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Farm diversification, entrepreneurship and technology adoption: Analysis of upland farmers in Wales

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ABSTRACT

Farm businesses face increasing challenges in the face of policy reform which envisages multifunctional rural economies with objectives which span the environmental, the social as well as the production of food. This leads to uncertainties and ambiguities in the way in which farms respond to incentives and pressures to become entrepreneurial, to diversify, to become more efficient at food production and to adopt new technology. This paper examines these tensions in the context of upland agricultural business in rural Wales. Qualitative and quantitative results support a conclusion of significant heterogeneity in farm response, and highlight tensions between maintaining a focus towards current on-farm activity or pursuing entrepreneurial diversification, as well as differing levels of technology adoption in support of these income streams. Supported by a descriptive cluster analysis based on survey data, the paper proposes a new conceptual categorisation of entrepreneurial strategy, distinguished on the basis of attitudes towards on- and off-farm income generation and on stated stance towards current and future policy grant streams. The paper discusses some of the factors that may determine how particular farmers and farming businesses lie within this categorisation.

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1. Introduction

Although the paths of development of rural economies are the subject of growing debate (Marsden and Sonnino, 2008; Wilson, 2008; Winter and Lobley, 2009; Marsden, 2016), small-scale agricultural enterprises remain at the traditional core of the rural landscape. These face increasing social and financial challenges, as well as sustained pressure from policy reform to meet a range of objectives beyond food production extending into social and environmental goals (Bateman and Ray, 1994; Lobley and Potter, 2004; Horlings and Marsden, 2014). All of these impact business strategy and performance (McElwee, 2005; Evans, 2009; Maye et al., 2009; Morgan et al., 2010; Suess-Reyes and Fuetsch, 2016). Further future challenges will arise because of the result of the 2016 UK referendum on EU membership, and its implications for UK rural and farm development policy and for tariffs and trade in agriculture outputs. These pressures may stimulate, at varying levels of intensity, a range of responses including increased farm

household pluriactivity, as well as innovation in pursuit of both intensification as well as on-farm diversification activity. The latter might entail the development, transfer and use of new technologies, as well as the exploration of marketing and other process innovations in pursuit of value-adding opportunities. These might complement more traditional forms of business income diversification, such as the provision of hire and contract services.

In the next section the paper explores these themes in further detail, focused on the context of upland or predominantly pastoral farmers across Wales. Through qualitative and quantitative analysis, explained in Section 3 and presented in Sections 4 and 5, this article undertakes an investigation of diversification and innovation activity, and their interconnectedness (McFadden and Gorman, 2016). The analysis confirms significant heterogeneity in farm business development paths, as noted by previous researchers (Ilbery, 1991; Bateman and Ray, 1994; McNally, 2001; Maye et al., 2009; Evans, 2009; Morgan et al., 2010; Hansson et al., 2013). The contribution of the paper is to propose, arising from the data analysis, a more sophisticated four-fold clustering of farm businesses. This categorisation identifies variation in a number of distinguishing characteristics of Welsh farmers: pluriactivity (off-farm income-generating activity), entrepreneurial attitudes towards on-

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farm diversification and intensification, and business development intentions towards available European Union (EU)-funded grant support. In turn this facilitates an assessment of the level and focus of entrepreneurial activity, alongside revealed attitudes towards innovation and new technology as well as EU ('Pillar 2') rural development grant support, and the extent to which these are contextualised by the nature of the farm and the farming household. Informed by this analysis the paper then proposes, in Section 6, a fresh conceptualisation of farm business types, which highlights the ambiguities facing farm-based businesses in the changing and confusing policy context.

2. Background: pluriactivity, farm diversification and entrepreneurial behaviour in the Welsh context

The rural marketplace is a transitioning space where a key influence since 2003 has been the reform of the Common Agricultural Policy (CAP) (European Commission, 2013) and the sharp shift in funding ('decoupling') from direct subsidy or price support for agricultural production ('Pillar 1') towards wider use of discretionary grant support for rural development ('Pillar 2') through policy instruments to promote restructuring of both farm business and the wider rural community and to promote agri-environmental objectives (Richardson, 2005; Midmore, 2011). These changes imply a broader conception of the 'post-productivist' multifunctional rural economy, set in its particular spatial, social and farm household context (Blandford and Hill, 2005; Hodge and Midmore, 2008; Wilson, 2008; Marsden and Sonnino, 2008; Leck et al., 2014). However, one critic suggests that CAP reform has blunted incentives towards further improvements in farm efficiency and the adoption of productivity-improving innovation (Rickard, 2012).

2.1. The Welsh context for rural development support policy and CAP reform

The Welsh situation is distinct from the rest of the UK, in terms of both the particular territorial context and in terms of the manner of devolved responsibility for the management of EU funding and for rural policy since 1999. These have allowed distinct policy to be informed by that territorial context of fragmented, low population density and its social implications. Steep slopes, altitude and high rainfall has resulted in 80% of agricultural land in Wales being designated as Less Favoured Areas (LFA) under Community Regulation EC75/268 (Welsh Government, 2013) which lends itself to sheep production. The context of this study is therefore upland pastoral sheep farmers in Wales. Average farmer age is high at just over 60 years of age, and almost two-thirds of farmers over 55 years of age (Welsh Government, 2013). Skills levels are considered low, with the Welsh Farm Business Survey reporting that 43% of farmers have no post-compulsory educational attainment (Farm Business Unit, 2013). A weak demographic profile is compounded by financial precariousness. In 2010 38% of Welsh farms had annual turnover below £25,000 and almost a quarter stated that the EU Single Farm Payment was their principal income source (Wales Rural Observatory, 2011).

The CAP decoupling process was introduced to Wales from 2005 onwards and has been guided by 2007–2013 and 2014–2020 rural development programmes (Welsh Assembly Government, 2007; Welsh Government, 2014). As permitted by the Welsh devolution settlement, the shift towards Pillar 2 support was able to be distinct from that introduced elsewhere in the UK. Some commentators argue that despite a UK-wide absence of strong coherence in understanding multifunctionality, a stronger expression of the developing multifunctionality of the rural economy began to emerge in Wales (Marsden and Sonnino, 2008). Devolved

government may have allowed the attenuation of some potential tensions and policy ambiguities in England between rural affairs and industry and innovation. During 2007–2013 Pillar 2 support was provided through a range of interventions including the agri-environment *Tir Gofal* and *Tir Cynnal* schemes. Since 2014 these have been simplified into one grant scheme, *Glastir*, which prioritises mitigation of climate change, water management and biodiversity. Other elements support upskilling, knowledge transfer and innovation. However, the mix of support potentially leaves farmers with inherent tension in how they interpret their developing role and identity in the wider rural ecological, social and economic context, and how that is translated into farm business development and strategy.

2.2. Entrepreneurial activity in the context of agricultural enterprises

The process of social, political and environmental change expressed in the developing policy landscape of the past 15 years has highlighted for farmers the difficulties of persisting with traditional 'productivist' business models, and created an imperative for entrepreneurial opportunity-seeking behaviour. However, as already highlighted farming households face considerable ambiguity in direction of travel. The ability to adjust structurally to market signals and social preferences depends largely on the flexibility of the farming enterprise, (Happe, 2004). Structural change in the rural economy impacts on the resources available to the farm, both on the farm and in terms of employment and other off-farm opportunities which may take farm household labour resource away from the farm enterprise. Farming activity is also increasingly determined by the technology available and adopted. Therefore policy decisions on research and development may be as influential as the CAP itself (Angus et al., 2009). The situation is starker in the uplands where continued innovation is required to provide key ecosystem services and maintain viable upland communities (Reed et al., 2009).

Entrepreneurship in the wider rural context is attracting increasing research interest (McElwee and Smith, 2014; Pato and Teixeira, 2016). However, the practical application of entrepreneurial policy within agriculture itself has been largely ignored (Clark, 2009). In the past farmers have been typically characterised as price-takers, market followers and passive decision makers. A cursory analysis of recent trends (Wales Rural Observatory, 2011) as well as the developing stance of rural policy (Horlings and Marsden, 2014) suggests that this is now dated. Entrepreneurship, in the form of on-farm diversification activity, deploying resource either as a substitution for current farm enterprise or to increase the range of farm business activity, may be critical for the survival of contemporary family-managed farm businesses (Seuneke et al., 2013; Hansson et al., 2013; McFadden and Gorman, 2016). Studies which focus on farm diversification typically view the farmer as actors who respond as the objects of innovation diffusion, and therefore highlight the important role of farmer networking and farm extension services, as well as the broader development of infrastructure to support information and communication in the rural economy (Galloway, 2007; Galloway et al., 2011; McFadden and Gorman, 2016; Saleminck et al., 2015; Hill et al., 2017).

Just as within the specific context of farming activity usage of the term diversification is 'fuzzy' (CRR, 2002; Maye et al., 2009), so the concept of entrepreneurial activity remains 'slippery', more than half a century since Edith Penrose attached this adjective (Penrose, 1959). The shift towards thinking of farmers as entrepreneurs therefore raises questions such as how to define an entrepreneur and how to place the boundaries of the farm (Vesala

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