Diffusion of an Innovative Land Use – Private Afforestation in Ireland between 1990 and 2012

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Abstract

Since 1990, national policy has sought to increase the area of forestry in Ireland. Farm households are incentivised to establish forestry plantations through a variety of financial inducements including establishment grants, annual premiums and a tax concession on forestry income. Despite these financial benefits, the rate of farm afforestation was and remains below national target levels. Whilst some of this research has pointed to the geographically uneven nature of participation in the afforestation scheme, the role of place in understanding the decision of farm households to plant, or not, forestry remains under-researched. In this paper we apply a novel approach to determine whether the local context influences adoption rates. The Poisson-based Kulldorff scan statistic coupled with the Visual Inquiry Toolkit is used to test whether this innovation diffused randomly through all farm households or in clusters of high adoption (hot spots) or low adoption (cold spots). Covariates specifying the suitability of Irish agricultural as set out in the Indicative Forestry Statement (2008) were included in the Kulldorff scan statistic to remove potential bias. On average 41 per cent of all new forestry stands occurred in hot spots and 10 per cent in cold spots among the farming population that had a probability of lower than 0.05 of occurring by random chance. The hot spot and cold spot figures should have been 22 per cent and 27 per cent respectively. These findings indicate that that there are significant local drivers and inhibitors to incentivised land use changes among local communities of farm households. National top down afforestation policies which fail to account for local factors are likely to be sub optimal. This offers useful insights for policy makers in the promotion of other voluntary incentivised land use changes among the Irish farming community such as biomass crops, agri-environmental schemes, etc.