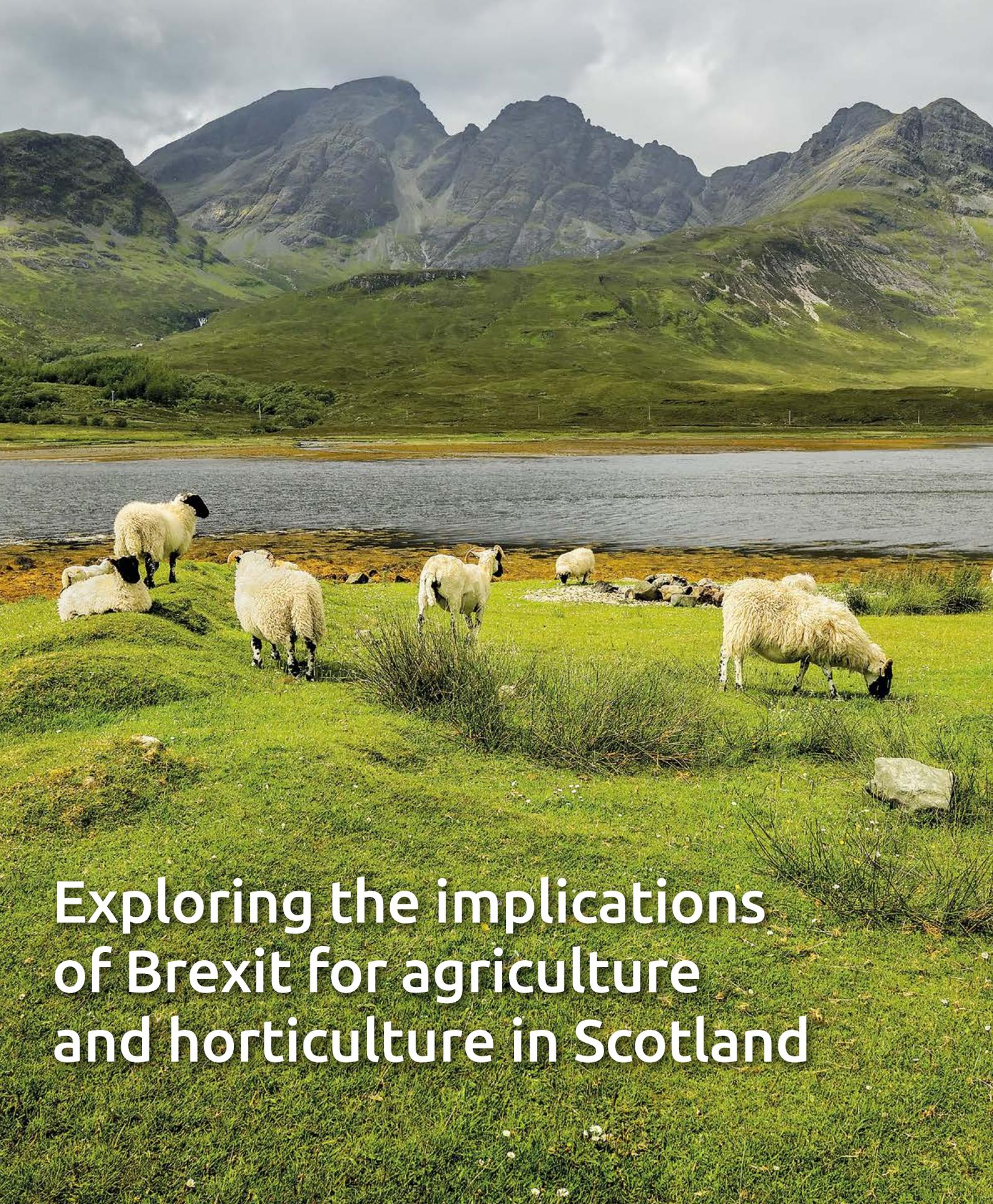


HORIZON



Exploring the implications
of Brexit for agriculture
and horticulture in Scotland

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HORIZON



Fergus Ewing MSP

Cabinet Secretary for the
Rural Economy and Connectivity

FOREWORD

Brexit is by far the biggest threat to Scottish agriculture and we need to get ready to meet this unprecedented challenge. While Scotland voted to remain within the European Union, the UK as a whole did not. As such, whatever and wherever our future lies, change is inevitable.

Let's be clear, Brexit will have a significant impact on the day-to-day running of every farm and croft across Scotland. It will affect the level of future support payments our farmers and crofters receive, whether they operate a small hill farm or large lowland farm. It will impact the fruit and vegetable sector, which relies on the hard work of EU migrant labour to harvest its crop. It will alter farmers' ability to trade freely with the world's largest single market. While Brexit's impact will not be uniform, it will be felt across all agricultural sectors and regions.

It is therefore vital our farmers, crofters and growers are well informed and start to really think about the steps they can take to safeguard their businesses to ensure a sustainable and prosperous future. I therefore welcome this analysis by AHDB and, in particular, the spotlight it gives to the potential impacts in Scotland.

I continue to press the UK Government for clarity and certainty for the sector, as I believe a vibrant and sustainable agricultural industry is essential to securing a prosperous Scotland.

AHDB and Quality Meat Scotland, who have collaborated on this report, have an important role to play in supporting their levy-paying farmers and growers in this respect and I believe this report does just that.

“ I believe a vibrant and sustainable agricultural industry is essential to securing a prosperous Scotland ”





INTRODUCTION

Building on previous editions of Horizon, this report focuses specifically on what Brexit will mean for Scottish agriculture and horticulture. AHDB has examined four key areas – trade, policy, labour and regulation – at the UK level in previous reports. This report takes a specific look at some of the risks and opportunities for Scottish agriculture and horticulture that arise from Brexit.

It is clear that Brexit brings a great deal of uncertainty for the agricultural sector and wider food supply chain. While we do not know all the details it is possible to identify areas where Scotland has both higher and lower exposure to Brexit challenges when compared to other parts of the UK. The report outlines three main areas:

1. International trade

Brexit will present Scottish agriculture and horticulture with both risks and opportunities. Though Scotland exports proportionately less to the rest of the EU than other parts of the UK, the future UK/EU trading relationship will still have a critical direct and indirect bearing on the industry. What's more, the UK Government's future trade policy may exploit new opportunities for Scottish food and drink while at the same time expose the industry to greater competition from lower-cost imports

2. Access to EU migrant labour

Scotland's vibrant soft fruit and vegetable sectors are particularly exposed to the risks associated with any restrictions on EU workers. Investing in robotics and automation to reduce dependency on manual labour may play a part in reducing this dependency, although substitution will be difficult for some operations, such as fruit picking. In addition, the reliance on migrant labour in the wider food manufacturing industry, such as in slaughter and meat processing, in Scotland poses a risk to the whole food supply chain

3. Agricultural support

The evidence is clear that farm support is critical to the current financial viability of many farming businesses in Scotland, more so than in other parts of the UK. It is not clear how agricultural policy will change post-Brexit but Scottish agriculture would be more exposed to any reductions in direct support levels, given that support contributes a higher proportion of farm business income. Although the ultimate scale of the financial envelope available for support in Scotland, and the way in which it will be distributed, remains unclear the issue of assuring financial viability while encouraging a more productive industry will be a particular challenge for policy-makers in Scotland

The report concludes that the agricultural industry, as well as other parts of the supply chain, needs to start preparing for Brexit now. While many of the factors relating to Brexit are out of the farmer's control, some steps can be taken to prepare. Of these, improving business competitiveness appears to be key, and this is something AHDB and Quality Meat Scotland (QMS) will support Scottish levy-payers with.

AHDB operates in Scotland to support levy payers in the dairy, potatoes, horticulture, cereals and oilseeds sectors. It does not cover the red meat sector in Scotland, as this is the responsibility of QMS and the sections of this report covering that sector have been produced from contributions from QMS. AHDB is grateful to Stuart Ashworth at QMS (on red meat) and also to Julian Bell at Scotland's Rural College (SRUC) (on cereals and oilseeds), who contributed towards this report.



BACKGROUND

Scotland's food and drink industry is recognised as a vital part of the Scottish economy. In 2016 primary agriculture and food and drink manufacturing contributed around 4.8% of Gross Value Added (GVA) to Scotland's onshore economy.

Challenges in Scotland

Agriculture in Scotland has to deal with particular challenges. For instance:

- 85% of agricultural land in Scotland is designated as Less Favoured Area (LFA) compared to only 17% in England¹
- Around 43% of Scottish farmland has been designated as High Nature Value² land which qualifies for higher EU 'custodial' support
- Distance from the market, with higher transportation costs compared to farmers elsewhere in the UK, is a key factor with 41% (7,200) of Scottish agricultural business operating in remote locations
- Limitations in local processing, manufacture and finishing facilities for some primary agricultural produce, as discussed later in the report Limited access to deep water ports to export bulk agricultural produce such as grains to non-EU countries

The structure of agriculture in Scotland, in part, reflects these challenges with a much higher share of output (compared to the UK as a whole) from cattle (24% vs 12%) and potatoes (7% vs 3%). Conversely, shares of output from poultry (3% vs 10%) and horticulture (9% vs 15%) are much lower.

Scotland boasts some very productive farms and regions. However, when looking across the total agricultural area, it has a lower productivity per hectare (based on income generated) compared to England and Northern Ireland (but higher than Wales, which has a similarly challenging agricultural topography).

¹ Allen et al., 2014

² Article 22 of the EU regulation on rural development (1257/99) states that support shall be given to "the conservation of High Nature Value farmed environments which are under threat"

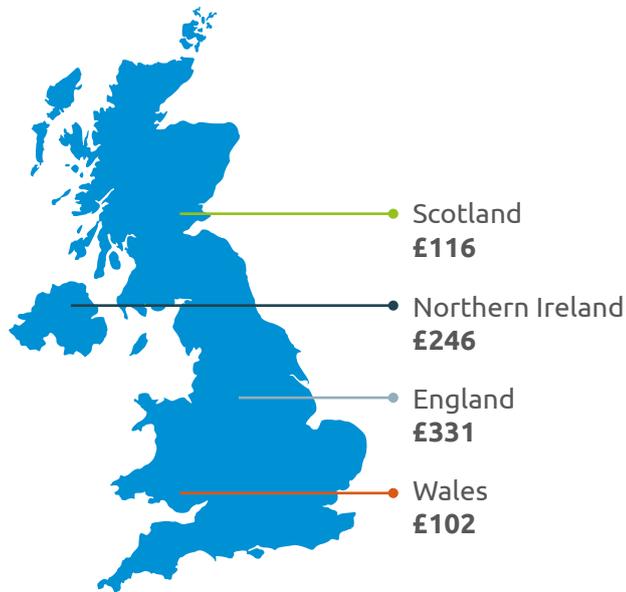


Figure 1. Total income from farming (per ha)

Source: Defra, three-year averages (2014–2016)

As we explore in more detail later, the Scottish agriculture industry is heavily reliant on support payments through the Common Agricultural Policy (CAP), which account for around two thirds of total farm business income in Scotland³. The importance of support varies by sector. There are sectors, such as horticulture, poultry and pigs, that have survived despite receiving little subsidy. In contrast, the grazing livestock and cereals sectors have averaged a loss over the three-year period to 2016 (excluding support payments) and have greater reliance on financial support through CAP. Sectoral issues are explored next:

Sectoral issues

Dairy farming saw the highest average farm business income of all Scottish farming sectors over the three-year period to 2016 and is a sector where support payments make up a lower proportion of farm income. Milk production in Scotland has been growing over the last decade, driven by rising milk yields, which increased by 19% from 2007–2014 (the last year in which data was collected) according to Defra statistics. Over the same period the number of herds and dairy cows both reduced.

In the past 10 years, the number of dairy farms in England and Wales has fallen by 33%. In Scotland, the number of dairy farms has fallen by 48% and in Northern Ireland by 32%⁴. Scotland has some of the largest dairy farms in Europe with an average herd size of 227 cows.

However, despite Scottish dairy farms having the largest average herd sizes in the UK (Figure 2), total income is lower than in England and has been particularly volatile over the last few years⁵. This is partly due to English dairy farmers having better access to higher-value supermarket aligned contracts.

³ NFU Scotland - Economic Impact of Leaving the European Union

⁴ AHDB Dairy Pocketbook 2016

⁵ Falling from £68,932 to £1,884 between 2015 and 2016



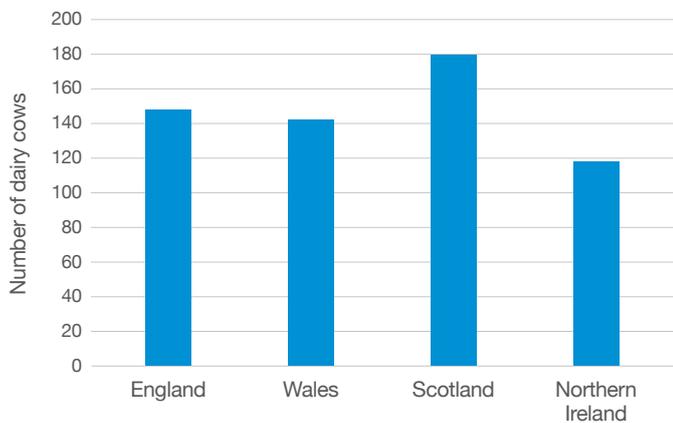


Figure 2. Average size of UK dairy herds, 2016

Sources: Defra, DHI, Welsh Government, SEERAD, DARD, Scottish Dairy Cattle Association)

The horticultural sector in Scotland is also a relatively successful industry, with strong growth and less volatility compared to other cash crops over the last decade. In the 1980s, the industry was in decline but over the last 10 years it has expanded spectacularly on the back of new growing technology, polytunnels and new varieties. The Scottish soft fruit sector is worth an estimated £115m⁶, contributing some 5% of total Scottish crop output by value. The area of strawberries and raspberries grown has doubled over the last decade and now accounts for 25% of the UK production⁷.

Potatoes are a major crop with Scotland producing 22% of total GB production. Seed potato output is significant, accounting for 45% of Scottish production. With limited access to processing facilities, when supply exceeds demand, prices for Scottish ware potatoes tend to see sharp falls. Around half of Scottish potato production is concentrated in North East Scotland which, due to distance from England, has added transportation costs to consider.

The livestock sector, including livestock products, accounts for 60% of output in Scotland with crops making up a lower proportion of output compared to England. The North East of Scotland, located the greatest distance from key markets, has one of the highest concentrations of livestock in the country. Two-thirds (67%) of pigs in Scotland are based in this region.

⁶ RESAS 2016

⁷ The Land Based Sector in NE Scotland P115
<https://www.aberdeenshire.gov.uk/facingthefuture/>



TRADE OVERVIEW

In previous Horizon reports AHDB has assessed the role the EU plays in negotiating trade between member states and with the rest of the world. The UK Government's Brexit strategy is set to take the UK out of the EU's customs union, which will place trade negotiation in the hands of the UK Government. A key question, therefore, will be the extent to which the UK Government's trade policy is supportive to the long-term interests to Scottish food and drink.

However, it is worth noting that the rest of the UK is Scotland's biggest trading partner for goods and services. Four times as much trade in value terms goes to other parts of the UK than to the EU⁸. Over the past 15 years, Scottish trade with the UK has grown by 74% (from £28.6bn to £49.8bn) as trade with the EU has increased by 8% (from £11.4bn to £12.3bn). UK trade is particularly significant for agriculture and horticulture with some 80% of Scottish primary agricultural and horticultural produce going to the rest of the UK⁹ (Figure 3).

When it comes to trade outside the UK, the EU is Scotland's biggest international export market. Just over half of exports to the EU go to the Netherlands, Germany and France. Although for Scotland as a whole, trade with the EU is smaller in value terms than trade with the rest of the UK, it is significant for particular sectors, which we will examine later in this report.

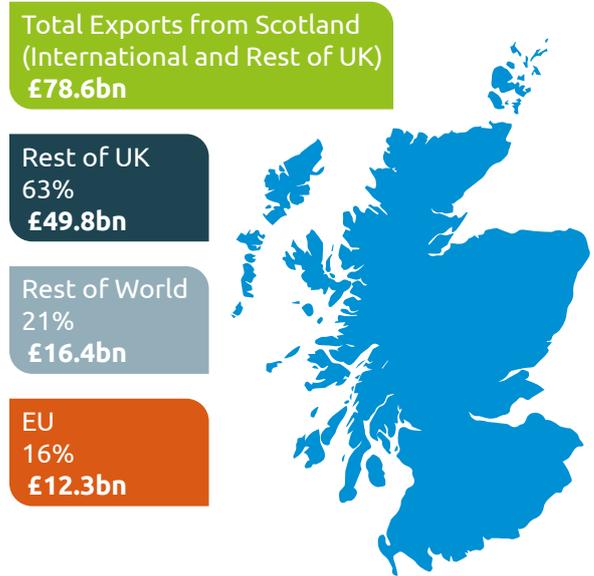


Figure 3. Scottish total exports by destination

Source: Export Statistics Scotland, 2015. Note: Direct sales from Scottish companies to international destinations are counted as international exports regardless of where they leave the UK. Live animals from Scotland slaughtered in England will contribute to the overall export figure.



⁸ Accounting for 63% (£50bn) of exports by value in 2015 www.gov.scot/Resource/0051/00514198.pdf
⁹ *According to Jimmy Reid Foundation

Scottish Government strategy

The Scottish Government has identified that Scotland's long-term economic performance depends on greater success in international markets¹⁰ and has an ambition to promote Scotland on the international stage to boost Scottish trade and investment, influence and networks. Priority markets for Scotland are China, India, Pakistan, Canada and the USA¹¹.

Scottish exports are predominantly channelled through a relatively small number of large businesses rather than SMEs and this is particularly the case for agricultural and horticultural products. One hundred percent of the value of Scottish exports are attributable to just 60 companies, with 75% of primary products exported through large businesses¹². Figure 4 shows the largest export markets for each of the UK nations, with arrows indicating the one-year growth trend.

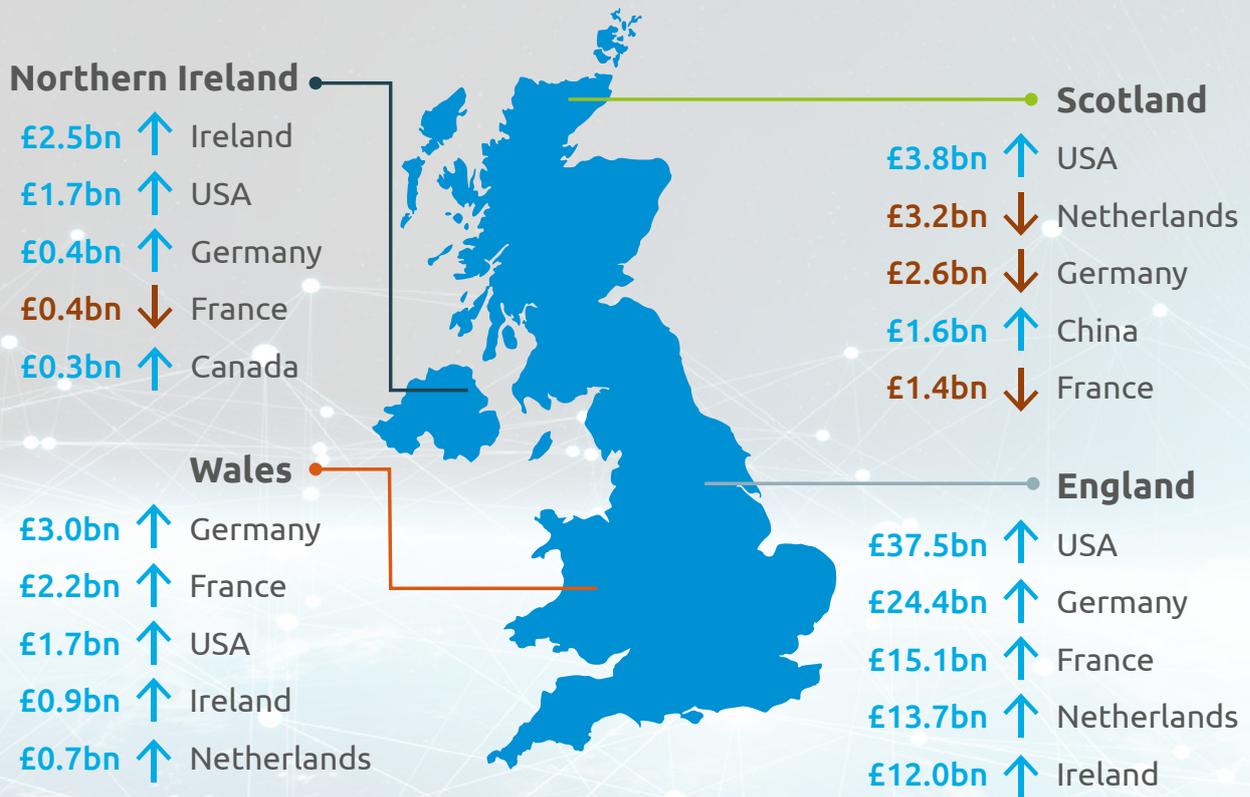


Figure 4. Top export partners (all goods) – UK nations

Source: HMRC 12 months ending Q1 2017

¹⁰ The Scottish Government's Global Scotland – Scotland's Trade and Investment Strategy 2016-2021

¹¹ The Scottish Government currently has country plans for China, India and Pakistan, the USA and Canada. A key priority within all the country plans is to develop trade opportunities for Scottish businesses. This approach is supported by Scottish Development International offices in China, India, Canada and the USA

¹² The Scottish Government's Global Connections survey

A potential consequence of Brexit, especially if trade tariffs are applied, could be that Scotland's reliance on the rest of the UK as a trading partner strengthens. International trade growth ambitions in the immediate term will be dependent on the trade arrangements negotiated by the whole of the UK.

Scotland's key food and drink exports

The total value of Scottish food and drink exports grew by £421m in 2016 to reach £5.5bn. This makes food and drink the top-exporting sector in Scotland, representing 17% of international exports in 2015 and almost a third of all manufacturing exports. Scotch Whisky is one of the UK's leading exports, accounting for around 25% of UK food and drink exports and contributing around £4bn each year to the balance of trade. It makes up the majority of export sales of Scottish food and drink.

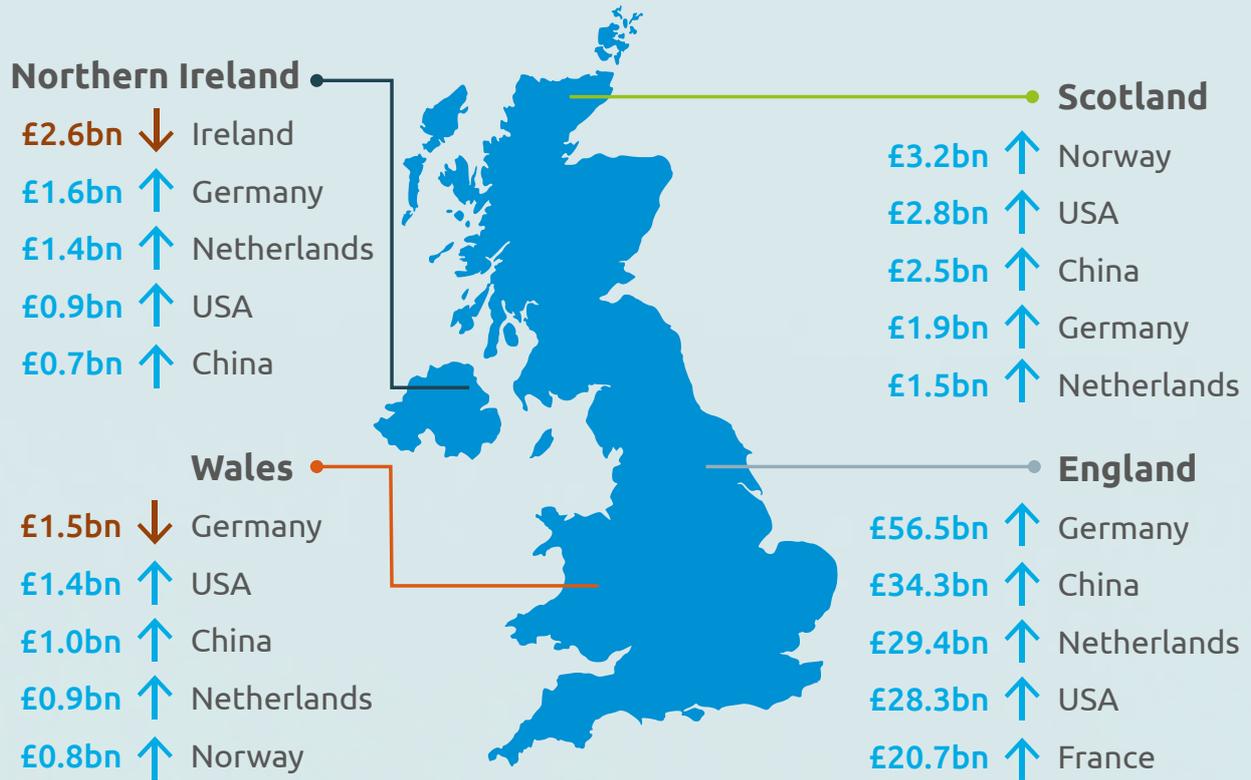


Figure 5. Top Import Partners (all goods) – UK nations

Source: HMRC 12 months ending Q1 2017



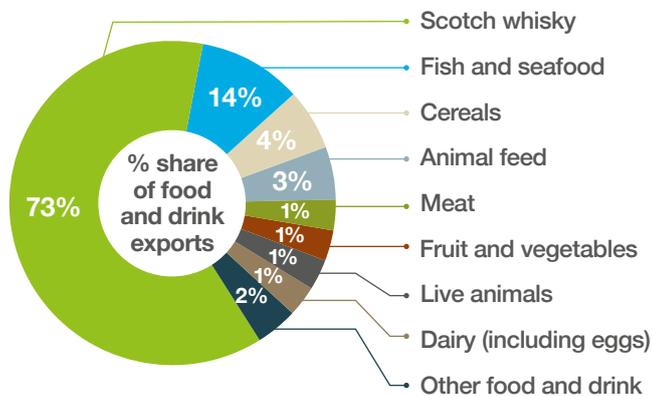


Figure 6. Key Scottish food and drink exports, 2016

Source: Scottish Government, 2016

The EU is a significant export market for some sectors such as lamb but less so for others such as dairy and horticulture. The next sections of the report explore trade issues within key agricultural sectors.

For the Scottish agricultural and horticultural industry, the ability to respond directly to international export opportunities may be constrained by certain physical limitations such as the availability of processing capacity in some sectors, a lack of deep-water ports near to where crops are produced and weather patterns affecting grain quality. Nonetheless, the Scottish brand is seen as a powerful marketing tool that is able to add value to and differentiate goods sold in the rest of the UK and globally.

Marketing the Scottish Brand

The Scottish food and drink industry holds a collaborative ambition to grow the value and reputation of Scottish food and farming, making Scotland home to the world's most exciting food and drink industry by 2030. Under the Scotland Food and Drink Partnership, the industry has set out a target to grow turnover from £14.4bn to £30bn by 2030 through strong collaboration and branding.

Key values that underpin the Scottish food brand are quality and provenance, heritage (the story of Scotland as the land of food and drink), responsibility (champions of responsible and sustainable production) and people who care about their products, communities and customers. The intention is to create a premium brand for Scottish food products.

The Scottish food and drink industry has a number of protected brands, such as:

- **Scotch Whisky** – made only from cereals, water and yeast distilled in Scotland. Its process and geographical significance are protected by UK, EU and international law
- **Scotch Beef PGI¹³** – whole-chain assured prime beef from animals born, reared and slaughtered in Scotland having spent their whole life on farm assured holdings and slaughtered in quality assured abattoirs
- **Scotch Lamb PGI** – whole-chain assured lamb with the animal born, reared and slaughtered in Scotland and having spent their whole life on farm assured holdings and slaughtered in quality assured abattoirs

This strategy has been successful for the Scottish food and drink industry as a whole, (turnover for the Scottish food and drink industry has risen 44% between 2007 and 2015¹⁴). A key challenge for the industry remains to match these ambitions in terms of goods sold with higher value added down the supply chain to primary producers. In part, this reflects the fact that a substantial proportion of Scotland's agricultural output still competes with raw materials supplied by producers in other parts of the UK and further afield.

¹³ Protected Geographical Identification (PGI) – is an EU wide scheme which provides trade mark protection to certain products.

¹⁴ According to Scotland of Food and Drink Performance Review 2017 www.foodanddrink.scot



Red meat

Quality Meat Scotland (QMS) has produced a number of detailed briefings on Brexit issues affecting the red meat industry in Scotland. These can be accessed here: <http://www.qmscotland.co.uk/>

The rest of the UK is the biggest market destination for processed red meat from Scotland, accounting for more than two thirds (£497.5m) of sales by value in 2016¹⁵. International exports account for 9% of sales by value

but play a key function in balancing the whole carcasse, enabling processors to find markets for products that are not easy to sell in the UK.

Table 1 below (based on a survey of processors) shows that just 25% of Scottish beef and 9% of Scottish lamb produced by Scottish abattoirs has its first point of delivery within Scotland.

Table 1. Distribution of Scottish red meat sales in 2016 (based on a sample of processors)

	Scotland		Rest of UK		Exports	
	Value (£m)	% by value	Value (£m)	% by value	Value (£m)	% by value
Beef	154	25	420	68.5	36.5	6
Sheep meat	10.5	9	75	65	30.5	26
Pig meat	18	42	24.5	58	< 1	< 1
Total red meat	182.5	24	519.5	67.5	67	9
Fifth quarter	7	17	27	67	6.5	16
Skins and hides	13.5	49.5	11	41	2.5	9.5

Source: QMS – Red Meat Industry Profile, 2017



¹⁵ QMS – Red Meat Industry Profile 2017



A key function of red meat exports is to help Scottish processors add overall value and balance the carcass by selling certain products overseas that they may not be able to sell easily in the home market. For beef, France and the Netherlands offer outlets for lower-value product, while Belgium and Luxembourg, Hong Kong and Macau, Switzerland and Norway are high-value destinations. For lamb, France and the EU Nordics are premium markets, while Benelux, Poland, the Baltics, Germany and Austria are buyers of lower-value cuts.

Exports to the EU are of most significance for sheep meat. Annually, between 25% and 30% of ex-abattoir deliveries of sheep meat from Scotland go to the EU. If the UK as a whole faces barriers exporting to the EU, this will impact Scottish lamb exports. If exports are exposed to tariffs, these are significant for many livestock products¹⁶ it is likely to make these uncompetitive, unless there is a significant downward adjustment to product price charged before the tariff is applied.

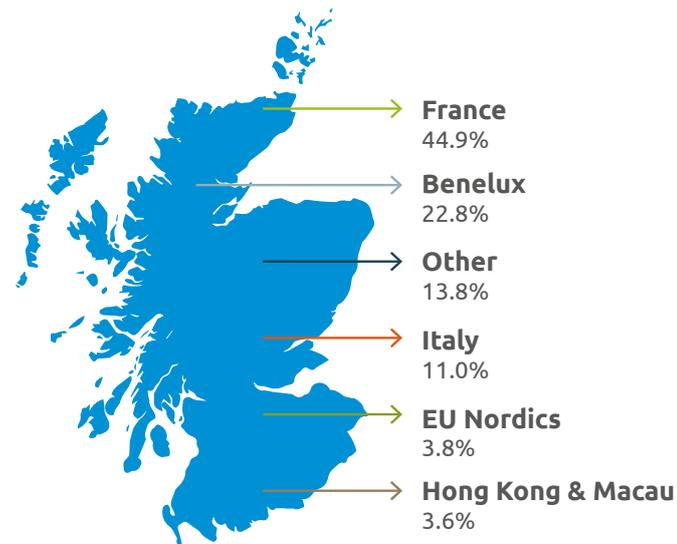


Figure 7. Destinations for overseas sales of Scottish red meat

Source: QMS

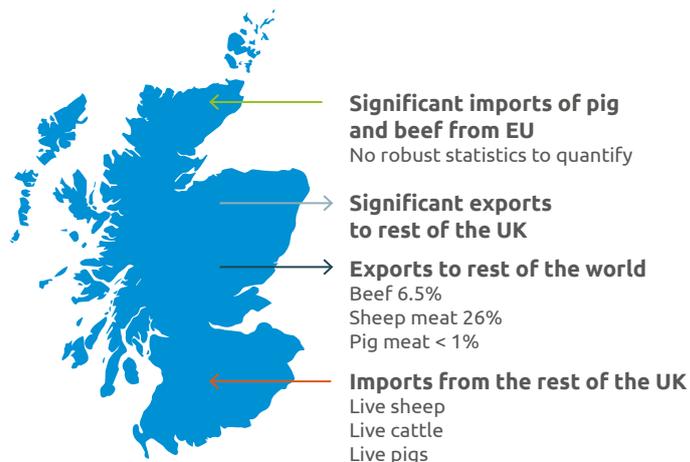


Figure 8. Red meat trade flows in Scotland

Source: OMS – Red Meat Industry Profile, 2017

Scotch Lamb PGI

The Scottish livestock industry was granted PGI status for beef and lamb in 1996. To be able to carry this title the lamb is required to have been born, reared and slaughtered in Scotland and to have been on a farm-assured holding throughout its life. Just over 6,500 farm businesses carry farm assurance for the farming of sheep and around 90% of prime lambs passing through Scottish auctions and co-operatives are eligible to carry the brand at this point.

The Scotch lamb brand is extensively used within the UK and Europe. However, while the whole carcass must be eligible for the brand, it is often only applied to specific cuts.

The majority of exports carry the Scotch Lamb brand when they are dispatched from Scottish abattoirs. Last year, based on the QMS survey of companies, it was estimated that the export value was over £30m. PGI recognition in trade agreements offers great opportunities for the future. The UK should be able to continue using the PGI mark post-Brexit, providing there is agreement with the EU. A national recognition scheme would need to be introduced and, the UK would need to continue recognising EU PGI marks. An AHDB Horizon report discusses PGI issues related to Brexit¹⁷:

¹⁶ See the Horizon report: What might Brexit mean for UK trade in agricultural products? ahdb.org.uk/documents/Horizon_Brexit_Analysis_Report-Oct2016.pdf

¹⁷ ahdb.org.uk/documents/Horizon_Brexit_Analysis_Report_GI_Highres_06December2016.pdf

Cereals

Scotland provides around 12% of UK cereal output¹⁸, with production dominated by spring barley, which accounts for around half of Scottish cereal output and 37% of UK spring barley output. Scotland benefits from the large Scotch Whisky sector; the two most significant markets are beverages (malting, brewing and distilling) and animal feed. A smaller amount of production goes into biofuel production and food products such as biscuits and breakfast cereals. Scotland's production has traditionally been in deficit in relation to wheat and in surplus in terms of barley. In recent years, a more balanced picture has emerged.

Wheat

Scotland runs a deficit in production of bread milling wheat due to climatic constraints. This is met by grain from the rest of the UK, EU and third countries. Recent large wheat crops and weaker distilling demand have helped Scotland remain largely self-sufficient in feed wheat; imports have previously featured. Any trade restrictions could result in greater use of UK- and Scottish-grown wheat in distilling, replacing maize that is currently imported.

Barley

A decline in spring barley plantings and strong demand growth for malting barley in distilling has reduced Scotland's traditional surplus of feed and malting barley. Scotland lacks sufficient malting capacity to meet the needs of the whisky sector, with a significant quantity of Scottish malting barley transported to Northern England. Most of this is then returned as malt for use in distilling. Feed barley is exported in most seasons to the EU or the Middle East and North Africa though the quantities have been falling in recent years. This is one area where Scottish cereal producers may be most vulnerable to any increase in trade costs as a result of Brexit, because the EU has preferential market access to several North African countries.

Trade in cereals between Scotland and the rest of the UK, mainly England, is generally more important than trade with the rest of the EU. Nonetheless, the overall picture for Scottish grains is influenced by the broader UK picture. In simple terms, when the UK has an exportable surplus of grain, prices trade closer to EU market prices. Where the UK produces less than domestic demand, prices rise, reflecting the higher costs of imported cereals. This affects the overall tone of the UK market.

Oats

Scotland has traditionally been relatively self-sufficient or run a small deficit in oats. In 2015, 82% of oats produced in Scotland were milled in Scotland and made into iconic Scottish brands such as oatcakes, oat biscuits and breakfast cereals. Some secondary processing takes place outside of Scotland for porridge oats and oatmeal. Exports of these products are focused on the EU, so there are risks resulting from trade restrictions or costs after Brexit. For instance, the EU applies a tariff of 5.8% + €13 per 100kg for oat biscuits/oatcakes.

Oilseed rape

Scotland lacks any large-scale processing plants for oilseed rape and the crop is almost entirely exported to crushers in England and the rest of the EU. More recently some small-scale cold-crushing plants have been developed in Scotland for human and livestock use.

With over half of Scottish grain being fed to livestock, trade for livestock products between the EU and UK will have an important bearing on Scottish grain demand. Any increase in trade costs, as a result of customs checks and/or tariffs, this will affect livestock production, which will have an influence on domestic feed demand. The impact of different trade scenarios is discussed later but if Brexit leads to a smaller livestock sector in Scotland, the demand for feed grains will fall.

¹⁸ Based on the three-year average to 2016 harvest. Source Defra and Scottish Government

Case study: Whisky – Key export, market for Scottish cereals

Whisky is a key market outlet for the Scottish cereals sector and the most important food and drink export for Scotland. Around 90% of all Scotch Whisky produced is exported. It represents around 75% to 80% of Scottish food and drink exports and more than 20% of all Scottish manufactured exports.

Scotch Whisky is permitted to be made only from cereals, water and yeast distilled in Scotland and its process and geographical significance are protected by UK, EU and international law. The permitted origin of the grain used to make Scotch Whisky is not limited to Scotland but the majority of barley (88%) and over half the grain used are Scottish. The Scottish grain sector is experienced in growing and delivering the required specification to meet the Scotch Whisky industry's needs and virtually all the malting barley produced in Scotland is low in nitrogen¹⁹. However, access to imported grain is seen as important for balancing supply in poor harvest years²⁰.

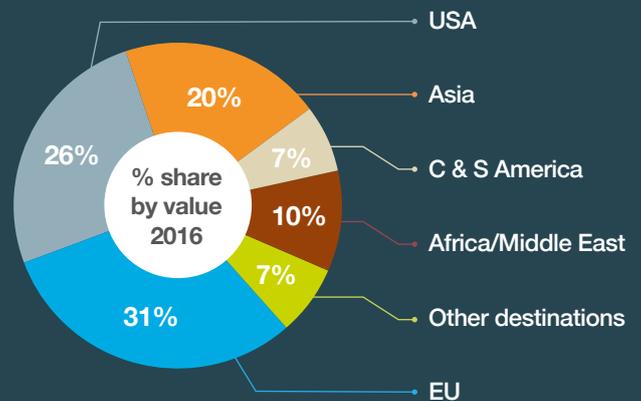


Figure 10. Top Scotch whisky export destinations by value, 2016

Source: Scottish Whisky Association export volumes and valuations 2016

The EU is an important export destination for Scotch Whisky, accounting for about a third of all exports, with much of the whisky going to France. The USA is the biggest non-EU export destination for Scotch whisky both in terms of volume and value. Collectively, the EU, USA and Asia account for 77% (£3bn) of Scotch whisky exports. Twenty-six percent of exports by value are in the form of single malt whisky, while 69% of exports by value are in the form of bottled, blended Scotch whisky. Just 6% of exports by value are in bulk. France is the biggest single export country based on volume accounting for 190m bottles of whisky in 2016, much higher than the whole of the USA at 119m bottles²¹.

EU import tariffs on spirits are set at zero, so the whisky sector and related malting barley and grain demand is not at significant risk from Brexit. However, spirit exports to certain third country markets (such as South Korea) benefit from EU Free Trade Agreements. While Scotch whisky is often marketed as a premium product, on exiting the EU, the UK would have to strike up replacement trade deals if it is to maintain preferential access to such markets.

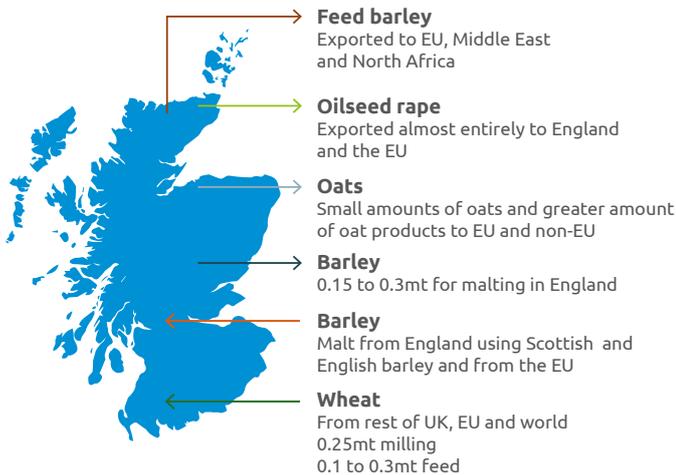


Figure 9. Cereal and oilseed trade flows in Scotland

Constraints in infrastructure in Scotland are a critical factor for industry competitiveness. The number of haulage firms and lorries have steadily declined over the last decade and have to be supplemented with lorries from England, particularly at peak seasonal times. Most ports in the main cereal-producing regions are equipped to handle relatively small coasters suitable for intra-UK or EU trade. This can add supplementary road transport costs particularly to move barley from the North East to more distant, deep-water ports suited to supplying non-EU markets.

Trade in cereals between Scotland and the rest of the EU typically comprises:

- Imports from the rest of the EU of bread wheat, maize for feed/distilling and malt
- Exports from Scotland of feed barley and rapeseed, with occasionally smaller export quantities of malting barley

Any trade barriers between the UK and the EU could also affect Scotland's trade with England. For instance, this may encourage cereal trade from surplus-producing regions in England to displace EU imports into Scotland. This may encourage greater wheat production in Scotland; with UK feed wheat replacing imported maize for feed and distilling, English bread wheat (which can't be grown economically in Scotland) displacing EU supplies and UK malt displacing EU product.

Trade with the EU is also important for cereal products with significant exports including whisky and other spirits, biscuits, oat and malt goods. Any trade restrictions on processed foods could be particularly damaging to the oats industry as Scotland has a large oat processing sector that is heavily reliant on EU export markets.

¹⁹ The Land Based Sector in North East Scotland P108

²⁰ www.scotch-whisky.org.uk Questions and Answers

²¹ Scotch at a Glance 2016/17

Potatoes

Potatoes are an important crop in Scotland, with the sector valued at around £208m²². Scotland produces 22% of total potato production in the UK but only has 8% of total population, so production exceeds local demand. Production is focused on the pre-pack and seed markets with only minimal processing production, as shown in Table 2. This is because the current processing varieties favoured by buyers are difficult to grow in Scottish conditions and there is relatively little processing capacity in Scotland.

In most cases the transportation of pre-pack potatoes to the buyer is a cost for growers. With a significant proportion of Scottish pre-pack potatoes transported to England, the distance travelled results in a cost disadvantage to Scottish production.

Scotland's climate means that Scottish potatoes are free from many plant health pests. As a result, Scotland has developed a profile as a leading grower of seed potatoes. Around 70% of UK seed potatoes are grown in Scotland, accounting for 80% of UK seed potato exports outside the EU. The vast majority of seed is grown in the north east of Scotland and Tayside.

Scotland has a Safe Haven status for plant health standards, which assists with the quality perception of seed. Seed production is mainly for markets outside Scotland, with about 60% destined for England and 40% overseas, with more than 40 countries, mainly non-EU.

Table 2. Scottish potato production by intended market sector

Total Production	Scotland (1.2mt)	England (4.0mt)
Fresh bags	2%	5%
Fresh chipping	1%	16%
Pre-pack	54%	34%
Processing	2%	40%
Other ware	2%	1%
Seed	40%	4%
	100%	100%

Source: AHDB Potatoes, 2016

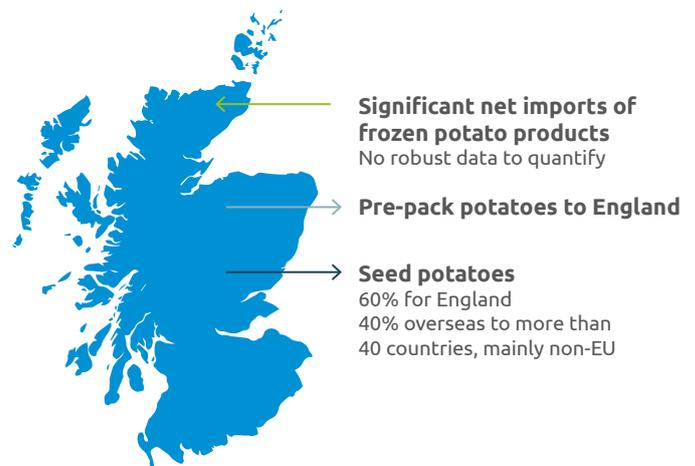


Figure 11. Potato trade flows in Scotland



²² Total income from farming (RESAS 2016)

Seed potatoes – Key export market for Scotland

The Scottish seed potato sector is worth an estimated £80–£100m and approximately 40% of the seed potatoes produced are exported. Around 65,000t of seed potatoes and 10,000t of ware potatoes produced each year in Scotland are exported outside the EU (or to the Canary Islands) (Source: Scottish Government). Scotland exports potatoes to more than 40 different countries around the world (Figure 12).

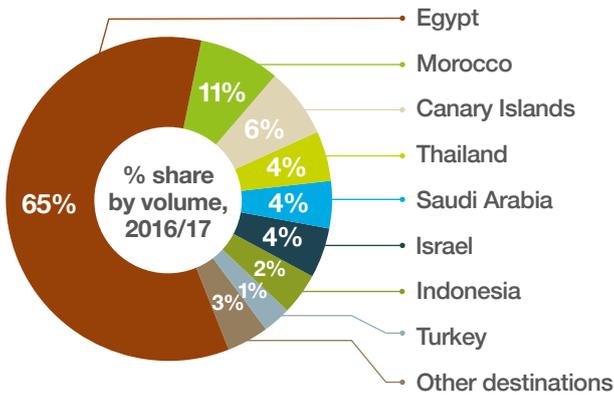


Figure 12. Scottish seed potato exports by volume, 2016/17

There are very few imports of seed potatoes into Scotland and those that are imported tend to come from the rest of the UK. Seed imports into the rest of the UK are minor, compared to domestic production and tend to fulfil demand for new (usually processing) varieties, often bred in the Netherlands. Typically, it takes a number of years for a variety to become established in the domestic seed industry, meaning growers must often import to access certain newer varieties in the meantime.

In the fresh and seed sectors in particular, EU trade is limited. With these sectors dominant in the Scottish industry, the direct benefits or costs in the event of increased trade barriers with the EU are likely to be limited.

The main Brexit risk for the Scottish potato industry is ongoing preferential market access for Scottish seed exports to non-EU markets. There are a number of existing trade agreements between the EU and other countries that benefit the potato sector. These include important seed export destinations, such as Egypt and Morocco. If preferential access is lost to these markets the seed industry would be at a disadvantage compared to EU competitors. While Egypt has a standard seed potato tariff of only 2%, Morocco levies 40% outside any trade agreements, which could make Scottish seed exports there unviable. The UK also operates within the framework of EU phytosanitary standards which are accepted by these markets. The UK will need to ensure future UK standards of these kind are accepted by trade partners.

Scotland's main opportunities exist for seed potatoes, as does the possibility of growing the access of these to non-EU markets in the medium to long term. Expanding seed exports is mostly constrained by non-tariff barriers, such as phytosanitary controls imposed by importing countries. Gaining access rests on being able to satisfy individual countries' authorities that Scottish seed can be certified free of a range of pests and diseases. Opportunities to continue to grow seed exports may be greater if the UK gains increased flexibility to negotiate on phytosanitary regulations with potential trade partners. A similar, albeit less substantial benefit, could come for fresh exports too.

If no trade deal has been agreed with the EU, potatoes and potato products would be subject to tariffs. With the main trade flow for potatoes being in the form of imports of processed potato products (such as frozen chips) from the EU to the UK this may provide opportunities for import substitution. This is to say that the UK supply chain may be able to produce domestic products at a price advantage to imported product. Within Scotland the opportunity for farmers to grow processing varieties will be limited but there could be increased opportunities to provide seed to supply chains in England.



“ ..the main trade-related opportunities of Brexit will focus on displacing imports into the UK. ”



Dairy

Raw milk produced in Scotland goes into a range of products, with cheese and the fresh liquid market dominant but butter, desserts and dairy ingredients also produced. There are effectively five main milk buyers purchasing milk from producers in Scotland, offering more than 30 different contracts. These processors supply a number of dairy products including liquid milk, cheese, butter, ice cream and yoghurt. Cheese, the dominant added-value activity, accounts for around 48% of production²³.

Raw milk output in Scotland has been outstripping processing capacity in recent years. AHDB estimates that in 2015/16 net movement of milk from Scotland into England of more than 100m litres of milk per year. This is equivalent to around 10 milk tankers per day. The UK exports mostly highly-processed products. The only UK exported product that is not manufactured in Scotland in any significant volume commercially is milk powder.

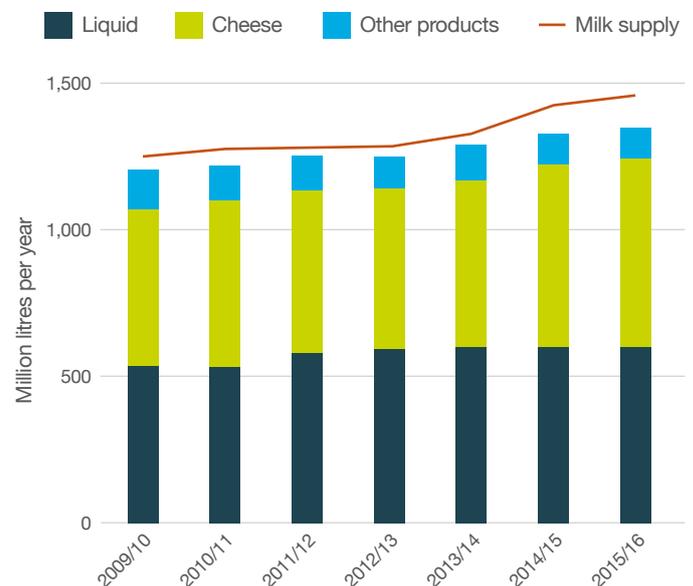


Figure 13. Scottish milk supply versus milk processed

Source: AHDB estimates/Processors/Defra

The UK is a significant net importer of dairy products, with Ireland by far the dominant EU player when it comes to UK imports, followed by France and Germany. As such, the main trade-related opportunities of Brexit will focus on displacing imports into the UK. Any situation where tariffs are imposed on EU products imported to the UK will provide a significant price advantage to Scottish products over imports.

The other key opportunity is the ever-growing global population, with increased numbers of middle-class consumers seeking dairy products. The UK may be better able to agree a favourable trade arrangements with some of these emerging markets, notably in the Asia-Pacific region, compared to the EU. AHDB has published a Horizon report assessing the prospects for global dairy (and other livestock product) exports²⁴.

²³ AHDB Dairy Statistics 2015

²⁴ ahdb.org.uk/documents/Horizon_meatanddairy_Sept2017.pdf

Horticulture

Horticultural production is concentrated in the east of Scotland, notably in Tayside, Grampian, Fife, Scottish Borders and Lothian. According to Scottish Government statistics, the total agricultural land used for horticultural production in Scotland at June 2016 was 21,100 hectares, under 0.4% of the total utilised agricultural area. The vast majority of this used for producing vegetables (18,200) with fruit grown on 1,900 hectares and flowers and nursery stock on 950 hectares.

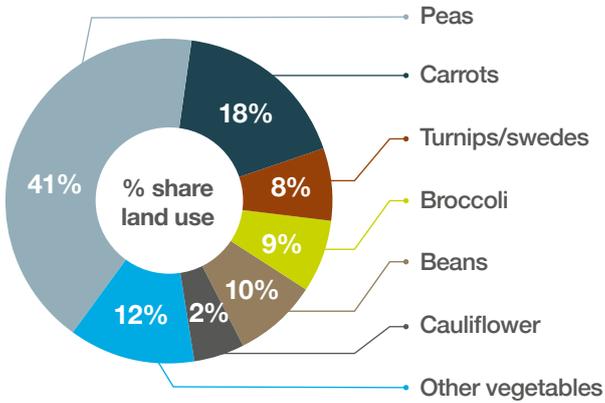


Figure 14. Land use for vegetable crops in Scotland

Source: Scottish Government 2016

In terms of soft fruit production, strawberries are the most significant crop in terms of area planted. The chart below presents combined areas of soft fruit in open field, walk-in plastic structures and glasshouses. Given changes in data collection, with the introduction of the new Single Application Form (SAF) in 2009, changes seen here should be treated with some caution.

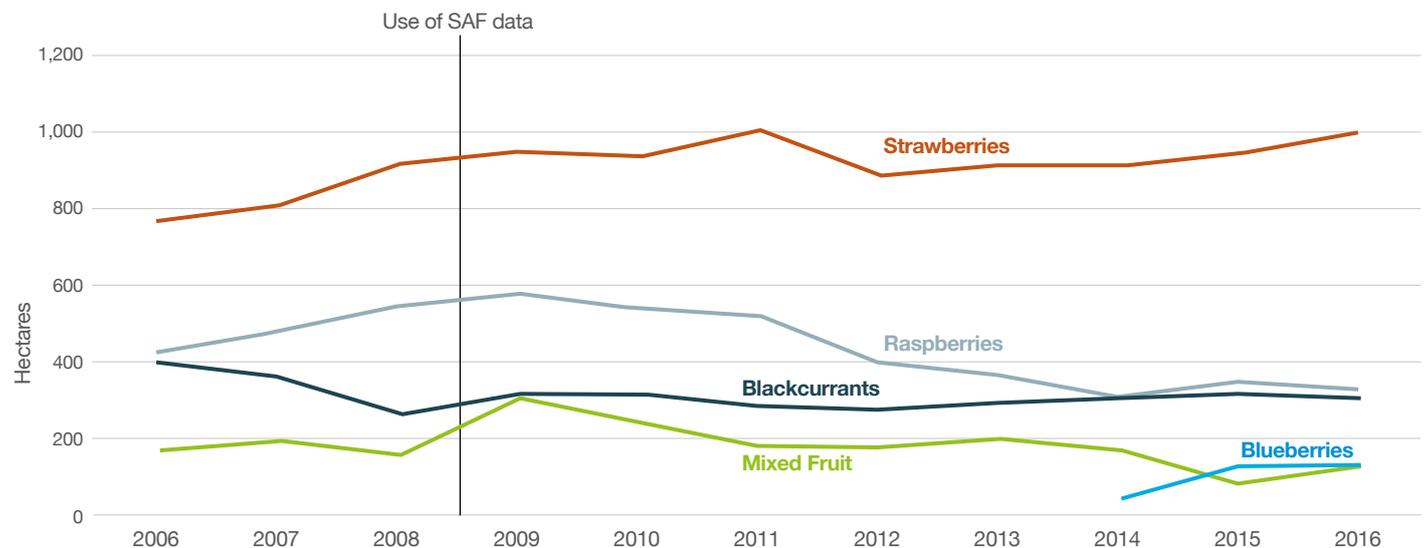


Figure 15. Soft fruit trends (both open field and plastic or glasshouse crops) 2006 to 2016

Source: Scottish Government 2016

Note: From 2011 onwards, areas of strawberries and raspberries include areas grown under glass as well as areas grown in the open field. Figures prior to 2011 only include areas grown in the open field. Figures for blueberries have only been collected separately from 2014.

Fruit generally accounts for around 3% of total farm output. Over the past 10 years, the output value of soft fruit has increased by £66 million (137%), to an estimated £115 million in 2016.

There are no official statistics or information on trade flows of soft fruit within, or to and from, Scotland. Scotland accounts for around 25% of total UK strawberry production, 15% of total UK raspberry production and 15% of UK blueberry production. A significant proportion of Scottish soft fruit is transported to the rest of the UK. This flow is likely to account for:

- 67% of strawberries to the rest of the UK
- 45% of raspberries to the rest of the UK
- 45% of blueberries to the rest of the UK

Most of the Scottish and wider UK horticulture sector is focused on the domestic market, so its exports are minimal. Total UK exports of fruit and vegetables were valued at just £199m in 2015, less than 4% the value of imports (Scotland-specific figures are not available). Assuming the UK leaves the Single market and Customs Union, Brexit will result in greater trade friction and costs of trade. There could also potentially be tariffs imposed on trade, too. This would effectively increase the price of imported product, which should mean that domestic produce becomes more competitive and could allow UK production to expand and displace some imports.

The biggest risk to horticulture with Brexit appears to be the availability of labour, with the sector particularly reliant on migrant workers for many roles. Issues around labour are discussed later in this report.

AGRICULTURAL POLICY

While agricultural policy within the UK is a devolved competency, the EU Common Agricultural Policy (CAP) has provided the framework for agricultural policy in Scotland. The Scottish Government has a high degree of flexibility in how it chooses to implement the CAP. For instance there is flexibility in how funds are allocated between Pillar I and Pillar II with a tailored rural development programme.

Pillar I – Direct Support

Basic payments within Pillar I are allocated based on three agronomic regions. Over the five-year period to 2019, a convergence process is taking place to move all payments towards the regional average value. Once completed, expected payment rates²⁵ will be:

- Region 1 – land used for crops or grassland (€161/ha) (not including Greening payment of €83/ha)
- Region 2 – land that is rough grazing in non-LFA areas or was more intensively farmed in LFAs (€27/ha) (not including Greening payment of €14/ha)
- Region 3 – more extensively grazed LFA rough grazing (€9/ha) (not including Greening payment of €4/ha)

Compared to the rest of the UK, a key difference in the allocation of Pillar I funding is that Scotland chose to provide coupled support for the beef sector, through the Scottish Suckler Beef Support Scheme, where eligible beef calves on the mainland receive about €100 and on islands €160 per head. Additionally, a coupled Scottish Upland Sheep Support Scheme was introduced for Region 3 farmers, where eligible ewe hogs receive a payment of around €100 per head, subject to certain retention criteria. These policy choices reflect the desire of the administration at that time to provide greater support in those sectors whose relative importance in Scotland is greater than on average across the UK.

Under the current CAP, there are varying levels of support across the four devolved nations. There are also different programmes operating across each of the devolved nations, which reflect locally-tailored policy decisions driven by profound underlying differences in environmental, socio-economic and demographic circumstances. Scotland gets a lower level of CAP funding per hectare of farmland than the rest of the UK and indeed other EU Member States.

Table 3. CAP spending by nation of the UK

	Scotland	England	Northern Ireland	Wales
CAP total spending (£m)	614	2,184	317	353
Current share of spending	17%	63%	10%	10%
Number of holdings as a % UK	24%	49%	11%	16%
Utilised agricultural area as a % of UK	32%	52%	10%	6%
Population as a % UK	8%	84%	3%	5%



²⁵ A Scottish Government Greening Guidance – payment rates 2019, Greening rates 2015

The importance of CAP support

EU funds are proportionately more important to Scotland than the rest of the UK. The largest part of Scotland's pre-allocated EU funds come from CAP Pillar I with support to farmers' incomes provided in the form of direct payments and market-support measures. Figure 16 shows the make-up of income for key agricultural sectors in Scotland compared to England.

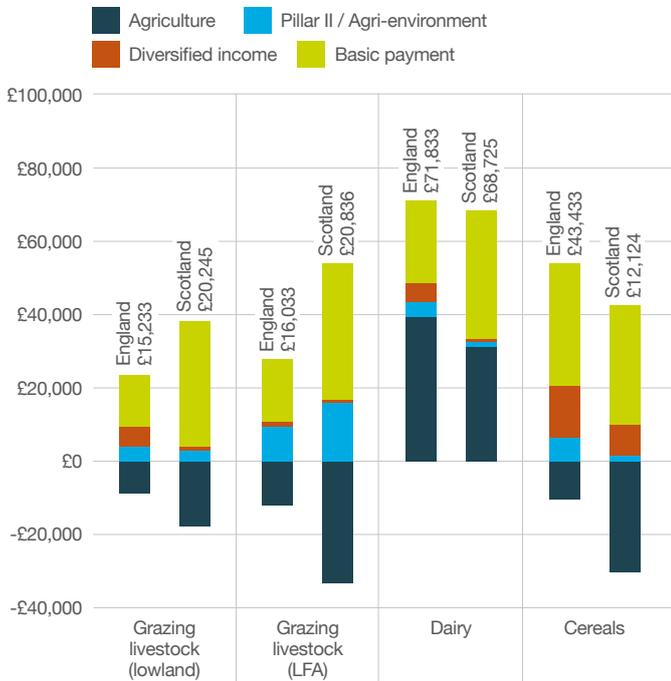


Figure 16. Comparisons of Farm Business Income for Scotland and England by sector, 2014–2016

Source: Rural Farm Business Survey / Economic report on Scottish agriculture 2015, 2016, 2017

Scotland's natural capital places a limiting factor in agricultural productivity compared to the rest of the UK, with 85% of its agricultural land classified as Less Favoured Areas (LFA). As such, CAP support is seen as playing a vital role in supporting farm incomes to ensure that farming in upland areas is sustained and land abandonment is avoided.

Because of the variation in physical and business environment, Farm Business Income can vary from year to year and support payments provide some mitigation to this. For example, in 2014–2015 Scottish farm business income was £23,944 per farm and fell to £12,615 in 2015–2016. Dairy Farm Business Income was particularly volatile falling from £68,932 to £1,884 between the two years. Without this support the typical Scottish farm business would not have been profitable in either of these years. In 2016, 12% of support payments were accounted for by Less Favoured Area payments (LFASS) made as a recognition of the challenges of climate, topography and distance from market has on cost of production and marketing within Scotland.

Pillar II – Rural development

Rural Development is the 2nd Pillar of the CAP, providing Member States with an envelope of EU funding to manage co-funded programmes. Each of the UK nations sets its own priorities for targeted support under six economic, environmental and social programmes set out in the EU rural development regulation for the period 2014–2020 (see Figure 17).

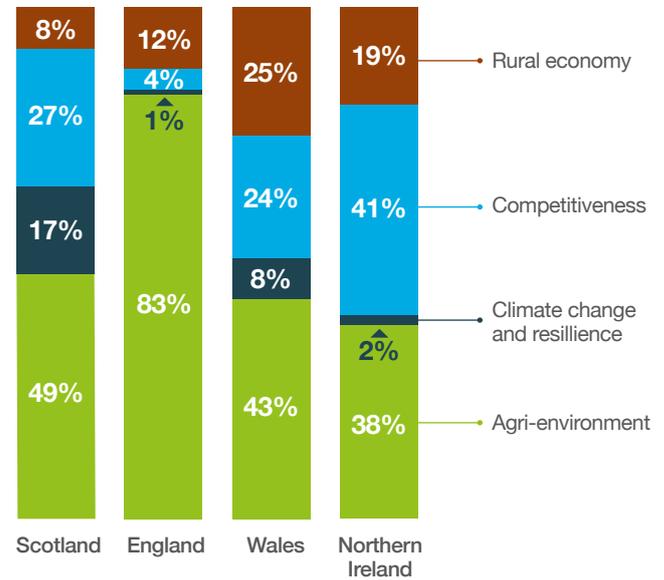


Figure 17. Rural Development funding, 2014–2020

Source: European Commission

The Scottish Government has chosen to use a higher proportion of the rural development budget for support on the basis of topography ie LFA and Higher Nature Value categorisations. There is also significant funding to climate change-related programmes, designed to reduce greenhouse gas emissions as well as carbon conservation and sequestration through the Agri-Environmental Climate Scheme (AECS) and Forestry Grant Scheme (FGS). Just over a quarter of the funding programme is targeted at improving agricultural and supply chain competitiveness, including farm viability and sustainable management.

In contrast, the majority of Rural Development Programme (RDP) funding in England, where only a small proportion of land is considered LFA, is targeted at better environmental land management, with very little funding used to support agricultural competitiveness or climate change and resilience.

Without the framework of the CAP distribution, significant questions remain both about the size of the overall Scottish funding envelope and the type of policy measures that Scotland will put in place. Agricultural policy is fully devolved and while a post-Brexit UK national framework for agricultural support is being discussed, it is possible that a post-Brexit world could see greater divergence in policy measures pursued across the UK.

LABOUR

AHDB has published a Horizon report regarding the impact of Brexit on labour²⁶ and QMS have published reports on securing skilled labour²⁷. If there is no longer free movement of workers between the UK and the rest of the EU, post Brexit, availability and the cost of labour will change. The horticulture sector arguably faces the greatest challenges around labour, due to the higher intensity of its use than in other parts of the industry. Here Eastern European workers provide a ready supply of seasonal labour for soft fruit picking, which is one of Scotland's growing sectors.

At farm level in Scotland, paid labour accounts for around 6% per cent of the total costs of agricultural production, according to the Scottish Farm Business Survey 2016. Evidence on the use of migrant workers in agriculture and horticulture in Scotland is limited. However, Scottish Government has recently funded SRUC to undertake research in the importance of seasonal workers to the agriculture sector. Full results from this study have not been published at the time of writing. The initial findings, which provide some indication of migrant work numbers include:

- 460,000 migrant workdays were reported on Scottish farms in 2015
- 75% of migrant workers were in Angus, Perth and Kinross, key regions for fruit and vegetable production

Migrant labour is also critical to the viability of the agricultural processing sector in Scotland. Currently, an estimated half the workforce in some of Scotland's abattoirs and meat processing plants are migrant workers. EU migrants make up a large proportion of official veterinarians. Research carried out by the Scotch Whisky Skilled Workforce has identified that 70% of companies involved in Scotch Whisky anticipate that they will experience skills shortages in the future, primarily in engineering and management.

²⁶ ahdb.org.uk/documents/Horizon_Brexit_Analysis_20September2016.pdf
²⁷ www.qmscotland.co.uk



REGULATION

The EU currently sets the regulatory framework governing agricultural production, environmental protection, food safety and food labelling, along with other areas. However, beyond this framework, many aspects are devolved.

UK businesses will remain bound by current EU regulation until the UK formally leaves the EU. Even then, it looks likely that most rules and regulations will remain in place, with the UK Government seeking to adopt most EU laws into UK law within the EU Withdrawal Bill.

Brexit is seen by many as an opportunity to regain control of regulatory affairs, providing greater flexibility to set regulation across the UK and within devolved administrations. However, regulatory standards play an important role in facilitating cross-border supply chains and, therefore, if the UK wishes to continue trading with the EU or with other countries requiring EU compliance, flexibility may be limited. Furthermore, if UK standards were different or lower than current EU standards, it is possible UK produce would come to be associated,

rightly or wrongly, with lower standards, (eg consumer safety or carbon footprints), which could affect demand for UK goods.

The question of regulation post-Brexit is further complicated by devolution. For those areas that are not reserved to Westminster (eg environmental protection, aspects of food safety and labelling as well as agriculture), there is a prospect in the long-term of some greater divergence between Scotland and other parts of the UK in the absence of common, EU standards and regulations.

Two key sets of regulation affecting agriculture are those governing plant protection products and animal welfare. AHDB has published a Horizon report focusing on plant protection products²⁸.

²⁸ ahdb.org.uk/documents/Horizon_Brexit_Analysis_january2017.pdf



BREXIT SCENARIOS AND SCOTLAND

With negotiations between the UK and EU ongoing and with details of how domestic policy will change in many areas unclear, it is difficult to assess how Brexit will affect Scottish agriculture and horticulture. AHDB has published a dedicated Horizon report entitled *Brexit Scenarios: an impact assessment*²⁹. This report maps out the range of possible post-Brexit situations and quantify their impact on farming.

The three chosen illustrative scenarios, summarised in Table 4, are not intended to predict or describe actual outcomes of the Brexit negotiations. Their purpose is to capture the range of possible repercussions and isolate

the effect of Brexit from other factors such as exchange rates, interest rates and economic growth, which are assumed to remain unchanged.

Table 4. The Brexit Scenarios

	Scenario 1: Evolution	Scenario 2: Unilateral Liberalisation	Scenario 3: Fortress UK
Public support	<ul style="list-style-type: none"> Direct Payments (DPs) and agri-environment payments are maintained at current levels 	<ul style="list-style-type: none"> Direct Payments (DPs) removed, agri-environment and other payments under Pillar II are increased to equal 50% of current overall support 	<ul style="list-style-type: none"> Direct Payments (DPs) removed, agri-environment payments reduced to 25% of current levels of overall support
	<ul style="list-style-type: none"> Pillar I and Pillar II payments remain the same 	<ul style="list-style-type: none"> Pillar I payments reduced to 0%, Pillar II payments (and associated costs) increased by 259% to disburse 50% of total PI+PII funds 	<ul style="list-style-type: none"> Pillar I payments reduced to 0%, Pillar II payments (and associated costs) increased by 130% to disburse 25% of total PI+PII funds
Labour	<ul style="list-style-type: none"> Retained at the current level 	<ul style="list-style-type: none"> Non-UK regular labour restricted to 50% of current levels Retained at the current level for seasonal (casual) workers 	<ul style="list-style-type: none"> Non-UK regular labour restricted to 50% of current levels Non-UK seasonal (casual) labour restricted to 50% of current levels
	<ul style="list-style-type: none"> No change to labour costs 	<ul style="list-style-type: none"> 50% increase in regular labour cost, no change in casual labour cost 	<ul style="list-style-type: none"> 50% increase in regular labour cost, 50% increase in casual labour cost
Trade relationship with the EU	<ul style="list-style-type: none"> Comprehensive Free Trade Agreement (FTA) enabling tariff-free trade between the UK and the EU 	<ul style="list-style-type: none"> No trade deal between the UK and the EU is agreed UK-EU trade relationship the same as with the rest of the world 	<ul style="list-style-type: none"> No trade deal between the UK and the EU is agreed UK-EU trade relationship the same as with the rest of the world (RoW)
	<ul style="list-style-type: none"> Increase of 5% in UK prices to reflect the cost of trade friction in an FTA 	<ul style="list-style-type: none"> Increase of 8% in UK prices to reflect the cost of trade friction without an FTA, no tariff applied 	<ul style="list-style-type: none"> Increase of 8% plus cost of WTO tariff in UK prices
Trade relationship with the RoW	<ul style="list-style-type: none"> WTO rules apply UK has access to a share of the EU's existing WTO Tariff Rate Quotas (TRQs) and agrees FTAs with third countries that already have FTAs with the EU 	<ul style="list-style-type: none"> WTO rules apply, although UK unilaterally reduces import tariffs to 0% for all agricultural products within set quotas 	<ul style="list-style-type: none"> UK adopts the same common external schedule of tariffs as the EU and retains a proportion of its existing WTO TRQs, including for New Zealand and Australian lamb and the Hilton Beef quota
	<ul style="list-style-type: none"> Increase of 8% in UK prices to reflect the costs of trade friction with the RoW 	<ul style="list-style-type: none"> Increase of 8% in UK prices to reflect the cost of trade friction, no tariff applied 	<ul style="list-style-type: none"> Increase of 8% plus cost of WTO tariff in UK prices – exceptions for lamb and beef in line with existing quota
Regulatory environment	<ul style="list-style-type: none"> All existing EU regulations adopted into UK law, meaning no change to regulatory costs 	<ul style="list-style-type: none"> All existing EU regulations adopted into UK law, with the regulatory burden reduced over time 	<ul style="list-style-type: none"> All existing EU regulations adopted into UK law, meaning no change to regulatory costs
	<ul style="list-style-type: none"> No change to costs 	<ul style="list-style-type: none"> 5% decrease in costs of seeds, fertilisers, crop protection, other crop costs, veterinary fees and medicines, plus other livestock costs 	<ul style="list-style-type: none"> No change to costs

²⁹ ahdb.org.uk/brexit/documents/Horizon_BrexitScenarios_Web_2017-10-16.pdf

AHDB's modelling goes further than other studies, which have sort to quantify Brexit impacts as it assesses four different aspects of Brexit. The model assesses the impact of changes in four key areas; trade arrangements, levels of agricultural policy support, regulation and labour. Having said this, findings from the research are broadly consistent with those found elsewhere. For instance, trade impacts were assessed by the Agri-food and Bioscience Institute (AFBI) using the FAPRI model and trade and support were explored by Wageningen University in a study funded by the NFU.

Results for Scotland

In order to provide more Scottish-specific evidence, AHDB commissioned analysis of some Scottish-specific farm types, using data from the Farm Business Survey in Scotland. Results from this analysis are discussed within this section.

Scotland has two coupled payments within Pillar I (Scottish Suckler Beef Support Scheme and Scottish Upland Sheep Scheme). The modelling assumes these are removed under Scenarios 2 and 3, along with the Basic Payment Scheme. Scotland provides payments under the Less Favoured Area Support Scheme (LFASS) within Pillar II. These account for around 13% of all support paid to farmers. We assume Pillar II type support will be increased to the level of 50% of current agricultural support in Scenario 2 and 25% of current support in Scenario 3.

Specialist sheep in Scotland

The baseline FBI for specialist sheep farms is £11,122 (Figure 18). Under **Scenario 1: Evolution**, this falls by 10% to £9,980, under **Scenario 2: Unilateral liberalisation**, FBI falls by 8% to £10,214, while under **Scenario 3: Fortress UK**, FBI becomes negative after falling by 210% to -£12,379. It is important to note that there are significant differences in impacts for farms of different performance levels. Figures showing this can be found in the Appendix. They indicate that farms in the top 25% of performance in terms of FBI size are able to remain profitable under all the scenarios. This is also a finding for all other sectors that have been analysed.

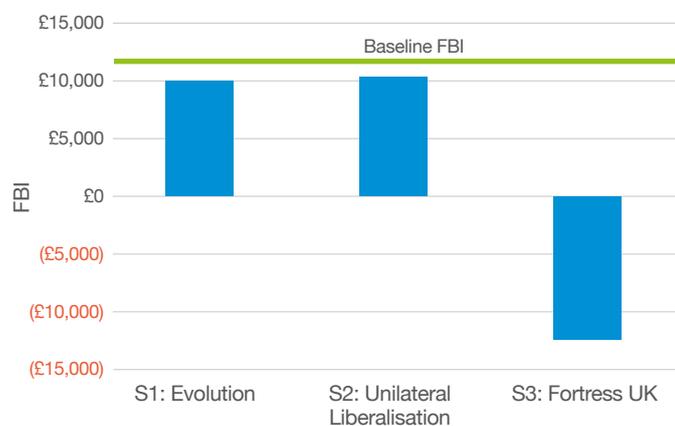


Figure 18. Impact of scenarios on FBI: specialist sheep in Scotland

Figure 19 shows the components of FBI for each scenario and the baseline. Comparisons between them give the explanation why FBI differs between scenarios.

- The 10% decrease in FBI seen under **Scenario 1: Evolution** is driven by decreases in the output values of sheep, caused by the loss of export potential. This is not compensated for by a smaller increase in the value of cattle
- There is an 8% decrease in FBI under **Scenario 2: Unilateral liberalisation** represents a removal of Pillar I payments (£19,670 per business) is more than offset by the increase in Pillar II payments (from £15,415 to £41,613). Decreases in the value of production output and increases in regular labour costs also have an impact, although reductions in regulatory costs provide some marginal relief for these changes.
- Under **Scenario 3: Fortress UK**, the negative FBI results from a smaller increase in Pillar II support, which does not fully offset the loss of Pillar I support and an increase in both casual and regular labour costs. The value of production output also decreases relative to the baseline. There is likely to be severe pressure on less-efficient farmers and downward pressure on farm size, in order to reduce costs of paid labour

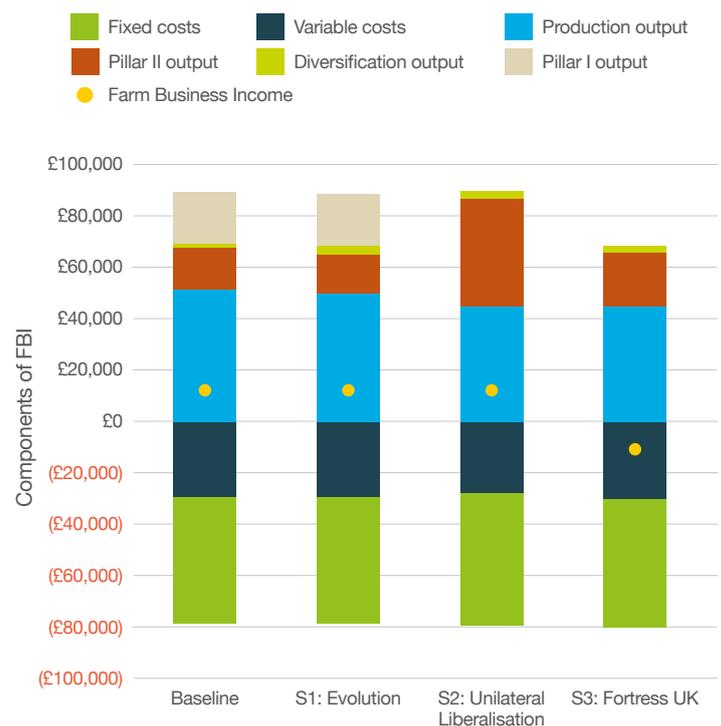


Figure 19. Components of changes to FBI: specialist sheep in Scotland

Specialist cattle in Scotland

The baseline FBI for specialist cattle farms is £24,641 (Figure 20). Under **Scenario 1: Evolution**, this rises by 14% to £28,028, under **Scenario 2: Unilateral liberalisation**, FBI falls by 89% to £2,716 while under **Scenario 3: Fortress UK**, FBI falls by 86% to £3,542.

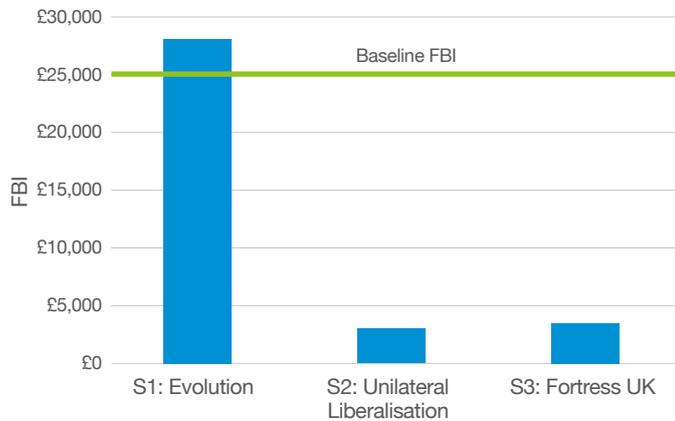


Figure 20. Impact of scenarios on FBI: specialist cattle in Scotland

Figure 21 shows the components of FBI for each scenario and the baseline; comparisons between them give the explanation why FBI differs between scenarios.

- The 14% rise in FBI seen under **Scenario 1: Evolution** is driven by increase in the output value of cattle, caused by the loss of export potential. This is not offset by a decrease in the value of sheep
- The 89% decrease in FBI under **Scenario 2: Unilateral liberalisation** is driven by a removal of Pillar I payments (£35,434 per business), which is not offset by the increase in Pillar II payments (from £10,950 to £29,572). A slight decrease in the value of production output and increases in regular labour costs also have an impact, although reductions in regulatory costs provide some marginal relief for these changes

- Under **Scenario 3: Fortress UK**, the decline in FBI results from a smaller increase in Pillar II support (from £10,950 to £14,786), which does not fully offset the loss of Pillar I support and an increase in both casual and regular labour costs. The value of production output increases relative to the baseline but there is likely to be severe pressure on less-efficient farmers and downward pressure on farm size, in order to reduce costs

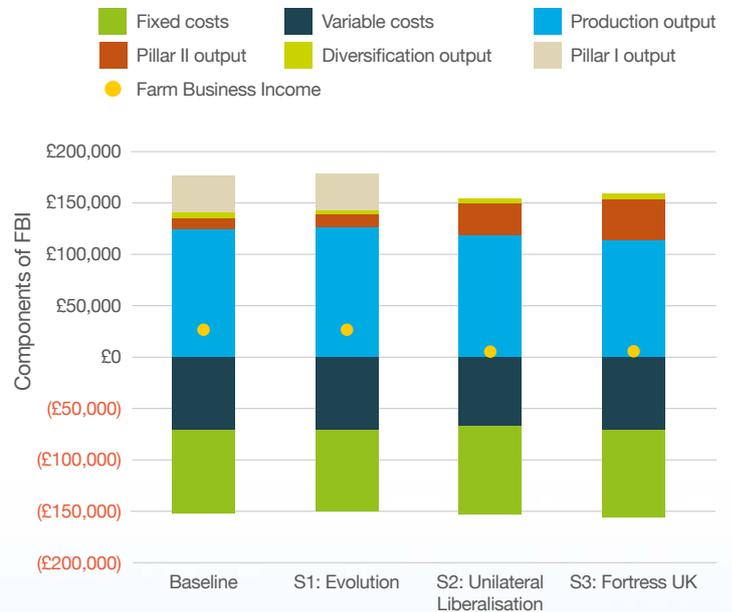


Figure 21. Components of changes to FBI: specialist cattle in Scotland





Dairy in Scotland

The baseline FBI for specialist dairy farms is £35,442 (Figure 22). Under **Scenario 1: Evolution**, this rises by 52% to £53,888, under **Scenario 2: Unilateral liberalisation**, FBI falls by 88% to £4,375, while under **Scenario 3: Fortress UK**, FBI rises by 37% to £48,640.

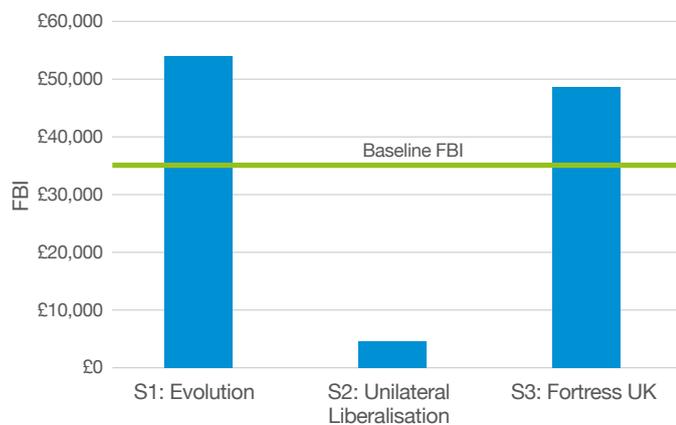


Figure 22. Impact of scenarios on FBI: dairy in Scotland

Figure 23 shows the components of FBI for each scenario and the baseline. Comparisons between them give the explanation why FBI differs between scenarios.

- The 52% rise in FBI seen under **Scenario 1: Evolution** is driven by increase in the output value of raw milk, caused by a rise in import costs
- The 88% decrease in FBI under **Scenario 2: Unilateral liberalisation** is driven by a removal of Pillar I payments (£31,990 per business), which is not offset by the increase in Pillar II payments (from £1,910 to £5,157). Production output increases and increases in regular labour costs also have an impact, though reductions in regulatory costs provide some marginal relief for these changes.

- Under **Scenario 3: Fortress UK**, the 37% rise in FBI results from a smaller increase in Pillar II support (from £1,910 to £2,579), which does not fully offset the loss of Pillar I support and an increase in both casual and regular labour costs. The value of production output increases by £53,077 relative to the baseline due to the rising cost of dairy imports providing upward pressure to domestic prices



Figure 23. Components of changes to FBI: dairy in Scotland

Other sectors

The farm businesses in ‘Brexit Scenarios: an impact assessment’ were evaluated using data from the Farm Business Survey in England. Many of the farm types outlined provide a relevant starting point for Scottish businesses to understand the possible impacts of Brexit. Full details can be found within the report itself, but headline results are provided here.

Pigs

Figure 24 shows that the baseline FBI for pig farms is £46,067. This increases under all three scenarios to £68,708 under **Scenario 1: Evolution**, £57,418 under **Scenario 2: Unilateral liberalisation** and £205,354 under **Scenario 3: Fortress UK**.

It should be noted that the carcass balancing trade is very important in the pig sector, and while higher prices are likely to be possible for cuts in demand, an inability to extract value from cuts for which there is no domestic demand would mean that the price rises seen here, and the consequential large increases in FBI, would be reduced, possibly considerably.

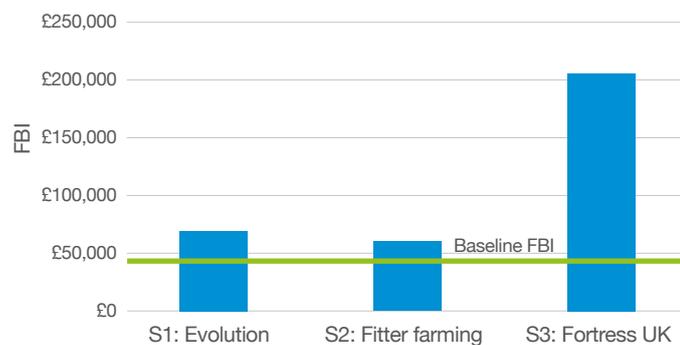


Figure 24. Impact of the scenarios on FBI: pigs



General cropping

Figure 25 shows the baseline FBI for general cropping farms³⁰ is £61,231. Under **Scenario 1: Evolution**, FBI rises marginally but FBI falls to around one-third of this level under **Scenario 2: Unilateral liberalisation**. FBI also declines under **Scenario 3: Fortress UK** but only to £24,710.

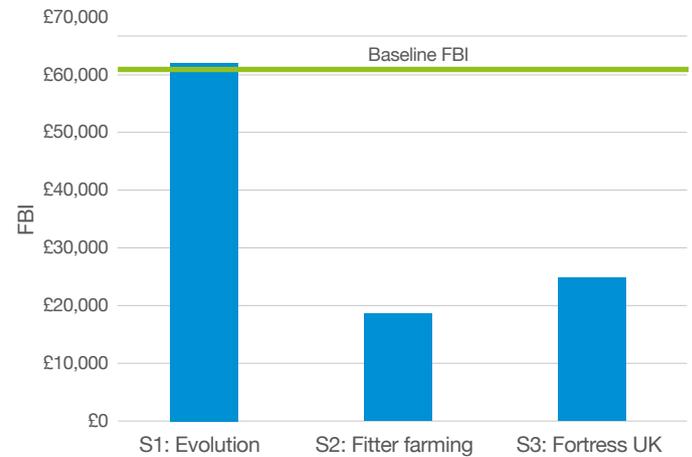


Figure 25. Impact of the scenarios on FBI: general cropping

Horticulture

The horticulture classification includes a broad remit. AHDB has, therefore, chosen specific crops as representative of the sector, including onions, tomatoes and strawberries. Full details of the methodology for modelling crops where data was limited may be found in the technical report³¹. Figure 26 compares the baseline FBI (£33,517) to that under the three scenarios. FBI increases by approximately £15,000 under **Scenario 1: Evolution** but falls under both **Scenario 2: Unilateral liberalisation** and **Scenario 3: Fortress UK** to £29,632 and £30,890, respectively.

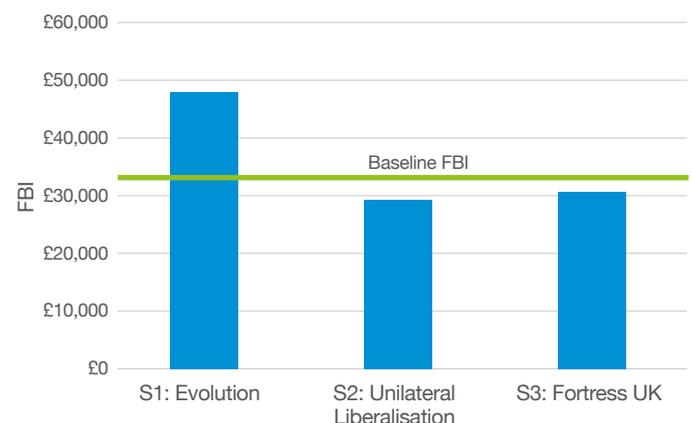


Figure 26. Impact of the scenarios on FBI: horticulture

³⁰ Holdings on which arable crops (including field-scale vegetables) account for more than two-thirds of their total standard output (SO), excluding holdings classified as cereals; holdings on which a mixture of arable and horticultural crops account for more than two-thirds of their total SO, excluding holdings classified as horticulture and holdings on which arable crops account for more than one-third of their total SO and no other grouping accounts for more than one-third

³¹ www.ahdb.org.uk/brexit

Cereals

The baseline FBI for cereals farms is £43,796 (Figure 27). Under **Scenario 1: Evolution**, this falls by 9% to £39,788, under **Scenario 2: Unilateral liberalisation**, FBI falls by 81% to £8,216, while under **Scenario 3: Fortress UK**, FBI becomes negative after falling by 103% to -£1,341.

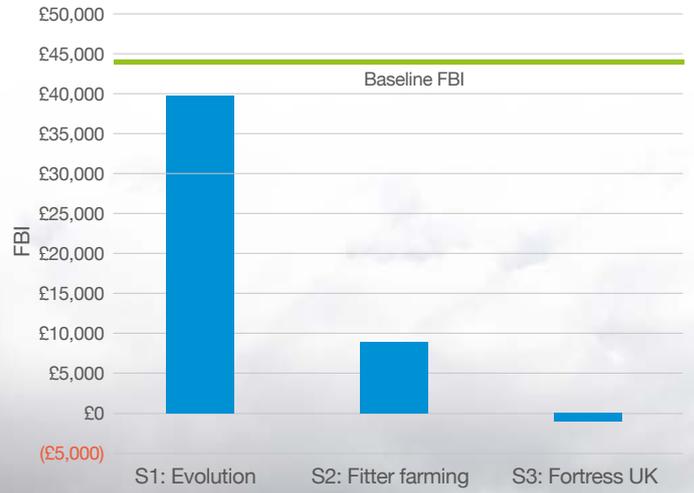


Figure 27. Impact of the scenarios on FBI: cereals



Fit for the Future

While the implications of this analysis need to be considered by policy makers in both Westminster and Edinburgh, the work raises some important questions for Scottish farmers and growers. The over-riding message is for businesses to focus on the aspects they control. This starts with understanding the range of scenarios, their consequences and potential effects of Brexit on their businesses. Those businesses that have thought about the possible range of outcomes, having considered the options they can take to deal with them and planned for any eventuality, are most likely to succeed.

AHDB and QMS see five critical questions that Scottish farmers and growers need to be asking themselves in order to plan ahead:

1. Are we making time to take a hands-off view of the business? This is about being able to take a step back from the day-to-day farming, look at the overall direction of the business, your personal and family ambitions and long-term goals
2. Do we know our costs and how do they compare? Good businesses know their costs of production. The most competitive businesses know how they compare. The results of our recent analysis on Brexit scenarios highlight that those businesses in the top 25% of performance as measured through farm business income (profit) will be better placed to deal with the challenges that even the most extreme Brexit scenario may present. AHDB's new Farmbench tool offers a new, intuitive approach to benchmark the whole-farm business, rather than a specific enterprise such as combinable crops
3. Is the business providing sufficient profit, on a five-year rolling average, before direct payment? This is about taking a long-term view of the profitability of the enterprise rather than looking at a given year
4. Do we have a plan that takes account of different payment scenarios? Businesses should contemplate how they might respond, over time, to different scenarios in relation to farm support payments
5. What skills will the business need? While this may be more challenging for some businesses, a change of enterprise, structure or diversification are all likely to require new skills to enable a business to succeed



CLOSING THOUGHTS

It is clear that Brexit brings a great deal of uncertainty for the agricultural sector and wider food supply chain. While we do not know all the details, it is possible to identify areas where Scotland has both higher and lower exposure to Brexit challenges, when compared to other parts of the UK.

The scenarios analysis highlights that significant change could result from Brexit, indicating that farmers and growers, as well as other parts of the supply chain, need to start preparing for Brexit now. While many of the factors relating to Brexit are out of the farmers' control, some steps can be taken to prepare.

On international trade:

- Brexit will provide Scottish agriculture and horticulture with both risks and opportunities. In the short term, the nature of future UK/EU trade relationships will be a critical issue. Due to the lower level of EU exports, Scottish agriculture as a whole is less exposed to this risk than other parts of the UK. However, it is clear this will still affect the industry and there is an obvious interdependence with the agri-food sector elsewhere in the UK, with greater friction in UK/EU trade boosting farming incomes in some sectors (notably dairy and pigs) and shrinking them in others (notably cereals and sheep)

On access to EU migrant labour:

- While the repercussions vary across the agricultural sector, it is horticulture that is most dependent on this resource. In the short term, at least, the profitability of horticultural businesses, particularly those in soft-fruit production, appears to be linked to availability of this flexible labour resource. Scotland as a whole would be less impacted by any adverse changes than other parts of the UK, given the lower proportion of horticultural output but for the businesses affected the issue is critical

On agricultural support:

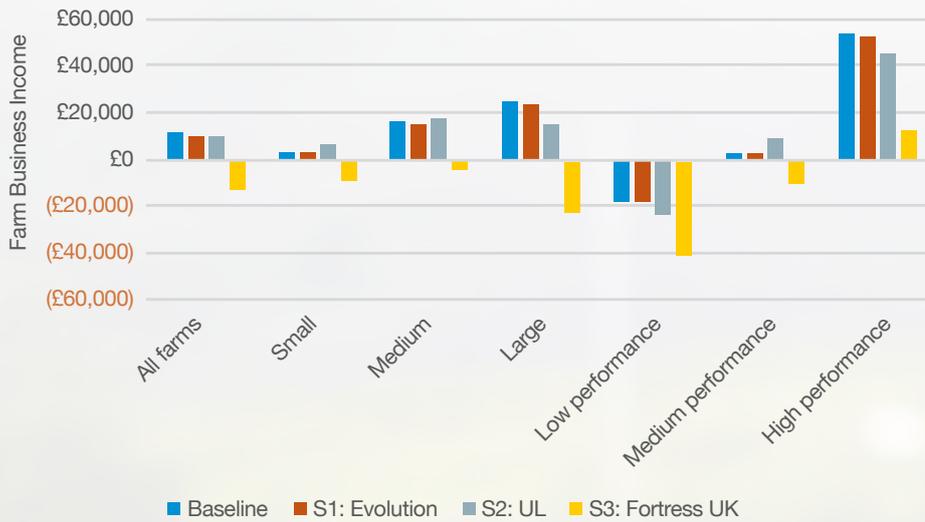
- The evidence is clear that support payments are important to maintaining farm business incomes for many businesses. It is not clear how agricultural policy will change post-Brexit, but there is likely to be increased scrutiny of the degree to which agriculture provides public benefits for public money. Scottish agriculture would be more exposed to any reductions in support levels, given that support contributes a higher proportion of farm business income. Future decisions on the level of agricultural budgets and how this funding is allocated will be important

On trade:

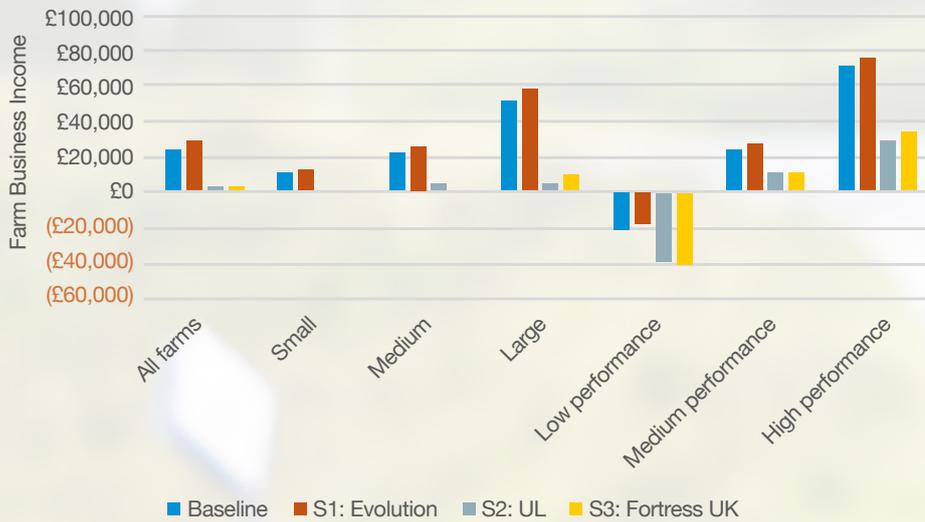
- International trade growth ambitions in the immediate term will be dependent on the trade arrangements negotiated by the whole of the UK. Here, replicating the existing EU preferential trade agreements, to avoid negative impacts should be the initial priority. In the medium to long-term, there are opportunities to gain improved access to other markets but it is important to realise that these could bring both opportunities and threats (in the form of imports) to the agricultural sector. AHDB has published reports examining the growth prospects for UK grains, livestock and dairy products³², these identify possible target markets for food and drink exports
- Differentiating and adding value will remain a cornerstone of Scotland's strategic direction. Nonetheless, while the Scottish brand can have a positive effect on the value of goods sold from Scotland, it is important to remember that many farmers and growers are producing raw materials for competitive markets. The requirement to increase productivity and competitiveness will become more important than ever



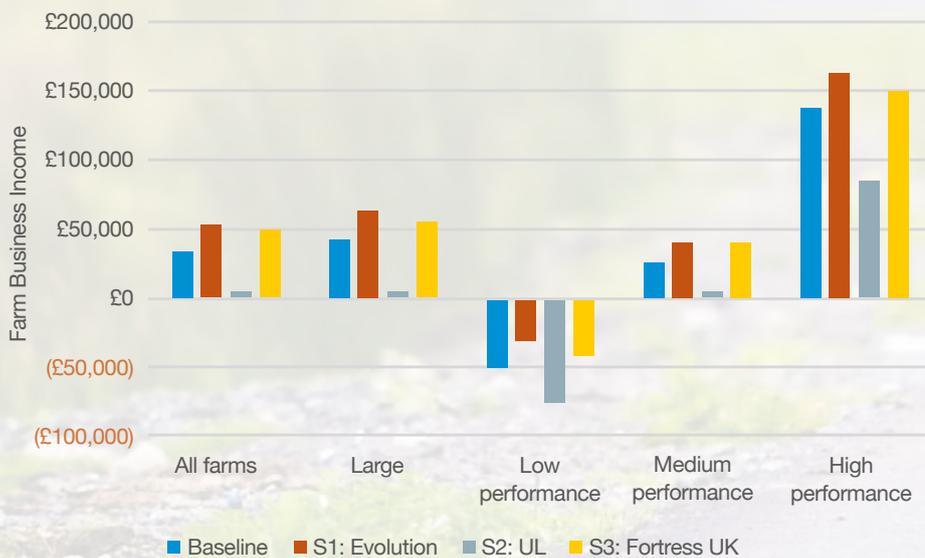
APPENDIX



Specialist Sheep in Scotland: changes to FBI by farm size and performance



Specialist Cattle in Scotland: changes to FBI by farm size and performance



Dairy in Scotland: changes to FBI by farm size and performance

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