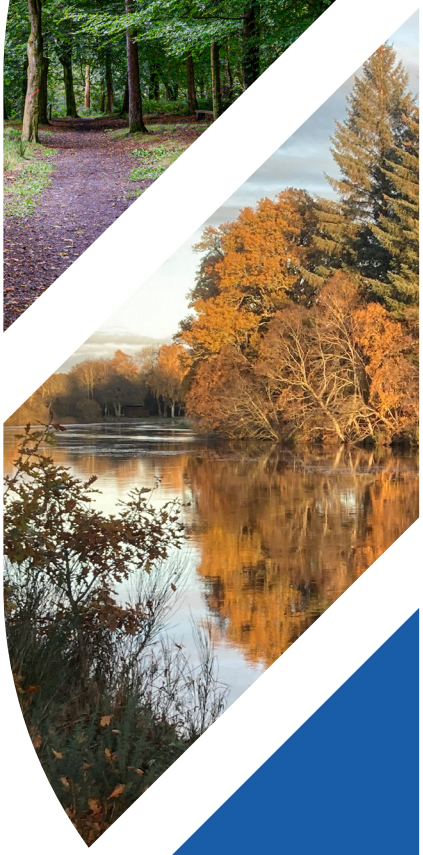
Scottish Forestry
Coilltearachd na h-Alba

Economic Impact of Forest Based Activities in Scotland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Contents

Executive Summary

Purpose

The forestry sector is an important part of the Scottish economy, covering a diverse range of activities including creating and managing woodlands, processing of wood products and tourism.

This study brings together the different parts of the forestry sector to provide a comprehensive estimate of its economic contribution. The results are for 2019, the final full year of economic activity prior to the Covid-19 outbreak. More specifically it updates four indicators in the Scottish Forestry Strategy (SFS) Implementation Plan, first published in 2008:

- Forestry's contribution to Scottish Gross Value Added (GVA[1])
- Timber's contribution to Scottish GVA
- Forestry's contribution to Scottish tourism GVA
- Employment supported by the forestry-related sector

Scope

GVA and employment were estimated for four broad components of the 'forest industries' in Scotland:

- Forestry
- Primary wood processing
- Forestry-related activities supply chain
- Forestry tourism

For the purposes of the present study, Scotland's forest based activities sector was defined as including any business operating in Scotland that is engaged in activities related to forestry, trees, woodland and primary timber processing (pulp mills, production of sawn wood, wood panels, fencing posts and woodfuel, including chips, briquettes, pellets, firewood and other woodfuel) in Scotland'. This includes forest management and primary timber processing, forestry civil engineering, haulage, agents, community groups with interests in woodland, NGOs, local authorities with woodland activity, research and education, tourism and the activities of the sector's three principal public agencies (Scottish Forestry, Forestry & Land Scotland and Forest Research).

Businesses and activities excluded from the study included secondary processing and paper production from imported pulp and most haulage from primary to secondary processors. The economic impact of the installation and operation of wood fuel boilers was excluded (being beyond the parameters of the study and considered as part of the renewable energy sector) although processing of wood for fuel and production of wood pellets was included.

A bespoke approach was undertaken that accumulated data from a range of sources into a single impact model covering the whole forestry sector. The output of this activity was a single 'bottom line' assessment, based on the best available data, of the total value of the forestry sector to Scotland.

The study examines direct effects on GVA and employment. Multiplier (or "knock-on") effects from indirect and induced impacts are not considered in order to reduce risks of double-counting

1 Gross value added (GVA) is an economic productivity metric that measures the contribution of a corporate subsidiary, company, or municipality to an economy, producer, sector, or region.

Key Findings

Forestry's Economic Contribution to Scotland

£99m
from Forestry Activities Supply Chain

£394m
from Primary Wood Processing

WORTH £1.1 BN PER YEAR

£385m
from Forestry

£252m
from Tourism[2]

1,940
in Forestry Activities Supply Chain

3,690
in Primary Wood Processing

EMPLOYS 34,140 PEOPLE

10,380
in Forestry

18,130
in Tourism[2]

2 It should be noted that a different methodology was used to calculate the economic significance within tourism as detailed in section 5.2.

Key Findings

The results of the study demonstrate that the forestry sector in Scotland has a far-reaching impact across the economy. Given the geographical spread of woodlands, support services, processing facilities and tourism activities, the economic benefits of forestry are distributed widely across Scotland, including more remote areas. The results show that Scotland's forestry sector employed an estimated 34,140 people and contributed £1.1 billion per year to Scotland's economy.

Most businesses fall within the micro and small business categories, as well as a few much larger businesses with over 250 employees. This illustrates the importance of the bespoke approach taken in this study in that the contribution of many microbusinesses might not be captured by government estimates, such as the Scottish Annual Business Statistics (SABS).

The forestry and primary wood processing parts of the sector are roughly equal in size in GVA terms, although the former are almost entirely made up of small businesses and support a much larger share of employment. Primary processing transforms roundwood harvested from forests through a complex process including cutting, milling, drying, and finishing, and plays a vital role in adding value to the production of timber in Scotland. It is ideally placed to meet demand for renewable, bio-based products based on the sustainable management of natural resources.

The forestry sector is also supported by a diverse chain of businesses that provide the supplies, advice, expertise and infrastructure needed to establish new woodlands and bring products to market. Many of these businesses are rooted in the fabric of rural areas and the communities that live there. This sub-sector is also a fundamental economic contributor to the forestry sector generating an estimated GVA of nearly £100m.

Finally, the results reveal the important role of forest tourism in the economy and local communities. Its contribution to GVA exceeds £0.25bn and generates almost 20,000 jobs. Visits to forests are also associated with enjoyment of nature and improved health and well-being.

The study underlines the economic importance of the forestry sector and provides a snapshot of the different ways in which it generates income and employment across Scotland. There are, of course, significant non-monetisable benefits that forests bring to Scotland's communities which, while not part of this study, are also central to forestry's economic narrative.

1. Introduction

1. Introduction

1.1 Purpose

The purpose of this report is to provide an estimate of the forest-based activities sector's total contribution to Scotland's economy in 2019. It aims to identify innovative solutions to address the limitations of ONS data sources in assessing this value, including the challenges of capturing accurate data for small and micro businesses, and some SIC codes containing a mixture of forestry and non-forestry businesses[3].

1.2 Defining the Forest Based Activities Sector

For the purpose of this report, and following discussions with Scottish Forestry, the forest-based activities sector has been assumed to include the following types of businesses:

- **Forestry**:

– Silviculture & Other Forestry Activities
– Harvesting
– Support Services to Forestry (including public sector agencies such as Scottish Forestry and Forestry and Land Scotland)

- **Primary Wood Processing**:

– Sawmilling & planing of wood
– Manufacture of wood-based panels and paper
– Manufacture of pellets, chips and firewood

- **Forestry Activities Supply Chain**:

– Land Agents
– Environmental Consultants
– Road Haulage
– Supplies and Equipment
– Firewood Merchants
– Wildlife Management
– Tree Nurseries

- **Forestry Tourism**

1.3 Summary of approach

For most businesses within the forest-based activities sector, the economic and employment impacts of the sector have been developed through a 'bottom-up' approach. For some sectors, such as Primary Wood Processing, this approach was not possible due to poor survey responses. These cases are explained in full in subsequent sections. The 'bottom-up' approach has been based on the following steps:

1. **Sector definition**: we agreed an SIC code-based definition for each industry in discussions with Scottish Forestry (presented in Appendix 1). Where we identified SIC codes that were partially forestry based and partially non-forestry based, we included all the SIC code within the definition at this stage and filtered out non-forestry businesses as part of step 3.

2. **Data Capture**: we pulled together a list of all known businesses in each industry, including a turnover figure and employment figure for each business, based on a combination of data sources, including the Inter-Departmental Business Register and the Experian National Business Database.

3. **Data Cleansing:** we reviewed the list of identified businesses line-by-line, all duplicate or non-forest-based businesses were removed, and any known forestry businesses that were not mentioned on the list were added in using Companies House records.

4. **Gap filling:** where gaps were identified in the data (for example where a business reported a turnover figure for their business but not an employment figure or vice versa), an average figure for businesses within the same sector or sizeband was applied to that business' record.

3 Standard Industrial Classification (SIC) codes are four-digit numerical codes that categorize the industries that companies belong to based on their business activities.

5. **Aggregation:** the total impact in the sector was estimated as the aggregate figure across all known businesses within the database.

It must be noted that SIC classification depends on businesses self-reporting what subsector they conduct their primary business in. Some businesses occupying several subsectors may establish different subsidiary businesses for separate business lines, while others may attribute all of their turnover to a single sub-sector. Therefore, there may be misalignment between what a company is known for, and what category they are classified into, which affects aggregate data.

The employment data in this study relates to reported or estimated headcount employment. One feature of the forestry sector is the considerable use of contractors, part-time staff, seasonal staff, and volunteers. This may mean there are discrepancies between employment figures and turnover, in that similar turnover figures may be attributed to varied employment figures, depending on companies' level of use of contractors and volunteers.

An alternative approach was required for those industries where most businesses operated in a range of different sectors including both forestry related and non-forestry related activities (including land agency, environmental consultancy, and road haulage). In these cases, estimates are based on the findings from a previous Forestry Commission[4] survey of businesses operating in this area. These figures were adjusted to account for the employment and GVA growth that has occurred in the years since this report's publication, using the average annual sector growth rates reported in Scottish Annual Business Statistics.

An alternative approach was also required to quantify the economic contribution of forest-related tourism expenditure in Scotland. This is because some businesses, particularly in tourist facing communities close to forests, served a variety of visitors, some of whom are forest visitors and some of whom are not. This approach applied estimates for the number of non-local visitors to forests in Scotland (based on monitoring data provided to the research team by Forestry and Land Scotland) and converted these to estimates of total visitor spend based on data from the UK Day Visitors Survey.

There is an array of further benefits to society from Scotland's forests that we have not been able to monetise. However, a section on Community Benefits has been provided as Appendix 2 to qualitatively illustrate the further value of the forestry sector to local communities.

4 The Economic Contribution of the Forestry Sector in Scotland, Forestry Commission, 2015. This approach was also used for assessing the economic impacts of the environmental consultants and road haulage sectors, based on the same rationale.

2. Forestry

2.1 Sector definition and profile

2.1.1 Sector definition

Forestry refers to all matters and activities concerned with or affecting the production and use of goods from or on forest land. It includes:

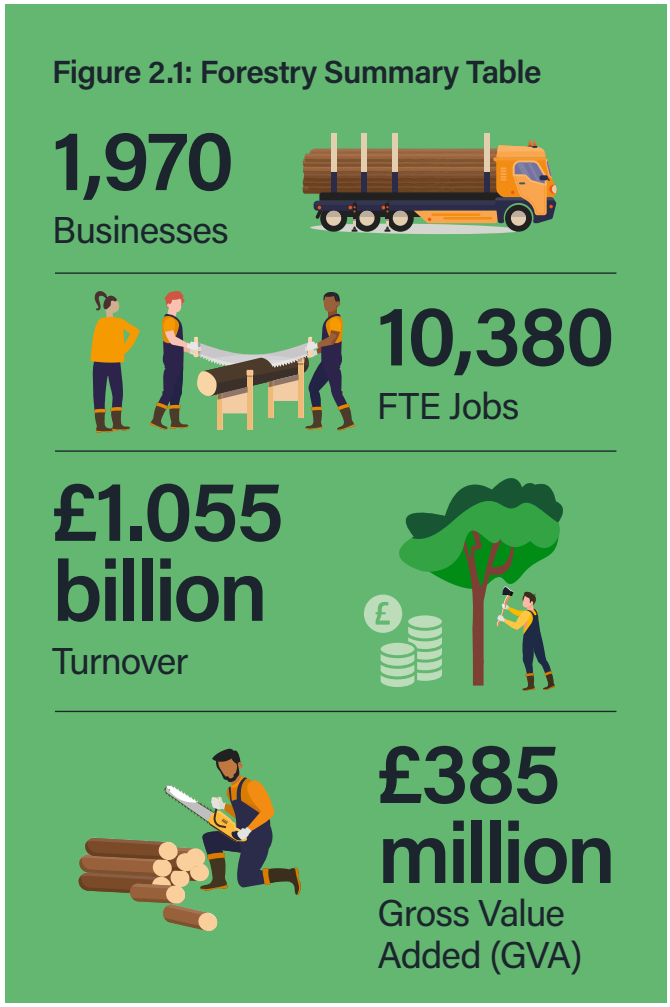
- **Silviculture and other forestry activities**: Silviculture is the practice of controlling the growth, composition/structure and quality of forests. There is a wide range of silviculture systems that are usually tailored to a site and the tree species to be grown.
- **Harvesting and thinning**: the cutting down of trees and their preparation where necessary, for delivery to sawmills, pulp mills and other wood-processing plants
- **Support services to forestry**: any operations that assist the forestry industry, including forestry consulting, timber estimation, forest creation/planting, fencing, road engineering and public sector agencies undertaking activities related to forestry.

2.1.2 Sector profile

Forestry and Logging is a significant sector within the Scottish economy, with over 1,970 businesses generating a turnover of over £1 billion, according to our estimates. Approximately 10,380 full-time equivalent employees are involved in the Forestry sector generating a GVA in the order of £385 million.

In terms of business size, nearly 100 percent of businesses employ fewer than 250 employees. In fact, only two businesses would be classified as large according to Office of National Statistics (ONS) definitions. Moreover, 94.7 percent of the businesses, numbering 1,860, are considered microbusinesses with fewer than 10 employees.

Figure 2.1: Forestry Summary Table



2.2 Silviculture and other forestry activities

2.2.1 Definition

Silviculture is the practice of controlling the growth, composition/structure and quality of woodlands. There is a wide range of silviculture systems that are usually tailored to a site and the tree species to be grown.

2.2.2 Business profile by sizeband

When analysing business sizes, we find that there are no large businesses operating primarily in silviculture in Scotland. Following the trend of the rest of forestry, a vast majority of the businesses employ fewer than 10 employees. Therefore, the possibility for the economic impact of this subsector being understated in national statistics is high.

Table 2.1: Silviculture and Other Forestry Activities Sector – Business Profile by Sizeband

Sizeband	Number of businesses	Number of employees	Turnover
Micro (0-9)	850	1,450	£225 million
Small (10-49)	40	720	£55 million
Medium (50-249)	<5	510	£264 million
Large (250+)	0	0	0

2.2.3 Estimate of economic significance

A summary of economic significance is provided below. A total Silviculture turnover of £544 million equates to a total GVA of £198 million.

2.3 Harvesting

2.3.1 Definition

Tree harvesting involves cutting down trees and preparing them for delivery to sawmills, pulp mills and other wood-processing plants.

2.3.2 Business profile by sizeband

Tree harvesting reflects the larger sector in that most of the employment and revenue generation comes at the hands of micro and small businesses. There is only one business that employs over 50 people, and there are no large (250+ employee) harvesting businesses in Scotland.

Table 2.2: Harvesting Sector – Business Profile by Sizeband

Sizeband	Number of businesses	Number of employees	Turnover
Micro (0-9)	230	400	£41 million
Small (10-49)	10	150	£19 million
Medium (50-249)	<5	60	£12 million
Large (250+)	0	0	0

2.3.3 Estimate of economic significance

This part of the sector generates an estimated £72 million of revenue, which translates to a sizeable £26 million in GVA. It is also estimated to support nearly 600 full time jobs.

Table 2.3: Harvesting Sector – Estimate of Economic Significance

Number of businesses	230
Total Employment	600
Turnover	£72 million
Gross Value Added (GVA)	£26 million

2.4 Support services to forestry

2.4.1 Definition

Any operations that directly assist the forestry industry, including forestry consulting, timber estimation and transport, forest creation/planting, fencing, road engineering etc. It also includes the activities of the sector's three principal public agencies (Scottish Forestry, Forestry & Land Scotland and Forest Research). Scotland's forestry system has many contractors that work for or in tandem with silviculture, harvesting and other subsectors but do not count as employees; such registered contractors are also included in this section.

2.4.2 Business profile by sizeband

When analysing these services by business size, we find that microbusinesses far outnumber ones that are larger. In fact, only two organisations supporting forestry activities employ over 250 employees. Although the medium-sized businesses, ones that employ between 50 and 249 people, in our dataset contribute the most in terms of employment, the 790 microbusinesses generate substantial turnover, with a combined £117 million.

Table 2.4: Support Services – Business Profile by Sizeband

Sizeband	Number of businesses	Number of employees	Turnover
Micro (0-9)	790	1,630	£117 million
Small (10-49)	40	620	£77 million
Medium (50-249)	20	2,580	£5 million
Large (250+)	<5	2,290	£240 million

2.4.3 Estimate of economic significance

The businesses, organisation and contractors that work in support services to forestry in Scotland are vital to the sector as well as to the Scottish economy. Even taking a conservative approach, we've estimated that the over 800 businesses and organisations in this industry employ over 7,000 employees and generate a GVA of over £161 million.

Table 2.5: Support Services – Estimate of Economic Significance

Number of businesses	840
Total Employment	7,120
Turnover	£439 million
Gross Value Added (GVA)	£161 million

2.4.4 Sector summary – forestry sector

When taken together, the silviculture, harvesting and support services to forestry sub-sectors employ over 10,000 people and have a combined GVA of £385 million.

Table 2.6: Sector summary – Forestry sector

Sector	Number of businesses	Number of employees	Turnover £m	GVA £m
Silviculture & Other Forestry Activities	890	2,670	544	198
Harvesting	230	600	72	26
Support Services to Forestry	840	7,110	439	161
Total	1,970	10,380	1,055	385

3. Primary Wood Processing

3.1 Sector definition and profile

3.1.1 Sector definition

Wood processing is the transformation of roundwood harvested and extracted from the forest. It is a complex process that involves a number of steps, including cutting, milling, drying, and finishing. It is an important industry, separate from forestry, that plays a vital role in our economy and society. As the renaissance in renewable bio-based products and sustainable practices continues, the forestry sector continues to provide us with benefits from providing sustainable materials through processing as well as helping to conserve natural resources creating jobs and economic growth in the forestry sector, which feeds into the larger Scottish economy.

The sector can be divided into two main categories: primary wood processing and secondary wood processing.

- **Primary wood processing** is the process of converting roundwood logs. This breakdown can be as sawing for timber, chipping for biomass, pulping for paper etc. Anything which initially breaks roundwood down.
- **Secondary wood processing** is the process of converting timber and other wood products into manufacturing products, such lamination, production of sheet material, paper, planing for flooring or cladding etc.

For the purpose of this study, only primary wood processing has been included as part of the forest-based activities sector. This is because primary processing is the first step in the conversion of wood into usable products, whereas secondary wood processing is a further development into manufacturing. Secondary processing also uses a large proportion of imported timber whereas this study estimates the economic impacts of the domestic sector.

However, the two are often heavily interlinked and often take place at the same facilities.

The primary wood processing sector Includes:

- **Sawmilling:** is the process of turning logs into sawn timber that is subsequently distributed to construction, fabrication, and furniture industries to create a range of consumer products.
- **Manufacture of wood-based panels and paper:** Board material includes chipboard, Orientated Strand Board and other pressed sheets for use in construction. An increasing amount of board material uses recycled timber.
- **Manufacture of pellets, chips and firewood:** this involves the production of wood chip, pellets and firewood for renewable energy biomass. Depending on the market value of roundwood, this sector has the ability to take material from sawmilling and panel producers.

3.1.2 Sector profile

Primary wood processing is a significant sector within the Scottish economy, with around 220 businesses generating a turnover of over £1.1 billion. Approximately 3,690 full-time equivalent employees are involved in the sector generating a GVA in the order of £394 million.

Table 3.1: Primary Wood Processing

Businesses	220
FTE Jobs	3,690
Turnover	£1,160 million
Gross Value Added (GVA)	£394 million

3.2 Sawmilling

3.2.1 Definition

Sawmilling of wood is the process of turning logs into sawn timber that is subsequently distributed to construction, fabrication and furniture industries to create a range of consumer products. It generally takes the better quality and larger roundwood from forestry in the latter stages of its current rotation.

This subsector is a vital part of the forestry industry. It provides the raw materials that are used to make a wide range of products and adds more value from standing tree to finished product than any other processing sector. Jobs and economic growth from sawmilling are generally centred in rural areas.

3.2.2 Business profile by sizeband

When broken down by business size, the sawmilling industry in Scotland presents an interesting picture. Most businesses fall within the micro and small business categories, there are only two large businesses with over 250 employees. This is a reflection of the nature of the entire forestry sector in Scotland, with many microbusinesses whose contribution might not be apparent in government estimates such as the Scottish Annual Business Statistics (SABS).

Table 3.2: Sawmilling – Business Profile by Sizeband

Sizeband	Number of businesses	Number of employees	Turnover £m
Micro (0-9)	160	410	£21 million
Small (10-49)	10	350	£51 million
Medium (50-249)	<5	230	£99 million
Large (250+)	<5	1,250	£395 million

3.2.3 Estimate of economic significance

Overall, the industry encompasses about 180 businesses, employing an estimated 2,240 people and contributing £180 million GVA.

Table 3.3: Sawmilling – Estimate of Economic Significance

Number of Businesses	180
Total Employment	2,240
Turnover	£566 million
Gross Value Added (GVA)	£180 million

3.3 Manufacture of wood-based panels and paper

3.3.1 Definition

Panels is a sub-sector of the primary processing sector of the forestry industry. It involves the production of panels from sawn timber, chips, or other wood products including recycled timber. These are compressed with a glue-based resin to form chipboard, OSB and other large boards for construction uses. For the purposes of this assessment, paper mills, except those that are exclusively involved in secondary processing, have also been included within the Manufacture of wood-based panels and paper.

The manufacture of panels is a growing industry that is playing an important role in the transition to a more sustainable economy. Panels are also relatively lightweight, which makes them more energy-efficient to transport and install.

3.3.2 Estimate of economic significance

Due to the data limitations of survey responses, a different approach was adopted for this sector. Published UK ONS data[5] on the GVA of wood-based panels was used to estimate the economic significance of this sub-sector. ONS report £379m in GVA within Panels in the UK in 2019. This value was adjusted to the Scotland level using further ONS Forestry Statistics[6], which reports the cubic metres of sawn softwood by country from the Sawmill Survey. Scotland accounts for 1,570 out of the 3,108 cubic metres of sawn softwood production in the UK. This proportion (50.4%) was used to apportion the £379m UK GVA estimate. This approach was also taken in estimating the employment and number of businesses in the wood-based panels sector. Forestry Statistics[6] estimated 2,075 individuals were employed within the sector in 2019, 1,048 (50.4%) of whom have been assumed to be in Scotland. Likewise, 3 of the 6 UK businesses operating in wood-based panels in the primary wood processing sector across the UK were assumed to be located in Scotland.

In addition to the ONS published Panel data, any paper mills that use Scottish fuel sources have been included. The GVA of which is estimated to be in the order of £9m.

The overall Manufacture of wood-based panels and paper industry has a combined turnover of £549 million and employs 1,250 people and is estimated to contribute £200 million to Scotland's Gross Value Added.

Table 3.4: Manufacture of Wood Panels and Paper – Estimate of Economic Significance

Number of Businesses	<5
Total Employment	1,250
Turnover	£549 million
Gross Value Added (GVA)	£200 million

3.4 Manufacture of pellets, chips and firewood

3.4.1 Definition

The manufacture of pellets and chips is a sub-sector of the primary processing sector. It involves the production of wood pellets and chips from roundwood.

Pellets are small, compressed pieces of wood that are used as a fuel for heating and cooking. They are made by grinding wood chips into a fine powder and then pressing them into pellets under high pressure. Chips are larger pieces of wood that are also used as a fuel. They are made by chipping logs into smaller pieces.

The manufacture of pellets and chips is a relatively new industry, but it has grown rapidly in recent years. This is due to a number of factors, including the increasing demand for renewable energy, the rising cost of fossil fuels, and the environmental benefits of using wood pellets and chips as biofuel.

5 ONS Forestry Research Statistics. Available online at: https://www.forestresearch.gov.uk/tools-and-resources/statistics/forestry-statistics/

6 The Economic Contribution of the Forestry Sector in Scotland, Forestry Commission, 2015. This approach was also used for assessing the economic impacts of the environmental consultants and road haulage sectors, based on the same rationale.

Due to the prevalence of wood-fired stoves in rural Scotland, local firewood is an incredibly valuable resource that also reduces the carbon costs associated with transferring fuel across long distances. However, it seems that most firewood businesses are registered under other categories or are small, unregistered enterprises, thereby reducing the number of businesses in this analysis. A substantial portion also operate informally, as cash businesses, limiting analysis and estimation.

Because of this the vast majority of firewood businesses go unrecorded and their employment & turnover cannot be used for this report. This is likely to represent a substantial part of the Scottish forestry economy.

3.4.2 Business profile by sizeband

Microbusinesses in this sub-sector again constitute a significant proportion of the business base, with all but two of the country's producers employing nine employees or fewer, and with these microbusinesses contributing to almost 70% of the industry's turnover.

Table 3.5: Pellets, Chips and Firewood Manufacturing Sector – Business Profile by Sizeband

Sizeband	Number of businesses	Number of employees	Turnover
Micro (0-9)	40	120	£31 million
Small (10-49)	<5	40	£12 million
Medium (50-249)	<5	50	£2 million
Large (250+)	0	0	£0

3.4.3 Estimate of economic significance

Overall, the manufacturing of pellets, chips and firewood sub-sector is estimated to employ 210 people and provide a GVA of £14 million.

Table 3.6: Pellets and Chips Manufacturing Sector – Estimate of Economic Significance

Number of Businesses	40
Total Employment	210
Turnover	£45 million
Gross Value Added (GVA)	£14 million

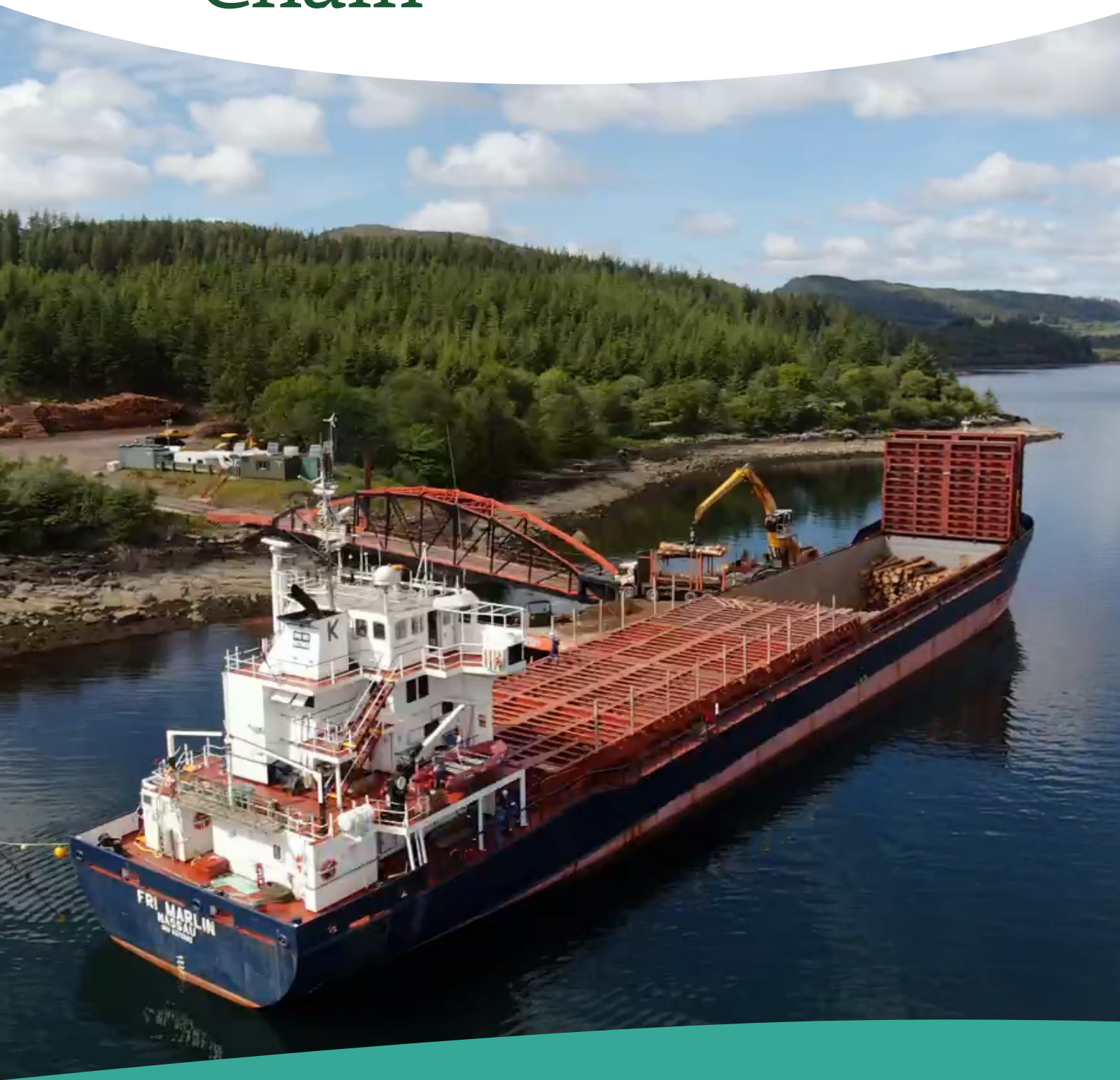
3.5 Sector Summary – Primary Wood Processing

When taken together, the three primary wood processing sub-sectors employ around 3,690 people and have a combined GVA of £394 million.

Table 3.7: Sector Summary – Primary Wood Processing

Sector	Number of businesses	Number of employees	Turnover £m	GVA £m
Sawmilling	180	2,240	£566	180
Manufacture of wood-based panels and paper	<5	1,250	£549	200
Manufacture of pellets, chips and firewood	40	210	£45	14
Total	220	3,690	£1,160	394

4. The Forestry Activities Supply Chain



4.1 Sector definition and profile

4.1.1 Sector definition

The forestry and primary wood processing sectors are supported by a variety of businesses from forest management up to forest-based products distribution to markets. These activities form the forest industry supply chain that supply timber and biomass to different forest product manufacturing sectors such as lumber, pulp and paper, wood products, and bioenergy to satisfy a wide range of market needs. Industries operating in the sector include:

- **Forestry agents and land agents:** these provide advisory and implementation advice for land disposals, acquisitions, leases etc as well as day to day forest management. Harvested woodlands in the UK must be restocked and managed back into mature forests. Forestry agents are responsible in the establishment and management of forests.
- **Environmental Consultants:** these businesses can specialise in environmental services that guide projects to a progressive environmental outcome. Services can range from assuring environmental compliance to proactive nature-based strategies to baseline assessments for existing environmental conditions. The work is diverse and adds sizeable value to both the forestry industry supply chain and to the economy.
- **Road Haulage:** millions of tonnes of timber cross Scotland every year, benefitting the economy and communities who depend on forest products. Timber haulage involves the distribution from forest to processors and is an important part of the forestry life cycle.
- **Agricultural supplies:** these are any goods that are used in the production of food, fibre or plant-based materials. These supplies can include things like seeds, fertilisers, pesticides or machinery. Here, we are specifically concerned with the suppliers of such equipment that is directly used in forestry and woodland management or in harvesting forest-based products.
- **Wildlife Management:** this is an important part of the forestry sector. For the purpose of this report, we have only included forest-related husbandry within our definition of this industry.
- **Tree Nurseries:** These businesses grow saplings and trees than replenish harvested stock, protect biodiversity, and grow forest cover. It is an important subsector that is vital to the forestry sector and generates sizeable economic value to forestry.

4.1.2 Sector profile

Supply chain factors are important in the forestry sector because they can have a significant impact on the cost, quality and sustainability of forest products. For example, the type of tree planted can not only affect the quality of wood but also

the health of the forest. Similarly, the way that trees are harvested and their transportation affects costs as well as sustainability.

The categories mentioned in the definition play a significant role in forestry, and collectively contribute an estimated £99 million to Scotland's GVA while providing full-time employment to around 1,940 people.

4.2 Forestry and Land Agents

4.2.1 Definition

Land agents provide advisory and implementation advice for land disposals, acquisitions, leases, wayleaves, and related matters across a broad range of land-use types including forestry. Forestry agents are professional foresters dealing exclusively in the forestry sector. Any trees harvested in the UK must be restocked and managed back into mature forests. Land agents are responsible in the establishment and management of forests.

In some instances land agents may take the responsibility for forestry work whilst harvesting contractors may also take forest management roles. This makes the size of the sector difficult to quantify.

4.2.2 Estimate of economic significance

Due to constraints surrounding data availability, particularly related to the number of businesses who operate partially, but not exclusively in this area, estimates for total employment and GVA in Land Agency activities in Scotland are based on the findings from a previous Forestry Commission survey of businesses operating in this area. These figures were adjusted to account for the employment and GVA growth that has occurred in the eight years since this report's publication, using the average annual sector growth rates reported in Scottish Annual Business Statistics. This approach produces a figure for employment and GVA associated with the provision of land agency, consultancy and legal advice on matters to forestry in Scotland[6].

Based on this approach, we estimate that forest related land agency activities support 180 full time equivalent jobs in Scotland and contribute £17 million to Scotland's GVA.

Table 4.1: Land Agents Sector – Estimate of Economic Significance

Total Employment	180
GVA	£17 million

4.3 Environmental Consultants

4.3.1 Definition

Environmental consultancy covers a range of professional support services, including assuring environmental compliance to proactive nature-based strategies and baseline assessments for existing environmental conditions. The work is diverse and adds sizeable value to both the forestry industry supply chain and to the economy.

4.3.2 Estimate of economic significance

Based on the same approach as was used in the land agency sector calculation, we estimate that the provision of environmental consultancy support for forestry related activities supports 210 full time equivalent jobs in Scotland and contributes £14 million to Scotland's GVA.

Table 4.2: Environmental Consultants Sector – Estimate of Economic Significance

Total Employment	210
GVA	£14 million

4.4 Road haulage

4.4.1 Definition

Road Haulage is the transportation of timber cross Scotland every year, benefitting the economy and communities who depend on forest products. Timber haulage involves the distribution from forest to processors and is an important part of the forestry life cycle.

4.4.2 Estimate of economic significance

Based on the same approach as was used for the previous two sub-sectors, we estimate that road haulage of timber supports 1,220 full time equivalent jobs in Scotland and contributes £58 million to Scotland's GVA.

Table 4.3: Road Haulage Sector – Estimate of Economic Significance

Total Employment	1,220
GVA	£58 million

4.5 Agricultural supplies

4.5.1 Definition

Agricultural and equipment supplies are an important aspect of forestry because they provide the tools and resources that are needed to grow and harvest trees. Without these supplies, it would be near impossible to produce the wood that is used for a variety of products, including paper, furniture, and building materials. They can help to improve the efficiency and sustainability of operations in forestry, touching all aspects—from silviculture to transport.

4.5.2 Estimate of economic significance

There were several constraints in estimating the economic impact of the Supplies subsector to the supply chain and, subsequently, to forestry. While equipment and supplies can help boost productivity in the forestry sector, reduce the cost of operations, improve the quality of forest products and reduce the environmental costs associated with forestry production, the core focus of the industry is to cater to farming and agriculture. In fact, most businesses that sell equipment to the forestry sector overwhelmingly sustain their business through sales to non-forest sectors.

Based on advice from forestry industry specialists Evolving Forests, we filtered the list of all agricultural supply businesses in Scotland to only those which primarily supply to forestry businesses. We estimate that these businesses employ approximately 70 people across Scotland and contribute nearly £1 million to Scotland's GVA.

Table 4.4: Agricultural Supplies – Estimate of Economic Significance

Total Employment	70
GVA	£879,000

4.6 Wildlife management[7]

4.6.1 Definition

Wildlife Management is the management of game animals, such as pheasants, partridges, and deer. It involves a variety of tasks, such as breeding, releasing, and protecting game animals, as well as managing their habitats.

Wildlife Management can relate to animal husbandry both in a wild or domestic setting.

4.6.2 Estimate of economic significance

Wildlife Management is an important aspect of the forestry sector because it helps to maintain the balance of the ecosystem. Gamekeepers help to control the populations of game animals, which helps to prevent them from overgrazing or damaging forests. Gamekeepers also help to protect forests from wildfires, which can damage or destroy trees and other vegetation.

Based on survey responses and advice from Evolving Forests, a portion of Wildlife Management related to hunting, trapping and related services can be attributed to the forestry sector. Conservatively, we estimate that this industry generates about £1.5 million of turnover attributable to the forestry sector, while supporting around 30 FTE jobs and contributing nearly £1 million to Scotland's GVA.[8]

Table 4.5: Wildlife Management – Estimate of Economic Significance

Total Employment	30
GVA	£740,000

4.7 Tree nurseries

4.7.1 Definition

Tree nurseries propagate and grow on tree seedlings/saplings to the desired size for a range of forestry planting. Forestry nurseries

7 This sector is referred to as "Hunting, trapping and related service activities" within the UK SIC but has been referenced here as Wildlife Management to align with current industry parlance.

8 The estimates relate only to organisations which list Wildlife Management as their main business activity in their accounts (those registered with Companies House under SIC Code 01.7 "Hunting, trapping & related service activities"). This is likely to understate the total value of these activities to Scotland's economy, and the remainder of the impact is likely to be contained within the Silviculture & Other Forestry Activities figures presented earlier. In addition, any FLS wildlife ranger managers have been captured within the Support Services to Forestry sector.

are specialist businesses usually distinct from garden nurseries though there will be a grey area between them.

Tree nurseries are an important aspect of the forestry sector because they provide the trees that are used to plant forests. Without tree nurseries, it would be very difficult to plant the millions of trees that are needed to replace those that are lost every year.

Nurseries play an important role in maintaining the tree stock and promoting biodiversity. Some of these benefits will be explored in the community benefits appendix of the report. However, it was challenging to sift through nursery business data to identify ones that solely or primarily propagate trees for forests and woodlands. Consultants at Evolving Forests were once again approached to lend their expertise on the matter. As a result, we have estimated that tree nurseries provide employment to 220 people and generate a turnover of £19 million. This results in a GVA contribution of around £10 million.

Table 4.6: Tree Nurseries – Estimate of Economic Significance

Total Employment	220
GVA	£10 million

4.8 Sector Summary – Forestry Activities Supply Chain

When taken together, the industries which make up the forest activities supply chain employ approximately 1,940 people and have a combined GVA of approximately £99 million.

Table 4.7: Sector Summary – Forestry Activities Supply Chain

Sector	Number of employees	GVA £m
Land Agents	180	17
Environmental consultants	210	14
Road haulage	1,220	58
Agricultural supplies	70	1
Wildlife Management	30	1
Tree nurseries	220	10
Total	1,940	99

5. Forestry Tourism

5.1 Introduction

This section seeks to quantify the economic contribution of forest-related tourism expenditure in Scotland. Founded on the assumption that a proportion of all tourism expenditure is incurred by tourists participating in recreational forest-related activities. There are two approaches that can be followed for this section:

- **A 'bottom up' approach:** aggregating the jobs, turnover and GVA contributions of all known forestry tourism businesses. This is broadly similar to the approach taken for other sectors in this report.
- **A 'top down' approach:** estimating the number of non-local forest visitors in Scotland for whom a forest visit was the primary purpose of their trip and applying a spend per visit assumption to each visit. This was the approach taken in the previous report.

This study has adopted a 'top-down' approach to assess the total value of the sector. This approach was adopted both to ensure consistency with previous assessments of the value of the forestry tourism sector, and to overcome the challenges associated with defining which businesses were should be classed as 'forestry tourism' (in reality, many tourism and hospitality businesses provide goods and services to both forest visitors and non-forest visitors).

5.2 Methodology

The economic impact of forestry tourism in Scotland was estimated by multiplying the number of annual tourism visits to Forestry and Land Scotland (FLS) forests, by average length of stay, and by average expenditure per visit.

The latest annual visitor figure was reported as 10.6 million in the current corporate plan. This total was split between day and overnight visits using estimates from the All-Forests Survey 2013[9]. The survey reported 33% of total visits were part of an overnight holiday or short break, with the remaining 67% being day trips.

In line with the 2015 CJC report covering the economic contribution of the forestry sector, it is assumed that 52% of the visitors estimated would be visiting forests as the main destination, and thus would be attributable to the Forestry Sector.

Table 5.1: Total Visit Assumptions

Length of Stay	Proportion of day spend assumed
Annual Visits (provided by FLS)	10,600,000
Adjustment of 52% directly attributable to forestry	5,512,000

FLS provided insights into the length of stay for 3 forest regional surveys for Tweed Valley, Galloway and Queen Elizabeth Forest Park. For overnight visits, a weighted average length of stay was calculated based on the sample size of each survey and the number of overnight visits. The total annual overnight visits were then multiplied by the weighted average length of stay to estimate the annual number of overnight stays in FLS Scotland's forests.

The regional surveys also provided a breakdown of daily visits by hours spent in the parks. For the purposes of this assessment the day visits were grouped into the following categories:

9 All Forest Survey 2, 2013. Main Report, Forestry Commission Scotland. Available online at: https://forestryandland.gov.scot/images/researchandresources/tourismrec/Profile-of-forest-visitors-All-Forests-Survey-Report-2013_.pdf

Table 5.2: Day Visit Assumptions

Length of Stay	Category	Proportion of day spend assumed
1-3 Hours	Short day visit	1/3
3-6 Hours	Half day visit	1/2
6+ Hours	Full day visit	1

A weighted average was then taken across all 3 regional surveys to estimate the proportion of short, half and full day visits. This was then multiplied by the annual number day visits for each length of stay category.

The annual visit estimates were then converted into annual spend estimates using national spend per visit estimates. The average expenditure per day visit was extracted from the Great Britain Day Visitor Report 2019[10]. An annual expenditure of £379m across 12 million visits was estimated for "Undertaking outdoor activities" in Scotland. Dividing the total spend by the number of visits generates a proxy for average spend per day visit to a forest of £31.58. An equivalent estimate of £30 is also provided for visits to "Village/ countryside", the average of the two figures, £30.79, was carried forward as a proxy for spend per day visit to Scotland's forests. To account for overnight visit expenditure, Visit Scotland's[11] estimate of average domestic overnight daily expenditure of £64 was applied.

The number of short, half and full day annual visitors were then multiplied by the average spend per day and by the proportion of the day spent in the forest (as detailed in Table 5.1). Similarly, the annual number of nights spent was multiplied by the spend per night estimate. The summation of these 2 generates a total annual spend of £476m.

5.2.1 Economic significance of forest-related tourism

Combining the estimates for annual spend for both day and overnight trips generates a total expenditure of £476m on tourism in Scottish forests. To convert this total expenditure value to the wider GVA of the sector, it is necessary to apply an industry and location specific turnover to GVA ratio. Scottish Annual Business Statistics details the turnover, employment and GVA at basic prices for accommodation and food services in Scotland. Dividing the total turnover by the GVA elicits a conversion ratio of 0.53 and dividing the total turnover by total employment generates a turnover per employee value of £26,248.

Therefore, the GVA of forestry tourism in Scotland can be estimated by multiplying the total sector turnover by the turnover to GVA ratio, this value is in the order of £252m. Dividing the total turnover by the turnover per employment figure produces an estimated employment in the forestry tourism sector of 18,130. Both results are representative of the significant contribution forestry-related tourism has on the Scottish economy.

As previously mentioned, there are several ways to estimate the size of the forestry tourism sector and findings can differ significantly based on the methodology and assumptions applied. The approach taken in this study has applied estimates for the number of non-local visitors to forests in Scotland (based on monitoring data provided to the research team by Forestry and Land Scotland) and converted these to estimates of total visitor spend based on data from the UK Day Visitors Survey.

10 Kantar 2019 – The Great Britain Day Visitor 2019 Annual Report. Available online: https://www.visitbritain.org/sites/default/files/vb-corporate/gbdvs_2019_annual_report.pdf

11 Visit Scotland. Domestic Overnight Tourism Statistics.

A summary table detailing the key calculations and results is provided below:

Table 5.3: Summary – Forestry Tourism

Metric	Value
Short visits (1-3 hours)	
Total forest visitor numbers	10.60 million
Multiplied by Attribution factor	52%
Multiplied by Proportion of day visitors	67%
Multiplied by Weighted average proportion coming for a short visit (1-3 hours)	32.4%
Equals Forest visitors on a short visit	1.20 million
Multiplied by Average spend per visit	£10.26
Equals Total spend (short day visits)	£12.27 million
Half day visits (three to six hours)	
Total forest visitor numbers	10.60 million
Multiplied by Attribution factor	52%
Equals Total spend (short day visits)	67%
Multiplied by Weighted average proportion visiting for a half day (3-6 hours)	46.1%
Equals Half day forest visitors	1.70 million
Multiplied by Average spend per visit	£15.40
Equals Total spend (medium day visits)	£26.20 million
Full day visits (six hours or more)	
Total forest visitor numbers	10.60 million
Multiplied by Average spend per visit	52%
Equals Total spend (short day visits)	67%
Multiplied by Weighted average proportion visiting for a full day (6+ hours)	21.5
Equals Full day forest visitors	795,000
Multiplied by Average spend per visit	£30.79
Equals Total spend (full day visits)	£24.48 million
Overnight visits	
Total forest visitor numbers	10.60 million
Multiplied by Attribution factor	52%
Multiplied by Proportion of overnight visitors	33%
Estimated annual number of nights spent	6.45 million
Multiplied by Average spend per visit	£64.00
Equals Total spend (overnight visits)	£412.99 million
Combined figures (all durations of stay)	
Total visitor spend	£475.95 million
Multiplied by GVA:turnover ratio	53%
Equals GVA impact	£251.97 million
Total spend divided by Average turnover per employee	£26,248
Total number of employees	18,130

6. Summary

6. Summary

A bespoke economic impact assessment was undertaken that accumulated data from a range of sources into a single economic impact model covering the whole forestry sector. The output of this activity was a single 'bottom line' assessment, based on the best available data, of the total value of the forestry to sector to Scotland.

It shows that the Forestry Based Activities Sector contributes over £1.1 billion to Scotland's GVA and supports around 34,140 jobs. This figure does not include the contribution from secondary processing, such as pulp, paper and wood-based product manufacturing, and does not include the significant non-monetisable benefits that forests bring to Scotland's communities.

Table 6.1: Forestry Based Activities in Scotland – Estimate of Economic Significance

Sector	Number of businesses	Number of employees	GVA £m
Forestry			
Silviculture and other forestry activities	890	2,670	198 million
Harvesting	230	600	26 million
Support services to forestry	840	7,110	161 million
Sub-total	**1,970**	**10,380**	**385 million**
Primary Wood Processing			
Sawmilling	180	2,240	180 million
Manufacture of wood-based panels and paper	<5	1,250	200 million
Manufacture of pellets, chips and firewood	40	210	14 million
Sub-total	**220**	**3,690**	**394 million**
The Forest Activities Supply Chain			
Land Agents	NA	180	17 million
Environmental Consultants	NA	210	14 million
Road haulage	NA	1,220	58 million
Agricultural supplies	NA	70	1 million
Wildlife Management	NA	30	1 million
Tree nurseries	NA	220	10 million
Sub-total	**NA**	**1,940**	**99 million**
Forestry Tourism			
Sub-total	**-**	**18,130**	**252 million**
Total – Scottish Forestry Based Activities Sector	**Over 2,100**	**34,140**	**1,130 million**

Appendix 1 – SIC Code Definitions

It should be noted that companies generally only register under one SIC code, which should be the most relevant to their business even if they undertake operations in a number of different codes. However, SIC codes don't necessarily reflect modern forestry or processing. For example, organisations may engage in forestry related activity (e.g. haulage) but their employment is recorded under a non-forestry SIC.

Table A.1: SIC Definitions

Sector	SIC Division
Forestry	
Silviculture	2.1
Harvesting	2.2
Support services	2.4#
Primary Wood Processing	
Sawmilling	16.10
Manufacture of wood-based panels and paper	16.21
Manufacture of pellets and chips	16.29
Supply Chain Activities	
Agricultural supplies	46.1+6#
Firewood retail	46.1+7#
Wildlife Management	1.7
Nurseries	1.3

# indicates SIC codes which include a combination of forest based and non-forest based industries. For these codes, the list of businesses has been filtered based in part of Thomson Directory descriptions (as listed in the Experian National Business Database) and on professional advice provided to the research team by Evolving Forests, a specialist research consultancy with an expert understanding of the sector.

Appendix 2 – Community Benefits

Introduction

Forests provide a range of wider benefits to their local communities that are additional to the jobs and economic benefits described in the previous three sections, including benefits for local biodiversity; community development; infrastructure; education; tourism, and the environment. While it is difficult to place a monetary value on some of these benefits, they are nonetheless significant, and we therefore highlight examples of these benefits below. The examples provided below focus on smaller, locally-led initiatives although the wider forest sector also generates such benefits.

Promotion of biodiversity

Biodiversity refers to the variety of species and ecosystems found in a specific area. The benefits of maintaining biodiversity are crucial for maintaining the balance of the natural world, preserving important ecosystem services, and preventing species extinction. One of the most striking examples of the benefits of biodiversity is the Abriachan Forest Trust, one of the first community purchases of State Forest in Scotland.

Another example of the benefits of biodiversity can be seen in the Birse Community Trust, which manages 415 hectares of community-owned woodland. The Birse Community Trust promotes wildlife and tree diversity, as well as conservation, while also providing paths and spaces for human activity. The community's involvement is high, and the trust also engages in small-scale logging, with a sawmill producing timber to sell. This not only helps preserve important species and ecosystems, but also provides economic opportunities for the community.

Another example of biodiversity promotion can be seen in the Taynuilt Trees, a small non-mechanised nursery growing local native trees. By promoting the growth and diversity of native trees, the nursery helps maintain the balance of the local ecosystem and supports the preservation of important species.

The Urban Roots Initiative is yet another example. This initiative manages a mixed woodland plantation in partnership with Glasgow City Council and with the support of the South Lanarkshire Council. The objectives of the initiative are to manage mixed habitats using low-impact methods, to support regionally important species, and to facilitate and increase community involvement. By working to preserve biodiversity in an urban setting, the Urban Roots Initiative demonstrates the importance of preserving biodiversity in all types of environments.

By supporting the preservation of tree species and ecosystems, creating economic opportunities, and increasing community involvement, these initiatives highlight the important role that forests play in preserving biodiversity in all our communities.

Community development

Community development is the process of creating and maintaining a thriving community through engagement in various initiatives and projects. A key aspect of community development is the creation of a circular local economy where local resources are utilised and the benefits are shared within the community. This not only contributes to the economic growth of the community but also helps in preserving the environment and natural resources.

One such example of community development is Scottish Wood, a community enterprise sawmill that replaces imported timber with local hardwood. The sawmill buys the hardwood from local landowners and not from timber merchants, thereby supporting the local economy. A portion of the profits generated is reinvested into community development organisations and forestry training schools, while the rest is reinvested in the sawmill. Scottish Wood also operates its own store where small local consumers can buy the hardwood products. The sawmill is also skill-sharing with others to start more community enterprise sawmills, thereby creating a circular local economy.

Another example of community development is the Forest of Falkland and the Centre for Stewardship. This local-based land management system is located on 500 hectares of farms, cottages, and businesses, as well as 1,000 hectares of woodland. The primary focus is on community-led land management and education, with a strong emphasis on sustainable living and training. This approach not only provides educational opportunities but also supports community-led land and business management.

Kilfinan Community Forestry Company is a community acquisition of a conifer forest consisting mainly of sitka spruce. The aim was to take local control of a forest and use it to provide jobs and resources. The company has successfully established a 75kW hydropower plant, glamping pods, a sawmill, and a firewood processing enterprise. Improved paths have also benefited community activity and well-being.

The company's next goals are to establish a community event space and affordable housing that would use local wood for construction. However, cash flow issues and planning approval delays have slowed progress.

Knoydart Forest Trust is another example of community development. This was previously a privately owned estate that was bought by the community. The trust is focused on woodland management, deer management, rhododendron eradication, clearing of mature trees, and replanting. These initiatives have all benefited the community and helped in the preservation of the local environment.

Old Grandtully Castle Wood and Angus Ross Furniture is a local syndicate that owns an ancient Oakland. The woodland supplies timber for their furniture business, and the company also manages the woodland, produces firewood, and sells seeds. This type of community development helps in preserving the local resources and creating a sustainable local economy.

In conclusion, the examples discussed above show how local resources can be utilised to create a circular local economy and support community-led initiatives. These initiatives contribute to the economic growth of the community and help in preserving the environment and natural resources. Community development plays a vital role in ensuring a sustainable future for the community and its residents.

Community infrastructure

Community infrastructure encompasses a wide range of assets and facilities that are essential for a community's overall health and well-being. From homes to public spaces, community infrastructure provides the foundation for a community to thrive. An important aspect of community infrastructure is the use of locally sourced materials, including timber, in the construction of homes and buildings.

North Woods is a small woodland that supplies timber for building businesses. The woods support the owners and employees, who all live in self-built cabins within the woods. This is an excellent example of how community infrastructure can be both self-sustaining and environmentally responsible. By using locally sourced materials, North Woods is reducing its

carbon footprint, creating jobs, and providing a high-quality product for building businesses. Additionally, the fact that the owners and employees live within the woods highlights the importance of community infrastructure for creating a sense of place and promoting community well-being.

North West Mull Community Woodland Company (NWMCWC) is another example of community infrastructure that utilizes local timber. The company manages two land-locked woods of exotic conifers and focuses on silviculture, increased tree diversity, and supporting crofts. In addition to providing a source of locally sourced timber, NWMCWC also supports a Forest School and archaeological training. This combination of silviculture and education provides multiple benefits to the community, including job creation, community involvement, and environmental sustainability. By using local timber in their infrastructure projects, NWMCWC is not only supporting the local economy but also helping to preserve the natural beauty of the area for future generations.

In conclusion, the use of locally sourced materials, such as timber, in local infrastructure projects is essential for promoting sustainability, supporting the local economy, and creating a sense of place. The examples of North Woods and NWMCWC demonstrate the multiple benefits that can be achieved through the responsible use of local resources in community infrastructure projects. By continuing to prioritise the use of local materials, communities can ensure the long-term sustainability and well-being of their residents and the environment.

Education

Education plays a crucial role in the development of communities. Scotland's forest support education in a number of ways, from learning about the environment and conservation to hands-on skills training in forestry and related fields. The following are examples of organisations that prioritise education as a benefit in their community development efforts.

Borders Forest Trust is a growing organisation that started as the Wooplaw Community Woodland, the UK's first community woodland buyout. As the trust's assets increased, it started to form complementary businesses and training centres, including Real Wood Studios. In addition to these businesses, the Borders Forest Trust supports and runs Forest Schools and training centres in the Borders, providing educational opportunities for its 700 members.

The Fife Rural Skills Partnership is another example of an organisation that prioritises education in its community development efforts. Founded in 2013, the partnership is made up of several local NGOs that work together to build a series of training programs that develop or draw on skills in the rural sector. This includes the Falkland Forest and Stewardship Centre, which offers training and development programs that range from school children to skills training in forestry for adults.

Both of these organisations understand the importance of education in their communities and are working to provide opportunities for their members to learn and grow. Whether it's learning about the environment, conservation, or hands-on skills training, education plays a vital role in the development of communities and the individuals within them. By prioritising education, these organisations are helping to build a brighter future for their communities and ensuring that the skills and knowledge necessary for success are passed down from generation to generation.

Here, two larger institutions also deserve mention. The University of Highlands and Islands (UHI) Scottish School of Forestry is one of the leading forestry schools in the UK and offers a range of courses leading to qualifications in forestry, arboriculture and environmental management.

Lantra is an organisation that works to improve the skills and knowledge of people working in land-based industries, such as forestry, and is based in Scotland. It works with partners, including UHI, to deliver training and development courses for people working in forestry.

These two organisations not only uplift the community through education, but provide interdimensional benefits, such as economic (upskilling the workforce to meet the needs of the forestry sector), environmental (helping ensure sustainable management of the forestry sector as well as teaching ways to protecting and enhance forests and woodland ecosystems) and societal (working in and to promote recreational green spaces) benefits.

Community engagement

The use of forests and woodlands as spaces for community engagement and activity has been a focus for many initiatives and organisations across Scotland. From the Cassiltoun Housing Association Project to the Lionthorn Community Woodland Association, the focus has been to provide public access to the woods and promote recreation, with the goal of uplifting communities and providing a space for health and well-being.

The Cassiltoun Housing Association Project, for example, transformed a neglected woodland—in an urban area—that was a platform for anti-social behaviour into a space for community engagement and well-being. The transformation was made possible through the efforts of volunteers who cleaned up the area.

Similarly, the Blarbuie Woodland Enterprise, originally set up as a "screen" for a mental health institution, has now been transformed into a community well-being space that can be accessed by all, with NHS GPs referring it as a therapeutic walking or activity space.

Initiatives like the Forres Community Woodlands Trust were set up to preserve woodlands near urban areas, with the main purpose being to manage the woods, with pushback from residents on any plans to organise any other operations within the woods. Other initiatives like the Sunart Oakwoods Initiative work on a range of themes, including community benefits, to support actors within the woods and promote their use as spaces for health and well-being.

The Children's Wood, a small naturally regenerated woodland, is an example of an initiative that believes in the intangible health and access benefits the land offers to the community as an open space woodland. The Dunbar Community Woodland Group, manages a portion of the Lochend Wood and aims to promote public access to the woods and recreation, with plans to host training courses and sell firewood in the future to achieve self-sustainability.

Finally, the Lionthorn Community Woodland Association manages a private woodland in partnership with an urban community, with the main objective being to conserve and enhance the natural environment of Lionthorn Woods and promote public access to the woods to the local community.

In conclusion, the use of forests and woodlands as spaces for community engagement and activity has been a focus for many initiatives and organisations across the UK, with the goal of uplifting communities and providing a space for health and well-being. From cleaning up neglected areas to preserving urban woods and promoting public access, these initiatives and organizations demonstrate the benefits of using forests and woodlands for community engagement and activity.

Sustainable and innovative use of forest products

The forests and woodlands of Scotland offer a wealth of opportunities for sustainable and innovative use. One such area is the utilisation of forest products previously thought unmarketable, which can provide significant benefits for both the environment and local communities. Some examples are provided below.

The Tayforth Machinery Ring allows small scale woodland groups and farmers to cost effectively harvest and sell wood by helping them build 5-year plans for woodland management and then planning felling and moving in geographical clusters across multiple plantations. This not only reduces the costs involved in wood harvesting but also reduces the carbon footprint by reducing the distance travelled by the logs.

MAKAR, an architect-led design, manufacture and construction company that specialises in the use of Scottish timber. It is a UK leading company that has grown from an offshoot of the owner's architecture business to being a leader in ecological design. By promoting the use of local resources, MAKAR not only reduces the carbon footprint involved in transportation but also promotes the use of sustainable and renewable resources, making a positive impact on the environment.

Wood Shares, a community investment vehicle which raised £23,000 for Real Wood Studios, is a private investment opportunity for individuals to invest in a centre using local wood products for furniture design, timber processing, and sales. This shows the potential for using locally sourced wood products to create new and innovative products. By utilising these resources in this manner, the impact on the environment is reduced and local communities can benefit from new economic opportunities.

Craggach Woods, a two-person-owned, 40-hectare productive native woodland, provides a prime example of sustainable forest management. The owners have in-house timber processing, which enables them to provide wood for local craftspersons and their own fuel needs. This not only reduces the environmental impact of transportation but also supports the local economy. Additionally, by utilising the resources available on the property, the owners are able to maintain the health and sustainability of their woodland.

Barfad Willow, a small part-time and seasonal business started by a couple, highlights the potential for using previously thought unmarketable forest products for niche markets. The business grows 17 different species of willow, from basket making to hedge types, and demonstrates how even small-scale businesses can have a positive impact on the environment and local communities. The use of willow—a readily available and sustainable resource—helps reduce the demand for other materials, such as plastic, and provides new economic opportunities for the owners and their community.

In conclusion, the utilisation of locally sourced forest products provides a wealth of opportunities for sustainable and innovative products, reducing the environmental impact, and supporting local communities. As such, these initiatives should be encouraged and supported to help drive sustainable forestry practices and provide new economic opportunities for communities across Scotland.

Tourism

Forests provide a valuable asset for community led initiatives to develop tourism offers in rural parts of Scotland.

Friends of Jubilee Wood was a community woodland group that attempted to manage a thin stretch of urban wood near Peebles, in the Scottish Borders. Despite its initial success, the group closed due to a housing development that reduced the size of the woods and created liabilities. Despite this, the wood is still well-used, attracting 20,000 visitors per year. This demonstrates the need for proper woodland management to maintain tree health and the usability of the area and highlights the importance of preserving such spaces for future generations to enjoy.

Dunnet Forestry Trust is another example of how forests and woodlands can be used for tourism purposes. The trust manages two woodlands, one small plot and the main Dunnet Forest, which covers 104.5 hectares. The main purpose of the Trust is to manage the woodlands and make them fit for purpose, as well as to strengthen and deepen community use. This has involved the building of horse and mountain biking trails, the installation of sculptures and music instruments in walking trails, and the creation of a tree nursery and forestry training centre.

The efforts of the Dunnet Forestry Trust have been successful, with visitor numbers increasing from an estimated 4,000 per year in 2003 to over 50,000 per year in 2015. This shows that investing in forests and woodlands for tourism purposes can have a positive impact on communities and the environment.

In conclusion, using forests and woodlands for tourism purposes has many benefits. It not only provides a peaceful and relaxing environment for visitors, but it also helps to preserve these areas for future generations and provides income and employment opportunities for local communities.

The examples of Friends of Jubilee Wood and Dunnet Forestry Trust show that, with proper management and investment, forests and woodlands can be used in a sustainable and innovative way to benefit both the environment and the local community.

Economic Benefits

Forests provide opportunities for community development companies to generate revenues which can then be re-invested back into the community.

For example Knoydart Forest Trust works in partnership with the Knoydart Foundation to support its community development goals, with the Forest Trust providing the timber needed to support the recent refurbishment of Knoydart Community Hall; while Raasay Wood's Wood Fuel project uses locally sourced timber to provide low cost firewood to local residents experiencing fuel poverty.

These examples show how the forest sector generates further societal economic benefits that are over and above those captured in the GVA and employment numbers shown in the previous sections of this report.