



## **Paper 5/1 – Agriculture and Land Use background information**

### **For information**

#### **1. Purpose**

1.1 This paper provides Commissioners with background information on agriculture and land use in Scotland. Scottish Government officials have provided the information in this paper, at the request of the secretariat.

#### **2. Background**

1.2 The paper summarises a range of evidence that is drawn from Scottish Government analysis, published statistics and research projects.

1.3 The first four sections present evidence around key themes identified by the Scottish Government's agriculture champions<sup>1</sup>:

1. Financial sustainability
2. Public value
3. Agri-food supply chain
4. Education and new entrants

1.4 Additional Policy Briefings cover the following topics:

5. Land use in Scotland
6. Agriculture and Climate Change
7. Rural Economy
8. Bioenergy
9. Forestry

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<sup>1</sup> <https://news.gov.scot/news/agriculture-champions-announced>

## 1. Short Knowledge Account – Financial sustainability

### Introduction

1.1 As with any sector of the economy, ensuring financial sustainability is essential if the sector is to thrive going forward. Although income from farming accounts for less than 1% of Scotland's GDP<sup>2</sup>, it helps support the broader food and drink supply chain which accounts for around 9.5% of the Scottish onshore economy.<sup>3</sup>

1.2 8% of Scotland's agricultural land is suitable for arable farming, with around half deemed of severely limited agricultural use (rough grazing).<sup>4</sup> Therefore agricultural output in Scotland is heavily dependent on beef and dairy, accounting for around 50% of output.<sup>5</sup>

1.3 Despite around 10% of Scottish agricultural land being used to grow cereals, fruit and vegetable, they generate approximately a third of the total value of agricultural output. Barley is the main crop grown in Scotland, accounting for around 50% of the area of land used to grow crops.

1.4 This short knowledge account examines the financial performance of the Scottish agriculture sector, covering profitability, productivity and competitiveness, innovation and the diversification of Scottish farming.

### Recent trends

1.5 Since the turn of the century there has been a steady upward trend in the total net income from farming. Total income from farming<sup>6</sup> was provisionally estimated to be £729m in 2017, up 53% since 2003,<sup>7</sup> 70% of this income is farm support payments.

1.6 There is significant volatility in farm income in Scotland, partly due to exchange rate movements which means that farmers have had to manage significant swings in the income earned each year. For example, in between 2012 and 2017, the annual change in total income from farming has been within the range of +32% to -28%.<sup>8</sup>

1.7 While the sizeable amount of farm support received by the Scottish farming sector has helped to insulate the sector from adverse weather and poor trading conditions, the annual changes in the amount of farm support has also contributed to the volatility in farm income. For

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<sup>2</sup> Scotland's GDP, Q1 2019 <https://www2.gov.scot/Resource/0054/00547635.pdf>

<sup>3</sup> Scottish Annual Business Survey and Quarterly National Accounts (2015)

<sup>4</sup> Land Capability for Agriculture in Scotland, [http://www.hutton.ac.uk/sites/default/files/files/soils/lca\\_leaflet\\_hutton.pdf](http://www.hutton.ac.uk/sites/default/files/files/soils/lca_leaflet_hutton.pdf)

<sup>5</sup> <https://www.gov.scot/publications/total-income-farming-estimates-scotland-2016-18/pages/1/>

<sup>6</sup> Income & subsidies less expenditure

<sup>7</sup> Economic Report on Scottish Agriculture, 2017 <http://www.gov.scot/Topics/Statistics/Browse/Agriculture-Fisheries/PubEconomicReport/2017docs>

<sup>8</sup> <https://www.gov.scot/publications/total-income-farming-estimates-scotland-2016-18/>

example, the depreciation in Sterling following the financial crisis in 2008 contributed to a 10% increase in the farm support payments Scottish farmers received in 2009.<sup>9</sup>

1.8 Research has found that two-thirds of Scottish farms are viable with farm support in the short and long-term (where farm income exceeds farm costs). This has increased since 2001 from around half of Scottish farms.<sup>10</sup> However, between 12% and 20% of Scottish farms were unviable between 2001 and 2010 (i.e. suffered recurring annual losses) despite farms support. The unique nature of agriculture (family home is usually on the farm) and the substantial net worth of many farms (£1.3 million on average), may explain why such farms remain in business despite on-going losses.

1.9 The average farm business income in 2017-18 was estimated at £35,400, although without farm support the average farm is estimated to make a loss of £7,400. Indeed farm businesses made an average loss from agricultural activities of £14,600 and around 40% of farm businesses do not generate enough to pay the farmer the minimum agricultural wage.<sup>11</sup>

1.10 The average farm business income masks significant differences across parts of the Scottish agriculture sector. Sheep farms and beef farms in less favoured areas have the lowest income and have been historically low compared to other farm types. For example, sheep farms in less favoured areas had an average income of £18,200 in 2017-18. Dairy farms had the highest average income by farm type in 2017-18, with an average income of £73,100.

1.11 There are also significant differences in farm income within sectors. For example, in dairy farming, low performing farms are losing on average £31,800 while the high performers have an average income around £181,800.<sup>12</sup>

1.12 There is significant amount of cross-subsidisation from off-farm income (e.g. second jobs) which is equivalent to around 36% of average farm business income.<sup>13</sup>

1.13 The productivity growth of the Scottish agriculture sector has been generally positive and ranks well against comparator countries over the period 2000 to 2015, with productivity growth increasing at a higher rate since 2010. There is significant divergence of performance both across farm types and also within farm types, with lowland grazing and dairy farms performing well and the greatest variances in productivity performance were for livestock farms in less favoured areas.<sup>14</sup>

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<sup>9</sup> Farmers can choose to receive CAP payments in euros or sterling.

<sup>10</sup> Barnes, A.P., Hansson, H., Manevska-Tasevska, G., Shrestha, S. and Thomson, S.G. (2015) The influence of diversification on longterm viability of the agricultural sector  
<http://openaccess.sruc.ac.uk/bitstream/handle/11262/10845/10845.pdf?sequence=2&isAllowed=y>

<sup>11</sup> Scottish Farm Business Statistics, 2017-18  
<https://www.gov.scot/publications/scottish-farm-business-income-estimates-2017-18/>

<sup>12</sup> Scottish Farm Business Income, 2017-18  
<https://www.gov.scot/publications/scottish-farm-business-income-estimates-2017-18/>

<sup>13</sup> Scottish Farm Business Income, 2017-18  
<https://www.gov.scot/publications/scottish-farm-business-income-estimates-2017-18/>

<sup>14</sup> Boosting Productivity Growth in Scottish Agriculture, SRUC – forthcoming publication

1.14 There is anecdotal evidence that a lot of Scottish farmers do not closely monitor their finances or engage in benchmarking their performance. However, evidence does exist for English farmers where 1 in 3 farms regularly produce budgets, gross margins and cash flows, or carry out in depth analysis of their profits and losses. Within the top 25% of performing farms in England, 26% engage in farm management practices such as calculating their balance sheet and benchmarking their performance.<sup>15</sup> Agricultural output in Scotland is heavily dependent on beef and dairy, together accounting for around 35% of output in 2017. The beef sector is the most dependent on subsidy, with evidence that around 38% of producers have positive margins.<sup>16</sup>

1.15 The average net worth of farm businesses in Scotland was £1.3 million in 2017-18, with owner occupied farm businesses worth £1.54 million and tenant farm businesses worth around £373,000. The increased capitalisation of Scottish farms and the substantial rise in land prices have contributed to the increase in net worth.

### **Past drivers of change**

1.16 Changes in input prices and commodity prices were the top two reasons for past changes in farm management practices in Scotland, with 70% of farmers reporting that CAP reform has had no impact.<sup>17</sup> Commodity price volatility has increased since 2000, creating greater uncertainty for farmers over the income they receive for their produce.

1.17 The CAP has been a main driver for what Scottish farmers have historically produced. There is significant research which highlights that CAP has shielded the Scottish agriculture sector from market forces which in turn has meant that the sector has not needed to innovate and become more productive in order to compete with other countries.

1.18 The substantial rise in seasonal lets, which increased particularly in the South West, Central Highlands and Wester Ross, was mainly for rough grazing land. This was almost certainly an artefact of the 2005-13 CAP as farmers sought land to active purchases of CAP entitlements or active farmers seeking a safety net for CAP inspections.

1.19 Relatively poor educational attainment, with 28% of Scotland's farmers have agricultural training<sup>18</sup>, is likely to have had an influence on the productivity performance of Scottish farmers. Further, the high average age of Scottish farmers might also be a factor, with research in the US and the Netherlands showing that younger farmers tend to drive innovative practices.

1.20 Land market distortions, which have been influenced by the tax and farm support regime regime, have contributed to the difficulty in accessing affordable farmland. This not only affects new entrants, but successful farm businesses looking to expand.

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<sup>15</sup> Future Farming and the Environment: evidence compendium, Defra, 2018  
[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/683972/future-farming-environment-evidence.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/683972/future-farming-environment-evidence.pdf)

<sup>16</sup> [https://www.qmscotland.co.uk/sites/default/files/qms\\_cattlesheep\\_2016\\_1.pdf](https://www.qmscotland.co.uk/sites/default/files/qms_cattlesheep_2016_1.pdf)

<sup>17</sup> SRUC & JHI – farmer intentions survey

<sup>18</sup> Scottish Survey of Farm Structure and Methods, 2016  
<http://www.gov.scot/Publications/2016/11/4283>

1.21 There are regulatory and legal impediments to structural adjustment within the farming sector. For example, succession laws and inheritance tax arrangements.

### **Future drivers of change**

1.22 The OECD identify that the main future drivers of growth in the agriculture sector are technical progress, economies of scale and best practice diffusion. However there is limited evidence that the efficiency of livestock farms is influenced by their size.

1.23 The UK Government's decision to leave the EU will affect the Scottish agriculture sector through three main routes: the subsidies farmers receive as the UK leaves CAP; future trade agreements with the EU and other countries; and the impact of EU seasonal migrant labour. Furthermore, following the referendum result the value of Sterling depreciated around 15% against the Euro, affecting the value of the goods and services the Scottish farming sector trades with the Euro Area.

1.24 Changes in consumer preferences will also influence what Scottish farmers produce.

1.25 Technological advances and innovations could have a major impact on Scottish farming, such as the recent attention on the potential for vertical farming.

## 2. Short Knowledge Account – Public value from agriculture

### Introduction

2.1 Scottish agriculture provides a range of public benefits such as managing the natural environment, contribution to climate change, preserving landscapes and contributing towards food security. These public benefits are not captured within the price the farmer receives for their produce and therefore are often underestimated.

2.2 Furthermore, agriculture is an integrated part of the rural economy providing direct employment and buying goods and services from other rural businesses (e.g. veterinary services).

2.3 However, farming can have a harmful impact on the environment, such as air and water quality, biodiversity and landscape.

2.4 This short knowledge account summarises the existing evidence on these public benefits from the Scottish agriculture sector and considers the overall importance of the sector to rural communities and the rural economy.

### Recent trends

2.5 Scotland's rural economy is often equated with 'Agriculture, Fishing and Forestry', this sector accounts for about 1% of output for Scottish economy. Nearly 70% of the output from the sector is generated in Mainly Rural and Islands and Remote areas. However, in some local authority areas, the importance of the agriculture, fishing and forestry sector reaches as high as 8% of output, such as in Angus and Orkney.<sup>19</sup>

2.6 The agriculture sector is clearly interconnected with other sectors of the economy, particularly accommodation and food services, which together account for around 8% of output in Mainly Rural parts of Scotland.<sup>20</sup>

2.7 A range of indicators of farmland biodiversity are declining. For example, although the abundance of terrestrial breeding birds experienced a long-term increase between 1994 to 2008, it has since fallen back and is now 17% lower than the 2008 peak and 3% lower than the 2006 baseline.<sup>21</sup> There has, however, been a long-term increase among the species which contribute to the farmland bird indicator.<sup>22</sup>

2.8 Water quality is adversely affected by farming through run-off of fertilisers, pesticides and slurry, and through the erosion of soil which is washed off farmland. Diffuse pollution from

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<sup>19</sup> Understanding the Scottish Rural Economy, 2018, <http://www.gov.scot/Publications/2018/02/3310/3>

<sup>20</sup> Understanding the Scottish Rural Economy, 2018 <http://www.gov.scot/Publications/2018/02/3310/3>

<sup>21</sup> Scotland Performs, <http://www.gov.scot/About/Performance/scotPerforms/indicator/biodiversity>

<sup>22</sup> Index of Abundance in Terrestrial Breeding Birds, SNH, <https://www.nature.scot/sites/default/files/2018-02/Official%20Statistics%20-%20Terrestrial%20Breeding%20Birds%20-%20Index%20of%20abundance%201994-2016.pdf>

agriculture is recognised as a key pressure on water quality, with 252 rivers and lochs in Scotland affected by diffuse pollution pressures.

2.9 Soil testing and nutrient management can help maximise productivity and minimise the need for expensive inputs, while reducing GHG emissions. In 2016 17% of holdings with grassland had carried out a nutrient management plan on their grassland, and 42% of holdings had carried out a nutrient management plan on their other land (up from 36% in 2013).<sup>23</sup>

2.10 Furthermore, 30% of holdings with grassland had carried out soil testing, while 64% of holdings had carried out pH testing on their other land. While larger farms are more likely to employ nitrogen management measures, they still comprise the majority of agricultural emissions.

2.11 High Nature Value (HNV) farming and forestry indicator demonstrates how much of our farmland and forestry is rich in biodiversity and monitors how the character of this resource is changing over time. The features of this type of farming and forestry, such as semi-natural grassland and native woodland, have landscape and cultural values as well as supporting traditional breeds of farm animals and crop varieties. The total area under HNV farming was estimated at 2,432,000 hectares (44% of the utilised agricultural area), with the Highlands made up the largest area for HNV farming.<sup>24</sup>

2.12 Around £4 billion worth of environmental benefits from farmland, forestry, woodland and trees are generated each year in the UK. This includes the value of educational visits to farmland in the UK.<sup>25</sup> A similar figure for Scotland has not been estimated, but this could be in the region of around £800m per annum based on the share of Scottish farming and forestry within the UK.

2.13 Past research estimated that the Scottish agriculture sector benefit to the environment from Scottish farming outweighed the cost, with a net benefit of between £200m to £260m per annum (in 2009 prices) between 2000 and 2007.<sup>26</sup>

2.14 Estimates for the Environmental Land Management scheme in England indicates that it generates at least £3.20 of public goods returned for every £1 invested, with support for forestry management estimated to generate £5.60 for every £1 invested.

## Past drivers

2.15 The role of agriculture and forestry in shaping landscapes and terrestrial ecosystems is important as they affect a large proportion of Scotland's land area (c.70% and c.18% respectively). In particular, agriculture has had a major influence on Scotland's ecosystems over the past 70

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<sup>23</sup> Scottish Survey of farm structure and methods, 2016 <http://www.gov.scot/Publications/2016/11/4283/0>

<sup>24</sup> High Nature Value Farming and Forestry, 2015

<http://www.gov.scot/Topics/Environment/Countryside/Landusestrategy/Monitoring/Indicator4>

<sup>25</sup> The Future of Food, Farming and the environment, Defra, 2018 <https://www.gov.uk/government/consultations/the-future-for-food-farming-and-the-environment>

<sup>26</sup> A Review of Literature on the Value of Public Goods from Agriculture and the Production Impacts of the Single Farm Payment Scheme, SAC, 2009

<http://www.oecd.org/agriculture/44733980.pdf>

years which, in part, has been influenced by changes in global food consumption, the post-World War II drive for increased food production and innovations in farm technology.

2.16 Between 1992 and 2014 the area of Scotland under higher-level agri-environment schemes (Environment Sensitive Areas, Countryside Premium, Rural Stewardship, Rural Priorities) has increased from 0.12 to 1.21 million hectares, equivalent to around a fifth of agricultural land in Scotland.

2.17 Landscape simplification is considered to be a key overarching driver of biodiversity loss, characterised by increase homogeneity of habitats at a variety of scales: between regions and farms, between fields and within fields.

2.18 Increased automation within farming has contributed to a decline in employment within the sector, with the total number of people employed in the sector falling by around 30% since 1982.<sup>27</sup>

### **Future drivers**

2.19 Future support for the agriculture sector following the UK Government's decision to leave the EU, including the payment to farmers for delivering public goods.

2.20 Future trade arrangements the UK has post-Brexit will impact different parts of the Scottish agriculture sector and will potentially have knock-on implications for the public goods generated from the sector.

2.21 The adoption of technologies, such as those which assist precision farming, have the potential to not only increase the profitability of Scottish farming, but also mitigate some of the negative environmental impacts (e.g. from over-use of fertilisers).

2.22 Greater demand from consumers of evidence of the environmental impact of the food and drink they consume. This could drive new methods for accrediting the environmental impact of agricultural produce (in addition to carbon accounting).

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<sup>27</sup> Abstract of Scottish Agricultural Statistics, <http://www.gov.scot/Topics/Statistics/Browse/Agriculture-Fisheries/PubAbstract/AbstractPub?refresh=0.4200934689341132>

### **3. Short Knowledge Account – Agri-food supply chain**

#### **Introduction**

3.1 Scottish agriculture plays a key role in the wider agri-food supply chain by providing the primary produce which is then processed, packaged, distributed and sold for us to consume in our homes or in restaurants.

3.2 The strength and resilience of the supply chain will have a significant impact on Scottish farming, in terms of providing a clear customer for the output produced and providing confidence to enable the agriculture sector to undertake investment. Co-operation, both horizontally (between farmers) and vertically (between farmers, processors and retailers), increases the resilience of agri-food supply chains.

3.3 This short knowledge account summarises the current evidence on the agri-food supply chain in Scotland.

#### **Recent Trends**

3.4 The food and drink supply chain, stretching from farmer to restaurateur, accounts for nearly 10% of Scottish output and 1 in 7 jobs in Scotland (around 215,000).

3.5 Around 40% of Scottish agricultural output (£1.1 billion) is processed in Scotland, with 31% exported (3/4 of which are to the Rest of the UK) and 28% sold directly to Scottish households.<sup>28</sup>

3.6 The red meat sector plays a key role, accounting for around 45% of the value of output from the Scottish agriculture sector and its wider supply chain is estimated to generate £2,429m in output and £733m in GVA.<sup>29</sup>

3.7 Throughput from primary (abattoirs) and secondary (cutting plants) meat processing in Scotland is highly concentrated, with a few large abattoirs accounting for the bulk of animals (72% for cattle, 88% for sheep and 93% for pigs).<sup>30</sup>

3.8 A significant proportion of finished Scottish livestock are slaughtered outwith Scotland (around 8% of cattle and around 40% for pigs and sheep). In addition, a smaller number of animals are also finished outwith Scotland. Nearly all the cull ewes from the Scottish flock are exported live to abattoirs outside Scotland despite existing plants having the capacity to handle significantly more sheep.<sup>31</sup>

3.9 The beef and lamb supply chains are constrained by their fragmented structure which make co-ordination between a large number of firms challenging. There is scope for greater integration<sup>32</sup>

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<sup>28</sup> Scottish Input Output Tables, 2014

<http://www.gov.scot/Topics/Statistics/Browse/Economy/Input-Output>

<sup>29</sup> <http://www.qmscotland.co.uk/sites/default/files/economic-contribution-of-scotlands-red-meat-supply-chain.pdf>

<sup>30</sup> <http://www.qmscotland.co.uk/sites/default/files/economic-contribution-of-scotlands-red-meat-supply-chain.pdf>

<sup>31</sup> <https://www2.gov.scot/Resource/0050/00504964.pdf>

<sup>32</sup> Modernising Scottish Agriculture, 2014

and co-operation between producer, with the UK having the lowest share of agricultural produce from farmer co-operatives compared to the biggest EU farming countries.

3.10 There is a clear need to improve communication and understanding of the various issues within the lamb supply chain. Evidence that a lot of the individual businesses were using lean principles to drive efficiencies at their own level but they were missing the opportunities to link up with others in the chain to drive overall chain improvement.<sup>33</sup>

3.11 Furthermore, there is scope for better communication between all stages of the production chain through meetings that encourage a two way flow of information and understanding of each other's issues. Better communication of lamb results fed back to producers in a way that Food Standards Scotland or farmers can easily analyse and benchmark their data.<sup>34</sup>

## Past Drivers

3.12 The food supply chain is subject to economic and environmental events, such as the Russian import ban on certain food imports from the EU and adverse weather affecting harvests.

3.13 The increased presence of supermarkets over the past few decades has meant a consolidation of the number of buyers of agricultural produce.

3.14 Behaviour of supermarkets and their influence on the entire supply chain, with evidence that supermarkets are able to 'transfer excessive risk and unexpected costs' to food suppliers through the exercise of buying power in the supply chain – in particular through retrospective adjustments to the terms of supply.<sup>35</sup> The practices of the big supermarkets encourage and enforce imitation by other actors up and down the chain but supermarkets are the only ones powerful enough to make a financial success of it.<sup>36</sup>

3.15 While information on farm gate prices is freely available, there is much less information on prices applied at the downstream stages of the groceries supply chain – in particular in the manufacturing, processing and food service sectors. This contributes to the weak position of farmers and other small suppliers in the chain and hampers their ability to take well-informed production and marketing decisions.<sup>37</sup>

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<http://www.gov.scot/Resource/0044/00440027.PDF>

<sup>33</sup> Adding Value to the Scottish Sheep Sector: Farm Stock Scotland Pilot Study, 2013, [http://www.qmscotland.co.uk/sites/default/files/Lamb%20Supply%20Chain%20Report%20corrected%20final%20version%2021%20Nov%2013\\_0.pdf](http://www.qmscotland.co.uk/sites/default/files/Lamb%20Supply%20Chain%20Report%20corrected%20final%20version%2021%20Nov%2013_0.pdf)

<sup>34</sup> Adding Value to the Scottish Sheep Sector: Farm Stock Scotland Pilot Study, 2013, [http://www.qmscotland.co.uk/sites/default/files/Lamb%20Supply%20Chain%20Report%20corrected%20final%20version%2021%20Nov%2013\\_0.pdf](http://www.qmscotland.co.uk/sites/default/files/Lamb%20Supply%20Chain%20Report%20corrected%20final%20version%2021%20Nov%2013_0.pdf)

<sup>35</sup> "The supply of groceries in the UK market investigation", Competition Commission, 2008, [http://webarchive.nationalarchives.gov.uk/20140402235418/http://www.competition-commission.org.uk/assets/competitioncommission/docs/pdf/non-inquiry/rep\\_pub/reports/2008/fulltext/538.pdf](http://webarchive.nationalarchives.gov.uk/20140402235418/http://www.competition-commission.org.uk/assets/competitioncommission/docs/pdf/non-inquiry/rep_pub/reports/2008/fulltext/538.pdf)

<sup>36</sup> <http://hummedia.manchester.ac.uk/institutes/cresc/sites/default/files/Bringing%20home%20the%20bacon.pdf>

<sup>37</sup> Groceries Code Adjudicator Review: Part 2, Government response to the Call for Evidence on the case for extending the Groceries Code Adjudicator's remit in the UK groceries supply chain [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/681882/groceries-adjudicator-consult-summary-of-responses-180216.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/681882/groceries-adjudicator-consult-summary-of-responses-180216.pdf)

3.16 Both domestically and internationally, red meat production has been characterised by independent firms interacting through short-term commercial transactions. This led to the prevalence of large numbers of small firms, the central role of auction marts in selling live animals and the dominance of spot markets for commodity meat. This structure maintains individual firms' flexibility and the opportunity to seek the best prices on any given day, but also incurs exposure to supply and demand uncertainty which can hamper business planning and divert resources to risk management rather than productive uses.<sup>38</sup>

3.17 Recognition of the effects of volatility and risk on overall performance have led to greater interest in closer interactions between different parts of the supply chain to identify where costs can be reduced, risks managed better and value added by better meeting market needs.

3.18 The seasonal nature of lamb production creates peaks and troughs throughout the year which leads to an imbalance between demand and supply. This results in stock moving outside the optimum weights, with obvious consequence for producer prices.<sup>39</sup>

3.19 The reliance on spot markets rather than forward contracts or vertical integration means that processors are not guaranteed their desired volume of throughput on any given day and often have to devote time and effort to sourcing additional supplies and/or holding larger than desired inventory stocks. Equally, farmers' overall financial performance can be highly dependent on prices achieved on only a few discrete occasions throughout the year, again hindering budget planning and increasing exposure to risk.

### **Future drivers of change**

3.20 Changes in the grocery sector, such as increased competition from discounters, the growth of internet shopping and new entrants such as Amazon.

3.21 Greater need for the traceability of products following past scandals (e.g. horse meat).

3.22 New technologies including "smart" devices which have the potential to influence the way people shop and their demand for certain products.

3.23 Future trade arrangements post-Brexit have the potential to impact the Scottish agri-food supply chain through a number of different channels. For example, it could affect the amount of food we export (if our products face tariffs) and therefore may increase the proportion of agricultural produce which is processed in the UK. The complexity of food supply chains is such that animals, food and food ingredients frequently pass back and forth between different countries on numerous occasions on the journey from primary production to retail sale.<sup>40</sup>

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<sup>38</sup> <http://www.qmscotland.co.uk/sites/default/files/economic-contribution-of-scotlands-red-meat-supply-chain.pdf>

<sup>39</sup> <http://www.gov.scot/Resource/0050/00504964.pdf>

<sup>40</sup> <https://www.parliament.uk/documents/commons-library/Brexit-UK-agriculture-policy-CBP-8218.pdf>



3.24 Previous work identified the following key vulnerabilities facing the Scottish food supply chain: a pandemic; land contamination; coastal flooding; food scare; extreme temperature (including Heavy Snow); demonstrations; and industrial action.<sup>41</sup>

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<sup>41</sup> Mapping and Analysis of the Resilience of the Food Supply Chain in Scotland, 2009, <http://www.gov.scot/Publications/2009/07/15103034/0>

## 4. Short Knowledge Account – Education and new entrants

### Introduction

4.1 The skills a farmer has will influence their ability to adopt best practices, introduce innovations and ultimately improve the performance of their farm business. This includes the skills of those entering farming and the continued professional development (CPD) of those already within the sector.

4.2 Having a steady inflow of skilled people is crucial to the sustainability of any sector within the economy. Agriculture is no different although new entrants face particular challenges given the high capital requirements and the limited availability of farmland.

4.3 This short knowledge account examines the level of skills and education of the Scottish agriculture sector and the particular challenges facing new entrants.

### Recent Trends

4.4 In 2016 28% of farmers had formal agricultural training, with 18% having completed a full agricultural training course of two years or more, and 10% having completed a basic course of less than two years. This remained broadly unchanged from 2013. The remaining 72% of farmers have only practical agricultural experience.<sup>42</sup>

4.5 Although this is consistent with the picture for the UK as a whole, it is in contrast to many other EU countries. For example, around 70% of farmers in Germany and the Netherlands, and around 60% in France have undertaken some formal training in 2013.<sup>43</sup>

4.6 Overall, a higher percentage of people working in agriculture, forestry and fishing sector have no formal qualifications compared with those in other sectors of the UK economy.<sup>44</sup>

4.7 In terms of CPD, just over 1% of those managing farms in Scotland in 2016 said that they had undergone some vocational training in the last 12 months.<sup>45</sup> At the UK level, around 53% of sector employers provided some form of on- or off-the-job training in 2011, compared with 59 per cent across the whole economy. This represents the third lowest sector, out of 15, in the UK economy.<sup>46</sup>

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<sup>42</sup> Scottish Survey of Farm Structure and Methods, 2016 <http://www.gov.scot/Publications/2016/11/4283/0>

<sup>43</sup> AHDB Horizon, Driving productivity growth together  
[https://ahdb.org.uk/documents/Horizon\\_Driving%20Productivity\\_Jan2018.pdf](https://ahdb.org.uk/documents/Horizon_Driving%20Productivity_Jan2018.pdf)

<sup>44</sup> Agriculture, Forestry and Fishing: Sector Skills Assessment, UK Commission for Skills & Employment, 2012  
[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/312548/briefing-paper-ssa12-agriculture.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/312548/briefing-paper-ssa12-agriculture.pdf)

<sup>45</sup> Scottish Survey of Farm Structure and Methods, 2016 <http://www.gov.scot/Publications/2016/11/4283/0>

<sup>46</sup> Agriculture, Forestry and Fishing: Sector Skills Assessment, UK Commission for Skills & Employment, 2012  
[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/312548/briefing-paper-ssa12-agriculture.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/312548/briefing-paper-ssa12-agriculture.pdf)

4.8 International studies have identified that high educational attainment tends to be associated with highly performing farms.<sup>47</sup> Research in England found that although education was not a significant determinant of the performance of farms, the top performing groups for cereals, general cropping and less favoured areas grazing livestock farms contained a greater proportion of farmers with college or university level qualifications.<sup>48</sup> There is some evidence that high educational attainment is associated with farmers more willing to take-up agri-environment options and to diversify into non-farming activities.<sup>49</sup>

4.9 The average age of a Scottish farmer is around 60 years old, with around 9% of Scottish farmers under the age of 41 compared to 34% who are over 64. Although this is similar to the average age of rural business owners, given the physically demanding nature of farming, significant attention has been given to encouraging new entrants into farming.

4.10 A significant barrier for new entrants into Scottish agriculture is access to land.<sup>50</sup> The price of agricultural land increased significantly over the past two decades, and there has also been a reduction in the availability of tenanted farmland which has traditionally been the main route into the sector. Over the last 30 years the area of agricultural land rented under a tenancy of 1 year or more has declined from around 40% to 22%.<sup>51</sup> At the same time, there has been a sharp rise in seasonal lets, which have increased by 50% since 2005 and now account for 1 in 7 hectares rented in Scotland. The constrained availability of land will also make it more difficult for successful farms to expand, and could therefore constrain the growth of their business.

4.11 A survey in 2014 of landlords highlighted the issue of farmland available for rent, with around 40% of respondents indicating that for land currently rented out under a Secure 1991 tenancy which was due to become vacant in the near future, around 40% said they would take the land in-hand to expand. A similar proportion also said that they would use it to facilitate new entrants.<sup>52</sup>

4.12 A further driver to increase the number of new entrants into farming is that around three quarters of tenant farmers have an eligible successor in place, of which two-thirds were willing to take on all of their tenancy or tenancies.<sup>53</sup> In addition, 66% of agricultural landlords said they had a successor (nearly all of whom was a family member) with 17% reporting they had no successor.<sup>54</sup>

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<sup>47</sup> Kimura, S. and C. Le Thi (2013), "Cross Country Analysis of Farm Economic Performance", OECD Food, Agriculture and Fisheries Papers, No. 60, OECD Publishing, Paris. <http://dx.doi.org/10.1787/5k46ds9ljxkj-en>

<sup>48</sup> Farm Level Performance: Identifying Common Factors Determining Levels of Performance [http://randd.defra.gov.uk/Document.aspx?Document=10520\\_Farm\\_Level\\_Performance\\_2012.pdf](http://randd.defra.gov.uk/Document.aspx?Document=10520_Farm_Level_Performance_2012.pdf)

<sup>49</sup> Agri-environmental diversification: Linking environmental, forestry and renewable energy engagement on Scottish farms, Lee-Ann Sutherland et al (2016) <https://www.sciencedirect.com/science/article/pii/S0743016716301437>

<sup>50</sup> Barriers to new entrants to Scottish farming – a new perspective on an old problem, 2008 [http://www.tenantfarmingforum.org.uk/eblock/services/resources.ashx/000/244/597/58\\_final\\_report\\_from\\_contractors.pdf](http://www.tenantfarmingforum.org.uk/eblock/services/resources.ashx/000/244/597/58_final_report_from_contractors.pdf)

<sup>51</sup> Scottish Agricultural Tenure Review, <http://www.gov.scot/Resource/0045/00454210.pdf>

<sup>52</sup> Renting out agricultural land in Scotland, 2014 <http://www.gov.scot/Publications/2014/06/1339/downloads>

<sup>53</sup> Survey of Agricultural Tenant Farmers, 2014 <http://www.gov.scot/Publications/2014/06/5177/1>

<sup>54</sup> Renting out agricultural land in Scotland, 2014 <http://www.gov.scot/Publications/2014/06/1339/downloads>

## **Past drivers of change**

4.13 To some degree, the under-investment in skills and training reflects low levels of demand by producers that could be unlocked by generational change.<sup>55</sup>

4.14 The relatively low levels of training can be explained by the high capital intensity and simple product market strategy, as well as high levels of risk and uncertainty, high variability of income, regulatory and legislative requirements, high travel costs due to geographic remoteness and lack of ICT infrastructure.<sup>56</sup>

4.15 Taxation rules may be a barrier to new entrants. Under existing inheritance tax rules, no tax is charged on lifetime gifts to individuals but should the donor die within 7 years of making the gift then the transfer is taxed on the value of the farm at transfer. However, if the transfer is made after death, then it may qualify for 100% relief and therefore can dissuade farmers from passing on assets to the next generation.

4.16 Very often economies of scale mean existing farming businesses, with security and assets, attain additional land to spread fixed costs and increase returns.

4.17 The splitting of farms in commuting distance of major urban centres has also become common practice as sellers try and maximise their overall sale value. This has meant that many farms have become fragmented to capture the residential value of farmhouses and cottages and the development value of traditional steadings from lifestyle purchasers and developers.

4.18 Fiscal measures have a major bearing on the Scottish land market. Being classed as an active farmer gives a range of tax benefits, both in terms of allowable costs for income tax and relief on inheritance and capital gains taxes. This can make letting a poor option for many landowners.

4.19 The combination of low incomes, high prices for land, declining supply of traditional tenancies, taxation factors and a strong demand for amenity land, has made traditional entry to the industry difficult.<sup>57</sup>

4.20 The affordability of farmland is part of the challenge facing new entrants. Although there are no official statistics, the Valuation Office Agency reported that Scottish agricultural land increased in value by around 150% between 2001 and 2009 and Knight Frank report an increase of 223% between 2004 and 2014. The CAP has acted to distort the market for farmland, pushing up rents, capital values and provides what appear to be a pension for those occupying the land.

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<sup>55</sup> AHDB Horizon, Driving productivity growth together  
[https://ahdb.org.uk/documents/Horizon\\_Driving%20Productivity\\_Jan2018.pdf](https://ahdb.org.uk/documents/Horizon_Driving%20Productivity_Jan2018.pdf)

<sup>56</sup> Agriculture, Forestry and Fishing: Sector Skills Assessment, UK Commission for Skills & Employment, 2012  
[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/312548/briefing-paper-ssa12-agriculture.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/312548/briefing-paper-ssa12-agriculture.pdf)

<sup>57</sup> Barriers to new entrants to Scottish farming – a new perspective on an old problem, 2008  
[http://www.tenantfarmingforum.org.uk/eblock/services/resources.ashx/000/244/597/58\\_final\\_report\\_from\\_contractors.pdf](http://www.tenantfarmingforum.org.uk/eblock/services/resources.ashx/000/244/597/58_final_report_from_contractors.pdf)

4.21 A pilot programme, “Exchange Programmes for Young Farmers”, financed by the EU in 2015 to provide a comprehensive assessment of the specific needs of young farmers across the EU showed that young farmers in the UK perceive the availability of land, credit, subsidies and useful training as more problematic than other young farmers in the EU.<sup>58</sup>

### **Future drivers of change**

4.22 The aging workforce risks tacit skills being lost and raises the importance of career progression and CPD for the existing workforce. A growing global population and concerns over food security are increasingly important policy issues which place additional importance on the sector.<sup>59</sup>

4.23 The sector is likely to be more focused on science and technology due to the pressures of climate change, food security and demographics as precision agriculture and sustainable intensification are implemented.<sup>60</sup>

4.24 Knowledge and appreciation of the sciences and application of ICT are key future skills needed to deliver sustainable intensification and precision farming.

4.25 Various studies have predicted that following the UK Government’s planned departure from the EU, the price of agricultural land will decline as a result of the expectation of lower levels of farm support for the agriculture sector.<sup>61</sup>

4.26 The advent of vertical farming potentially removes or at least challenges the assumption that land is fixed in supply and will alter the relative importance of factors such as land quality and location.<sup>62</sup>

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<sup>58</sup> Pilot project: Exchange programmes for young farmers

[https://ec.europa.eu/agriculture/external-studies/young-farmers\\_en](https://ec.europa.eu/agriculture/external-studies/young-farmers_en)

<sup>59</sup> Agriculture, Forestry and Fishing: Sector Skills Assessment, UK Commission for Skills & Employment, 2012

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/312548/briefing-paper-ssa12-agriculture.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/312548/briefing-paper-ssa12-agriculture.pdf)

<sup>60</sup> Agriculture, Forestry and Fishing: Sector Skills Assessment, UK Commission for Skills & Employment, 2012

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/312548/briefing-paper-ssa12-agriculture.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/312548/briefing-paper-ssa12-agriculture.pdf)

<sup>61</sup> <http://www.hutton.ac.uk/blogs/how-will-brex-it-affect-uk-agricultural-land-values-and-why-does-it-matter>

<sup>62</sup> <http://www.hutton.ac.uk/blogs/how-will-brex-it-affect-uk-agricultural-land-values-and-why-does-it-matter>

## 5. Short Knowledge Account – Land use in Scotland

### Introduction

5.1 Scotland's land provides a wealth of benefits, such as food, timber, clean water, energy, and a space for recreation. Over centuries, land use has significantly influenced the production of food, wood, energy, recreation, a wide range of amenities, and the character of our landscape.

5.2 The term 'land use' covers all forms of land (and water) management. Farming, forestry, renewable energy, housing developments and recreation are just a few of the major land uses in Scotland. Practically every hectare of Scotland is used in at least one way, although a few remote coastal cliffs and mountain tops are free from such uses.

5.3 The land provides places to live, work and enjoy. Land use is the physical basis of our communities, and it is also a core component of our identity. Scotland's land and its communities depend on each other.<sup>63</sup>

5.4 Everyone has an opportunity to influence how land is used and managed in Scotland. While land owners and managers make most direct decisions about land use, public influence strongly affects their decisions.<sup>64</sup> Often the impact of decisions taken about land use or land management will be experienced many miles away in urban areas, for example flood attenuation by tree planting to slow the flow of flood water.<sup>65</sup>

5.5 There has been significant land use change in Scotland over the last 50 years, through both the intensification and the abandonment of management.

### Recent Trends

5.6 Agriculture and forestry are the most dominant land uses in Scotland, accounting for around 70% and 19%<sup>66</sup> of land use in Scotland respectively. However, the extent of their dominance has fluctuated over the past century. For example, agriculture accounts for around the same share of land use today as it did back in 1911, however it rose in the post-WWII era to a high of around 87.5% of total land use in Scotland in 1962.<sup>67</sup>

5.7 The area of land used for forestry in Scotland has steadily increased from around 4.5% in 1905 to 18.5% in 2018. Despite this rise, it is still some way below the EU average of 43%.

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<sup>63</sup> <https://www.gov.scot/Publications/2011/03/17091927/3>

<sup>64</sup> <https://www.gov.scot/Publications/2011/03/17091927/3>

<sup>65</sup> <https://www.gov.scot/Resource/0050/00505253.pdf>

<sup>66</sup> Results from the June 2017 Scottish Agricultural Census, Scottish Government,  
<http://www.gov.scot/Publications/2017/10/9554/0>

Forestry statistics 2017, Forestry Commission,  
[https://www.forestry.gov.uk/pdf/Ch1\\_Woodland\\_FS2017.pdf/\\$FILE/Ch1\\_Woodland\\_FS2017.pdf](https://www.forestry.gov.uk/pdf/Ch1_Woodland_FS2017.pdf/$FILE/Ch1_Woodland_FS2017.pdf)

<sup>67</sup> Historical Agricultural Statistics

<https://www.gov.scot/Topics/Statistics/Browse/Agriculture-Fisheries/Publications/histagstats/CSV>

5.8 The total area of derelict land in Scotland has remained around 10,000 hectares since 2011<sup>68</sup>, equivalent to around 0.1% of Scotland's land area.

5.9 Over much of Scotland there are strongly competing interests. In the uplands for instance, neighbouring interests may favour using the land for sheep farming, grouse shooting, forestry, wind farms or leaving areas wild for nature or natural flood management. In some places all of these uses can be accommodated, but in others some may act against others.

5.10 Despite accounting for nearly 90% of land use in Scotland, the agriculture and forestry sectors account for around 1% of output in the Scottish economy.<sup>69</sup> However, they provide jobs and incomes, often in areas where other commercial opportunities are limited, and they support other industries which further contribute to the Scottish economy (e.g. tourism and food and drink sector).<sup>70</sup>

5.11 Some types of land have particular value in delivering benefits of key strategic importance, helping to ensure our long-term needs are met. For example, in support of food security, we continue to ensure that prime agricultural land retains its capacity for food production.<sup>71</sup>

5.12 Although our land area is fixed, that does not mean the level of benefits it delivers is fixed. Many land managers are already delivering multiple economic, environmental and social benefits from their land. However, others are not taking the opportunities to broaden their focus and benefit accordingly.<sup>72</sup>

5.13 The capacity of land to help manage water resources is increasingly valued as the climate changes and extreme weather events become more frequent. We are increasingly recognising that human interventions have affected flood risk, and that reinstating natural features in the landscape such as river meanders, flood plains, wetlands and forests can help to restore run-off patterns and reduce flooding. Restoring these natural features can also provide a wide range of coincident benefits, including improved biodiversity, greater carbon sequestration, and increased amenity and recreational opportunities.<sup>73</sup>

5.14 Within the agriculture sector there have been structural changes which have had a knock-on impact on land use. For example, the amount of agricultural land let in Scotland has fallen from around 41% in 1982 to around 22% in 2018. Much of this trend can be attributed to changes in agricultural holdings legislation and reform in the Common Agricultural Policy (CAP). The increased decoupling of CAP support since 1992 (arable aid payments were made on a per hectare basis as was set-aside) played a part in incentivising greater control over farmland in order to benefit from CAP support payments. This incentive is likely to have increased since 2005 given the introduction of the Single Farm Payment which required the farmer to comply with statutory management requirements rather than actively farm the land.<sup>74</sup>

<sup>68</sup> Scotland's Vacant and Derelict Land Survey, 2017 <https://www.gov.scot/Publications/2018/06/8465/0>

<sup>69</sup> Quarterly Scottish GDP <https://www.gov.scot/Topics/Statistics/Browse/Economy/GDP>

<sup>70</sup> <https://www.gov.scot/Publications/2011/03/17091927/3>

<sup>71</sup> <https://www.gov.scot/Publications/2011/03/17091927/3>

<sup>72</sup> <https://www.gov.scot/Publications/2011/03/17091927/3>

<sup>73</sup> <https://www.gov.scot/Publications/2011/03/17091927/3>

<sup>74</sup> <https://www.gov.scot/Publications/2014/06/9792/4>

5.15 The ownership and management of land are fundamental to society, and impact on most aspects of rural life, influencing social, economic and environmental development.<sup>75</sup> It is now estimated that 432 landowners account for 50% of the privately owned land in Scotland. Additionally, it is estimated that 1,125 "estates" controlled about 70% of privately owned land in Scotland.<sup>76</sup>

5.16 Around 200 community groups own and manage forests and woodlands in Scotland.<sup>77</sup> Between 2003 and 2017, almost 7,000 ha of the National Forest Estate (owned by the Scottish Ministers on behalf of the nation) was transferred to communities, NGOs and social landlords.

5.17 Land use is also closely bound up with other dimensions that sustain communities. For example, the long-term viability of many rural communities is heavily dependent upon the ability of people to find work and a place to live. However, in many rural communities there remains a lack of affordable housing. This often has a knock-on effect on schools and other community facilities, compromising the demand for and provision of services and infrastructure.<sup>78</sup>

## **Past Drivers**

5.18 Rural land use is driven by a range of factors which can be broadly classified as: environmental (including climate change); demographic; economic; technological factors; policy and institutional factors; and cultural and social factors.<sup>79</sup>

5.19 Land tenure is recognised as a significant cause and constraint to decisions on land-use change.<sup>80</sup>

5.20 Global drivers often affect land use through related policy, market and technological developments at international and national level, which either lead to a direct response from land managers or lead to the introduction of a set of different policy instruments which provoke a response from land managers.<sup>81</sup>

5.21 Land use is driven by a wide range of considerations and change tends to happen slowly and for the longer term. The drivers of change include the priorities of those who manage the land, market influences, the incentives and regulations which impact upon particular areas and the capacity of the local area.<sup>82</sup>

5.22 Many of our land-based businesses are intimately tied into the system of incentives set by the European Common Agricultural Policy (CAP).<sup>83</sup> For example, after the UK entered the CAP

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<sup>75</sup> <https://www.gov.scot/Publications/2016/07/1094/7>

<sup>76</sup> <https://www.gov.scot/Publications/2016/07/1094/7>

<sup>77</sup> Stewart, A. & Edwards (2012) Number of community groups involved in managing woodland. Forest Research

<sup>78</sup> <https://www.gov.scot/Publications/2011/03/17091927/3>

<sup>79</sup> <https://www.gov.scot/Publications/2010/01/06100615/5>

<sup>80</sup> <https://www.gov.scot/Publications/2010/01/06100615/5>

<sup>81</sup> <https://www.gov.scot/Publications/2010/01/06100615/5>

<sup>82</sup> <https://www.gov.scot/Resource/0050/00505253.pdf>

<sup>83</sup> <https://www.gov.scot/Resource/0050/00505253.pdf>

there was a rapid fall in beef cattle as farms on the East of Scotland substituted beef production with arable production in response to higher support payments for crops offered through CAP.<sup>84</sup>

5.23 Furthermore, the headage payments introduced in the 1980s for sheep and livestock in Less Favoured Areas dramatically drove up the number of sheep (and to a lesser extent cattle) in the hill and upland farming areas. More recently, the late 1990s saw poor returns to beef and sheep and the 2001 Foot and Mouth crisis led to a large reduction of the Scottish sheep flock. In 2005 the introduction of decoupled CAP support payments (with the exception the Scottish Beef Calf Scheme) stimulated further restructuring within the industry and sheep numbers continued to decline quite rapidly to the extent that by 2011 the number of Scottish breeding ewes was at the lowest level in over a century.<sup>85</sup>

5.24 As Scotland's population has grown over past centuries, more wood from forests has been harvested and many forests disappeared, making space for agriculture, people's homes and infrastructure. The chronic lack of trees and timber was recognised as a strategic problem for the UK and the UK Forestry Act of 1919 was introduced to address the issue. Given this strategic need to grow more timber, the forests planted in Scotland during the following 100 years were primarily, but not exclusively, designed to optimise timber production, using species that could thrive in Scotland's relatively favourable growing conditions.

5.25 Favourable tax relief encouraged the private purchase of significant areas of land in Scotland for forestry up until the tax reforms in the late 1980s.

5.26 A number of historical factors have contributed to Scotland having the most concentrated pattern of private landownership in Europe (e.g. feudalism, succession laws, fiscal policies, agricultural support).<sup>86</sup>

5.27 The ownership and structure of Scotland's estates shows a degree of continuity across the centuries with over a quarter of Scottish landowning families able to trace their landowning ancestry back to at least the 16<sup>th</sup> century.<sup>87</sup> However, deteriorating economic conditions led to increased number of land sales and fragmentation of many large estates, particularly during the depression of the 1920s.<sup>88</sup>

## **Future Drivers**

5.28 The broad categories identified as past drivers for change are still relevant going forward, namely: environmental (including climate change); demographic; economic; technological factors; policy and institutional factors; and cultural and social factors.

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<sup>84</sup> [https://www.sruc.ac.uk/downloads/file/57/response from the hills business as usual or a turning point](https://www.sruc.ac.uk/downloads/file/57/response%20from%20the%20hills%20business%20as%20usual%20or%20a%20turning%20point)

<sup>85</sup> [https://www.sruc.ac.uk/downloads/file/57/response from the hills business as usual or a turning point](https://www.sruc.ac.uk/downloads/file/57/response%20from%20the%20hills%20business%20as%20usual%20or%20a%20turning%20point)

<sup>86</sup> <https://www.gov.scot/Publications/2016/07/1094/7>

<sup>87</sup> <https://www.gov.scot/Publications/2016/07/1094/7>

<sup>88</sup> <https://www.gov.scot/Publications/2016/07/1094/7>



5.29 Specifically, post-Brexit support measures introduced for rural land management in Scotland will impact future land use.

5.30 The increase in community land ownership will continue to shape and influence future land use in Scotland.

5.31 The Planning (Scotland) Bill sets out a package of measures intended to strengthen the planning system's contribution to inclusive growth and empowering communities. The Bill sets out proposed high level changes to the overall framework under which planning operates; the detail of how the new provisions will work in practice will be contained within secondary legislation and guidance.

5.32 The Climate Change Plan (currently in the process of being updated) sets out the aim of increasing woodland cover from around 18% to 21% by 2032 and restoring 40% (250,000 hectares) of Scotland's peatland by 2030.

## 6. Scottish Government Policy: Agriculture and Climate Change

6.1 The SG supports Agricultural Climate Change through Pillar 1 & 2 of the Common Agricultural Policy (CAP).

6.2 **Pillar 1** supports and delivers the Greening requirements. Applicants of the Basic Payment Scheme under CAP must comply with specific requirements (where relevant) on their land to enable an additional Greening payment to be made.

6.3 These requirements cover: **permanent grassland** (protecting permanent grassland designated as environmentally sensitive), **crop diversification** (growing different crops to enhance biodiversity and soil organic matter), and **Ecological Focus Areas** (where farming practices good for the climate and environment are undertaken).

6.4 **Pillar 2** supports/delivers the Scottish Rural Development Programme (SRDP), which includes:

- **Farm Advisory Service (FAS)** - activities include providing events, case studies, guidance notes, free carbon audits and integrated land management plans.
- **Agri-environment and Climate Scheme** - promotes land management practices which protect and enhance Scotland's natural heritage.
- **Knowledge Transfer & Innovation Fund (KTIF)** - supports projects that provide vocational training, skills development and knowledge transfer projects focused on agriculture.
- **Beef Efficiency Scheme (BES)** – aims to establish a superior genetic and more productive national herd whilst reducing GHG emissions.

6.5 Government also provides support out with the Common Agricultural Policy described above. The Climate Change Plan 2018 – 2032 sets out our approach to raise awareness, reduce GHG emissions, improve our carbon sink and reduce our agricultural products emissions intensity. This plan is currently in the process of being updated.

6.6 Examples of current action and support available outside of CAP include:

- **Farming for a Better Climate** (soil regenerative agriculture) – A group of farmers that work collaboratively focusing on issues relating to soil regenerative agriculture, including soil, fertiliser, manure management, carbon sequestration and more. They will be looking for practical solutions that can then be disseminated to the wider agriculture community.
- **Agricultural Technology Group** – this Group will share, disseminate and encourage adoption of advances in agricultural science and technology as widely as possible.
- **Young farmer climate change champions** – a group of young farmers and crofters have been appointed as Scottish Government agricultural climate change champions. They will



champion a cultural and behavioural through peer to peer learning to shift towards low-carbon, environmentally sustainable farming in Scotland.

6.7 In addition to the above support, Programme for Government 2019 contained a number new commitments to help increase the speed of change in our agriculture sector. These include development of a new Agriculture Transformation Programme for our farming and food production focused on sustainability, simplicity, profitability, innovation, inclusion, productivity and reducing emissions. Work will begin this year to:

- develop pilot schemes to reduce greenhouse gas emissions from agriculture
- encourage more tree planting across Scotland including woodland integration and agro-forestry on Scottish farms
- promote the multiple benefits of good grassland management to more livestock farmers
- encourage more farmers to invest in renewable energy, including bio-energy, to meet their energy needs
- support an evidence-based approach to crop production and selection and strategic development of organic farming
- explore the development of models to demonstrate and promote carbon neutral farms

## 7. Rural Economy

7.1 Scotland's rural economy is diverse. It is rich in natural assets that define Scotland's image and reputation around the world. It accounts for 98% of Scotland's land mass with nearly 20% of our population living in rural areas. The rural economy also contributes over a quarter of Scotland's Gross Value Added. It is equivalent to the combined output of Edinburgh and Glasgow.

7.2 Rural Scotland has countless natural resources, well-placed to help us address the climate emergency and further our aims of making Scotland a net-zero society.

7.3 **Depopulation** - The rural economy is facing challenging times; our population is aging and will need care; our working age population is in decline and projections see this trend escalating. The effects of leaving the EU will be compounded in many parts of rural Scotland leaving them most vulnerable.

7.4 The Rural Economy Action Plan set a goal to increase the number of people living and working in rural Scotland. In September 2019 'Protecting Scotland's Future', was unveiled as part of the Government's Programme for Scotland 2019-20. It contains a commitment to 'develop an action plan supporting repopulation of our rural and island communities'

7.5 Support for the Rural Economy

7.6 Our Rural Economy is tightly integrated to the Scottish economy, however rural areas and businesses face different challenges.

7.7 We provide support to rural enterprises through our existing economic development agencies, Business Gateway and previous funding to GrowBiz. In addition we are establishing a new economic development agency in the South of Scotland. Our Economic Action Plan takes forward specific actions that enhance businesses, places and the lives of people in rural Scotland.

7.8 Our latest Programme for Government includes a pilot to test a new place-based approach to integrated business support for rural micro-enterprises.

7.9 Mainstreaming Rural Policy

7.10 The independent National Council of Rural Advisers published their report a [New blueprint for Scotland's rural economy: recommendations to Scottish Ministers](#) last year and more than 90% of the recommendations made are now being delivered through national programmes of work.

7.11 An important recommendation was the establishment of a Rural Economy Action Group (REAG) which met for the first time in Oct 2019. They will be responsible for driving forward change and ensuring the delivery of the NCRA recommendations - effectively mainstreaming rural policy throughout Scottish Government's areas of responsibility.

## 8. Bioenergy

8.1 The Scottish Government recognises bioenergy could play an important role in the decarbonisation of Scotland's energy system and the sequestration of emissions from the atmosphere. Bioenergy already contributes to energy supply in Scotland, meeting an estimated 4.4% of final energy demand in 2016 (Ricardo).

8.2 However, bioenergy resources are limited and must be managed sustainably and equitably. While there is potential to double bioenergy production from domestic feedstock from the current 6.7 TWh to 14.1 Twh per year by 2030, there are a number of constraints and challenges.

8.3 **Bioenergy action plan (BAP)** – The Scottish Government have committed to investigating the potential scope for bioenergy in Scotland. This includes developing understanding of competing feedstock uses, and long term availability of supply and will work with stakeholders to produce a draft Bioenergy Action Plan (BAP) by the end of 2019.

8.4 The guiding principles of the BAP will be:

- Policies to support bioenergy are consistent with the ambitions laid out in the Energy Strategy, Scotland's Climate Change Plan and Scotland's Land Use Strategy.
  - Bioenergy schemes that deliver greenhouse gas emission reductions to help meet Scotland's climate change targets.
  - Bioenergy schemes that represent good value for money, deliver benefits for communities, and help tackle fuel poverty.
  - Biomass is produced and managed in a sustainable way, and should be used in heat-only or combined heat and power schemes to exploit available heat and local supply.
- Demands on land for food, energy crops and other non-food crops are managed equitably.

8.5 We plan to engage with stakeholders across sectors prior to publishing a draft plan by the end of 2019 and publish the final plan by May 2020.

## 9. Forestry

9.1 Scotland's forests are a powerful carbon sink, absorbing the equivalent of 9.5 million tonnes of carbon dioxide in 2017.

9.2 The Scottish Government has ambitious woodland creation targets to support this. They are set out in its climate change plan:

- increase forest cover from 18% to 21% of the total area of Scotland by 2032.
- increase annual planting targets: 10,000 hectares per year until 2019-20, 12,000 hectares from 2020-21, 14,000ha from 2022-2023, 15,000ha from 2024-25.
- increase use of Scottish wood products from 2.2 million m<sup>3</sup> to 3.0m by 2031-32.

9.3 In 2018-19 Scotland exceeded the woodland creation target in the climate change plan, creating 11,210 hectares, roughly 22 million trees, against a target of 10,000 hectares. This was 84% of all the new woodland in the UK in 2018-19.

9.4 The 2019 Programme for Government announced an additional £5 million for 2019-20 and set out the Government's ambition to:

- go beyond the Climate Change Plan target by planting 12,000 ha in 2019-20.
- accelerate progress and set increased annual targets beyond 2021.

9.5 The Scottish Government supports woodland creation with grants from the Scottish Rural Development Programme. Scottish Government funding is matched by the EU, coming to a total of £46 million of incentives supporting all types of woodland creation.

9.6 Over 80% of approved applications for forestry grants come from farmers and crofters with small and medium sized forestry projects.

9.7 Forestry supports 25,000 jobs and contributes £1bn annually to Scotland's economy. The Scottish timber harvest is approx 7 million tonnes - around 60% of the UK harvest.

9.8 Since 1 April 2019, forestry in Scotland has been fully devolved. Two new SG agencies have been created: Scottish Forestry (policy, regulation, sector support) and Forestry and Land Scotland (manages national forests and land for Scottish Ministers).

9.9 470,000 hectares of Scotland's national forests and land are owned by Scottish Ministers on behalf of the nation. This:

- contributes over £1m per day to the economy and supports 10,255 FTE jobs
- hosts 90 community and partnership projects and nine starter farms
- welcomes 10.6 million visitors a year
- hosts enough renewable energy infrastructure to power 600,000 homes



9.10 In February 2019 the Scottish Government published a new forestry strategy setting out a 50-year vision for Scotland to have more forests and woodlands. The Strategy aims to:

- Increase contribution of forests and woodlands to sustainable and inclusive economic growth.
- Improve resilience of forests and woodlands and increase contribution to healthy and high quality environment.
- Increase use of forest and woodland resources to enable more people to improve health, well-being and life chances.