POST-BREXIT IMPLICATIONS FOR AGRICULTURE & ASSOCIATED LAND USE IN THE HIGHLANDS AND ISLANDS

Report to the Highlands & Islands Agricultural Support Group
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Post-Brexit implications for Agriculture & Associated Land Use in the Highlands and Islands

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This study was commissioned by the Highlands and Islands Agricultural Support Group (HIASG). It considers potential economic, social and environmental impacts of Brexit on agriculture, crofting and related land use across the Highlands and Islands. The main findings are that:

- Extensive livestock grazing across the region is **vulnerable** to potential Brexit-induced price reductions and, especially, to the removal of income support measures.
- This will accelerate existing trends of **declining agricultural activity, land abandonment and a shrinking agricultural workforce**, with limited scope for alternative land use activities.
- Declining active land management will **impact negatively on upstream and downstream sectors**, notably the Scottish Government's target growth sectors of Food & Drink and Tourism, risking wider economic activity and employment.
- Declining active land management will also **impact negatively on a range of unique and internationally important environmental and cultural public goods** maintained by extensive and small-scale agriculture.
- Scope for appropriate policy support may be constrained by a range of external factors, but **mitigating Brexit impacts will require both income support to maintain a resident population of land managers plus more targeted support for providing specific public goods**.
- Crucially, relative to current and past arrangements, **policy support measures and funding levels need to better reflect the distinctive needs and contributions of the Highlands and Islands**, consistent with National Performance Framework and international commitments.

Executive Summary

Introduction

S1. This study was commissioned by Highlands and Islands Agricultural Support Group (HIASG) and draws on published analysis, literature and data plus telephone interviews with regional stakeholders to consider the potential economic, social and environmental implications of Brexit's impacts on the distinctive agriculture, crofting and related land use found across the region.

Farm-level effects of Brexit

S2. Different scenarios exist to describe possible arrangements for post-Brexit trading and domestic support, but various modelling exercises indicate that the type of extensive livestock grazing that dominates land use across the Highlands and Islands (H&I) is generally vulnerable to projected reductions in farmgate prices, exchange rate fluctuations and any removal of income support.

S3. Projected Brexit impacts will accelerate existing trends of loss-making farms, a reduction in agricultural activity levels (including land abandonment), a lack of reinvestment and a smaller agricultural workforce.

Wider production and employment effects

S4. Farm-level impacts will ripple back along the supply-chain and across other sectors via multiplier effects. Upstream input suppliers to H&I agriculture contribute around £61m of Gross Value Added (GVA) to the regional economy, whilst the downstream (and priority growth) sectors of Food & Drink and Sustainable Tourism contribute a further £244 and £344m respectively.

S5. Unless mitigating actions are taken, the severity of potential farm-level contractions and subsequent reductions in demand for input goods and services, the availability of raw materials for processing and also maintenance of landscapes and heritage attractive to visitors will place much of this aggregate economic activity and associated rural employment at risk.

Community viability

S6. In-turn, the viability and/or cultural identity of rural (especially crofting and island) communities may be adversely affected by reductions in employment and population size. For example, by a loss of critical mass required for continued provision of public services. This applies particularly in locations where alternative employment opportunities are limited by biophysical constraints and/or remoteness, but even if alternative opportunities exist community identity may be eroded.

Public goods

S7. Negative impacts will also be felt in terms of wider, non-market ecosystem services such as climate and water regulation, soil and habitat formation and landscape aesthetics. In particular, the prevalence of High Nature Value (HNV) and environmental designations across the region indicates the importance of extensive, often small-scale agricultural management to maintenance of internationally important landscapes, habitats and species, many of which are not found elsewhere in the UK and which will be at risk if agricultural activity declines.

S8. The policy rationale of public money for public goods is increasingly recognised in Scotland and elsewhere, and provides a basis for framing policy support more broadly in terms of multiple outcomes rather than simply agricultural production. Encouraging public good provision requires support payments, but also accompanying advice, training and investment grants – productivity improvements are required for all ecosystem services, not simply commodity production.

Policy responses

S9. These perspectives are not new and have been noted previously in numerous strategy and policy documents, but Brexit starkly reinforces the need for action. Historically, support measures have failed to reflect the distinctive contributions and funding requirements of the H&I, neglecting the additional production costs imposed by remoteness, the cultural heritage of crofting and the maintenance of unique landscapes and habitats.

S10. If negative Brexit consequences are to be mitigated, future support for the H&I needs to improve on past arrangements, preferably through a combination of more equitable income support payments and better targeted agri-environmental payments, in tandem with appropriate advice, training and capital grants to improve productivity for both commodity and public good provision.

S11. Although Brexit offers flexibility outside of the Common Agricultural Policy (CAP), policy design will still be constrained by various external factors. In particular, World Trade Organisation (WTO) rules limiting agri-environment payments to cover costs incurred and income foregone will (unless interpreted differently) make it difficult to derive income from public goods provision, reinforcing the need for separate income support – but this will have to be agreed under a UK common policy framework and funded from a probably smaller budget.

Conclusions

S12. The distinctive environmental and cultural characteristics of the H&I region, together with the exposure of its dominant agricultural land use to Brexit-induced pressures, provide a compelling case for distinctive and targeted policy interventions consistent with the Scottish Government's National Performance Framework and international commitments. The extent to which appropriate support is forthcoming will be a test of political commitments to the economic, environmental and social conditions of the region, but also of how well the case can be made to the public for discretionary expenditure on agriculture and natural capital rather than on other competing demands.

Post-Brexit implications for Agriculture and Associated Land Use in the Highlands and Islands

Section 1. Introduction

Background

1.1. This study was commissioned by the Highlands and Islands Agricultural Support Group (HIASG), a body comprising each of the Councils[1] within the Highlands and Islands (H&I) region plus RSPB Scotland. HIASG was originally formed in response to on-going debates during periodic reforms to the Common Agricultural Policy (CAP), to help frame and present the case for appropriate regional support levels and measures. The need for such policy thinking and advocacy has been reinforced by the decision for the UK to leave (hereafter referred to as Brexit) the European Union (EU), prompting renewed interest in identifying and highlighting particular agricultural and related policy challenges and opportunities facing the region. For example, the prevalence of constrained and marginal land in the Less Favoured Area (LFA), geographical remoteness, the presence of crofting, and the extent of High Nature Value farming systems and environmental designations.

1.2. The overall aim of the study was to ascertain the possible implications of Brexit for the agricultural sector (including crofting) and related land use in the Highlands and Islands, and to consider the associated impact on the environment, rural communities and economy. More specifically, the study was designed to use available data to establish the present state of the agricultural sector and related land use across the region, project the likely social, environmental and economic impacts of different Brexit scenarios on agriculture and the H&I region, and to make recommendations for targeted policy and support measures.

1.3. The study was desk-based, entailing a review of published analysis of agricultural Brexit scenarios and related literature, collation of publicly available agricultural, land use and economic data, and telephone interviews with 36 stakeholders across the H&I region. It also draws heavily on analysis undertaken on crofting and the Highlands and Islands Enterprise area through "Work Package 2.4: Rural Industries" as part of the Scottish Government's Strategic Research Programme 2016-2021. The study ran from November 2017 to May 2018.

1.4. The rest of this Section offers an overview summary of Brexit and possible policy scenarios and their impacts on farmgate prices and farm incomes, plus a brief summary of stakeholder views. Section #2 uses various data to describe the current H&I situation, and Section #3 draws on stakeholder views and published literature to discuss likely impacts and how they might be addressed.

Brexit

1.5. Despite the time elapsed since the 2016 referendum and the subsequent triggering of Article 50 setting March 2019 as the date for the UK to leave the EU, the precise meaning of Brexit remains unclear. The UK government itself has yet[2] to agree on its preferences and priorities, which will then be subject to negotiation with the EU and (later) third-countries.

1.6. Partly as a consequence of this domestic political uncertainty but also in recognition of the sheer procedural challenges involved, an implementation[3] period has been agreed in principle to allow for

[1] Argyll & Bute, Na h-Eileanan Siar, Highland, Orkney, and Shetland.
[2] This remains the case at the time of writing.
[3] This is the UK terminology; the European Commission terms it a transitional period, which the UK confusingly uses to describe the continuation of agricultural support funding beyond March 2019.

continued negotiations beyond March 2019. The terms and duration of any transition have yet to be agreed, with a suggested end date of December 31st 2020 possibly being extended or indeed shortened.

1.7. This implies that the claim year 2019 and payment year 2020 will be the last under the Common Agricultural Policy (CAP), and claim year 2020 and payment year 2021 will be the first under whatever new domestic agricultural policy arrangements will be in place. However, a lack of clarity also affects domestic arrangements, with relationships between Devolved Administrations and the UK government being strained by differences of opinion over the repatriation of powers and budgets from Brussels to either London or to Belfast, Cardiff and Edinburgh. The Scottish Government's position, as set-out in, for example, Scotland's Place in Europe or the "Continuity Bill" is somewhat different to UK government's position.

1.8. Despite accounting for less than 1% of the overall UK economy, agriculture features prominently in Brexit debates for four primary reasons. First, CAP expenditure is a significant funding injection[4] to many regional economies and its loss potentially threatens the viability of many existing agricultural and related activities. In particular, expenditure under the CAP on decoupled,[5] area-based support in the form of the Basic Payment scheme (BPS) constitutes a significant proportion of farm incomes (more so in Scotland than England, with Scotland also using the decoupled Less Favoured Area Support Scheme, LFASS).

1.9. Second, the EU schedule of external tariffs applied under the World Trade Organisation (WTO) rules protects UK farmers from international competition whilst allowing free access to the EU market. The loss of such privileges may also affect the viability of existing agricultural and food sector activities by changing farmgate prices for both inputs and outputs, particularly in a period of exchange rate uncertainty.

1.10. Third, some parts of UK agriculture (and indeed other sectors such as haulage, construction and tourism) are highly dependent on employees from elsewhere in the EU, and restricted availability of labour may threaten the viability of some farming activities, either directly on-farm or elsewhere in the supply-chain.[6]

1.11. Fourth, agriculture is a Devolved policy area and different parts of the UK have implemented the CAP in slightly different ways to reflect variation in local circumstances and political preferences, such that any changes to the overall framework for agricultural policy and Devolved powers and/or the distribution of funding will have different impacts in different places. This is particularly relevant to the H&I region where (limited) coupled[7] support payments are in place for beef and sheep production: no coupled payments exist in the UK outwith Scotland.

1.12. UK government Ministers have attempted to assuage some concerns by guaranteeing existing levels of agricultural support beyond 2019, possibly to 2022 or even 2025, proclaiming possibilities for new trading arrangements and for reinstating seasonal worker schemes.[8] However, considerable uncertainty remains and concerns remain regarding impacts on agriculture and related land use in many areas. This is certainly true of the H&I region which encompasses some diverse but particular characteristics that distinguish it from other parts of Scotland and the rest of the UK (see Section #2).

[4] Although it is important to note that EU support is also received via Structural and Investment Funds.
[5] Meaning that payments are not linked to commodity production levels, only to the area of land managed.
[6] For example, veterinary services, horticulture, food processing.
[7] Meaning payments are linked to commodity production.
[8] It should also be noted that EU funding and policies operate on a seven-year cycle, whereas domestic cycles follow the shorter (e.g. five-year) parliamentary cycle.

Brexit scenarios

1.13. Notwithstanding the continuing uncertainty, it is possible to sketch-out likely agricultural Brexit scenarios in terms of trading arrangements and farm support funding. This has been attempted by a number of formal economic modelling exercises and a consensus is emerging regarding the bounds within which Brexit may operate.

1.14. Three studies are particularly relevant here: van Berkum et al. (2016), Bradley & Hill (2017) and Davis et al. (2017).[9] All three adopt slightly different analytical approaches, but specify broadly equivalent scenarios to encompass the range of trade arrangements available post-Brexit.[10]

1.15. At one extreme, it is possible that agreement is reached to retain more-or-less free trade between the UK and the rest of the EU. For example, via a Free Trade Agreement (FT) or some sort of Customs Union. In this FT scenario, no tariffs would be applied to agricultural and food products exported from the UK to the EU27 or on imports from the EU27 to the UK, and regulatory alignment would be maintained. However, it is assumed that arrangements could not be as mutually beneficial as currently and a degree of trade "friction" would be experienced. For example, a low level of physical customs inspections and increased bureaucracy. This would have the effect of increasing trade costs, affecting farmgate prices modestly.

1.16. If a Free Trade Agreement is not achieved, the UK will need to have a schedule of commitments under the WTO.[11] The likelihood is that this will simply mirror most of the current EU schedule.[12] Under this WT scenario, domestic producers would continue to receive the same level of tariff protection from third-countries, but tariffs would also be applied to imports from and exports to the rest of the EU. In addition, the degree of trade friction would be higher than under the FT scenario, with more physical customs checks and paperwork. As a result, farmgate prices would change by more, rising for commodities for which the UK is currently a net importer (e.g. beef) and falling for commodities for which the UK is currently a net exporter (e.g. lamb). It is possible that some farm costs might be reduced by removal of some regulatory controls, although UK Ministers have repeatedly emphasised retention of high environmental and animal welfare standards, so it is not clear where savings might be made.

1.17. At the other extreme, the UK could opt to remove tariffs on imports in favour of unilateral liberalised trade (LT). Under the Most Favoured Nation (MFN) rules of the WTO, this would apply to imports

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[9] van Berkum, S. et al. (2016) Implications of a UK exit from the EU for British agriculture. Study for the NFU. Warwickshire. Wageningen: LEI Wageningen. LEI Report. https://www.nfuonline.com/assets/61142; Bradley, D. & Hill, B. (2017). Quantitative modelling for post-Brexit scenarios. Final report for AHDB. Agribusiness Consulting|Informa. https://ahdb.org.uk/brexit/documents/Quantitative_Modelling_For_Post_Brexit_Scenarios-12oct17.pdf ; Davis, J. et al. (2017) Impacts of Alternative Post-Brexit Trade Agreements on UK Agriculture: Sector Analyses using the FAPRI-UK Model. AFBI. https://content17.green17creative.com/media/99/files/FAPRI_UK_Brexit_Report.pdf

[10] None of the formal modelling analysis has as yet addressed non-tariff measures (e.g. sanitary and phytosanitary rules) alongside tariff barriers, but (e.g.) plant and animal health issues will affect trade.

[11] Assuming that the UK gains separate membership of the WTO and that no WTO members raise objections over how current EU arrangements (e.g. tariff rate quotas, TRQs and permitted support ceilings, AMS) are inherited by the UK.

[12] Tariff Rate Quotas (TRQs) may be problematic here. For example, import quotas for New Zealand lamb and Brazilian beef, but also export quotas of (H&I) seed potatoes to North Africa.

from all[13] countries, not just from the EU. Given that import tariffs are currently high[14] for many agricultural products, and that trade friction costs would be incurred, farmgate prices would fall significantly for many products under this LT scenario. Again, some regulatory savings might be possible, but these remain as yet unknown.

1.18. Although other scenarios could be envisaged, the three scenarios represent the bounds within which Brexit may be implemented. That is, if Free Trade Agreements with third-countries were agreed or if tariffs were only scaled back not abolished, trading costs and lack of tariff protection would not be as severe as in the LT scenario, whilst the FTA scenario is already representative of a "soft" Brexit and the WTO scenario of maximum trade protection.

1.19. Table 1.1 summarises the price projections of the three studies for selected farm commodities. There is some variation in the projections, reflecting differences in the analytical approaches taken, assumptions made and data used. Nevertheless, it apparent that sheep prices are likely to fall under either the WTO or LT scenarios, beef prices are likely to rise under the WTO but fall under LT and dairy prices are likely to rise under FT and WTO, but possibly fall under LT. Wheat prices are generally expected to rise, but barley prices could rise or fall.[15] The models also highlight possible exchange rate volatility as an additional problem to contend with.

Table 1.1: Price change projections relative to baseline under different Brexit scenarios.

Product	van Berkum et al.			Bradley & Hill			Davis et al.		
	FT	WTO	LT	FT	WTO	LT	FT	WTO	LT
Beef	+4.6%	+7.4%	-14.9%	+4.6%	+21.5%	-0.5%	+1.9%	+17.5%	-42.3%
Sheep	+2.3%	+8.8%	-4.7%	-5.0%	-25.4%	-20.0%	+4.3%	-23.0%	-18.8%
Milk	+4.3%	+7.2%	+2.2%	+4.0%	+12.1%	+0.4%	+1.0%	+30.0%	-10.0%
Wheat	+5.0%	+8.0%	+7.9%	+2.3%	+2.3%	+2.3%	+1.0%	+7.8%	-1.5%
Barley	+5.0%	+8.0%	+8.0%	-5.0%	-16.4%	-16.4%	+0.5%	-5.2%	-8.1%

Source: as footnote 7

1.20. The trade scenarios can also be considered in combination with domestic support scenarios. Again, a large number of different scenarios could be contemplated, but a simple comparison of extremes can be made between maintenance of current Pillar I support levels and (to reflect HM Treasury and UK Ministers' expressed preferences) their complete removal.

1.21. SRUC has used updated price projections from Davis et al.[16] to assess the effect of different scenarios on Scottish farm incomes.[17] Each trade scenario was considered with and without Pillar I support, giving six in total: FT^+, WT^+, LT^+, FT^-, WTO^- and LT^- (where the "+" superscript indicates with Pillar I support and the "-" without it – with LFASS maintained). The assessment was conducted using

[13] Except under an FTA, since these supposedly have to be negotiated after Brexit has occurred.

[14] For example, the combination of ad valorem and flat rate tariffs yield effective tariff rates of 92% to 112% on beef and 45% to 64% on sheepmeat.

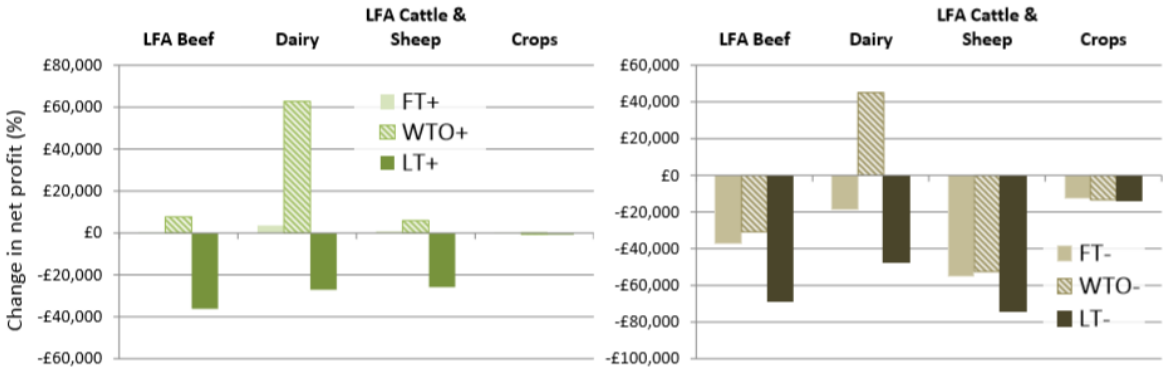
[15] Such differences in projections highlight the complexity of international markets and sensitivity of modelling results to different assumptions and definitions.

[16] Of the available sets of price projections, the results presented by Davis et al. were selected on the basis that they were derived from FAPRI-UK, an established partial-equilibrium model of agricultural markets that is used by the four UK government departments of agriculture for policy analysis and is currently being deployed in an ESRC-funded project looking at the agricultural impacts of Bexit.

[17] Shrestha, S., Thomson, S., Vosough Ahmadi, B. & Barnes, A. (2018) Assessing the impacts of alternative post-Brexit trade and agricultural support policy scenarios on Scottish farming systems. ScotFarm Policy Report 1 https://www.sruc.ac.uk/downloads/file/3606/assessing_the_impacts_of_alternative_post-brexit_trade_and_agricultural_support_policy_scenarios_on_scottish_farming_systems

information from the annual Farm Business Survey (FBS)[18] with ScotFarm, a farm-level optimisation model that simulates how farm production and resource usage could respond to different market and policy signals.[19] Figure 1.1. summarises results from this for profitability of different farm types under each trade scenario, with and without income support payments.

Figure 1.1: Estimated change in farm net profit under different scenarios, by farm type



Source: as footnote 17

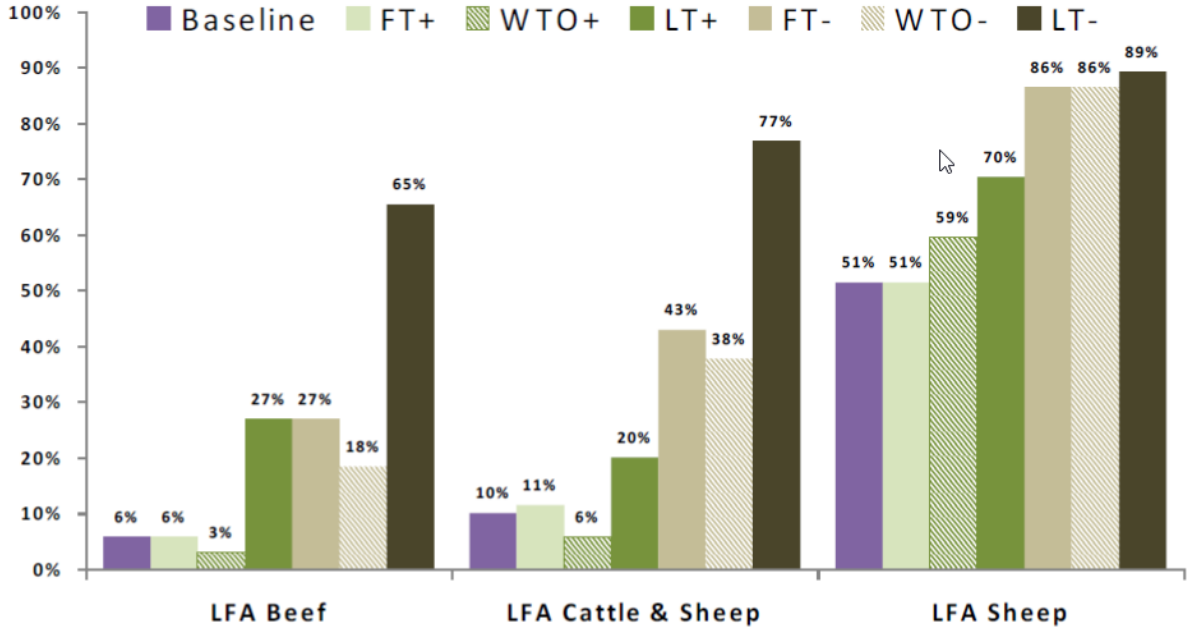
1.22. Unsurprisingly, ScotFarm confirms[20] that farm profits improve under scenarios with rising farmgate prices but decline under scenarios with falling farmgate prices. Hence, for example, beef and dairy producers benefit under FT^+ or WTO^+ but suffer under LT^+ whereas sheep producers gain a little under FT^+ but suffer under WTO^+ and LT^+. However, if Pillar I support is removed, all farm types suffer declining profit levels (apart from dairy under WTO), in particular beef and sheep farms, which are currently more dependent on income support. Swales et al. (2017b) derive broadly similar results.[21]

1.23. Focusing on beef and sheep production, the dominant farming activities across the H&I region (see section 2), Figure 1.2 illustrates estimated farm viability under the different scenarios. Under baseline conditions, 6% of LFA beef farms, 10% of Less Favoured Area (LFA) cattle and sheep farms, and 51% of LFA sheep farms are already loss-making on their agricultural activities, even with current levels of Pillar I support. These percentage shares increase under any scenario where Pillar I support is removed, and under the LT^+ scenario. Such losses are unsustainable in the medium to long-term and highlight the vulnerability of these farming systems to reductions in farmgate prices and/or support levels. Dairy and cropping farms appear to be less vulnerable, but a minority would still be loss making under the more severe scenarios.

1.24. There is, of course, variation around average figures and, depending on circumstances and ability to adapt, some individual farms will fare better, some worse. For example, more efficient farms or those with access to other farm income sources may be better placed to withstand the projected impacts. Nonetheless, it is apparent that – depending on the form of trade agreement reached but also crucially domestic decisions about future agricultural support levels - Brexit poses a significant risk to continued farming and crofting activity and related land use across the H&I region.

[18] Although this encompasses around 500 farms in Scoltand, it does not include very small, part-time farms. Consequently, archetypical crofting is not represented.
[19] Shrestha, S. (2017) ScotFarm – a farm level optimising model. Policy Analysis, Behaviour & Innovation Team www.sruc.ac.uk/download/downloads/id/3513/scotfarm_%E2%80%93_a_farm_level_optimising_model.pdf
[20] The results are for Scotland, but are indicative of H&I to the extent that beef and sheep systems dominate the region. However, the underlying FBS data exclude very small holdings, so crofts are not well represented.
[21] Swales, D., Macleod, J., Ashworth, S., Bell, J. & Bradley, D. (2017) Exploring the implications of Brexit for agriculture and horticulture in Scotland. AHDB. https://ahdb.org.uk/documents/Horizon_November2017.pdf

Figure 1.2: Percentage of loss-making farms under different scenarios, by farm type



Source: as footnote 15

1.25. The effects of price changes and removal of Pillar I support will extend beyond the farmgate, influencing social, environmental and wider economic conditions. This was recognised by all stakeholder interviewees, as summarised briefly below. In terms of the rural economy, via "multiplier" effects, reductions in output prices and support payments will ripple back along the supply-chain in terms of less demand for agricultural input goods and services plus will ripple across other sectors in terms of less demand for other goods and services due to lower income to farm, croft and input industry households.

1.26. For example, current agricultural output across the region amounts to around £285m which, together with £75m of Pillar I support and £27m of LFASS payments, gives rise to around £61m of Gross Value Added (GVA). An indicative multiplier value of 2.0 implies that an equivalent value (i.e. £387m of output, £61m of GVA) of economic activity arises in the upstream supply-chain and wider economy as a result of agricultural production. In addition, agriculture plays a key role in supplying raw materials to the downstream food and drink sector (regional GVA of £244m) and in maintaining landscapes, habitats and biodiversity which contribute to the tourism sector (regional GVA of £334m). Given the severity of potential farm-level losses under several Brexit scenarios, much of this aggregate economic activity must be viewed as being at risk unless mitigating actions are taken.

Summary of stakeholder views

1.27. Telephone interviews were conducted with 36 stakeholders (see Annex A for list) identified as knowledgeable about agriculture, crofting and land use across the H&I region. Although some variation in specific issues was apparent across different Council areas, there was a high degree of commonality of views. In particular, farming and crofting activities were uniformly regarded as highly vulnerable, leading to expectations of diminished activity levels and probable agricultural land abandonment if farmgate prices and/or Pillar I support were reduced.

1.28. Many stakeholders cited examples to illustrate an existing trend towards diminishing activity levels and a process of abandonment, particularly on poorer quality and/or harder to access land. Geographical remoteness and challenging environmental conditions were frequently mentioned as

constraints on productivity, but so too was labour availability – with the time required to tend and gather livestock becoming increasing difficult to find.

1.29. The consequences of reduced agricultural activity were expressed in relation to negative environmental, economic and community impacts. Many stakeholders emphasised the reliance of internationally important semi-natural habitats and distinctive biodiversity and landscapes on extensive, and often small-scale, agricultural management. Similarly, up and downstream linkages across supply-chains were used to highlight knock-on implications for employment and GVA in other sectors, particularly Food & Drink and Tourism.

1.30. Concern was also expressed about the impact on rural communities of reduced agricultural employment. This relates both to the risk of alternative employment being unavailable, leading to potential depopulation and a domino effect on community viability, but also to a loss of cultural heritage even if alternative employment is available.

1.31. In terms of policy responses to mitigate negative impacts of Brexit, there was general agreement that some form of continued income support for farming would be required. This was typically envisaged as an area or lump-sum based payment, similar to the current Basic Payment Scheme (BPS) or Less Favoured Area Support Scheme (LFASS), albeit possibly at a lower level. In recognition of likely budget constraints, the use of tiered payment rates and/or maximum payment caps was frequently suggested as a way of targeting funding at smaller businesses.

1.32. However, it was also acknowledged by most stakeholders that maintenance of the status quo was probably not achievable and indeed probably not desirable. The need to, where possible, improve efficiency was accepted (e.g. through investment and skills development) but many stakeholders also emphasised the need for policy to reward more than just commodity production. Consequently, there was considerable interest in the potential for using Pillar II type measures to target a range of policy objectives – albeit within recognised administrative, budgetary and WTO constraints.

1.33. Stakeholder views are returned to in Section #3, but the next Section presents selected statistical data from published sources to illustrate the nature of agricultural land use across the region and to profile some of the economic, social and environmental linkages identified by stakeholders.

Section 2. Baseline data

Introduction

2.1. As a geographical region, the Highlands and Islands enjoy a number of definitions with slightly different coverage. For example, Highlands and Islands Enterprise (HIE) coverage is based on Eurostat's NUTS2 region which encompasses part of North East Scotland, making it a larger area than that covered by the eight counties of the 1886 Crofters' Act. For this study, the Highlands and Islands are taken to be the area covered by the five Local Authorities: Argyll & Bute, Na h-Eileanan Siar, Highland, Orkney and Shetland (Figure 2.1).

2.2. The region's topography and peripherality has led to a very low population density covering much of the region (Figure 2.2 and Table 2.1), particularly in mountainous areas where limited economic opportunities exist to maintain populations.

2.3. Using the Scottish Government's rural–urban classification the majority of the study area is considered to be remote, being more than an hour's drive away from an urban centre with a population of over 10,000 people (Figure 2.3).

Figure 2.1: Local Authorities comprising the Highlands and Islands study region

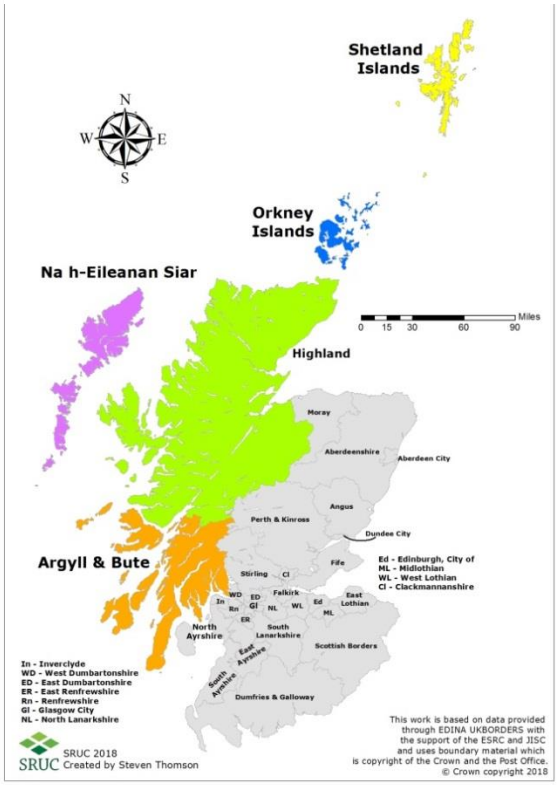


Figure 2.2: Population density

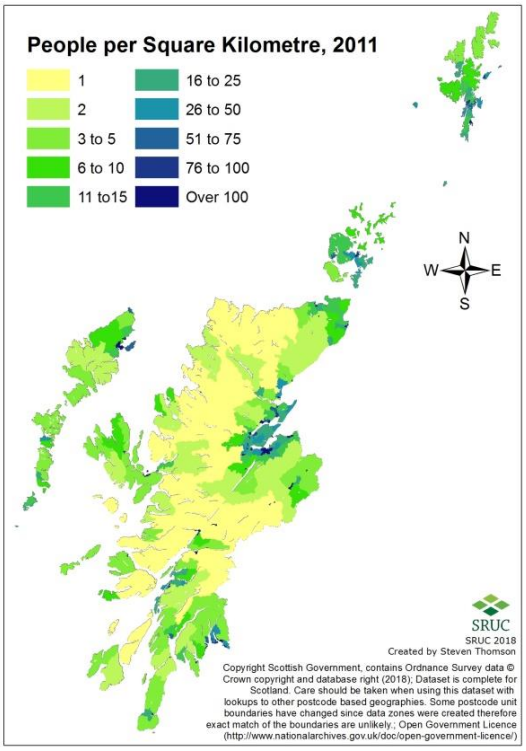


Figure 2.3: Rural-Urban Classification

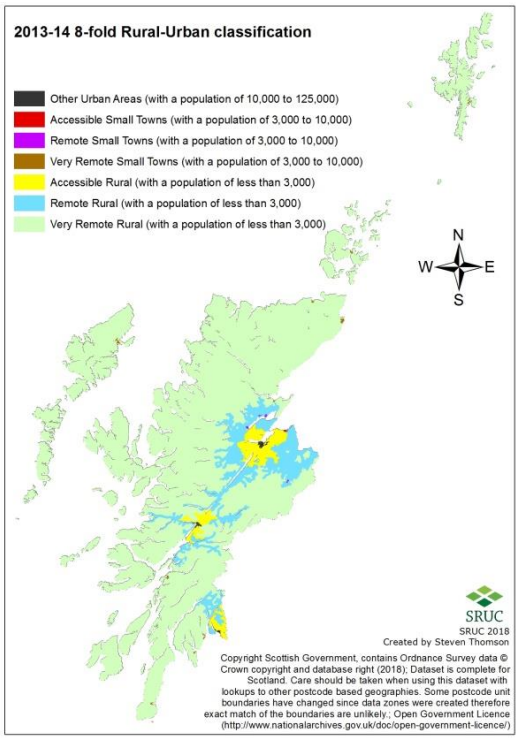


Table 2.1: 2016 Population density estimates

	Estimated population	Area (km^2)	Density (Ppl /km^2)
Argyll and Bute	87,130	6,909	13
Na h-Eileanan Siar	26,900	3,059	9
Highland	234,770	25,657	9
Orkney Islands	21,850	989	22
Shetland Islands	23,200	1,468	16
Highlands & Islands	**393,850**	**38,081**	**10**
Rest of Scotland	***5,010,850***	***39,829***	***126***

Source: Extracted from National Records Scotland (2016)[22]

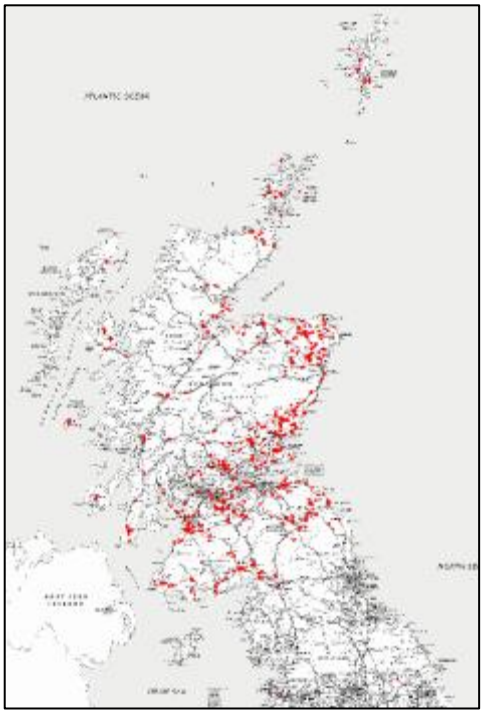
2.4. Remoteness from a choice of input suppliers and of downstream processors is also apparent, as shown in Figure 2.4. The effect of distance from suppliers and processors is to increase haulage costs relative to those incurred by businesses located further South and East. The estimated cost effect on basics such as fodder and fertilisers as well as animal shipments is reported in Table 2.2.

Table 2.2: Additional haulage costs of remoteness

	Outer Islands	Inner Islands	Remote Mainland
Fertiliser (£/t)	£36	£28	£15
Feed(£/t)	£32	£30	£10
Forage (£/t)	£38	£32	£20
Cattle haulage (£/hd)	£24	£21	£11
Sheep haulage (£/hd)	£5	£2	£1

Source: SAC Consulting calculations

Figure 2.4: Suppliers & Processors



Source: SAC Consulting

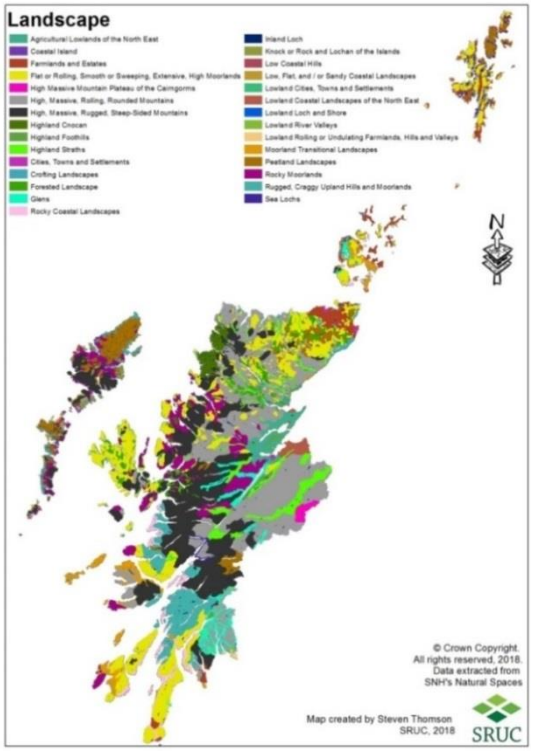
Landscape and environment

2.5. Reflecting the interaction of underlying geology with climatic conditions and land management over millennia, the region encompasses a range of landscapes from low lying coastal areas to high mountains (see Figure 2.5). Many of the landscape features, habitats and plant and animal species found in the region are recognised as rare and important, leading to the region hosting a high proportion of Scotland's environmental designations (see Figure 2.6).

2.6. For key environmental designations the Highlands and Islands are extremely important in terms of their coverage both within Scotland and the UK. The region has 18% of the UKs designated sites and 26% of the area of wetland sites of international importance designated under the Ramsar convention in the UK (53% of the Scottish sites and 80% of the Scottish designated area). For the terrestrial Special Protection Areas (for wild birds) the region contains 36% of the UK designated sites and 41% of the area designated (and 63% of Scottish sites and 82% of the area). For terrestrial Special Areas of Conservation (habitat and species protection) the region contains 20% of the UK sites and 13% of the designated area (58% of the Scottish sites and 73% of the Scottish area). For Special Sites of Scientific Interest H&I has 42% of the Scottish sites and 69% of the total area designated and extends to 19% of the UKs SSSI sites and 32% of the designated area.

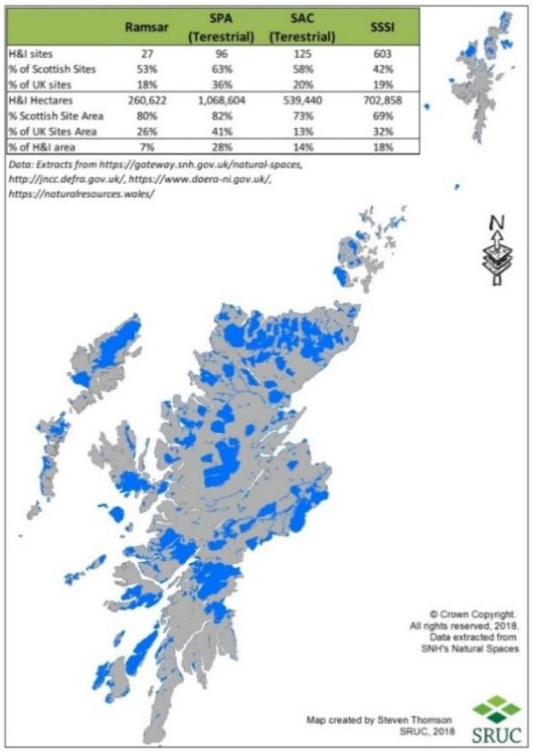
[22] https://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/population/population-estimates/mid-year-population-estimates/mid-2016/list-of-tables

Figure 2.5: Landscape Character Groupings



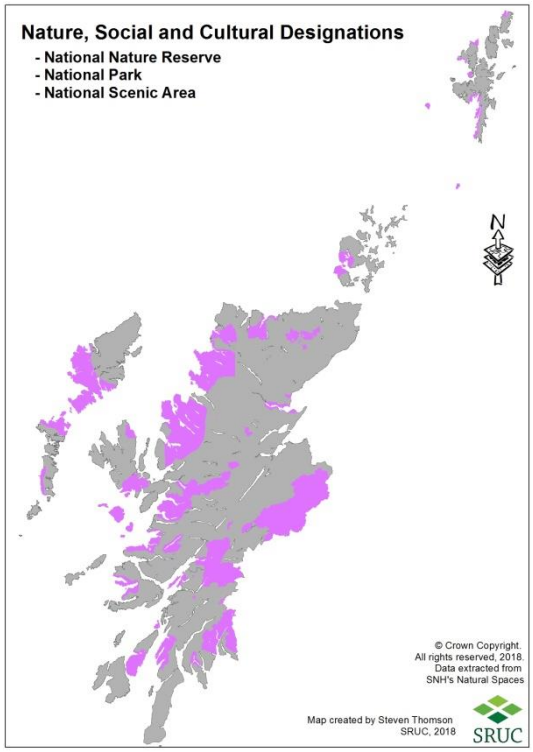
Source: derived from SNH data

Figure 2.6: Species & Habitat Designations



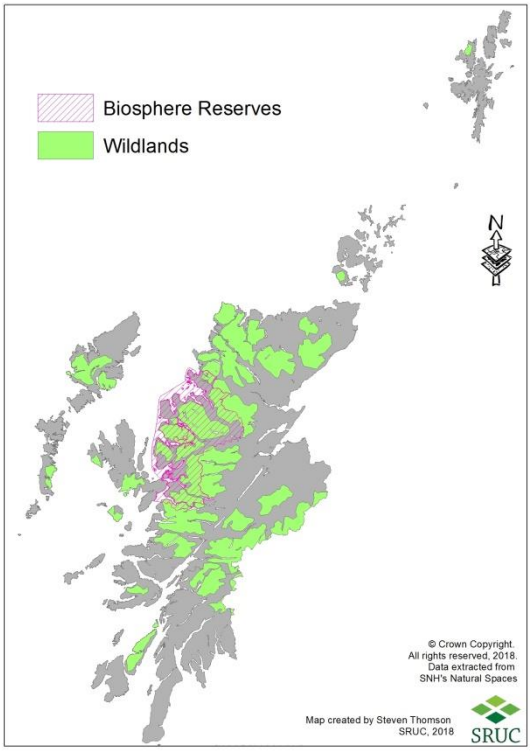
Source: derived from SNH, JNCC, Defra, DAERA & NRW data

Figure 2.7: Other designations



Source: derived from SNH data

Figure 2.8: Biospheres & Wildlands



Source: derived from SNH data

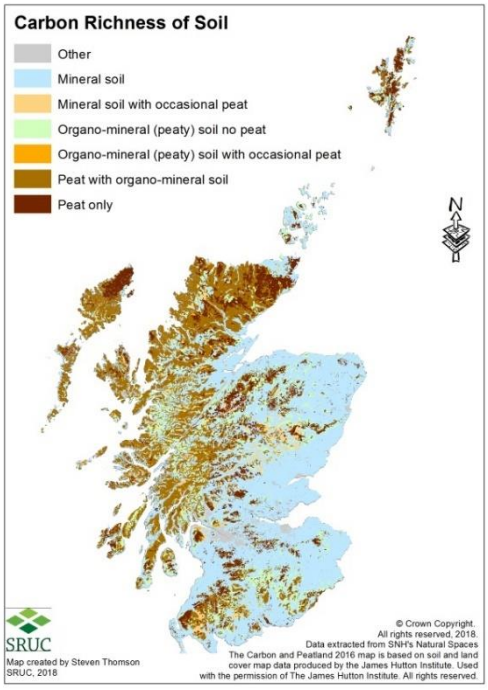
2.7. Relatively sparse populations and geographical remoteness also contribute to other classifications across much of the H&I area including National Scenic Areas, Natural Nature Reserves, Wildlands and includes the Wester Ross Biosphere Reserve and part of the Cairngorms National Park. This reiterates

how important the area is for highly valued social, cultural and landscape purposes (see Figures 2.7 & 2.8).

2.8. The Highlands Biodiversity Action Plan 2015 to 2020[23] states that, of the designated sites, nearly 85% are in favourable condition (after taking account of sites with no on-site remedy, such as sea cliffs). The Highland Environment Forum[24] state that the Highlands supports 40% of the UK's 1,150 priority species (75% of Scotland's) and over three quarters of the UK's 65 priority habitats as identified in the UK Biodiversity Action Plan.[25] This, again, reiterates how the region is of significant importance to a range of fragile habitats and species. Changes to land use practices can therefore have significant impacts on these fragile ecosystems, both positively and negatively, and stresses the need for long term land use planning.

Figure 2.9: Scotland's peatlands

2.9. The Highlands and Islands are also extremely important for Scotland's peat reserves, an important terrestrial store of carbon. Figure 2.9 highlights where the majority of Scotland's peat reserves and peaty soils are located. There are limited alternative land uses that are (a) permitted, or (b) feasible on this internationally important resource. The IUCN Commission of Inquiry on Peatlands[26] highlight how the UK has 13% of the world's blanket bog (one of the world's rarest habitats) with much of that located in Scotland and there are various international obligations and opportunities for countries to maintain and restore peatlands. There are Scottish Government programmes (through the SRDP and Peatland Action) aimed at restoring peatlands to favourable status – with the IUCN Commission of Inquiry calling for further action to preserve and improve the condition of this globally important habitat.

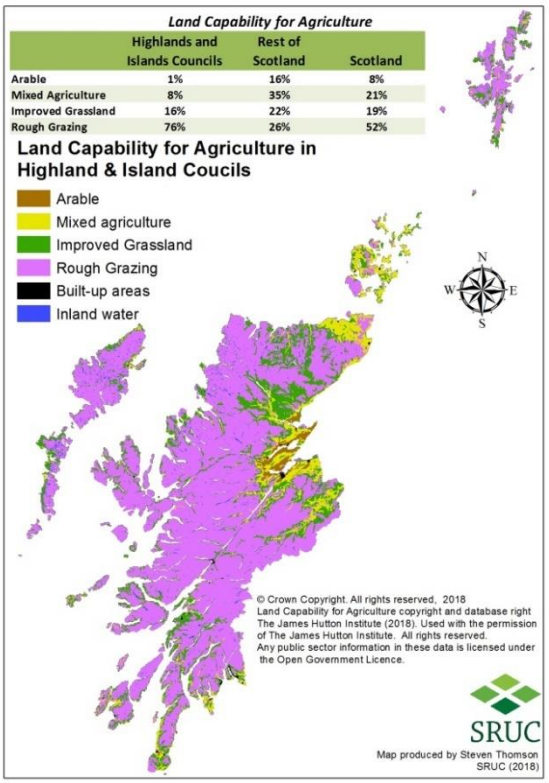


Source: derived from SNH and JHI data

[23] http://www.highlandbiodiversity.com/highland-bap.asp
[24] http://www.highlandbiodiversity.com/biodiversity.asp
[25] http://jncc.defra.gov.uk/ukbap
[26] Bain, et al (2011) IUCN UK Commission of Inquiry on Peatlands. IUCN UK. Peatland Programme, Edinburgh. See www.iucn-uk-peatlandprogramme.org/files/IUCN%20UK%20Commission%20of%20Inquiry%20on%20Peatlands%20Full%20Report%20spv%20web_1.pdf

Land use

Figure 2.10: Ag' Land Capability



2.10. Agricultural land use within the region is significantly constrained by biophysical conditions and it is estimated that only 1% of the land is capable of arable production (mostly around the Black Isle), with 8% capable of mixed agriculture (some cropping) and 16% for improved grassland. This means that over three-quarters of the region's farmland is only capable of rough grazing activities, severely limiting the choice and scale of farming system over much of the land (see Figure 2.10).

2.11. There is considerable woodland cover in the region (Figure 2.11 & Table 2.3) with a mix of forest plantation and designated ancient woodlands - indeed native woodland covers 16% of the wooded area in Argyll & Bute, rising to 37% in Highland.[27]

2.12. Forestry is essentially absent from the islands, but accounts for close to the national average share of land across Highland and is significantly higher in Argyll & Bute.

Table 2.3: Forestry area and share of total area

	Forest area	% of total land
Argyll & Bute	206,742 ha	30%
Na h-Eileanan Siar	3,373 ha	1%
Highland	416,319 ha	16%
Orkney	210 ha	0%
Shetland	50 ha	0%
Scotland	1,435,021 ha	18%

Source: FCS data

2.13. Notwithstanding national woodland creation targets (and some regional ones, such as for Caledonian Pine or Atlantic Oak), potential geographical expansion of forestry is constrained by land suitability (e.g. exposure) and policy restrictions (e.g. environmental designations, deep peats). This applies particularly to the north-west Highlands and to the Islands, but there is some technical scope for woodland creation elsewhere in the region (Figure 2.12).[28]

[27] See http://scotland.forestry.gov.uk/images/corporate/pdf/NWSS-LocalAuthorityAreasByPWT.pdf, although this includes all woodlands not just farm woodland. Actual reported areas are: Argyll & Bute, 33,051ha; Na h-Eileanan Siar, 336ha; Orkney, 35ha; Shetland, 3ha; Highland, 129,929ha.

[28] Sing, L., Towers, W. & Ellis, J. (2013) Woodland expansion in Scotland: an assessment of the opportunities and constraints using GIS. https://www.researchgate.net/publication/281405001_Woodland_expansion_in_Scotland_an_assessment_of_the_opportunities_and_constraints_using_GIS

Figure 2.11: Forest and Ancient Woodland

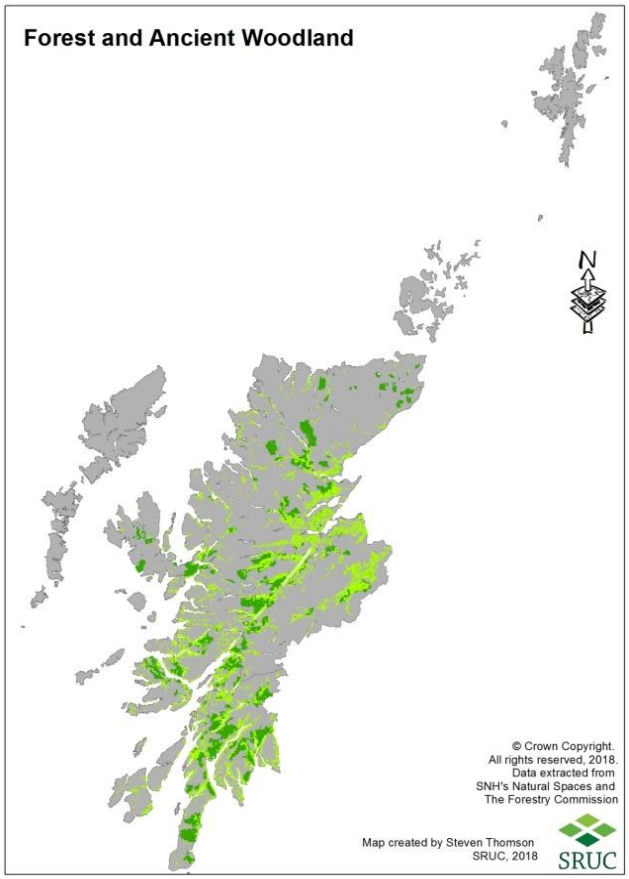
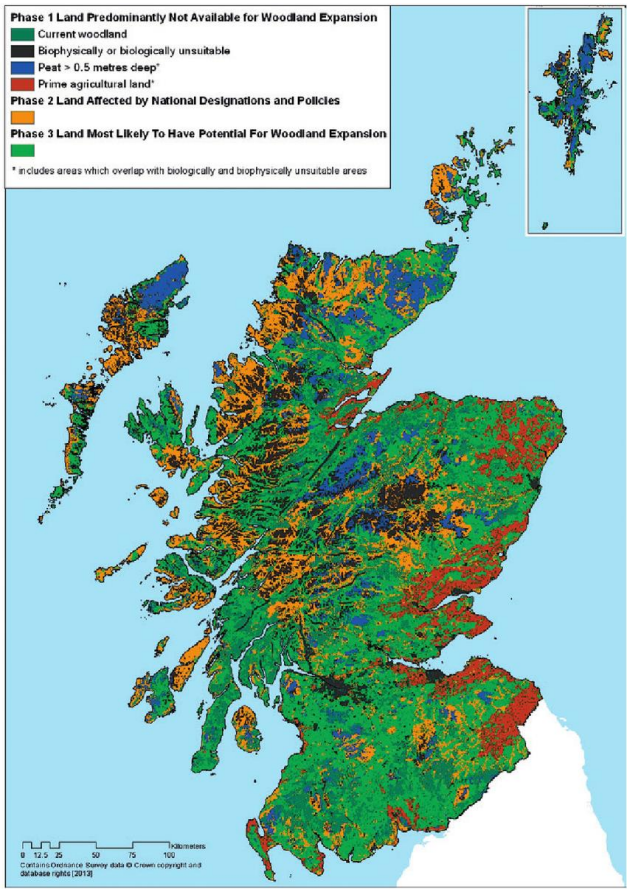


Figure 2.12: Potential forestry sites



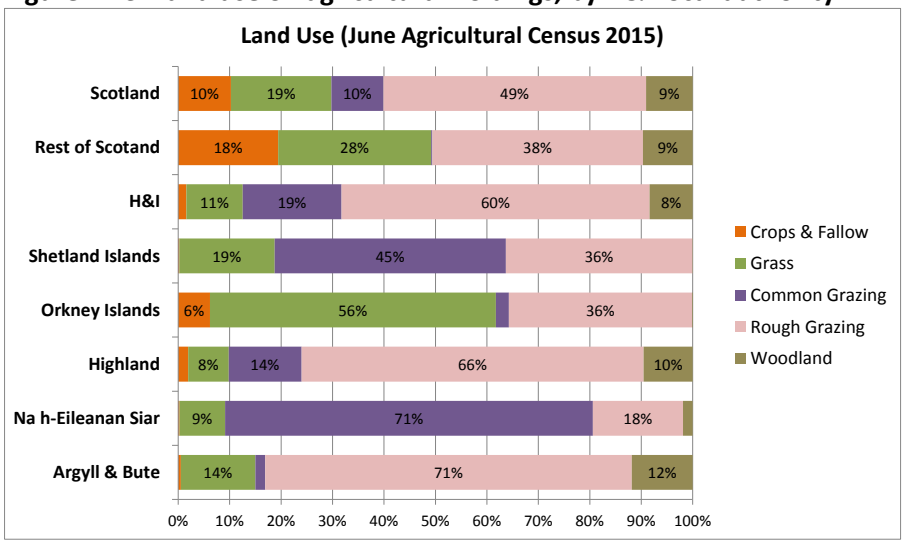
Source: Sing et al. (2013)

2.14. As a consequence of the quality of farmland and its underlying agricultural potential, the dominant agricultural land use across the region is rough grazing, with some variation between areas. For example, improved grassland is more common in Orkney and common grazings are more common in Shetland and Na h-Eileanan Siar, reflecting the presence of Crofting (see Figure 2.13). Managing the collective (and historical) rights applying across common grazings can pose particular problems in terms of calculating support payments but also co-ordinating management.

2.15. The land use in the H&I region, with the exception of Orkney is of significant contrast to the Rest of Scotland where 18% of the land is used for crops and 28% used as grassland. Woodlands represent a small but important land use on farms and crofts, although the estimated share of native woodlands is relatively low.

2.16. Again, there are significant variations across H&I with, for example woodland covering 12% of agricultural holdings in Argyll and Bute (which is significantly more wooded as a region, as shown in Figure 2.11 and Table 2.3) to 10% across the Highlands with only 2% coverage in Na h-Eileanan Siar and none in Orkney and Shetland.

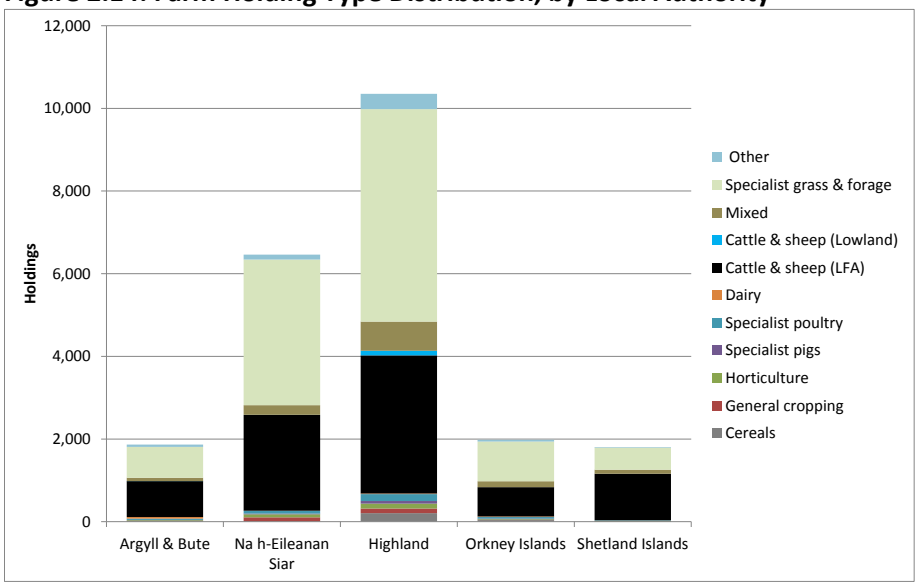
Figure 2.13: Land use on agricultural holdings, by H&I local authority



Source: derived from June Agricultural Census 2015.

2.17. The land quality and inability to grow much other than grass and natural rough grazing significantly constrains the farming systems that are available to many H&I farmers and crofters – indeed some have no choice other than to farm extensive hill sheep. Figure 2.14 confirms the dominance of LFA cattle and sheep systems on agricultural holdings across the region, alongside specialist grass and forage holdings that support this extensive livestock production. Indeed, these two holding classifications accounted for 36% and 47% of H&I holdings respectively.

Figure 2.14: Farm Holding Type Distribution, by Local Authority



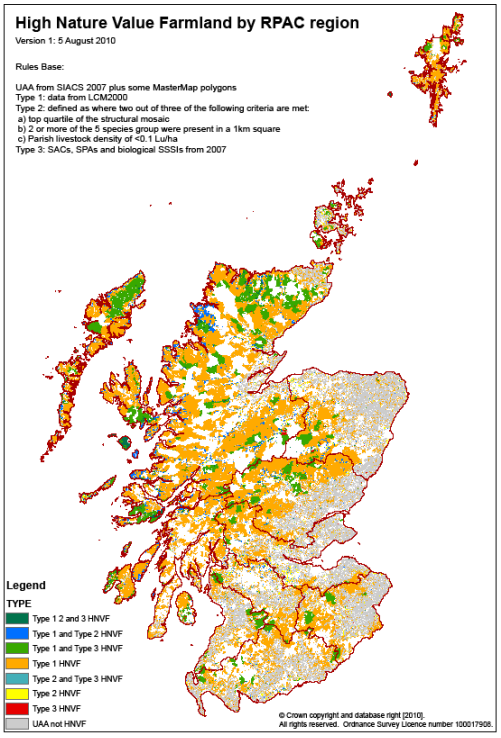
Source: Source: derived from June Agricultural Census 2015.

2.18. The biophysical constraints that are faced by farmers and crofters across much of the Highlands and Islands generally leads to relatively low impact, extensive grazing systems. This type of system can support high levels of biodiversity and has been classified as High Nature Value (HNV) farming by the Scottish Government and the European Union.[29] Similarly low intensity forest management that yields higher biodiversity are also classed as areas of High Nature Value (HNV) Forestry.

2.19. Scottish Government data[30] reveals that in 2013 the within the Highlands and Islands there were 1.65 million hectares of HNV farmland, accounting for 59% of the region's utilisable agricultural area and 68% of Scotland's HNV farming area (see Table 2.4).

2.20. The map of indicative HNV farmland across Scotland (see Figure 2.15) re-emphasises the importance of the H&I region for this low impact agriculture with biodiversity benefits that could help Scotland improve biodiversity beyond the 2020 Aichi biodiversity targets[31].

Figure 2.15: Scottish HNV farmland



Source: Mackey et al, 2011[32]

Table 2.4: High Nature Value farming in the H&I region, 2013

	UAA (Ha)	HNV (Ha)	HNV as a % of UAA	HNV as a % of total Scottish HNV
Argyll	422,540	264,503	63%	11%
Highlands	1,861,287	1,039,399	56%	43%
Northern Isles	240,234	117,568	49%	5%
Western Isles	301,094	232,103	77%	10%
Highlands & Islands	**2,825,155**	**1,653,573**	**59%**	**68%**
Scotland	***5,555,900***	***2,431,697***	***44%***	***100%***

Source: Scottish Government, 2014[33]

Farm & croft structure and output

2.21. Although cattle and sheep grazing is the dominant farm type, the structure of farms varies from very small to very large. If measured in terms of Standard Output, an indicator of the likely turnover[34] of an agricultural holding based on its land area and number of livestock, the vast majority of holdings in each part of the region are in the "less than £5k" class (with 45% less than £1k and 29% between £1k and £5k), reflecting the prevalence of small holdings and crofts (see Figure 2.16). This is most obvious

[29] https://www.eea.europa.eu/data-and-maps/data/high-nature-value-farmland/further-documentation/hnv-farmland-in-europe- 2012.pdf

[30] Scottish Government (2014) High Nature Value Farming and Forestry Indicators 2009–2013. http://www.gov.scot/Publications/2014/03/8273/downloads

[31] https://www.cbd.int/sp/targets/

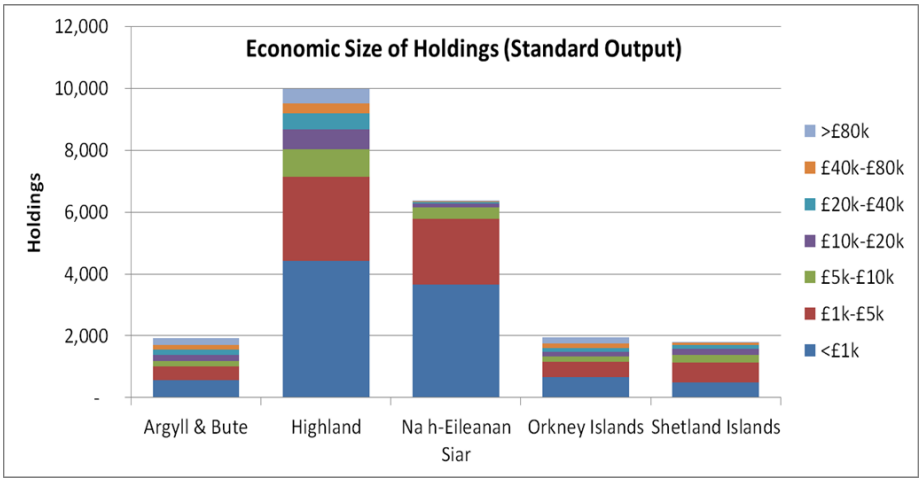
[32] Mackey E, Blake D and McSorley C. (2011) Farmland Biodiversity: Mapping High Nature Value Farmland in Scotland. SNH. http://www.gov.scot/Resource/Doc/355629/0120136.pdf

[33] http://www.gov.scot/Publications/2014/03/8273/downloads

[34] It is important to note that Standard Outputs are not an indicator of profitability – see later sections.

in Na h-Eileanan Siar, but applies everywhere. Holdings in the largest size class include some cattle and sheep producers, but are more typically dairy farms.

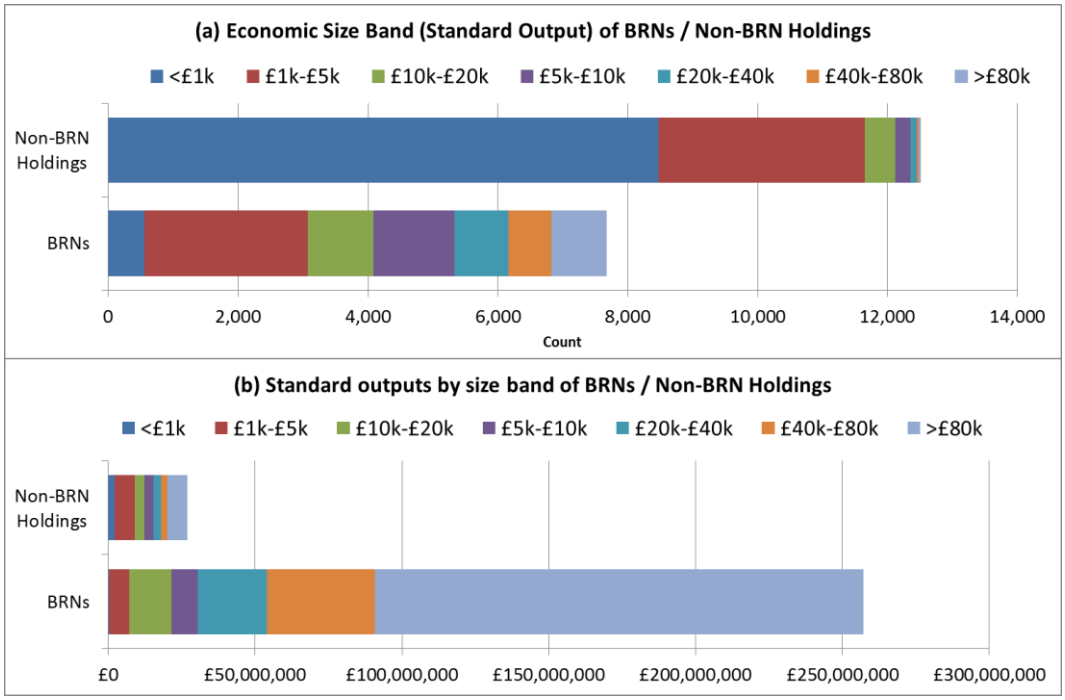
Figure 2.16: Agricultural Holding Size (Standard Output, £k) Distribution



Source: derived from June Agricultural Census, 2015.

2.22. Recognising that many farm businesses actually consist of multiple agricultural holdings, for those businesses that claim support from the Scottish Government the standard outputs for Highland and Islands holdings have been amalgamated to the farm business level, represented by those with Business Reference Numbers (BRNs) (Figure 2.17). These BRN businesses are likely to comprise the majority of commercial farm businesses in the region and are those most exposed to potential changes in the agricultural support regime under Brexit.

Figure 2.17: CAP Registered Businesses vs. Holdings (a) Economic Size Distribution and (b) Contribution to H&I Agricultural Output



Source: derived from June Agricultural Census, 2015.

2.23. The top portion of Figure 2.17 reveals that there are about 7,700 businesses registered for CAP payments with only 40% generating a standard output of less than £5k, compared with over 90% of

the non-cap registered holdings in that category. The non-CAP registered holdings only accounted for 9.5% of the region's standard output (see lower portion of Figure 2.17). Farm businesses with standard outputs of over £40k accounted for 71% of the H&I's standard output from agricultural activity. This reiterates that, whilst there are very many small agricultural holdings / businesses, less than 900 farm businesses are responsible for the majority of the region's agricultural (not cultural or environmental) output.

2.24. Livestock units (LSU) are a way to standardise livestock of different size (1 cow = 1 LSU).[35] Using this to assess livestock density on the ground gives an indication of relative intensity of livestock production across the region. Livestock density is important as it is currently used to assess 'active farming' and qualification for CAP support on rough grazing areas of Scotland – with the threshold at 0.05 LSU / Ha unless there is a derogation for environmental designations. Table 2.5 shows the high level of variance across H&I ranging from intensive cattle production in Orkney (0.72 LSU / Ha) to the very extensive hill sheep production in Na h-Eilianan Siar (0.06 LSU / Ha).

Table 2.5: Standard Output per region and per hectare

	Livestock Units	LSU/Ha	Standard Output	SO/HA
Argyll & Bute	89,169	0.18	£58.4m	£121
Highland	179,053	0.09	£149.7m	£72
Na h-Eileanan Siar	19,471	0.06	£13.3m	£44
Orkney	66,547	0.72	£46.1m	£502
Shetland	31,879	0.21	£16.6m	£111
Rest of Scotland	1,751,214	0.57	£2,105.5m	£691
Scotland	2,137,334	0.35	£2,389.6m	£388

Source: derived from June Agricultural census, 2015

2.25. Standard Output can be used to estimate the aggregate value of production across the region, and intensity per hectare (see Table 2.5). This reiterates the relative lower average intensity of production for the Highlands and Islands (£91/ha) compared to the rest of Scotland (£691/ha). It also highlights variation across the region, with Orkney (£502/ha) at one extreme and Na h-Eileanan Siar (£44/ha) at the other. Again, these differences reflect underlying variation in the type and scale of farming systems. It is also apparent that, despite accounting for around half of total Scottish farmland, the H&I region generates only around 12% of total agricultural output – again reflecting natural constraints on agricultural productivity.

Crofting

2.26. The Crofting Commission's Register of Crofts suggests there are approximately 20,500 crofts (including approximately 2,000 'deemed crofts'[36]) in Scotland with around 33,000 people living in crofting households. It is estimated that half the crofters in Scotland are over 65 years of age[37] and there is considerably higher level of owned crofts in the Highland region than compared to, for example, Na

[35] For calculating stocking density the Scottish Government considers the following to be equivalent to a livestock unit: one beef / dairy cow over 24 months of age, 1.66 beef / dairy cows over 20 months and up to and including 24 months of age, 6.66 breeding ewes, ewe hoggs or gimmers, 2.5 farmed deer: adult stags (27 months and over), 3.33 farmed deer: hinds, including suckling calves (27 months and over). See: https://www.ruralpayments.org/publicsite/futures/topics/all-schemes/basic-payment-scheme/basic-payment-scheme-full-guidance/eligible-hectares-and-minimum-activity---bps/

[36] When a crofter purchases a croft, their common grazing shares that remain tenanted and are "deemed" to be a separate and distinct croft in its own right. http://www.crofting.scotland.gov.uk/userfiles/file/Deemed_crofts/Factsheet-Deemed-Crofts-180425.pdf

[37] http://www.crofting.scotland.gov.uk/facts-and-figures

h-Eileanan Siar. Crofter's are important as land managers, particularly as they collectively are responsible for 1,071 common grazings that extend to a fifth of the agricultural land in the H&I region (2015, June Agricultural Census).

2.27. A survey of 800 crofters in 2014[38] reported that over 80% of crofters had previously been engaged in non-crofting jobs (either as employees or self-employed) with more than 40% still working off croft. The Scottish Government (2014)[39] used these figures to estimate that the non-crofting income of crofting households was about £480 million per year (with crofting families working on average 49 hours per week off-croft) highlighting that crofting activity is integrated with other sectors of the rural economy of the H&I region. This also implies there is a greater connection with the land and land stewardship in these communities.

2.28. This research did, however, reveal than more than 20% of the croft respondents were not active on their croft – often letting other crofters use the land. The report concluded that the annual revenue generated by crofts across Scotland was in the region of £85 million per year. The Scottish Government (2014)[40] estimated that £138 million was invested in crofts by crofters over the 2011-2014 period with planned on-croft investment of around £90 million for the 2015 to 2018 period - suggesting high multiplier effects and likely investment of non-croft incomes back into crofting capital equipment.

2.29. The significance of crofting to livestock numbers and land management is shown at the parish-level in Figures 2.18 to 2.21, highlighting the geographical concentration of crofting but also its dominance of livestock numbers and land management in some locations.

Figure 2.18: % Crofts

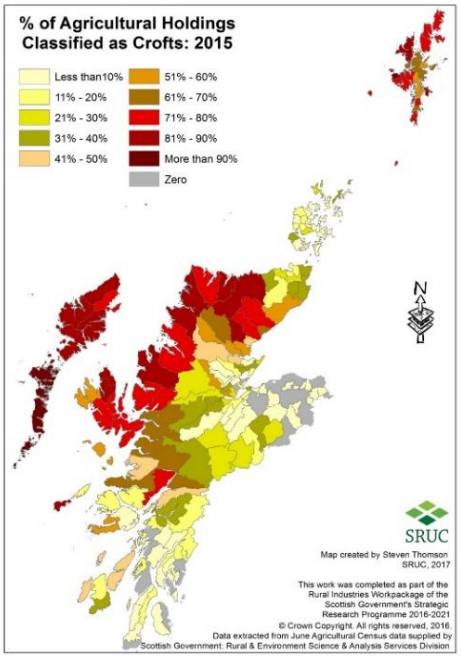
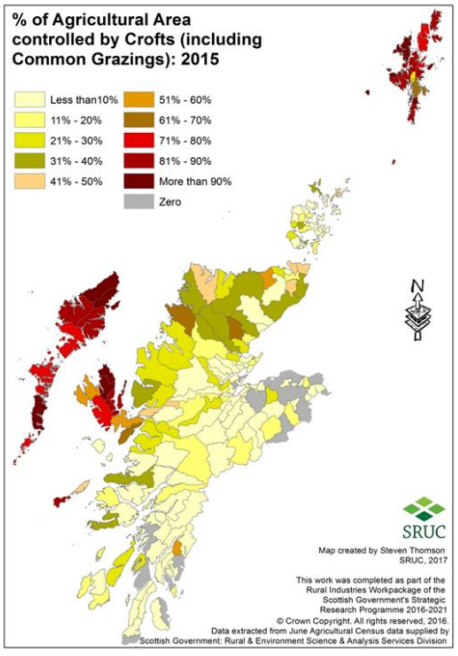


Figure 2.19: % Croft area



[38] Exodus Market Research Ltd. (2014) Survey of the Economic Condition of Crofting 2011-2014. Scottish Government Social Research Working Paper http://www.gov.scot/Resource/0047/00473575.pdf

[39] Scottish Government (2014) SG Report to Parliament: Economic Condition of Crofting 2011 – 2014.

[40] Op cit

Figure 2.20: % Croft cattle

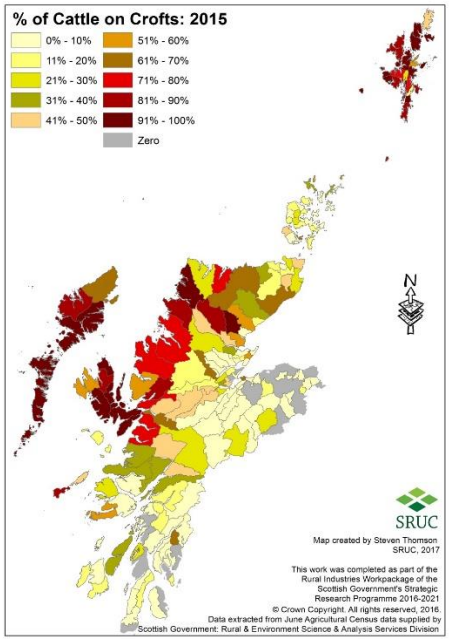
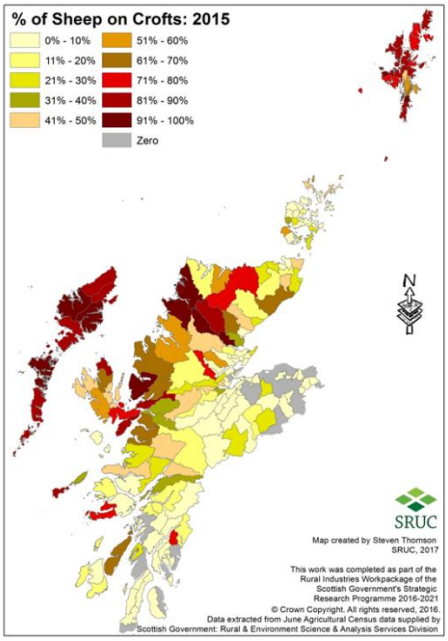


Figure 2.21: % Croft sheep

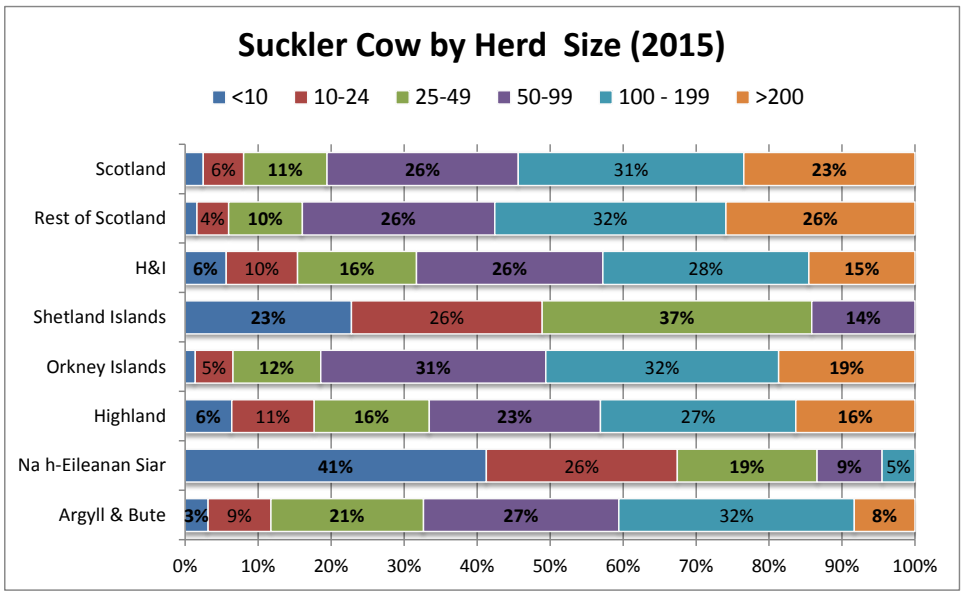


Source: all derived from June Agricultural Census 2015

Livestock numbers

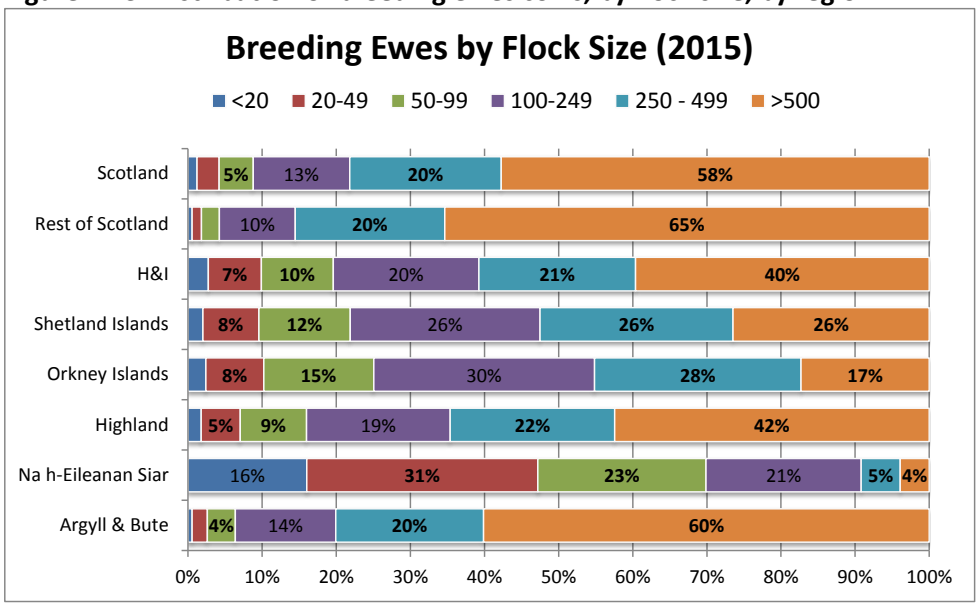
2.30. The influence of crofting is also apparent in the distribution of cattle and sheep across herds and flocks of different sizes (see Figures 2.22 & 2.23). For example, in Na h-Eileanan Siar and Shetland 41% and 23% of suckler cows are in herds of less than ten cows respectively, whilst around 20% of ewes across the Highlands and Islands are in flocks of less than 50 compared to less than 5% for the rest of Scotland.

Figure 2.22: Distribution of suckler cows, by herd size, by region



Source: derived from June Agricultural Census, 2015

Figure 2.23: Distribution of breeding ewes cows, by flock size, by region



Source: derived from June Agricultural Census, 2015

2.31. However, despite the relative abundance of smaller holdings, the total numbers of cows and ewes are higher on the relatively less numerous larger holdings (see Tables 2.6 & 2.7). For example, in the H&I only 2% of holdings with suckler cows have herds of more than 200 cows, but these account for 15% of total suckler cows. Only 5% of holdings with breeding ewes in the H&I have flocks bigger than 500, but these account for 40% of animals.

Table 2.6: Numbers and proportion of holdings with suckler cows, by herd size

		Herd size (hd)							*Of which Crofts*
		<10	10-24	25-49	50-99	100 - 199	>200	**Total**	
H&I	Holdings	1,566	696	515	408	233	62	**3,480**	1,657
		45%	20%	15%	12%	7%	2%		48%
	Cows	6,392	11,058	18,424	28,910	31,942	16,452	**113,178**	26,296
		6%	10%	16%	26%	28%	15%		23%
Rest of Scotland	Holdings	1,810	1,073	1,130	1,486	948	340	**6,787**	
		27%	16%	17%	22%	14%	5%		
	Cows	6,576	17,686	40,957	107,173	128,641	105,269	**406,302**	
		2%	4%	10%	26%	32%	26%		

Source: derived from June Agricultural Census, 2015

Table 2.7: Numbers of proportion of holdings with breeding ewes, by flock size

		Flock size (hd)							Of which Crofts
		<20	20-49	50-99	100-249	250 - 499	>500	**Total**	
H&I	Holdings	2,076	1,744	1,062	974	456	356	**6,668**	***4,414***
		31%	*26%*	*16%*	*15%*	*7%*	*5%*		***66%***
	Sheep	21,218	54,894	74,424	150,698	162,212	304,021	**767,467**	***300,838***
		3%	*7%*	*10%*	*20%*	*21%*	*40%*		***39%***
Rest of Scotland	Holdings	1,275	719	618	1,119	1,026	1,236	**5,993**	
		21%	*12%*	*10%*	*19%*	*17%*	*21%*		
	Sheep	10,130	22,933	44,231	186,562	366,929	1,189,922	**1,820,707**	
		1%	*1%*	*2%*	*10%*	*20%*	*65%*		

Source: derived from June Agricultural Census, 2015

2.32. Across the H&I, crofts account for 48% of holdings with suckler cows and 66% of holdings with ewes, but only 23% and 39% of total cows and ewe numbers respectively. The data reiterates how H&I livestock farming (and associated land use and natural capital management) is much more reliant on small scale farming / crofting than in the rest of Scotland that has implications for policy delivery.

2.33. Table 2.8 highlights how the region is dominated by land used for grazing livestock (with often no alternative due to land capability) ranging from practically 100% in Shetland to 88% in Argyll and Bute (compared to 73% across the Rest of Scotland). The agriculturally-constrained nature of much of the land is highlighted by the relative importance of sheep production across parts of the Highlands and Islands. In 2015, for every breeding cow there were 54.6 breeding ewes in Na h-Eileanan Siar, and 19.7 in Shetland compared to only 1.3 in Orkney, where cattle dominate.

2.34. Across the Highlands and Islands as a whole there were twice as many breeding ewes per cow than in the Rest of Scotland (6 versus 3), reiterating the reliance on sheep production in significant parts of the region are. Across most of the region there are few dairy cows in comparison to the suckler herd, again emphasising the limited production choices many farmers and crofters have. Whilst only 11% of the breeding cows in the Highlands and Islands are dairy cows for the Rest of Scotland they account for 34% of the breeding cows. Areas like Argyll and Bute have greater opportunity for dairy production due to a warmer climate, land quality (and therefore grass growth) and proximity to a creamery[41], meaning they have a lower proportion of suckler cows.

Table 2.8: Importance of grazing livestock, sheep and suckler cows

	Argyll & Bute	Na h-Eileanan Siar	Highland	Orkney Islands	Shetland Islands	H&I	Rest of Scotland
% Grass and Rough Grazing	88%	98%	89%	94%	100%	90%	73%
Ewes per Cow	5.8	19.7	6.2	1.3	54.6	6.0	3.0
% Suckler Cows	73%	100%	96%	92%	81%	89%	66%

Source: derived from June Agricultural Census, 2015

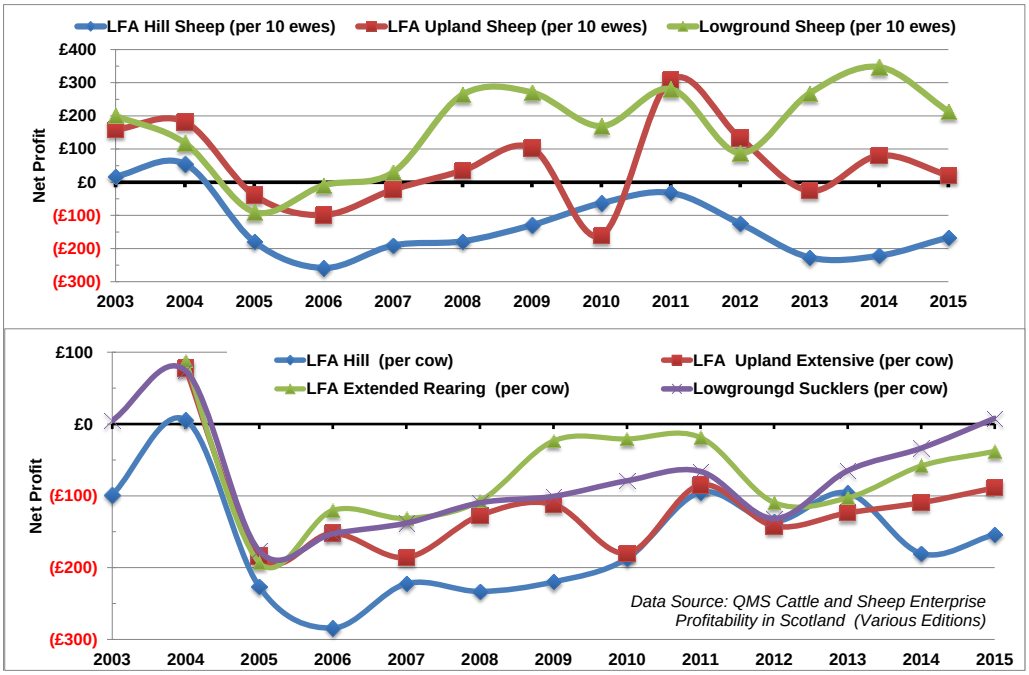
2.35. The constrained nature of agriculture in the Highland and Islands means that generating profit is difficult. Since price support and headage payments were largely removed from the CAP farmers and crofters have become reliant on decoupled support payments (BPS, Greening, SFP, LFASS, in particular) in order to generate agricultural profit. Using Quality Meat Scotland figures, Figure 2.24 highlights the extent of unprofitable production for the average hill sheep and beef systems, and how they compare to lowland production systems were additional forage and fodder are available.

2.36. However, the number of sheep and cattle has been changing over time, with marked declines in sheep numbers in many areas and increases in only a few locations (see Figure 2.25), and a more mixed picture for cattle (see Figure 2.26).

2.37. The very large decline in sheep numbers in many areas of the H&I is a result of the decoupling of agricultural support (LFA support and direct support) in the early 2000s, meaning there was no longer a requirement to maintain flock sizes to maintain CAP support levels. This change reduced grazing pressures in many areas but has also led to land abandonment in parts of the region and a change of grazing regime away from use of high hill / mountain grazings.

[41] Although there has been a recent announcement by First Milk that they plan to sell the creamery. See http://www.firstmilk.co.uk/media-centre/news/first-milk-to-sell-scottish-creameries.html

Figure 2.24: Profitability of hill and upland ewes and suckler cows in Scotland[42]



Source: Quality Meat Scotland (various years)

Figure 2.25: Changes in sheep numbers

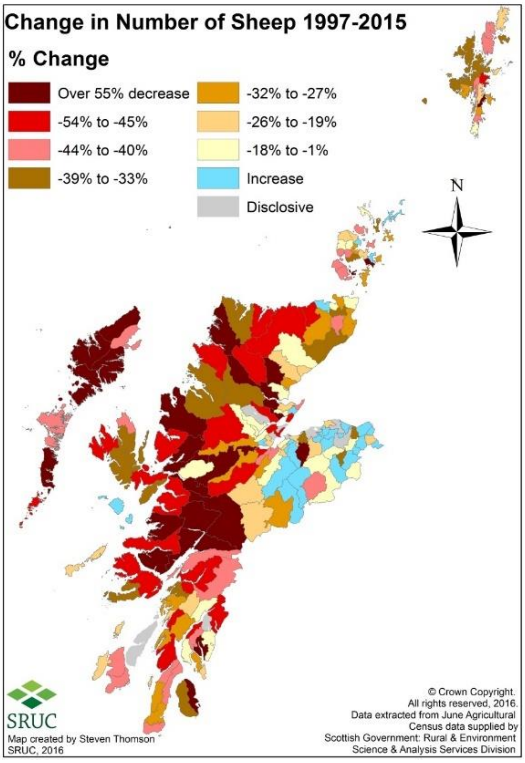
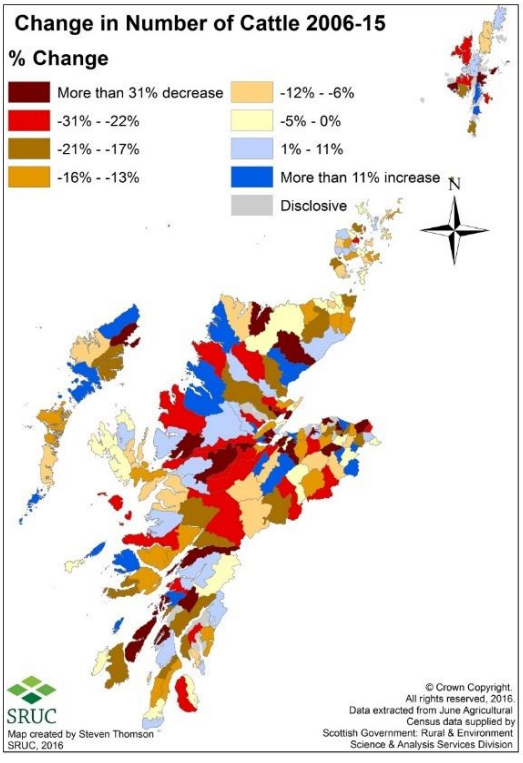


Figure 2.26: Changes in cattle numbers



Source: both derived from June Agricultural Census, various years

[42] These profit figures account for coupled support payments but exclude any decoupled payments such as the SFP of LFASS

CAP support

2.38. The relatively low intensity of production across most of the region (Orkney being an exception) translates into relatively low shares of Pillar I support under the CAP (see Table 2.9). That is, although it is now changing (see below), the use of historic support payments as the main determinant of support levels under the Single Farm Payment.

Table 2.9: CAP Pillar I and II support levels, 2014.

	PI		PII		Total		PII/PI
Argyll & Bute	£14.9m	(3.2%	£14.6m	(9.4%)	£29.5m	(4.7%)	98%
Highland	£38.0m	(8.0%)	£29.5m	(19.0%)	£67.5m	(10.7%)	78%
Na h-Eileanan Siar	£2.9m	(0.6%)	£4.6m	(3.0%)	£7.5m	(1.2%)	158%
Orkney	£14.4m	(3.0%)	£6.4m	(4.2%)	£20.8m	(3.3%)	45%
Shetland	£4.5m	(0.9%)	£4.2m	(2.7%)	£8.6m	(1.4%)	93%
Rest of Scotland	£398.3m	(84.0%)	£95.8m	(62%)	£494.0m	(79%)	24%
Scotland	£472.9m	(100%)	£155.0m	(100%)	£627.9m	(100%)	33%

Source: UK Coordinating Body – CAP Payments (http://cap-payments.defra.gov.uk/Default.aspx) NB. More recent data are incomplete; hence 2014 figures are shown here. Estimated future distributions are shown below.

2.39. The historic basis for support remains during the five-year transition to full Basic Payment Scheme & Greening by 2019. This means that higher payments are enjoyed by farms that had higher livestock numbers in the past (2000 to 2002), and those farms constrained to lower stocking densities receive lower support. Hence, despite accounting for around half of all Scottish farmland, the Highlands and Islands only received 16% of Pillar I payments made in 2014. The picture for Pillar II support is more mixed (see Table 2.10, with proportionately more (38%) flowing to the Highlands and Islands (most notably Na h-Eileanan Siar).

Table 2.10: CAP Pillar II support levels, split between LFASS and other schemes, 2014.

	LFASS		Other PII		Total	
Argyll & Bute	£7.0m	(11%)	£7.6m	(9%)	£14.6m	(9.4%)
Highland	£11.6m	(18%)	£17.9m	(20%)	£29.5m	(19.0%)
Na h-Eileanan Siar	£1.8m	(3%)	£2.8m	(3%)	£4.6m	(3.0%)
Orkney	£4.1m	(6%)	£2.4m	(3%)	£6.4m	(4.2%)
Shetland	£2.6m	(4%)	£1.6m	(2%)	£4.2m	(2.7%)
Rest of Scotland	£38.3m	(59%)	£57.4m	(64%)	£95.8m	(62%)
Scotland	£65.3m	(100%)	£89.7m	(100%)	£155.0m	(100%)

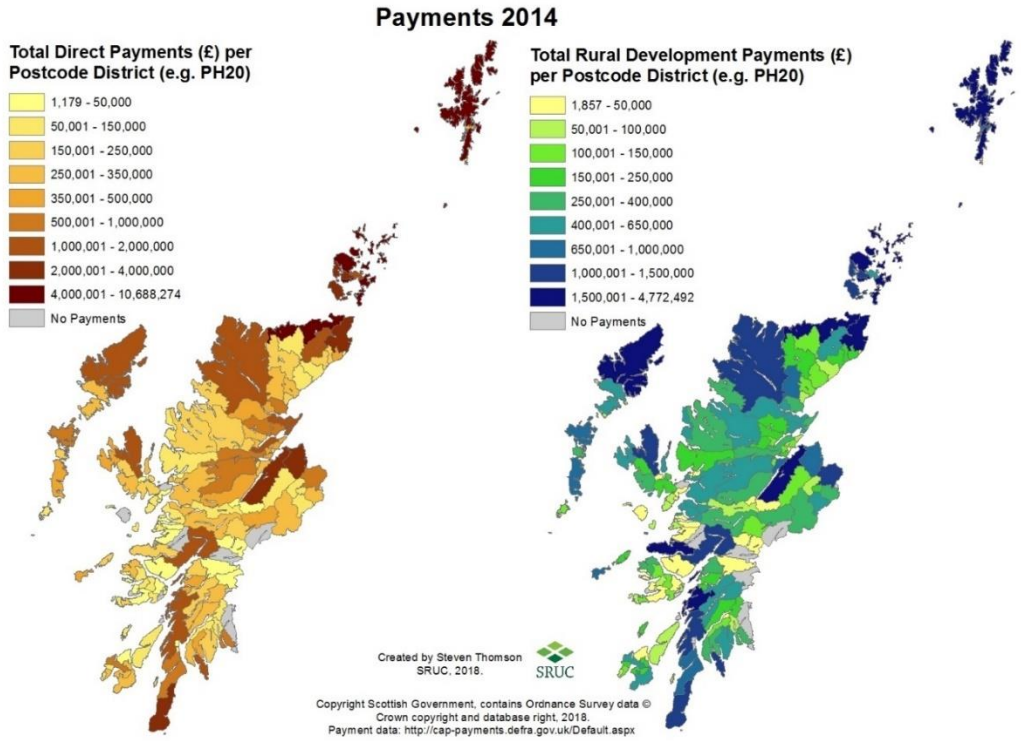
Source: UK Coordinating Body – CAP Payments (http://cap-payments.defra.gov.uk/Default.aspx) NB. More recent data are incomplete; hence 2014 figures are shown here.

2.40. Overall PII funding going to H&I in 2014 was still less than the rest of Scotland. As with Pilar I support, area payments offered through LFASS also provide proportionately higher funding levels to the Rest of Scotland (where 47% of Scottish recipients received 59% of the payments) than to the Highlands and Islands. Across H&I region Argyll and Bute received 11% of the LFASS payments in 2014 from 7% of the Scottish claimants, reflecting the larger more extensive hill farms on the mainland areas. Average payment rates in LFASS range from £1,288 in Na h-Eileanan Siar to £9,096 in Argyll and Bute (compared to £7,268 in the Rest of Scotland).

2.41. Figure 2.27 maps the distribution of Pillar I (direct) payments and Pillar II (rural development) payments in 2014 by postcode sector across the region. Higher Pillar I support levels made to the intensive farming systems in, for example, Orkney, Caithness and the Black Isle are apparent (although

the varying size of postcode districts also has an effect). The highest levels of Pillar II support may reflect the presence of Local Action Groups under LEADER.

Figure 2.27: Distribution of PI and PII support, by postcode district

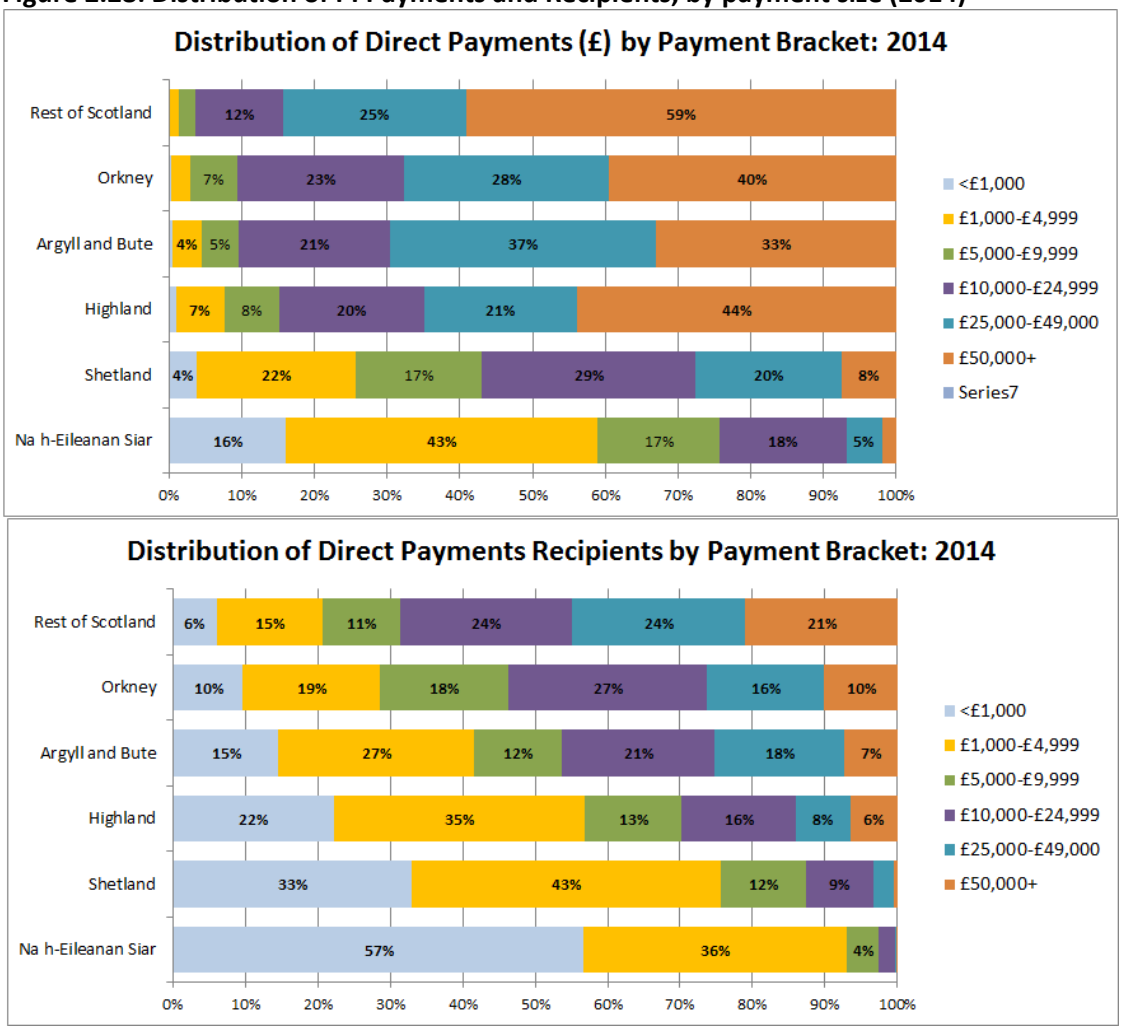


Source: UK Coordinating Body – CAP Payments (http://cap-payments.defra.gov.uk/Default.aspx)

2.42. The distribution of Pillar I and II support is also uneven across claimants, not just geographical areas (see Figures 2.28). For example, whereas the Rest of Scotland has only 6% of Pillar I claimants receiving less than £1000, regions in the Highlands and Islands have between 10% (Orkney) and 57% (Na h-Eileanan Siar) – but such farms account for a tiny fraction of overall Pillar I support.

2.43. In contrast, 21% of recipients in the rest of Scotland were paid more than £50,000 through Pillar 1 and they accounted for 59% of the payments made within the region. In H&I region 6% of claimants received over £50,000 and accounted for 44% of the total payments made – similar to Orkney where 10% of the claimants received 40% of the support.

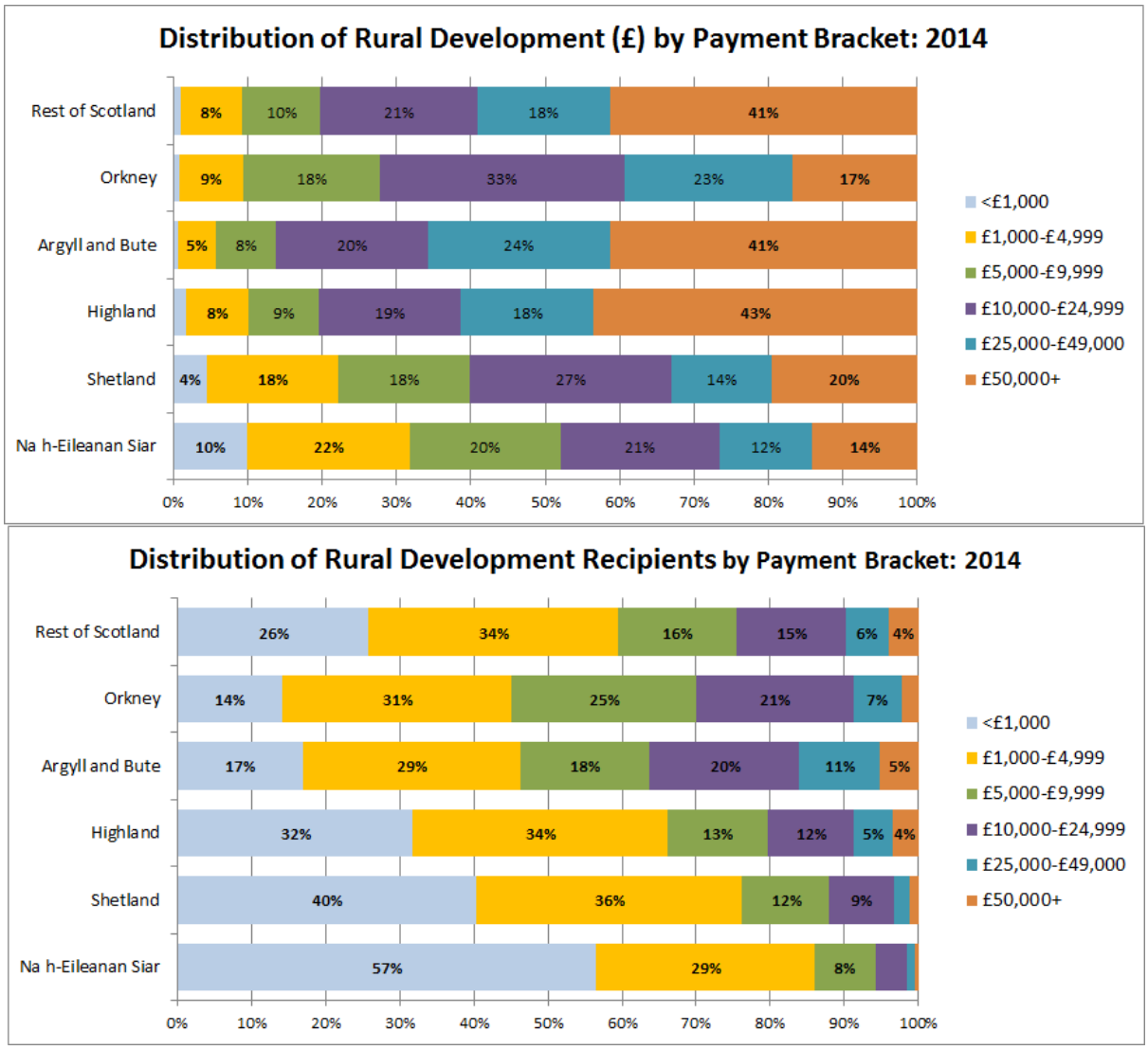
Figure 2.28: Distribution of PI Payments and Recipients, by payment size (2014)



Source: UK Coordinating Body – CAP Payments (http://cap-payments.defra.gov.uk/Default.aspx)

2.44. The picture for Pillar II support is more mixed, with some parts (e.g. Na h-Eileanan Siar and Shetland) of H&I having a higher proportion of claimants below £1000 than the rest of Scotland, and others (e.g. Orkney and Argyll & Bute) a lower proportion, but again such claimants account for a tiny fraction of overall PII support (see Figure 2.29). As with Pillar I, a small proportion of recipients account for a large share of the overall spend.

Figure 2.29: Distribution of PII Payments and Recipients, by payment size (2014)



Source: UK Coordinating Body – CAP Payments (http://cap-payments.defra.gov.uk/Default.aspx)

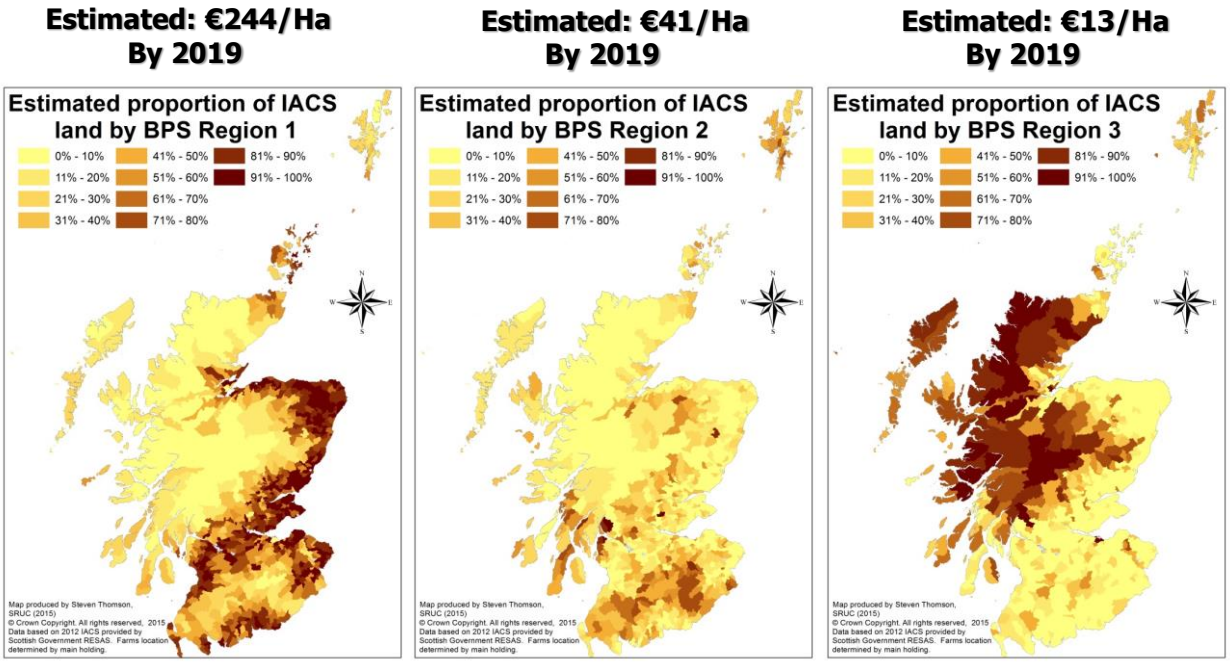
2.45. Whereas the Single Farm Payment was based on historic levels of support, the Basic Payment is on a transition path from this towards more standardised payments per hectare. However, payment rates will continue to be differentiated according to categorisation of land into Regions 1, 2 and 3. Region 3 is less productive farmland and will receive the lowest rate per hectare. It is also most common across the Highlands and Islands.

2.46. The CAP is currently going through a five-year transition from historically based Single Farm Payment to the fully regionalised payments under the 2109 Basic Payment Scheme (BPS) and Greening. During the 2014 CAP reforms in Scotland a number of different regional payment options were assessed (such as redistributive payments on the first 64 Ha, flat rate payments across Scotland, payments based on land capability) but in order to minimise redistribution the BPS model selected included three regions based on current land use: (i) Region 1: arable and grassland (ii) Rough grazing areas more intensively grazed (essentially more than 0.09 LSU / Ha) (iii) Rough grazing areas more extensively grazed. The geographical distribution of BPS regions is mapped in Figure 2.30, with estimates of the consequent shifts in aggregate support for each region shown in Figure 2.31.

2.47. The expected payment rates (including Greening payments) across these regions by 2019 is expected to be: Region 1 - €244/Ha; Region 2 - €41/Ha; Region 3 - €13/Ha. In addition, farmers can claim a coupled 'headage' payment[43] on beef calves worth approximately €100 per calf on the mainland and €160 per calf on the islands (in recognition of the additional costs incurred in transporting feed, fertiliser and stock). Additionally, farmers and crofters with the majority (80%) of their land in Region 3 can claim coupled 'headage' payments on ewe hoggs[44] worth around €84 per hogg as a means of supporting activity in the extensively farmed regions and minimise the risks of abandonment.

2.48. The geographical distribution of BPS regions is mapped in Figure 2.29,

Figure 2.30: Estimated proportion of Basic Payment Scheme regions per parish and estimated rate per ha in 2019



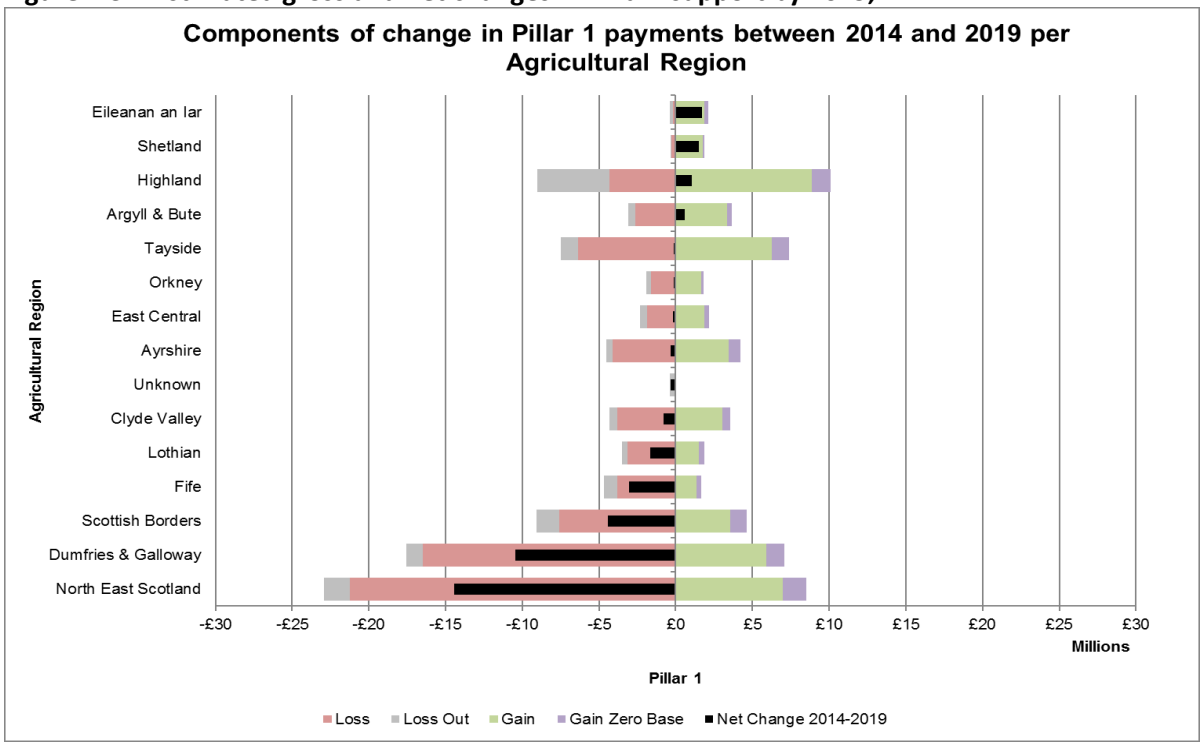
Source: Based on data from SG Rural and Environment Science and Analytical Services, 2015

2.49. Along with the evidence that BPS Region 3 dominates much of the H&I region, Figure 2.31 provides an estimation of the shifts in aggregate support for each region (with the caveat that changing exchange rates have affected the net position in Sterling). This illustrates that most areas of the Highlands and Islands will be net gainers (indicated by a rightward-pointing black bar) whilst elsewhere in Scotland will be net losers (leftward-pointing black bar), but also that within this aggregate effect there will be gross winners (green and purple rightward bars) and gross losers (pink and grey leftward bars). Orkney will retain approximately the same overall level of PI support, but it will be distributed differently.

2.50. The composition of Pillar I (and LFASS) support in 2019 has also been estimated, as shown in Figure 2.32. This highlights that, although less skewed than the 2014 distribution, proportionately more support will still flow to Rest of Scotland. It also confirms that the Basic Payment will be the largest component of support but that Greening and LFASS will also be important.

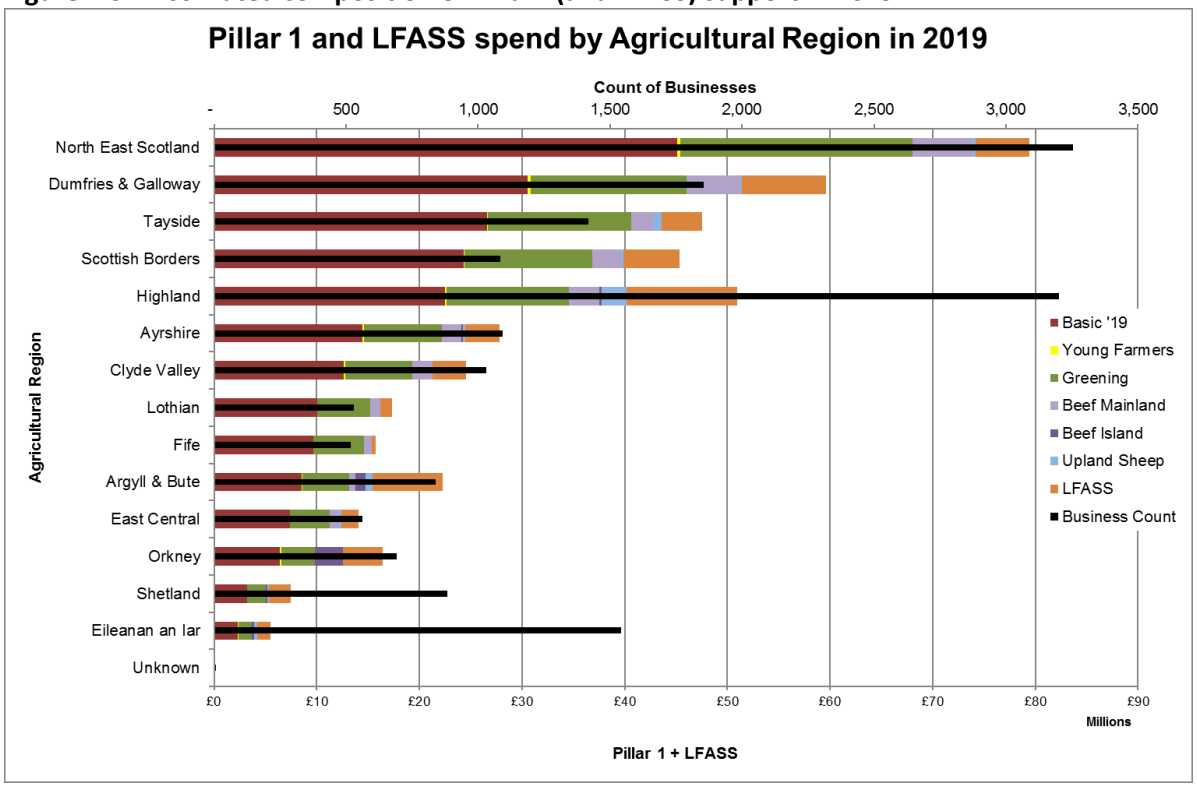
[43] Scottish Suckler Beef Support Scheme (Mainland and Islands variants)
[44] Scottish Upland Sheep Support Scheme

Figure 2.31: Estimated gross and net changes in Pillar I support by 2019,



Source: Keith Mathews, The James Hutton Institute. Presentation to the Scottish Governments Agriculture and Rural Development Stakeholders Group (August 2017)[45]

Figure 2.32: Estimated composition of Pillar I (and LFASS) support in 2019



Source: as Figure 2.31

[45] www.gov.scot/Topics/farmingrural/Agriculture/ARD-Stakeholder-Group/ARDStakeholderGroup-Meetings2017

Agricultural employment

2.51. Agricultural activities across the Highlands and Islands employ a sizeable workforce, mainly comprising unpaid family labour rather paid employees. The headline number of people working in agriculture is, however, an over-estimate of the actual workforce since many farm jobs are part-time in nature (particularly on crofts where multiple employment – pluriactivity - is the norm).[46] Converting to a full-time equivalent (FTE) basis is one way of correcting for this, but relies on assumptions about the hours worked by part-time staff. An alternative is to use Standard Labour Requirements based on average labour requirements for a given area of land or head of livestock.

2.52. Table 2.10 presents these different estimates of the agricultural workforce, alongside estimates of total employment. At the national level, agriculture accounts for around 2% of the total FTE workforce but, reflecting the rural nature of the region, around 7% across the Highlands and Islands and even higher on the islands (although the public and service sectors are the largest employers[47]).

Table 2.11: Estimated workforce size

	Agricultural workforce			Total workforce	
	Headcount	**FTE**	**SLR**	**Headcount**	**FTE**
Argyll & Bute	2,456	1,679	1,840	41,000	36,200
Highland	9,624	5,660	4,749	118,500	98,250
Na h-Eileanan Siar	3,978	1,811	444	13,200	11,050
Orkney	1,825	1,217	1,106	12,200	9,950
Shetland	1,944	994	657	12,700	10,900
Highland & Islands	**19,827**	**11,361**	**8,796**	**197,600**	**166,350**
Scotland	***63,473***	***44,338***	***50,837***	***2,571,200***	***2,221,400***

Source: ERSA, 2017; Local Authority web tables from the Regional Employment Patterns in Scotland

Business viability

2.53. Recent work by Barnes et al. (2018)[48] through the Scottish Government's Strategic Research Programme 2016-2021, highlighted the financial challenges faced by hill and upland farming systems in Scotland that are relevant to this study. Assessing the Scottish Government's Farm Business Survey (FBS) data they have developed a series of classifications for farm business viability:

- **Vulnerable**: farming families who cannot pay themselves the minimum agricultural wage and do not have income from non-farming sources
- **Sustainable**: farming families who cannot pay themselves the minimum agricultural wage but at least 50% of their cash income comes from non-farm income sources (off-farm diversification, off-farm jobs, etc.).
- **Viable**: farming families who can pay themselves (a) at least the minimum agricultural wage, and (b) a rate of return on non-land assets that is comparable to Government Bonds.

[46] The corollary of this is that many agricultural workers also fill other roles in the local economy, and if such people are displaced from agriculture and leave the area, labour shortages worsen for other sectors (including voluntary work).

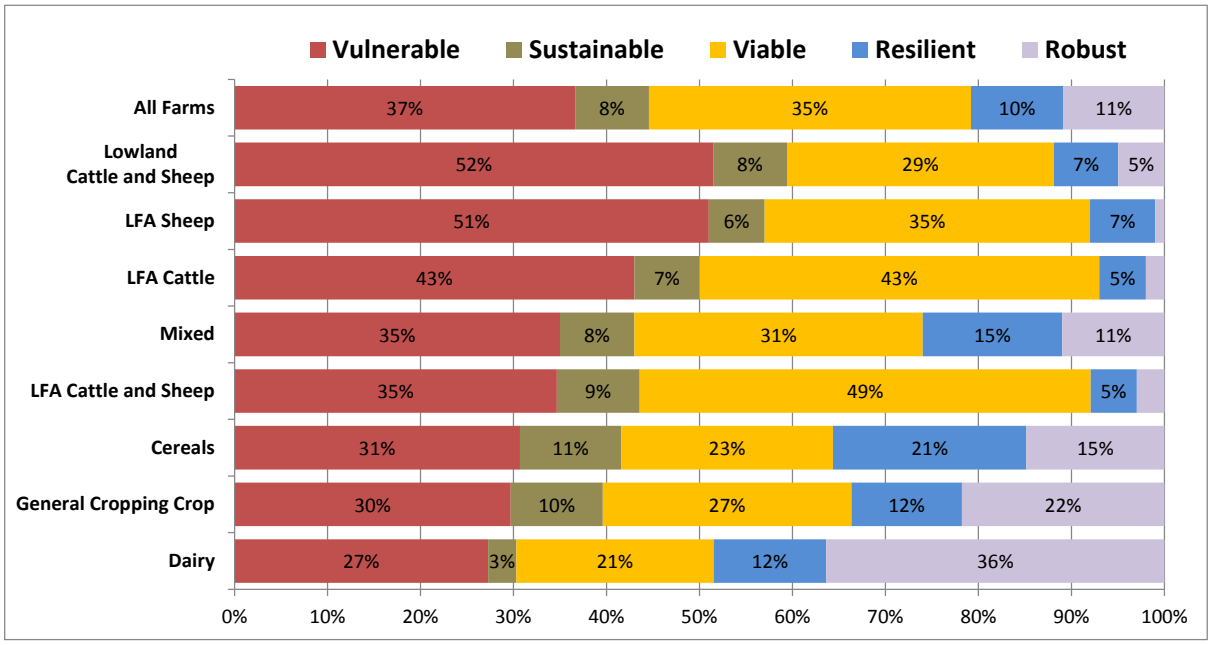
[47] e.g. see Kleinert, E. et al. (2018) Understanding the Scottish Rural Economy. RESAS Report. www.gov.scot/Publications/2018/02/3310

[48] Barnes, A., Thomsons, S. and Ferrieria, J. (Forthcoming) *Disadvantage and Economic Viability*. Paper prepared for presentation for the 162nd EAAE Seminar. The evaluation of new CAP instruments: Lessons learned and the road ahead (April 2018, Budapest)

- **Resilient**: farms businesses that remain viable for at least 5 years.
- **Robust**: farms businesses that remain viable for at least 5 years without CAP support payments.

1.34. Figure 2.33 shows that LFA livestock systems have very low levels of robust and resilient businesses. Half the LFA specialist sheep farms are classed as vulnerable as they cannot pay the family a minimum agricultural wage with 43% of LFA specialist beef and 35% of LFA cattle and sheep farms falling into this category.

Figure 2.33: Distribution of viability classes by farm type, average 2005-2016



Source: Barnes *et al* (2018) analysis of Scottish Governments Farm Business Survey

2.54. Further work done by Barnes *et al* shown in Table 2.12 highlights how persistent viability status can be, with 64% of those classed as vulnerable in year 1 remaining vulnerable in year 2 (i.e. the off-diagonal figures are smaller than the on-diagonal figures). This reiterates the vulnerability of many H&I farming systems to changes in the policy support regime and wider agricultural markets, and is in-line with anecdotal evidence of under-investment in many struggling farms further weakening their ability to improve.

Table 2.12: Markov Transitions matrices for differing viability classes

		Year 2				
		Vulnerable	Sustainable	Viable	Resilient	Robust
Year 1	Vulnerable	64	8	23	2	2
	Sustainable	41	36	14	3	5
	Viable	23	4	59	7	8
	Resilient	0	0	0	86	14
	Robust	13	3	31	0	54

Source: Barnes et al (2018) analysis of Scottish Governments Farm Business Survey

2.55. Variation across farms in terms of viability at least partially reflects variation in efficiency, with significant differences in the gross margin achieved per breeding animal by top and bottom quartile performers – as shown in Table 2.13

Table 2.13: Indicative variation in enterprise gross margins (£/hd)

	Lower 25%	Average	Upper 25%
Dairy	£277	£740	£1291
Sheep (extensive)	£0	£21	£40
Beef (upland stores)	£284	£470	£662

Source: Economic Report on Scottish Agriculture 2017

Economic contribution (GVA)

2.56. The economic contribution of agriculture can also be expressed in terms of Gross Value Added (GVA). GVA can be estimated in a number of ways, not all of which are perfectly compatible. Moreover, whilst national-level estimates are reasonably robust, regional estimates can be less reliable. This causes some problems for comparisons, but Table 2.14 presents some estimates drawn from published sources to show agricultural GVA alongside that of total regional GVA and also the food manufacturing and sustainable tourism sectors.[49]

Table 2.14: Indicative regional GVA estimates

	Agriculture	**Food**	**Tourism**	**Total[a]**	**Total[b]**
Argyll & Bute	£12.3m	£70.4m	£88.3m	£1,049m	£1,736m
Highland	£31.8m	£127.5m	£197.1m	£2,979m	£5,274m
Na h-Eileanan Siar	£3.3m	£14.9m	£25.6m	£234m	£460m
Orkney	£10.0m	£12.9m	£9.8m	£233m	£445m
Shetland	£3.7m	£17.8m	£12.9m	£524m	£631m
Highlands & Islands	**£61.1m**	**£243.5m**	**£333.7m**	**£5,019m**	**£8,546m**
Scotland	***£1,181.1m***	***£3,846.5m***	***£3,760.8m***	***£90,012m***	***£127,260m***

Source: pers. comm. SG;[50] Scottish Annual Business Survey Local Authority Tables; UK Regional GVA.
a=excludes financial and public sector; b=includes all sectors.

2.57. As with employment, agriculture at the national level accounts for only a small proportion of GVA (0.9% to 1.3%, depending on the choice of denominator) but adding food manufacturing raises this to 4.0% to 5.6%. Across the Highlands and Islands, some areas have higher shares (e.g. Orkney with 4% and 10% respectively), some lower shares (e.g. Shetland with 0.07% and 4%). However, in all cases food manufacturing contributes more than agriculture, as (with the exception of Orkney) does sustainable tourism.

2.58. It is also important to note that on-farm and on-croft agricultural activities are part of a supply-chain that encompasses upstream businesses providing input goods and services as well as downstream businesses utilising agricultural output. For example, veterinary services, hauliers, auction marts and abattoirs. Equally, households associated with agricultural and input businesses spend their income across other sectors. This means that the economic footprint of farming and crofting is larger than directly observed economic activities and includes indirect and induced activities too.

2.59. This is summarised formally through "multiplier" effects, with livestock agriculture typically having indicative multipliers of around 2.0 – meaning that each £ of agricultural output or GVA or each

[49] Food manufacturing include beverages; sustainable tourism includes accommodation and food services

[50] This provided estimated regional GVA, which was then distributed to each Local Authority area using estimated shares of agricultural output. See also Moxey, A. (2016) n Assessment of the Economic Contribution of Scotland's Red Meat Supply Chain. Report to QMS. http://www.qmscotland.co.uk/sites/default/files/economic-contribution-of-scotlands-red-meat-supply-chain.pdf

agricultural job gives rise to the same elsewhere.[51] Precise and up-to-date multiplier estimates for the H&I region are not available, but it is reasonable to assume that they would be of this order of magnitude, although linkages would also extend beyond the H&I region.

2.60. For injections of funding, multipliers ripple through supply-chains and the wider economy in a positive manner, increasing the benefit of increased agricultural activity. Conversely, if funding is withdrawn through reductions in prices or support payments, the negative impact is worsened. Current agricultural output across the region amounts to around £285m which, together with £75m of BPS support and £27m of LFASS payments, gives rise to around £61m of Gross Value Added (GVA). A multiplier value of 2.0 implies that an equivalent value (i.e. £387m of output, £61m of GVA) of economic activity arises in the upstream supply-chain and wider economy as a result of agricultural production. In addition, agriculture plays a key role in supplying raw materials to the downstream food and drink sector (regional GVA of £244m) and in maintaining landscapes, habitats and biodiversity which contribute to the tourism sector (regional GVA of £334m). Given the severity of potential farm-level losses under several Brexit scenarios, much of this aggregate economic activity must be viewed as being at risk unless mitigating actions are taken.

2.61. Focusing solely on removing support payments, BPS support of £75m and LFASS support of £27m represent an injection to the agricultural sector which stimulates demand for input good and services and bolsters farm household income for consumption purposes, thereby stimulating additional economic activity elsewhere. An indicative multiplier value of 2.0 implies the static effect of removing support payments would be the loss of over £200m from the region. The extent to which dynamic effects would reduce, or amplify, such losses is essentially unknown but structural change would be significant.

2.62. Similarly, changes to farmgate prices will also have a multiplier effect. In some trade scenarios, price rises are projected for at least some commodities, implying a modest positive effect – but not sufficient to counter the effect of losing Pillar I support. For example, beef and sheep output for the region is around £250m, so an average price rise of £10% would add £25m which multiplies-up to +£50m against the -£200m effect of losing income support payments. Again, dynamic effects would be expected to adjust the outcomes.

2.63. Multiplier effects also apply to forestry, the main alternative extensive land use. At the all-Scotland level, on-the-ground forestry is estimated to generate around 5,000 direct jobs with a further 15,000 elsewhere in the supply chain and wider economy, and to account for around £0.3bn of GVA directly and £0.7bn in total.[52] A breakdown of these figures for the H&I region is not available, but the all-Scotland equivalent figures for agriculture would be around 51,000 direct jobs plus 51,000 elsewhere in the economy, and £1.2bn of GVA plus a further £0.9bn in the wider economy.

2.64. However, although multiplier analysis provides a convenient means of estimating net economic effects, the figures presented above need to be treated as indicative rather than definitive. Existing estimates of multipliers are typically rather dated and often not regionally-specific, plus would be expected to alter with structural adjustments. For example, the relationship between GVA and output or jobs and output are not fixed, but evolve over time as technologies change and the scale of production alters.

[51] For a recent discussion of multiplier effects in the red meat sector, see Moxey, A. (2016) *op. cit.*

[52] Derived from CJC (2015) The economic contribution of the forestry sector in Scotland. Report to Forestry Commission Scotland. http://scotland.forestry.gov.uk/images/corporate/pdf/economic-contribution-forestry-2015.pdf (NB. to compare like-with-like, the published totals have to be disaggregated)

2.65. Separately, it is fundamentally important to note that although not reflected in GVA figures, natural capital in the form of geology, soils, water and biodiversity underpins the rural economy. Commodity production from the land is but one of multiple ecosystem services that are derived from how natural capital is managed. For example, other ecosystem services include regulation of climate and water plus aesthetic and cultural experiences. Such services are not traded in markets, but are nonetheless of economic value – as evidenced by political rhetoric and commitments. Academic attempts to estimate non-market values suggest that natural capital (of all forms, including aquatic and coastal) may supply annual benefits of around £25bn to Scotland.[53]

2.66. Within this, farming and crofting has a key role in managing land to deliver more than simply agricultural commodities. For example, protecting rare and internationally important habitats and species, maintaining landscapes, preserving carbon stored in (especially peaty) soils and maintaining regionally important cultural heritage. Again, academic studies suggest that these aspects of land management – including maintenance of farming communities - are valued by the Scottish public,[54] and the idea of using public money to pay for public (i.e. non-market) goods has gained increasing traction in recent years at both the UK and Scottish levels. An SRUC study in 2009[55] estimated the value of selected environmental public goods from Scottish agriculture at over £700m, although negative impacts such as diffuse pollution reduce the net benefit to around £260m and no regional split was estimated (nor were other public goods, such as cultural heritage, considered).

2.67. The implicit value of this natural capital, moulded by farm and croft activity is also highlighted by the tourism visitor attraction surveys. As shown in Table 2.15, visitors to each part of the H&I region are more attracted by scenery and landscape plus history and culture than for Scotland as a whole. Given the pivotal role of agriculture and crofting in creating and maintaining distinctive landscapes and cultural heritage, this confirms linkages between the sectors. Return visits are also more common than for Scotland as a whole.

Table 2.15: What attracted visitors to different parts of Scotland (2015/16)

	Scenery & Landscapes	History & Culture	Always wanted to visit	Return visit
Argyll & Bute	84%	45%	35%	38%
Highland	87%	55%	58%	36%
Na h-Eileanan Siar	87%	54%	54%	48%
Orkney	75%	74%	48%	34%
Shetland	75%	57%	52%	30%
Scotland	***50%***	***33%***	***15%***	***24%***

Source: VisitScotland (2017) Scotland Visitor Survey 2015 & 2016: Regional Results[56]

[53] See http://naturalcapitalscotland.com/about/natural-capital/#.Wrje6ExFzmR , also RPA & Cambridge Econometrics. (2008). The Economic Impact of Scotland's Natural Environment. Report to SNH. https://www.nature.scot/sites/default/files/2017-07/Publication%202008%20-%20SNH%20Commissioned%20Report%20304%20-%20The%20Economic%20Impact%20of%20Scotland%27s%20Natural%20Environment.pdf

[54] Moran, D. et al. (2004) Beauty, Beast & Biodiversity. What does the public want from agriculture? Report to SEERAD. http://www.gov.scot/Publications/2004/09/19892/42598

[55] McVittie, A. et al. (2009) A Review of Literature on the Value of Public Goods from Agriculture and the Production Impacts of the Single Farm Payment Scheme. SAC Rural Policy Centre Research Report. http://www.oecd.org/agriculture/44733980.pdf

[56] www.visitscotland.org/research_and_statistics/visitor_research/all_markets/scotland_visitor_survey.aspx

2.68. In particular, the non-market nature of most ecosystem services provides a rationale for public funding of land management and, moreover, the likely costs of natural capital management may be similar in magnitude to current agricultural support funding. That is, the same level of funding may still be required, but delivered and distributed in a different way. For example, a recent RSPB report estimated annual costs in Scotland of £456m.[57]

2.69. However, the public is not necessarily well-informed about the nuances of land management, natural capital and ecosystem services. As such, defending agricultural support against direct competition with other domestic spending needs is likely to be challenging and requires a persuasive case to be presented. Arguably, this goes beyond simply consideration of the immediate pressures on agriculture to encompass broader, perhaps philosophical, debates about how best to equip rural communities to face future challenges such as climate change, demographic trends and new technologies' impact on employment.

[57] Rayment, M. (2017) Assessing the costs of Environmental Land Management in the UK. Report to RSPB, the National Trust and The Wildlife Trusts. http://ww2.rspb.org.uk/Images/Assessing%20the%20costs%20of%20Environmental%20Land%20Management%20in%20the%20UK%20Final%20Report_tcm9-449499.pdf

Section 3. Discussion[58]

Context

3.1. Agricultural possibilities across the Highlands and Islands are widely understood to be highly constrained by the biophysical environment and/or geographical remoteness (peripherality) from input and output markets. For example, poorer soils, steep topography and short growing seasons restrict the types of activities that can be physically undertaken, whilst transport costs erode financial margins. Such constraints are acknowledged formally through the Less Favoured Area (LFA) designation, and in any future Area of Natural Constraint (ANC) designation.

3.2. Nonetheless, agricultural activities on farms and crofts are the dominant form of land use[59] and represent an important component of the economic, social and environmental fabric of the region. Reflecting the biophysical and geographical constraints, grazing livestock activities are most prevalent, particularly extensive sheep and beef rearing, although dairying and intensive beef are important in some locations.

3.3. The profitability of beef and sheep production across the region has been squeezed for many years, caught between rising input costs and (at best) relatively static output prices, with farm incomes consequently highly dependent upon CAP support payments. This means that many farm and croft family incomes are vulnerable and anecdotal evidence points to a lack of reinvestment in fixed capital on some hill farms, which will affect future farming opportunities. Market pressures and the decoupling of support payments have led to a general trend of declining livestock numbers, reduced utilisation of remoter land and continuation of a gradual reduction in the size of the agricultural workforce.

3.4. These trends already pose challenges around the environmental effects of agricultural abandonment of land, the up and down-stream economic effects of reduced supply-chain throughput and the community/cultural effects of changes to the level and composition of overall employment and economic activity. Such issues are complex and inter-related, linking to a number of policy areas including food production, tourism, environmental sustainability, regional and national economic development, community resilience and social inclusion.

3.5. The advent of Brexit adds to the pressures on agriculture across the Highlands and Islands through possible reductions in farmgate prices but more significantly through possible reductions in support payments, or at least a change in how they are delivered. The consequences of the latter for farm and croft incomes are starkly bleak: all interviewed stakeholders expected incomes to collapse and farm-level analysis by SRUC indicates that a significant proportion of farms would indeed become non-viable. This potentially existential threat to H&I agriculture confirms the need to consider knock-on implications for various policy areas and the scope for any mitigating actions.

3.6. Various ways of maintaining agricultural activity can be envisaged. These include raising agricultural productivity to reduce reliance on income support payments as well as retaining some form of support payments with activity clauses. However, the scope for such approaches will depend on willingness of the industry to change and on the level and type of support compatible with budget constraints, domestic common policy frameworks and WTO requirements. Moreover, different policy objectives may require different approaches and there will inevitably be trade-offs between objectives. These issues are considered below.

[58] This Section draws on views expressed by the interviewed stakeholders, the research team's own experience and selected published literature (see Annex B).

[59] Although it should be noted that sporting interests are also important, and often occur on the same land.

Improving agricultural market returns

3.7. The dependence of farm and croft incomes on support payments reflects costs of production, poor market returns and low productivity. If farmgate prices were higher and/or farms could produce more efficiently, market returns and incomes would improve, thereby reducing or avoiding some knock-on effects from Brexit-induced price falls and the removal of support payments.

3.8. It is possible that further devaluation of Sterling could lift farmgate prices, or that the purchasing policies of major multiple retailers could spontaneously evolve to offer higher prices.[60] However, neither eventuality is likely to afford sustainably higher prices, nor can the types of policy measures used historically to directly support prices be deployed under current WTO rules.[61] Consequently, improving market returns essentially requires individual farms and crofts to improve their productivity, to lower costs and/or raise output quality and/or increase output volumes.

3.9. Productivity, the efficiency with which inputs are converted into outputs, underpins economic growth and development. Rising productivity elsewhere in the economy broadly drives increases in average incomes. This means that for agricultural workers to maintain income parity with their peers in other parts of the economy, agricultural labour productivity has to approximately keep pace. This can be achieved through reducing the size of the agricultural workforce and/or increasing the value of output generated. Both approaches were used throughout the 20th Century to dramatic effect, but agricultural productivity growth has slowed in recent decades.

3.10. In principle, further on-farm productivity gains are possible, both through the introduction of genuinely new technologies but also more simply through more widespread adoption of current best practice. For example, contemporary research into the use of drones, electronic sensors and genetic improvement suggest that significant efficiency gains could be made. Equally, more mundane activities such as the routine use of business planning, benchmarking and co-operation have also been shown to improve returns. Improved marketing, drawing on high health status and/or geographical indicators can also play a role.

3.11. Moreover, comparisons between top and bottom performers indicate that the performance gap is significant and that there is a long-tail of under-performing farms. This implies that productivity gains are indeed there to be made, even simply from adoption of best practice. However, the practicalities of raising productivity are not necessarily straightforward – if they were, repeated exhortations in recent years from government and industry for productivity improvements would have achieved more than they have.

3.12. Barriers to productivity improvements include a lack of awareness of possibilities and a lack of skills to implement new approaches, both of which can be addressed through the provision of targeted information, advice and training. This implies a continuing role for government-funded advisory services, although experience suggests that it is difficult to engage with some potential beneficiaries due to their lack of interest or lack of time. It may be that greater exposure to market forces through post-Brexit changes to the support regime overcomes some of this inertia, but the content and delivery modes of advisory support may also need some revision to improve accessibility and perceived relevance. It is likely that the focus of future advice may need to focus on delivery of

[60] As occurred in 2015 for milk.

[61] Previously, minimum farmgate prices were achieved through, for example, deficiency payments, production quotas and intervention buying. These were essentially replaced by direct coupled payments which have in turn now evolved into decoupled area payments.

outcomes, be they around enhancing natural capital, an increased focus on productivity, or indeed advice on diversification, off-farm employment or retirement.

3.13. Uptake of best practice or more innovative technologies may also be hindered by credit constraints, particularly for smaller and tenanted farms. This can be addressed through the provision of grant-aid or soft-loans, ideally in tandem with advisory support to ensure that investments are appropriate and recipients have the capacity to utilise them properly. That is, providing farmers and crofters with new technical kit will not raise performance if they are unable to use it.

3.14. However, the scope for productivity improvements may also be hindered by the specific context of individual farms and crofts. For example, many are relatively small and do not provide full-time employment. In such circumstances, it may be difficult to justify investments in skills development or capital items due to the limited absolute gains to be made being restricted by the overall small-scale of production. Co-operation between neighbours might achieve a better scale, but may not be universally appropriate or indeed possible. Equally, although examples can be found, the scope for structural change through amalgamations of individual units to achieve better economies of scale may be restricted by the nature and spatial arrangement of land.

3.15. For example, managing a collection of small, fragmented parcels of land that require time and effort to visit offers little advantage – economies of scale arise from handling larger numbers of more readily accessible livestock rather than managing a larger area *per se*. Several stakeholders noted that some land is already effectively abandoned due to it not being accessible by quad bike and/or being physically too distant, and that there was little interest amongst other farmers or crofters to expand by taking on such land given the labour costs associated with utilising it. More generally, the challenging biophysical conditions represent a binding constraint on what can be achieved economically in situ.[62] For example, opportunities for finishing livestock are typically limited and producers of store animals typically poorly connected to end-consumers (at the whip-end of the supply-chain).

Limits to & consequences of agricultural productivity improvements

3.16. Irrespective of the barriers to improving productivity, it is also important to note that even if significant productivity gains were realised across a large proportion of farms and crofts, the absolute level of market returns achieved would still not necessarily represent a significant income in most cases. That is, even the most technically efficient farms achieve only modest margins per animal, so unless large numbers of animals are kept farm households will require supplementary income. Changes to support payments are of greater consequence to many farmers and crofters, meaning the focus has been more on funding rather than market orientation.

3.17. This implies a continued need for support payments and/or other private income. The latter highlights that policy needs to consider the role of on-farm diversification and off-farm employment as well as on-farm productivity in contributing to farm household viability. Consequently, the provision of information, advice, training and grant-aid should not be restricted to agricultural activities alone, and indeed the scope for productivity and income gains is probably greater outwith agriculture.

3.18. Separately, there are also potential environmental and social consequences of agricultural productivity gains. Environmentally, if higher productivity equates to higher stocking densities and/or

[62] It is, of course, possible to circumvent natural constraints through external inputs such as water, energy and chemicals. Hence, for example, wheat can be grown in deserts, tomatoes in the Arctic and (as happened in the 18th Century) pineapples in Scotland. This does not mean that such ventures are economically or environmentally sustainable, and the same applies to some less extreme examples of farming systems.

the greater use of purchased inputs (e.g. feed, fertilisers) on some parcels of land and/or reduced grazing on other parcels of land, the effect on habitats, biodiversity and landscapes may be unwelcome: many aspects of the agricultural environment across the Highlands and Islands require balanced management, neither too extensive nor too intensive, nor uniform across large areas but varying at a smaller scale to give a landscape mosaic.[63] Hence neither agricultural abandonment nor more intensive production are environmentally desirable, and existing small-scale and extensive farming needs to be maintained and enhanced.

3.19. Socially, abandonment and higher agricultural labour productivity both lead to less demand for on-farm labour.[64] Again, this implies a need for broader support measures aimed at helping displaced agricultural labour find alternative local occupations or retirement opportunities. These may include retraining or grant-aid for business start-ups, but equally may need to address pension arrangements and the availability of retirement accommodation. If local opportunities are available, displaced labour may be retained within the local economy, but reduced agricultural activity and a smaller agricultural workforce necessarily imply changes to the composition of total employment.

3.20. If local opportunities are not available, former agricultural labour may leave the local area, reducing population numbers. Although on average the agricultural workforce is only a small proportion of the overall workforce, in some remoter locations (e.g. outer-lying islands of Orkney and Shetland) it is significant and community viability could be threatened. For example, if minimum threshold sizes to support public services such as schools, GP surgeries and short-distance ferries are not maintained.

Supply-chain linkages

3.21. Employment and activity considerations also apply to up and downstream parts of agricultural supply-chains. For example, if agricultural activity declines, there is less demand for inputs such as veterinary services, feed and chemical supplies or machinery repairs. Equally, if output declines, hauliers, auction marts and abattoirs will face lower throughputs and, by extension, at least some food processors and retailers will have to source their inputs from elsewhere.

3.22. Consumer demand for food is complex. The overall volume of consumption is ultimately constrained by population size and physical limits to how much can (or should) be eaten per person per day, but the mix of different products varies with incomes and preferences. In modern economies, most food purchases are of processed products, either from specialist retailers or catering outlets, but the marketing chains by which products are presented to consumers are often long and complicated and can span more than one country.

3.23. Supply-chain linkages can also embody a degree of mutual or co-dependence that may lead to tipping-points. For example, transport costs limit the distance between dairy farms and creameries, meaning that a creamery relies on an accessible milk field, but dairy farmers also rely on an accessible creamery – if either loses critical mass and closes, so does the other. Other examples cited by stakeholders include the local relationships between livestock farms and large animal vets, hauliers and abattoirs.[65]

[63] Indeed, stocking densities are already regulated in some locations for this reason, notably environmental designations.

[64] Indeed, historically, improvements to agricultural productivity facilitated the release of labour for other activities, allowing economic diversification to occur. As part of this process, some activities that had occurred within the farmgate moved up or down-stream as supply-chains evolved and efficiencies arising from specialisation and economies of scale were realised.

[65] Although the routine shipment of cattle and, especially, sheep to plants in England and Wales somewhat weakens this argument.

Attention should not therefore be directed solely at one part of the supply-chain, but at the whole supply-chain

3.24. Some farms engage directly with the food sector through involvement in processing (e.g. dairy products) and/or retailing (e.g. farm shops). However, reflecting specialisation and economies of scale, most farms' role is as a supplier of input to other farms (notably production of store animals for finishing elsewhere) or raw materials to the downstream food sector. If the ambitious growth targets for the Scottish, and by extension, H&I food & drink sector are to be realised, an adequate supply of agricultural raw materials will be required.[66]

3.25. To an extent, this may be obtainable from outwith Scotland, either from elsewhere in the UK, from the EU27 or the Rest of the World (RoW). Indeed, although definitive figures are apparently not available, a proportion of raw materials are probably sourced from outwith Scotland. This partly reflects that not all raw materials (e.g. citrus fruits) are produced domestically, but also that processing margins are highly price-sensitive and Scottish produce can be too expensive for some uses.[67] However, the future availability of imports from outwith the UK will depend upon whatever trade arrangements are agreed whilst the availability of raw materials from within the UK will depend upon how agricultural production in England, Northern Ireland and Wales evolves. As such, security and cost of supply are potential concerns for the food sector, which in turn is a concern for regional development given the GVA contribution of food and drink and its status as a priority growth sector.

3.26. The exposure of the H&I food and drink sector to input supply concerns is unquantified. Certainly, abattoirs and creameries in the region will be vulnerable to any reduction in throughput, with small-scale processors already under pressure (for example, as evidenced by experience with the Orkney abattoir and Bute creamery). Stakeholders noted that this will undermine the use of local branding of (e.g.) cheeses and high-end meat cuts for (especially) tourism marketing.

3.27. However, the degree to which non-livestock processors and food retailers or caterers currently rely on domestic/local sourcing is unknown, as is the scope for increased local production if market and policy signals alter. For example, it could be that small-scale, specialist horticultural or poultry production could increase close to urban centres (although this will not significantly affect land use more generally). Encouragement for the latter might be offered through advice, training and investment grants, but maintenance of livestock production volumes close to those currently achieved will require more explicit funding.

3.28. Agriculture is also part of the tourism supply-chain (another priority growth sector), through both marketing of local food and drink but also its effect on landscapes, habitats and species that contribute to tourists' experiences. Land managers receive no[68] direct market reward from the tourism sector for this service provision, highlighting that agriculture is about more than simply commodity production.

Wider ecosystem service perspectives

3.29. Expressing productivity exclusively in terms of market returns to the farm and/or along the supply-chain neglects the wider range of non-market benefits associated with the types of land management undertaken across the Highlands and Islands. That is, appropriate land management can deliver a range of (what are now termed) ecosystem services (and inappropriate management can reduce them

[66] Given the relatively small size of the domestic consumer market, growth targets also depend on access to markets outwith Scotland – whether elsewhere in the UK or beyond.
[67] See Webb (2007)
[68] Except to the extent that some farms and crofts are directly engaged in tourist activities, such as B&Bs.

e.g. diffuse pollution, erosion, GHG emissions). For example, climate and water regulation, soil and habitat formation, and aesthetic and spiritual experiences. Unlike commodity production (itself an ecosystem service), these are not valued through markets but nonetheless have economic value to society.

3.30. These non-market values are acknowledged politically through, for example, commitments to maintaining rural livelihoods, traditions and communities and to honouring international obligations under environmental designations. They have also been estimated by economists, confirming that the public does indeed value landscapes and wildlife but also rural communities and traditions.

3.31. Recognition of non-market values justifies support payments for land management: public money for public goods (the so-called "provider-gets-principle", to be contrasted with the "polluter-pays-principle"). Public goods are under-provided by the market and require policy intervention to secure their delivery. This perspective essentially underpins much of the current policy proposals in England, but also features in the thinking of the Scottish Agricultural Champions and in position papers from various Scottish industry groups. Public goods include landscapes, habitats and biodiversity, and cultural heritage. Although stretching the strict economic definition, other issues which have spill-over or externality effects, such as population retention and food security, may also be regarded as public goods.

3.32. A focus on non-market values also highlights the relevance of efforts to improve productivity across a range of ecosystem services, implying that advice, training and investment measures should extend beyond agricultural and food production aspects of land management. Alternative institutional arrangements, such as public or NGO ownership, might be capable of delivering some ecosystem services but Stakeholders regarded them as a poor substitute for a resident network of land managers with personal and cultural ties to the land.[69]

3.33. For example, the logistics of using flying flocks for grazing management in remote areas are challenging, particularly on high hills where hefting is an issue. In addition, and the time taken to traverse distances limits the area that can realistically be covered by a few professional staff based at discrete locations. Resident farmers and crofters distributed across the region are better placed for day-to-day management and, moreover, embody local culture.

3.34. Stakeholders acknowledged that other extensive land uses might be appropriate in some locations. For example, afforestation or rewilding could also supply a range of ecosystem services. Indeed, the Scottish Forest Strategy aims to increase woodland cover and there is (and will continue to be) pressure to expand it, which inevitably poses a trade-off with agricultural land use. Reductions in agricultural support may improve the relative economic attraction of forestry, but the economic and employment profiles are different, as is the range of wider ecosystem services. As such, it may not be appropriate in all locations and even if biophysical conditions are potentially favourable (see Figure 2.12) the scope for commercial forestry in many remoter and island areas may be limited by the lack of infrastructure.

Policy support

3.35. Continuing uncertainty regarding future agricultural and rural development budgets and the level of Scottish autonomy hinders detailed policy deliberations, but it is nonetheless possible to identify some desirable options. For example, the role of information, advice, training and investment support was uniformly endorsed by Stakeholders, as was the notion of payments for the provision of public goods. However, concern was expressed about the type and level of payments, which have not necessarily

[69] Compare with e.g. Gawith & Hodge (2017)

suited the H&I region in the past by relating primarily to agricultural productivity rather than social and environmental benefits. The transition from Less Favoured Area (LFA) to Area of Natural Constraint (ANC) designations was perhaps a missed opportunity in this regard.

3.36. In particular, most Stakeholders saw a continued need for some level of basic (Pillar I-type) income support, but better targeted at the most vulnerable farms by using tiered/tapered payment rates and/or payment caps. This includes the BPS but also LFASS (a Pillar-II scheme but essentially the same as Pillar I support), and possibly also coupled payments (such as the current Beef Calf Scheme). There may be an opportunity to refocus any future Pillar 1-type support to ensure activity is maintained in these marginal / environmentally sensitive areas – perhaps with a 'light touch' small farm / crofter support scheme / a redistributive payment with higher payments on the first 50 hectares / or enhanced peripherality payments that recognise additional costs (with precedent established through the island uplift in the Scottish Suckler Beef Support Scheme).

3.37. Pillar II-type payments were accepted as most appropriate for targeting public goods, but need to be less bureaucratic to improve accessibility for smaller farmers and crofters (who are faced with higher 'transaction costs' of entering many of these schemes) and to be focused less on management prescriptions and more on outcomes. However, Stakeholders were clear that seeking continued support was not the same as attempting to protect the status quo – there was general agreement that farming and crofting needed to respond to various challenges. Moreover, it was acknowledged that public scrutiny of support measures would increase now that funding will compete more directly with other public demands rather than being ring-fenced within the CAP.

3.38. Although the UK's departure from the EU will permit domestic agricultural policy to evolve beyond the current constraints of the CAP, policy support will nonetheless still be restricted by WTO requirements. Specifically, the Agreement on Agriculture (AoA) will limit freedom to deploy support that is explicitly coupled to production and will restrict payment calculations for agri-environment schemes to (as currently) cover costs incurred and income foregone and to be part of a coherent environmental plan. In addition, Scottish flexibility to differ from arrangements elsewhere in the UK may be constrained by the proposed common framework envisaged as necessary to maintain a domestic level playing field.

3.39. Some level of coupled support is permitted under the WTO, as evidenced by the current existence of headage payments in some parts of the EU (including Scotland). As such, some form of domestic coupled support may be possible in future, particularly given that the relatively low volumes of total output derived from most of the H&I region are unlikely to be viewed as trade distorting. However, because the UK rather than Scotland will be a member of the WTO, the scope for coupled support in Scotland will be contingent on whether it is used in England, Northern Ireland and Wales. If other parts of the UK choose not to use coupled support, Scotland could use more (subject to whatever domestic common framework and funding levels are agreed) than if coupled support was used elsewhere.

3.40. The use of decoupled support, such as the BPS, is less constrained by the WTO[70] and would be easier to continue with post-Brexit. However, the total level of support and payment rates for different categories of land will be subject to the UK-wide common framework. UK Ministers have already

[70] Although it is possible that whatever domestic support is put in place in the UK will be challenged by another WTO member seeking to test whether EU-style coupled and decoupled support is indeed compatible with WTO requirements.

proposed that decoupled support should be removed in favour of Pillar-II type support (e.g. agri-environment schemes), and it is unclear whether this precludes any Pillar-I type support in future.[71]

3.41. Although the BPS and LFASS are currently decoupled payments, and notwithstanding some revisions in recent years, payment rates and the resulting distribution of aggregate support under both reflects their origins as coupled payments linked to agricultural productivity: more agriculturally productive land receives higher payments. This historical legacy ignores the wider perspective of rural land as a source of multiple ecosystem services, and hence is poorly targeted at supporting environmental and cultural benefits. Moreover, even where maximum payments are capped, the distribution of support is skewed towards larger businesses. The pivotal role of small-scale farms and crofts in maintaining cultural and environmental services requires greater attention to their support needs.

3.42. Stakeholders were in agreement that some element of future decoupled support was desirable to underpin farming incomes, anxious that its complete removal would prompt widespread land abandonment. However, there was recognition that support could be better targeted than currently. In particular, the greater vulnerability of smaller businesses could be addressed through tiered/tapered payment rates as well as capping (all of which implicitly result in redistribution from larger to smaller businesses). Agreement on appropriate tiers and caps was less forthcoming, reflecting difficulties in defining specifics to cover the heterogeneity of farming systems. As currently, the use of cross-compliance type requirements to link decoupled payments to basic public good provision was acknowledged as desirable, and indeed could be strengthened.

3.43. If Pillar-I type support is removed or significantly reduced, Pillar-II type measures will become more important both in terms of Stakeholders. However, Stakeholders expressed concerns about the scope for Pillar-II type measures to adequately replace income lost through removal of decoupled payments. In principle, the provision of advice, training and investment grants should improve market returns (whether from agriculture or other activities), but the absolute level of gains may be limited and diversification away from agriculture may weaken land-based benefits. Consequently, the emphasis is expected to be on agri-environment schemes as the main vehicle for using public money for public goods.

3.44. Yet, as currently interpreted, WTO requirements for agri-environment payment rates to cover only costs incurred and income foregone effectively constrain support to be income-neutral. In practice, modest income gains can occur because average payment rates are often set relatively generously and average rates inevitably over-compensate some land managers. Nonetheless, the magnitude of income losses arising from removal of Pillar I payments means that it will be challenging to replace them using agri-environment payments as currently configured. If income replacement is to be achieved, more imagination will be needed on how payment rates can be calculated.[72]

3.45. For example, if agricultural activities are significantly loss-making, there is no income forgone from reducing the activity and hence no compensation is payable. Addressing this requires acceptance that income forgone through undertaking land management includes what could be earnt in another available occupation. For example, in off-farm employment. That is, rather than the marginal cost of adjusting management prescriptions for a particular enterprise, whole-farm costs need to be considered: what level of support is required to maintain the farming infrastructure that underpins

[71] The UK government has repeatedly offered assurances that flexibility will be allowed, but details have yet to be agreed. It is worth noting that BPS payment rates currently vary markedly across the UK.

[72] See Barnes et al. (2011) Alternative payment approaches for encouraging the production of ecosystem serviceshttps://www.sruc.ac.uk/download/downloads/id/61/alternative_payment_approaches_for_encouraging_the_production_of_ecosystem_services

the level of land management necessary to deliver environmental and cultural benefits? Defra officials have expressed some openness to such ideas, but the WTO position would need to be explored. A more radical alternative would be to shift the basis for payments to one based on the (non-market) value of outcomes.[73]

3.46. Encouragingly, such innovations appear to have been achieved in some other parts of the EU. For example, the Burren Programme in County Clare, Ireland supports appropriate upland management in an area of high nature and high cultural value that faces many of the same threats affecting the H&I region. Through careful design and engagement with local farmers, a scheme has been designed that mixes traditional payments for actions (i.e. management prescriptions) with payments for results (i.e. outcomes) and has achieved demonstrable success. Payments of up to €180/ha are available, depending on how well results are scored (with advice, training and investment grants available to help improve to results). Similar schemes are also in place in parts of England, Finland and Germany.

3.47. Separately, Stakeholders also repeatedly emphasised the need for support schemes to be more readily accessible to all potential claimants, particularly smaller businesses with limited time, expertise and cash to devote to application processes. This is a perennial plea, reflecting persistent complaints about overly-complicated administrative requirements and high transaction costs deterring some applicants, and one that departure from the CAP may allow some progress with – although there is always a balance between accountability for public expenditure and administrative simplicity.

3.48. Some Stakeholders also suggested that at least a proportion of Pillar-II type funding should be non-competitive, ensuring all land managers receive a minimum level of support. This was the original basis for Tier I payments under Land Management Contracts (LMCs), guaranteeing all land managers a funding allocation. It was removed after a few years because not all land managers were using their allocation in full and it was difficult to demonstrate additionality relative to (e.g.) cross-compliance requirements (England's agri-environment Entry Level scheme has been subject to similar criticisms). Nonetheless, it may merit revisiting given the likely greater reliance on Pillar-II for income support.

A wider context

3.49. Deliberations about agricultural policy do not occur in isolation but are part of a wider policy context. For example, the Scottish Government's national Performance Framework (NPF)[74] presents a suite of outcomes and indicators to underpin an overall 'purpose' of sustainable economic growth. The potential impacts on agriculture across the H&I region have implications for several of these including sustainable places, resilient communities and valuing and protecting natural capital.

3.50. Such policy aspirations also exist at an international level. For example, the United Nation's Sustainable Development Goals[75] encompass sustainable and inclusive economic growth, with specific attention to land degradation and biodiversity protection. The latter is also covered by the specific Aichi Biodiversity Targets[76], reinforcing legally binding obligations for the protection and enhancement of species and habitats under a number of international conventions.[77]

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[73] For example, Grieve et al. (2016) suggest that rather than focusing on handicaps to agricultural commodity production, LFASS and it its proposed successor of Areas of Natural Constraint (ANC) should reward delivery of other ecosystem services.

[74] http://www.gov.scot/About/Performance/scotPerforms

[75] https://www.un.org/sustainabledevelopment/

[76] https://www.cbd.int/sp/targets/

[77] e.g. the Ramsar convention on wetlands https://www.ramsar.org/ or the Bern convention on European habitats and species http://jncc.defra.gov.uk/page-1364

3.51. This confirms that Scotland is not alone in recognising interactions between land management, livelihoods, local economies and environmental performance, nor in wrestling with how best to address multiple challenges and inevitable trade-offs between different objectives. For example, whilst initiatives such as the Land Use Strategy[78] are welcome, consensus on how land should be managed, by whom and for what purpose is difficult to achieve. Yet, Brexit forces more urgent consideration of such issues, accelerating the need to confront longer-term underlying challenges such as technological, demographic and climate change.

3.52. As highlighted by Section 2 of this report, the Highlands and Islands are not the same as the rest of Scotland, and certainly not the same as southern England – a fact that needs to be recognised by governments in both Edinburgh and London if inappropriate, uniform support measures are to be avoided. Specifically, the interplay between geographical remoteness (peripherality) and sparsity, biophysical constraints on agricultural production, small-scale farms and crofts, cultural uniqueness and internationally important environmental attributes shapes both what the region can contribute to meeting policy objectives and requires from policy support.

3.53. Some progress has already been made in this respect with, for example, the introduction of Road Equivalent Tariffs on (some) ferries,[79] the Islands Bill articulating commitments to island communities[80] and, in recognition of increased production costs, higher payments to island claimants under the beef calf scheme.[81] Although limited, these examples illustrate that policy makers are open to offering distinct and targeted support, not just in agriculture but also in other relevant areas such as infrastructure provision and access to public services. This suggests that the case for appropriate support for agriculture, crofting and related land use across the Highlands and Islands is there to be made.

Conclusions

3.54. The soil, climate and topographical characteristics of the Highlands and Islands constrain the biophysical possibilities for agricultural production. Challenges faced by farmers and crofters are further exacerbated by distance from markets for both inputs and outputs, imposing additional transport costs. As a result, many agricultural activities are already loss-making in financial terms and farming incomes are highly dependent on support payments under the CAP. Any reductions in farmgate prices and (especially) reductions in support payments following Brexit will threaten the viability of agricultural activities, leading to potentially significant structural change as land, labour and capital are used in different intensities and/or switch to other uses.

3.55. Structural change is not necessarily undesirable. Indeed, it is a necessary part of economic growth and development as resources are reallocated to more productive uses. However, two caveats apply. First, that a focus on productivity solely in terms of commodity production neglects other important non-market outputs associated with land management. Second, that the nature and pace of structural change typically needs to be managed to maintain continuity of some ecosystem services and to help individuals, businesses and communities adjust to changing market and policy signals.

3.56. With respect to productivity, commodity production is but one of many ecosystem services derived from rural land and optimising overall productivity across all services often requires commodity production to operate within specified bounds. For example, many of the internationally valued semi-

[78] http://www.gov.scot/Topics/Environment/Countryside/Landusestrategy
[79] https://www.transport.gov.scot/public-transport/ferries/road-equivalent-tariff/
[80] http://www.parliament.scot/parliamentarybusiness/Bills/105168.aspx
[81] https://www.ruralpayments.org/publicsite/futures/topics/all-schemes/scottish-suckler-beef-support-scheme/scottish-suckler-beef-support-scheme-full-guidance/#42958

natural habitats found across the H&I region are maintained through low-intensity grazing. Agricultural abandonment may[82] lead to loss of these habitats and landscapes, but so too would over-intensification in pursuit of higher agricultural productivity. Similarly, continuation of traditional land management, particularly crofting, is culturally important since its loss would diminish community identities.

3.57. Some aspects of productivity may link to observable financial effects. For example, most obviously, limiting agricultural productivity affects commodity returns, but land management can influence drinking water costs whilst changing habitats and landscapes may affect tourism demand. However, many ecosystem services take the form of public goods and have non-market values. For example, the climate-regulating function of carbon storage in peatland or forestry is acknowledged formally whilst the traditions, customs and perhaps existence of (especially remoter) rural communities are valued socially, but such values are not reflected fully (if at all) in market prices for agricultural commodities. Consequently, public policy interventions are required to secure delivery across the broader range of ecosystem services associated with rural land.

3.58. Separately, productivity gains may be limited by local context but even if desirable productivity gains are potentially available (for any ecosystem service), the nature and pace of structural change typically needs to be managed to maintain continuity of some ecosystem services and to help individuals, businesses and communities adjust to changing market and policy signals. For example, the condition of some semi-natural habitats and the viability of some species populations can decline rapidly in the absence of appropriate management, meaning that even short-term disruption (such as land being abandoned by one manager) followed by a subsequent return to appropriate management (such as land being readopted by another manager) can have a lasting negative effect. Similarly, cultural traditions and knowledge can be difficult for following generations to recreate once they lost.

3.59. Equally, rapid and/or large-scale change can have sometimes brutal social impacts as loss of employment and income exposes individuals and businesses to the stress and expense of seeking alternatives. Moreover, this has potential knock-on effects for communities, depending on their scope to absorb changes to the level and composition of employment and indeed local population size. Hence, again, policy interventions may be required, in this case to support adjustment processes.

3.60. These perspectives are not new and have been noted previously in numerous strategy and policy documents, although priorities and trade-offs are seldom made explicit. However, progress towards transformational change to meet stated ambitions tends to be slow, with redistribution of support funding often a stumbling block. Brexit starkly reinforces the need for action but may also offer increased flexibility to address identified challenges outwith confines of the CAP. Stakeholders were in agreement that the status quo was not defendable and that new approaches would be needed to sustain agricultural activities across the region, ideally with the pace of change eased through transitional arrangements.

3.61. The distinctive environmental and cultural characteristics of the H&I region, together with the exposure of its dominant agricultural land use to Brexit-induced pressures, provide a compelling case for policy interventions. The extent to which appropriate support is forthcoming will be a test of political commitments to the economic, environmental and social condition of the region, but also of how well the case can be made to the public for discretionary expenditure on agriculture and natural capital rather than on other competing demands.

[82] The presence of deer may be sufficient to compensate for loss of sheep and cattle in some cases.

Annex A: list of stakeholder interviewees

Argyll & Bute
Bill Dundas, RPID
Niall Campbell, SAC
Jack Fleming, RSPBS
Ross Lilley, SNH (also for Na h-Eileanan Siar)
Davy McCracken, SRUC (also for Highland)
Lucy Sumsion/John Dickson, NFUS (email only)
Russel Smith, SCF
Fergus Younger, SAOS

Highland
Rob Clarke, HIE
Hughie Donaldson, HIE
Derek Hanton, SAC
Brendan O'Hanrahan, SCF
Iain Keith, SCF
Patrick Krause, SCF
Siobhan MacDonald, SAC Consulting
Andrew Midgely, SLE
Neil Ross, HIE
Claudia Rowse, SNH
Colin Simpson, HC
Iain Sutherland, HIE
Ian Wilson, NFUS

Na h-Eileanan Siar
Angus Ferguson, SAC
Donald Mackinnon, SCF
Iain Macmillan, SAC consulting
Jessie Macneil, Crofter
David Muir, SCF
Andy Robinson, RSPBS (also for Argyll & Bute)

Orkney
Ruth Kirkpatrick, HIE
Susan Pirie, SAC Consulting
Kenny Slater, NFUS
Douglas Watson, SAOS

Shetland
Graham Fraser, SAC Consulting (email only)
Jim Nicolson, NFUS
Drew Ratter, ex CC
David Smith, SCF
Jonathan Swale, SNH (also for Orkney)

Annex B: Glossary

BRN – Business Reference Number, farm business identifier used for claiming support

CAP – Common Agricultural Policy

EU27 – European Union membership once UK leaves

FBS – Farm Business Survey

GVA – Gross Value Added (measure of economic activity)

H&I – Highlands and Islands

HIASG – Highlands & Islands Agriculture Support Group

HNV – High Nature Value

LFA – Less Favoured Area

LFASS - Less Favoured Area Support Scheme

LSU – Livestock Units (common measurement of livestock numbers combining different species)

MFN - Most Favoured Nation (tariff rates applied to one trading partner apply to all partners)

Pillar I – income support payments under CAP

Pillar II – rural development payments (e.g. agri-environment schemes) under CAP

SLR – Standard Labour Requirement (estimate of farm labour input)

SRDP – Scottish Rural Development Programme

WTO – World Trade Organisation, international body overseeing trade

Annex C: Other supporting literature

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