

# CAP Reform Post 2013

## Modelling of scenarios for the regionalisation of the Basic Payment Scheme in Scotland

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The James  
**Hutton**  
**Institute**

# Introduction

- Scenario Analysis - elements
- Step 1 - Defining Regions
- Step 2 - Defining Budgets
- Headline Results – Areas, Budgets and Rates
- Selected Scenario Analyses – Consequences for Sectors  
Geographical regions and by Farm Size
- Key Messages

**Caveats** – no final decisions taken, none of the options as they stand may be taken up, presented to inform the stakeholder-policy dialogue

# Scenario Analysis - Elements

- Scenarios are combination of regions and regional ceilings (referred to here as budgets)
- $\text{Rates} = \text{Budgets} / \text{Regions}$
- $\text{Payment per Ha} = \text{€ Value of the Budget} / \text{Area}$
- Both regions and budgets need to be set on objective and non-discriminatory basis

Regions	Budgets
Land Capability for Agriculture (LCA) – groupings of classes 1 – 7 (3)	Historic Payments
Less Favoured Areas – non-LFA, LFA, LFA-HIE (1)	Economic Contribution
Land Type – Arable, Permanent Grassland, Rough Grazing (1)	Weighted Land Area
Parish Classifications (4)	

# STEP1 - Defining Regions

## Assumptions:

- Businesses in receipt of SFPS (2011 population)
- Eligible land uses (as defined by IACS crop codes)
- No activity criteria applied – e.g. stocking rates
- Area is IACS claim based – verified, incl. rentals
- A claim is one land use and is part, or all, of a field
  - LCA mix – defined per claim
  - Land Type – defined per claim
  - LFA status – defined per field (all claims)
  - Parish – defined per field (all claims)

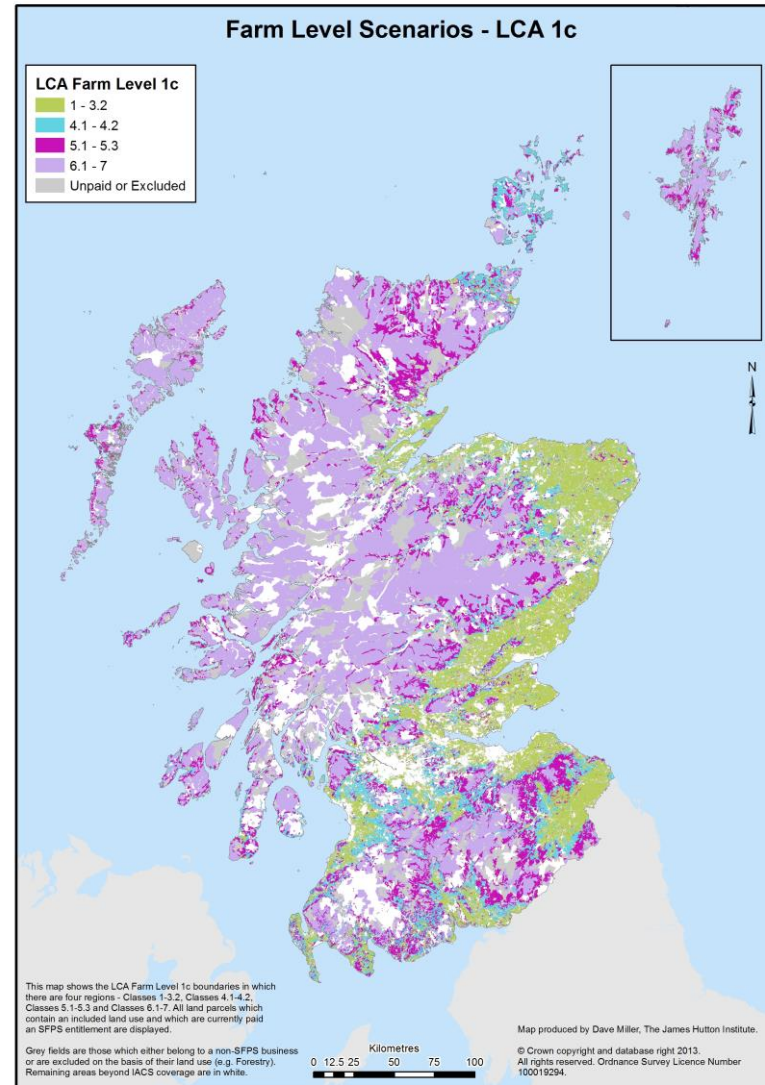
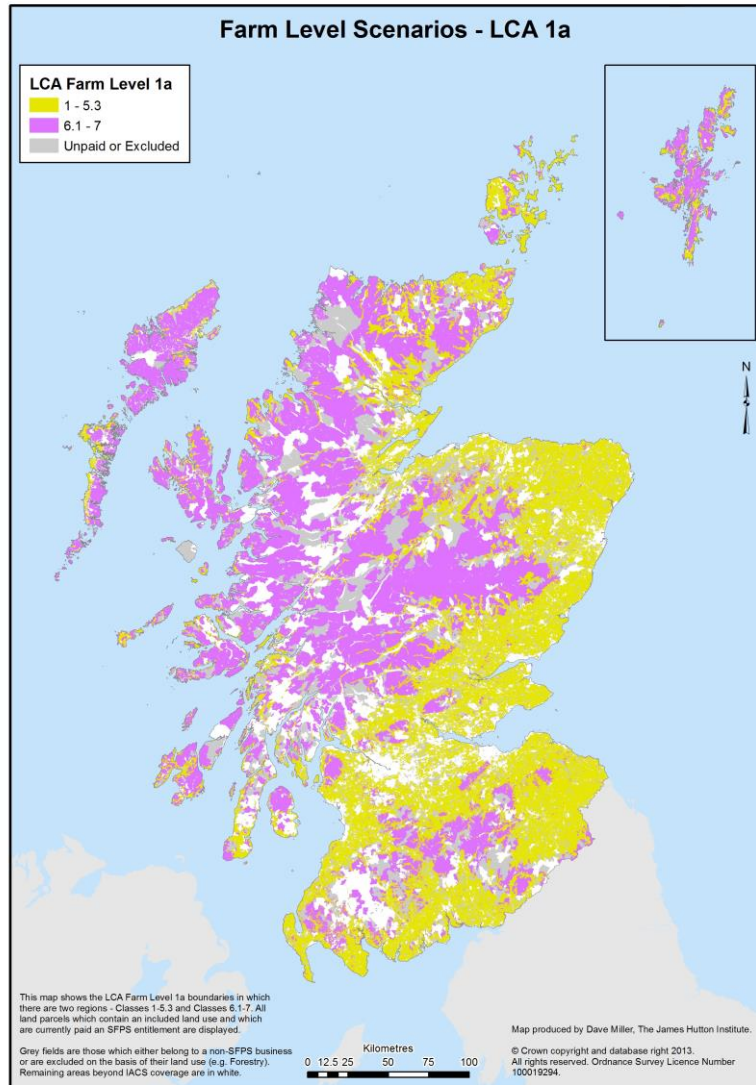
# Farm Level

Name	No. Regions	Definitions
<b>LCA Farm Level 1a</b>	2	<ul style="list-style-type: none"> <li>• 1 – 5.3</li> <li>• 6.1 – 7</li> </ul>
<b>LCA Farm Level 1b</b>	3	<ul style="list-style-type: none"> <li>• 1 – 3.1</li> <li>• 3.2 - 5.3</li> <li>• 6.1 – 7</li> </ul>
<b>LCA Farm Level 1c</b>	4	<ul style="list-style-type: none"> <li>• 1 – 3.2</li> <li>• 4.1 – 4.2</li> <li>• 5.1 – 5.3</li> <li>• 6.1 – 7</li> </ul>
<b>LFA</b>	3	<ul style="list-style-type: none"> <li>• Non-LFA</li> <li>• LFA</li> <li>• LFA-HIE</li> </ul>
<b>Land Type Farm Level</b>	3	<ul style="list-style-type: none"> <li>• Arable (incl. Temporary Grass)</li> <li>• Permanent Grass</li> <li>• Rough Grazing</li> </ul>

# Parish Classifications

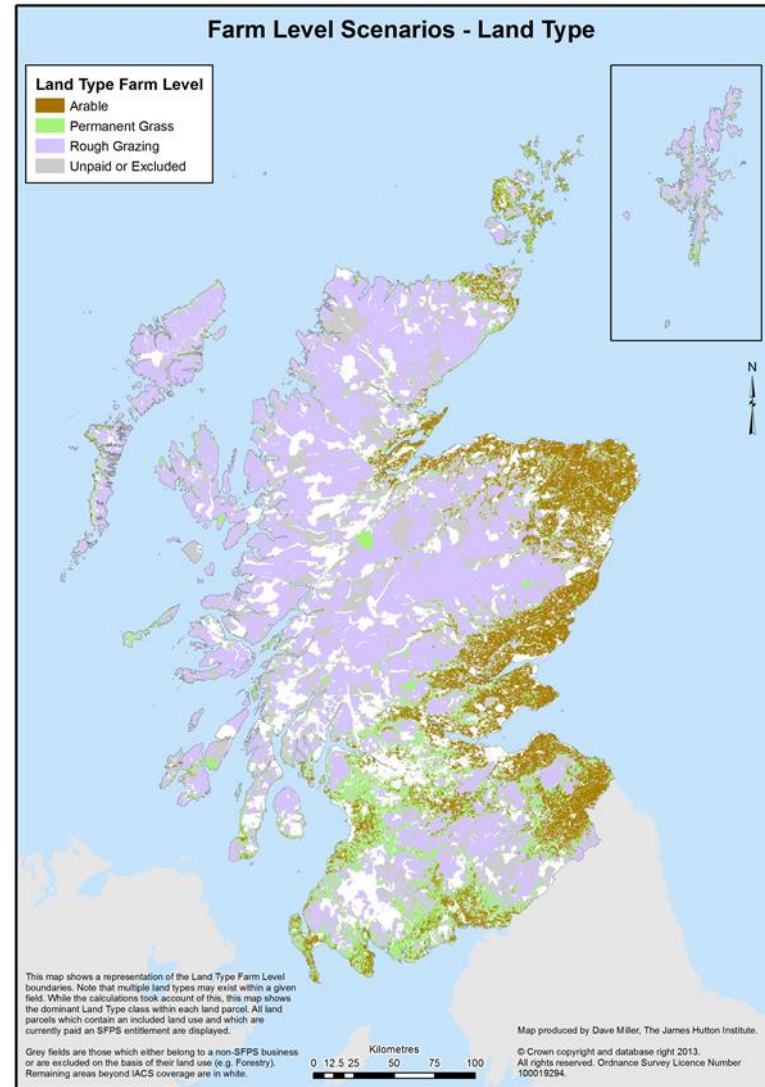
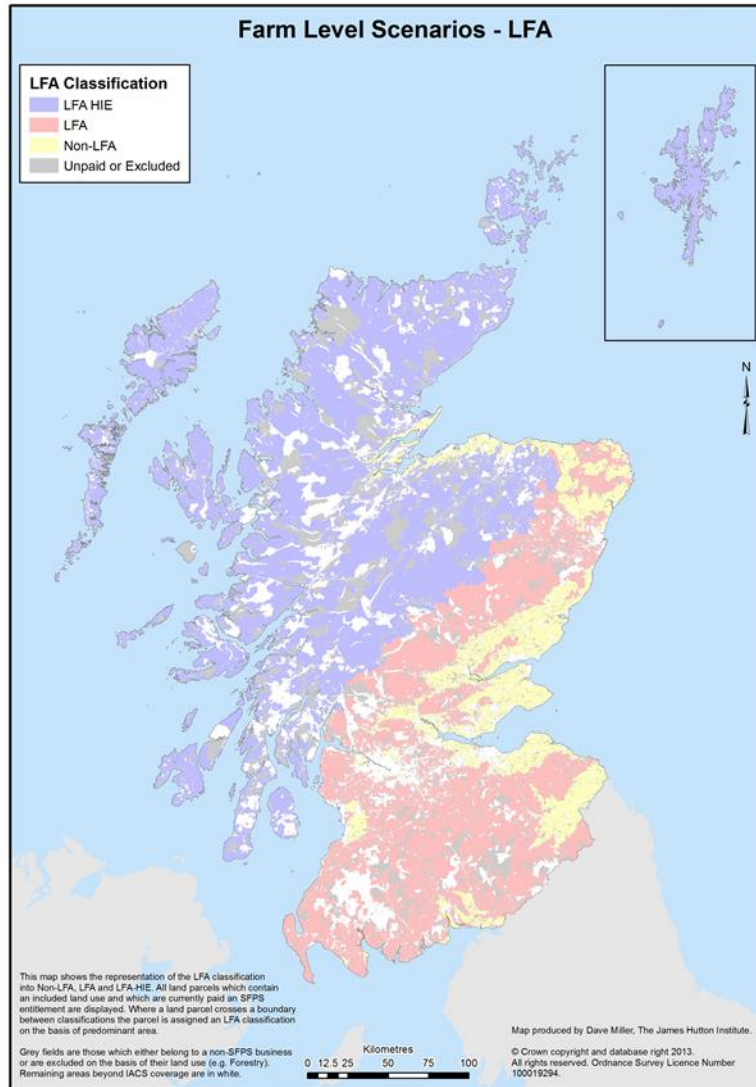
Name	No. Regions	Definitions
<b>LCA Parish Level 1a</b>	3	<ul style="list-style-type: none"> <li>• 1 – 3.1</li> <li>• 3.2 – 5.3</li> <li>• 6.1 – 7</li> </ul>
<b>LCA Parish Level 1b</b>	10	<ul style="list-style-type: none"> <li>• 1 – 3.1 Dominant (Dominance <math>\geq 75\%</math>)</li> <li>• 1 – 3.1 Dominant (Dominance = 50-74%)</li> <li>• 3.2 – 4.2 Dominant (Dominance <math>\geq 75\%</math>)</li> <li>• 3.2 – 4.2 Dominant (Dominance = 50-74%)</li> <li>• No Dominant Class (but most land is 1 – 4.2)</li> <li>• 5.1 – 5.3 Dominant (Dominance <math>\geq 75\%</math>)</li> <li>• 5.1 – 5.3 Dominant (between 50-74%)</li> <li>• No Dominant Class (but most land is 5+)</li> <li>• 6.1 – 7 Dominant (Dominance = 50-74%)</li> <li>• 6.1 – 7 Dominant (Dominance <math>\geq 75\%</math>)</li> </ul>
<b>Historical SFPS-Parish</b>	9	€1-<20; €20-49; €50-99; €100-149; €150-199; €200-249; €250-299; €300-349; €350+
<b>Land Type Parish</b>	3	<ul style="list-style-type: none"> <li>• Arable (incl. Temporary Grass)</li> <li>• Permanent Grass</li> <li>• Rough Grazing</li> </ul>

# Maps of Regions - LCA Class Groupings



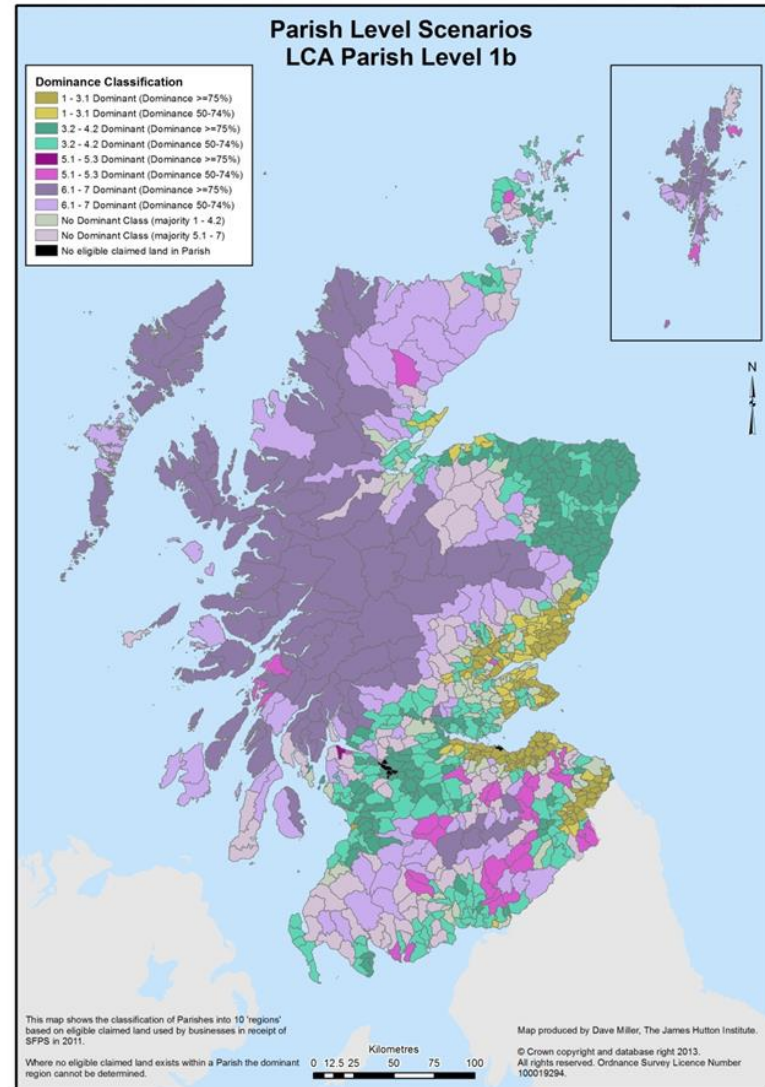
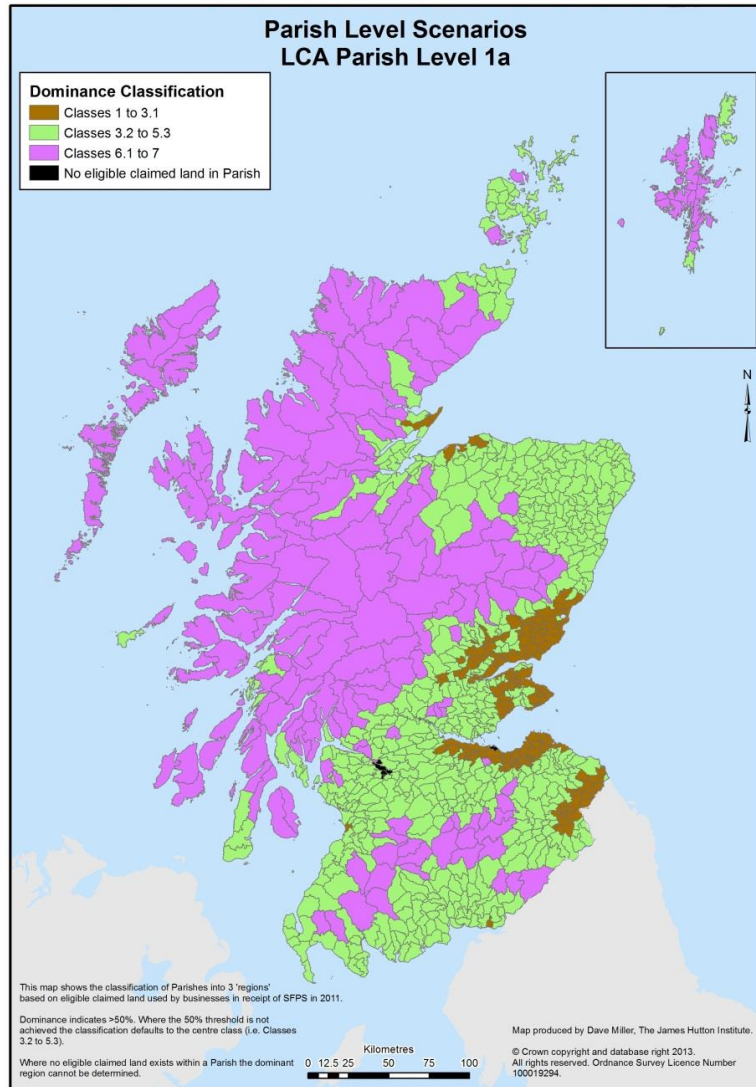


# Maps of Regions – LFA or Land Type

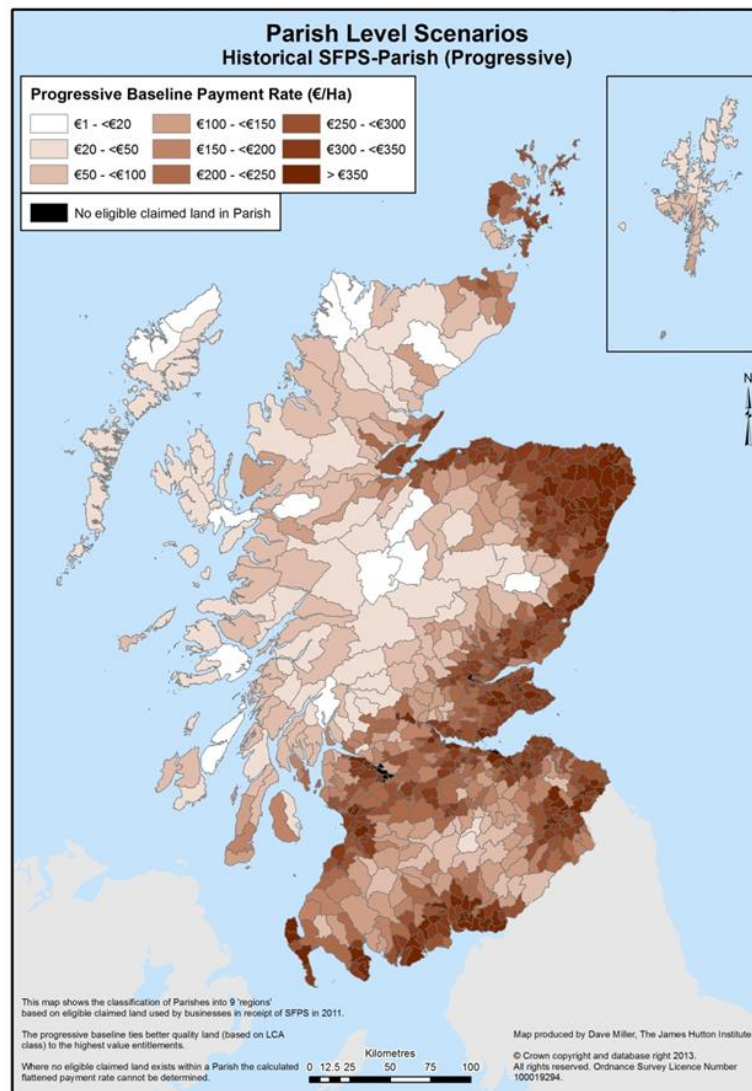
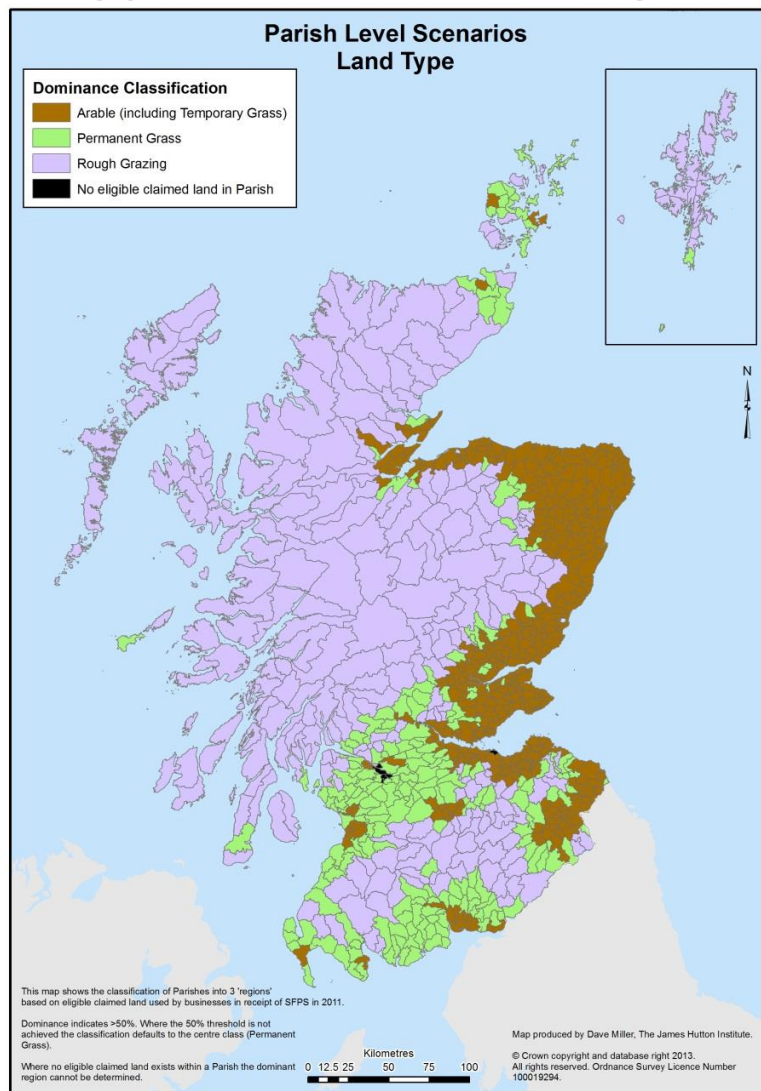




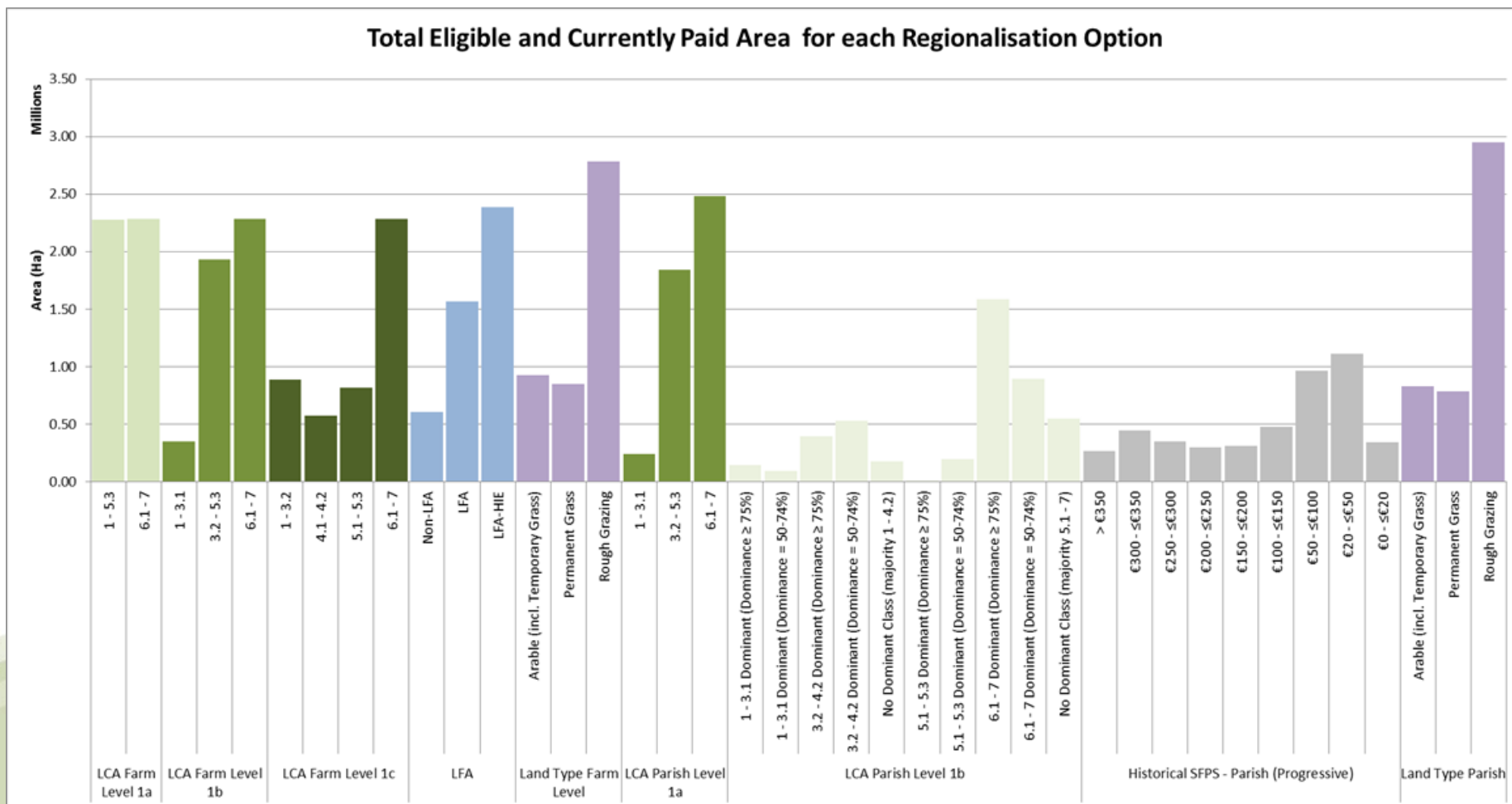
# Maps of Regions - Parishes Classified by LCA



# Maps of Regions – Parishes classified by Land Type or Historic Payment



# Areas of land in each Region



# STEP2 - Defining Budgets per Region

- Overall ceiling set by EU/UK – assuming ~642 €M\* pre-modulation but minus the existing BCS deductions)
- BCS added back in after modelling of regionalisation ~671 €M
- Number of regions defines the number of regional budgets needed (and thus the number of rates)
- Relative size of each region's budget is a key decision – the share of the overall budget
- Share size determined using one of three bases
  - Share of Historic Payments in each region
  - Share of Economic Contribution in each region
  - Weighted share of Land Area in each region



# Allocating Regional Budgets – 1. Historic

- Uses existing entitlement values – per business – *status quo*
- Flattens the entitlement values across all eligible land parcels\* in the business – higher value entitlements to better quality land as defined by LCA (where possible) – *progressive flattening*
- Each land parcel is part of one region
- The flattened values (€ per land parcel) for all parcels in each region are summed to give a total value for the region's budget

**Caveat** – progressive flattening is still means that within a business, entitlements likely generated on better quality land are spread onto lower quality. This lowers the budgets and rates for better quality land and increases them for poorer.

# Allocating Regional Budgets – 2. Economic Contribution

- Intent to share direct payment in proportion to contribution to Scottish agricultural output
- Uses standard outputs (SO) – average monetary value of the agricultural output at farm-gate prices - per business
- The SO values are linked to land, per business, using a simple flattening – SO / Eligible area
- The flattened SO values (by land parcel) are summed per region and divided by the SO total to set the regions' share of the Scotland Ceiling:

$$\text{Regional Share} = \text{SO regional total} / \text{SO Scotland total}$$

- The total BPS budget per region is then:  
$$\text{Regional Share} * \text{Scotland Ceiling}$$

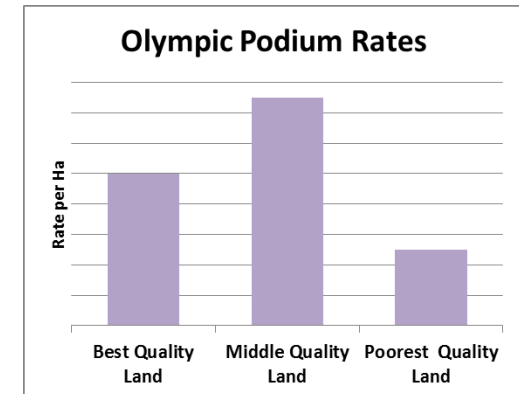


## Allocating Regional Budgets – 3. Land-Based

- Intent to explore distributions not tied to either historic entitlements or current contribution to outputs
- The share of the Scotland Ceiling for each region is:  
$$(\text{Area of Region} * \textbf{Weighting factor}) / \text{Area of all regions}$$
- With the same weight for all regions the effect is to use a single flat rate for all regions
- With Historic and Economic based budgets shares and thus rates are determined by the choice of basis for the ceiling
- With land-based the weightings are a policy decision that shapes the shares between regions to achieve desired outcomes
- The weightings need to be determined on an objective and non-discriminatory basis

### 3. Land-Based cont. Production Weighted

- Intent to weight payment towards land which supports production systems important for food production and to the agri-food supply chain and that could be vulnerable to significant reductions in support
- Uses three region options – Olympic podium with highest rates to middle quality land and lowest to poorest.
- The payment rate for poorest land is no more than €30 per ha – consistent with the Pack Inquiry
- The payment rate for the middle quality land is higher than that for the best but no more than 120% of the rate for best land – one balance between the two classes



### 3. Land-Based cont. Environmental Weighted

- Intent to weight payment towards land more strongly associated with the provision of non-market ecosystem goods and services
- Again only for three region models
- The poorest quality land receives a 10% uplift compared to the flatten historic payment rate – this is a modest increase since flattening of entitlements (as implemented in the modelling) already results in higher payment rates for lower quality land
- This uplift is paid for by reducing the rates on middle and best quality land – with the best quality land paying more but no more than twice as much (limit 67:33) – again only one balance between the other two regions

# Headline Results - Interpretation Notes

- Rates defined within this analysis are generally higher than those seen in the Pack Inquiry and follow ups – particularly for lower quality land
  - We have assumed the same budget and no new recipients - Pack Inquiry results included all eligible land.
  - Up to an additional 1.9M Ha of eligible (by land use) land in the SAF population (41 % of modelled area)
  - But – no Stocking Rate restrictions on eligibility so a larger area for some existing recipients is included (especially more Rough Grazing)
  - In the Historic and Economic Contribution ceilings the share of budget going to poorer quality land is increased by the implementation of the process of flattening entitlements or standard outputs to land

# Headline Results

Regions: Farm Level

Budgets: Historic (Share of Entitlements)

Scenario	Regional Boundaries	Area (M Ha)	'Progressive' Total (€)	'Progressive' Rate (€/Ha)	Redistribution (€) Increase & Reduction	Businesses Increasing (%)
<i>FARM LEVEL - HISTORIC</i>						
LCA Farm Level 1a	1 - 5.3	2.3	€518M	€228	€381M €190M	51%
	6.1 - 7	2.3	€124M	€54		
LCA Farm Level 1b	1 - 3.1	0.3	€115M	€331	€361M €180M	53%
	3.2 - 5.3	1.9	€403M	€209		
	6.1 - 7	2.3	€124M	€54		
LCA Farm Level 1c	1 - 3.2	0.9	€288M	€325	€298M €149M	57%
	4.1 - 4.2	0.6	€134M	€234		
	5.1 - 5.3	0.8	€96M	€118		
	6.1 - 7	2.3	€124M	€54		
LFA	Non-LFA	0.6	€200M	€329	€399M €199M	48%
	LFA	1.6	€277M	€177		
	LFA-HIE	2.4	€165M	€69		
Land Type Farm Level	Arable (incl. Temp Grass)	0.9	€296M	€319	€298M €149M	56%
	Permanent Grass	0.8	€173M	€205		
	Rough Grazing	2.8	€173M	€62		

# Headline Results cont. (2)

Regions: Parish Level

Budgets: Historic (Share of Entitlements)

Scenario	Regional Boundaries	Area (M Ha)	'Progressive' Total (€)	'Progressive' Rate (€/Ha)	Redistribution (€) Increase and Reduction	Businesses Increasing (%)
<i>PARISH LEVEL - HISTORIC</i>						
LCA Parish Level 1a	1 - 3.1	0.2	€76M	€319	€360M	48%
	3.2 - 5.3	1.8	€430M	€234		
	6.1 - 7	2.5	€137M	€55		
LCA Parish Level 1b	1 - 3.1 Dominant (Dominance ≥ 75%)	0.1	€46M	€320	€156M	53%
	1 - 3.1 Dominant (Dominance = 50-74%)	0.1	€30M	€318		
	3.2 - 4.2 Dominant (Dominance ≥ 75%)	0.4	€128M	€323		
	3.2 - 4.2 Dominant (Dominance = 50-74%)	0.5	€151M	€287		
	No Dominant Class (majority 1 - 4.2)	0.2	€44M	€249		
	5.1 - 5.3 Dominant (Dominance ≥ 75%)	0.0	€0M	€82		
	5.1 - 5.3 Dominant (Dominance = 50-74%)	0.2	€28M	€143		
	6.1 - 7 Dominant (Dominance ≥ 75%)	1.6	€71M	€45		
	6.1 - 7 Dominant (Dominance = 50-74%)	0.9	€66M	€73		
Historical SFPS - Parish (Progressive)	€0 - ≤€20	0.3	€6M	€16	€137M	51%
	€20 - ≤€50	1.1	€40M	€36		
	€50 - ≤€100	1.0	€72M	€74		
	€100 - ≤€150	0.5	€60M	€126		
	€150 - ≤€200	0.3	€54M	€174		
	€200 - ≤€250	0.3	€68M	€226		
	€250 - ≤€300	0.4	€97M	€276		
	€300 - ≤€350	0.4	€144M	€325		
	> €350	0.3	€103M	€390		
Land Type Parish	Arable (incl. Temporary Grass)	0.8	€268M	€324	€318M	54%
	Permanent Grass	0.8	€185M	€236		
	Rough Grazing	2.9	€189M	€64		



# Headline Results cont. (3)

Regions: Farm Level

Budgets: Economic (Share of Standard Outputs)

							Redistribution (€)	
Scenario	Regional Boundaries	Area (M Ha)	SO Regional Total (€)	SO Weighting (%)	Budget (€)	Rate (€/Ha)	Increase and Reduction	Businesses Increasing (%)
FARM LEVEL - ECONOMIC								
LCA Farm Level 1a	1 - 5.3	2.3	€1,847M	88%	€566M	€248	€345M	52%
	6.1 - 7	2.3	€249M	12%	€76M	€33	€172M	
LCA Farm Level 1b	1 - 3.1	0.8	€520M	25%	€159M	€459	€337M	55%
	3.2 - 5.3	1.9	€1,326M	63%	€406M	€211	€169M	
	6.1 - 7	2.3	€249M	12%	€76M	€33		
LCA Farm Level 1c	1 - 3.2	0.9	€1,155M	55%	€354M	€399	€273M	61%
	4.1 - 4.2	0.6	€440M	21%	€135M	€235		
	5.1 - 5.3	0.8	€252M	12%	€77M	€95	€136M	
	6.1 - 7	2.3	€249M	12%	€76M	€33		
LFA	Non-LFA	0.6	€869M	41%	€266M	€438	€393M	49%
	LFA	1.6	€861M	41%	€263M	€168	€197M	
	LFA-HIE	2.4	€371M	18%	€113M	€48		
Land Type Farm Level	Arable (incl. Temp Grass)	0.9	€1,177M	56%	€360M	€388	€258M	62%
	Permanent Grass	0.8	€576M	27%	€176M	€208	€129M	
	Rough Grazing	2.8	€348M	17%	€106M	€38		

# Headline Results cont. (4)

Regions: Farm Level

Budgets: Weighted Land Area: Production & Environmental

Scenario	Regional Boundaries	Area (M Ha)	Adjustable Weighting	Budget (€)	Rate (€/Ha)	Redistribution (€) Increase and Reduction	Businesses Increasing (%)
<i>FARM LEVEL - Production Weighted</i>							
LCA Farm Level 1b	1 - 3.1	0.3	11.78	€76M	€218	€346m	53%
	3.2 - 5.3	1.9	78.62	€505M	€262		
	6.1 - 7	2.3	9.59	€62M	€27		
LFA	Non-LFA	0.6	21.93	€141M	€232	€443m	36%
	LFA	1.6	68.05	€437M	€279		
	LFA-HIE	2.4	10.02	€64M	€27		
Land Type Farm Level	Arable (incl. Temp Grass)	0.9	42.17	€271M	€292	€267m	61%
	Permanent Grass	0.8	46.12	€296M	€350		
	Rough Grazing	2.8	11.71	€75M	€27		

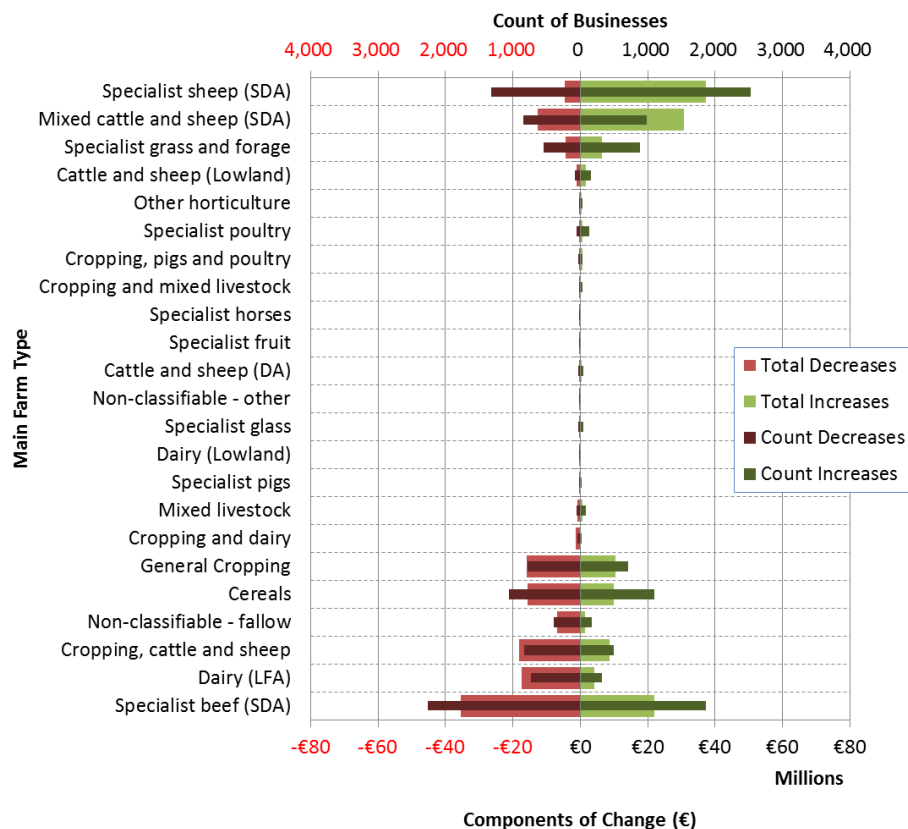
Scenario	Regional Boundaries	Area (M Ha)	Adjusted Historic (%)	Budget (€)	Rate (€/Ha)	Redistribution (€) Increase and Reduction	Businesses Increasing (%)
<i>FARM LEVEL - Environmental Weighted</i>							
LCA Farm	1 - 5.3	2.3	-2.39	€506M	€222	€391M	50%
Level 1a	6.1 - 7	2.3	+10.00	€136M	€60		
LCA Farm Level 1b	1 - 3.1	0.3	-6.46	€108M	€310	€372M	51%
	3.2 - 5.3	1.9	-1.23	€398M	€206		
	6.1 - 7	2.3	+10.00	€136M	€60		
LFA	Non-LFA	0.6	-4.96	€190M	€313	€408M	47%
	LFA	1.6	-2.38	€271M	€173		
	LFA-HIE	2.4	+10.00	€182M	€76		
Land Type Farm Level	Arable (incl. Temp Grass)	0.9	-3.50	€286M	€308	€313M	54%
	Permanent Grass	0.8	-4.00	€166M	€197		
	Rough Grazing	2.8	+10.00	€190M	€68		

# Scenario Analyses – 1

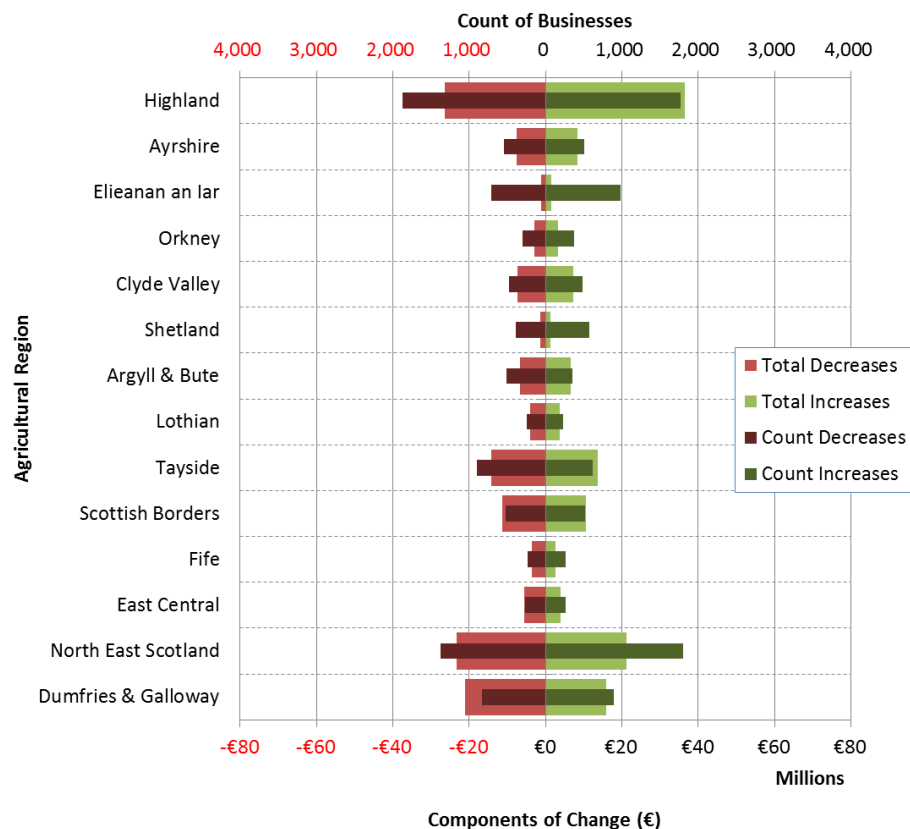
## Region – Parish - Historic Parish SFPS Budget – Share of Historic Entitlements

- *Status quo* – seen as preferable by some stakeholders
- Redistribution €273M

Historic SFPS Parish Level - Historic - Sector

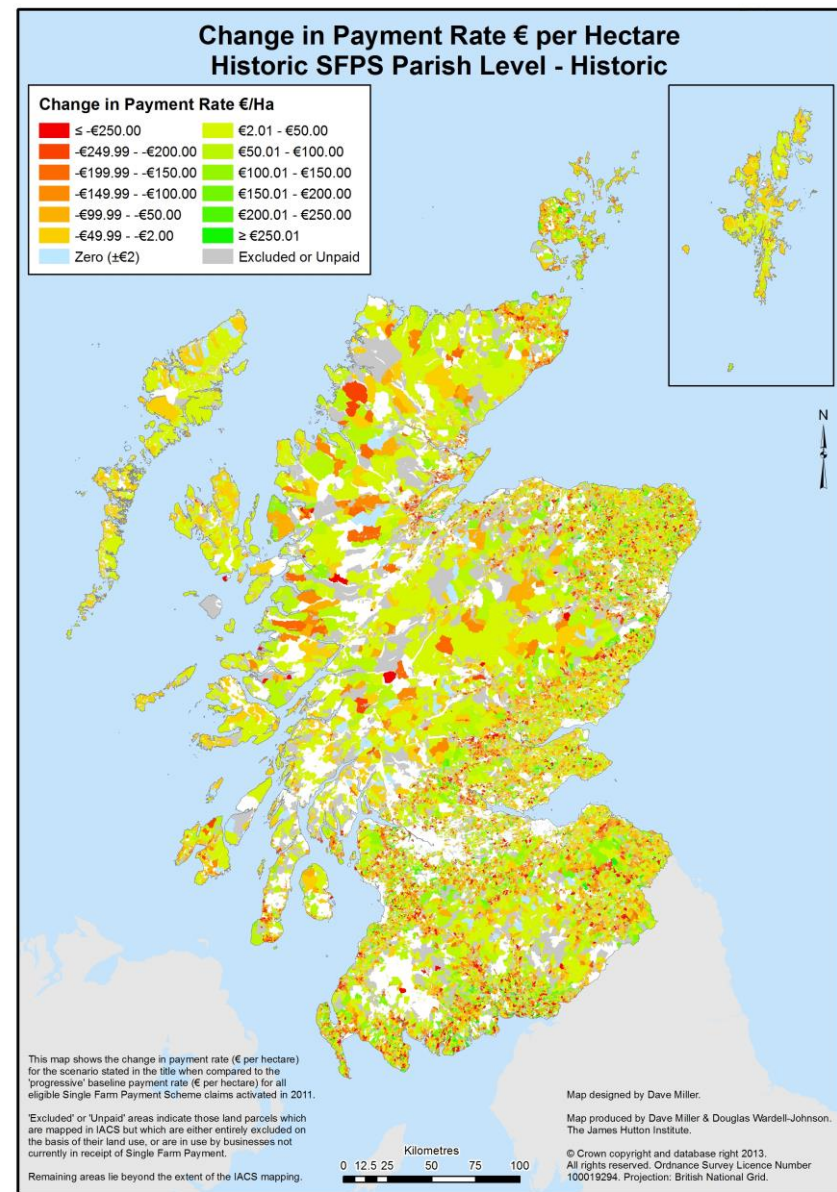
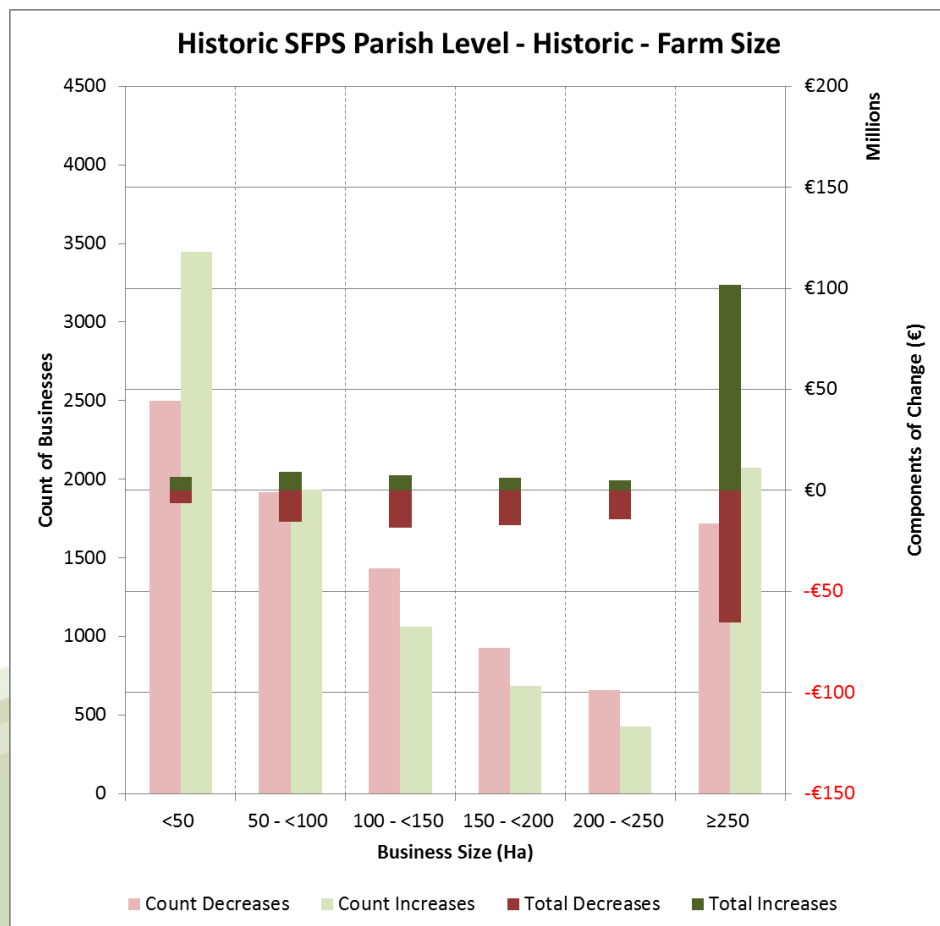


Historic SFPS Parish Level - Historic - Geography



# Scenario Analyses – 1 cont.

## Region – Parish - Historic Parish SFPS Budget – Share of Historic Entitlements



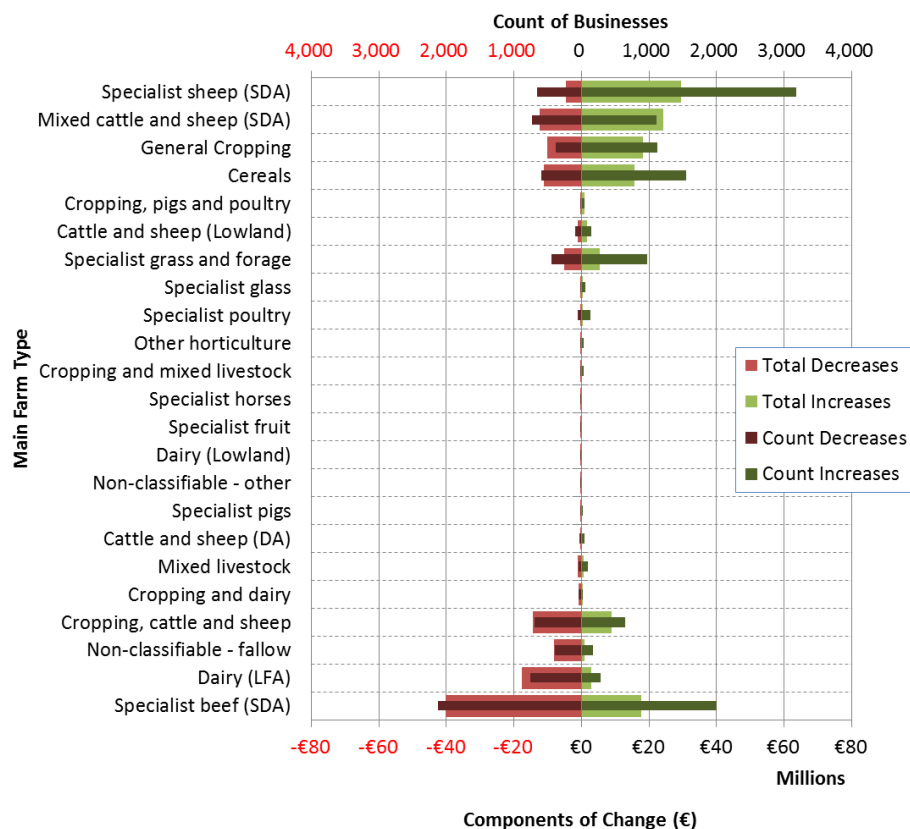
# Scenario Analyses – 2

Region – Farm Level - Land Type

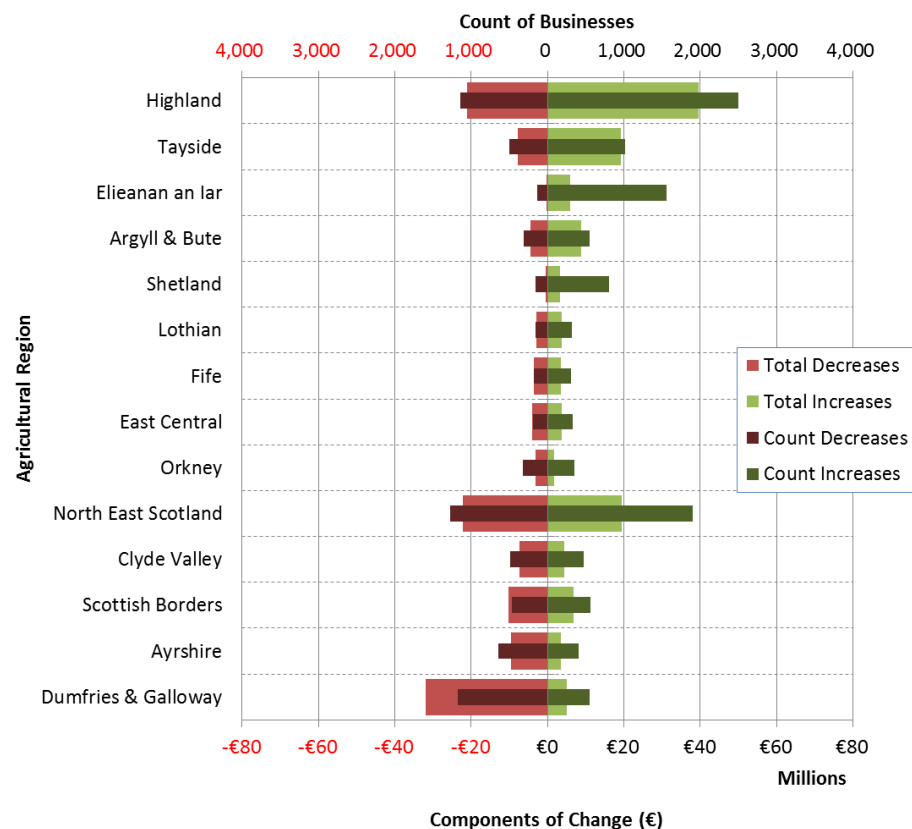
Budget – Economic (Share of Standard Outputs)

- Clear objective justification, uses existing EU audited data
- Redistribution €258M

Land Type Farm Level - Economic - Sector



Land Type Farm Level - Economic - Geography

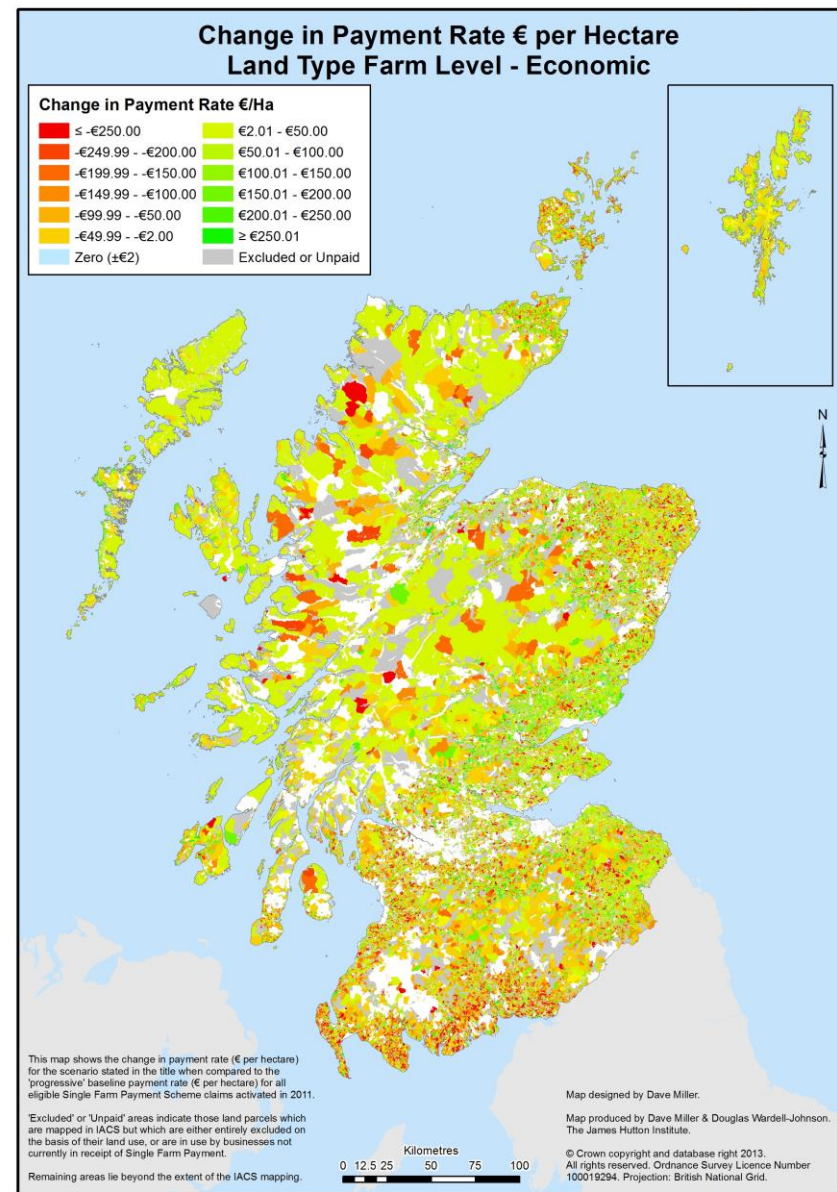
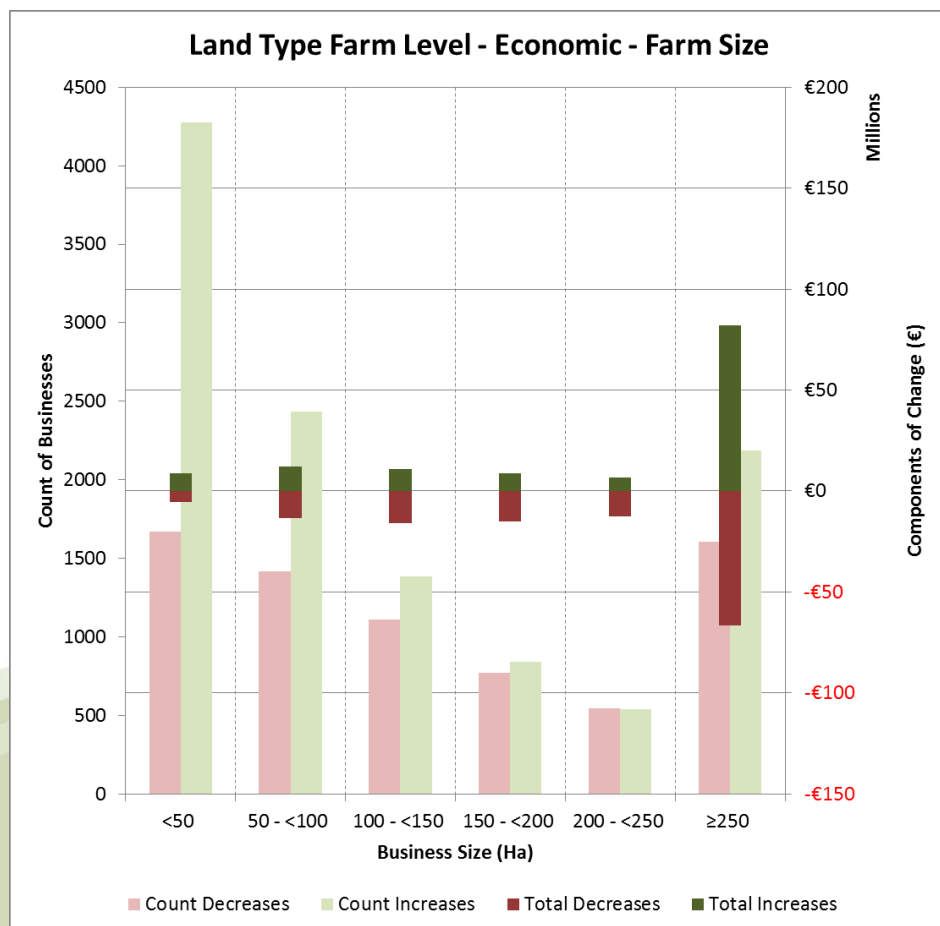




# Scenario Analyses – 2 cont.

Region – Farm Level - Land Type

Budget – Economic (Share of Std. Outputs)



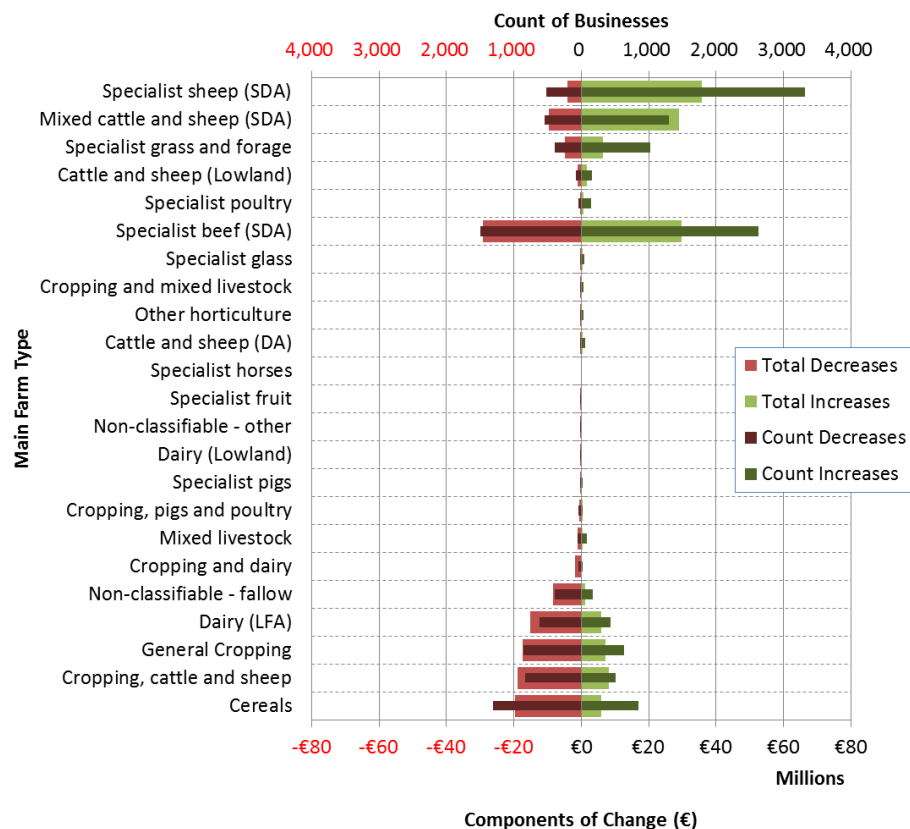


# Scenario Analyses – 3

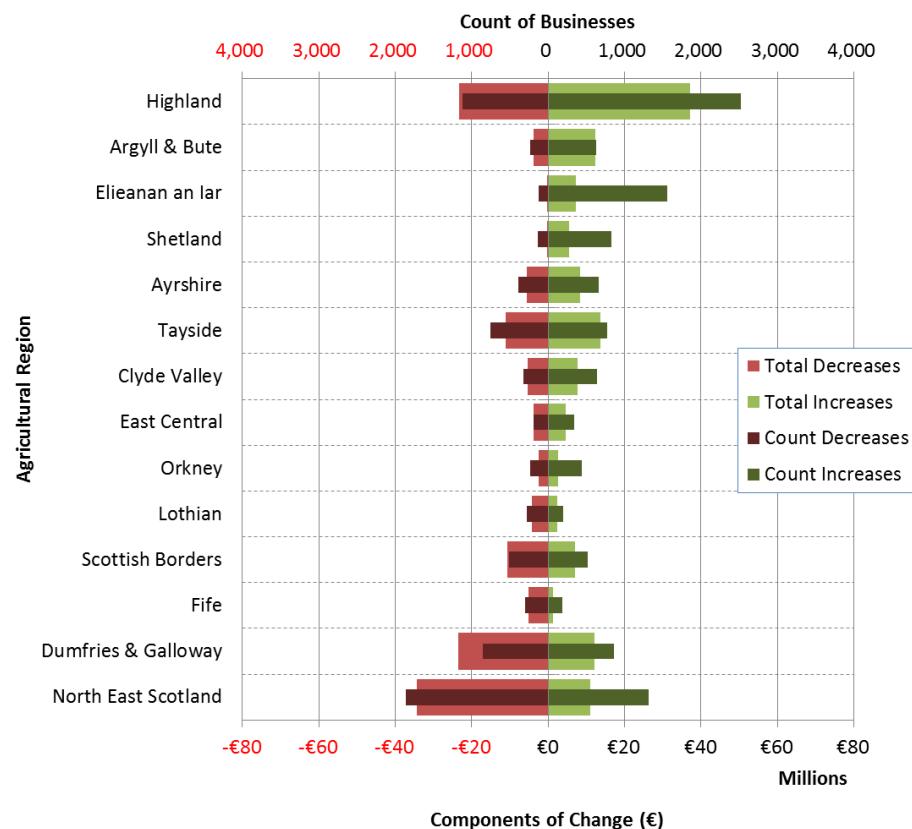
## Region – Farm Level – Land Type Budget – Production Weighted

- Podium weighting towards permanent grasslands (+20% vs. best land)
- Redistribution €267M

Land Type Farm Level - Production - Sector

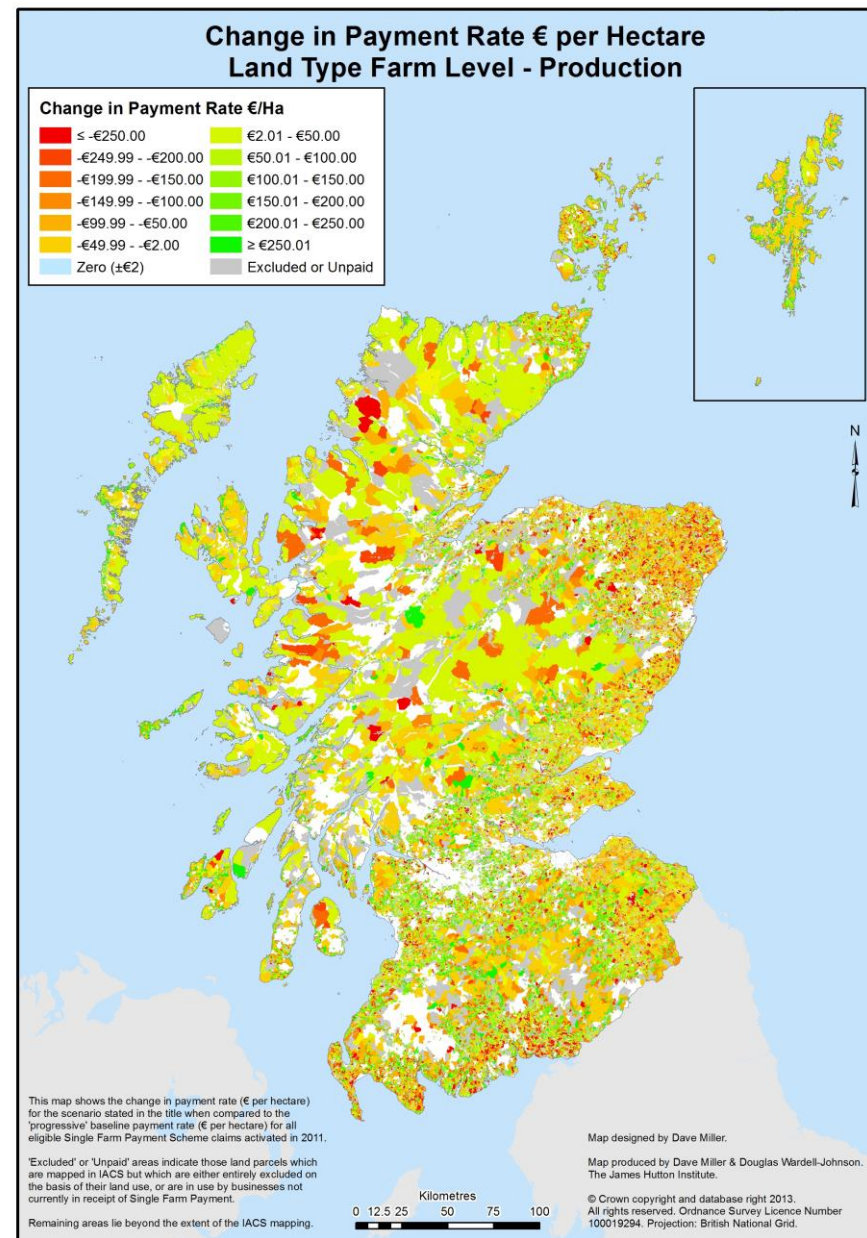
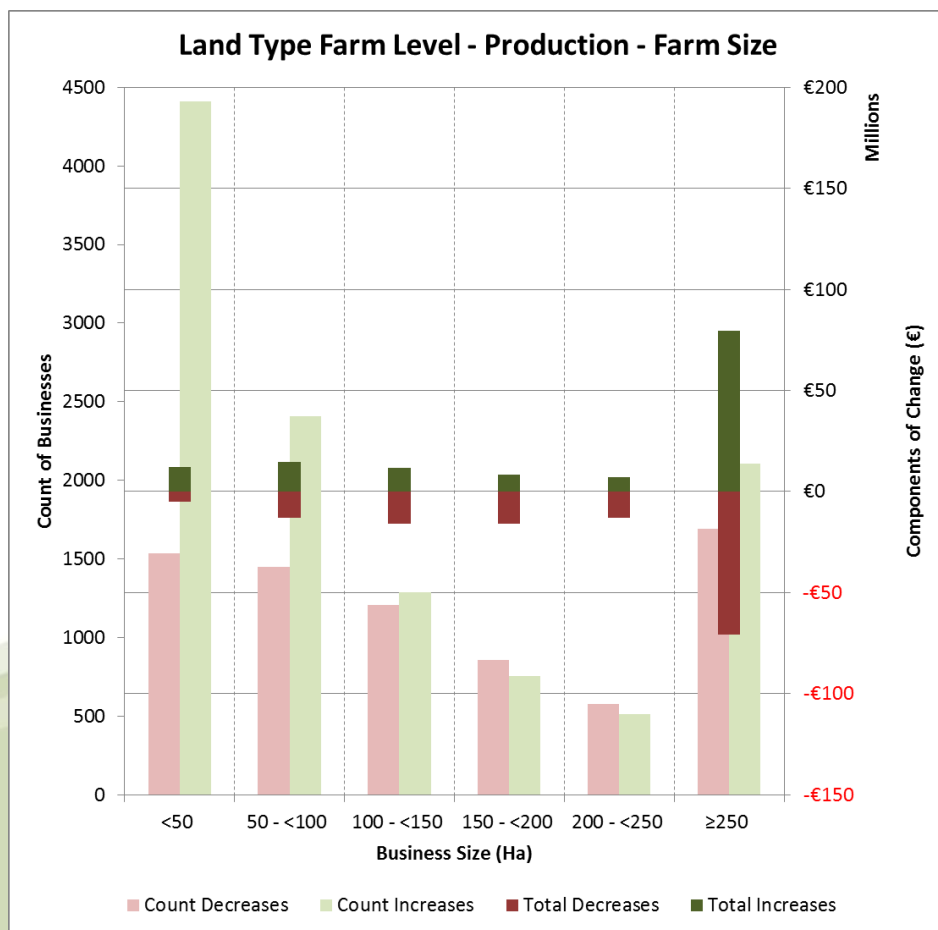


Land Type Farm Level - Production - Geography



# Scenario Analyses – 3 cont.

## Region – Farm Level – Land Type Budget – Production Weighted

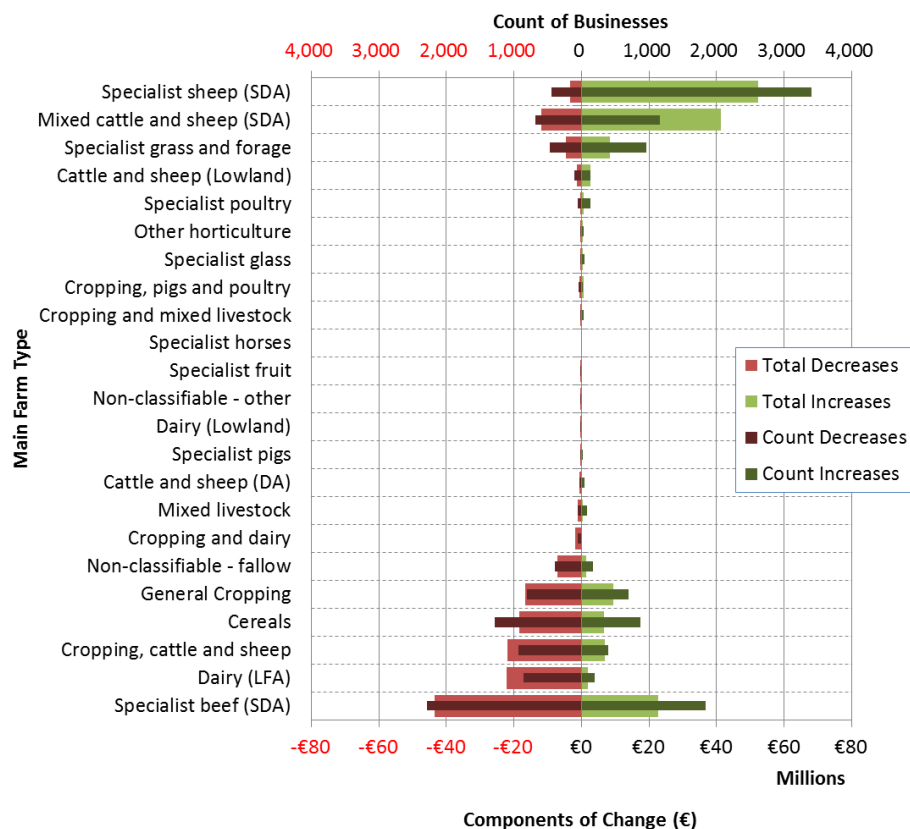


# Scenario Analyses – 3

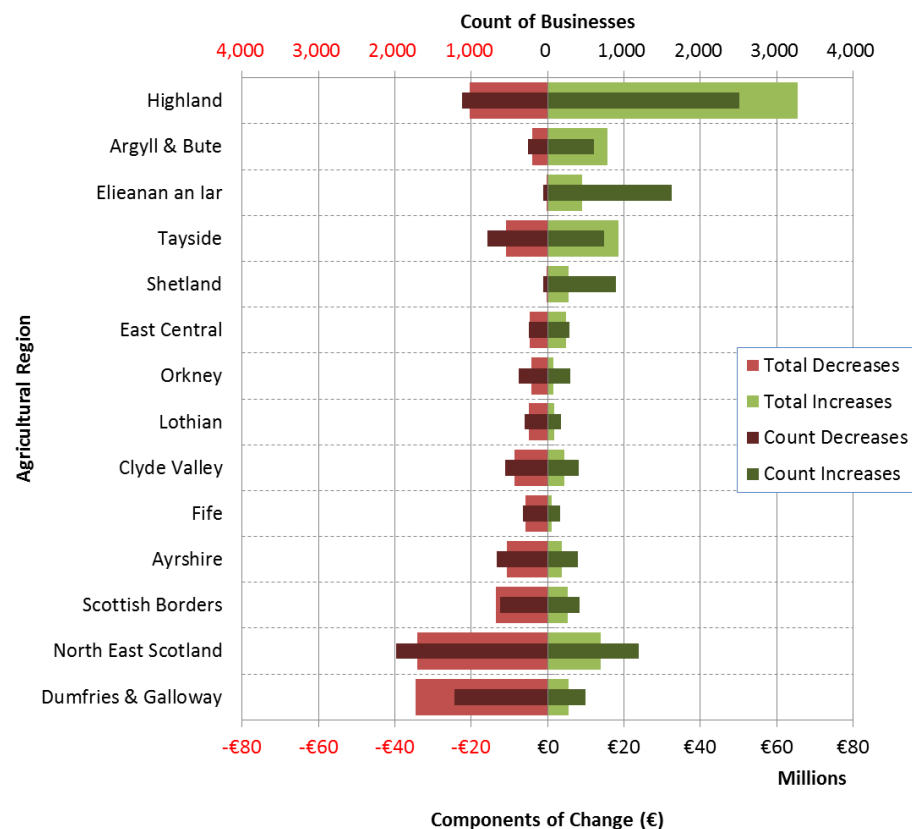
## Region – Farm Level – Land Type Budget – Environmental Weighted

- Uplift of 10% from flattened historic on poorest land, paid for 60:40 from other classes
- Redistribution €313M

Land Type Farm Level - Environmental - Sector

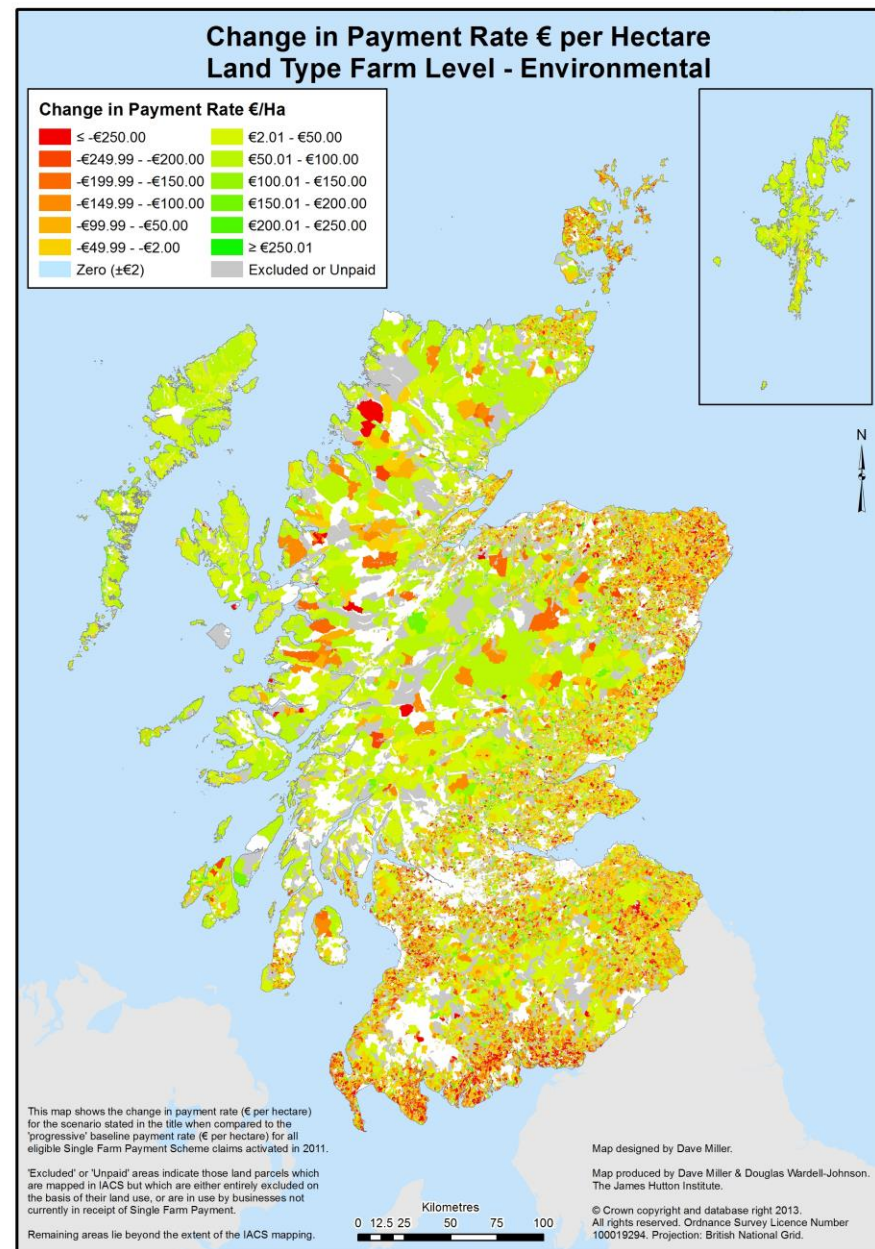
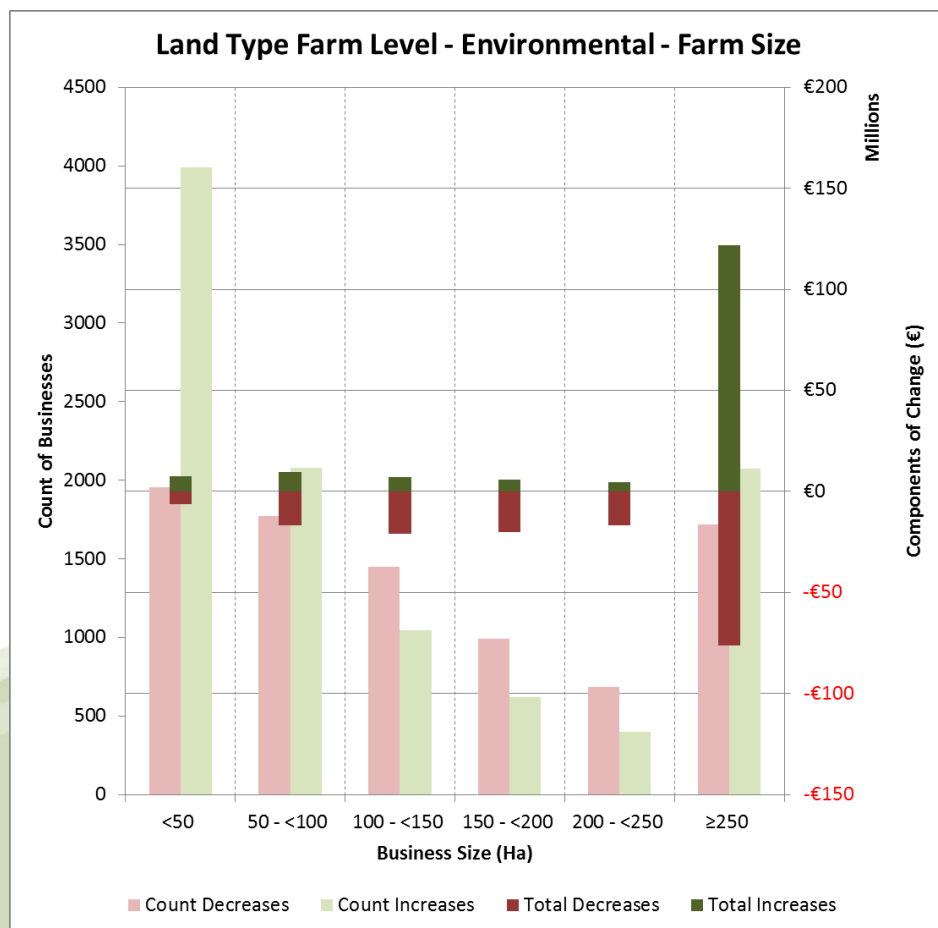


Land Type Farm Level - Environmental - Geography



# Scenario Analyses – 3 cont.

Region – Farm Level – Land Type  
Budget – Environmental Weighted



# Key Messages

## Regions

- Number of regions - a small number is adequate, strongly diminishing returns
- Parishes – internalised redistribution – areas not matching the Parish classification can be large
- LCA – measures potential not activity at a fixed time window, but issues of mapping scale in North and West
- Land Type – reflects intensity, least redistributive, but historic based

## Budgets

- Historic – difficult to link to land, limited justification
- Standard Outputs – difficult to definitively link the livestock component of standard outputs to land within a business, better reflects current economic activity, historic
- Weighted Land Area – flexible, policy led, outcome focused



# Key Messages (cont.)

- Area-based approaches “Flatten”
- Flattening means redistribution – generally from more intensive to less
- Within Sectors and within Regions important – beware net effects
- Effects of change are concentrated within larger businesses
- Basis of Regions matters – land quality, land type, LFA status, Parishes - more flexibility for Regions
- Geography of Regions matters – need to avoid extremes in a single Region
- Defining success?