

Position Statement: Trees and their role in carbon management for land and business

INTRODUCTION

Carbon dioxide (CO₂) is the most prevalent of the greenhouse gases (GHGs) that are driving climate change. Humankind's past actions make future climate change inevitable but action to reduce GHG emissions is urgently required to limit its scale and thereby the resulting impacts on both the natural world and human civilisation.

Trees absorb CO₂ and release oxygen as they grow. Trees and forests are crucial to the global carbon cycle: the total carbon content of forests has been estimated at 638 Gt for 2005, more than the amount held in the entire atmosphere¹. Global deforestation accounts for around 18 per cent of all GHG emissions, more than the entire transport sector combined².

The Trust believes that mitigation of climate change through reduction of CO₂ emissions should be tackled through a hierarchy of actions, the most important being reduced energy use, followed by increased energy efficiency, use of renewable energy resources, product substitution, protection of carbon stores, carbon sequestration and carbon offsets³.

CARBON BASED LAND MANAGEMENT

The objective of carbon-based land management is to reduce the release of carbon into the atmosphere and increase long-term carbon sequestration and storage. In addition, renewable products, such as wood, can be used to substitute for products that are fossil fuel-based, or whose processing needs large amounts of fossil fuels.

Given the importance of trees, woods and forests in the carbon cycle and the decisions made about their management (i.e. deforestation, restocking and woodland expansion), the Trust believes that carbon-based land management fits into the hierarchy of actions required to reduce carbon emissions into the atmosphere, as a bridge between product substitution and protection of carbon stores.

Three broad land-cover types are particularly important in carbon management terms, namely peatlands, farmed land and woodlands. Conservation of peatland is crucial in preventing release of large amounts of carbon into the atmosphere. However, woodland has the greatest role to play in increasing carbon sequestration. The benefits of differential management of farmland for carbon management are less well understood. Carbon-based land management can also generate a wealth of other benefits, such as helping wildlife to adapt and move in response to change, healthy places for recreation, inspiring landscapes, improved water quality, flood management, soil protection and sustainable drainage systems, shading and pollution control in urban areas.

Carbon management in forestry

The Trust believes that the following actions to minimise loss of carbon from forests and woods are crucial:

¹ UNFCCC (2009) Fact Sheet

² International Panel on Climate Change (2007) Fourth Assessment Report

³ Woodland Trust (2005) Position statement on climate change www.woodlandtrust.org.uk/campaigns

- **Forest protection:** the Stern report⁴ identified that deforestation was one of the main global issues driving climate change. Although woodland loss in the UK is low, the Trust remains resolutely opposed to any loss of ancient woodland and will continue to campaign to prevent such losses in the future.
- **Forest expansion:** current rates of afforestation in the UK (approximately 9000 ha per annum) contribute 2-3 per cent of the UK's Kyoto Protocol commitment to reduce or sequester carbon emissions to 12.5 per cent below 1990 levels by 2008-12. A doubling of woodland planting could increase this contribution and also provide many other benefits to society of direct relevance to a changing climate.
- **Low intensity forest management systems:** forest soils store more carbon than the woody biomass of trees and so intensive forest management systems that damage soils should be avoided. The Trust's sensitive approach to restoration of planted ancient woodland sites is therefore vindicated on both biodiversity and carbon management grounds⁵. There are additional advantages, in terms of carbon management, in focusing woodland creation and the inevitable soil disturbance this brings on inorganic mineral soils (which are low in carbon), currently under arable and improved pasture. Such practice also makes good conservation sense: tackling habitat fragmentation and reducing the intensity of land use helps make the countryside more resilient in the face of climate change.
- **Product substitution:** we support sustainable use and harvesting of timber for the purposes of product substitution e.g. using timber frames in house construction.
- **Woodfuel production:** CO₂ is released when wood is burnt, but since trees absorb carbon from the atmosphere as they grow, wood can be regarded as a renewable source of energy. Moreover, it can require only small amounts of fossil fuels to process and transport wood compared with oil, coal or gas. Since reducing carbon emissions from fossil fuels is central to addressing climate change, sustainable harvesting of wood as a substitute fuel source is a legitimate part of the shift towards a wider use of renewable energy. But the extraction of wood for fuel needs to be done sensitively, so that the woodland can continue to absorb carbon after the timber has been removed (i.e. by replanting or naturally regenerating trees). Short rotation coppice and short rotation forestry, (i.e. planting of woody crops for woodfuel) can also play a role, given suitable environmental safeguards.
- **Low carbon forestry operations;** the Trust is currently looking at how best to reduce its own carbon footprint; one element is to look critically at woodland operations including materials used and contractors' practices.

CARBON MANAGEMENT BY BUSINESSES AND INDIVIDUALS

One of a range of carbon management tools for businesses and individuals seeking to address their GHG emissions is carbon sequestration through the creation of woodland. Such activities do not neutralise emissions but over time can ensure the storage of an equivalent amount of carbon. As well as the capture and storage of carbon, new native woodlands can protect against soil erosion and flooding, provide shelter and shade, and enable wildlife to move through the landscape more easily.

Overview of Trust position

The Trust believes carbon sequestration by trees can form part of a comprehensive GHG reduction strategy based around the principle of reducing emissions at source wherever possible. Woodland creation for carbon sequestration can help compensate for **residual** emissions, that is, those which will inevitably occur even after reasonable steps have been taken to reduce emissions.

Tree planting as a form of carbon offset

Tree planting has been proposed as a form of carbon offsetting⁶; that is, taking action in one place to neutralise the effect of emissions made in another. Whilst in principle this might be possible, the terms of the Kyoto Protocol state that such offsetting activities are not possible in the UK because afforestation is already reported by the UK Government as part of its legally binding emissions reduction commitment.

⁴ Stern (2006) The economics of climate change HM Treasury

⁵ Woodland Trust Position statement on planted ancient woodland sites. www.woodlandtrust.org.uk/campaigns

⁶ A comprehensive list of offset types is contained within The Carbon Trust (2006) **The Carbon Trust three stage** approach to developing a robust offsetting strategy.

The Trust believes that the international framework is logically inconsistent in not allowing forestry offsets under the terms of the Kyoto Protocol, whilst at the same time allowing national governments to account for afforestation in relation to their Kyoto commitments.

Tree planting for carbon sequestration

UK forestry has one of the most highly regulated and most comprehensive policy frameworks in the world. The Trust considers that this makes the UK one of the most appropriate locations to create woods for companies and individuals wishing to lock up an equivalent amount of carbon to their own residual emissions. The Trust believes that such carbon sequestration projects are valid and should be supported in the UK if:

- the activity is **additional to that which would otherwise occur** with the funds raised being used directly in the woodland creation project
- the woodland is **permanent**; for instance, it is maintained as woodland under a continuous cover forestry regime
- the carbon captured above ground and in forest soils is **verifiable**, i.e. estimated and/or measured according to a recognised calculation methodology
- the woodland is planted on **mineral soils that have a low carbon content**
- the total amount of carbon stored as the woodland reaches maturity is sold at the outset of the project life (assumed to be 100 years), i.e. in year 1, to avoid any possibility of resale
- Emphasis is placed on the multiple benefits that native woodland offer over and above faster growing non-native species.

We have recently developed our own carbon sequestration product, Woodland Carbon, which meets these criteria and provides additional and substantial environmental benefits for people and wildlife in adapting to climate change. The income from this sale of product, which is available to both individuals and companies, is directly invested into our woodland creation programme. We place great emphasis on encouraging customers to do more to reduce their GHG emissions. As such, Woodland Carbon acts to raise awareness of climate change in a UK context and highlights the immediate need for comprehensive action across a range of platforms. To ensure that Woodland Carbon is not used by companies to sidestep the need to reduce emissions, we:

- insist that companies have audited their carbon emissions before buying Woodland Carbon
- encourage them to take steps to reduce their emissions based on the results of the audit
- encourage them to develop employee buy-in to programmes and to engage stakeholders to reduce emissions too.

Current & future developments

In the public mind, trees are closely associated with their ability to capture and store carbon. The value of trees in mitigating GHG emissions is also recognised internationally, as exemplified by countries, including the UK, being able to count afforestation towards national Kyoto Protocol commitments.

Although the Trust considers woodland creation to be a valid means by which a measureable quantity of carbon can be stored, it is no replacement for the need to make significant reductions to GHG emissions as we make the transition to a low carbon society. These reductions are likely to require dramatic changes to the way we live and public acceptance of those changes is currently some way off. The important principle is that carbon sequestration by trees should be seen as part of a package of measures by which individuals and companies can address their emissions; it should not be used as a way of salving conscience by paying to continue environmentally damaging activity.

Irrespective of actions by individuals and businesses, climate change is such an urgent issue that Government must continue to drive forward emissions reduction legislation, regulations and incentives.