Sequestration and substitution: how do stakeholders in the woodland sector view their role in climate change mitigation?

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Introduction

- There are high expectations about the role that forestry can play in mitigating climate change (FCS, 2013)
- Forestry is expected to have a dual role that involves carbon sequestration and product substitution (Moran et al, 2008).
- Sequestration arises from actions such as afforestation, drainage management, and forest management in relation to, for example, rotation length, thinning regimes, and tree species (Read et al, 2009).
- Product substitution relates to the provision of timber and wood-fuel to substitute for high carbon materials and energy sources.
- For mitigation potential to be realised much depends upon the views, awareness, experience, and behavioural intentions of woodland and forest managers (Dandy, 2012; Cook & Ma, 2014).

Methods

- Forestry and woodland managers' opinions regarding sequestration and substitution were gathered through an online survey.
- They were asked whether they do, or would consider doing, a range of relevant woodland management behaviours and forestry activities.
- The following framework was used to inform survey design so as to understand what might influence behaviours & behavioural intentions.

Results

- 44 responses were received from a range of land managers with responsibility for managing areas of forestry, woodland and trees.
- 93% of respondents thought the climate had changed over the last 30 years. Of these, all but one respondent thought that humans had some influence or a strong influence on this change.
- On a 3 point scale (Very good/Reasonable/Poor) a majority of respondents rated their own knowledge of climate change (77%), carbon sequestration (61%) and ‘using wood for product substitution’ (57%) as ‘reasonable’.

- The action that most would do, that is relevant to sequestration, is to avoid land use change from forestry to other land uses. The one that is most commonly already being done is replanting after felling.
- Other actions, for example changing thinning regimes, rotation lengths and intensity of management, are less popular (figure 1).

- Of four actions related to substitution, the one that is most commonly already being done is providing biomass for renewable energy, and most would say they would consider producing wood to substitute for carbon intensive materials in other sectors.
- Many comments were made regarding what would encourage management that increases sequestration and substitution. For example, improved markets would encourage substitution, and more knowledge and information would encourage sequestration.

Conclusions and next steps

- The findings suggest that woodland managers will continue to replant and aim to avoid land use change to other non-forestry uses.
- They will embrace new markets to provide timber products that can replace established high carbon materials such as concrete and steel.
- This suggests there is support for sequestration and substitution policy goals.
- However, some forest management changes may require additional incentives and support to encourage behavioural change.

Next steps

- Two ‘behaviour scores’ (for sequestration and substitution) have been constructed and will be used to investigate connections between the variables shown in the model opposite.
- Further analysis of the qualitative data will be conducted in order to investigate key themes of importance to the respondents.

References


Legislation

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