Has commercial timber production become an ‘inconvenient truth’?

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Abstract
The public outcry that followed the recent proposal to sell state owned forests in England highlighted the disjunction between the general public and the commercial forestry sector in their respective understanding of the purpose of forests. The production side of forest management was hardly mentioned in the ‘debate’ that almost entirely focused on the fear that access to forests would be lost under private ownership. Given that the global use of timber is set to increase substantially through increasing population and carbon mitigation schemes, it is remarkable that future timber security is not perceived as a priority in Britain; a country that is a major importer of timber and timber products. This paper suggests that the narrow view of the purpose of forests embraced by the general public is largely the fault of the forestry industry due to its failure to adequately inform the public of the long-term economic need for timber production. Proposals for future policy directions are discussed.

Introduction
We all use wood, a lot of wood, and often without realising it. The annual global use of timber is estimated at around 4 billion tonnes (FAO, 2009), equivalent to about three-quarters of a tonne of wood for every human being on earth. With world population increasing by around 3% per year, a corresponding rise in demand for wood is inevitable, and this will be exacerbated by the rapid industrialisation of countries such as China and India. Additional pressures to use more wood also come from concerns over the effects of climate change on the environment. Initiatives are rapidly developing to replace construction materials that use large amounts of embedded energy in their manufacture, such as concrete and steel, with ‘low carbon’ timber as a means of mitigating carbon emissions (e.g. Edinburgh Centre for Carbon Management, 2006). However, the most dramatic increase in wood consumption in recent years is through the use of wood as a ‘carbon neutral’ fuel (FAO, 2009). Already, domestic supplies of wood fuel in Britain are barely able to keep up with demand and increased imports are inevitable.

Given our relatively small forest area and high dependency on imported wood, it is surprising that the future security of timber supplies does not have a higher profile within our society, as is the case for, say, food or energy. The public outcry over the proposal at the end of 2010 to sell state owned forests in England highlighted this disparity. The topic of commercial timber production was rarely mentioned, and instead the focus of public dissent was almost entirely based on the fear that access to forests would be lost under private ownership. Similar fears were voiced in 2009 when a proposal to lease state forests in Scotland to the private sector was discussed, even though there is a legal right of access here. To the public, the use of forests for recreation is now seen as a right and not a privilege, paid for by the taxpayer. This is in spite of the fact that practically all the forests in the country were planted with the sole objective of timber production. If the UK population overwhelmingly believes that forests are primarily for their benefit as a recreational resource, what can the forestry industry do to convince the public and politicians that the vast gap between domestic timber production and imports may have serious economic implications if world demand continues to increase at current levels? The aims of this article are to examine the background to this apparent disjunction between society and the commercial forestry industry, to determine whether part of the blame for this lies with the forestry industry itself, and to discuss options for re-balancing the management priorities of our forests.

Conflict between ‘commercial forestry’ and the ‘environment’
By the 1980s, environmental conflicts associated with forestry, most notably the afforestation programmes around the Caithness Flows, were becoming increasingly politicised and questions were being raised about the economic viability of ‘plantation’ forestry. These conflicts led to the ending of the Schedule D tax relief associated with large-scale afforestation at the time and this further eroded the ‘commercial’ arguments supporting forest expansion (Farmer and Nisbet, 2004). While these events were highly significant at the time, it was the proposal by the Conservative government of the day to sell off state owned forests that was the catalyst for change in the forestry industry in Britain. Although this initiative was
unsuccessful, it fundamentally transformed public opinion. From their perspective forests were largely about access and environmental values, and they feared that these values would be lost under private ownership. Environmental lobby groups exploited this sentiment to the full even although many private forests were, and still are, exemplars of multi-use practice. The Forestry Commission recognised that arguments for managing forests, presented solely on economic grounds, were tenuous and this was reinforced by reports stating that forestry was unprofitable and only justifiable through its environmental and social benefits (National Audit Office, 1986). The Forestry Commission was aware that its survival depended on changing from being perceived primarily as a grower and producer of timber to that of the ‘guardian of the forest environment’. The policy worked. The Forestry Commission moved the environment to the top of its list of priorities and through its regulatory arm (The Forestry Authority) dragged the private sector with it through revised planting and management grant schemes. The net result was that timber production was forced down the hierarchy of management objectives, often appearing as a minor activity in forest management plans and policy statements. Conifer species increasingly gave way to planting of native broadleaved species and management objectives focused on wildlife conservation and ‘amenity’. Timber production was reduced to a minor objective despite the fact that the timber processing sector in Britain is overwhelmingly reliant on commercial conifers (in fact 70% of the world’s industrial timber use is coniferous). While many of the policy initiatives at the time were sound, such as improving the forest landscape and riparian management, there were many erroneous directives such as a recommended planting spacing for broadleaved species so wide that there would be no hope of quality timber production, and the view that every planting site had to have a set proportion of broadleaves regardless of whether it made silvicultural or even ecological sense.

A further setback for the commercial sector in Britain occurred in the early 1990s when imports of comparatively cheap timber from former Eastern Bloc countries, particularly the Baltic States, resulted in a slump in the price of timber that was already at a historically low level. Rates of new planting of commercial conifer species continued to decline. The vision of expanding the forest area to provide a strategic reserve of timber had finally disappeared. Forest expansion was now about the environment.

**Current perceptions of the commercial forestry sector**

More than twenty years on from these events, new planting has declined to a pitifully low level. In Scotland last year, less than 3000 hectares of new planting took place of which 80% comprised broadleaves (Forestry Statistics, 2010). Only 10% (300 hectares) of new planting was classed as ‘commercial’, highlighting the dominance of non-timber values of management in domestic forest policy. In fact, the forest estate has actually been reduced in size over the past 5 years, with around 21,000 hectares of forest ‘de-stocked’ due to delayed restocking and wind farm development. While there is a significant, ongoing programme of timber production in our forests, this remains largely ‘hidden’ from public attention. Attitudes towards ‘commercial forestry’ and ‘the environment’ remain polarised to the extent that to mention one almost rules out discussion about the other. In
many parts of Continental Europe there is a strong ‘forest culture’ that is singularly lacking in Britain. Information signs in Continental forests usually emphasise the multi-purpose nature of forests, where commercial timber production and environmental activities are normal and compatible features of forest management. Conversely, information boards, leaflets and other publicity materials in Britain almost exclusively highlight the role of forests as places of recreation and habitats for wildlife. Information provided by newspapers on forestry issues is usually located in the environment sections rather than say the business pages. Even forestry industry publications are often dominated by articles on how to enhance the non-timber benefits of forests with supporting scenes of wild plants and animals, and people involved in recreation, without the balancing message of forestry as a business. After nearly three decades of ‘selling’ the amenity image, it should come as no surprise as to why the general public has acquired such a narrow view of the purpose and function of forests.

### Improving timber markets

While afforestation for commercial objectives has dramatically declined in Britain over the last two decades, softwood timber production has risen by over one third (Lawson and Hemery, 2007). This increase in production is due to past afforestation programmes, particularly from the 1960s and 1970s, attaining maturity. Forecasts predict that volume production in Britain will rise from 9.5 million m³ in 2000 to around 16 million m³ by 2020, after which they will return to around year 2000 levels by 2050 (Lawson and Hemery, 2007). Unless the forest area is increased, and quickly, to compensate for the forecast fall in timber production after 2020, the processing sector may be forced to downsize when the peak in volume output has passed, resulting in a loss in employment and an increase in the already large volume of imports of timber and timber products.

Nevertheless, there is a current optimism in the domestic timber industry and this is in part influenced by the relative strength of the Euro against sterling that has made the cost of importing timber more expensive and has encouraged processors to harness the potential added value of home grown timber. In spite of the economic recession, this has encouraged significant investment by milling companies in Britain to increase production capacity. The cost of imports is also being influenced by the rise in the international price of fuel and raw materials. This has been driven by the rapid industrialization, and increased timber consumption particularly of China and India, but also Russia (UNECE, 2008). Furthermore, recent taxes placed on the export of round logs from Russia have further raised the international price of softwood logs given its dominant position as a major producer of timber (Lawson and Hemery, 2007).

### The era of climate change

Ironically, it was the threat of the effect of climate change on the environment that focused international attention back on forestry. The need for large-scale afforestation was being openly discussed for the first time in decades. Sir Nicholas Stern said, in his ground-breaking climate change review, that forests offer the single largest opportunity for cost-effective and immediate reductions in emissions (Stern, 2007). The UK and devolved governments have introduced proposals to expand the forest area as part of the process of carbon mitigation. However, if commitments to mitigate carbon emissions are to be met, fast-growing species such as Sitka spruce and poplars will have to be used since carbon sequestration positively correlates with the growth rates of trees (Nijnik, 2010). This will almost certainly conflict with current thinking on species choice in tree planting programmes.

Concerns associated with climate change have galvanised efforts to incorporate more timber into building construction to replace high-energy embedded materials, and these initiatives are gradually taking effect. Wood is also increasingly used as ‘carbon neutral’ fuel. The increase in demand in fuel wood has increased competition for small round wood with the particle board industry, and has led to a price rise (Lawson and Hemery, 2007). The greater demand for fuel wood has also been driven by the huge rise in oil prices in the last decade and the political pressure to find alternatives to fossil fuels. Already, in Sweden, cars use bio-petrol produced from sawmill by-products such as sawdust. The overall increase in demand for small round wood has had important consequences for the forestry industry, in particular in that small round wood from thinning has become much more valuable. This has encouraged the thinning of stands, which may otherwise have been postponed or abandoned due to poor economic returns and in turn promoted better stand structures, higher quality timber, greater stand stability, and improved biodiversity (Cameron, 2001). However, in spite of the recent upturn in the timber markets, serious problems remain for the forestry sector.

### Conclusions

#### Importance of the long-term view

For too long, forest policy has focused on the ‘quick-fix’ view, often with serious implications for the future. There are many examples of this (see Lawson and Hemery, 2007), but two events in particular highlight the damage caused by short term planning. The first was the reaction in the late 1970s to the oil crisis with the decision to stop thinning stands if the thinning operation did not make money. This led to a generation of highly unstable forest stands producing timber of generally low quality and value (Cameron, 2001). The second event was the flooding of the market with cheap timber from Eastern European countries in the early 1990s that exacerbated the shift in forest policy in Britain away from commercial production towards the non-timber benefits of forests. This reaction was based on an assumption that a long-term trend in timber prices was being witnessed when the reality was that supply of low-priced wood from these countries could never continue indefinitely. Sadly, the history of forestry in Britain can, from a certain perspective, be seen as one of staggering from one disaster to the next, each leaving a legacy that in part contributed to the next event. Policy makers have consistently failed to take a long-term view of the industry and instead tend to focus on short term problems.

#### Engaging the public

Perhaps the most immediate problem facing the forestry sector is to engage the general public in the realities of the commercial forestry industry. Without this, real change will be difficult if not impossible. Planting strategies have already been proposed to address the future shortfall in timber production in Scotland (e.g. Coppock, 2004), but these have been quietly ‘shelved’ over fear of negative public reaction. A fresh approach by the forestry sector is needed on the type of information presented to the public. People need to know what wood is used for and how much they use, and this should be put in a global context. If we use more wood than we produce, then it has to come from somewhere, and that may involve huge environmental and social issues in the exporting countries. It needs to be stressed that timber is a sustainable material and that there is virtually no other way of
using land resources so heavily with so little risk of depleting their productive capacity. Contrary to the view that conifer plantations are bad for the environment, there is a growing body of research that shows that planted conifer forests are associated with high levels of biodiversity in addition to providing functions such as soil protection and flood control (e.g. Bauhus et al., 2010). Interpretable information provided should explain that well-managed forests can be commercially viable, ecologically diverse, and attractive places to visit; all at the same time. The industry should have nothing to fear about being open and honest with the public, and indeed may be pleasantly surprised by the reaction.

Timber production as a primary objective

Concerns over securing future timber supplies are growing as world demand continues to increase with increasing population, and this has already resulted in overexploitation and forest degradation in many countries (Millennium Ecosystem Assessment, 2005). Timber, like all major commodities, is traded on the world markets and supplies are not limitless. Britain can no longer go on being one of the biggest timber importers in the world and increasingly treat its own forests primarily as leisure areas or wildlife sanctuaries. With the exception of forests of internationally important environmental value, timber production should become the primary objective of management of all forests. There is no reason why well-managed native forests should not be an important resource of timber in addition to providing a wide range of environmental, scientific and social values. Indeed, there is evidence to link a decline in woodland plant species with lack of active management (Kirkby, 2005). Grant aid policy should adopt this position as the default and applicants should have to present a strong case to receive state aid for planting without a commercial element. There is also a growing expectation that if timber income is sacrificed in the interest of the environment or access, then landowners should be compensated from the public purse (Lawson and Hemery, 2007). Given the current economic climate, government funding for new planting is likely to decline in real terms for the foreseeable future, and so non-timber values of forests will increasingly have to be paid for by timber revenues. If the forestry sector in Britain fails to act and change the way the industry is run, then by the middle of this century, people will surely look back in despair at the poor decision making and lost opportunities at the large areas of economically worthless forest that they have inherited.

The need for forest expansion

Perhaps the original mission of the Forestry Commission—to create a strategic reserve of timber for times of crises—may have been more visionary than is generally perceived. Increasing world demand for timber through population growth, greater use of wood for construction where it replaces materials associated with high embedded energy, and supply of bio-fuels for the growing market, will almost certainly force up the price of timber and timber products. The price of timber will increase in line with fuel price rises and this will affect the cost of importing timber from distant areas (FAO, 2009). As a result, mill owners will be encouraged to source timber from stands closer to the point of processing. The international trade in timber is already increasingly in high-value finished or partially finished products and less in lower-value roundwood in response to higher energy and transportation costs (Lawson and Hemery, 2007). In addition, pressures to adopt low carbon technologies as part of carbon mitigation schemes are likely to increase and will further question the rationale of shipping relatively low value, round timber over long distances. This suggests a greater reliance
on domestic timber supplies in the future. The predicted decline in UK timber production beyond 2020 adds further pressure to expand our forest area and this has to begin as soon as possible. A strategy to increase the forest area to meet future demand beyond 2020 fits well with current policies in addressing climate change. For example, the Scottish Government in its Climate Change Bill aims to source 80% of its electricity from renewable sources by 2020. The ‘carbon economy’ of Scotland could be significantly improved by greater use of bio-energy. It is estimated that wood fuel output from Scotland’s forests could reduce overall carbon emissions of 0.6 to 1.5 million tonnes per annum (estimated total CO2 emissions of 54 million tonnes per annum, The Scottish Government, 2008). Forest residues used for power generation in Sweden already account for 2.5% of the total energy production in the country, and this figure is set to increase. Scotland is well placed to make greater use of this source of green energy. Further reductions in carbon emissions are possible if timber is used to replace carbon intensive building materials such as bricks, concrete and steel with a potential saving of 0.5 to 2 million tonnes of carbon.

While using more wood may seem like an environmentally sensible idea, satisfying a significant increase in demand for timber in the future may not be so easy to achieve. The Scottish Climate Change Bill proposes to increase the forest area in Scotland to around 25% of the land surface by 2050, which equates to around 16,000 ha of planting per year; a very expensive objective given the high costs of forest establishment. If this expansion is to become a reality rather than an aspiration, then major investment is needed. Given the current parlous state of government finances, any significant expansion of the forest area will most likely be based on private capital. However, money for major land purchases is unlikely to be forthcoming and instead financial inducements will be needed to encourage existing land owners to plant trees, and 83% of land in Scotland is privately owned. While still controversial, one approach is to use tax incentives. Many may baulk at the idea of returning to a system of tax breaks to support an expansion of forest area but the world has moved on since the 1980s. There is now a well-established regulatory system to ensure that new areas of forest are of the highest standard in terms of design and environmental protection. Land availability for afforestation does not appear to be a problem. A study has indicated that 16 % of non-forested land area in Scotland (1.3 M ha) may be potentially suitable for forestry, much of which is classed as lower quality agricultural land, while a further 28% (2.2 M ha) was found to be potentially suitable given certain environmental constraints (Towers et al., 2006). This would suggest that there is no shortage of suitable land to meet the planting target of 650,000 ha. It is vital that there is a fairer balance in support mechanisms offered to agriculture and forestry if sufficient land is to become available. The Common Agricultural Policy has consistently favoured agriculture at the expense of forestry and this has to change. There is scope for better integrated land use, based on intelligent design, especially between livestock farming and forest expansion. There also has to be greater use of more productive genotypes of both conifers and broadleaves that will result in better quality timber and more home-grown green logs leading to reduced imports. This will require the establishment of more seed orchards and increased nursery capacity to meet the increased demand for plants.

Leadership

There is a pressing need for strong leadership throughout the forestry sector that focuses on the future and not just the present. This is not the responsibility of one individual or a single organisation, but for the entire sector. The real danger is that we will continue with a ‘live-for-now’ attitude until it is too late. With projected demands on timber and forest products set to continue into the foreseeable future, a world shortage of timber is a real possibility and this will lead to a further increase in timber prices. Recent increases in demand for wood for energy have already led to higher prices and could bring about a major shift from a global wood surplus to a wood deficit (FAO, 2009). The UK could quickly be at the mercy of world markets. If the British and devolved governments do indeed rush to the forestry sector and say that the top priority is now to expand the forest area and produce more wood, the forestry industry will reply that this is fine, given the investment and land; but by the way, come back in half a century and your timber will be ready! Forestry cannot be turned on and off to suit markets; instead, it requires steady development in the long term. With limited opportunities to significantly increase the economic prospects of the agriculture and fishing sectors in Scotland, forestry is perhaps the single greatest opportunity to boost the rural economy and employment prospects in a way that is entirely sustainable.

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References


