Agriculture Reform Programme Regionalisation Options: Interpretation of Outputs Report

An output of RESAS commissioned project Supporting Scotland's Land Use Transformations

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Contents

Acronyms

Acronym	Full Text	Acronym	Full Text
AECS	Agri-Environment Climate Scheme	NECG	New Entrant Capital Grants
ANC	Areas of Natural Constraint	NESUG	New Entrant Start Up Grant
ARIOB	Agriculture Reform and Implementation Oversight Board	P1	Pillar 1
BB	Broadband	P2	Pillar 2
BES	Beef Efficiency Scheme	PGRS	Permanent Grassland
BPS	Basic Payment Scheme	PSG	Project Steering Group
BRN	Business Reference Number	QST	Quantitative Story Telling
CAGS	Crofting Agricultural Grant Scheme	RESAS	Rural and Environment Science Analytical Services
EARS	Economic Advice and Related Services	RP	Rural Priorities (payment scheme)
EFA	Ecological Focus Area	RPID	Rural Payments and Inspections Division
FGS	Forestry Grant Scheme	SAF	Single Application Form
FPMC	Food Processing, Marketing and Co-operation	SBCS	Scottish Beef Calf Scheme
FPS	Farmland Premium Scheme	SFGS	Small Farms Grant Scheme
FWPS	Farm Woodland Premium Scheme	SFPS	Single Farm Payment Scheme
FWS	Farm Woodland Scheme	SSBSS	Scottish Suckler Beef Support Scheme
JAC	June Agricultural Census	SUSSS	Scottish Upland Sheep Support Scheme
KTIF	Knowledge Transfer and Innovation Fund	TGRS	Temporary Grassland
LFASS	Less Favoured Areas Support Scheme	VCS	Voluntary Coupled Support
LMO	Land Managers Options	YFSUG	Young Farmers Start Up Grant

1 Introduction

This document is an output of the policy-led analysis within the Land Use Transformations (LUT) research project (C3-JHI-1) part of the 2022-27 Scottish Government (SG) Strategic Research Programme (SRP). This report presents outputs from the second of the Quantitative Story Telling (QST) processes focused on options for changes to the way farm support payments are distributed across Scotland and between sectors or size classes, referred to here as "regionalisation options".

This document provides a more in-depth interpretation of the policy implications of the regionalisation analyses conducted and is thus a supplement to the project's Synthesis Report. The charts presented within this document are also included, with annotations in the slide decks that accompany the reports – see D8.4 Baselines and Characterisations | Land Use Transformations and D8.6 Specific Scenarios | Land Use Transformations. Methods and data sources are reported in the Synthesis Report. This report has two parts – first characterisation of the baseline *status quo* and second characterisation of alternative Basic Payment Scheme (and related) regionalisation options.

2 Baseline Characterisation

2.1 Areas and Entitlements - Overall

From Figure 1 it can be seen that BPS is paid on a subset of land within businesses – land use area > BPS area > net entitlements (reduced for rough grazing areas) > LFASS area (typically but some LFASS only businesses can see LFASS >BPS areas e.g. for Specialist Sheep). Difference between land use and BPS area can be exclusions (ineligible features) or decisions to have alternative practices like environmental management. The land considered eligible may need to change if management of natural habitats is to be part of future area-based payments. The largest potential for increase in area is the Highland agricultural region. Additional area would reduce overall rates per hectare and see net transfers of funds between regions.

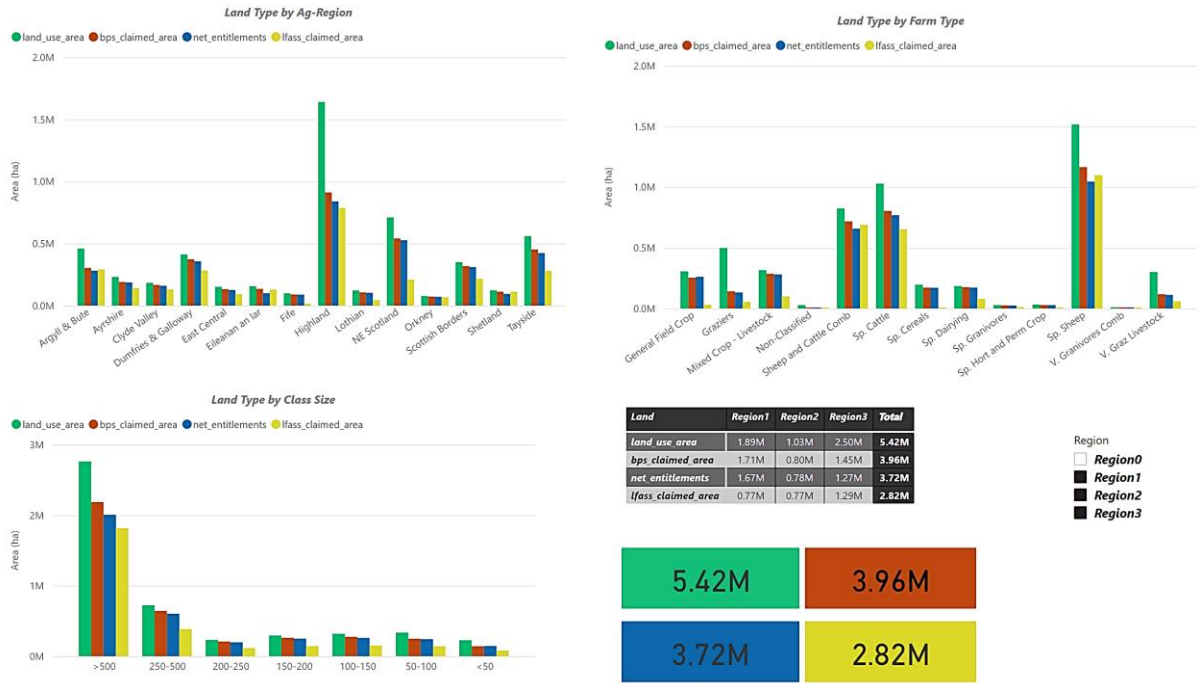

Figure 1

The concentration of land in Scotland into larger businesses, >500 ha, means an area-based system of payments will tend to favour such businesses. Unless schemes guarantee actions commensurate

with area (e.g. enhanced conditionality) then there is the potential for windfall payments. In the absence of conditionality then capping payments or stricter eligibility criteria can limit such windfalls. Eligibility is hard to implement but capping can be a useful mechanism to fund front loading of payments to sustain or allow greater participation of small businesses in schemes (i.e. ensuring payments are always greater than the cost of Tier 1 compliance).

2.2 Areas and Entitlements - Region 1

Focusing on BPS Region 1 land (see Figure 2) this is a limited proportion of Scotland (1.71M ha of 3.96M ha of BPS claimed land), yet this is the land on which production is based so any changes here will have substantial impact on food systems. Given the value per hectare of Region 1 payments and the high proportion of overall BPS budget allocated to this region (87%), their distribution is the key to understanding policy outcomes or expectations for delivery via Enhanced Conditionality. This is presented in Section 2.5.2 *BPS Value*.

Figure 2

Regionally BPS Region 1 highlights NE Scotland, Dumfries and Galloway, Tayside and Borders and sectorally Specialist Cattle. The area of the region is less concentrated in the largest size classes with >250 ha now equally as large as >500 ha but >50% of such land is in the top two classes. A substantial area of BPS Region 1 is LFASS eligible (0.77M ha of 1.89M ha) reflecting the diversity within the region but perhaps also raising questions of either whether the Region 1 definition was too inclusive or how effective the LFASS region is in defining disadvantage.

2.3 Areas and Entitlements - Region 2

BPS Region 2 is differentiated from Region 3 in terms of historic stocking rates but has the same land use basis (rough grazed land). This makes Region 2 a harder to defend regionalisation as over time the definition will less well reflect current practice. Supporting actively managed but marginal farming systems without delivering windfall funding for agriculturally inactive land is a challenge for area-based systems but voluntary coupled support for specific activities may be a more transparent and equitable way to deliver the livestock support intentions of BPS Region 2.

The region is the smallest at 0.8M ha (compared with 1.45 for Region3) and is most strongly associated with Specialist Sheep businesses and is very strongly associated with the largest size classes – see Figure 3. Region 2 is important in several regions in absolute area, but the real importance is seen where it makes up a substantial portion of the overall region mix (see Section 2.5.3 *BPS Region Mix*). Several future regionalisation options have merged BPS Regions 2 & 3.

Figure 3

2.4 Areas and Entitlements - Region 3

BPS Region 3 is extensive at 1.45M ha but note that the total land use area is 2.5M ha so this is the area in which businesses have much larger areas at their disposal than are included within the payments systems as it stands, see Figure 4.

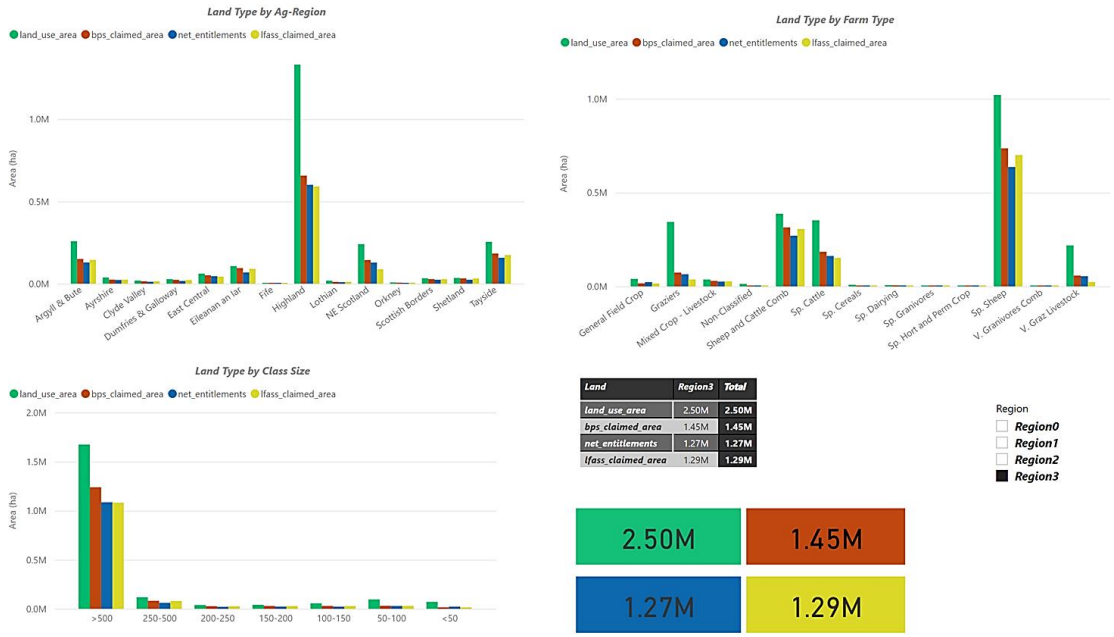

Figure 4

Pressure to include more of this land could be substantial were management of landscape features to enhance biodiversity included within the scope of payments. Such pressures may come from land managers but also from commitments within the Biodiversity Strategy (30 by 30). While the region is associated with specialist sheep it is certainly possible to question the extent and degree of activity present in some locations and whether such activity would be better supported by a VCS scheme with social or environmental objectives. Regionally Highland is dominant, but the region is also a substantial share of Argyll and Bute, (upland) Tayside and (upland) NE Scotland. The concentration of funds within the largest size classes means the justification of funds in terms of income support, food production or similar economic rationales is weak unless effective conditionality measures mean there is demonstrable public good returns. Most of the Region 3 land is in LFASS (1.29 M ha vs 1.45 M ha of BPS claims, but this perhaps again raises questions of how effective the LFASS region is in capturing disadvantage when there are 0.16M ha of Region 3 land outwith LFASS.

2.5 BPS Region Characterisation

These charts focus on the BPS region in terms of area (Section 2.5.1) and value (Section 2.5.2).

2.5.1 BPS Area

The charts in Figure 5 provide a way of seeing the relative sizes of BPS regions and this their potential importance for regions, farm types and size classes.

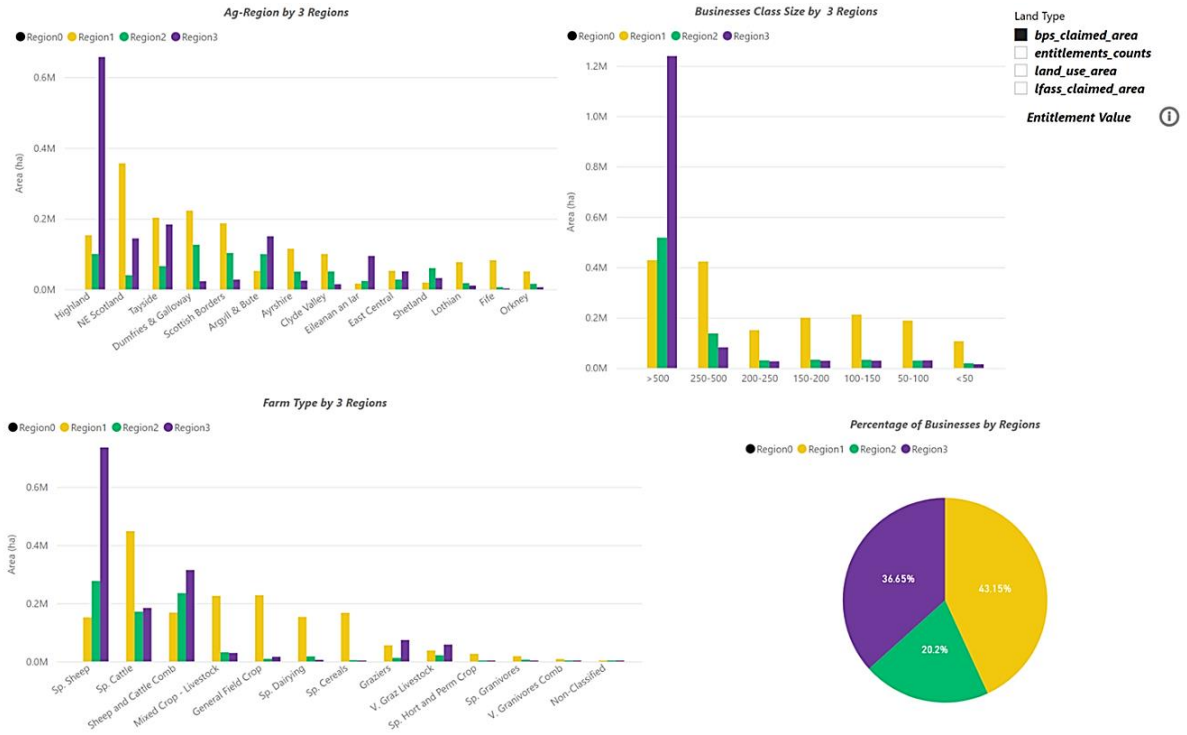

Figure 5

What is perhaps not intuitive is the large size of BPS Region 1 at 43% of the claimed area of Scotland (it is of course a much smaller percentage of the total land area of Scotland - 22%). Region 3 is again emphasised as very distinct, being concentrated in Highland, and/or large businesses with a perhaps nominal assignment to the specialist sheep type. Rigorously implementing regionalisation is challenging with the margins between BPS Region 1 and Regions 2/3 depending on interpretations of "improved" PGRS versus "semi-natural" rough grazing. There is perhaps a case for reinterpreting this boundary to included more of the higher quality and better condition semi-natural grasslands and to

exclude some of the more marginal PGRS where there is limited evidence of active grazing – e.g. from the encroachment of rushes.

2.5.2 BPS Value

The contrast of the BPS value chart (Figure 6) with the area chart (Figure 5) is very clear with BPS Region 1 completely dominant at 87% of spend. This emphasises that any future policy development must, at least initially, focus on how Region 1 funds are made to deliver better for the policy objectives being sought. There is a fundamental question raised here of whether the Region 1 areas can deliver the outcomes sought. For transformation of food production systems to net zero the answer is that Region 1 will have to do the heavy lifting. For biodiversity gain there is certainly potential given the parlous and declining state of biodiversity within land associated with more intensive production methods (mostly BPS Region 1). The size classes emphasise the importance of the relatively small numbers of biggest businesses with both >250 ha and >500 ha classes each having >£60M spend per annum. Here economies of scale in delivering net zero and biodiversity outcomes may mean these businesses should be expected to deliver more than their proportionate share of outcomes.

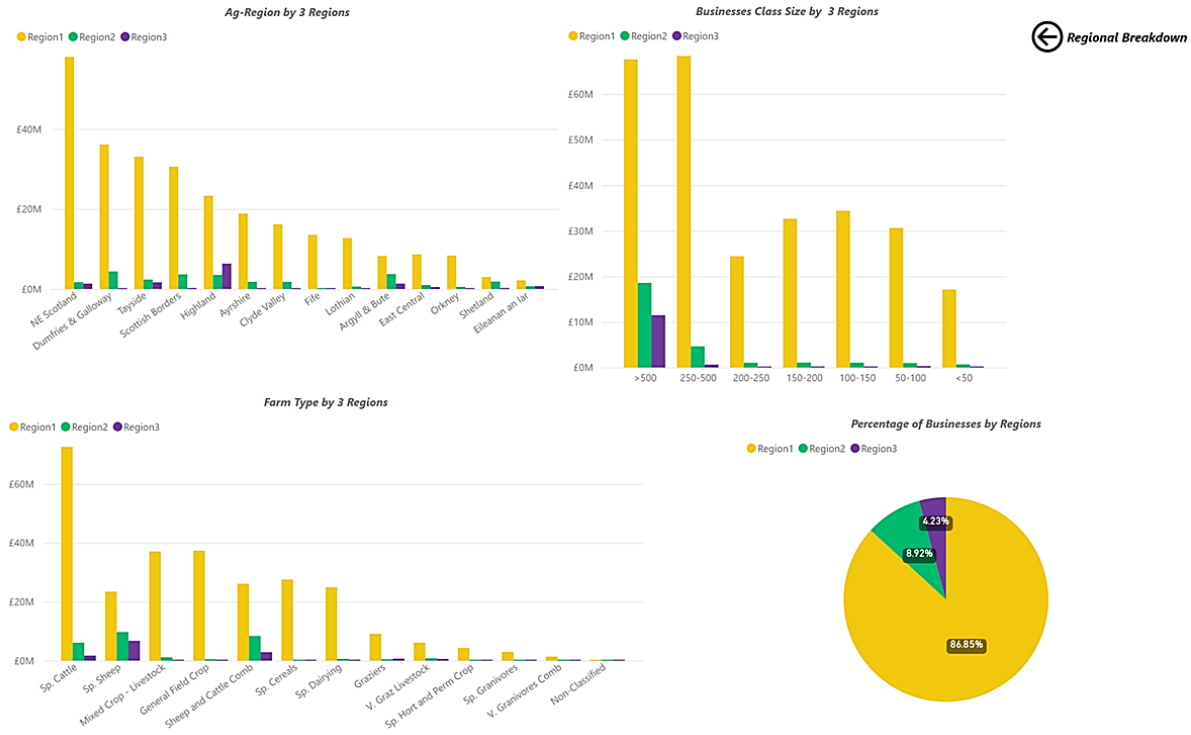

Figure 6

In financial terms, Region 2 and 3 are marginal (but as noted previously can be locally significant). Here the question may be, what is the mix of area-based and other mechanisms suitable to maintain food production capacity and is additional funding needed in the regions to maintain and enhance existing natural capitals in the face of climate change and other pressures.

2.5.3 BPS Region Mix

The charts in Figure 7 provide an alternative view of the BPS region with the per region percentage of area and spend used. The charts are used to make clear the relative importance of the BPS regions within the regions, farm types and size classes. Normalising in this way takes out the effects of region or farm type or size and can aid in interpreting the balance for smaller regions and farm types. In the area-based charts (left), regions with small proportions of Region 1 land are Argyll and Bute,

Western Isles, Highland and Shetland, with Shetland having the largest proportional exposure to Region 2. For some of the smaller farm types, the charts emphasise that Region 3 can be weakly associated with conventional farming – e.g. the Various Grazing Livestock classes (often horses) or Graziers (where it is assumed that the forage is being used by others as no livestock are associated with the business).

Figure 7

The spend based charts (right) re-emphasise that even for regions or types with large exposure to BPS regions 2 and 3, it is how Region 1 is organised that is the key to delivering policy outcomes. Only in Highland and Western Isles is Region 3 funding more than 10% and neither are greater than 20%. Region 2 funding is more significant for Shetland and Argyll and Bute so any future revision to regionalisation options affecting Region 2 likely needs to be checked for these areas. For farm types, Specialist Sheep, Sheep and Cattles and Non-classified have more Region 2/3 exposure but this raises two questions. First, what is nature of the land management activity present in these regions? Second, what is what is the balance of agriculture and other management objectives? Together these questions go some way to assessing how well the current pattern of agriculture-based support aligns with the wider net zero and biodiversity policy objectives.

2.5.4 Other BPS regions analysis

There is frequent reference in policy deliberations (such as the SG Enhanced Delivery Discovery Process or ARIOB meetings) to single region businesses, especially businesses dependent on the rough grazing regions (R2 or R3). This prompted the research team to quantify the number of such

SAF businesses, classified based on their mix of BPS regions. Table 1 presents one possible classification (other threshold values could be used) and this provides some insights on the significance of each of the classes in terms of their share of the area and how many businesses there are of this type. Single region businesses are common with 44% of the population but virtually all of these are Region 1 only, with 41% of the population. For businesses dominated by one region (>90%) there is a further 17% of the SAF population with >90% Region 1. Here the interest is in how best to implement Enhanced Conditionality such that the requirements generated by Region 1 funding are not delivered exclusively on other Regions' land where that greatly diminishes the additionality being achieved. The >90% classes highlight that there are small numbers where Region 2 is dominant (even when combined with Region 3) but that there is an extensive area (27%) and substantial number of businesses (17%) where Region 3 is dominant. This implies the need for region funding, Enhanced Conditionality requirements and measures to be implemented in a way that is compatible with such businesses, so they can make meaningful contributions to delivery of SG objectives. It is worth noting that SAF businesses with >90% Region 3 land will encompass both the very largest "estate" type businesses and the smallest crofts, again emphasising the need for policy options and actions that are meaningful and practical for both scales of business. Other classes with substantial (>10% area or business count) are mixed businesses with >50% Region 1 or Region 2. Mixed businesses imply challenges of how to specify Enhanced Conditionality requirements; the need for decisions on the balance of funds between regions to deliver the expected outcomes from all regions; and for scheme implementation not to be too burdensome or generate unintended consequences while still being effective in mainstreaming agri-environmental measures across all farming systems.

Table 1

Classification (classified in this order*)	BPS area ha	Count BRN	% Area	% Count
R1 Only	643,230	7,399	16%	41%
R2 Only	11,537	135	0.3%	1%
R3 Only	96,674	196	2%	1%
R2/3 Only	7,427	91	0.2%	1%
>90% R1	520,937	3,019	13%	17%
>90% R2	167,603	414	4%	2%
>90% R3	1,085,784	1,186	27%	7%
>90% R2/3	170,694	368	4%	2%
>50% R1	433,309	2,539	11%	14%
>50% R2	574,158	1,661	14%	9%
>50% R3	198,976	680	5%	4%
>50% R2/3	49,780	162	1%	1%
	3,960,107	**17,850**		

2.6 Less Favoured Areas (LFA)

2.6.1 LFA Area

A focus on just the LFA area emphasises the nature of the farming systems present (as represented by the BPS region mix) and thus the challenge of delivering the sought for policy outcomes with the LFA/BPS regions and other policy mechanisms as they stand, see Figure 8. The LFA area is dominated in area terms by BPS Region 3 but in value terms it is BPS Region 1 funding that is in the main the backbone of support within the LFA area, see

Figure 9. The area is dominated in farm type terms by cattle- and sheep-based farm types and such businesses can have both biophysical and socio-technical challenges. Area-based payments, especially those like LFASS now tied to patterns of activity that are decades old, are neither well-tailored to defining relative disadvantage, nor support keystone activities within farming systems, as is possible via coupled support.

Figure 8

2.6.2 LFA Value

In terms of spend, LFASS is more valuable than Region 2 and 3 BPS payments, see again

Figure 9, emphasising that a fit for purpose LFASS type payment could be a significant policy reform priority.

Figure 9

As noted before, LFASS is usually much less significant than BPS Region 1 payments, but for Argyll and Bute it has nearly the same value and it is more than half the total for Highland. For Argyll and

Bute this is a peculiar combination of circumstances, with high LFASS rates (more heavily stocked land) and this stocking associated both with BPS Region 1 and a large share of Region 2 land. Argyll and Bute region is thus the most sensitive region to any revisions of LFASS.

If LFASS is couched in terms of support for the smaller and most marginal farming systems, then the evidence is that on the contrary most support goes to the largest businesses and cattle over sheep. This suggests that either a more targeted approach to income support is needed (e.g. frontloading) or that LFASS funds would be better included in other mechanisms (e.g. VCS), or within schemes with stronger conditionality so that large funding recipients would not make windfall gains by the scheme requiring greater delivery of public good outcomes.

2.7 Upland Sheep Support Scheme (SUSSS)

Since dropping SUSSS payments as part of regionalisation simplification (e.g. by merging Regions 2 and 3) has been previously analysed (see EARS report – Scenario 5, p11), a specific breakdown of SUSSS payment recipients was undertaken, and these recipients can also be specifically identified in any assessment of alternative regionalisation outcomes within the Scenario Builder.

2.7.1 SUSSS Value

The policy intervention logic for SUSSS was to support more active land managers with sheep on the most marginal lands (defined as having 80% Region 3 and no more than 200 ha of Region 1 land). As a coupled payment the scheme farm type outcomes are, as expected, dominated by businesses where sheep are a key enterprise, but from the farm size analysis the vast majority of spend is in the largest >500 ha class (see Figure 10).

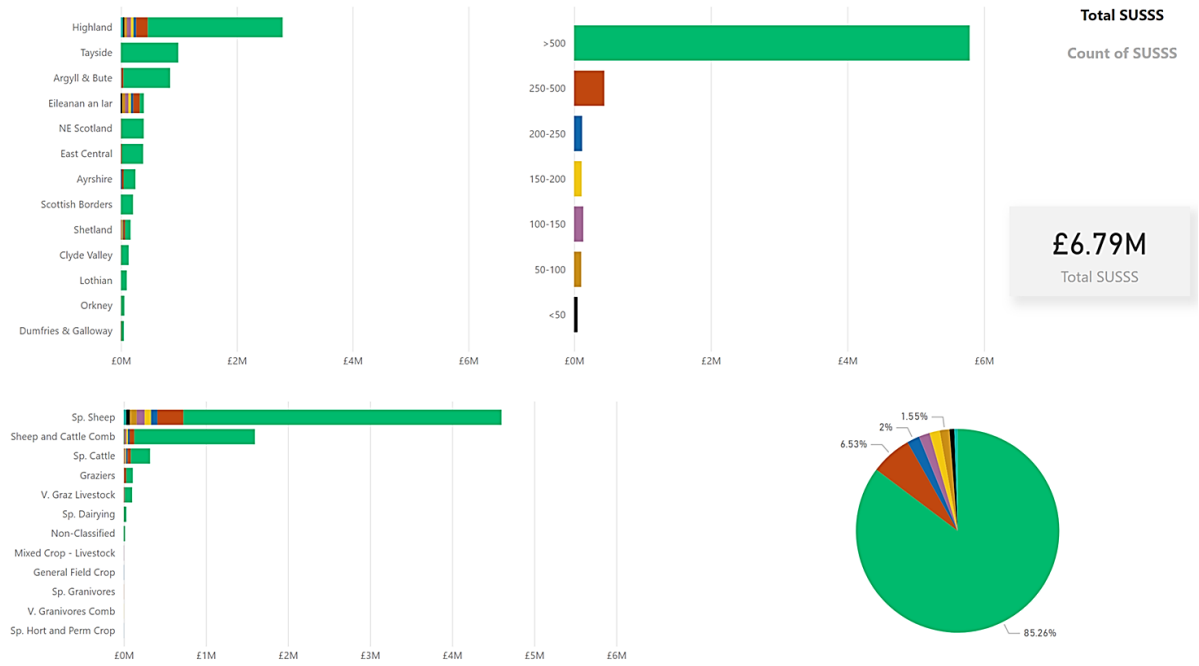

Figure 10

2.7.2 SUSSS Count of Recipients

With such marginal land, extensive businesses may well be a reasonable expectation, but the concentration of funds within small numbers (n=393) of >500 ha businesses rather than the <500 ha businesses (n=678) does mean that the scheme is not supporting the more marginal smaller businesses (see Figure 11).

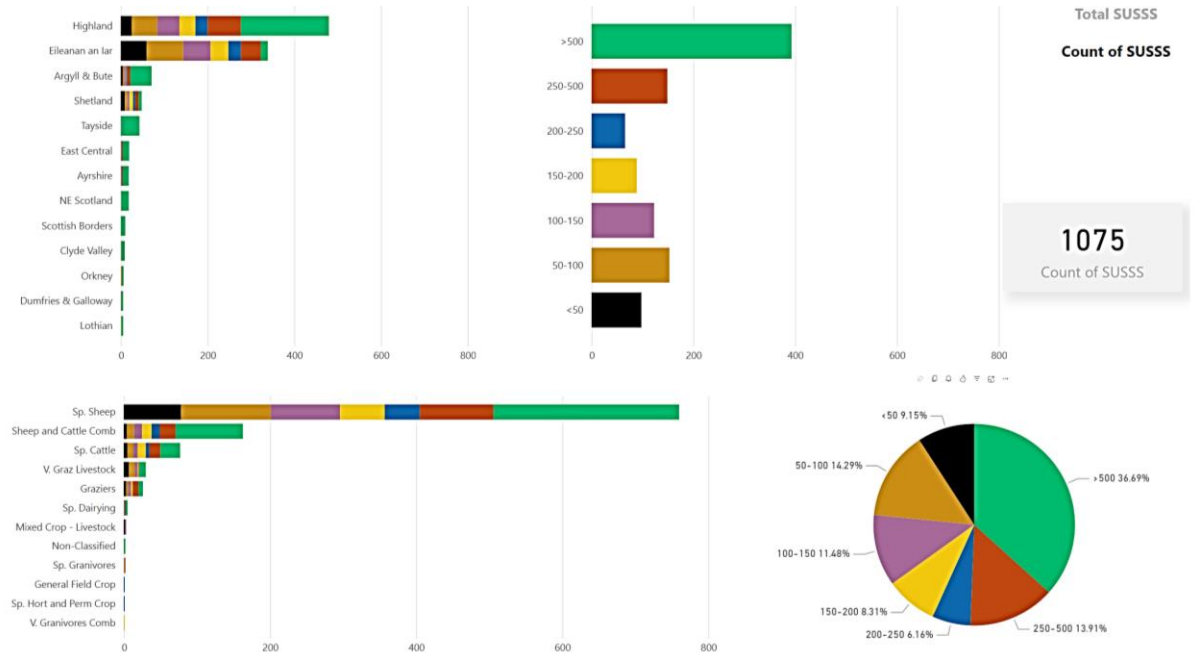

Figure 11

Larger businesses can be argued to be the keystone for maintaining rural services such as veterinarians, but how necessary SUSSS payments are to maintaining viability and activity in such businesses can be questioned as many saw large increases in payments over the 2015 to 2019 transition from historic to area-based payments. The small budgets and small numbers of recipients does raise the question of whether such schemes repay their administrative costs and whether similar outcomes could have been delivered via other mechanisms.

3 Baseline Distributions

As part of characterising the baseline (status quo) the distributions of other phenomena within the BPS regions was also estimated. These area-based distributions can also be linked to the distribution of payments within scenario analyses.

3.1 Peatland Condition

The peatland condition characterisation is significant as peatlands are a large source of GHG emissions. Historic and current agricultural land use can cause degradation (e.g. erosion) or limit the functioning of peatlands (e.g. via drainage). There are substantial areas of peatlands within BPS businesses with ~1.4M ha on BPS claimed land and another ~0.6M ha unclaimed but within BPS recipient businesses (see Figure 12). Most of the peatland in these businesses suffers from some degree of degradation, from more severe (545k ha of eroded and drained peats at a loss rate of 5 tonnes of C per ha per annum) to less severe (214k ha of heather dominated drained peats at a loss rate of 2 tonnes of C per ha per annum). The area of fully functioning near natural bog is 562k ha and since this may be vulnerable to climate change then climate adaptation management interventions may be needed to build longer term resilience.

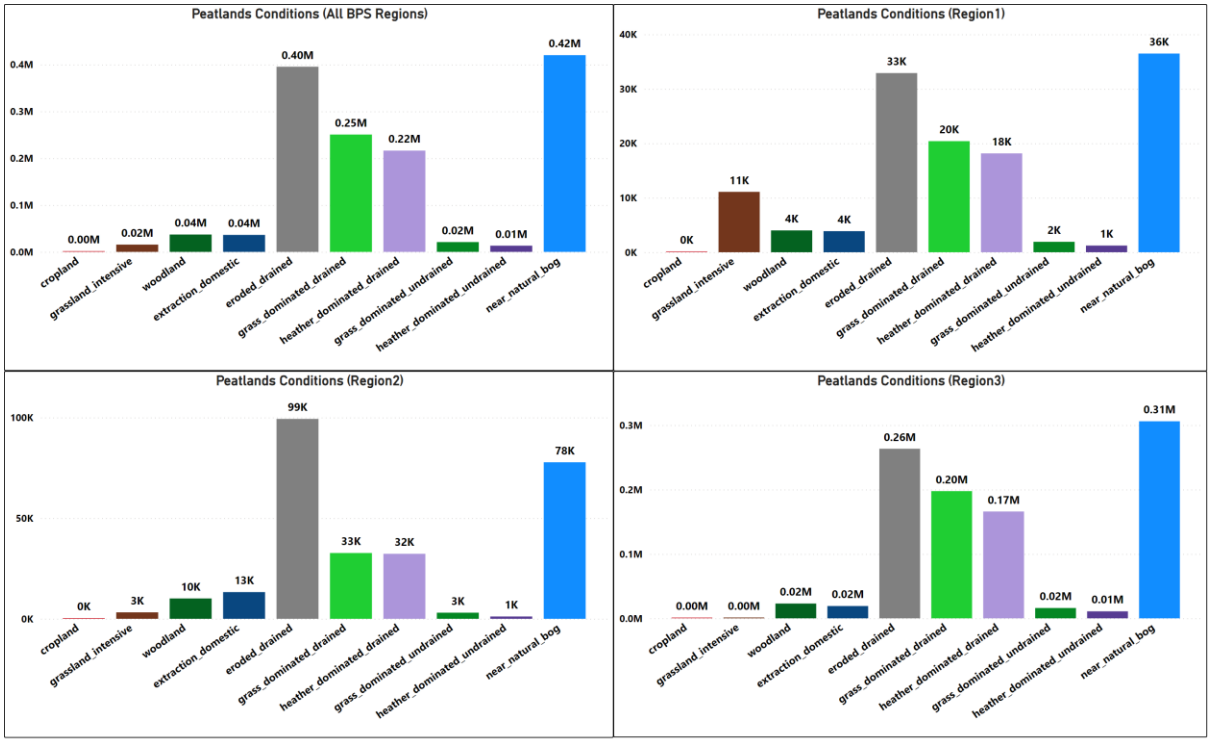

Figure 12

In terms of BPS regions, there is some area of peatlands identified in Region 1 (129k ha) but this may be an artefact of different scales of mapping being combined. Where any peatlands in Region 1 or elsewhere are being subject to more intensive agricultural uses (potentially unwittingly) then changes in management are likely to need to be supported. For Regions 2 and 3 the peatland areas are 268k ha and 986k so in the main peatlands are a Region 3 issue, but limits on more intensive grazing may need to be reconsidered if stocking rates are continuing to cause erosion or limit natural regeneration of vegetative cover. With ~10,000 businesses with some degree of exposure to peatland there is certainly an opportunity to consider if funding for BPS Regions 2 and 3 could be made conditional on undertaking some aspects of peatland restoration or management to complement the larger scale restorations funded through PeatlandAction. Were peatland restoration

or management to be prioritised then this may raise questions on whether the share of the overall budgets devoted to Region2/3 is adequate (13% of BPS).

See also reporting of peatlands and payments analysis – Phase 1 and Phase 2.

3.2 Land Capability for Agriculture

Land capability for agriculture reflects the range of uses to which land can be put with low numbered classes having the greatest flexibility (Prime Land is defined as LCA1-3.1) and high numbered classes (LCA 6+) typically being unimproved, semi-natural rangelands, see Figure 13. Capability is assessed against biophysical criteria (climate and soils) with economically viable levels of technology and other agricultural inputs assumed. The LCA mix for the BPS claimed areas is similar to that for Scotland as a whole but includes nearly all the land with the best capability, see Figure 13. The LCA mix across Scotland highlights the limited areas of the higher potential land (LCA class 1-4.2) with large areas with more limited potential (LCA class 5+). BPS Region 1 has nearly all of the LCA class 1-4.2 land with BPS Region 2 having the LCA class 5 (Improved Grassland) and LCA class 6 (Rough Grazing) and BPS Region 3 being nearly entirely dominated by the lowest agricultural potential class (LCA6.3). The LCA perspective on regionalisation informed the development of the BPS regions and emphasises that while it is possible to divide Scotland into two regions (i.e. combining BPS 2 and 3) any such division has a fairly broad range of capabilities and the boundary will be imprecise.

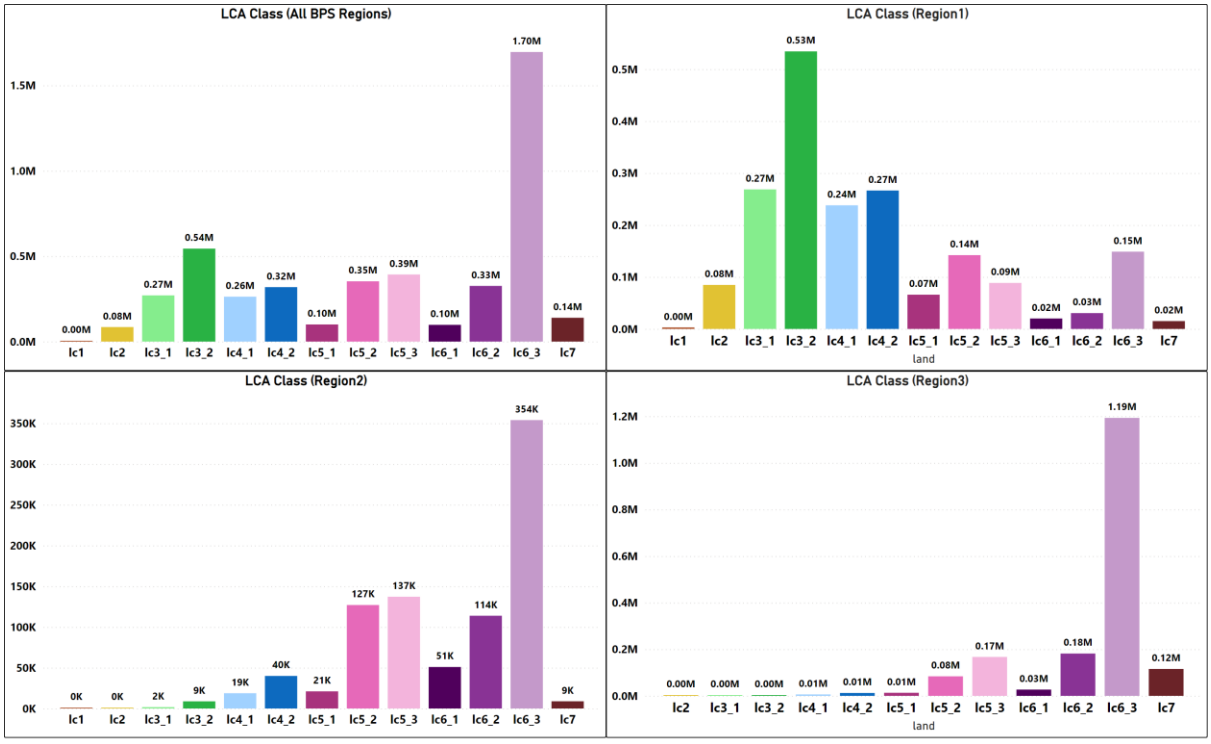

Figure 13: LCA – Prime land (classes 1-3.1), Mixed (classes 3.2-4.2), Improved Grass (classes 5.1-5.3), Rough Grazing (classes 6.1-6.3), Very Limited Agricultural Value (class 7). Note large differences in y-axis ranges.

Note that this analysis has used the published LCA mapping, but this used climate data from 1958-78 so is substantially dated but is the mapping typically referred to by land agents in transactions and thus familiar to land managers. Updated versions of the LCA have been created and are awaiting peer review with details of the analysis and examples of the changes from the 1958-78 period to 1990-2020 presented as a story map.

3.3 Land Cover

While the land capability for agriculture implies that there is a diversity within the BPS regions this is not nearly as apparent when a land cover view is taken. The land cover view is significant as this is the basis for BPS regionalisation used in the 2015 reforms. From Figure 14, for BPS the primary differentiation is between rough grazing (RGR) in BPS region 2 and 3 and all other covers in BPS Region 1. This again highlights the limited basis for distinguishing between BPS region 2 and 3 except in the practice of stocking where support for production is the goal, and this goal may be better handled via coupled support schemes. For BPS region 1 there are 48 land cover codes used, but this diversity occurs across almost insignificant areas, with BPS region 1 dominated by cereal production, temporary and permanent grass (>5 years).

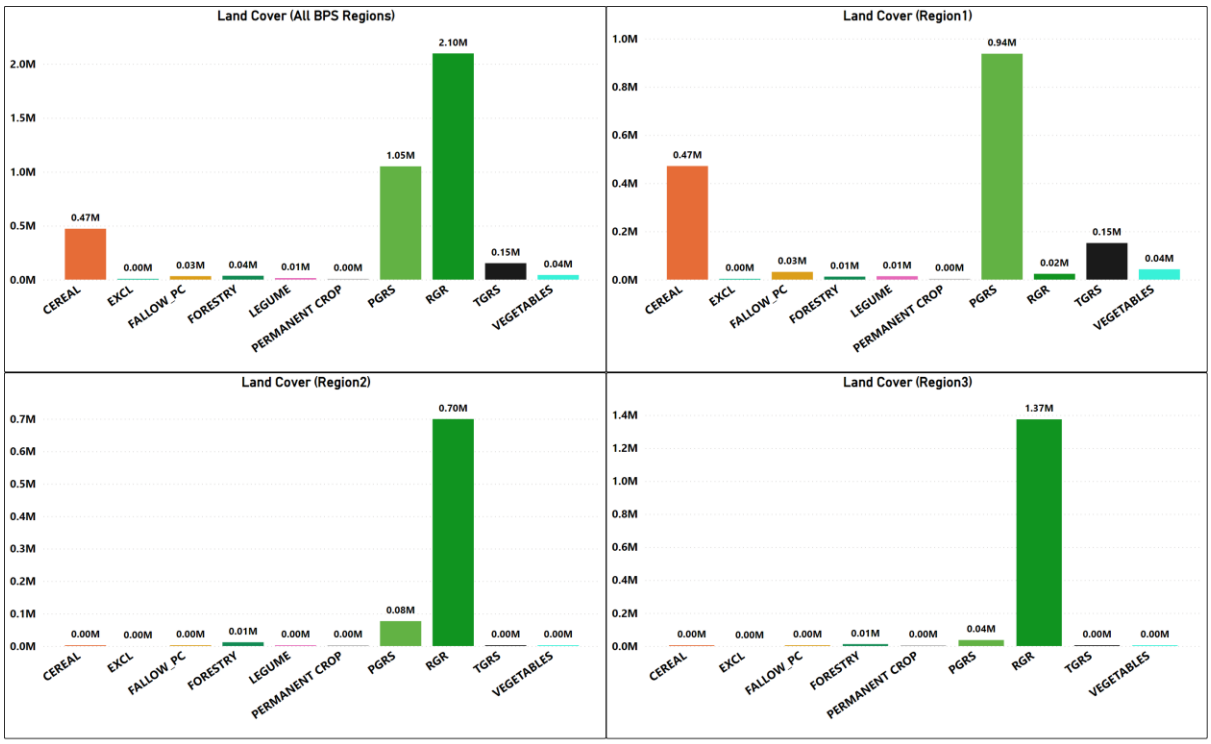

Figure 14: Land Cover by region – note the lack of distinction between Regions 2 and 3.

The challenge with such broadly defined payment regions is that while they have the desirable feature of administrative simplicity, on their own they struggle to deal with responding appropriately to the diversity of circumstances within the region. Particularly for livestock-based systems any land-based regionalisation fails to consider how the land is used rather than just what covers the ground. Grass receiving 300 kg/ha of N fertiliser to support high output dairy systems presents very different challenges from marginal grasslands with stock being used for grazing to promote environmental outcomes. This means there can be both windfall gains and insufficient support. This implies the need for greater consideration of mechanisms that can differentiate within regions such as front-loading, capping and more sophisticated eligibility criteria. The balance of budgets between regions and other schemes would also be usefully reconsidered.

3.4 Land Activity

For BPS regionalisation, activity has been used as an eligibility criterion, with Figure 15 showing the activity classes present overall and in each BPS region. For businesses receiving BPS there are 1.3M ha of land that have no or null (no data) activity. Other than arable which is restricted, by definition, to BPS Region 1, all the other classes are present across the regions. That alternative practice, (using

environmental audit to prove land is GEAC compliant) is present across all regions belies the idea that allowing this activity as an eligibility criterion would lead only to the inclusion of unproductive and unmanaged hill land.

Activity is not trivial to define and administer for livestock systems where the land cover alone is not necessarily sufficient. Stocking rates have long been used for eligibility, but it is acknowledged as challenging to define appropriate universally applicable thresholds, with many derogations needed when stocking is needed for environmental outcomes but at very low levels. Regular re-baselining to reflect changes in practice are also necessary. In an EU or WTO context alternatives to stocking rate are also mandatory which was the reason for the need to make alternative practices available in the 2015 regionalisation. One alternative may be in tying eligibility to undertaking activity that maintains capacity for food production. Such capacity is the public good, not the production activity *per se* that should be based on responding to market demand. More broadly, activity can usefully be linked with the concept of additionality. Here eligibility could be linked to the need to demonstrate that activity on land included is delivering to at least one outcome from the basket of outcomes sought by government. The need here is to be clear on what is the outcome of activity, and this is not a trivial task. Otherwise, there is the danger that Enhanced Conditionality, in encouraging a broader range of eligible activity to deliver the outcomes sought then government, ends up paying for outcomes that would have been delivered by nature in any case.

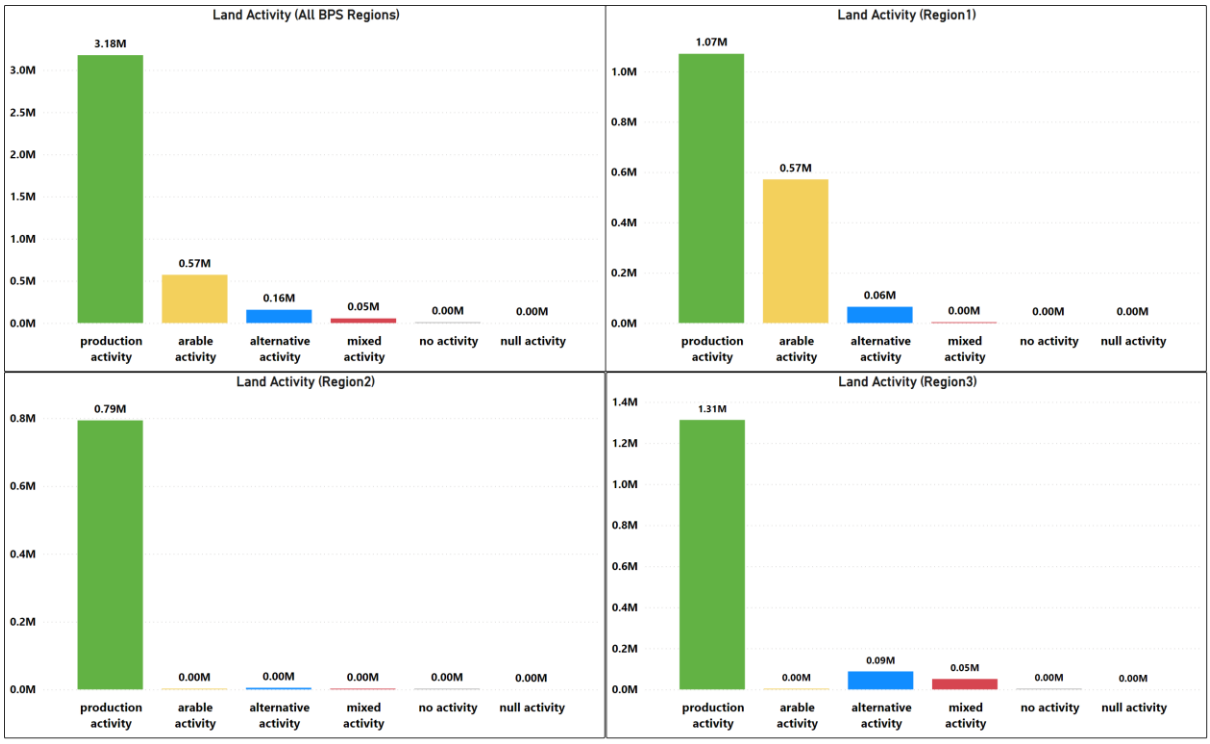

Figure 15

3.5 Disadvantage and Fragility

Disadvantage and fragility are both concepts that have been used in regionalisation of LFASS payments and have been considered in 2016 for the Areas of Natural Constraint a replacement for LFASS, with the breakdown for BPS regions presented in Figure 16

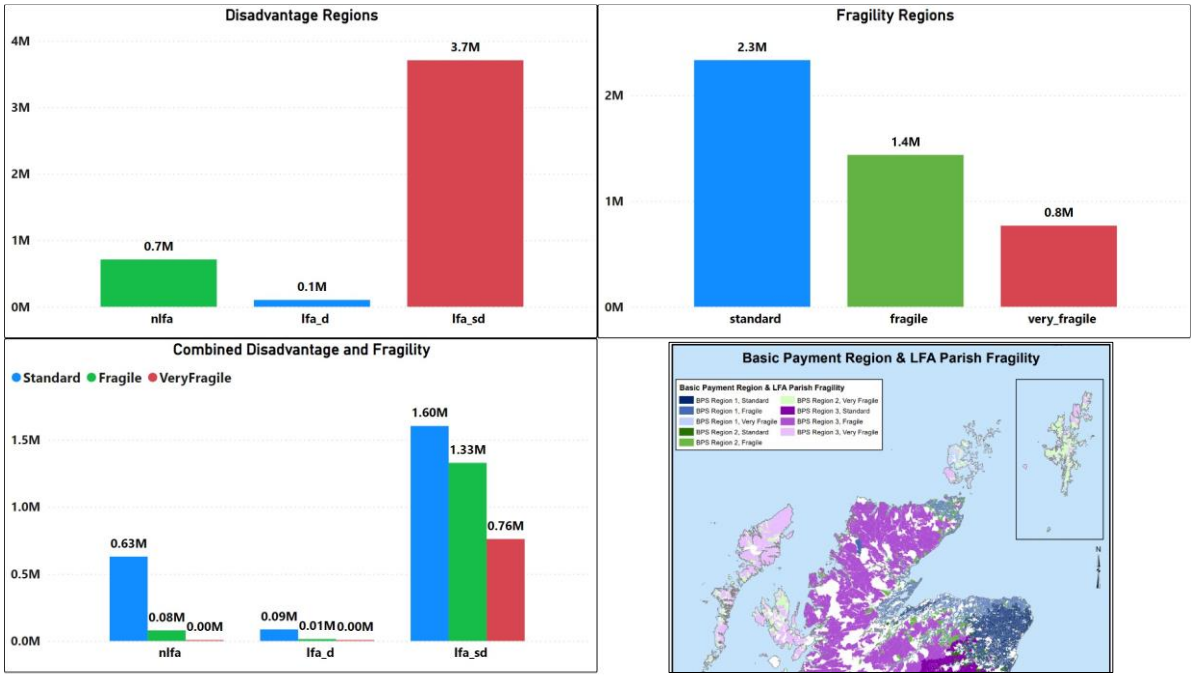

Figure 16: Disadvantage and Fragility regions areas – map shows a combination of BPS regions and fragility previously considered in the 2016 Areas of Natural Constraint (ANC) analysis.

Disadvantage is defined in biophysical terms and using EU defined definitions and rules, with some socio-economic fine tuning, but is not an effective way to represent relative disadvantage within Scotland. In effect nearly all of Scotland is classed as Severely Disadvantaged meaning funds are spread over too large an area with the most severely disadvantaged not sufficiently supported and those with BPS Region 1 land receiving windfall benefits. The Disadvantaged region is too small at ~103k ha, to have a meaningful role and could likely be excluded from payment without issue. Fragility is defined in terms of peripherality and has a much stronger ability to differentiate socio-economic challenges to farming practice. The restriction of very fragile to islands only (especially including islands that are now connected by bridges) is problematic as some islands have better service and access than the most remote Mainland areas. Combined, BPS regions and Fragility classes generate nine regions that do a better job of elaborating the relative levels of advantage for conducting agriculture within Scotland. See page 10 of the ANC Map Book.

3.6 Urban Rural Classification

The urban rural classification is included as it classes rural areas as accessible, remote and very remote. This classification is more transparent in its methodology than is Fragility – with a focus on access to services and recognition of the importance of access to both large urban centres but also the key role of small towns. The accessible rural areas are particularly helpful in highlighting where there are the strongest urban rural interactions and where commuter populations may influence the norms and expectations of land management. Accessible rural areas will also have a wider range of off-farm opportunities – i.e. pluriactivity at individual or household levels with implications of dependence on agricultural incomes and viability. Across the BPS regions there are distinct differences.

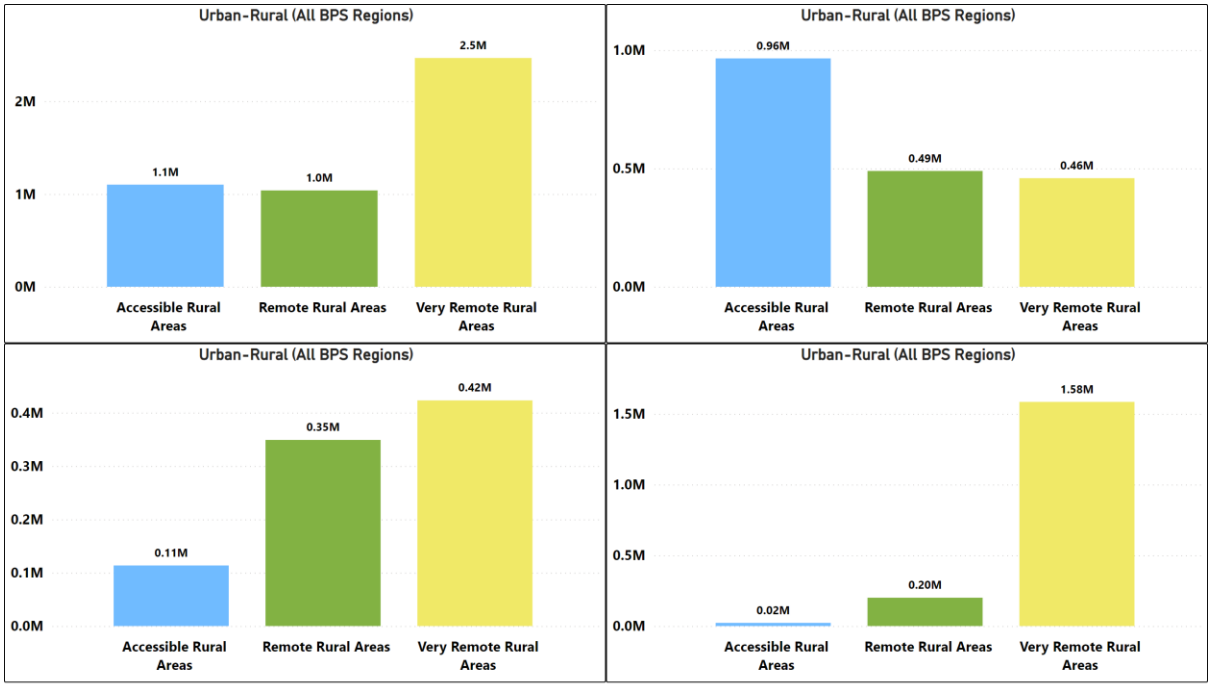

Figure 17: Accessible – 30 minutes to a 10,000+ population settlement, Remote Rural – 30-60 minutes, Very Remote Rural >60 minutes.

Figure 17 highlights that 90% of accessible rural land is in Region 1, so ironically the land with the greatest potential for farming, and the highest levels of support payments, also has best access to urban centres, and thus on- and off-farm diversification. Region 2 is a transition region with a closer balance of remote and very remote land, but Region 3 is near exclusively very remote. The combination of remoteness and limited agricultural potential implies the greatest challenges for farming in these regions and this is compounded by having the lowest levels of BPS payments per ha. This means that unless businesses are very extensive then support payments are unlikely to have significant impact either on business viability or on adoption of measures likely to deliver the climate change and biodiversity outcomes sought.

3.7 Socio-economic performance (SEP)

The socio-economic performance (SEP) mapping is an index based on multiple measures of socio-economic performance. The SEP quartiles have been used as a framework for assessing where support payments have been distributed (see an ARD stakeholders presentation) with the intervention logic that areas with more limited socio-economic performance might be higher priorities for income supporting funding. For this analysis only rural areas (datazones) have been included in the analysis.

The overall pattern of land areas per SEP quartile highlights that agricultural land tends to be associated neither with the best nor worst performing areas – quartile two and three (64% of the All Regions area) see Figure 18. The highest and lowest performing areas are typically urban. Including urban data zones would mean 84% of land is in quartiles two and three. BPS region 1 has 0.59M ha of the land in the top quartile (51%) but BPS regions 2 and 3 are >50% of land area in all other quartiles. Note of course that since agriculture and related processing and services are typically small parts of local economies, the linkage of SEP with BPS regions needs to be treated cautiously.

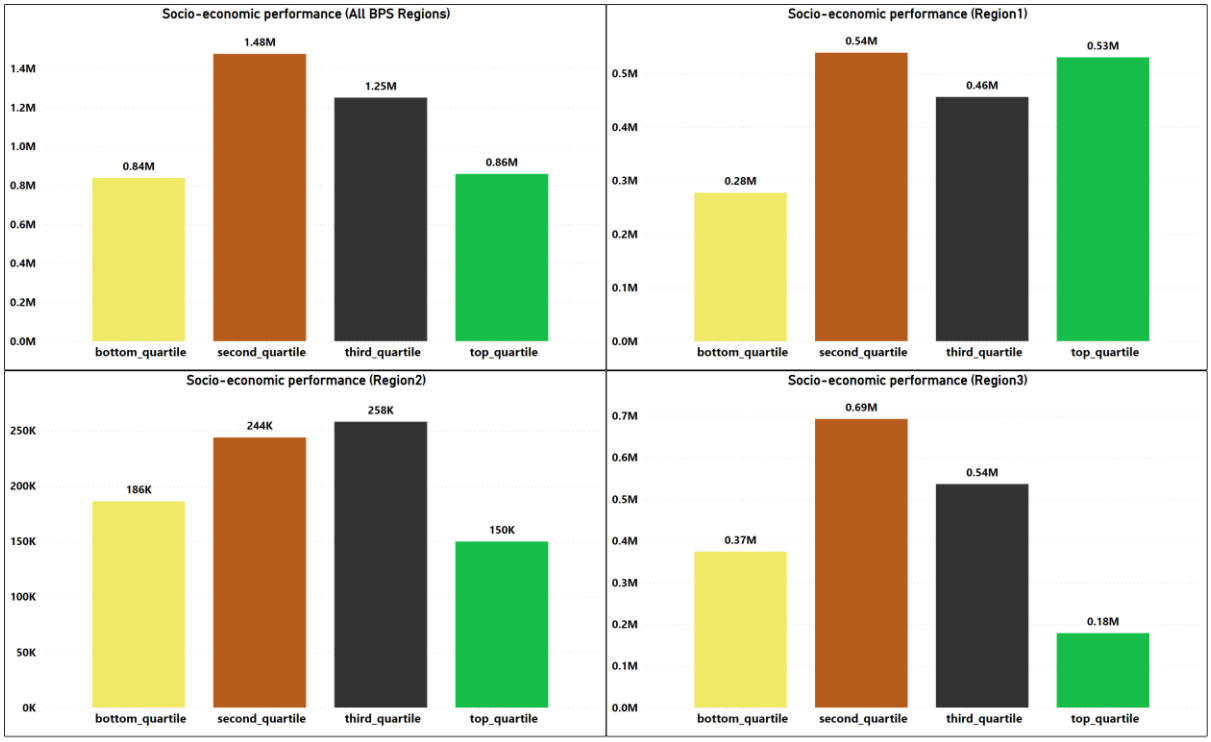
Socio-economic performance (All BPS Regions)
1.4M
1.2M
1.0M
0.8M
0.6M
0.4M
0.2M
0.0M
0.84M
1.48M
1.25M
0.86M
bottom_quartile
second_quartile
third_quartile
top_quartile
Socio-economic performance (Region1)
0.5M
0.4M
0.3M
0.2M
0.1M
0.0M
0.28M
0.54M
0.46M
0.53M
bottom_quartile
second_quartile
third_quartile
top_quartile
Socio-economic performance (Region2)
250K
200K
150K
100K
50K
0K
186K
244K
258K
150K
bottom_quartile
second_quartile
third_quartile
top_quartile
Socio-economic performance (Region3)
0.7M
0.6M
0.5M
0.4M
0.3M
0.2M
0.1M
0.0M
0.37M
0.69M
0.54M
0.18M
bottom_quartile
second_quartile
third_quartile
top_quartile

Figure 18

4 Scenario Analysis

All scenario analysis uses 2022 data updating the previous analysis within the EARS project.

4.1 BPS Scenario S4 – 2 Regions - Merge Regions 2 and 3

4.1.1 Scenario Definition

BPS regions 2 and 3 (both predominantly rough grazing) are merged into a single region with a combined budget. The budget used for the Scottish Upland Sheep Support Scheme is added to the new regions budget. This was EARS Project Scenario 5.

4.1.2 Scenario Rationale

The rationale for this scenario is one of fairness and simplification. While there are some biophysical differences between current Region 2 and 3 the main differentiation is based on historic stocking rates. Eliminating linkages of regions to stocking rates and especially historic ones is desirable for both fairness and administrative simplicity. The differences in payment rates between Region 2 and 3 could mean that the same Enhanced Conditionality measures enacted would in-effect be paid at different rates per ha or that current Region 3 area would have such limited capacity to deliver via Enhanced Conditionality as to render the scheme meaningless. There were also concerns raised on whether differentiating between current Region 2 and 3 was legally defensible given the challenge to the Welsh government "hill line". Without the region differentiation the current basis of SUSSS eligibility is removed (80% Region 3 and <200 ha Region1), but there were also questions raised on whether the outcomes of SUSSS (and indeed Region 2) might be achievable by other means.

4.1.3 Scenario Outcomes – Change in Payments

The main scenario dashboard summarises the outcomes using agricultural region, farm type and size class (BPS area in ha) – see Figure 19.

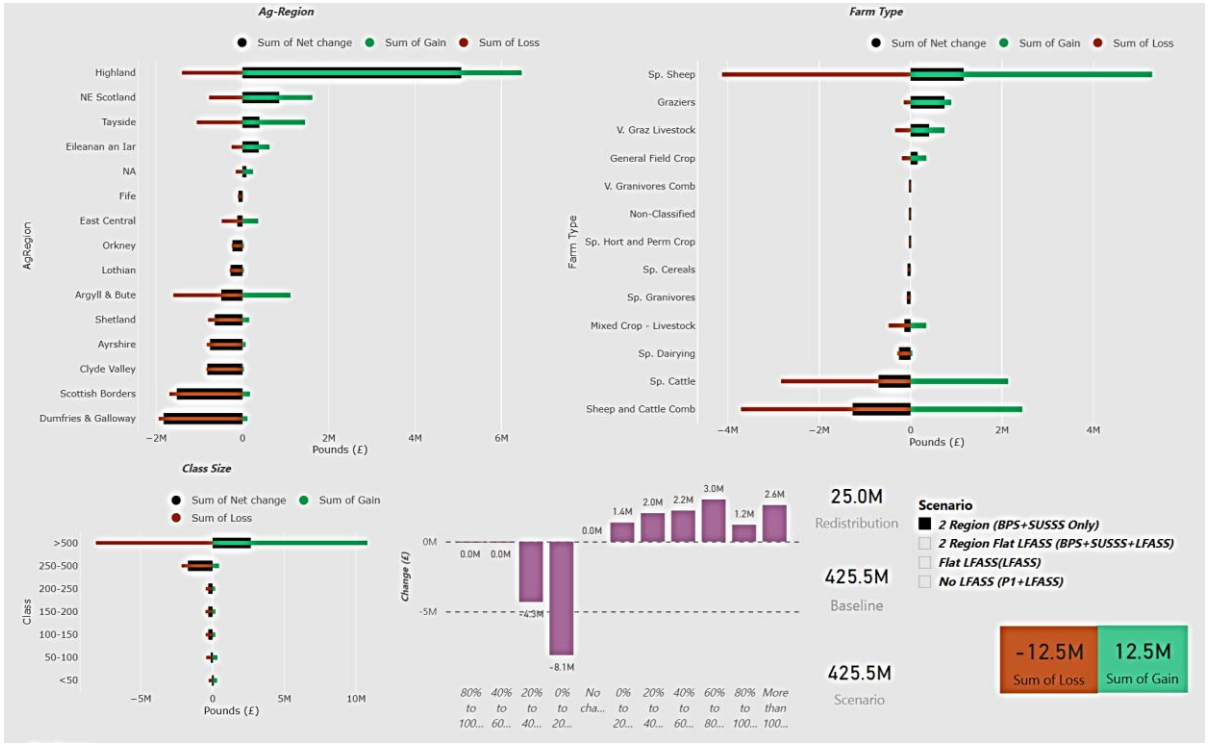

Figure 19

For this scenario the overall redistribution is limited (25M£ of 425M£) since only Region 2 and 3 and SUSSS change – and their budgets are a small part of the overall BPS budget. Over 7,000 businesses see no change and the Region 1 payments for all businesses remain the same (87% of funding). The first dashboard highlights that there is limited between region, farm type and size class change (compare the net change per line with the gain and loss for the same line with the latter indicating the degree of change within lines). This kind of redistribution is characteristic of previous changes where payments linked to historic stocking are "flattened" across a wider population with a mix of gains by lower intensity and losses by higher. Regionally areas with the more substantial shares of Region 3 have net benefits but there is still some within region redistribution. Regions with net loss have almost no offsetting gains. The gains in Highland are nearly all in 500+ ha businesses and overall, the 500+ ha class sees nearly all of the net gains. It needs to be noted that 500+ ha of near exclusive Region 3 is not necessarily a large business in financial terms, but some care is perhaps needed to balance expectations of delivery via Enhanced Conditionality for the largest businesses within the 500+ ha size class.

A second dashboard provides two views on the distribution of changes in payments, first as the magnitude of change (£) see Figure 20 - and second as the relative change (% of current payments) see Figure 21. In absolute terms the changes are heavily concentrated at greater than £10k gain or loss, while noting that the numbers of businesses are small at 220 and 310 respectively. For the relative change, most losses are <20% (6,826) with <40% more limited (837, concentrated in 500+ ha specialist sheep businesses but across most regions).

Figure 20

Figure 21

4.1.4 Options for mitigation of negative impact

Mitigating the changes in the scenario may not be needed as the redistribution is quite limited. Capping would potentially limit gains seen as windfalls (by larger and less agriculturally active businesses). With Enhanced Conditionality there is an argument that larger scale businesses may be better able to deliver the outcomes sought and indeed might justifiably be required to deliver more per pound of support than more modest business (economies of scale for environmental delivery). The benefits and limits of capping need to be further investigated.

Where the loss of SUSSS is a significant issue then it could be justified to have a replacement scheme but perhaps one that considers the role of sheep in the rural economy or in delivery of ecosystem services via grazing for biodiversity outcomes (i.e. tailored forms of VCS).

Where the changes have disadvantaged small holdings then there is potentially a case for a specifically tailored opt-in schemes for small-holders, perhaps with some degree of front loading to fully offset compliance costs and using enhanced GEAC rather than Enhanced Conditionality measures. With 91% of funds going to the top 50% of businesses there is potential for substantial simplification gains and ensuring engagement by extending the reach of a small-holders scheme to the bottom 50% of recipients.

4.2 BPS Scenario S6 – New 3 Region

Earlier deliberations as part of the EARS project suggested that as well as merging BPS regions 2 and 3 (i.e. Scenario 4) it may be desirable to split the current BPS Region 1 and to assess the areas relevant to the Enhanced Conditionality measures then being considered (see EARS report – Scenario 6, p11). Unless paid at different rates, such a split would not change payments per business, but rather form the basis of guidance on the Enhanced Conditionality requirements per business. This would seek to avoid the potential for Enhanced Conditionality requirements to be delivered exclusively from areas with lowest opportunity costs, where this might severely limit the public goods gained. This also means that a full scenario payment analysis was unnecessary and only the basis and relative size of the two new regions was analysed.

Figure 22 presents a Grassland and Arable split within BPS Region 1, where the key decision has been to include temporary grassland (TGRS) in the arable class. This is best justified when the TGRS land is seeing more regular tillage with the TGRS being part of a grass break between cropping. Where the presence of TGRS is generated by a fodder or forage crop or by reseeding then depending on the interval between reseeding them it may be better to consider such TGRS as part of grassland/livestock systems. The TGRS as Arable split means a 0.97M ha Grass to 0.73M ha Arable split whereas TGRS as Grassland would mean a 1.14M ha Grass to 0.57M ha Arable. A preferable option may be to split TGRS based on the rotation within which it occurs. While the balance between Grass and Arable regions is important, of greater importance is that the Enhanced Conditionality measures that deliver most significant public benefits within each region are taken up and implemented effectively.

While there is no suggestion (to date) of using a differential in payment rates between the split BPS regions, this mechanism could potentially be used to better target outcomes in arable dominated regions or for the livestock/permanent grass regions. For the latter, this would also need to consider any changes to voluntary coupled support and/or disadvantage payments. This is elaborated further in the next two sections, 4.3 *Scenario – FlatLFASS* and 4.4 *Scenario – 2 Region - No LFASS*.

Figure 22

4.3 Scenario – FlatLFASS

4.3.1 Scenario Definition

This scenario takes the current LFASS budget and allocates it across all the claimed LFA area – this FlatLFASS scenario is the simplest flat rate as previously tested for BPS (EARS Scenario 1, p7). The analysis presented here is, though, just for the LFASS budget not combined with other payment schemes.

4.3.2 Scenario Rationale

The rationale for FlatLFASS is again based on delivering enhanced fairness and simplification. LFASS has been repeatedly questioned in terms of effectiveness in several reviews despite being seen as highly desirable by the sector. While LFASS is an area-based payment the underlying calculations per business to set payments per business are more complex than BPS and incorporate stocking rate data that is dated. This means payments to businesses do not reflect current practice. Updating (re-baselining) LFASS is possible but the age of the IT infrastructure supporting LFASS may make this undesirable. There are thus potential benefits from replacing LFASS with a new, revised, or simplified, disadvantage-based, scheme or delivering the outcomes of LFASS via other means.

Given previous analyses of simple "flattening" this scenario was not anticipated to be a viable policy option but was rather exploratory to quantify the magnitude of effects that would need to be mitigated by other means.

While not considered by the FlatLFASS scenario, the definition of the LFA region itself has also been questioned since it does not well differentiate the degrees of disadvantage and potentially delivers windfall benefits to some businesses. Support for livestock rearing may be better delivered via VCS or other technical efficiency support schemes, preferably with additional conditionality to also deliver public good outcomes.

4.3.3 Scenario Outcomes – Change in Payments

The dashboard in confirms that FlatLFASS has all the anticipated negative outcomes of simple flattening options. The scenario has high levels of redistribution (41M£ against a budget of 61M£) with large transfers between farm types, regions and size classes and substantial within class redistributions – see Figure 23. All of these changes are hard to present as making LFASS more effective or delivering across the range of policy objectives sought. In particular, the near £10M transfer between specialist cattle and specialist sheep farm types would need careful consideration of how this might interact with an Enhanced Conditionality model.

The distribution of change in payments dashboard highlights that the dramatic movements in farm types and regions are largely driven by changes for the largest recipients (14.56M£ extra for 380 businesses gaining more than £10k versus 6.99M£ loss for 406 businesses losing more than £10k) – see Figure 24. The percentage-based view of change also highlights the degree of change with 2,239 businesses doubling their LFASS payments (+100%) and 4,465 losing between 40% and 80% of LFASS value - Figure 25. This change highlights both the degree of concentration of payments in the existing LFASS and that unlimited area-based payments may not deliver well the income support or other objectives of LFASS without other mechanisms.

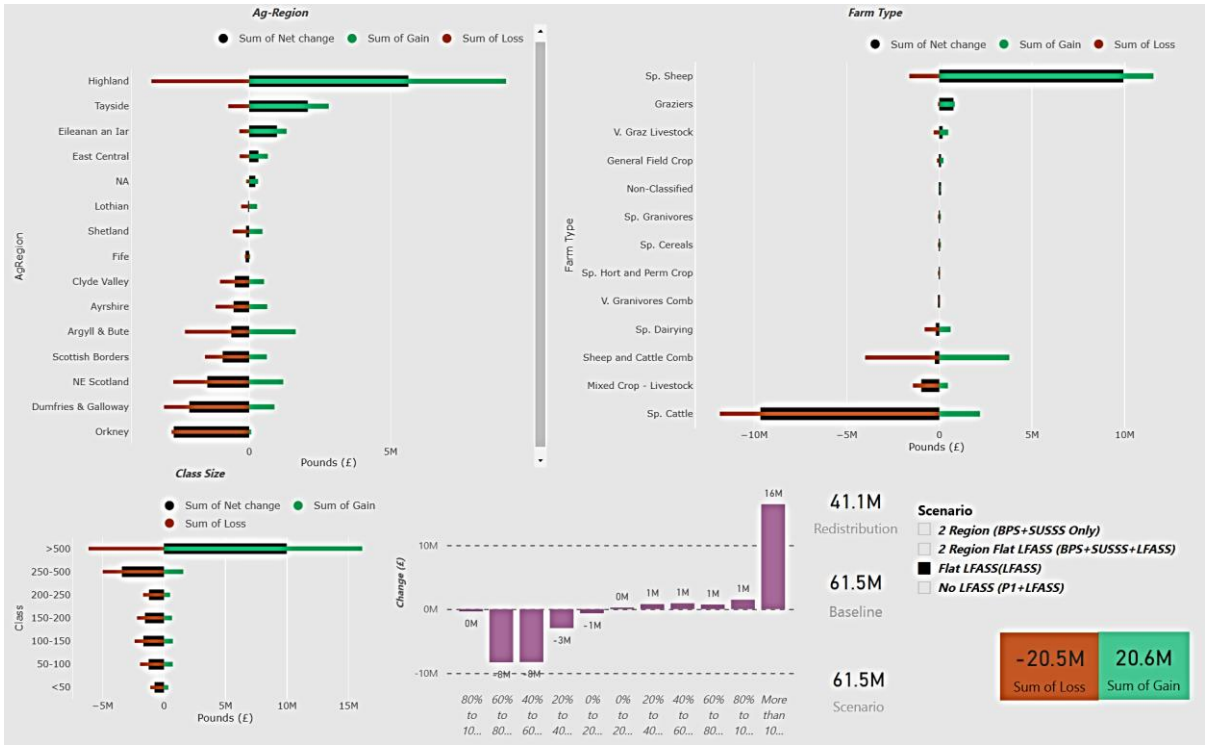

Figure 23

Figure 24

Figure 25

4.3.4 Options for mitigation of negative impact

Mitigating the negative outcomes from FlatLFASS could be achieved via capping of the payments to the largest businesses, or just capping payments to the new, merged, Region 2 area, but noting the caveats on capping expressed previously. The redistribution from smaller to larger businesses could be offset by front loading. The negative outcomes for specialist cattle businesses could, if necessary, be offset by increased use of VCS, in particular for island cattle.

4.4 Scenario – 2 Region - No LFASS

4.4.1 Scenario Definition

Merge BPS Regions 2 and 3 and their budgets – drop SUSSS and add the budget to the new merged Region 2 (~£30/ha) – simplification and fairness.

Use the LFASS budget to increase both Beef Mainland and Island payment rates by ~100% - to ensure resilience or viability of suckler herds. Beef Mainland has ~£68M or £204 per animal with Beef Island ~£12M for £294 per animal.

Use the remainder of the LFASS budget to top up the new merged Region 2 budget (£51M to £81M, so £40/ha) – disadvantage payment.

Limit the payments for the new merged Region 2 to ~£100,000 – limit windfalls for the most extensive businesses.

Front load all BPS payments up to 55 ha by 150 percent – engagement and compliance offsets.

4.4.2 Scenario Rationale

This scenario combines the simplifications of the 2 Region model with a more sophisticated realignment of budgets and funding mechanisms to render LFASS unnecessary. The scenario is partly a demonstration of the analytical capability of the Scenario Builder, but is also a serious attempt to

replicate the functions of LFASS without the LFA region or the complexity and unfairness of using historic stock rate bases. Given the complexity of the scenario there are serious challenges to implementation but in the main it reuses existing regions and payment mechanisms (the exception being front-loading). The complexity of 2 Region – No LFASS may best be set against that of the *status quo* and whether LFASS can be maintained as a viable policy option going forward.

4.4.3 Scenario Outcomes – Change in Payments

The headline redistribution figures are much higher at ~£82M than for the earlier scenarios but this reflects the much greater degree of change in budgets and other mechanisms – see Figure 26. Front loading is, though, a large and intentional part of this redistribution accounting for ~£24M. The smaller size classes (up to 150 ha) see gains with near neutrality between 150 and 250 ha and reductions for >250 ha, the latter likely compounded by using a cap on payments for new Region 2 land. The characteristic gains and losses within classes is again evident reflecting the reduction in payments linked to historic stocking rates, both through a flat rate top up for LFA land and increased VCS payments for those currently undertaking suckler cow rearing. Changes between farm types (net change in black) is limited but with some substantial within type changes (Sp. Cattle and Sp. Sheep). Further interpretation of these changes is likely needed to assess if the redistribution is beneficial. Regionally there relatively small net changes – Borders sees the largest net loss at ~£4M and Highland with largest gain at ~£6M likely reflecting the gains made by crofters from front-loading. The distribution of magnitudes of change sees few levels of loss >40% but closer analysis of the drivers would be needed to ensure that these changes would not compromise particular regions or sectors.

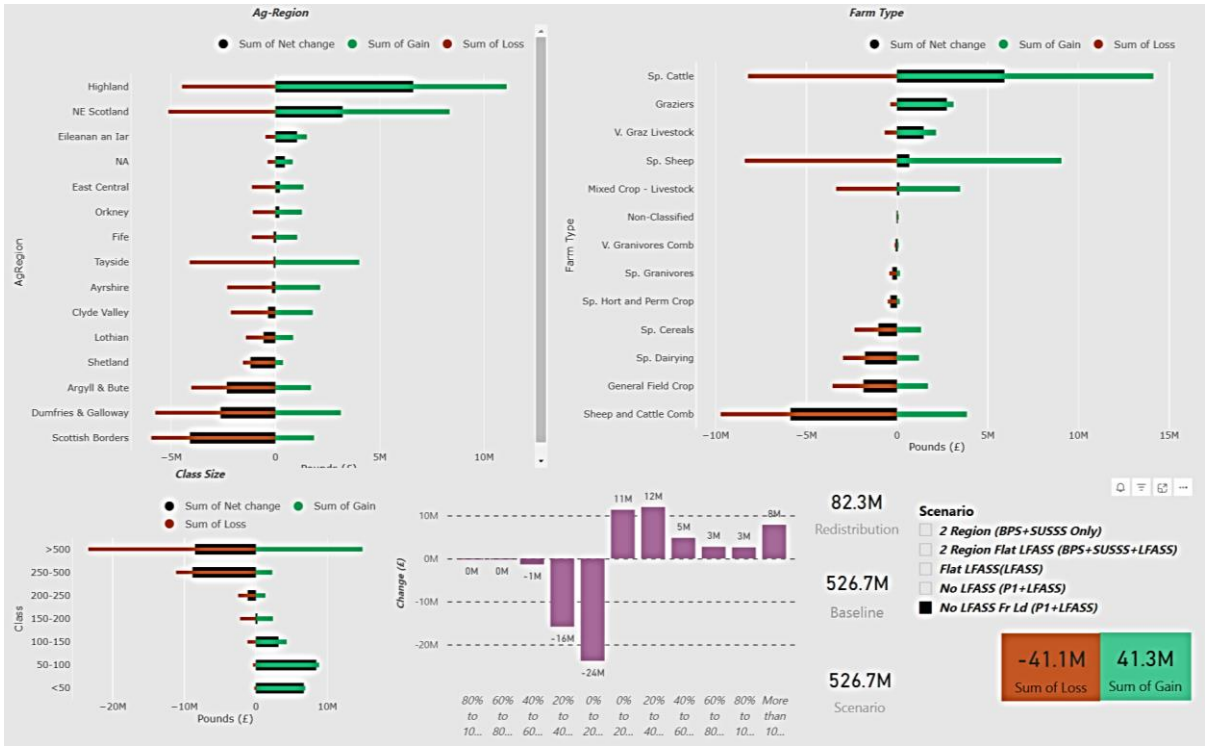

Figure 26

The two distribution of change charts highlight that despite the degree of change in budgets and mechanisms a supermajority of BPS businesses makes gains (11,664 of 17,812, 65%). Most of the change occurs in the above or below £10k changes - with -£29M for losses and £19M for gains, see

Figure 27, but few businesses (1,226, 7%) lose more than 20%, see Figure 28. Again, more detailed analyses of the compositions and locations of these changes would be desirable.

AgRegion	Net Change
Argyll & Bute	-2,350.58K
Ayrshire	-164.05K
Clyde Valley	-350.76K
Dumfries & Galloway	-2,625.75K
East Central	213.68K
Eileanan an Iar	1,002.04K
Fife	-80.47K
Highland	6,550.73K
Lothian	-564.44K
NA	444.00K
NE Scotland	3,212.19K
Orkney	182.09K
Scottish Borders	-4,101.90K
Shetland	-1,236.56K
Tayside	-90.63K
Total	39.58K

Class	Net Change
0	174.62K
<50	6,645.84K
50-100	8,417.73K
100-150	3,129.41K
150-200	191.54K
200-250	-1,135.83K
250-500	-8,849.96K
>500	-8,533.76K
Total	39.58K

Farm Type	Sum of change
	444,001.06
General Field Crop	-1,847,216.81
Graziers	2,734,344.65
Mixed Crop - Livestock	122,377.60
Non-Classified	24,558.67
Sheep and Cattle Comb	-5,873,592.05
Sp. Cattle	5,876,375.86
Sp. Cereals	-1,022,625.10
Sp. Dairying	-1,770,299.58
Sp. Granivores	-260,058.11
Sp. Hort and Perm Crop	-365,182.46
Sp. Sheep	586,105.95
V. Granivores Comb	-55,727.45
V. Graz Livestock	1,446,515.96
Total	39,578.20

Figure 27

AgRegion	Net Change
Argyll & Bute	-2,350.58K
Ayrshire	-164.05K
Clyde Valley	-350.76K
Dumfries & Galloway	-2,625.75K
East Central	213.68K
Eileanan an Iar	1,002.04K
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Lothian	-564.44K
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Total	39.58K

Class	Net Change
0	174.62K
<50	6,645.84K
50-100	8,417.73K
100-150	3,129.41K
150-200	191.54K
200-250	-1,135.83K
250-500	-8,849.96K
>500	-8,533.76K
Total	39.58K

Farm Type	Net Change
	444.00K
General Field Crop	-1,847.22K
Graziers	2,734.34K
Mixed Crop - Livestock	122.38K
Non-Classified	24.56K
Sheep and Cattle Comb	-5,873.59K
Sp. Cattle	5,876.38K
Sp. Cereals	-1,022.63K
Sp. Dairying	-1,770.30K
Sp. Granivores	-260.06K
Sp. Hort and Perm Crop	-365.18K
Sp. Sheep	586.11K
V. Granivores Comb	-55.73K
V. Graz Livestock	1,446.52K
Total	39.58K

Figure 28

4.4.4 Options for mitigation of negative impact

Interpreting the range of outcomes in the dashboards and scenario definition, it is possible that the outcomes could be refined to avoid unnecessary negative impacts on particular combinations of regions and farm types (always a challenge in region design when simplicity is emphasised). The needs for a new VCS scheme for sheep (on a different basis to SUSSS) or for LFA dairy could be worth investigating. There is potential to make more use of peripherality metrics (such as the very remote rural areas identified in the Urban Rural classification) to shape payment rates either within the new merged Region 2 or for VCS. Here the thinking was in making very remote rural more comparable to Island rates for VCS). Extending the analysis to have metrics for Enhanced Conditionality expectations per business via funding per Tier and perhaps incorporating progressive expectations would assist in interpreting the outcomes.