<u>EXECUTIVE SUMMARY – The Wood Bank</u>

Introduction

i. This Report provides an analysis of the status of, and wealth associated with, the woodlands of the East of England. Woodland is a key resource which not only supports a significant economic sector in its own right, but also makes a major contribution to the quality of life of the region. Our Report responds to a research brief which can be summarised as requiring:

- an analysis of jobs and economic assets in the woodland and timber sectors;
- an evaluation of the social and environmental roles of woodland, both actual and potential;
- an interpretation of the barriers and opportunities to future development of the region's woodland resource; and
- an indication of the 'hard' and 'soft' infrastructure supporting the timber industry and woodland resource, both actual and potential.
- These research objectives relate essentially to the ways in which woodland can most effectively contribute to the *Regional Economic Strategy* for the East of England.

ii. Although much of the woodland wealth cannot readily be quantified, we have attempted to demonstrate its importance to the region by placing realistic values on its market and non-market benefits. These are summarised in the Table below and explained more fully in the following paragraphs.

Sector	*£ million*	*See paragraph*
Economic development – timber, tourism & game	***191***	xvi, xxvi
Quality of life – landscape, recreation & health	***137***	xxx, xxxi, xxxiii
Environment	***90***	xxiv
Spatial planning	***26***	xxxvi
Renewable energy	***11***	xxxvii
Education and learning	***3***	xlii
Multiplier effects	***222***	
Current annual wealth	*£680 million*	

The Regional Setting

iii. The East of England is a prosperous region with a high quality of life overall. Broadly speaking, it has a rural character, although parts of it are strongly influenced by London and other urban concentrations. The East of England Development Agency reports that people who live and work in the region rate the natural and built environment as highly important, seeing it as a good business location with an open and unpolluted environment, close to the countryside and coast. The region, however, is not without its challenges, particularly in relation to the restructuring of the rural economy, urban development pressures, pockets of relative disadvantage, and some bleak or industrialised landscapes. Woodland cover can make an important contribution in responding to these and other issues. Indeed, the woodland and timber sector can contribute to EEDA's *Regional Economic Strategy* in a number of key ways, notably through wealth creation, opening up access to opportunity, safeguarding and enhancing the environment, and sustainable development.

iv. In broad terms, we consider that the region's woodland wealth makes an important contribution to the rural economy, through an annual gross output of around £26m in forestry and £61m in processing. Together with indirect and induced effects, the total annual economic worth of timber production and processing is some £220m in the region. This is particularly important in a context of rural diversification and restructuring. Significant though this figure is, the 'real wealth' of woodlands is substantially higher. We estimate that the annual value of woodlands to the region's quality of life and wider economy – as reflected, for example, in terms of tourism, health, recreation and environment – is about a further £327m. In addition, the potential annual value could rise significantly if targeted expansion of the region's woodlands occurred, with major gains being possible in relation to the social and health benefits of well-designed accessible woodlands, provision of specialist recreational and tourist facilities, and development of timber as an alternative energy source.

v. This sum, though extremely significant, is probably an under-estimate. For example, in view of the difficulties of accurately pricing non-market goods, we have deliberately erred on the side of caution in calculating benefits, and some researchers have proposed much higher values. Also, the figures do not include certain industries peripheral to, but cognate with, the main woodland and timber sector. These include the sales of wood products and crafts, which we know from a study by Intermark are worth £24m annually within the region (plus their multiplier effect), and the many arboriculture/ tree surgery businesses associated mainly with amenity and urban trees, which we believe could have a turnover of around £20m (plus multiplier). In total, a justifiable estimate for the current annual wealth associated with woodland in the East of England is around £680m. As previously noted, this could rise substantially if additional assets are developed in the future.

The Nature of Woodland Wealth – the Wood Bank

vi. Woodland wealth has conventionally been measured principally in terms of the actual market value of timber products and timber-related employment. Increasingly, however, emphasis has been placed on the range of goods and services for which there is no market. Thus, on the one hand, woodland wealth relates to the quantity, composition, age and condition of trees, as a resource to be processed for a variety of uses, and as a contributor to direct and downstream employment. On the other hand, 'non-market' or 'public' benefits comprise the social and environmental roles of trees, as well as certain diffuse economic benefits, such as the provision of attractive settings for inward investment.

vii. Thus, the *economic* benefits of woodland, in addition to employment and the value of timber, include positive influences on inward investment, increased property values, reduced energy costs, regeneration of derelict and damaged land, and tourism. *Social* benefits relate to improved physical and mental health, increased community pride, recreation, education, and social inclusion. *Environmental* benefits chiefly comprise pollution abatement, biodiversity, landscape, soil conservation and the protection of archaeological and historic artefacts. These benefits vary in magnitude and generally have no apparent market value. Nevertheless, they are well attested in the literature and are increasingly susceptible to valuation using a variety of economic techniques.

The Forestry Policy Framework

viii. For the past century, forestry policy in Britain has been driven by economic and strategic arguments. This has led to a policy emphasis on plantation forestry and a large-scale processing industry, involving both the public and private sectors. From the 1960s onwards, policy attention started to turn to the multiple benefits of woodlands, with an increasing sensitivity towards the use of native broadleaved species and the provision of community benefits. Most recently, there has been a significant shift towards sustainable forestry, particularly the role that woodland can play in relation to rural development, economic regeneration, environment and conservation, and recreation, access and tourism. The Forestry Commission has recently published a suite of sustainability indicators, and these affirm the purpose of the British woodland estate as that of achieving multiple benefits through the adoption of sustainable development priorities.

Undertaking the Research

ix. This Report is wide-ranging in its coverage and has been compiled on the basis of a number of sources of evidence. First, we have undertaken a desk study of literature and previous reports relating to woodland wealth and the timber industry. Second, we have drawn upon recent statistical sources and specially provided information, particularly the National Inventory of Woodlands and estimates of timber availability for the region. Third, we have attributed values to numerous aspects of woodland wealth, on the basis of previous economic studies and current assessments being undertaken in other English regions. Fourth, we have undertaken a postal questionnaire survey of woodland owners and woodland-related businesses in the region to gather supplementary information on the characteristics of the sector, flows of expenditure, local employment provision, and perceived barriers to the future expansion of woodland wealth. Finally, we conducted a number of interviews with public and private operators, to provide greater insight into current patterns and trends. In all this, we have been supported by a steering group which has provided guidance on the scope and direction of the study.

Woodland and Timber in the East of England

x. The National Inventory of Woodland and Trees reveals an uneven pattern of woodland cover in the region, ranging from 3.6% in Cambridgeshire to 9.8% in Norfolk, and averaging 7.3% (close to the English average). Overall, the pattern is one of relatively small woodlands, mainly broadleaved and predominantly in private ownership, but with a number of large conifer-dominated Forestry Commission holdings making a major contribution both to timber resources and the regional landscape. According to the England Rural Development Programme, over half of non-Forestry Commission woodlands are unmanaged or undermanaged. This is attributed to the limited availability of local timber processing facilities, and the disproportionate costs associated with small and possibly isolated woods. Often, the main product from these sites will be low-grade roundwood, which is most economic when it can be transported to relatively local large-scale bulk users. Despite a current scarcity of such end-users in the region, the East of England chapter in the Rural Development Programme notes a considerable potential for improving the existing woodland resource.

xi. The region contains a number of distinctive areas of woodland which make highly significant contributions to landscape character, recreational opportunity and economic prosperity. Key assets include:

- major areas of multi-purpose Forestry Commission holdings, such as Thetford Forest and the Sandlings;
- the mixed ancient woodlands, plantations and parklands of the Greensand Ridge;
- remnant ancient hunting forests, such as Epping, Hainault and Hatfield;
- the old oakwoods, with their associated rare species, of Suffolk's Staverton Thicks;
- a number of notable estates, both in private and voluntary sector ownership, containing important woodlands and woodpasture; and
- parts of Thames Chase, Watling Chase and Marston Vale Community Forests, all of which are creating new multi-purpose woodlands, but whose core funding ceases in 2005, and whose future development will consequently become an important issue for the region.

xii. The National Inventory of Woodlands records that the region contains just under 140,000ha of woodland, of which just over three-fifths are broadleaved, just over one-fifth is coniferous, together with smaller proportions of mixed woodland, coppice or coppice-with-standards, and open space with woodlands. The main conifers are Scots and Corsican pine. Broadleaved species are more varied, with oak comprising a quarter, but ash, sycamore, beech, birch and elm also well represented. Of the 113,00ha in woods of at least 2ha, the largest single custodian is the Forestry Commission, managing almost 26,000ha of mainly coniferous woodlands. The remaining 87,000ha of mainly broadleaved woodland is owned by private individuals (c.56,000ha), businesses (c.14,000ha), charities (c.8,000ha), local authorities (c.6,500ha), other public bodies (c.2,000ha) and communities (c.500ha). Excluding small woodlands (under 2ha), average size is 14.6ha, but Forestry Commission holdings are disproportionately in the larger size classes. Tree cover in the region increased by over 26,000ha between 1980 and 1998, during which time the proportion of broadleaves also increased from 59% to 71%. Although private sector planting is well down on the period 1940-1970, this situation masks a significant recovery in the planting of oak in non-public woodlands, and a steady upward trend in the planting and re-planting of Corsican pine by the Forestry Commission. The 'high forest' in the region is predominantly of sawlog quality, albeit there is significant undermanagement in the non-FC owned broadleaved resource.

xiii. The future production of timber in the region has been calculated by the Forestry Commission, with the proviso that this figure will always be more than actual availability. These estimates indicate that annual harvestable coniferous roundwood in the East of England could increase from its current level (c.290,000 cu.m.) to around 370,000 cu.m. by 2040, thereafter declining quite sharply. The theoretical contributions of the private sector and Forest Enterprise will be similar until around 2035, at which point the private sector contribution could fall quite substantially, and only be partially offset by rising production in FE woodlands. Broadleaved roundwood production will remain relatively stable at around 180,00 cu.m. until around 2040, with only relatively minor fluctuations to be evened out. Thereafter there would be a sharp dip before stabilising at about 150,000 cu.m. annually. Oak would be the principal species, though a reasonable variety will be available during the whole period, with a significant quantity of poplar between about 2015 and 2050. Approximately 80% of hardwood in the private sector is likely to be of sawlog quality, leaving perhaps 20-30,000 cu.m./yr. of low grade hardwood available for other uses.

The Market Benefits of Woodland – the Wood Bank

General Issues

xiv. Whilst the direct economic and employment benefits only reflect a minority of the region's woodland wealth, the timber industry is an important generator of jobs in its own right, and drives the wise management of woodlands on which many wider benefits depend. Thus, rural development issues form an important strand in a future strategy.

xv. There is a widespread view that a significant part of the region's woodlands are undermanaged, particularly privately owned broadleaved woodlands, and that this requires changes to incentives, business support and markets. High quality hardwood is relatively price inelastic, which suggests directing effort towards improving the actual and perceived quality of the region's timber. However, it is also sensible to further develop the supply of and demand for low grade hardwood, which is well suited to firewood, chipwood, pulpwood and horticultural woodchips. There is a prevalent view that small and medium scale woodfuel heating schemes deserve further investigation, as they can provide stable markets embedded in the local economy.

Economic development – timber, tourism and game

Timber

xvi. The core woodland industry comprises establishment, maintenance and harvesting. Backward linkages include suppliers of forestry goods (seedlings, fertilisers, etc.), whilst forward linkages comprise various processing facilities. In regions with large woodland and timber industries, these linkages can often be provided internally, but elsewhere there is likely to be significant leakage. With regard to employment, a very high proportion of labour is drawn from a local catchment.

xvii. In general terms, the regional woodland economy comprises four industry 'chains', entailing the production, processing and end use stages of: domestically grown softwood, domestically grown hardwood, imported softwood and imported hardwood. Very broadly speaking, these may be represented as the region's conifer plantations (mainly managed by the Forestry Commission) supplying a number of UK processing mills; a diverse broadleaved resource, mainly in the private sector, and supplying a wide range of end uses; highly competitively priced and reliably supplied softwoods, mainly from Scandinavia and Eastern Europe, through regional ports such as Harwich and Felixstowe; and a variety of hardwood supplies, including tropical timbers that cannot be produced locally. These are each associated with particular opportunities in the region.

xviii. We estimate that in the East of England, some 825 jobs are associated with woodland and timber production, and around 560 with timber processing. These are predominantly in rural areas and thus particularly important within the context of a diversified rural economic base.

In addition, there are likely to be around 1,170 full-time equivalent jobs arising from the indirect and induced effects of timber production. The total gross impact of forestry (including multiplier effects) is about £62.5m, and of processing about £158m, annually in the region.

xix. The character of the Forestry Commission's managing agency Forest Enterprise activity varies across the region, which includes the whole of the East Anglia District and parts of the Northants and South-East Districts. The East Anglia District's estate is dominated by commercial softwood plantations but, whilst all the estate is managed for timber production, multiple use is a high priority. The Northants District estate, by contrast, has a strong emphasis on restoration to coppice-with-standards. Although the District has a legacy of softwood plantations and coniferisation of native woodlands, this is gradually being reversed, and commercial production is viewed as a by-product. The South-East District extends only into Hertfordshire, and supports only a small amount of activity in the region.

xx. The private woodlands of the region are very varied in ownership and scale. According to surveys in East Anglia (*sic*), which are likely to be representative of the wider region, over 60% of farm woodlands, and just under half of estate woodlands, experience at least some degree of under-management, normally related to environmental and sporting constraints, high working costs for small areas, fragmented ownership, inaccessibility, and conflicting management interests. The landowner sample in our survey was based on the FC's Woodland Grant Scheme recipients and was thus unlikely to reveal the extent of undermanagement; however, it confirmed that management objectives were as likely to be related to sporting or even conservation interest, as to commercial production.

xxi. The market research company Intermark has also found that around £24m of generally low quality timber products are sold regionally through garden centres, garage forecourts etc, although the major growth in these appears to be in tropical hardwood goods. The factors likely to lead to market growth, especially products made from regional timber, are environmental labelling (especially FSC certification) and, for farm shops, the attraction of 'buying local'. Purchasers' expectations seem likely to increase, thus requiring products of higher and more consistent quality, supported by reliable supplies. Local producers are being affected by aggressive marketing, consistent supply and competitive pricing, and there is a move towards industrialised processes and away from cottage industries producing rustic items. However, there seems to be good scope for local producers to increase sales of split logs for fuel, kindling and charcoal, especially through garage forecourts.

xxii. There are substantial numbers of forest industry businesses in the region, with production concentrated in a few large businesses and most businesses being small or very small (often one person) in size. Highest employment densities appear to exist in management companies, processing and contracting, as well as high 'value added' businesses such as timber merchants, furniture makers and joiners. Most woodland employment appears to be associated with conservation, pest control, scrub clearance and sporting management, rather than in the more specific forestry operations of planting, fencing, access and timber work. However, planting, harvesting and thinning operations represent the major opportunities for contractors.

xxiii. Skill levels in the industry are broadly adequate although there are some emergent issues. Whilst Forest Enterprise reported satisfaction with current skill availability, attributable to their internal training programme, they did anticipate potential problems in filling future vacancies, reflecting a combination of low wages and high housing costs. Throughout the private sector there is greater concern about the rising average age of skilled workers, combined with growing requirements for operator certification and safety, and younger workers' expectations of comfort. Areas in which businesses reported skill deficits were in marketing and market intelligence, computer use, and machine operation. Moreover, in very small enterprises, particular skills may only be 'one deep'.

xxiv. With regard to FE, regional output is dominated by the East Anglia District, where annual production is about 180,000 cu.m.. Most of this is committed to four sawn fencing mills in the region and one in South Yorkshire on the basis of five-year contracts. Low grade wood suitable for products such as MDF and chipboard is sent to a processing plant in North Wales, and thus is associated with disproportionately high haulage costs. Our survey of private timber businesses in the region points to a number of general factors. With regard to timber purchases and sales, there is a negative trade balance, partly occasioned by a regional supply that is perceived to be of poor quality and uncertain continuity. Most inputs are sourced locally, though the lack of a large specialist tree nursery in the region results in high imports of forestry goods, and specialist machinery is frequently purchased outside the region. Those businesses most likely to source materials and goods from outside the region comprise nursery owners, timber merchants, contractors and tree surgeons. Those retaining most of their expenditure within the region are management companies, manufacturers and processors of timber products, and woodland owners. Sales of timber within the region by private woodland owners were predominantly low grade, whereas the lower proportion of exported timber was mainly high grade.

xxv. Figures relating to the woodland economy need to be moderated by estimates of the 'informal' economy. There is particular scope for informal activity in the woodland and timber industries: certain activities such as felling and maintenance are characterised by part-time and self-employed workers, work can be seasonal, some transactions (e.g. firewood purchases) are commonly made in cash, whilst some (such as casual workers taking fuelwood in return for forestry work) are essentially based on barter. In general, those with a long-term commitment to the sector noted that under-reporting of income was self-defeating as it tended to reduce the sale value of their business. Overall, we conjecture, based on pertinent research in developed countries, that informal economic activities could add around a further 10% to the value of the regional industry.

Tourism and game

xxvi. Tourism is a major industry in the East of England, with visitor trips generating £3.4bn in 1997. Recent leisure trends show that the traditional seaside holiday has been in decline, whereas short breaks, particularly involving countryside and heritage locations, are growing. Woodland clearly contributes significantly to the region's tourism potential, and we estimate that about a fifth of the region's 'out of town' visitor destinations derive at least part of their attractiveness from associated woodland. Indeed, Thetford Forest is the third most visited attraction in the region, with the heavily wooded country parks at Fairlands Valley (Stevenage) and Thorndon (Brentwood) being fourth and fifth.

xxvii. We have considered a number of alternative methods of valuing recreation and tourism benefit, and conclude that a reasonable estimate for the East of England is £120m annually, taking into account both the intrinsic values of leisure and the actual expenditure of woodland visitors. It is likely, too, that field sports related to woodland generate approximately a further £8m of direct expenditure.

The Public Benefits of Woodland – The Wood Bank

General Issues

xxviii. Within a post-industrial knowledge economy, timber production and processing is typically only a minor sector, and the importance of the woodland resource is more accurately represented in terms of its contribution to 'public' or 'non-market' benefits. We have used the term 'public benefit' to represent those woodland-related assets for which markets rarely exist and thus derive their value from the presence of woods rather than the timber extracted from them. Some of these assets may in practice have real market values, such as specialist recreation provision, but mostly it is necessary to infer indicative values by theoretical methods.

xxix. Various techniques have been proposed by economists for the valuation of public benefits. All of these have limitations and make differing assumptions, and it is not possible to apply them to the multiple elements of woodland wealth with great accuracy and confidence. However, we have drawn on a wide variety of sources, and also checked our estimates against those produced for other recent regional appraisals of woodland wealth. We have tried to avoid giving a spurious sense of accuracy to our figures, but have instead sought to arrive at similar values by a range of different methods, thereby reducing the scope for arbitrary and inconsistent estimates. We thus present a set of 'convergent approximations' for the various public benefits associated with the region's woodland wealth, and believe these to be rather cautious and as realistic as possible.

Quality of life – landscape, recreation and health

Landscape Quality

xxx. The diverse scenic qualities of the East of England have been defined in various local authority landscape assessments and the Countryside Agency's *Countryside Character Initiative*. These identify many areas where woodlands and more isolated tree features contribute to landscape distinctiveness, such as the Brecklands, river valleys, parklands and mixed farming areas. There are also less attractive areas where additional tree cover could soften the existing bleak or industrialised vistas. Valuing landscape benefits creates various difficulties, such as their free availability, their different values to tourists and residents, and the problems of separating out the 'landscape experience' from other values in order to avoid the risk of double counting. On the basis of various reasonable assumptions, we propose a figure of £60m/ year related to landscape quality.

Recreation

xxxi. The region has a number of 'flagship' woodland recreation resources, with a particularly important focus at Thetford Forest; the re-opened Centre Parcs facility at Elveden Forest is an example of the scope for major leisure provision by the private sector. According to the 1998 UK Day Visits Survey, there were an estimated 308m woodland leisure trips in England, and apportionment from earlier studies suggests that upwards of 50m of these would have occurred in the East of England. The Public Opinion of Forestry survey reinforces the importance of this type of recreation, reporting that in 2001 almost three-quarters of adults in England had made a leisure visit to a woodland in recent years. Most trips are short and local, by regular visitors, but a sizeable minority are longer-duration and typically result in significant expenditure. Many woodland visits are also for more specialised activities such as horse riding, mountain biking and bird watching, and these users may inject substantial sums of money into local economies.

xxxii. It is clear that there is both a large <u>actual</u> demand for woodland recreation as well as a suppressed <u>latent</u> demand where facilities do not yet meet the needs of potential users. Many parts of the East of England appear currently to be under-provided in terms of woodland recreation, either because there is too little woodland cover, or because existing woodland cover is insufficiently welcoming to potential users. Providing for latent recreational demands has two particularly important aspects: extending opportunities for convenient, healthy exercise to local and sometimes disadvantaged communities; and catering for more specialised leisure activities which can boost rural economies.

Physical and Mental Health

xxxiii. Three major health benefits have been convincingly related to tree cover: the psychological benefits of woodlands on well-being; improved post-surgery recovery rates in hospital wards which overlook wooded settings; and the opportunities for moderate exercise which exist in well-designed, accessible woodlands. Around 3% of the cost of the National Health Service is related to physical inactivity, and this could be substantially reduced if adults maintained their fitness by taking the equivalent of a brisk 30 minute walk five times a week. The benefits of physical activity are demonstrable in relation to heart attacks, strokes, Type II diabetes, fractured femur, colon cancer, breast cancer, Alzheimer's disease, hypertension and certain mental health problems. It is estimated that increasing the numbers who are moderately active by 5% and reducing the numbers who are sedentary by 10% could reduce numbers of deaths in the UK from heart disease alone by over 500 per year. It is not possible to estimate reliably the contribution made by woodland recreation opportunities to fitness, and thus to health budget savings. However, it is important to note that the predominant characteristic of woodland recreation is that of local, short duration visits on foot – very similar to the ideal 30 minute brisk walk – thus providing an ideal opportunity for appropriate exercise regimes. A conservative estimate of the savings on the health budget associated with woodland recreation in the region might be £18m, and there is great potential for even more savings if woodland walks were more widely available and actively promoted.

Environment

Biodiversity

xxxiv. Woodlands contribute enormously to the region's biodiversity (the term that encompasses the variety of life), with county Biodiversity Action Plans and State of Environment Reports setting many targets for the extension and positive management of woodland cover. Particular attention is paid to increased woodland area generally, ancient woodlands, distinctive semi-natural woodlands, wet woodlands, woodpasture or parkland, and veteran trees. Biodiversity has enormous value to society – both as a fundamental life-support system and as a source of enjoyment and education – but is extremely difficult to price. However, drawing on a range of recent research, we consider that the biodiversity of the region's woodlands is worth around £55m annually.

Soil, air and water

xxxv. An increasingly important role of woodlands is as a sink for anthropogenic atmospheric carbon. We have estimated that trees and their associated soils in the East of England sequester over 16m tonnes of carbon per year in net terms. Using a mid-range estimate for the value of sequestered carbon, we propose that this is worth around £14m annually. There is also widespread evidence of the role of woodlands in trapping air pollutants, including the assimilation and decomposition of ozone, sulphur dioxide and nitrogen oxides. It is also probable that well designed planting adjacent to high risk industrial facilities can mitigate possible pollution incidents. A realistic estimate of the pollution mitigation value of trees in the region is £18-19m. Woodlands will also have additional benefits in terms of soil and water conservation, as well as lowering nitrate inputs into aquifers, though we have not been able to attribute values to these. Overall, it appears reasonable to suppose that the collective benefit of woodlands to the physical environment is perhaps £35m annually.

Spatial planning

xxxvi. The co-ordination of residential and industrial development with new and existing woodlands has numerous benefits such as increasing house values, reducing loss of privacy, screening disamenities, providing recreation and access links, moderating winds and temperatures, alleviating urban flooding, decreasing pollution impact, attracting and retaining inward investment, and creating attractive workplace settings. Although all of these are virtually impossible to place a price on, we provide a reasoned basis for a combined, but almost certainly very conservative, annual value of £26m.

Renewable energy

xxxvii. We report separately on the actual and potential woodfuel industry for three main reasons: first, interviewees and questionnaire respondents repeatedly referred to this as the pre-eminent opportunity to revitalise the small roundwood sector (and thus private woodlands generally); second, sales of firewood are peculiarly important in local economies and are very beneficial in terms of expenditure recirculation and job diversification; and third, scenarios of future energy use in the region favour wood as a key alternative to fossil fuels.

xxxviii. Charcoal production is frequently cited as an opportunity for rural diversification. Currently an extremely high proportion of charcoal, especially for the barbecue market, is sourced from overseas. Much of this is from unsustainable sources, such as mangroves and rainforests. Some observers thus see significant potential for increasing charcoal production from UK woodland, and adding substantially to our 200 or so charcoal producing enterprises. However, views about this potential are mixed, as investment costs are high, the demand seasonal, and problems of marketing considerable. The largest firewood producer in the region also distributes considerable quantities of charcoal, but has expressed concern about reliability of small roundwood supply if they were to extend into charcoal production.

xxxix. With regard to fuel for electricity production, we heard a number of knowledgeable representations for a major new timber-burning power station in the region. The principal sources of material for this would be low grade roundwood and wood waste, and specially grown short rotation willow coppice. There are currently three, and in the future perhaps four, stations which do or could with some conversion, take an amount of wood waste/ woodchip; however, they do not yet create a major demand. Currently less than half a percent of the East of England's electricity demand is met from renewable energy sources, well below official targets. Energy crops are seen as one of the likeliest means of making a rapid contribution to these targets. Presently, development of wood energy is hampered by lack of market incentives, though DEFRA's *Energy Crop Scheme* provides some assistance. However, there is also some reluctance to promote over-dependence on a single large wood-fired electricity station, and a more diversified fuel economy based on community heating schemes may be preferable.

xl. In view of the importance of firewood in local rural economies, we undertook a separate study based on a sample of small-scale operators in North East Suffolk and North West Norfolk. Although these businesses each employed 2-3 people, the mean FTE associated with the firewood element was less than one. Typically, they required part-time year round labour, supplemented by seasonal assistance, and generally used firewood production as a means of keeping employees busy during slack periods. Whilst major items of equipment (apart from chain saws) tended to be purchased from outside the region, most other purchases were relatively local, especially fuel and oil. Almost all the wood utilised is from the region, though some came from surprisingly far afield. Most of the log sales are to households, where wood is predominantly used for supplementary heating, and only about 5% of sales were to households using wood as their major source of heat. By contrast, kindling was sold almost entirely to commercial outlets. Most sales are quite local, with an average delivery distance of 16km for firewood. Income is very variable (typically £4-10,000/yr for a supplementary enterprise and £20-25,000/yr for a main enterprise), and sales are heavily seasonal. Based on operators' knowledge of local firewood enterprises, about 90% of the sector operated on a small scale, part-time basis, and this included farmers, sawmills, fencing specialists and tree surgeons.

xli. Overall, we estimate that, annually, over 60,000t of firewood are produced for commercial sale in the region, involving an expenditure by producers of c.£1.5m in the region and a further c.£0.5m outside the region, generating an income of around £5m from sales of regionally produced firewood, supplemented by some £3.5m from wood produced outside the region. A proportion of this activity will, however, be in the 'informal' economy. Also, the total tonnage excludes a significant quantity extracted by farmers and landowners for their own consumption.

Education & Learning

xlii. Woodlands have important educational values, particularly in relation to school visits, lifelong learning, skills training and, potentially, school location. The Forestry Commission has created specific educational facilities such as Forest Classrooms, and leads on the Forest Education Initiative. However, research now points to more fundamental contributions of woodlands to children's intellectual, physical and emotional development, and some countries have consequently set schools within woodlands. There is little evidence on how such benefits can be costed, but we are able to suggest a possible current value of around £5m.

Looking to the Future

Introduction

xliii. This section considers the current prospects of the woodland and timber industries in the region, their sources of business intelligence, overcoming barriers to future development, and the kinds of support which could be provided in order to help them contribute more effectively to the *Regional Economic Strategy*. We recognise that a developmental strategy for the sector must address both the business needs of timber growers and processors, and the non-commercial but hugely significant public benefits that can be reaped from increased tree cover.

Business Prospects

xliv. Latterly, the domestic timber industry has faltered due to low raw material prices and the availability of cheap imports. Considering this unfavourable context, most of the businesses we surveyed were surprisingly optimistic, with only private woodland owners typically anticipating static or deteriorating prospects, and generally suggesting that it was not possible to make a significant profit from woodlands. The view from Forest Enterprise was that the growing policy importance of multiple-benefit woodland, and the long-term supply contracts that had been set up with current customers, would provide an economic cushion. Overall, just under two-thirds of respondents to our survey expressed the view that their business performance would remain about the same during the next three years, with about one-fifth expecting an improvement and one-sixth a deterioration.

xlv. However, there was seen to be little scope for investing in major new processing facilities in view of current timber prices and existing over-capacity, even though it was economically dubious to be paying high transport costs to send low grade timber outside the region for processing. Short- and medium-term development of the sector was seen to lie in consolidating markets and producer-processor linkages, extending recreation provision, and establishing replacement markets for small roundwood. Generally, there was felt to be scope for capitalising on public awareness of local goods and environmental issues, creating a more efficient and diversified domestic timber market, securing payments related to conservation and 'green business', ensuring timber meets FSC standards where possible, and exploiting promising niche markets such as coppice and Christmas trees.

Supporting the Regional Economic Strategy

xlvi. We consider that future support to the woodland and timber industries in the East of England should be two-fold. First, there is a need to promote expansion and improved management in the commercial sector. We see important opportunities in relation to:

- practical, affordable training courses with effective follow-up, with de-centralised delivery where possible;
- providing preferential loans and improved business advice for both major operators and microbusinesses;
- supporting substantial new market opportunities for small roundwood;
- better promotion, including certification, of regional timber;
- improving the image of the industry amongst school/college leavers;
- improving the reliability of supplies from local producers; and
- greater assistance in understanding and exploiting markets.

xlvii. Second, there is a need to optimise the contribution of woodland to the general wealth and quality of life of the region, and this challenge will require both private sector initiatives and a wide range of commitments from public sector organisations. The opportunities in these areas are sometimes fairly clear, but generally they require further research and feasibility testing. However, we feel that the most promising issues for medium-term attention are:

- targeting urban fringe areas for new, well-designed woodlands with a community emphasis;
- investigating the scope for more sophisticated types of woodland recreation, entertainment and tourism;
- promoting woodland walks as a healthy activity for all sections of the population;
- supporting design and management measures that increase the biodiversity and landscape values of woodlands;
- developing the carbon sequestration potential of woodlands;
- cultivating close links with local authorities and others to explore opportunities for development-related woodland, and for educational links to woodlands;
- undertaking a feasibility study of the economics, logistics and technology of wood-burning power stations.

xlviii. In support of these issues, we advocate the establishment of a core-funded networking organisation to assist woodland and timber industries with the co-ordination of production and supply chains, promote the region's timber as a high quality and reliable resource, investigate emerging market opportunities, and advocate the benefits of woodland to a wide range of organisations. In addition, we believe that a more strategic partnership should be facilitated by the Forestry Commission to assist policy targeting, so that the non-market benefits of woodland can more effectively be realised for the sustainable development of the region. We suggest that progress in relation to these issues should be monitored against a 'balanced scorecard' of accomplishments in relation to the full range of market and non-market benefits.

Professor Paul Selman
Countryside and Community Research Unit
University of Gloucestershire

January 2003