# United Kingdom

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## Executive Summary

A number of factors impact on competitiveness in the forest, forest products and non-timber forest products sectors.
Although there is a very wide size range of private forest/woodland units in the UK, the majority of non-industrial private forest (woodland) holdings are small. The objectives of many owners are more orientated towards amenity than commercial forestry. The low profitability of private forestry is compounded by relatively high wage rates and other production costs and low timber prices.

In the UK there is a weakly developed wood culture. Other materials dominate construction and wood products are not seen as high performance materials. The wood product market is dominated by imports and there is a lack of skilled workers and designers in the UK.

While there has been a growth of demand for many NTFPs, the same pattern of import dominance prevails. Even where market opportunities exist, firms are likely to remain small. In the UK labour costs are quite high and there may be labour shortages in areas with high levels of NTFP. There can be logistical problems with trying to aggregate supplies from small fragmented forests. In some non timber forest services, such as active recreation, the UK may be advantaged by a large and dense population, but the state forest sector, rather than private woodland owners may be in a better position to provide such facilities, although nearby related private service providers may benefit

There are a number of significant barriers to entrepreneurship in the forest sector, in wood processing and in the NTFP sector.
For few woodland owners is the forest and woodland asset a major source of well-being. In the case of private farms, traditional estates, hobby farms or amenity holdings, forestry is rarely a significant contributor to income. The consumption-related objectives of many private owners suggest that the warm glow of ownership or private pheasant shooting are more likely to influence forest/woodland decision making than entrepreneurial activity.

Many of the high value outputs of UK forests are public or quasi-public goods. Their 'production' depends on grant and subsidy design rather than market signals. Even new planting is driven more by the prospect of grant drawdown than by profitable silviculture.

Property rights relating to NTFPs, especially fungi, may impede marketisation.
The wood product sector has a complex structure of some very large firms and a legacy of smaller firms. Many firms do not have access to good market data and find difficulty in finding appropriate supply chains to access urban markets. Further they are not aware of institutional and policy support mechanisms, are compromised by low profitability and are consequently unable to secure finance for restructuring and investment.
In relation to NTFPs, consumers identify only weakly with UK sourced material. There is little product labelling with place of production.

Mainstream business nor forestry businesses do not seem to recognise the opportunities afforded by NTFPs and those managing grants for business development and other forms of assistance have not been readily assessed. There is an 'alternative culture' demand for many products which is not always entrepreneurial and often lifestyle based.

Institutions do not appear to recognise the value of NTFPs and non-wood SMEs, although a problem of resource ownership because of uncertainty of property rights. Consequently access to resources is on an informal ad hoc basis, with no guarantee of supportive or even benign resource management for NTFP production.

Each of the elements of the NIPF sector and associated supply chains are characterised by specific problems which generate particular research needs.
In relation to the forest owners, the internalisation of the externalities either through enterprise or through negotiating grants for public good delivery is essential for the delivery of public goods to be optimised.

The weak state of the small-scale forest products industry (with the partial exception of a burgeoning craft sector) makes it difficult for the forest owner to connect to niche markets.

There is a major need to establish the green infrastructure values of forest and woodland and the extent of the halo effect. Once established there is a need to design effective mechanisms by which woodland owners can be rewarded for the external benefits provided to others who behave entrepreneurially to take advantage of the green infrastructure provided by forest owners.

In the forest processing sector, there is little public support for development and testing of new product ideas for SMEs. There is little available life cycle analysis information on wood products and the environmental and technical benefits of wood products vis-a-vis alternatives are weakly promoted.

In relation to non-wood products, there is uncertainty as to the volume and availability of supplies. Quality control is weak and labelling rarely advertises UK production.

There is a need (see above also) to develop means for rewarding landowners for the provision of green infrastructure. There is also a need to ascertain the extent to which the state forest is an impediment to the development of NTFP enterprise because of its dominance of the market and its capacity to use public money to displace private initiative.

There are a number of policy implications.
The forest and woodland sector clearly needs better targeted and more efficient support systems to reward woodland owners for public good provision. Many forest owners are unaware of the commercial values associated with their woodland resource and there is a need for a more supportive advisory and information system for non-industrial private forest owners.

There is a need to target support more effectively to maximise the scope for value added enterprise. Current support mechanisms for the forest processing sector fall largely under the umbrella of general support measures when more specific support is needed to help the forest processing sector adapt. In relation to non-wood products there is a need to better understand the impact of new legislation on both recreational and product based non-wood production.

## 1. Consumption

### 1.1. State of the art and historical development

The UK has been predominantly an urban society for the past 150 years. Throughout this period it has had one of the lowest levels of woodland area per head of population in Europe and the urban population's requirements for wood products has been met overwhelmingly from imports. Consequently, for the urban population the value of the non-timber benefits from woodlands (both non-timber products and the environmental and social services provided by woodlands) has for many years exceeded the value of the consumption of wood products derived from British grown wood. In recent years a growing number of studies has focussed on identifying and quantifying these non-timber, non-market benefits, particularly biodiversity, landscape, recreation and carbon sequestration. These have led to a clearer understanding of the significance of these non-market benefits and they have now become key objectives of governments in formulating forest and woodland policies across the UK.

Wood products
UK consumption of forest products in 2003 totalled 45 million $m^3$ wood raw material equivalent or approximately 0.75 $m^3$ per head. Over the past 30 years consumption has grown at a rate of approximately 2% p.a., mainly from increased demand for paper and panel products. Imported products currently account for 86% of consumption but this percentage has slowly declined over the past 20 years as domestic production of timber has increased.

Consumption statistics for forest products are compiled by the Forestry Commission, trade associations (UK Forest Products Association, Forestry and Timber Association, Paper Industry Federation, Wood Panels Industry Federation, Timber Trades Federation) and the Office for National Statistics. There is no sector-wide compendium containing comprehensive details of forest products consumption.

Non-wood products

Although a number of recent inquiries have been conducted, the nature and extent of the market size for NTFPs remains conjectural. However, it is certainly small in relation to existing or potential demand and much of what could be supplied from the UK is in fact imported.

It can be argued that UK forestry is in a post-productionist milieu where services are more significant in terms of social and economic benefits than production of timber, wood fibre, mushrooms or berries. A few studies of the scale of the 'market' for services have been undertaken (described below) and indicate values many times greater than the combined value of products even including multiplier effects. Nevertheless there is as yet no general accounting for such values and it is not clear whose responsibility this should be. Some aspects of green infrastructure are monitored by general 'Quality of life' indicators (collected by DEFRA, www.cs2000.org.uk) and some by the Forest Research Omnibus surveys.

### 1.2. Forest products' and services consumption

Income and expenditure

GDP and expenditure per head are summarised in Table 1.

Table 1. Gross domestic product and household spending £ per head (2000 prices)

| | **1990** | **2000** | **2002** |
|---|---|---|---|
| GDP per head | 13,115 | 16,221 | 16,693 |
| Household final consumption expenditure per head | 8,416 | 10,684 | 11,299 |

Household expenditure on major spending classes is given in Table 2 and shows a rising share of expenditure on recreation and culture.

Table 2. Final household consumption expenditure by major spending classes (%)

| **Expenditure class** | **1990** | **2000** | **2002** |
|---|---|---|---|
| Food and drink | 10.5 | 9.8 | 9.2 |
| Alcohol and tobacco | 5.6 | 4.1 | 4.0 |
| Clothing and footwear | 4.3 | 5.9 | 6.6 |
| Housing | 20.2 | 17.7 | 17.1 |
| Household goods and services | 5.0 | 6.0 | 6.7 |
| Health | 1.9 | 1.5 | 1.4 |
| Transport | 15.9 | 15.0 | 15.1 |
| Communication | 1.2 | 2.2 | 2.5 |
| Recreation and culture | 8.6 | 12.1 | 12.7 |
| Education | 1.3 | 1.6 | 1.2 |
| Restaurants and hotels | 13.5 | 11.5 | 11.1 |
| Miscellaneous | 13.4 | 12.4 | 12.3 |
| Total% | 100.0 | 100.0 | 100.0 |
| Total £ billion (2000 prices) | 470 | 596 | 634 |

### 1.3. Market demand for forest related products and services by urban population

Apparent consumption of main wood product categories.

No data are published on urban consumption of forest products but it is likely that 80%-90% of the value of consumption is by the urban-based population. Figures of total UK consumption of forest products are published regularly by UN ECE.

It is not possible to determine apparent consumption for NWFPs are there is little or no readily available information on the quantities imported or produced within the UK. Table 3 gives figures for some indicative products and sectors gleaned from a market survey undertaken in 2001 by Dyke & Primrose (2002). Demand for many of these products is buoyant and as Figure 1 shows, demand is rising for herbal remedies.

Table 3 Market demand for NWFP in the UK

| Product type | Species | Demand | Source |
|---|---|---|---|
| Cosmetics | Heather, Bluebell, Primrose, Horse chestnut, Pine resin & oil, Orchids, Hawthorn, Hazel | Increasing | Imported – UK sourced only used for small scale production of regionally branded products |
| Drinks | Elderflowers, elderberries, sloes, bilberry etc. | Increasing | Mainly UK, though several companies import more than half their requirements |
| Veterinary products Hilton Herbs, Somerset | Cleavers | 10-12 tonnes/year | Mostly imported from Germany |
| | Nettles | 10-12 tonnes/year | |
| | Meadowsweet | 6-7 tonnes/year | |
| | Hawthorn, eyebright, comfrey, dandelion, rosehips, valerian, skullcap | Increasing | |
| Pharmaceutical plants | Total imports in 1995 | 8,200 tonnes and rising at 10% per year | Global imports, UK sources insignificant |
| Decorative products | Non-floral plant parts including Willow, Hazel, Moss, Ivy, Logs, Branches, Twigs, Ferns, Holly and tops of Birch etc. | Estimated as 10% share of floristry revenues = £119 million in 2001 | Most imported, UK collection only a small fraction of this though there are net exports of rhododendron |
| Herbal remedies | General | Estimated as worth £279 million in 2002 | Global imports, UK sources insignificant |
| | Dandelions | 50-100 tonnes/year | Imported from Belgium and Holland |

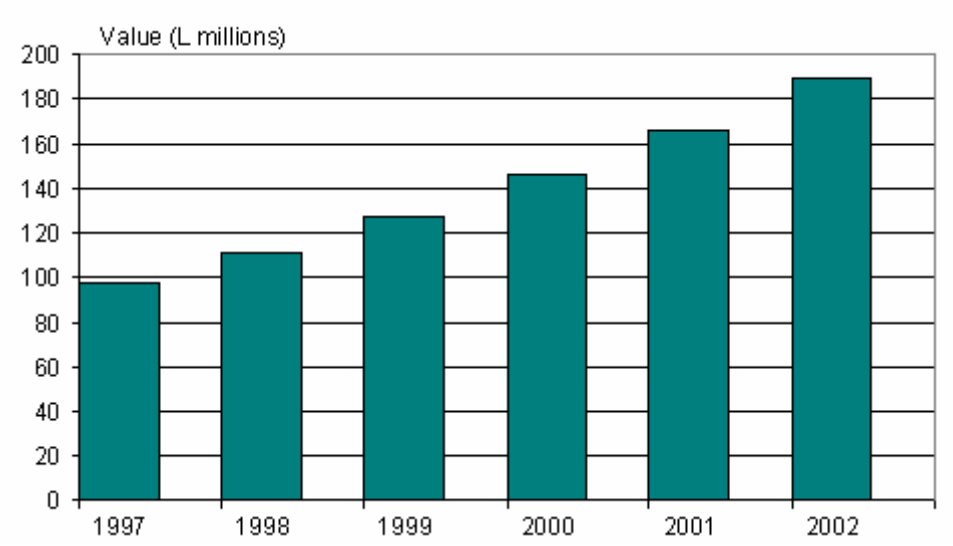



Figure 1 Estimated value of herbal remedies UK 1997-2002

The figures in Table 3 and Figure 1 clearly indicate that there is large demand for many NWFP products but that the vast bulk of this demand is being met by imports even for common species native to the UK. This is because the prices if imports are much lower than the cost of UK collection and there is no premium or strong preference for UK-sourced material. UK collectors cannot compete with imports, particularly from eastern Europe to supply larger-scale manufacturers (e.g. of cosmetics) because of (a) lower wage rates, (b) availability of seasonal labour, (c) size and accessibility of the resource, (d) traditional market infrastructure which already collects for internal consumption and (e) lack of trade barriers. This means that opportunities for UK collection and enterprise development is likely to remain undeveloped unless it can gain some market advantage such as UKWAS or organic certification and niche marketing (such as small-scale production of regional or tourism related products). Even so the scarcity of cheap, seasonal, rural labour is a critical constraint on the development of UK NTFP enterprises and the larger companies are importing seasonal labour gangs from eastern Europe.

Estimation of the share of consumption by urban population.

Data related specifically to the urban population are not available. Between 70% and 90% of the UK population is classified as living in urban areas. Consumption of most categories of wood products is likely to be spread relatively evenly across the population and it would be reasonable to assume that consumption patterns broadly follow population distribution. However, consumption of fuel wood and many non-wood forest products is likely to be more heavily biased to rural areas, in part because of vernacular use and in part because of the demand of affluent new rural residents. For some NTFPs such as fungi, the exclusive restaurants of major cities are an important source of demand.

Estimated consumption of services.

The most comprehensive data available relate to recreational use of forests and woodlands and the following points summarise findings from the biennial surveys of public opinion of forests and woodland conducted by the Forestry Commission.

- 355 million visits are made annually to woodland and forests
- two thirds of the UK population have visited woodland or forests in the previous two years
- reasons for visiting forests in descending order of importance are:
    - peace and quiet
    - wildlife
    - attractive scenery
    - safe environment
    - knowing visitors are welcome
    - good for exercise
    - no entry charges (usually)

A higher number of visits are made to woodlands owned by voluntary bodies (e.g. National Trust) than to state (Forestry Commission) forests, reflecting both location and woodland attributes.

Market surveys of demand for non-wood products by urban population.

There are no statistics or surveys of the consumption of wood products that are specifically consumed in urban areas (see above comments of likely urban/rural consumption patterns).

There have also been no surveys of the specifically urban demand for NWFP. However, the majority of the population in the UK is urban so total market demand for NWFPs is a reasonable surrogate. A market survey of a range of NWFPs (edible fine foods, decorative, herbal medicine and pharmaceutical products) was undertaken in 2001 on behalf of the Scottish Forest Industries Cluster (Dyke & Primrose 2002). Unfortunately, although this survey was targeted at NWFPs, it was impossible to disaggregate wild from cultivated, native from non-native, or UK sourced from imports. Most respondents where not able to address such specific enquiries and figures are only related to general categories such as ‘herbal remedies’. The market survey suggests that demand is largely being driven by the fashion for natural health and beauty products, demand for natural veterinary products by the requirements of organic food certification, natural home decoration by television ‘make over shows’ and novelty and wild foods by television chefs.

Second homes

There are estimated to be 150,000 second homes in the UK. A significant percentage of these is for commercial letting, not holiday-making. The holiday second homes tend to be in areas of high amenity value. Further research is necessary to determine the role of woodlands in the decision making process in purchasing second homes, although in some tree-rich areas such as Speyside and Perthshire, there is likely to be a woodland-induced premium on second home property values.

### 1.4. Main problems and research questions in consumption for enterprise development

Important knowledge gaps related to the consumption of **wood products** can be summarised as follows:

- lack of comprehensive statistical information on end uses of forest products and trends in substitution;
- lack of statistics on consumption of new products particularly further processed products;
- lack of information on the premium people will pay for locally produced/gathered products;
- lack of information on consumption of certified timber products;
- poor data on product prices along the wood chain; and
- difficulty for SMEs in accessing supply chains.

**For non-wood products** there is an enormous gap in understanding the extent to which trees and woodland in so called tree-rich areas create enhanced living space both for residential and recreational use. A recent study by Slee, Evans and Roberts (2002) suggests that over 90% of the economic value attributable to trees may not arise from timber or even non timber forest products but from forest services, through what has been described as a halo or shadow effect on surrounding households and businesses. In densely populated countries, the value of these services may be overwhelmingly important. Other knowledge gaps include:

- the size of the market;
- the value of the produce;
- the contribution of local NTFPs to local livelihoods and identity
- the nature of supply chains for NTFPs and the scope for value addition.

## 2. Small-scale forestry practices

### 2.1. State of the art and historical development

In the UK, there are enormous definitional difficulties in defining small-scale forestry because of an absence of any data on the size of forest holdings. There has been a recent inventory of forests, but it is based on ownership type and size of individual unit of forest and there is no available information on forest ownership, other than division into public and private sector. As can be seen in Table 4, 17% of all private forest/woodland by area in Great Britain are on units less than 20 ha. in size. Most professional and lay observers would consider such woodland as ‘small-scale’. Figures for percent of woodland area made up of private woodland of less than 50ha is 26% and of private woodland of less than 100 ha is 33%.

Table 4. Area of woodland in GB not owned by Forestry Commission

| Size class ha | Number of woods | Total area (ha) | % of total area | Mean wood area (ha) |
|---|---|---|---|---|
| <10 | 65,485 | 275,687 | 11 | 4.2 |
| 10-20 | 11,056 | 153,966 | 6 | 13.9 |
| 20-<50 | 7,518 | 232,394 | 9 | 30.9 |
| 50-100 | 2,725 | 188,746 | 7 | 69.3 |

Source: NIWT 2003

The private forestry sector in the UK comprises a number of types of owner. The large-scale private owners are broadly of two main types: large traditional landowners, comprising the old aristocracy and, increasingly, a new class of owners of landed estates who own mixed land use estates (but often rely on cross subsidy from urban wealth); and new forest owners who took advantage of tax avoidance possibilities in the 1970s and 1980s. The latter created a group of absentee forest owners (often foreign residents), whose forest was/is nearly all managed by commercial forestry companies. A further group of private owners comprise the forest products firms who have acquired some land, but which in practice often prefer to work with long-term contracts with private landowners in order to secure wood raw material.

The small-scale forestry sector in the UK is more complex. It comprises two principal types of farm woodland: old relict woodland with little silvicultural management, (often grown on unproductive areas of farms, but sometimes associated with windbreaks/shelter belts and areas of woodland planted and/or managed for game management); new farm woodland planted since 1987 with grant aid. In addition, there is often a woodland component of many smaller rural land holdings which comprise mixed land use estates rather than farms. Finally, there is increasing ownership of small woods by environmental NGOs and private owners, neither of whom is normally interested in commercial exploitation of timber.

### 2.2. General information on small-scale forest holdings in the UK

The historical development of small-scale forestry in the 20$^{th}$ century shows a decline in the forest area of small-scale forestry for the first half of the century brought about by a combination of two world wars and the decline of what might be termed a traditional local forest economy. This was caused by changes in farm tenure and a decline in the use of local forestry products such as woodfuel, thatching spars and hurdles. Over this same period there was a dramatic increase in state afforestation. After the Second World War a programme of support to private forestry was initiated through a grant aid programme and later through certain tax advantages for new woodland planting. With the exception of a few forestry/woodland craft enthusiasts, the general state of small-scale forestry was one of general silvicultural neglect and of the use of forest and woodland for outwintering stock, protecting game (especially pheasants) and providing some fuelwood. With the exception of shelterbelts used to provide shelter to either crops or livestock, most small-scale woodland is hardwood, though in upland areas and in drier areas of Eastern Britain, there are some areas of lowground softwood planting.

From the 1980s, there has been a growing emphasis on new woodland for environmental reasons. Grant rates for broadleaves were raised to increase the broadleaved component in new planting. In addition, a number of new initiatives (often in partnerships with non-forestry organisations) have encouraged new private sector forestry in damaged post-industrial landscapes.

A step change in policy occurred in 1987, when farm forestry was actively supported by a new farm woodland grant scheme. This scheme has been revised and, in addition, locational supplements have been added to increase the attractiveness of new private forestry planting in certain areas.

Since the late 1980s, a new NGO, the Woodland Trust, has been active in acquiring small areas of established woodland. In general, small areas of ancient and semi-natural woodland have become attractive to a new type of woodland owner (whether private sector or NGO), whose purchases of the resource is rarely followed by commercial exploitation.

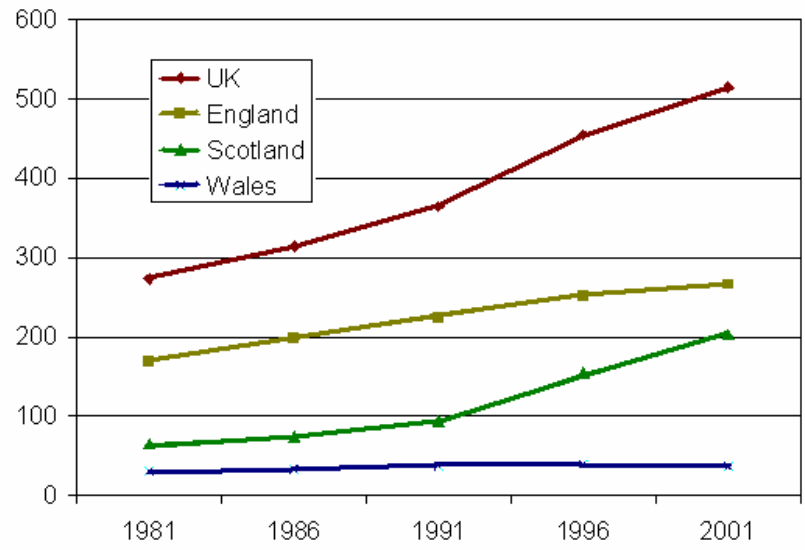
Since about 1990, there has been a proliferation of partnership-funded projects, which promote woodland management and conservation (see above). These projects often seek to engage and work with private forest owners. The net effect of these changes on the extent of small-scale forestry is summarised in Table 5. and Figure 2.

Table 5. Comparison of woodland area between 1980 census and 1998 Inventory (based on 1980 methodology)

| **Woodland size** | **1980 Census woodland area** | | **1998 Inventory woodland area** | | **Change** |
|---|---|---|---|---|---|
| | **ha** | **%** | **ha** | **%** | **%** |
| 2.0 or more | 1,998,642 | 94.8 | 2,544,631 | 95.7 | 27 |
| 0.25-<2.0 | 109,755 | 5.2 | 107,075 | 4.0 | -2 |
| Total | 2,108,397 | | 2,658,775 | | 26 |
| % woodland cover | 9.4 | | 11.9 | | |

Source: NIWT 2003

Forestry as a whole contributes less than 0.5% of GDP in the UK. In recent years, the cut of timber has been increasing (especially from the public sector, in spite of falling prices. The contribution of small-scale forestry to the total cut is negligible, as is its contribution to GDP.




Source: June Agricultural Census DEFRA, SEERAD, WAG

Figure 2. Changes in area of farm woodland 1981-2001 (000ha)

A recent study of English forestry's contribution to rural economics found that productive and traditional estate forests account for majority of jobs (4600 and 3400) compared to 1800 and 1200 in small farm and community woodlands (Public and Corporate Economic Consultants 2000). A review of WGS/FWPS 2002 for Scotland considered impact on employment figures: over period 1992-2002. Around 600-1,180 net additional jobs are estimated to have been created in the planting/establishment phase and when timber harvesting is included 1560-2140 FTEs will arise.

No public information exists on ownership types. Obviously a large number of farmers own woodland, most of whom still live on the farm. The farm population is ageing and there is recognition that intra-familial succession may not take place on many smaller farms. Much farmland that comes onto the market is bought by non-farmers for amenity reasons. Woodland is generally thought to create a premium on land values, largely because of its contribution to landscape, amenity and game management. The steady drift towards ownership of farms especially in more attractive and wooded regions (such as the Weald, the Chilterns and the English Marches in England) by entrepreneurs and rich people but as an amenity asset has major implications for the development of woodland as a commercial resource.

The volume and share of wood harvesting from small-scale forestry units is unknown but likely to be small, because of the absence of silviciultural management from the majority of such holdings.

NTFPs are likely to be very important to their owners but not often as marketed products. The amenity values are a major interest of most forest owners. Game is important to a significant number of owners and high-quality pheasant shoots are usually associated with a mixture of woodland and open country. In some parts of the UK a strong recent interest in edible fungi has promoted widespread collecting and small broadleaved woodlands are targeted by commercial pickers. Property rights are unclear and vary between different parts of the UK. Some estimates have been made for UK output of some NTFPs but figures are not regarded as reliable.

More highly wooded areas are often seen as attractive for residential and tourist use. Forest owners may or may not be engaged with tourism or recreational enterprises. However, many non-forestry tourist enterprises can still benefit from the landscape attractiveness conferred on areas through the presence of trees and woodland.

There are very distinct regional differences in the amenity uses of woodland. Pheasant shooting is predominantly in lowland areas and in some regions such as the Cotswolds, Suffolk or Hampshire may be an important facet of small woodland use. Deer are found everywhere that there are trees but shooting may be more difficult in areas with high-density rural populations and widespread recreational access. Gathering edible fungi is more important in the north and west of Britain due to frequency of occurrence rather than local demand.

### 2.3. Small-scale forestry practices

There are almost no studies of small-scale forest owners. The best researched area is those farmers who have planted farm woodland with grant aid, as ex-post evaluative studies have been conducted. Cobham Resource Consultants (1983) found that 56% owners of small woods said game was their motivation for planting.

In a Scottish review of WGS/FWPS the main objectives of owners were to enhance amenity, encourage wildlife, and improve habitats and landscape. Timber production was only an objective in 25% of cases. Very few existing woods have formal management plans.

Benign neglect is the most widely practiced style of management. Game management is common in some regions. This involves managing the woodlands almost exclusively for game shelter, especially with pheasants. Some woodland is widely used for deer shooting, although this can be as much a case of vermin control as game shooting. Many forest owners also extract firewood on an *ad hoc* basis.

Most small woodland is unmanaged. However, all new farm woodland is subject to an approved planting plan and there is greater likelihood of management of this type of woodland.

Most small-scale forest owners know little about the value of their trees and the problem of asymmetric information is endemic in the small-scale forest sector. Work in small-scale forests will normally be conducted by the landowner with respect to fuelwood. Most forestry tasks relating to commercial operations will be carried out by contractors. Often, the forest management advice will be outsourced, often to one of the larger companies like Tilhill, although there is also a significant number of forestry management microbusinesses. There is a wide range of forest contracting firms, though in regions with modest tree cover, there may not be great competition between contractors and small scale operations may be unattractive to many contractors.

There is a Small Woods Association, which promotes traditional management of small woods, but there are no associations or co-operatives addressing the general management and silvicultural needs of small-scale forest owners. There are national forestry societies, but the membership of such organisations is often associated with larger-scale forest holdings.

The share of self consumption of small woodland products is unknown but likely to be high. Most small woods do not generate profit. Owners do not invest with the expectation of any commercial return with the exception of farm forestry and challenge funded forestry, where the level of grant aid has been sufficient to encourage some landowners to engage in forestry for commercial reasons. However, the future earnings from timber are an inconsequential factor in that decision.

The loss of a tradition of farm forestry in the UK is attributable to the nature of rural land ownership in the UK. Woodland was normally the exclusive property of landowners, whereas by the 19$^{th}$ century most farmland was tenanted and farmers had neither need nor right to engage in woodland management. The rise of owner-

occupancy in the 20th century has not re-created a farm-forestry culture, due to low profitability of timber, modest support to existing woodland owners and reliance on imports.

Forestry (small or large scale) is still very much a part of the mixed land use estates where a number of tenanted farms co-exist alongside a home farm and areas of residential 'policies' and woodland. In such situations, game management, usually under the landowner's rather than the tenants' control is also a major land use.

There is virtually no evidence of specific innovation in small-scale forestry, although small-scale forestry inevitably has benefited from the developments in forestry as a whole, in particular tubes for enhancing the growth of new trees. Most equipment used in small-scale forestry is imported.

There is a growing interest in small-scale entrepreneurship relating to the use of wood fuel etc. There are some examples but these have rarely moved beyond exemplar status. Levels of wood-related activity remain very insignificant.

Given the modest skills of most small scale forest owners the majority of timber will be sold standing, felled by a contractor and probably sold by an agent who is likely to also be the woodland adviser/consultant to the owner.

### 2.4. Policy framework and production conditions

The Forestry Commission is the main regulatory authority that provides new planting grants and management grants and issues felling licences. Until recently, the grant systems in England Scotland and Wales were almost the same. New schemes are currently being launched in these countries, which reflect national forest strategy priorities and will lead to significant differences.

There are two general sets of grants that apply to small-scale forestry: these are the general grant schemes for forestry which provide new planting grants and grants for restocking; and second the farm woodland grants which provides compensation for up to 15 years for converting farmland into forestry. On farmland both grants can be used at the same time; indeed, this is implicit in the design of the scheme.

In addition, there are specific incentives in some specially designated areas, normally based on a desire to increase forest cover in tree-light regions or in damaged post-industrial landscapes. Some of these schemes are 'challenge-funded' and are based on tenders by landowners, which are then considered by an expert panel. In some cases, commercial timber production has a central role, though in many cases the principal objectives of landowners relate to amenity.

In general, it can be seen that the grants to small-scale forestry are designed to deliver multifunctional benefits. The grants and other payments are such that the value of the tree crop is almost immaterial in the decision to plant trees. Tree planting (except for replanting) is grant-driven not market-driven.

There are two key institutions: the Forestry Commission and the former agriculture ministries (now different bodies in England, Wales and Scotland). The Forestry Commission is both landowner and advisory body, and it is in the advisory/grant administering capacity that the Commission impacts on small-scale forestry.

The agricultural ministries are responsible for management of the Farm Woodland Schemes, which are administered under the EU-supported Rural Development Plans or the respective parts of the UK. There is a dual agency role in the delivery of the FWPS/WGS package at present, which may change as the FC takes on board such responsibilities.

Large-scale land ownership has been challenged in Scotland through the Land Reform Act 2003, which in crofting areas gives crofting tenants scope to acquire landlords' assets. This allows the collective purchase of land, including forestry, by local communities. The Forestry Commission in Scotland has responded to these changes by proposing state-sponsored sale of surplus public sector forest assets to communities under similar groundrules.

Other institutions that impact on small-scale forestry include the regional-level agencies, which manage the challenge schemes and a range of partnership bodies (e.g. Cumbria Broadleaves or Highland Birchwoods) which promote particular types of forestry in particular regions. There are some national level bodies, such as Coed Cymru in Wales and the Caledonia Partnership in Scotland, which have promoted native woodland management.

In relation to rural/regional development, the principal institutions in England are the recently formed regional development agencies, in Scotland the Enterprise Companies operated under a Scottish Enterprise or Highlands and Islands Enterprise umbrella. In Wales the equivalent body is the Welsh Development Agency. In the areas with greater levels of tree cover, these regional bodies have often taken an active interest in the local forest industry. However, their level of engagement with forest owners is very low.

The bulk of research work in forestry in the UK is carried out by Forest Research, which has two major research stations in the UK. In addition, some research is outsourced but still funded by the Forestry Commission.

Historically education has taken place in universities and colleges, with universities generating graduate foresters and colleges covering more craft-level diploma qualifications. The Institute of Chartered Foresters is a membership body with an explicit educational remit, though many foresters practice who are not members.

With the exception of the Forestry Commission's advisory support and the frequent presence of woodland advisers in municipalities, most forestry advice is provided by private sector consultants who range from one-man firms to subsidiaries of large forestry conglomerates of which the largest in UK terms is Tilhill Forestry, a subsidiary of UPM Kymenne.

### 2.5. Supporting and limiting factors for enterprise development in small-scale forestry and barriers to entrepreneurship

The biggest driver of entrepreneurial activity is the market for niche products created by an increasingly affluent population. However, the changing nature of small-scale forest ownership tends to mean that small-scale forests tend to be used for private amenity and game rather than more entrepreneurial activities.

The biggest barrier to entrepreneurial activity in small-scale forestry is thus the preferences and attitudes of forest owners, whose interests and activity with respect to their woodland are largely driven by amenity interests. For the larger-scale innovative wood processing forms the low quality/high extraction cost wood products of the small-scale forest sector afford little interest.

There is a craft processing sector that often uses local wood products and the small-scale traditional sawmills are increasingly selling into this artisanal/craft market. This sector may be entrepreneurial in its perspective, but many such firms are lifestyle businesses.

In general labour costs are relatively high in the UK.

## 3. Wood-processing industries

The UK's forest resource is small (11.6% of land area) in comparison with most European countries (46% of land area for Europe including Russia). Wood production is drawn almost exclusively from coniferous plantations and hardwoods now account for only 6% of the annual harvest. In 2003, UK forests supplied 8 million $m^3$ (under bark) to the wood processing industries. This is equivalent to 18% of Britain’s consumption (45 million $m^3$ wood raw material equivalent) of primary processed forest products (sawnwood, wood-based panels, pulp and paper). Britain's imports (82% of consumption) are drawn principally from Europe, North America, South America, S.E. Asia and West and Central Africa. The high import dependence means that the linkage between urban consumption of forest products and rurally based production of wood products has been very weak for over 100 years.

### 3.1. State of the art and historical development

UK wood production has increased from 3.7 million $m^3$ (over bark) in 1970 to 11.2 million $m^3$ in 2003, this growth coming wholly from the maturing softwood plantations. Table 6 illustrates the growth in production of primary processed products over the period.

Table 6. UK Production of Forest Products from Domestic Roundwood and Residues

| **Product** | | **1970** | **1975** | **1980** | **1985** | **1990** | **1995** | **2000** | **2003** |
|---|---|---|---|---|---|---|---|---|---|
| Sawn softwoods | 000m³ | 585 | 753 | 980 | 1560 | 1935 | 2106 | 2389 | 2683 |
| Sawn hardwoods | 000m³ | 734 | 572 | 610 | 261 | 336 | 189 | 103 | 70 |
| Particleboard | 000m³ | 300 | 520 | 620 | 1065 | 1517 | 2118 | 2561 | 2526 |
| Fibreboard | 000m³ | 95 | 75 | 75 | 125 | 175 | 408 | 700 | 835 |
| Wood pulp | 000 T | 434 | 318 | 306 | 400 | 595 | 639 | 517 | 504 |

Source UN/ECE

The expansion of the sawn softwood industry has been mostly by family businesses, and in the early development phase of the industry most of these were SMEs. However, there has been a growing concentration of production in the largest sawmills, largely because of scale economies. There has also been a consolidation of company ownership with the largest groups accounting for an increasing share of overall production.

The growth of the panels and pulp and paper sectors has been almost wholly in the hands of large multi-national companies, rather than domestically owned SMEs. The timber importing and merchanting sector, which traditionally traded only in imported wood products, is now also an important distribution channel for domestically manufactured products. This industry has also consolidated, though there are still many SMEs in this sector. Secondary wood processing industries (joinery, furniture) and paper industries (converting, packaging) have also experienced increasing consolidation in terms of unit size and ownership.

Cultures behind entrepreneurship

No comprehensive research has been undertaken in this field and the following comments are general observations.

Family business traditions and motivations were and still are strong drivers in the woodworking SMEs. Profitability, though obviously important, is not as rigorously pursued in many family businesses as in larger, corporate organisations. Innovation in the primary wood processing industries has relied largely on European, Scandinavian and North American technology (e.g. sawmill and wood panels equipment). There are some highly innovative SMEs in both primary and secondary processing sectors but access to finance is often a major constraint to capitalising on these ideas.

Over the last five years there have been conscious attempts by government agencies to encourage the development of industry clusters. The most successful of these is the Scottish Forest Industries cluster. The cluster's main activities include: lobbying government, promoting the use of timber, organising tours of overseas forest industries, disseminating technical and market information to industry, holding seminars and conferences. The cluster receives financial support from the Scottish Executive (the devolved administration for Scotland).

There is a strong craftsman culture and “lifestyle” ethos in bespoke furniture, joinery and carpentry businesses. Many of these are very small enterprises and are often rurally based. Some traditional crafts (such as coppice-based products) have declined, as markets have been lost to imports or non-wood materials.

Studies on wood industries

There is no central compendium of current studies/research projects on the UK wood processing industries. Consultancy reports have recently been undertaken (December 2004) on the future development of forest industries in Scotland and Wales. Research areas of the major research institutions are show in Annex C.

### 3.2. Wood processing industries

Structure of wood industries

Table 7 shows the trend in the number of establishments in the primary wood processing industries from 1990-2003. The decline in sawmills and round fencing manufacturers is clearly seen. The largest pulp mill has recently ceased production of wood pulp and converted to using 100% recycled fibre. Two smaller panel mills closed in 2003.

Table 7. Number of establishments in the primary wood processing industries using UK grown roundwood

| Year | Sawmills | Pulp and paper mills | Woodbased panel mills | Round fencing manufacturers (GB only) | UK total |
|---|---|---|---|---|---|
| 1990 | 3361 | 4 | 11 | - | - |
| 1995 | 459 | 4 | 11 | 131 | 605 |
| 2000 | 305 | 4 | 10 | 85 | 404 |
| 2003 | 250 | 3 | 8 | 64 | 325 |

Source: Forestry Commission

Details of the size and country distribution of sawmills is given in Table 8.

Table 8 Number of sawmills in the United Kingdom in 2003

| Size category Production | UK | England | Scotland | Wales | N Ireland |
|---|---|---|---|---|---|
| <1000m3 | 96 | 58 | 23 | 7 | 7 |
| 1000-4999m3 | 84 | 50 | 24 | 4 | 6 |
| 5000-24999m3 | 43 | 17 | 18 | 7 | 1 |
| 25000-49999m3 | 12 | 4 | 5 | 2 | 1 |
| ≥50000m3 | 16 | 4 | 9 | 2 | 1 |
| Total | 250 | 133 | 79 | 22 | 16 |

Source: British Timber Statistics 2002 and Forest Service

There are no published data on distribution of companies in each industry sector by number of employees or turnover.

Value added along the wood chain

There are no regularly published figures of value added along the wood processing chain. However, multiplier studies of the forestry sectors in Scotland and Wales were undertaken in 1999 and these provide detailed analyses of the economic impact of an expansion and decline in forestry activities on the economies of both countries.

Table 9 gives a summary of the economic characteristics of forest growing, harvesting, haulage and primary wood processing in Wales. The figures on gross output (row 4) give an indication of values along the chain.

Table 9. Economic Characteristics of Forestry Related Sectors in Wales: 1998*

| Sector | All Forest Sectors | Private Estates etc *** | Harvesting and Allied Contracting | Haul age | Sawmills | Panel Board and Paper |
|---|---|---|---|---|---|---|
| FTEs** in Wales | 3,281 | 728 | 846 | 215 | 557 | 936 |
| FTEs in Rest of UK | 649 | | 90 | | 45 | 514 |
| Total FTEs | 3,930 | 728 | 936 | 215 | 602 | 1,450 |
| Gross output £000s | 403,448 | 16,533 | 43,474 | 9,352 | 47,253 | 286,837 |
| Average Gross Wage £000s | 17.6 | 10.4 | 19.6 | 15.1 | 13.6 | 24.4 |
| Total non-wage spend in Wales £000s | 81,673 | 5,605 | 9,293 | 2,152 | 26,031 | 38,592 |
| Total Forestry related purchases in Wales £000s | 52,133 | 4,197 | 3,875 | 0 | 23,514 | 20,548 |
| All other non-wage spending in Wales £000s | 29,540 | 1,408 | 5,419 | 2,152 | 2,517 | 18,044 |
| Imports (UK and Overseas incl labour) £000s | 166,621 | 1,354 | 4,302 | 1,852 | 5,703 | 153,411 |

Notes:
financial figures £000s 1996 prices;
**FTEs are full-time equivalent jobs.
*** including forest management companies, nurseries, and farm woodlands.
Row totals may not balance because of rounding

**Share of imports and exports of the wood processing industries.**

Imports dominate the UK forest products market and consequently the vast bulk of domestic manufacturers' products are aimed at the UK market. A comparison of imports and exports by broad product category is shown in Table 10. Figures are in thousands of $m^3$ wood raw material equivalent. In 2003 imports were the equivalent of 49 million $m^3$ (WRME) and exports 13 million $m^3$ (WRME). Imports are concentrated on sawn softwoods, wood-based panels, pulp and paper. Exports are mainly of wood panels, paper (based primarily on imported pulp and recycled fibre) and recovered paper where exports are growing rapidly. SMEs play a very small role in exporting.

Table 10. UK imports and exports (WRME volumes) thousand m³ WRME underbark

| | **Wood (round and sawn)** | | | **Paper and Paperboard** | | | **Total** |
|---|---|---|---|---|---|---|---|
| | Softwood | Hardwood | Wood panels | Paper | Pulp | Recovered Paper | |
| | | | Imports | | | | |
| 1995 | 12 536 | 1 432 | 5 150 | 15 930 | 8 447 | 677 | 44 172 |
| 1996 | 13 335 | 1 659 | 5 372 | 16 564 | 7 929 | 250 | 45 107 |
| 1997 | 13 977 | 1 614 | 5 970 | 17 803 | 8 171 | 211 | 47 746 |
| 1998 | 14 070 | 1 514 | 6 312 | 17 244 | 7 542 | 161 | 46 843 |
| 1999 | 13 784 | 1 464 | 6 160 | 17 439 | 7 518 | 179 | 46 543 |
| 2000 | 15 263 | 1 767 | 6 825 | 16 493 | 7 865 | 400 | 48 613 |
| 2001 | 15 278 | 1 855 | 7 102 | 18 614 | 6 985 | 144 | 49 977 |
| 2002 | 16 131 | 2 016 | 8 279 | 15 500 | 6 951 | 213 | 49 089 |
| 2003 | 17 274 | 2 392 | 8 030 | 15 160 | 6 515 | 280 | 49 651 |
| | | | Exports | | | | |
| 1995 | 290 | 81 | 718 | 3 355 | 158 | 762 | 5 364 |
| 1996 | 201 | 82 | 756 | 3 407 | 55 | 912 | 5 414 |
| 1997 | 203 | 93 | 985 | 4 193 | 22 | 1 341 | 6 838 |
| 1998 | 300 | 367 | 956 | 4 004 | 98 | 1 240 | 6 964 |
| 1999 | 391 | 193 | 1 359 | 4 071 | 124 | 1 311 | 7 448 |
| 2000 | 502 | 347 | 1 206 | 3 900 | 32 | 1 712 | 7 699 |
| 2001 | 833 | 277 | 1 467 | 3 532 | 12 | 2 033 | 8 154 |
| 2002 | 833 | 239 | 1 597 | 3 355 | 23 | 3 454 | 9 501 |
| 2003 | 1093 | 481 | 1 882 | 3 653 | 5 | 5 459 | 12 572 |

Source: UK Overseas Trade Statistics and conversion factors to WRME.

### 3.3. Wood processing industries practices

Current small and medium scale practices

SMEs dominate activity in timber harvesting, timber haulage and sawmilling. They probably account for between 50% and 60% of roundwood consumption in the sawmilling industry. These companies import virtually no raw material and export very little of their output.

Economic characteristics

Profitability of sawmilling is relatively poor and many SMEs have inadequate access to capital to finance plant modernisation and innovation. The bulk of recent expansion of sawmilling production has been in the larger sized SMEs. The smaller SMEs are mainly family businesses and the larger ones private limited companies. Statistical information on the educational background of managers in SMEs is not available. In the smaller SMEs, most managers probably have high school level qualifications but in the larger SMEs there is likely to be a higher proportion of graduates in management. There is a serious shortage of skilled workers in timber harvesting and in the woodworking industries.

Employment in the primary wood processing industries totalled 10,600 persons in 1998/9 (see Table 11) about one third of the sector.

Table 11. Employment in forestry and primary wood processing industries 1998/9

| **Employer**[1] | **GB** | **England** | **Scotland** | **Wales** |
|---|---|---|---|---|
| Forestry Commission | 3,909 | 1,331 | 2,011 | 567 |
| Private woodland owners | 8,425 | 4,242 | 3,196 | 987 |
| Forestry companies and contractors | 4,598 | 2,077 | 2,223 | 298 |
| Wood processing industries | 10,628 | 5,581 | 2,917 | 2,130 |
| Other employers | 1,972 | 1,508 | 347 | 117 |
| Total | 29,532 | 14,739 | 10,694 | 4,099 |

Sources: Forest Employment Survey 1998/9
Notes: [1] Figures include work by contractors as well as employees in full time equivalents

Many sawmilling SMEs manufacture commodity products and sell into fiercely competitive markets. Competitiveness focuses largely on production cost competitiveness rather than on qualitative factors. There is a major need for most SMEs to develop higher value markets with new or modified products which will help to move them away from commodity markets.

Characteristics of innovative behaviour.
The more successful SMEs have expanded their business through innovation in new products and markets and investment in new plant and machinery. These companies tend to be the larger SMEs.

Rate of formation of enterprises
Networking between SMEs has developed over the past 5 years, particularly in Scotland and Wales through initiatives by the devolved governments in providing financial support for cluster organisations. This has developed furthest in Scotland where there is a very active "Scottish Forest Industries Cluster".

In 2003 the approximate number of registered businesses in the sector were as follows:

- forestry and logging 2750
- sawmilling and planing of wood 850
- manufacture of wood based panels 160
- manufacture of pulp, paper and board 370

Over the past decade the number of businesses in each of these divisions has fallen, particularly in the processing industries. This has been due to industrial consolidation and closure of small businesses.

### 3.4. Policy framework and production conditions

Main wood industry policy institutions-national and regional.
Constitutional changes in 1999 established governments in Wales and Scotland with local responsibilities. Forestry and industrial support / development are devolved functions. Each country (England, Scotland, Wales) has formulated forestry policies which differ quite considerably and there are variations by country in the level and mechanisms for government support for forest industry development. It is strongest in Scotland and this reflects the higher share of the forestry sector in the Scottish economy compared with England and Wales.

Organisations providing financial and business support for the forest industries within each country include:

- The Forestry Commission
- Development Agencies (e.g. Welsh Development Agency, Scottish Enterprise)
- European Union through regional and structural policies e.g. Objective 1

At UK level, support is given for selected types of industrial development by the Department of Trade and Industry, the Department of Transport, Environment and the Regions and the European Investment Bank.

Main reform policies and policy incentives

There have been no major macro economic policy reforms over the past 10 years such as privatisation, international trade policies or price liberalisation that have impacted in a major way on the forest products industries. However, strong macroeconomic management has led to a strong pound and created major disadvantages for domestic producers whose prices can be readily undercut by imports. However, a number of other policies have seriously affected or will soon affect the sector.

These include:

- Policies to encourage the use of recycled materials. These include EU packaging waste regulations and the imposition of rising charges for disposing of waste in land fill. These policies have led to a sharp increase in the use of recycled fibre in paper making and recycled wood in board product manufacture. Both these developments have had a strong negative impact on the market for small diameter roundwood and sawmill co-products.
- Renewable energy policies. The UK government has set targets for the proportion of electricity generated from renewables. Renewable sources currently account for 3% of electricity production and the target for 2010 is 10%. The fastest growing renewable source is wind. However, there are now several incentives for investment in biomass energy, particularly for heating purposes in the home, commercial and institutional buildings. This might result in a major new market for small roundwood and forest residues.
- The "climate change levy" on energy-intensive industries. Energy-intensive industries, including the paper and panels industries, are encouraged to reduce energy costs by offsetting a fossil fuel energy surcharges by improving their efficiency of energy use or by producing / buying renewable energy.
- Public procurement of sustainably / legally produced timber. In 2004 the government established a Central Point of Expertise on Timber Procurement (CPET) which will ensure that all timber used in government and other public sector buildings is supplied from legal sources. Certified timber (FSC, PEFC) will satisfy these requirements. Non-certified timber will still be usable if it can be shown to come from legal sources. As most timber from British forests is certified, this policy may benefit the domestic industry. It is likely that these government requirements will be taken up by the private sector in the longer term.

**Main policy (including financial) incentives available to wood industry that directly influence management behaviour**

Incentives are available under regional development programmes usually for capital equipment and training, but in some situations there may be assistance with finding premises.

**Extension and consultancy services.**

Regional development agencies (e.g. Welsh Development Agency) provide some extension services to SMEs e.g. supporting formation of cluster organisations, providing business advisory services. There are several well-established consultancy organisations, some British others international, servicing the sector.

**Bureaucracy**

No data are available on the number of projects supported by development agencies. Some SMEs consider that development agencies are poor at stimulating the development of innovative businesses. Weaknesses cited include:

- inflexibility of support mechanisms and slowness to react
- suspicion/failure to understand entrepreneurial and creative ideas in SMEs
- excessive attention to short-term job creation by the business rather than long-term business growth and innovation.

### 3.5. Supporting and limiting factors for enterprise development in wood processing industries and barriers to entrepreneurship

**Factors supporting enterprise development.**

- Growing supply of wood from coniferous plantations.
- Scope for reversing the decline in hardwood production.
- Slowly growing recognition of the environmental benefits of wood products in comparison with competitive materials.
- Support mechanisms from Forestry Commission and development agencies.
- Wealth of innovative ideas and enthusiasm for product development in many SMEs.

**Factors limiting enterprise development based on British grown wood.**

- Dominance of imported supplies of wood products.
- Poor quality of softwood and hardwood resource.
- Declining supply of skilled woodworking workforce.
- Poor image of industry by young people.
- Lack of wood culture in major consuming industries e.g. construction.

**Barriers to entrepreneurship.**

- Confusion among SMEs about support mechanisms. This arises from the large number of organisations and schemes available for support. These vary by region, some are for specific types of development e.g. wood energy and others are generic across all sectors of industry.
- Inflexibility of support mechanisms, slowness to react, conservative attitudes to new ideas, over reliance on short-term job creation as a criterion for support.
- Access to finance by SMEs
- Poor market data available to SMEs

**Policy and research implications.**

- Policies and research needed to enable SMEs to develop and test new products
- Policies needed to improve information on the environmental benefits of wood products (e.g. Life Cycle Analysis) and to communicate this information to industry
- Policies needed to improve the image of forestry and wood and to encourage young people to seek training in woodworking industry skills

## 4. Non-wood forest products and services

The closest to a definition of NTFP for the UK is that promulgated in Scotland on the NTFP web site hosted by the Royal Botanical Gardens Edinburgh and funded by the Scottish Enterprise through the Scottish Forest Industries Cluster (see Box 1).

Box 1. NTFP Scotland definition

> Non-timber forest products (NTFPs), also known as *non-wood forest products* (NWFPs), include all materials supplied by woodlands except timber.
> Scottish woodlands provide a wide range of such products, including wild and managed game, edible and medicinal plants and mushrooms, foliage, seeds, bark, resins, dyes and craft materials.
> http://www.forestharvest.org.uk/

The NTFP Scotland definition is fairly conventional in its focus on woodland materials but many of the products are also found in hedgerows and open moorland and reports on such products generated by non-foresters have taken a broader view of the subject and used a variety of terms including:

- non-timber woodland products' Dyke (2001)
- wild living resources' Murray & Simcox (2003)
- wild and traditionally managed plants' Sanderson & Prendergast (2002)
- wild harvest' Prendergast & Sanderson (2004)
- woodland and hedgerow products' Wong & Dickinson 2003

The only consensus seems to be the distinction between 'wild' products and those which are cultivated whether they are harvested from forests or not. A further confusion is the that use of the term 'NTFP' to refer to products such as the industrial use of cellulose as a chemical feedstock by some in the wood science community. Regardless of this, all these definitions are concerned only with biological products. However, the definition of Mantau (2004) which has been adopted for this report also includes market and non-market services. For many years now the multi-purpose nature of forestry has been recognised in UK policy in which the social function of forests is prominent. Recent work by Slee *et al.* (2003) indicates that many of the social values of forestry translate into real incomes and cash transfers into local communities and the authors suggest that forestry impacts on rural development in four areas:

- **Forest production**, including forest-related work and the upstream and downstream connections of forestry on employment and income;
- **Green infrastructure** effects (the forest 'halo') on surrounding economic activity, for example through the encouragement of households or firms to move into the area, or through increased turnover of recreational and tourism businesses attributable to the forestry and woodland.

- The **non-market values** of forests and woodland, which although not generating immediate regional income, do create a contribution to national green accounts.
- The **social values** attributable to forests and woodlands, which range from their contribution to symbolic capital and community identity to their contribution to social capital building.

The biological products which are generally the focus of classic interpretations on NTFPs fall, alongside timber under 'Forest production'. Since the cash market for carbon credits is as yet undeveloped in the UK these values have been placed alongside biodiversity and other environmental goods i.e. water quality under non-market values. Although social capital is also a non-market value it is significant in providing infrastructure, particularly marketing, for the development of NTFP based enterprises i.e. the margins which accrue to the cache or cultural value attached to wild, local and traditional products.

### 4.1. State of the art and historical development

The mass movement of people from the country to cities consequent on industrialisation took place in the UK during the mid 19$^{th}$ century. Their descendants now four or more generations away from the land and living in a post-industrial society are dissociated from the realities of rural production (significant numbers of urban children think cotton comes from sheep and that oranges are grown in the UK). This means that demand for non-timber forest products from most people is low or non-existent. Niche markets exist for traditional products including herbal medicines, wild foods, woodcraft such as baskets and bodging (rustic furniture made from green wood). However, even among those which are derived from native species, there are only a few that are made from UK sourced raw materials e.g. sloe gin is a traditional liqueur but much of it is made from pulped sloes (*Prunus spinosa*) imported from eastern Europe. Interest in natural products is experiencing rapid growth and this provides significant opportunities for the development of new forest product based enterprises (see below).

Of more overall significance is urban demand for access to the countryside and forests for recreation, aesthetic landscapes and conservation (albeit the 'feel-good' of knowing that we still share our island with wild animals and plants rather than consumptive use). The relatively small size and communication infrastructure of the UK means that much of the countryside is easily accessible to urban people and can be deemed to be peri-urban. Over the past few years the tension between urban demand for services and rural, productionist sensibilities has been growing. This has been brought to the fore with the controversial Hunting Bill, which will ban hunting with dogs in the UK from February 2005. This promises to bring about civil protests and even a judicial challenge to the use of the Parliament Act to get the Bill past objections in the House of Lords which would have constitutional implications[1].

[1] The following web sites provide further information on the scale of discontent over these developments.
http://news.bbc.co.uk/1/hi/talking_point/4012743.stm
http://news.bbc.co.uk/1/hi/in_depth/uk/2002/hunting/default.stm
http://www.defra.gov.uk/rural/hunting/default.htm

There are various ways in which urban demands are communicated to forest managers. Public demand for forest services is expressed through civil society (letters to newspapers etc.) and special interest groups. It is possible to recognise two groupings of NGO interest. There are those mostly concerned with amenity (landscape quality) and public access for recreation e.g. Council for the Protection of Rural England (www.cpre.org.uk), Council for National Parks (www.cnp.org.uk) and the Ramblers Association (www.ramblers.org.uk). The second group are those which are concerned with conservation e.g. Royal Society for the Protection of Birds (www.rspb.org.uk) and Woodland Trust (www.woodland-trust.org.uk). The FC also undertakes its own surveys of forest use and amenity and recreation feature strongly in these. These concerns are also reflected in representations from statutory agencies such as Scottish Natural Heritage (www.snh.gov.uk), English Nature (www.englishnature.gov.uk) and Countryside Council for Wales (www.ccw.gov.uk).

These concerns are reflected in policy in each country within the UK as policy statements such as those for England in Box 2.

Box 2. English Forestry Strategy

| |
|---|
| Woodlands and forests can provide timber, enhance the beauty of the countryside, revitalise derelict and degraded landscapes, reduce pollution, improve health, and enhance wildlife habitats. Woodlands can also generate employment, provide opportunities for sporting and recreational activities, and improve the quality of life in and around towns and cities by screening development and improving the setting for housing and industry. Few other land uses can boast such a diverse range of benefits. |

The founding principle of UK state forestry to provide a strategic timber resource in case of war is long gone and the current perception in UK forestry is that forests should provide social benefits which are perceived to be mainly related to provision of amenity and recreation. Nevertheless there remain important production roles for the forests and direct economic links between forests, urban demands for services and rural development. As pointed out by Slee *et al.* (2003) the balance between different demands, products and services varies dramatically between locales even within England and this needs to inform analysis and development of development options and constraints for forest-based rural development.

Forest and tree-based biological products

The recent downturn in incomes from timber as well as increasing interest in natural, 'lifestyle' products has prompted an examination of the potential for income generation from NTFPs across the UK. Reports funded by forestry, economic development and conservation interests have been prepared for England, Scotland and Wales (see list below). The consensus of these reports are that there is significant demand for natural products for natural products and this is set to grow in the near future, however, there are only modest levels of enterprise activity. There are several constraints on development of forest product based SMEs based on UK-sourced materials which are likely to constrain the exploitation of UK NTFP markets. The most significant of these are listed below.

- Processors require large volumes, as cheap as possible and available at on schedules to suit manufacturing timeframes – this is difficult for small scale SMEs to deliver and the fragmented nature of UK forests mean it can be difficult for a collector to access large volumes as this may require agreements with many landowners.
- Urban consumers are not discerning and are hardly aware of which products are made from plants native to the UK, let alone being prepared to demand or pay a premium for UK sourced ingredients.
- The price for wild-collected products is heavily dependant on labour costs. Labour rates acceptable to UK people mean that products cannot compete with imports on price as labour rates are lower elsewhere, particularly in eastern Europe.
- Seasonal and manual labour in rural areas is in short supply and a major impediment to the development of the rural economy. Several larger-scale pickers overcome this problem by importing seasonal labour gangs from outside the UK.
- Market linkages between urban areas and the rural hinterland are very weak and disappearing – there is only one traditional seasonal market left for Christmas foliage in the UK.
- For some products, UK sources are not capable of meeting demand which means imports will still be needed.

Several of the larger SMEs which specialise in collecting NTFPs overcome these problems by taking out licenses to collect over large areas, operating in the grey labour market (cash in hand without paying taxes), using imported, seasonal labour (often from eastern Europe) and not offering woodland owners any income (much collection even under license is effectively free). Until recently, most woodland owners were content to allow harvesting even when it was blatantly commercial, free of charge as a contribution to the local economy. However, farm and forestry incomes in the UK have fallen dramatically in recent years and are unlikely to recover in the short term. This means that woodland owners are now actively seeking alternative forest-based incomes and looking for opportunities to generate income from commercial activity on their land. Farmers are also seeking to diversify their incomes and this presents an opportunity to more closely integrate economic activities on farms and adjacent forests.

The small scale and specialist nature of possible NTFP enterprises means that products do best if they are niche marketed. Scoping available products in a locality and determining which, if any, could be successfully niche marketed, is something which is beyond the capacity of many relatively isolated farmers and foresters. In areas with Objective 1 status (much of rural Wales and Cornwall) there are farm diversification programmes in place to support enterprise development with business advice and soft loans as well as Leader and other development initiatives. Although these have been successfully used to develop NTFP-based enterprises (e.g. mushroom cultivation in woodlands in south Wales support by Leader) there is little strategic development of woodland products and developments in NTFPs depends upon innovation among farmers and woodland managers. There is no lack of innovative thinking among these communities but it seems that many ideas fall foul of the straitjackets inherent in the measures and business plans of the programme managers and fall between the cracks between the agriculture, forestry and horticulture sectors. It takes a particularly innovative business advisor to be able to pitch an idea to the right support programme in the right manner. The lengthy and oftentimes intrusive application process is also off-

putting to new entrepreneurs and opportunities can have passed before application are processed. The spending constraints on grants or loans received e.g. the need to have competitive tenders from a list of approved contractors also pushes up prices so that it is hardly worthwhile taking up grants. As a consequence, most genuinely innovative enterprises and many started by competent entrepreneurs that are likely to succeed are developed and funded without state assistance and this is likely to remain the case. This leaves the development agencies to support those seeking to emulate successful enterprises. However, niche markets for speciality products can be easily overrun and there is a need to protect the interests of existing enterprises as well as avoiding market saturation in a manner that still provides for open marketing of opportunities.

Besides providing the normal SME development support of easy loans, cash grants for computers etc. the following are areas that could be addressed by rural development agencies to promote entrepreneurship in the NTFP sector:

- co-funding or commissioning of R&D on sustained yield management (distribution, biology and productivity) of products with highest potential for SME development;
- support to development of rural labour infrastructure;
- promotion of native and locally sourced products;
- labelling of forest products (organic or UKWAS);
- organisation of marketing initiatives.

Recreation and tourism

Woodlands in the UK are recognised as having been used for recreational purposes since the medieval period; by which time many forests were predominantly used as royal hunting reserves rather than sources of timber. Over the years and particularly after the onset of the industrial revolution, increasing urbanisation moved people away from the countryside with a large proportion of the population being effectively alienated from the country and only the wealthy able to make recreational use of forests. Increasing mobility and affluence through the 19$^{th}$ century, however, meant that more and more urban people could indulge in leisure activities in the countryside and this lead to the formation of groups such as the Forest Ramblers Club in 1884. Demands for recreational access to countryside culminated in the Kinder Scout Mass Trespass in 1931. Since this time the Forestry Commission (FC) has recognised the importance of informal leisure use of state forest land and throughout the 20$^{th}$ century the FC, has been a key provider of forest recreation and tourism opportunities. Initially this was through the development of Forest Parks, the first such park being founded in Argyll in 1935. However, it was not until the 1970s that recreational use of state forests was promoted on a wider scale through the establishment of car parks, picnic sites, walking trails and interpretation. These latter facilities were developed mainly as non-market resources for public benefit. At the same time, a small state run market enterprise, called Forest Holidays, was established by the FC, to provide accommodation (cabins and camp sites) in state forests across the country.

During the 1980s, state-owned forests were threatened with privatisation. However, public outcry in the face of the potential loss of what was regarded as an important recreational resource, was instrumental in preventing this move. Throughout the 1990s, leisure facilities in state forests have been expanded and improved upon to meet the needs of increasingly diverse, specialised and informed groups of users. Some

developments, such as the mountain bike trails, have particularly responded to increasing demand for recreation from wealthy urban consumers. Others, such as wildlife watching facilities, respond to a rising societal concern and interest in biodiversity and the conservation of the natural environment. These facilities have been funded primarily through the revenue gained from the sale of timber. More recently, with the declining profitability of domestically produced timber, grants (from within and outwith the public sector) and, to a lesser extent, visitor charging, have been increasingly important sources of funding for the development and improvement of leisure facilities. At the same time, however, (and in some cases in conflict with the need to generate revenue), recreation in state forests is increasingly viewed in terms of its current and potential benefits for public health and well-being, education, social inclusion and cultural diversity.

Whilst the FC continues to be a key player in forest leisure provision, the last fifteen years have seen a broader range of organisations and individuals providing such services, for example, non-government organisations (like The Woodland Trust), community groups and innovative individual landowners (particularly new forest owners). Centre Parcs, a large scale commercial forest tourism enterprise providing self-contained holiday resort complexes in forest settings, has also entered the market and caters, largely, for urban-based consumer demand.

Large country estates have traditionally been integrated and diverse enterprises and are often very innovative. Having access to large-scale land and capital investment means that they can afford to invest in new enterprises. They are increasingly diversifying into recreation and tourism providing for example, saw mill demonstrations, go-karting and quad biking, pheasant shooting , falconry displays, bed and breakfast and shops selling home produce (see for example, the Rothiemurchus estate in Scotland).

Over the last ten years, the introduction of certification under UKWAS has also emphasised the importance of using forests for a wide range of purposes including recreation. Woodland grants from the FC and the impacts of new access legislation (see later), are also driving forces behind the increasing provision of recreation and tourism activities within privately owned forests. These policy related instruments have been augmented by the declining profitability of domestically produced timber with forest owners and managers becoming increasingly interested in the development of forests as potential sources of recreational and tourism-based revenues.

Definition, classification and relevance of forest recreation and tourism in rural economies

‘Recreation’ and ‘tourism’ are usually seen as being part of the wider ‘leisure’ sector. That is, product and service providers catering for activities which people take part in during non-working hours. Whilst the forestry sector, particularly FC, tends to refer to any leisure activity as ‘recreation’, there are important distinctions between recreation and tourism activities. Following Hall and Page, 2002, the tourism sector can be distinguished from the recreation sector in that it focuses on catering for leisure activities which people carry out during visits which involve an overnight stay away from home. As such, tourism often involves people purchasing accommodation, food and drink and is characterised by the injection of money *into* local economies. The

recreation sector on the on hand caters for people taking part in leisure activities, which do not require them to stay away from home overnight. Recreation too however involves people purchasing goods and services but it is characterised as promoting the circulation of money *within* rather than into local and regional economies (ibid). Clearly there are overlaps between the tourism and recreation sectors in that many of the products and services offered primarily for recreation, are also used by tourists, and vice versa.

In the UK, the FC considers informal leisure to be a public good and users are not charged to enter state forests. There are however, commercial elements within state forest recreation provision. As was noted earlier, in the 1970s the FC established a Forest Holiday business providing cabins and campsites within some of the woodlands under its management. With declining revenue from timber sales, there has been increased pressure on FC to find alternative sources of funding for recreation development and maintenance. This has led to the introduction of charges for certain recreation products and services. Since the 1990s, the FC has charged for car parking at some of its recreation sites with a high level of facility provision. FC visitor centres have also increasingly turned to market enterprises such as shops and cafes to provide revenue for their maintenance. More recently, the development of a number of specialist mountain bike trails has lead to the establishment of bike hire facilities and associated services (such as jet sprays for cleaning bikes) in forests. At a few forests, specialist trails, such as the 'Go Ape' tree top trail at Thetford Forest in the East of England, and forest drives, are also charged for. The FC special events programme, involving activities such as rally car racing, music festivals and laser shows, has also developed in the last five to ten years. Participants and/or spectators are charged to enter these events and as such they generate significant income to the FC. However, some events do fail to cover their costs.

Commercial enterprises are often run in partnership with the private sector and thus can play a role in local rural development, for example, visitor centre shops, cafes and bike hire facilities are often franchised to local entrepreneurs. Many of the mountain bike trails are also delivered with sponsorship from the private sector (see the mountain biking case study). Forest Holidays is also soon to be managed under a public-private sector partnership agreement.

Recreation provision is similar within other (non-state) parts of the forestry sector, with access and trails being provided on a predominantly non-market basis, with certain specialised activities and services, for example, quad bike riding, guided walking tours, accommodation and activity centres, being commercial concerns. As such, recreation and tourism products and services contribute significant incomes to both the state and private forestry sectors. Questions are however being raised about the extent to which the provision of recreation as a non-market public benefit in state forests is undermining the ability of the other parts of the forest sector to develop, particularly commercial recreation facilities (see mountain bike case study for further details).

As well as providing economic benefits (and costs) to land owners, forest recreation facilities also have economic impacts within the wider areas in which they are located. For example, they can help attract visitors to the area, increase the length of time people

stay in an area and also enable the establishment of market enterprises who use the biological and man-made resources of forests to provide a range of leisure services, such as food and drink, guided walking and horse-riding tours and nature photography courses. They also enable the establishment of enterprises providing product and services which more directly form part of the non-market products and services of woodlands, for example bike hire companies in areas where mountain bike trails are located (see mountain biking case study).

There have been several studies of the economic value of forest recreation and tourism in the UK. Willis *et al.* (2003) estimated the annual value of forest recreation to be £392.65 million and the annual value of the forest landscape to be £150.22 million. The FC is currently funding work to be undertaken to explore the economic value (consumer surplus) and economic impacts of different forest leisure activities (for example walking, mountain biking and wildlife watching). In relation to tourism, Hill *et al.* 2003 found that in 2002, forest related tourism expenditure associated with tourism day visits generated around £2.3 billion (3% of total tourism expenditure in the UK). Across six case study areas, an average of 13% of total tourism expenditure incurred by visitors to the countryside was considered to be 'forest associated expenditure'.

Complementing these quantitative studies, has been the Leisure Landscapes research project (Martin forthcoming). This has produced qualitative information relating to the role of forests to local rural tourism economies. It revealed the important role of forests to rural tourism businesses in terms of their contribution to positive tourism area identities and increasing the breadth and depth of holidaymaker experiences. The work also examined the ways in which the biological materials (for example berries and mushrooms) and man-made products and services (for example trails and interpretation) in forests can be utilised by enterprises to generate revenue for example through the provision of guided walking tours, mountain bike hire and wild life watching tours. The study revealed the considerable potential there is to strengthen the relationship between forest managers and local tourism enterprises, through a greater sharing of resources (monetary and non-monetary) to increase the quality of recreation and tourism provision and the benefits gained from such provision to the forestry and tourism sectors. Indeed, one the critical issues facing the forestry sector is how the costs and benefits of non-market forest recreation provision maybe apportioned more equally between land managers and local enterprises.

Property rights regulation system for forest recreation and tourism

Property rights of FC forests rest with the state (the devolved administrations in Scotland and Wales). Non-FC forest property rights rest with a range of private individuals and businesses, community groups and non-governmental organisations. In Scotland, a proposal to increase the opportunities available to community groups and other bodies to purchase or lease National Forest Land is currently under-going consultation (www.forestry.gov.uk/consultations).

The 1919 Forestry Act regulates the use of forestry land as well as national and local land use planning regulations. All state forests are open access resources and thereby allow free public access by foot (with use subject to FC bylaws). A permit system is operated for some modes of access (for example motorized vehicles and in some areas,

horse riding) and for large groups and special events. Generally permits are issued in order to ensure the necessary provisions for public health and safety have been made, rather than to generate revenue. Permit costs therefore tend to only reflect administration costs of the permit schemes. FC also operates a voluntary Forest Code governing the behavior of recreational users of state forests.

More broadly, countryside access is governed by national legislation, with new access legislation currently in the process of implementation. In Scotland, the Land Reform Legislation gives a right of public access (by all forms of non-motorised transport) to all land (including forests and woodlands) and inland water. The 'Scottish Outdoor Access Code' has been developed to set out the law with regard to public and land managers rights and responsibilities within the act. Whist allowing for responsible recreational use of the countryside, the act does not confer the right to hunt, fish or shoot on public access land or to take away anything in or on the land for commercial purposes.

In England and Wales, the Countryside Rights of Way Act makes provisions for a revised network of public rights of way and the designation of 'open land' (within which the public have the 'right to roam'). Unlike the Scottish legislation, the public only have rights of access along public rights of way or within 'open land' and only access on foot is permitted. Although forests and woodlands are generally not covered by the act (except where they constitute 'open land'), the act gives forest and woodland owners the right to designate land for public access 'in perpetuity'. The FC in England and Wales has made a commitment to designate, wherever possible, the land under its ownership for public access. Access provided under the act is governed by the Countryside Code.

Overarching all of these are the provisions of the UK Woodland Assurance Scheme (UKWAS 2000), which is the UK forest certification scheme. This makes provision for the incorporation of recreational services into woodland management.

The inclusion of forests and woodlands in the Scottish legislation and the ability for any owner to designate forests and woodlands as open access resources in England and Wales should serve to increase the supply of forest and woodland for recreation. Whether owners then engage in entrepreneurial activities to exploit these opportunities for commercial enterprise, remains to be seen. The FC in the East of England is piloting a toolkit which provides guidance to those interested in developing forest recreation facilities. If the pilot is successful the toolkit may be rolled out more broadly within the UK.

Green infrastructure and local development

For many years recognition of the social and cultural significance of forests, wooded landscapes and trees in the UK has been a driver for forest policy and strategic management. However, the recognition that the presence of forests and trees in the landscape have a measurable and significant impact on local economies is relatively recent. Slee *et al*. (2003) undertook a study of two regions in England for the Forestry Commission which examined the incomes derived from forestry using a mix of interviews, income and employment multipliers, benefit-transfer and interpretative methods. The results (see Table 11) indicate that the residential halo is many times

greater than timber-based incomes. Likewise, even though recreational facilities within the forests are free, the local economy can turn these into incomes and livelihoods through tourism enterprises.

Table 11. Regional forestry-based incomes (£ millions per year)

| **Income derived from forest dependant:** | **Mid-Bedfordshire** | **Breckland** |
|---|---|---|
| Production (wood only) | 0.64 | 3.32 |
| Tourism | 3.04 | 20.45 |
| Residential values | 8.33-24.99 | 6.1-18.3 |
| Non-market informal recreation | 1.2-2.46 | 1.04-1.87 |
| Carbon | 0.04-0.11 | 0.54-1.61 |

The 'residential halo' is typified by an increase in residential values in attractive i.e. wooded landscapes (in which the trees may be as hedgerows rather than woodlands) which gives rise to a more affluent community which in turn increases revenues for local businesses. Although the extent to which trees influence these values is to some extent a function of proximity to urban areas i.e. it is less apparent in isolated rural areas and very significant in peri-urban areas, it is a general phenomenon and it is generally acknowledged that you have to pay for a view. Forests provide 'green' infrastructure for other activities and hence economic activity. How this is exploited will be conditioned by the character of the local economy.

Although green infrastructure effects are clearly there at present, they do not provide real incomes to forest owners. One way in which owners could capture these incomes streams would be to develop residential or office development within their forests. Indeed, the effect is further enhanced when buildings are hidden within a forest giving each a sense of privacy and intimacy with nature. Several woodland owners in Scotland have recognised the market for forest residential and office developments. However, developments of this type are prohibited under present planning regulations and there is often severe opposition to the zoning of forest land for building development. This does seem a little inequitable when forest-based tourist accommodation is allowed and exploited on state forest land. A further twist to the story is the small, but growing demand for forest burials. This was started as a means of providing protection for endangered conservation sites but has grown beyond this to be expressed as a demand for 'green' burials which often includes the use of biodegradable wicker coffins and memorial tree planting rather than headstones. However, although these types of enterprise development could well generate significant incomes for some owners, most of the economic benefits of halo effects will remain outside the reach of the great majority of owners unless some more institutional means of repatriating cash flows can be devised. It has been suggested that a local forestry tax may be one way to so do this but implementation of such a tax would require substantial changes in public and state attitudes towards the role of forests. In the short term much could be done to balance forestry accounts by inclusion of halo cash flows and to demonstrate that the cost of forest management is actually an investment in the local economy, which is significant, can be measured and deserving of reward through a subsidy that can be recouped through taxation.

In England, the desire to maximise forest benefits for urban communities led to the development of the Community Forest Programme which is a partnership between the Forestry Commission, Countryside Agency, 58 local authorities and many other local and national organisations (http://www.communityforest.org.uk/). There are 12 community forests, all sited close to urban centres with the intention of developing deprived areas using the residential, business and tourism halo effects. The Mersey Forest is the largest of these and has successfully developed forested landscapes which are having an impact on the deprived peri-urban ex-industrial landscapes of the area around Liverpool (see Box 3). This has been achieved by planting of 7.5 million trees to create 2,500 ha of new woodland (64% increase in woodland cover) much of it on derelict brownfield sites (coal tips etc.), 72 km of hedgerow and 1,000 ha of non-wooded wildlife habitat. This has generated 100 new jobs in the area and involved local people in 27,000 woodland and tree based events such as tree planting, seed collection, nature walks etc. Benefits to woodland owners have been grants for tree planting and the additional work has provided a boost to traditional forest-based businesses. Interestingly, timber production has a very low profile in the Mersey Forest and current output of thinning and tree surgery waste is used to make 17 products including bird boxes, gates and cutting boards.

Box 3 The Mersey Forest … for the economy

Trees and woodlands encourage inward investment, create jobs, provide a resource for training, and boost local business income through increased tourism and leisure.

Creating The Mersey Forest is also helping to overcome negative perceptions of the region, one of the barriers to further economic development. An improved physical environment gives renewed confidence to an area, provides more attractive locations for business and housing developments and creates more desirable environments to live in.

Tree lined roads, green corridors and wooded locations have also been shown to be favourable for the housing market and can add around 20 percent to house prices. The Mersey Forest creates the environmental, structural framework within which economic development can take place.

Community forests also impact directly on employment by developing forest industries and stimulating the markets for local timber. In timber related industries alone, the Northwest employs over 37,000 people, with an estimated gross output of £435 million. The potential exists for further expansion, aided by the growth of The Mersey and Red Rose Forests.

The Mersey Forest partnership is also providing training in forestry skills, rural crafts and land management to help stimulate local forest industries and prepare the workforce for new opportunities.

And with over 30 million visits a year to woodlands and forests in the Northwest, The Mersey Forest is already an important part of the region's tourist industry.

source: www.merseyforest.org.uk

Cultural values

The Scottish omnibus survey (questionnaire survey of public opinion on forestry) conducted in 2003 a few questions where added on the collection of NTFPs. This revealed that 24% of the 944 people in the survey had collected some tree or plant material within the last five years. This proportion was remarkably constant across gender, age, income class area and working status. The only differences being more collection among rural people though even 20% of urban dwellers had collected NTFPs at some time. The types of products collected reflected British tastes with a strong preference (54%) for wild berries, leaves, cones, seeds, bark etc. and relatively little collection (16%). Firewood was collected by only 14% of respondents and flowers, herbs, moss, ferns and lichens by 25%. The relatively high level of collection among part-time workers (42%) suggests that they may be using the products to supplement

their incomes or as a substitute for bought products. However, most of the products collected were probably for domestic use and represent the extraction of cultural and perhaps social value from the forest. Although these cultural values do not in themselves generate income they can be used to market both recreational experiences e.g. fungi forays (collection trips) and wild products e.g. 'fruits of the forest' flavours. Increasingly, there are more prosaic cultural products which can be niche marketed, such as rowan twigs as wands, as well as contributing to the continued interest in traditional herbal medicine.

### 4.2. Case studies of successful marketing strategies

Case study 1: Recreational cycling in Welsh forests

Recent increases in mobility leisure time and disposable incomes have served to diversify and specialise outdoor recreation and an increasingly sophisticated and segmented market for recreational facilities is emerging. This case study examines the impact that the emergence of mountain biking (MTB) has had on forest use in Wales and also how exploitation of these opportunities can contribute to rural incomes and local enterprise development.

The UK has almost no wilderness and forests, even commercial conifer monocultures are a major source of outdoor recreation opportunities for the largely urbanised population. In Wales, much of which is relatively remote from large conurbations there is strong demand and use of forests for recreation with an estimated 11 million visits per year. Much of this is represented by short stay visits i.e. weekend trips by people coming from England. For people living in Wales this translates into opportunities to develop tourism and the rural economy as well as fulfilling local needs for recreational space. The recent 'Woodlands for Wales' strategy expresses these aspirations within its 'Tourism, recreation and health' objective. Stated priorities under this objective are:

- To use woodlands to help create a high-quality visitor experience; and
- To promote health through access to woodlands for all communities.

Cycling has always been a popular recreational pursuit in the UK (the Cyclist's Touring Club was established in 1878) and provides an opportunity for forest-based exercise and holidays. The mountainous landscapes and extensive forests with well-conditioned roads have long been used for informal recreational cycling. Over the past 15 years interest in recreational off-road or traffic-free cycling has increased dramatically (it is estimated there are 22 million mountain bikes in the UK – though most will never be ridden off-road) as disposable incomes have risen and bikes and riders become more specialised.

In Wales, the well established, constructive and sympathetic relationships between club cyclists and the Forestry Commission[2] resulted in partnerships to develop the first specialist mountain bike facilities. The success of the first developments at Coed y Brenin stimulated considerable interest in mountain biking in forests and the adoption in 2000 of the 'Mountain Bike Wales Initiative' prepared by Dafydd Davies the FC Forest Sport Development Advisor, himself a keen mountain biker. The FC developed

[2] In this case study the abbreviation 'FC' is used to denote all forms of state forestry in the UK and Wales.

partnerships with local authorities, New Deal (training and work experience for local unemployed youth), National Park Authorities, commercial sponsors and volunteers to develop facilities in Welsh forests. As with any enterprise, the FC mountain bike strategy considered market segmentation with regard to its competitive advantage and identified its key segments as leisure cycling and mountain biking both of which have large numbers of participants and high scope for growth.

Table 12. gives a few details of the projects, partners and investment levels for each of the five mountain bike site developments, which were supported under the MTB Wales Initiative. The MTN Initiative was a key component of the Wales Tourism Board Cycle tourism strategy for Wales who assisted with the marketing of the MTN product. The developments in mid and north Wales are targeted at weekend users from England, with most local benefits accruing as tourism income while those in south Wales cater for day visitors from Welsh urban centres such as Cardiff where benefits are direct satisfaction of urban demand for local recreational opportunities of which social inclusion is an important element.

Table 12. Mountain Bike Wales Initiative programme 2001-2002

| **Site** | **Investment (£)** | **Commercial sponsors** | **Local partners** | **Main users** |
|---|---|---|---|---|
| Coed y Brenin | 195,000 | Karrimor (manufacturer)<br>Red Bull (energy drink)<br>MBR (magazine) | Snowdonia National Park Authority<br>Gwynedd County Council<br>SUSTRANS (national cycle network) | Weekend visitors<br>Local riders |
| Afan Argoed forest park | 70,000 | Rocky Mountain (manufacturer) | Singletrack Mind (club)<br>Neath Port Talbot Council<br>Environmental Task Force | Day visitors from nearby urban areas (close to M4 so many will be from England) |
| Gwydr Forest | 130,000 | Marin Bikes (manufacturer) | Snowdonia National Park Authority<br>Conwy Borough Council | Weekend visitors<br>Local riders |
| Cwm Carn | 70,000 | Whyte Bikes (manufacturer) | British Trust for Conservation Volunteers<br>New Deal<br>Caerphilly Council | Day visitors (from nearby urban centres) |
| Nant-yr-Arian | 110,000 | Continental Tyres (manufacturer)<br>Summit Cycles (shop) | Ceredigion County Council<br>WDA<br>New Deal (Ceredigion Training)<br>Cyclists Touring Club | Weekend visitors |

As with all investments, and particularly when these are funded by the public, it is important to evaluate the returns on investments. It is not possible from the annual accounts to determine the expenditure and income to FC from mountain biking facilities but the figures in Table 13 demonstrate that in terms of cash these are likely to operate

at a net loss to the FC, though, as shown below, there are significant cash injections into the local economy.[3]

Table 13. FC annual accounts for 'Promote tourism, recreation and health' objective

| **Accounting year (5th April)** | **Net expenditure** | **Income** |
|---|---|---|
| 1999/2000 | 4,571,000 | Not given |
| 2000/2001 | 1,952,000 | 91,000 |
| 2001/2002 | 3,398,000 | 84,000 |
| 2002/2003 | 4,761,000 | 222,000 |

However, it is not the intention of the FC to run recreation in the forests for profit but for social benefits (health, recreation and amenity) and to support nearby rural economies. This raises the issue of how costs and benefits can be distributed more fairly amongst stakeholders e.g. land managers and accommodation providers, local shops and restaurants etc. It has been suggested that a tourism tax levied on local tourist enterprises might provide a mechanism for some of the increased revenue to find its way back to the forest owners to help pay for the provision of recreational facilities. The MTB Wales Initiative has been judged successful as it produced several key outputs as shown in Table 14.

The overall assessment in the FC annual report for 2002/2003 was that the MTN Wales Initiative had a 'very positively impact on local communities, both through increased tourism revenue and the provision of high quality recreational resources for local people.'

Conflict resolution

*In the status report prepared by Dafydd Davies in 2000, it was noted that there were nine illegally constructed trails on FC land and very extensive use of unofficial trail networks, i.e. forest roads, tracks and paths in all parts of Wales, but particularly in South East Wales and in the urban fringe forests of Coed y Cymoedd. Many of these sites in the peri-urban area (Cwm Carn) were included in the MTN Wales Initiative with the clubs that used the trails involved in trail design and construction. This has helped to meet obvious local demand, resolve potential conflicts between different forest users (for safety it is important to keep mountain bikers away from pedestrians) and inappropriate use of forest roads and footpaths.*

Good working relationships with local clubs and enthusiasts are also important in publicising the existence and quality of new trails and negotiating and encouraging riders to keep to voluntary codes of practice such as the one which prohibits mountain bike riding on the main Snowdonia mountains between 10 am and 5 pm from the 1st May to 30th September. They also provide an opportunity to influence the development of the sport to minimise potential conflicts and ensure 'consumer' aspirations are met in a sustainable manner.

[3] A STSM is looking at this topic in relation to Coed y Brenin

Table 14. MTB Wales outputs

| **Indicator** | **Achievement** |
|---|---|
| Employment | Over the life-time of the project, 40 people were employed full time. Many of them have continued in work associated with mountain biking. |
| Training | Through partnership with the New Deal which is a government sponsored training and work experience programme for unemployed local youth, 10 people are now in permanent employment |
| SME development | Construction techniques developed by Welsh trail builders are acknowledged by the International Mountain Bicycling Association (IMBA) as being the most advanced in the world. Welsh trail builders make inventive use of walking excavators and combine this with hand-built sections to create all weather trails in very difficult conditions in a short space of time. Three of the supervisors of the original trail work teams have gone on to establish their own trail design and construction companies and now work across the UK |
| Access to countryside | In all 75 km of new trail have been installed in Welsh forests which are likely to be used by an additional 300,000 visitors. It was also noted that developments will provide a very valuable local recreational resource that will encourage current non users to make constructive use of the forest environment and contributing to the Welsh 'Woodlands for Health' programme (http://www.forestry.gov.uk/forestry/activewoods). |
| Partnerships | As shown in Table 4.2 many different types of partnerships between the private, public and forestry sectors have been created around the development of Welsh mountain biking. A crucial part of the success of the project has been the less obvious partnerships forged between the site managers, local clubs and riders who contributed voluntary labour on trail building as well as suggestions on design and siting of trails. |
| International recognition | The IMBA in their annual trail report for 2003 stated that 'Wales is now the envy of the mountain biking world'. Wales was awarded 'A' grade (Elite) status which is shared with Idaho, Colorado and South Dakota where the sport originated. All of the FC sites listed in Table 4.2 where listed among the best in the world with Coed y Brenin singled out as best site in UK. |
| Contribution to local economy | Based on figures for Coed y Brenin site (see Box 5) the cash injection resulting from the MTN Wales Initiative was projected to be in the region of £16 million arising from 200,000 short stay visitors. It is likely that the actual income to the local economy is higher than this as there is also a spend resulting from day visitors and others who are attracted to the footpaths and other facilities at the mountain bike centres. Also there are indications that many mountain bikers have high disposable incomes and are likely to be higher spenders. For example, it is estimated that the What Mountain Bike magazine reaches 118,288 readers half of whom are aged between 25-34 with an average personal income of £28,000 and who estimate they will spend on average £1,352 on their next bike and £343 on related products per year. Many local providers of accommodation recognise the draw of mountain biking. The FC/Wales Tourist Board mountain biking marketing web site (www.mbwales.com) provides links to 64 hotels, B&B and hostels and receives 1.4 million hits per month. |

Marketing

In 2004, the FC web site lists 31 facilities for cycling with mbwales.com listing eight major mountain biking centres and other sites listing up to 20 recommended MTB sites in Wales. With an estimated 120,000 cyclists using Welsh trails per year it is probably safe to say that mountain biking has graduated into a mainstream outdoor recreation. The success of mountain biking in stimulating the local economy has resulted in similar developments in the Brecon Beacons National Park (www.mtbbreconbeacons.co.uk) and the Clwydian Hills close to the English border in NE Wales (www.ridetheclwyds.com ) and else where in the UK, notably Cumbria and Scotland.

However, although the development of mountain biking in Wales has certainly been effective there have also been failures. Bike hire facilities at Coed y Brenin struggled to generate enough income from seasonal demand to invest in high quality, well maintained bikes demanded by the public. Specialist shops such as Energy Cycles in Llanberis closed due to problems with seasonal demand and also competition from internet sales and shops closer to customer's homes. Even internet equipment e.g. 9feet.com retailers have not been able to attract sufficient income to maintain their independence. Mountain bikers are also very particular and trails considered too tame such as the one provided by the FC in Clocaenog Forest remain unused.

Access rights

Public access to FC land is guaranteed as it is all designated as Open Access land and the intention is to dedicate all footpaths under the Countryside and Rights of Way Act (thus assuring free public access). However, over the past few years the FC in Wales has been selling off parcels of land to raise revenue. Although land earmarked for sale are judged as not delivering significant public benefits there is a concern that the sale may compromise access for cyclists. Pedestrian rights of way are protected by a clause in the property deeds but unless the forest roads are registered as bridleways or byways access by cyclists cannot be similarly protected. In 2004, 25 woodlands are being offered for sale with the intention of raising £1.8 million. This is raising concerns among mountain bikers that the effective privatisation of land will have the effect of cutting some established routes in half.

Public versus private benefits

As demonstrated above, the public sector is able to justify investment in recreational facilities in term of its objectives to provide public benefits. This means that except for car park fees and the value of café franchises, facilities generate no revenue for the FC as the landowner and are virtually free to the user. Since the FC own half of all forested land in Wales, as well as the top-rated sites, it is virtually impossible for private landowners to charge for access to their land or any facilities they may develop. This means that the only way private owners can benefit from the mountain biking is to develop accommodation, cafés, shops etc. to capture some of the cash spent by bikers visiting free facilities on their land. See Box 4 for an account of the experience of one of the few private owners who have developed mountain bike facilities on their land. Although MTN Wales has delivered significant benefits to the rural economy, it has so far done little to ensure that it provides benefits to other, private forest owners. There are two ways of levelling the playing field: (1) For the FC to start charging for access to its trails. However, this would raise serious concerns with social inclusion, as charging

would impact on low-income households and would make facilities inaccessible to urban youth who would continue to make illegal use of woodlands. However, many mountain bikers are affluent and anecdotal evidence suggests some are prepared to pay for high quality facilities. (2) For the government to provide a subsidy towards the costs of developing facilities on private land to achieve social benefits and which the owner can then use as a locus for their own tourist enterprise development.

Box 4 Coed Trallwm

This forest is one of the few in Wales where the landowner is a forester, lives in the forest and uses it as his main income. It is located close to the town-based mountain biking centre at Llanyrtyd Wells which means it is placed close to other cycling attractions. The owner's son is a keen mountain biker and, with help from FC Woodland Improvement Grant, has designed and built three trails. The easy Blue trail is 3 km long with a 95 m climb; the medium Red trail is 4 km long with 140 m of climbing while the difficult Black route is 5 km with 155 m of climbing. The trails are free to use and have received good reviews (www.mtbbritain.co.uk/coed_trallwm.html ) and the site is featured on the mtbwales.co.uk site.

The owner has converted seven old farm buildings within the forest into self-catering accommodation sleeping 2-10 people (www.forestcottages.co.uk) and hoped that the mountain bike trails would help to fill them. However, he reports that occupancy of his accommodation is around 25% over the whole year and that few people using them have been specifically attracted by the trails. It was judged that this was because they are too short to fill a days riding so visitors tended to come for just a day and combine a visit with other sites. The owner is responding to this by constructing a car park, visitor centre and café to cater for day visitors. This represents an investment of £80,000 on the part of the owner with a subsidy of £50,000 from the Wales Tourist Board. The intention is for members of the family to operate the new enterprises (café and shop) rather than franchising them as this will provide operational flexibility. The cashflow forecasts for the new enterprises estimate a payback period on the investment of around 7 years based on a projected spend from 4000 visits from cottage occupants and day visitors.

Future development plans are to develop longer routes with the co-operation of neighbouring owners to satisfy those staying longer.

*Selected Welsh MTB web sites*

www.dragondownhill.co.uk – downhill racing site
www.energycycles.com - north Wales club
www.forestry.gov.uk/cycling - FC site
www.mbwales.com - FC/Wales Tourism site
www.mtbbreconbeacons.co.uk - Brecon Beacons National Park site
www.mtbwales.co.uk
www.mtb-wales.com
www.nwmba.demon.co.uk - North wales club
www.reditreks.co.uk - mountain bike holiday business – Dyfi Valley
www.ridetheclwyds.com - development authority site promoting mtb in Clwydian hills
www.roughrides.co.uk - information for off-road riding in Powys
www.singletrack-mind.org.uk - south Wales club
www.summitcycles.co.uk - shop in Aberystwyth (route sponsor in Nant yr Arian)

Box 5. Coed y Brenin

This area close to the A470 trunk road just north of Dolleglau within a FC (state) owned conifer plantation was first identified as a suitable site for a race course by NWMBA (North Wales Mountain Bike Association) in 1990. Trails were created from 'an unpassable rock strewn jungle' and the first race held in 1991. Sian and Dafydd Roberts who are local mountain bikers and past national race champions set up a mountain bike hire facility on site and later took over the franchise for the visitor centre and café at Maesgwm Visitor Centre. With commercial sponsorship with Red Bull (energy drink manufacturers), parts of the original race route where turned into the permanent all-weather Red Bull trail in 1996 followed by the Karrimor (outdoor equipment manufacturer) trail in 1998. Since then several more specially constructed mountain bike trails have been developed. Most of the routes are designed by experienced local mountain bikers and built by local construction companies using volunteers for handbuilt sections. Good relationships with mtb users are maintained by the FC Recreation Ranger who is himself a mountain biker. Other facilities at Maesgwm are a set of easy waymarked walking trails, car park, toilets, café, visitor centre, shop, bike washing facility, children's playground and an orienteering trail. Other developments are the forest road link with Lon Las Cymru which is the trans-Wales National Cycle Network route from Holyhead to Cardiff and a traffic-free link with nearby towns.

The quality and continued development of Coed y Brenin has resulted in a large and sustained rise in visitor numbers from 14,000 in 1994 to 100,000 in 2001. Events such as training for the UK Olympic team, trade shows, the Fat Tyre Festival and family fun days are held at the site. The Fat Tyre Festival held in 2003 attracted 880 entrants to the 'challenge rides' who had come specifically for the Festival with the majority (61%) coming from England. Relationships are very important in the marketing of such events and even though the mean travel distance was 50 miles, 30% of the visitors to the Fat Tyre Festival had heard of the event by word of mouth.

With the increase in visitor numbers and satisfaction (96% of visitors) the FC has been able to meet its obligation to provide forest-based recreational opportunities. However, the provision of such facilities also provide income opportunities for local enterprises such as hotels, cafés and shops. In 1999 the FC undertook a short study of the cash injected into the local economy by mountain biking. Based on a car park count of 36,193 vehicles and an occupancy rate of 3.3 people per car spending around £40 per night within 15 miles of Maesgwm it was estimated that around £2.5 million was spent in the local area. Other data also suggests that the average distance travelled to the site is 50 miles, so this truly represents a net movement of money into the local economy. The impact of the increasing recognition of linkages between the forest, recreation, tourism and the economy is the number of local establishments that ally themselves with mountain biking (for examples, see www.parcnet.com, www.garthyfog.co.uk).

Strong links and good will between the mountain bikers, FC and local SMEs are important aspects of the success of Coed y Brenin. This was made particularly apparent when on March 3rd 2003 Sian and Dafydd Roberts who ran the café and shop where served a 28 day 'Notice to quit' by the FC. The couple had at that time run the facilities at Measgwm for 12 years and in particular the café from 1995. They are local, native Welsh speakers, well known and popular among mountain bikers, champion mountain bikers themselves and had helped develop the Coed y Brenin trails. It appears that a misunderstanding had developed over the terms of their contract in 2000 and negotiations had reached an impasse. The news of the eviction quickly spread (see www.conti-tyres.co.uk/conticycle/news/news_mar03.htm). The result was widespread protests and a petition supporting Sian and Dafydd was presented to the Forestry Commission. The FC responded with a press release on the 25 March (News release No. 5782) which stated their case and expressed a strong desire to meet with the couple to resolve the dispute and stated that 'Our mountain bike facilities are not driven by profit. Our sole intention is to provide the best possible facilities at Coed-y-Brenin, and we hope the mountain bike community will be able to understand this.' Talks were successful and Sian and Dafydd continue to run the visitor centre which demonstrates the significance of social capital (relationships and good will) in the development and maintenance of successful enterprises.

source: www.forestry.gov.uk/coed-y-breninforestpark
www.mtbbritain.co.uk/coed_y_brenin_news.html

Case study 2: Moss collection

The western uplands of Britain are a key habitat for bryophytes; on non-forested land as blanket bog and as deep carpets of moss in native woodlands and conifer plantations. The richness of bryophyte flora of the western uplands is very high (~1000 species) and is in decline. For example Snowdonia (North Wales) has 550 species including 10 in the Red Data book and has lost at least 10 species over the last century. The rarest bryophytes are restricted to relatively small geographic areas and ancient native woodland sites. Elsewhere and especially in conifer plantation the moss carpets are mostly made up of a few, common species.

Collection of moss (known as 'mossing') is a widespread and established commercial activity. People have been making an income from sale of fresh moss from Wales for many years. Many of the current collectors have been active for 20-25 years with one business established in 1952 involving two generations of the same family. Collection is generally indiscriminate, with the only distinction being between 'yellow', 'green', 'sphagnum', 'blanket' and 'bog' moss. Thick moss blankets are preferred as saleable moss needs to be at least 12.5 cm long. Collection is seasonal and extends from January to September with a peak in March and April.

Moss is collected for sale in horticultural and floristry markets for use as a liner in hanging baskets, in wreathes and generally in floristry. The collected moss is sold into UK and Europe (through Amsterdam) and demand is apparently on the rise along with large-scale, illegal and irresponsible collection especially in Scotland (with two prosecutions for illegal collection in 2003). Incomes and more particularly profits from moss collection are high with moss being sold (to traders) for 75p to £1 a bag. It then retails at around £4.50 a bag to the hanging basket market. On a good site one collector can fill 300-400 bags a day. One collector said he sold 12,000-15,000 bags of moss a year. Another estimated that a good mossing income was around £100 an hour not counting delivery time. However, mossing is hard work and not for everyone.

Until recently mossing was mostly ignored by forest managers and was largely unregulated, probably small-scale and focussed on conifer plantations. However, in the mid-1990's large-scale unregulated mossing was discovered to be taking place in nature reserves and conservation sites. Concerns with the impacts of this on rare bryophytes and the woodland habitats prompted CCW to impose a restriction on all mossing in Wales which included the state forest land administered by the FC. These restrictions caused at least one collector to shift their operations to Scotland and many others became much more wary. However, because mossing provides local employment opportunities woodland managers (e.g. FC, Fountain Forestry and Dŵr Cymru) recommenced licensed mossing on their land.

Mossing licenses are typically for 1-2 years and specify the area over which moss can be collected with some restrictions on harvesting e.g. not to rake the soil. Most contracts specify that the mosser has to have insurance to cover both their employees and third parties. There are various pricing policies for these permits with large differences between collectors and managers. Licences to collect over a compartment range from £500-£1000. However, some collectors, especially with private owners offer a fixed percentage of the value of the moss and some owners find that this provides a better income than timber production. For larger woodland managers the permit income only

just covers the expense of issuing the permit and monitoring activities and it is done for social rather than economic reasons. Most responsible mossers have long-standing relationships with woodland owners.

Experienced moss collectors report that moss can be sustainably harvested from young plantations and under open canopies at 3-5 year intervals. However, there is little quantitative evidence for this and forest managers are reluctant to license an activity that has unknown consequences especially as most forests are now entered into FSC-style certification under UKWAS. The consequence of this is that managers tend to restrict the area and type of land they are prepared to licence for moss collection. For example, the FC in the Coed y Mynydd district in Wales do not permit mossing in areas which are popular with the public because it looks unsightly and also not in protected areas. The main areas permitted are those about to be felled and this amounts to about 20% of the 40,000 ha of forest in the area. About half of this area has been harvested in the past few years and this is leading to supply difficulties for the collectors and increasing competition for access to collection sites. There remains general antipathy towards moss collection and this is not likely to change without some research and the development of best practice guidelines for sustainable harvesting that would be acceptable under UKWAS certification.

Mossing enterprises

Collection of moss is a sensitive issue because of possible conservation concerns and also because it is highly commercial with, sometimes, competition for the best sites. This coupled with much mossing operating in the grey economy means that it is difficult to determine the level of activity or its contribution to forest values. Nevertheless, a short study in Wales (Wong & Dickinson 2003) suggests that in Wales there are less than five SMEs, and maybe up to 50 individual collectors. Nevertheless, it is possible to discern two distinct groups of mossers. There are those who make a living from mossing combined with collection of other foliage or woodcrafts (‘diversified’ livelihood strategies sensu Belcher & Kosters 2004) and those who use it to supplement farm incomes (‘coping’ strategies). A short description of a few mossing enterprises is given below.

Box 6 Booth Moss & Foliage Limited

This company is the largest UK based company specialising in the collection and sale of moss. The company is based in Wales and began collecting in Scotland when the restrictions on mossing were imposed in Wales. The company operates on both state and private land under license and employs regional gangs of collectors with about 5 people in a gang. Much of the moss is exported and the company is reported to send around 50 container loads of moss to the Netherlands per year. The company is successful and has been around for some time and reports an annual profit of between £50,000 and £55,000. The company also collects foliage to supplement moss and is considering expanding into wreath manufacture for value-addition.

Box 7. Goodstock

This is a small enterprise that provides a part-time income (it is supplemented with sales of rustic garden furniture www.goodstock.co.uk) for the proprietor and one employee in mid-Wales. John Spikes, the proprietor collects from his own 32 ha forest and operates in local (private) conifer plantations. Moss is collected by hand and sites are harvested every 3-4 years. There are two distinct markets for the moss; in winter it goes to wreath makers and in summer for hanging basket liners. The moss is sold directly to around 20 florists in the southern of England and generates an annual income of ~£16,000.

Box 8. Farm income diversification

In the prime mossing area of mid-Wales there has been long established seasonal collection of moss by local farmers to supplement their farm incomes. One farmer reported that winter moss collection contributed 25% of his annual income and without it his farm would not be economically viable. The farmers tend to sell the moss to foliage wholesalers from outside the local area who visit on a regular basis and have long-standing relationships with their suppliers. Many of the farmers engaged in mossing have been doing so for many years (> 20) and are aging. There are relatively few younger farmers involved in mossing but other than the fact that the rural population is aging (average age of farmers in Wales is > 60 years) the reasons for this are not known.

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Marketing and branding

Moss collected in the UK is sold in a number of ways. Directly to local retail outlets (garden centres and florists), through local horticultural merchants e.g. the Northwich market or exported in bulk to Europe. There is very little value addition though some collectors are beginning to experiment with wreath manufacture but it can be difficult to market these as few have access to retail outputs. There is no branding or source identification on retail moss and thus little or no opportunity for traditional marketing or market development for UK-sourced moss. This is increasingly an issue as conservation concerns are prompting campaigns against the use of live moss and prompting the development of alternatives such as dyed wool waste. Imports of dried moss from New Zealand which is labelled as sustainable is also undermining traditional demand for live moss. However, markets for UK sourced live moss could perhaps be stabilized by applying a UKWAS and source label to retail moss backed by a marketing campaign. Implementing such a campaign would require quantitative research to demonstrate the sustainability of mossing, changes to UKWAS to permit labelling of the moss and development of a promotional campaign. The mossing enterprises themselves are probably too small to pay for all of this but it could be funded through government and EU schemes to secure social and economic benefits for woodland owners and to support rural income diversification. Securing incomes and relationships between responsible collectors and woodland owners may also help to police illegal collection and trade of moss.

Research needs:

- quantitative data of resource availability;
- understanding of market trends;
- lists of species being collected;
- regeneration rates of moss;
- impacts of collection on woodland ecosystems;
- appropriate education of moss collectors in terms of business management, manual courses and woodland skills;
- the impact of new forest management systems (i.e. CCF) on moss populations.

## 5. Forests and ownership

### 5.1. State of the art and historical development

Britain's woodland area declined from the Roman times until the early 20th century as a result of many pressures but particularly agricultural expansion, the production of charcoal during the industrial revolution and wars. By 1905 woodland cover was about 5% and further losses occurred during the first world war. The crisis in wood supplies during the war led to the formation of a state forest service, the Forestry Commission, in 1919. Its remit was to expand the nation's forest estate by undertaking afforestation in its own right and by offering financial assistance to encourage planting by private land owners. The primary policy objective was to establish a strategic reserve of timber for the nation. During the 1920s and 30s there was a steady growth in the woodland area but this was partially reversed by the fellings that took place during the second world war. In 1947 the UK woodland area totalled 1.4 million ha, 5.8% of the land area. Over past 60 years the forest area has doubled and woodland cover now stands at 11.6%. To minimise its impact on agriculture, almost all the afforestation until the 1980s was in upland areas principally in Scotland, Wales and northern England. These sites are generally best suited for coniferous species and most of the plantation development has been of exotic species, most notably Sitka spruce (*Picea sitchensis)*

From the 1970s, the initial policy objective of creating a strategic reserve of timber was gradually replaced by broader objectives of conservation, recreation, amenity as well as timber production. In the early 1980s, these new objectives resulted in important changes in government policies. The Forestry Commission withdrew from further afforestation and was required to sell some of its woodland. Consequently, the continued expansion of the woodland area over the past 20 years has been largely in the private sector and their share of the forest resource has grown. Important changes were also made to the financial support given to private owners, most notably the withdrawal of certain tax concessions which encouraged large-scale coniferous afforestation, the restructuring of forestry grant schemes to favour the planting of broadleaves rather than conifers and the introduction of new grants to encourage the expansion of farm woodlands. These changes have resulted in a much greater emphasis on new planting (as opposed to restocking) of broadleaved species rather than conifers so that in 2003/4 broadleaves accounted for 80% of new planting compared with only 3% in 1980.

In 1999, constitutional changes led to the formation of governments in Scotland and Wales with certain devolved powers. Forestry is one of the devolved functions and as a result each country is now developing its own distinctive forestry strategies. The non-timber functions of forestry now dominate the strategic objectives of the three countries (possibly less so in Scotland) and each is introducing its own mechanisms, including new woodland grants, to support its priorities.

The development of forestry is Britain over the past 80 years has thus been marked by major changes in both government and society's priorities for forests and woodlands and these in turn have resulted in major shifts in forestry practices. In many respects, these changes reflect the needs of Britain's increasingly prosperous urban society and the multiple benefits woodlands can provide.

### 5.2. Forest resources

Table 15 shows the changes in woodland area over the last 1000 years. By the time of the Norman conquest in the 11th century, England has already lost most of its forests and cover at this time is estimated at only 15%. By the beginning of the 20th century UK cover had fallen to 4.7%. The expansion of the forest area over the past 80 years described above is clearly seen. The growth has been particularly marked in Scotland where cover has increased from 4.5% to 17% since 1905.

Table 15. Changes in woodland area in the United Kingdom.

| **Year** | **UK** | | **England** | | **Scotland** | | **Wales** | | **N Ireland** | |
|---|---|---|---|---|---|---|---|---|---|---|
| | area | | area | | area | | area | | area | |
| | 1000 ha | % | 1000 ha | % | 1000 ha | % | 1000 ha | % | 1000 ha | % |
| 1086 | | | | ≈15 | | | | | | |
| 1350 | | | | ≈10 | | | | | | |
| Late 17thC | | | | ≈8 | | ≈43 | | | | ≈1.54 |
| 1905 | 1140 | 4.7 | 681 | 5.2 | 351 | 4.5 | 88 | 4.2 | 15 | 1.14 |
| 1924 | 1211 | 5.0 | 660 | 5.1 | 435 | 5.6 | 103 | 5.0 | 13 | 1.0 |
| 1947 | 1419 | 5.8 | 755 | 5.8 | 513 | 6.6 | 128 | 6.2 | 23 | 1.85 |
| 1965 | 1784 | 7.3 | 886 | 6.8 | 656 | 8.4 | 201 | 9.7 | 42 | 3.1 |
| 1980 | 2175 | 9.0 | 948 | 7.3 | 920 | 11.8 | 241 | 11.6 | 67 | 4.9 |
| 1995 | 2746 | 11.3 | 1097 | 8.4 | 1281 | 16.4 | 287 | 13.8 | 81 | 6.0 |
| 2004 | 2817 | 11.6 | 1115 | 8.6 | 1330 | 17.0 | 286 | 13.8 | 86 | 6.3 |

Source: Forestry Commission.

Table 16. shows the area of woodland in 2004 by country and ownership class. The total woodland area is 2.7 million ha. Conifers account for 58% of the area and broadleaves 42%. The Forestry Commission owns 29% of the total resource but 44% of the coniferous forest. Virtually all (92%) the broadleaved resource is privately owned and this is principally found in England. Scotland holds two thirds of the coniferous area. The coniferous forests account for 94% of the annual harvest and this largely reflects the results of government policies from 1920 to the 1980s in encouraging coniferous based afforestation. Forestry Commission woodlands produced 54% of the coniferous harvest in 2003, higher than its 44% share of the forest area and this partly reflects the older age class structure of their forests.

Table 16. Forest area and ownership in Great Britain in 2003 (000 ha)

| | **Conifers** | **Broadleaves** | **Total woodland** |
|---|---|---|---|
| | | Forestry Commission | |
| England | 154 | 52 | 205 |
| Wales | 98 | 11 | 110 |
| Scotland | 440 | 25 | 465 |
| Great Britain | 692 | 89 | 780 |
| | | Non-FC | |
| England | 217 | 693 | 910 |
| Wales | 64 | 112 | 176 |
| Scotland | 611 | 254 | 965 |
| Great Britain | 892 | 1060 | 1951 |
| | | All woodland | |
| England | 370 | 745 | 1115 |
| Wales | 162 | 123 | 286 |
| Scotland | 1051 | 280 | 1330 |
| Great Britain | 1583 | 1148 | 2731 |

Source: Forestry Commission.

Table 17. Species composition of woodlands in Great Britain

| **Species** | **GB** | **England** | **Scotland** | **Wales** |
|---|---|---|---|---|
| Scots pine | 227 | 82 | 140 | 5 |
| Corsican pine | 47 | 41 | 2 | 3 |
| Lodgehole pine | 135 | 7 | 122 | 6 |
| Sitka spruce | 692 | 80 | 528 | 84 |
| Norway spruce | 79 | 32 | 35 | 11 |
| European larch | 23 | 14 | 9 | 1 |
| Japanese/hybrid larch | 111 | 33 | 56 | 22 |
| Douglas fir | 45 | 24 | 10 | 11 |
| Other conifer | 30 | 19 | 5 | 6 |
| Mixed conifer | 18 | 9 | 8 | 0 |
| Total conifers | 1406 | 340 | 916 | 149 |
| Oak | 223 | 159 | 21 | 43 |
| Beech | 83 | 64 | 10 | 9 |
| Sycamore | 67 | 49 | 11 | 7 |
| Ash | 129 | 105 | 5 | 19 |
| Birch | 160 | 70 | 78 | 13 |
| Poplar | 12 | 11 | 0 | 1 |
| Sweet chestnut | 12 | 12 | 0 | 1 |
| Elm | 5 | 4 | 1 | 0 |
| Other broadleaves | 120 | 84 | 18 | 18 |
| Mixed broadleaves | 160 | 91 | 62 | 8 |
| Total broadleaves | 971 | 648 | 206 | 118 |
| **Total – all species** | **2377** | **988** | **1123** | **266** |
| Felled | 47 | 15 | 23 | 9 |
| Coppice1 | 24 | 22 | 1 | 0 |
| Open space2 | 217 | 72 | 134 | 11 |
| **Total woodland** | **2665** | **1097** | **1281** | **287** |

Source: 1995-99 National Inventory of Woodland and trees

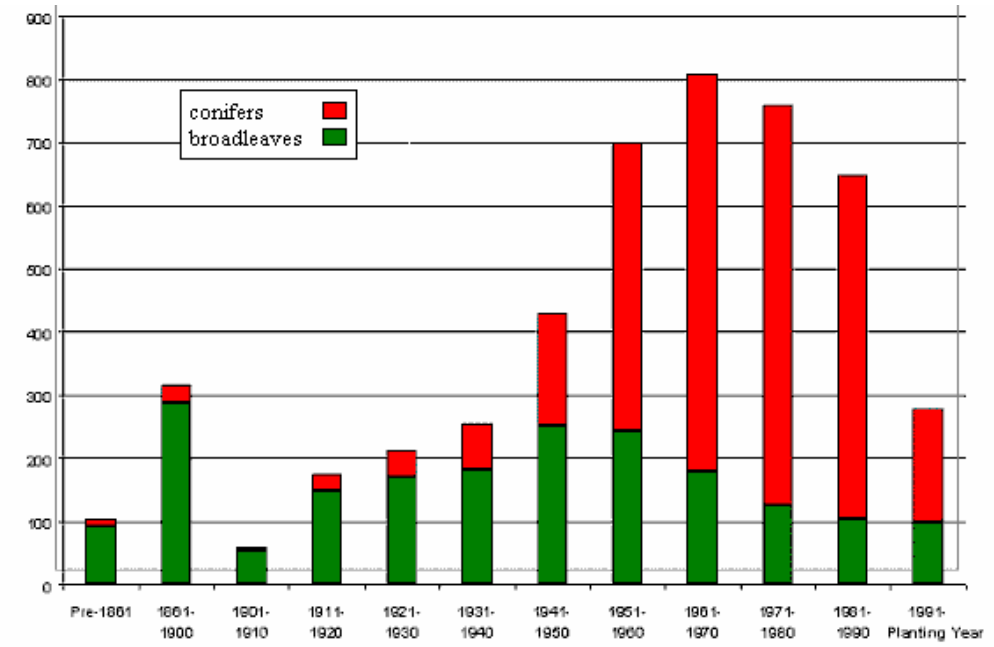
Notes:

[1] Coppice includes coppice with standards.

[2] Areas of integral open space, each less than 1 hectare

Table 17 shows the main species in British forests. Of the softwood species shown only Scots pine is indigenous to Britain and the overwhelming share of exotic species in the forest area is clearly seen. The dominant softwood species are of Sitka spruce, Scots pine and lodgepole pine. Oak is the main broadleaved species.

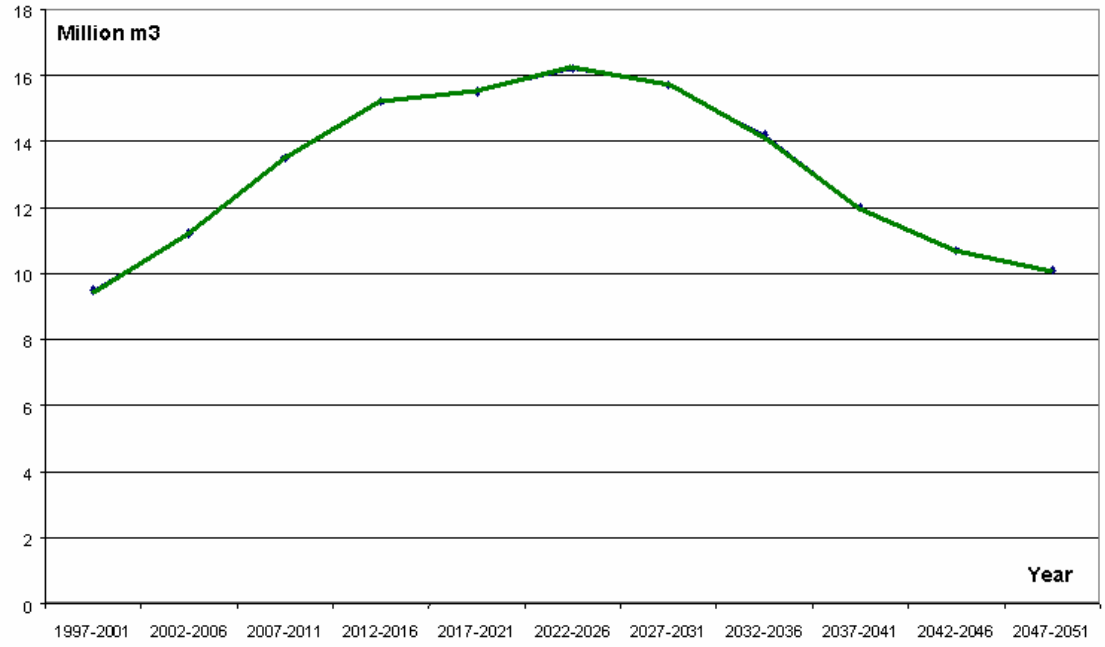
Figure 3. shows the age class structure of the woodlands. The concentration of coniferous afforestation from the 50s to the 80s is clearly seen.




Source: Forestry Commission.

Figure 3. Age profile of woodland in Great Britain

The afforestation of the past 80 years will lead to a growing availability of timber and long term production forecasts are shown in figure 4.. The forecasts are based on current silvicultural and management systems. Total wood supply potential will rise to about 17 million $m^3$ in about 2020 and after this will fall until the middle of the century before picking up again. This pattern of growth and decline results from the imbalance in age classes of the softwood resource. However, these cycles could be smoothed out by adopting different cutting regimes. The rising production, which will mainly occur in Scotland, should support a considerable growth in the wood based industries.




Source: Forestry Commission.

Figure 4: Forecast of wood production in Great Britain 1997-2050

### 5.3. Forest ownership

The division between state and private ownership was shown in Table 16. A finer breakdown of private ownership is shown in Table 18.

Table 18. Ownership type of woodland

| Ownership type | GB | England | Scotland | Wales |
|---|---|---|---|---|
| FC | 882 | 223 | 539 | 120 |
| Other public body | 45 | 27 | 13 | 5 |
| Local Authority | 80 | 61 | 11 | 8 |
| Private/ timber business | 41 | 7 | 28 | 6 |
| Other private business | 273 | 147 | 101 | 26 |
| Personal | 1,110 | 481 | 533 | 96 |
| Charity | 90 | 68 | 14 | 8 |
| Community ownership or common land | 5 | 4 | 0 | 1 |
| Unclassified | 18 | 4 | 13 | 1 |
| Total | 2,545 | 1022 | 1253 | 270 |

Source: NIWT 1995-1999

There is considerable evidence of change in forest ownership over the last 20 years. First, the expansion of the state forest component has terminated, largely as a result of changing policy objectives in the forest sector and with respect to privatisation. However, there was only ever relatively modest disposal of state forestry assets in the UK. Second, the tax avoidance motivation to purchase forests has been changed by the Finance Act of 1987, which terminated the tax dodge which allowed the super-rich to invest their earnings tax free in forestry (although forestry continues to receive privileged treatment by the tax system). Third, new forestry has tended to come down

the slope, partly as a function of farm woodland grant schemes and partly through a tendency for landownership to be driven by amenity concerns rather than narrow profitability. Fourth, older pieces of woodland have become increasingly attractive to environmental NGOs

A large number of farmers own woodland, most of whom still live on the farm. The farm population is ageing and there is recognition that intra-familial succession may not take place on smaller farms. Much farmland that comes onto the market is bought by non-farmers for amenity reasons. Woodland is generally thought to create a premium on land values, largely because of its contribution to landscape, amenity and game management. The steady drift towards ownership of farms especially in more attractive and wooded regions (such as the Weald, the Chilterns and the English Marches in England) by entrepreneurs and rich people but as an amenity asset has implications for the development of woodland as a commercial resource.

### 5.4. Main problems and research questions in forest resources and ownership for enterprise development in the forest sector

- Implications for businesses collecting NTFPs of changing usufruct and landowners rights resulting from recent legislation in England/Wales and Scotland
- Insurance costs for private owners resulting from changes in laws of access to privately owned woodland. Who should meet these costs?
- Valuation of NTFPs . How should they be priced?
- How should the value of non- market benefits e.g. biodiversity, landscape, carbon sequestration be captured (financially) by private woodland owners. What methods should be adopted in determining non-market values?
- How can private forest owners be compensated for potential loss of income as a result of extended usufruct rights arising form recent legislation widening public access? How can personal and commercial consumption of NTFPs be defined?

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**Annex A: Organisations studying forest products' consumption and main publications and information sources.**

**Wood products**:

| Service | Web site | Activities |
|---|---|---|
| Confederation of Forest Industries (UK) Ltd. | http://www.confor.org.uk/ | New organisation to speak for timber industry and develop new markets |
| Forest Industries Development Council | http://www.fidc.org.uk/ | Promotion of multi-objective forest industry in the UK |
| Forestry Commission | http://www.forestry.gov.uk/forestry/HCOU-4UBJ6C | Surveys of timber supply, prices, employment and public opinion. |
| Forests and Timber Association | http://www.forestryandtimber.org/ | Representative body for people involved in growing and management of trees |
| Paper Industry Association | http://www.ppic.org.uk/ | 'Eyes, ear and voice' of UK paper industry |
| Timber Trades Federation | http://www.ttf.co.uk | Official voice of UK timber trade |
| TRADA | http://www.trada.co.uk/ | Trade directories, standards etc. |
| UK Forest Products Association | http://www.ukfpa.co.uk/ | Represents technical and commercial interests in forest products industry |
| Wood Panels Industry Federation | http://www.wpif.org.uk/ | Represents industrial manufacturers of chipboard, OSB and MDF in UK |

**Non-wood products**:

| Institution – Project | Web site | Comments |
|---|---|---|
| Basketmakers' Association | http://www.basketassoc.org/ | Promotes quality and training in basketry |
| Berry Scotland | http://www.berryscotland.com | Berry trade and growers network |
| British Association for Conservation and Shooting | http://www.basc.org.uk | Representative body for country shooting |
| Community forest network | http://www.communityforest.org.uk | Promotion of peri-urban community forests in England |
| Department for Environment and Rural Affairs | http://www.defra.gov.uk | Government funding for research into rural affairs |
| Ethnomedica | http://www.rbgkew.org.uk/ethnomedica | Research group on herbal traditions of Britain |
| FC 'Wild Woods' data base | http://www.forestry.gov.uk/forestry/wildwoods | Data base of wildlife watching opportunities in GB forests |

| | | |
|---|---|---|
| FC recreation data base | http://www.forestry.gov.uk/forestry/recreation | Data base of forest recreation opportunities GB |
| Flora Celtica – Royal Botanic Gardens, Edinburgh | http://rbg-web2.rbge.org.uk/celtica/fc.htm | International project on use of wild plants in Celtic countries (most information in database from Scotland) |
| Forest Education Initiative | http://www.foresteducation.org.uk | Network to support development of forest-based education |
| Forest Research | http://www.forestresearch.gov.uk/website/forestresearch.nsf/ByUnique/INFD-5XNEY5 | Research arm of the Forestry Commission |
| Game Conservancy Trust | http://www.gct.org.uk | Ecology and management of game focussing on birds |
| Green Wood Trust | http://www.coppice-products.co.uk/ | Database of coppice workers and products |
| NTFP Scotland | http://www.forestharvest.org.uk | Information and databases on Scottish non-wood forest products (mostly plants) |
| Partnership for action against wildlife crime | http://www.defra.gov.uk/paw | Public information on wildlife crime |
| Project Blaeberry | http://www.forestfruits.org | Study of economic potential of wild blaeberries (*Vaccinium myrtillus*) |
| Royal Botanic Gardens Kew | http://www.rbgkew.org.uk/scihort/ukplants.html | Study of wild plant use in England and Scotland |
| Scottish Forest Alliance | http://www.scottishforestalliance.org.uk | Support for biodiversity and carbon sequestration projects in Scottish forests |
| The Deer Initiative | http://www.thedeerinitiative.co.uk | Advises and researches deer ecology, management and supports venison marketing |
| Wild Mushroom Forum | http://www.snh.org.uk/scottish/species/fungi/fungicode.asp | Sets codes of conduct for mushroom pickers in Scotland |
| Wild Resources Limited | http://www.wildresources.co.uk | Studies on NTFP potential and sustainable production |
| Woodturners Association | http://www.britishwoodturners.co.uk | Support to businesses in the automatic wood turning industry |

**Annex B: Organisations studying small-scale forestry and main publications and information sources.**

| Organisation | Web site | Activities |
|---|---|---|
| Coed Cymru | http://www.coedcymru.org.uk | Promoting of management of broadleaved woodlands in Wales |
| Cumbria Woodlands | http://initiatives.smallwoods.org.uk/index.php?link=directory.php&id=2008 | Project to aid small woodland owners in Cumbria |
| Heartwoods Project | http://www.heartwoods.co.uk/96_About_Heartwoods.asp | FC programme to develop wood supply chain in Shropshire |
| Reforesting Scotland | http://reforestingscotland.gn.apc.org | Network encouraging ecological and social regeneration of forests in Scotland |
| Small Woods Association | http://www.smallwoods.org.uk | Provides advice and support to small woods owners |

**Annex C: Organisations studying wood processing industries and main publications and information sources.**

The following institutions are involved in research and provision of information relevant to the wood processing industries:

| | |
|---|---|
| University of Wales, Bangor | Wood science and technology, forest products economics |
| University of Bath | Timber engineering |
| Imperial College, London | Wood biodegradation and preservation, life cycle analysis |
| Napier University | Timber engineering |
| University of Dundee | Wood biodeteriation |
| Buckinghamshire College | Wood biodeteriation, wood composites |
| Building Research Establishment | Use of wood in construction |
| TRADA | Component and product testing |
| UK Forest Products Association | Sawmilling |
| Wood Panels Industry Federation | Wood panels |
| Paper Federation of GB | Pulp & paper |
| CONFOR (Confederation of Forest Industries | Forestry Sector |
| Timber Trades Federation | Imported timber products |

**Statistical publications**

| | |
|---|---|
| Forestry statistics | Forestry Commission<br>http://www.forestry.gov.uk/statistics |
| Paper statistics | Paper Federation of GB |
| Timber statistics<br>Industry statistics | Timber Trades Federation<br>Office of National Statistics |