How can farmers and landowners be motivated to plant more trees to deliver a wide range of benefits, especially mitigating climate change?

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It would not be surprising if many of us feel that we are facing unprecedented change; climate change, biodiversity loss, Brexit. Within the UK, we sit within an uncertain policy context and a paradigm shift in attitudes towards tree planting and changing climate. Whilst this reflects the substantial challenges our landscapes and communities are to face, it has also created a united goal. The precarity enables conversations that may not have taken place in a previous, more seemingly secure, context.

The UK tree planting targets are clearly not yet being met[1], a large proportion of the landscape is under agricultural management[2] and there has been a lack of uptake in grant opportunities to plant trees[3,4] hence the title of this essay. I will argue, however, that motivation (the desire to achieve an outcome) is not the primary factor at play. Farmers and other landowners want to plant more trees. This essay will briefly identify the evidence for this statement and suggest, if not solutions, approaches that the forestry sector may take to enable these motivations to be realised.

Farmers and landowners want to plant more trees

A 50-year history of land management and land use policy decisions is peppered with the neglect of landowner and farmer perspectives and situated knowledge. This has been demonstrated to ruin relationships and have disastrous and long-lasting consequences (for examples see *Lowe et al* (1997) on agriculture and water pollution [5]; Brian Wynne's seminal work on the Chernobyl fall out and sheep farming "May sheep Safely graze"[6]; and critiques of the British expertise model and the BSE crisis [7,8]).

Farmer and landowner motivations for not planting have been identified in research[4,9,10], however

perceptions and preferences with regards to reasons for proactive tree planting are less well-evidenced (with a few key exceptions in international contexts [11–13]). Pontbren is an oft-used example for supporting the argument of tree planting for flood management. However as Sophie Wynn-Jones details, the motivations of the farmers in question were primarily based around improving their farming business and family well-being; improvements to biodiversity were a secondary benefit whilst flood management and development of woodland products were essentially an unexpected bonus[14]. None of these factors negate tree planting, but they define a specific context in which that planting is appropriate.

My PhD research will play a part in better understanding farmer and landowner motivations within the context of tree planting and land use change[15,16]; starting with an understanding of land manager perceptions and preferences and exploring how these may impact designing tree planting within the context of Natural Flood Management. The case study (a river catchment +100km2) is relatively well-wooded, and initial responses indicated that it didn't need more trees. However, my on-site, semi-structured interviews with land managers (predominantly farmers) conducted to date suggest that the majority would like to, or have plans to plant more trees. Planting described includes hedgerows, riverside regeneration, silvopasture and small woodlands; this is supported by wider research which identified diversity of tree planting amongst other agri-environment landscape options[17].

Research has shown farmers have strong environmental values[18,19] and situated knowledge[20] which enables them to incorporate those values into rhetoric and decision-making[21,22]. The values and perceptions of the farmers I interviewed reflected this; they were aware of the importance and value of trees in a biodiversity/climate context and gave both personal, environmental and business arguments for their inclusion in the landscapes. Farmers and landowners already want to plant more trees.

Enabling Change

If the motivation to plant is already present, the next step is to create a situation that enables this planting to take place.

This essay is written under the concept that #thefutureisforestry, therefore I will specifically address the topic of tree planting within the context of managed woodland. This is instead of, for example, natural regeneration or scrub, both landscape aspects which include trees and have a part to play in our landscape's challenge to tackle climate change. There are clear benefits to 'managed' woodland which have been well outlined in the 2018 Confor essays[23] and public research[24]. Whilst governance and grants will be key in enabling change, the forestry sector has both the challenge and the opportunity to play a significant role in enabling planting to take place.

Can forestry adapt to meet the landscape needs of farms?

Grants supporting the conversion of farmland to large woodlands that would fall within a

commercial forestry context have suffered from a lack of uptake in multiple scenarios[4,12,25]. Barriers have been demonstrated to be complex and diverse: economic, cultural and personal. Whilst there may be solutions to be found in the conversion of large areas of land, this limits thinking to solutions which already fall into the traditional commercial forestry context.

The 'treescapes' described by farmers interviewed would fall into the category of managed woodland. Yet these small treescapes are not currently supported by mainstream grants or by clear advice and support within mainstream forestry. This is then a challenge to be met, a bridge to be built. Can forestry adapt to support the management of the diverse range of treescapes that are suitable within a farm context?

The knowledge, technology and techniques already exist within the industry[26–28]; Perhaps lacking are the systems, logistics and supply chains to support this. Between 1995 and 2015, sawmill numbers reduced from 288 to 91. This does not suggest that small local sawmills would be available for use by small local farms.

Economically, perhaps small-scale management does not seem a viable prospect, but perhaps forestry could learn from a mushroom. In 'The Mushroom at the end of the world' the author describes a market that falls outside the traditional capitalist context, with mushroom pickers in Oregon being driven by values of freedom, rather than those of economy (and yet making a very good living)[29].

This is perhaps an extreme example, but it demonstrates possibilities. 1.4 million hectares of woodland is certified and classed as managed woodland by Forest Research; this is only 25% of English woodland, 44% of UK woodland overall[30]. There is approximately 1 million hectares of farm woodland in the UK; a significant increase in 10 years (0.7 million hectares in 2009)[30]. By adapting to small sites, more diverse and currently unmanaged areas, foresters look at accessing not only a large current potential of woodland, but also a growing area.

Grants made available through policy and governance will be of no purpose if the logistics to support their implementation are not in place. In addition, the more support is in place, the more likely it is that policy will be directed towards farm forestry.

By listening to farmers and landowners' needs and requirements and responding to their perceptions of landscapes, the forestry sector could increase its own productivity. Not in the name of maximum economic growth at any cost, but within a sustainable, achievable environment; capable of meeting the diverse benefits our society now demands.

Can forestry build relationships with agriculture that would support both sectors?

A second aspect to this new level of communication is perhaps more important; relationship building. The perception of 'commercial conifer forestry' has not been a positive one. Despite the public shift in awareness and voice around the benefits of trees and woodlands, this is rarely

associated with the commercial sector. Here the ghosts of conifer plantations on peat bogs and tax breaks[31,32] still affect the efficacy of forestry to interact with wider land-management. A wish to defend the fairness of this must be left in the playground. It is a reputation and perception that exists, and therefore forestry must tackle it.

There are good examples of communication[33–35] but they are not common, and are often designed for presentation, rather than dialogue. It is rare to be fully informed about the work in a woodland (excluding obvious impacts such as safety implications), or to meet the manager of it. For farmers and other landowners in different social and industrial circles, meetings and therefore conversations that build relationships are even rarer. It may be that the forestry sector finds that the first and most challenging steps it needs to make are to meet and listen to the needs and requirements of the diverse land management communities.

Conclusion: Listen, Adapt, Enable, Communicate

Farmers and other landowners are already motivated to plant more trees, but barriers such as logistics, knowledge and funding, prevent access. If the forestry sector is to enable the planting of trees within a managed environment, it may need to adapt its own practices to suit a more diverse range of landscapes. It will also need to develop an integral practice of relationship building; to listen and to communicate, to find out which are the right trees and the right locations. Then perhaps farmers will be enabled to plant the trees - for climate change, for biodiversity, for sleeping sheep - that they already wish to plant.

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