



Matters Arising

Carbon sequestration through forestry

A previous article¹ examined the role of trees in sequestering carbon dioxide from the atmosphere in the context of the area of woodland that would be required to compensate for emissions caused through new housing developments.

As the article indicates, “Carbon sequestration by trees is one of the most effective means of capturing atmospheric carbon.” To add to this discussion, I would like to bring attention to an independent assessment of the scientific evidence on the role of UK forests in helping to tackle climate change that was published in 2009. Led by Professor Sir David Read from the University of Sheffield and a Fellow of the Royal Society, “Combating Climate Change—a role for UK forests” (known as the Read report) was put together by over 30 leading forestry scientists and economists in the UK.²

Believed to be the first national assessment of its type in the world, the analysis in the Read report includes an assessment of the sequestration potential of a variety of forest types in the UK, covering timber, energy, farm woodlands and native woodlands. It also assessed the potential of wood products and wood fuel from UK woodlands to substitute for fossil fuel-intensive energy sources and materials, the so-called “carbon substitution effect”.

Two key conclusions of the report were that planting additional woodland has the greatest potential to increase carbon abatement in the UK, and that woodland creation is a cost-effective way of delivering carbon abatement. Cost-effectiveness is further increased if the many other benefits that woodlands provide are taken into account. These wider ecosystem benefits are evident in the National Ecosystem Assessment published in June 2011.³

The Read report estimated that a sustained programme of woodland creation across the UK (about 15,000 hectares per year above baseline levels) over the next 40 years could, by the 2050s, be delivering emissions abatement equivalent to about 10% of total greenhouse gas (GHG) emissions at that time. This would represent a 4% change in land cover and would bring UK forest area to 16% (which would still be well below the European average). Preliminary analysis of land class data in Great Britain indicates that such levels of planting could be accommodated on land that is of low value for agriculture or that is presently derelict.

¹ Holt, G.C. Carbon neutrality—a government dilemma? *Nanotechnol. Perceptions* **6** (2010) 121–123.

² Further details on the Read report can be found at www.forestry.gov.uk/readreport.

³ <http://uknea.unep-wcmc.org/>

It is worth noting that the maximum mean annual increment of a new woodland, and thus the maximum rate at which carbon sequestration occurs, may not be reached until 30 or 40 years, or longer, depending on the type of woodland, after planting. Therefore, early action to increase woodland cover is needed if the sequestration benefits are to be maximized by the middle of the century. The Forestry Commission is currently leading a task force to examine how conditions can be put in place to encourage investment in new woodlands in the UK.

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