (Siebert et al., 2006; Dwyer et al., 2007; Morris and Potter, 1995; Wilson and Hart, 2000; Schenk et al., 2007; Sutherland, 2010). Although there are farmers who engage in AE schemes as a result of their environmental orientation (see for example Morris and Potter, 1995), the instrumental emphasis of many participants has been problematized as (potentially) representing short-term opportunism (e.g. Lowe et al., 1999; Morris and Potter, 1995).

Over the past decade several researchers have argued that farmers' instrumental objectives for agri-environmental scheme participation reflect a socialised preference for productivity; on this basis, Burton (2004) and colleagues (e.g. Burton et al., 2008; Sutherland and Darnhofer, 2012) suggest that incentivising farmers to produce appreciable environmental goods would increase up-take and longevity of AE activities. In this paper, we test this argument empirically by assessing the relationship between scheme participation, environmental values, observation of environmental gains from AE scheme participation, and ongoing plans for AE scheme engagement. In addition, we argue that these environmental actions are not limited to those encouraged by AE schemes, but include farm afforestation and on-farm renewable energy production. In assessing the three activities together as 'agri-environmental diversification', we consider the prospect that engagement in AE schemes not only leads to production of appreciable environmental outputs, it may lead to up-take of other forms of AE action.

Conceptualising AE scheme participation as a form of farm diversification represents the progression of work by Sutherland (2010), who contended that UK farmers are pursuing AE schemes as part of long-term business development strategies. The literature on farm diversification developed largely in parallel to the AE scheme literature in the 1980s and 1990s, partly in response to the introduction of diversification grant schemes, but more so in relation to concerns about overall farm household adjustment and the intellectual opportunities presented by the introduction of modified political economy concepts (Evans, 2009). The low economic returns on many European farms led to the establishment of grant schemes to encourage engagement in 'alternative farm enterprises': "the introduction of a non-traditional source of income into the pre-existing farm business, a process widely recognised in the published literature as 'farm diversification' (Gasson, 1988; Ilbery, 1991)" (Bowler et al., 1996, pp. 285). A potential relationship between AE scheme and farm diversification engagement is evident in the demographic features of participants: the factors influencing adoption of both practices are broadly similar, including age, educational level, tenure, and farm size (compare Ilbery and Bowler, 1993; Bowler et al., 1996 with Vanslebrouck et al., 2002; Morris and Potter, 1995). As the literature developed, the complexity of motivations for farm diversification also came under scrutiny; although the instrumental orientation of diversifying farmers was not considered problematic, it was recognised that whereas larger farms could pursue diversification as an accumulation strategy, smaller-scale farms often did so as a survival strategy (Evans and Ilbery, 1993; Meert et al., 2005; López-i-Gelats et al., 2011). More recently, researchers have demonstrated that diversification can also reflect expression of farm household members' (often gendered) personal interests (e.g. Brandth and Haugen, 2011).

Assessment of farmer engagement in both diversification and AE activities were largely subsumed within the post-productivism and multifunctionality literature in the 1990s and 2000s. Basic to both concepts is the premise that agricultural policies had shifted from a central, common focus on production, towards a broadening array of goods and services produced by agricultural land and businesses. These debates set AE scheme engagement and farm diversification within broader discourses about the best use of agricultural land, and policy shifts towards production of public goods (e.g. the protection, production and consumption functions of agricultural land – Holmes, 2012). The precise use and definition of the terms 'post-productivism' and 'multifunctional agriculture' have been the source of considerable debate (see for example Evans et al., 2002; Mather et al., 2006; Wilson, 2008). In this paper we utilise Marsden and Sonnino's (2008) conceptualisation, in which post-productivism is characterised as a subtype of multifunctionality, which emphasises the different functions of agricultural land (e.g. farmland diversification).

Although conceptually, AE scheme engagement and farm diversification are both considered options for multifunctional farming transitions, empirically the two have continued to be addressed separately. Maye et al. (2009), for example, intentionally excluded AE scheme participation from their study of diversification on tenant farms. This approach has considerable historical precedent: farm business diversification (in the UK) has not typically been environmental in orientation – the most popular diversification activities were closely related to production (e.g. contracting out labour, equipment and buildings), renting buildings or related to tourist accommodation (Keep, 2009; Evans and Ilbery, 1993). In addition, the revenues for AE scheme engagement were very small in relation to other sources of farm income (Hanley et al., 1999) – and thus arguably too small to for AE schemes to be considered viable options for farm business diversification. Evans (2009) pointed out that it is only over the past decade that it has become feasible to enter AE schemes in order to generate substantive business income.

Integrating these two literature offers the opportunity to update debates on the nature of AE engagement in light of current market and policy contexts, and to further develop the implications of the apparent instrumental orientation of many farmers towards AE scheme participation. It also enables us to build on the substantial body of literature on agri-environmental engagement to better understand farmer responses to new policy measures encouraging afforestation and renewable energy production. In the UK, incentives for farmers to afforest were introduced at the same time as AE measures (1987), prior to their European-wide application in the 1992 MacSharry Reforms, and have continued to feature in the Rural Development Programmes (RDP) (Crabtree et al., 2001). However, in light of climate change concerns, the urgency of afforestation has substantively increased in UK policy rhetoric over the past decade. Although farming subsidies for renewable energy production were also introduced in the UK in the late 1980s, included within RDP-based farm diversification grant schemes, it was renewable energy production subsidies introduced in the 2000s through the energy sector that made production viable on farms (Sutherland et al., 2015).

Within the UK, Scotland is strongly pursuing afforestation and renewable energy production as part of its commitments to a reduction in greenhouse gas emissions. Scotland has set a target of sourcing the equivalent of 100% of its electricity consumption from renewable sources by 2020, representing 30% of energy consumed (Scottish Government, 2011); this is substantially higher than the UK government goal of 15% of energy consumed (Department of Energy and Climate Change, 2011). Scotland's target for afforestation is substantial but less clear: in the 2006 Scottish Forestry

Download English Version:

<https://daneshyari.com/en/article/6460218>

Download Persian Version:

<https://daneshyari.com/article/6460218>

[Daneshyari.com](https://daneshyari.com)