Prospects for the market supply of wood and other forest products from areas with fragmented forest-ownership structures: - England case study

A contract report for ConFor and CEPF

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Acknowledgements

All stakeholders who participated in the study (listed in Appendix 1).

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Abbreviations

BOKU	University of Natural Resources and Applied Sciences, Vienna
CHP	Combined Heat and Power (woodfuel)
CPET	Central Point of Expertise on Timber
CGT	Capital Gains Tax
CLA	Country Land and Business Association
CLAD	Customer and Land Database
CEPF	Confederation of European Forest Owners
ConFor	Confederation of Forest Industries
DEFRA	Department of Environment Food and Rural Affairs
EFIP	English Forest Industries Partnership
EWGS	England Woodland Grant Scheme
ETWF	England's Trees Woods and Forests
FC	Forestry Commission
FSC	Forestry Stewardship Council
FWO	Fragmented Woodland Owners
GB	Great Britain
GHG	Green House Gas
GVA	Gross Value Added
IHT	Inheritance Tax
LAG	Local Action Group
Mgt	management
NFI	National Forest Inventory
NGO	Non-Governmental Organisation
NIWT	National Inventory of Woods and Trees
PAWS	Plantations on Ancient Woodlands Sites
PES	Payment for Ecosystem Services
RDPE	Rural Development Plan for England
RHI	Renewable Heat Incentive
RPA	Rural Payments Agency
RSPB	Royal Society for the Protection of Birds
RLR	Rural Land Registry
SLIM	Small and / or Low Intensity Managed
T10Q	Top 10 Questions for forestry project (see www.forestryevidence.org)
UK	United Kingdom
UKFS	United Kingdom Forestry Standard
UKWAS	United Kingdom Woodland Assurance Scheme
WMI	Woodland Management Indicator
WIN	Woodland Initiative Network

Notes

Values quoted at £ pound sterling were converted to Euros in January 2010 at an exchange rate of £1.00 = €1.15.

The Chatham House Rule was applied in this study: The rule states that "When a meeting, or part thereof, is held under the Chatham House Rule, participants are free to use the information received, but neither the identity nor the affiliation of the speaker(s), nor that of any other participant, may be revealed". For more information see: http://www.chathamhouse.org.uk/about/chathamhouserule/ . Individual names have not been affiliated to any personal citations in the text.

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INTRODUCTION

ConFor contracted the Sylva Foundation to complete a report to represent England's input into a European study entitled *Prospects for the market supply of wood and other forest products from areas with fragmented forest-ownership structures*. The research study was coordinated through the University of Natural Resources and Applied Life Sciences, Vienna (BOKU) in conjunction with a number or partner organisations and participants.

Fragmented forest ownership

The following definition was provided as the definition of fragmented forest ownership.

> "As fragmented forest ownership in this study, we understand the presence of a high number of individuals owning small-size forest parcels. Forest fragmentation here is not meant to be addressed mainly from the spatial point of view, considering distribution of individual forest stands in the landscape, even though this may also be viewed as one of the limiting factors for effective mobilisation of wood. The area of a fragmented woodland may be considered as a small-size forest parcel, yet fragmentation may also be determined by the site conditions (e.g. stock, topography, site development, etc.), and therefore the decision on what may be considered as fragmented has to be taken on a case to case basis."

This definition of fragmented woodlands was provided by the European project co-ordinator and was adopted in the England case study for the sake of uniformity and therefore to permit comparison between case studies. This definition was provided at the start of the interviews. Given that it is nonspecific, i.e. "small-size" forest parcels the definition was often debated. There is no clear or common definition of fragmentation in England. The factors that determine the fragmented nature of a woodland are variable and manifold, comprising indicators such as size, shape, spatial fragmentation, owner typology, state of management, woodland species, quality of growing stock, stocking density, and proximity to specific / relevant wood markets.

Methodology

The Sylva Foundation commenced work on the project on the 8th December 2009.

The methodology employed involved both primary and secondary data collection as detailed in the case study protocol. The topics and questions covered followed the format detailed in the revised annex II of the case study protocol.

The time frame to carry out the literature review, organise and interview the stakeholders, organise and conduct the focus group and produce the final report was short considering the scope of the project. This was acknowledged when the contract was accepted. In cases where it was felt that more time was required to research and investigate particular areas of the project it was recommended that further research should be carried out. Additionally it has been detailed where the study identified a lack of available information.

Forestry is a complex subject with many management issues and considerations regarding resource, markets, ownership and mobilisation inextricably linked. Case study questions were edited and reduced where it was deemed that other questions similar in nature had adequately addressed the issue in other parts of the report.

Secondary data collection

A literature review was carried out in December 2009 and January 2010. The resources used for the literature review were the Plant Sciences Library at the University of Oxford, the Sylva Foundation library at Little Wittenham, and an internet search.

The project remit requested specific data sets with regard to forestry harvesting, transport and processing statistics**.** In the UK such statistical data can often relate to, or include different geographical areas such as England, Scotland, Wales, Northern Ireland, Great Britain (GB) or the United Kingdom (UK). The move towards devolution of the Forestry Commission (FC) into the separate countries that comprise GB and the UK in 1997 will have partly caused this situation, as will be the objectives of other public sector agencies such as the UK Office for National Statistics that may not necessarily require reporting on the United Kingdom's constituent countries. Therefore in this report, where possible, the data will be provided for England, however in some cases, where no other source is available the data may refer to Great Britain or the United Kingdom.

Primary data collection

Stakeholder interviews

Ten Stakeholder Interviews were carried out. The interviewees were stakeholders from across the forestry sector (Appendix 1). A typology of the stakeholders interviewed is detailed in Appendix 2.

Focus Group

The focus group meeting was originally due to take place at the Sylva Foundation Offices at Little Wittenham on the 7th January 2009, however due to adverse snow conditions the meeting was postponed and location changed to Monday 11th January at the Plant Sciences Department of the University of Oxford. Nine forestry stakeholders braved the weather conditions to make the meeting and their comments, debate and input was highly valued.

SECTION 1. DESCRIBE THE CASE STUDY REGION

Brief history of the woodland resource in England

In prehistoric times England was largely covered with woodland. By the end of the first millennium much had already been cleared to satisfy the needs of an increasing population, with the Doomsday records showing approximately 15% woodland cover across England[1]. This trend continued, and by the end of the 19th century woodland had dropped to below 5%. Since then England's forest and woodland area has been expanding, and by the beginning of the 21st century there were over 1.1 million hectares, equivalent to 8.4% woodland cover[1]. This, however, remains relatively low in international terms.

In the last 10 years UK forestry policy has had two main aims:

- The protection and sustainable management of existing woods and forests;
- The continued steady expansion of woodland area to provide more benefits for society and our environment[2].

1. Total forest cover in England

1.i. Percentage of the total area.

Total woodland area in England is 1,129,000 ha 8.4% of land area (FC 2009).

Table 1 Area of woodland in England

Area of Woodland - England[3] (000 ha)			
	Coniferous	*Broadleaved*	*Total Woodland*
Forestry Commission	146	55	201
Non-Forestry Commission	219	709	928
All Woodland	365	764	**1129**

Notes:
1. Areas as at 31 March 2009.
2. FC/FS = Forestry Commission/ Forest Service; Non-FC/FS = all other woodland, including some other publicly owned woodland.
3. Figures for non-FC woodland in Great Britain are based on data obtained from the 1995–1999 National Inventory of Woodland and Trees and adjusted for new planting and sales of FC woodland, but at present no adjustment is made for woodland converted to another land use.
4. Broadleaves include coppice and coppice with standards.

[1] Rackham, O. (2001). *Trees and woodland in the British landscape : the complete history of Britain's trees, woods & hedgerows*. London: Phoenix Press.

[2] Smith S. (2002). The National Inventory of Woodland and Trees. Forestry Commission. http://www.forestry.gov.uk/pdf/frnationalinventory0001.pdf/$FILE/frnationalinventory0001.pdf

[3] Forestry Commission (2009a) Forestry Facts and Figures. A Summary of Statistics about woodland and Forestry. National Statistics.

1.ii. How did it develop during the last ten years (approx.)?

The woodland cover was assessed as 8.4% of land area in 2001, an increase from 7.3% in 1980[4] This represented an increase of woodland area by 17% since the last survey in 1980[5], which surpasses the increase of around 6% between 1965 and 1980[6].

1.iii. What future development can be expected

It is expected that the woodland cover will continue to increase as the importance of creating new woodland has recently taken a step forward in public policy terms in England. The UK Government launched their Low Carbon Transition Plan in July 2009 which details plans to reduce UK carbon emissions. It contains a very positive section about woodland creation which is a real shift in emphasis compared with other statements about woodland creation in England made over the past 2-3 years.

In summary, the woodland section in the plan states that woodland creation is a cost effective way of tackling climate change, that it also provides a raft of other benefits, and that if we achieved 10,000 ha per annum of new planting 50 million tonnes of carbon could be stored. By not planting more woods our ability to store carbon will fall[7].

The UK Government published the Read Report in late 2009 that highlighted the important role for UK trees and forests in responding to climate change. The report identified a clear need for more woodlands and advocated that an additional 14,840 ha be planted annually over the next 40 years leading to an increase of 4% of land area under trees (Read *et al.* 2009)[8].

The woodland cover was assessed as 8.4% of land area in 2001, an increase from 7.3% in 1980. A recent Government strategy has advocated an additional 4% of woodland be created by 2050.

2. What is the wood mobilisation in terms of annual increment?

England has not taken full advantage of the (forestry) sector compared to competing countries including Scotland and Wales. There is lost economic potential as only **39%** of the annual increment is being harvested. The high dependence on imported wood and paper products means that not only do revenue streams flow back to forest owners elsewhere, but also the opportunity to fund sustainable forest management and other forest based activities in England[9]. It is interesting that the authors of this report considered Scotland and Wales as competing countries.

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[4] Forestry Commission (2003). State of England's Woodlands. Evidence Based Steering Group Paper. Economic Analysis of Forestry Policy in England. April.

[5] Smith S. The National Inventory of Woodland and Trees. Forestry Commission. 2002. http://www.forestry.gov.uk/pdf/frnationalinventory0001.pdf/$FILE/frnationalinventory0001.pdf

[6] Locke, G.M.L. (1987). *Census of woodland and trees 1979-82*. Forestry Commission Bulletin 63. HMSO, London.

[7] http://wtcampaigns.wordpress.com/2009/07/16/government-announce-low-carbon-plan/

[8] Read, D.J., Freer-Smith, P.H., Morison, J.I.L., Hanley, N., West, C.C. and Snowdon, P. (eds). (2009). Combating climate change – a role for UK forests. An assessment of the potential of the UK's trees and woodlands to mitigate and adapt to climate change. The Stationery Office, Edinburgh.

[9] Woodland and Forest Sector in England. A Mapping Study Carried Out on Behalf of The England Forest Industries Partnership by Jaakko Pyroy Consulting. 2006

The authors specifically considered the economic fitness of England and the factors that determined the English forestry sector's competiveness. He started by comparing the two countries that bordered England, Wales and Scotland, hence why Wales and Scotland were considered competitors in the regional / international market.

Each year the FC publish statistics on UK wood production and trade. The figures are estimated by the Expert Group on Timber and Trade Statistics. They are based on surveys of the forest sector and trade data from HM Revenue & Customs. The provisional figures for 2008[10] indicate:

Harvesting of UK roundwood[11]:
- 8.4 million green tonnes of softwood (9.24 million cubic metres Over bark); a 7% decrease from 2007, but similar to the level in 2006;
- 0.4 million green tonnes of hardwood (0.4 million cubic metres Over bark); a 2% decrease from 2007.

UK roundwood deliveries to industries and others:
- Total: 8.6 million tonnes of roundwood (softwood and hardwood); a 7% decrease from 2007, but similar to the level in 2006; of which:
- Sawmills: 5.0 million green tonnes; an 11% decrease from 2007;
- Wood-based panels: 1.2 million green tonnes; an 11% decrease from 2007;
- Integrated pulp and paper mills: 0.5 million green tonnes; a 9% increase from 2007;
- Other uses, including round fencing, woodfuel, shavings and exports of roundwood: 1.9 million green tonnes; a 7% increase from 2007.

UK production of wood products in 2008 included:
- 2.8 million cubic metres of sawnwood (a decrease of 11% from 2007);
- 2.6 million cubic metres of wood-based panels (a 28% decrease from 2007);
- 5.0 million tonnes of paper and paperboard (a 5% decrease from 2007)[12].

Estimated hardwoods volumes delivered to sawmills decreased from 92,000 green tonnes in 2004 and to 67,000 greens tonnes in 2008. The majority of UK hardwood deliveries (69%) were used for woodfuel. Estimates of harvest and increments in England in 2001[13]:

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[10] UK Wood Production and Trade (provisional figures). Forestry Commission. May 2009. http://www.forestry.gov.uk/pdf/trprod09.pdf/$FILE/trprod09.pdf

[11] Conversion coefficient - http://www.forestry.gov.uk/website/forstats2009.nsf/0/8B4784E90B2A535480257361005015C6

[12] UK Wood Production and Trade (provisional figures). Forestry Commission. May 2009. http://www.forestry.gov.uk/pdf/trprod09.pdf/$FILE/trprod09.pdf

[13] Pearson I. & Gardiner B. (2006). A Woodfuel Strategy for England. Forestry Commission England.

Table 2 Annual increment and harvest (Pearson I. & Gardiner B. 2006).

Million green tonnes per annum			
	Conifer	Broadleaved	Total
Annual increment	3.8	3.3	7.1
Annual harvest	2.3	0.6	2.9
Unutilised	1.5	2.7	4.2

The annual harvested increment from English woodlands is 39%

2.i. How much is the annual harvest in cubic metres over bark

The total (statistically recorded) annual harvest volume can be taken from the table above and equates to 2,900,000 m^3.

2.ii. How much is the annual increment in cubic metres over bark?

The total (statistically recorded) annual harvest volume can be taken from the table above and equates to 7,100,000 m^3.

2.iii. How much did it develop during the last ten years (approx.)?

Detailed data for the development of the annual increment over the last ten years are not available. Generally data suggests that annual increment has been declining.

2.iv. What future development can be expected?

The forest and wood-using industry has the advantage of working with a material which is a natural carbon capture and storage facility. As a result, the industry is in the position positively to contribute to efforts to address climate change, through emissions reductions, mitigation, product substitution and adaptation thus it is expected that there will be a rise in wood demand. It is further expected (anecdotally) that increment rates will continue to decline and future harvest volumes will not be sufficient to meet this increased demand. Softwood production is expected to peak by 2021, then fall, due to the lack of new planting over the last 20 years.

A strong quantitative indication of harvesting potential can be taken from *A Woodfuel Strategy for England* that sets out to utilise an extra 2Mt of wood per annum by 2020, representing a 60% increase in wood production in England. The focus for achieving the 2 Mt is on under-managed woods[14]. Many of these woods will be fragmented and indeed their fragmented nature is a contributing factor to their under-managed status.

3. Is there legal uncertainty regarding forest ownership

There is an active campaign by the Land Registry to encourage Land Owners to register their property. The main statutory function of Land Registry is to keep a register of title to freehold and leasehold land throughout England

[14] Pearson I. & Gardiner B. (2006). A Woodfuel Strategy for England. Forestry Commission England.

and Wales. On behalf of the Crown, it guarantees title to registered estates and interests in land[15]. State-backed registration gives greater security of title, providing protection against claims of adverse possession.

Registration percentage differs across administrative areas in England. Cumbria has the highest percentage of unregistered land at 41.68%, whilst Stockton on Tees has the lowest at 11.24%[16].

State-backed registration gives greater security of title, providing protection against claims of adverse possession.

3.i. Is there an ongoing restitution process?

There is no ongoing restitution process in England.

3.ii. Please describe the process.

There is no ongoing restitution process in England.

4. How can the forests in the region be characterised?

4.i. Average stock per hectare in cubic metres over bark?

Data on average stock per hectare were not accessed for England. The next GB National Forest Inventory that may include this data will not be available until 2014.

4.ii. Shares of coniferous/non-coniferous wood?

In England, Broadleaved woodland is the dominant forest type representing 52.1% of all woodland. Conifer woodland represents 25.6%, Mixed woodland 12.3% and Open Space within woodlands 6.5%[17].

The main broadleaved species is oak covering 158 665 hectares or 25% of all broadleaved species. The main conifer species are pines covering 129 593 hectares or 38% of all conifer species.

4.iii Shares of abandoned and/or unmanaged forests, and the role that fragmented ownership plays in this?

265,000 hectares of the 914,000 hectares of non–FC woodland in England receives FC approved management grants. This leaves 649,000 hectares, or 71% of non-FC woodland without an approved management plan[18]. This is currently the best available estimate of under-managed woodlands although the lack of an approved FC plan does not necessarily equate to an unmanaged status.

Stakeholder Quote:

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[15] Anon. (2008). New Framework document. Land Registry.

[16] http://www.landreg.gov.uk/register_dev/fholdcover/

[17] Forestry Commission (2009). Forestry Facts and Figures. A Summary of statistics about woodland and forestry. National Statistics.

[18] Pers. Comm. Head of Woodland Surveys, Forestry Commission. National Inventory of Woodlands and Trees – England.