Future CAP: a new Scottish Beef Calf Scheme

A scenario analysis of the distribution of payments and effects of a new Scottish Beef Calf Scheme as part of an area-based system of Pillar 1 CAP payments.

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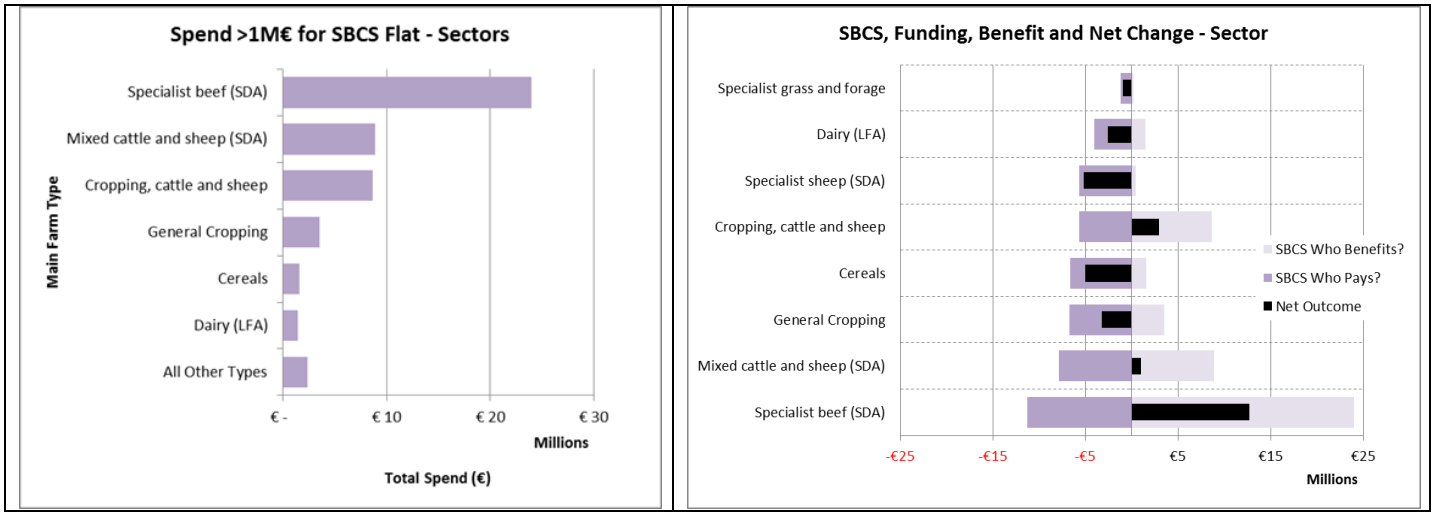
CONTENTS

EXECUTIVE SUMMARY

This paper presents a scenario analysis of a Voluntary Coupled Support Scheme (VCSS) in Scotland for beef-calves. This is part of the Phase 2 modelling of future CAP Pillar 1 options for Scottish Government conducted by staff at the James Hutton Institute.

The analysis presented here uses a simple VCS implementation paying a single flat rate for all beef calves regardless of herd size (SBCS Flat). The assumed budget percentage available to fund the VCS is 8% of the total SFPS budget value (642M€) used in all other scenario analyses to allow like –for-like comparison with the historic baseline. The paper also assesses options for increased payments for a first cohort of calves defined by a size limit - Front Loading.

The first figure below shows the distribution of spend using SBCS (Flat). For the top three farm types the great majority of businesses receive payments (84-69%). Yet given the way in which VCS is funded these headline budgets do not indicate net benefit or costs for the farm types. The second figure shows the net benefit by farm-type (in black) and also the funding and expenditure. Thus while there is net transfer between farm-types the overall magnitude of net benefit for the beef sector is substantially less than the headline budget figure alone would imply.



For this analysis the effects of using SBCS (Flat) with a regionalisation/budget scenario were also assessed by using the three region, land type based, podium weighted budget with a rough grazing rate of €27/ha from the Phase 1 Modelling. This shows that the overall net gain of ~€13M for Specialist Beef businesses was distributed almost evenly between those that lose under the without-VCS scenario (€6.6M) and those already gaining without VCS scenario (€6.1M). Sheep-based farm types see smaller increases (by €4.6M), while General Cropping (€1.9M), Cereals (€3.7M) and Dairy (LFA) (€1.8M) see larger reductions. Overall, small numbers (<700 businesses) move from net loss to gain through the use of SBCS (Flat) though more substantial numbers see losses reduced (1,925). The redistributive effects of using VCS are concentrated in the larger businesses (>250ha). While there are pronounced regional effects, with positive outcomes for Dumfries and Galloway and Orkney and the North East, these are small in magnitude (all <€3M).

In assessing the options for front-loading it was apparent that the key decision is the size of the first cohort being considered and only secondarily (for the options assess) the magnitude of the differential between the first and subsequent cohorts. Small cohort sizes and/or small differentials strongly limit the effects of the front loading and while the outcomes may be significant for individuals their aggregate effects are small (<€5M).

Finally, from the analysis it is possible to question the desirability of combining a podium weighted budget allocation with a calf-based VCS, as this may be resulting outcomes where gains from regionalisation and budget choices are further enhanced by the implementation of VCS.

1 INTRODUCTION

This paper presents a scenario analysis of a Voluntary Coupled Support Scheme (VCSS) in Scotland for beef-calves. This is part of the Phase 2 modelling of future CAP Pillar 1 options for Scottish Government conducted by staff at the James Hutton Institute.

2 MATERIALS AND METHODS

The analysis draws on the Phase 1 Modelling of regionalisation and budget scenarios and shares the same underlying datasets, approaches and assumptions with all data for the year 2011. The analysis presented here uses a simple scheme implementation paying a single flat rate for all calves regardless of herd size (SBCS Flat). This is intended to provide a first indication of the nature of spend and outcomes of a VCS rather than definitive statements on rates or payments. The assumed budget percentage available to fund VCS is 8% of the total SFPS budget value (€642M) used in all other scenario analyses to allow like –for-like comparison with the historic baseline. Differences in the assumed budget percentage can be made by linear interpolation. The calf numbers are those verified by SG-RPID in 2011 with assumptions on future eligibility of breeds based on the existing Scottish Beef Calf Scheme.

3 RESULTS

Use of an 8% rate with a €642M budget means a VCS budget of €51.4M. With 429,955 calves verified in 2011 this means a payment rate of €119.49 per calf. While these values have been used to ensure like-for-like comparability with Phase 1 Modelling they do not account for transfer to Pillar 2 or for the UK budget allocation both of which mean the actual rates of payment will be lower.

3.1 Spend

Of the 18,790 businesses with current SFP entitlements 7,504 would receive a beef calf based VCS payment. This is a total spend of €50.5M or 98% of the budget. €0.9M is paid to non SFPS businesses. The sectoral breakdown of this population is presented in Figure 1. The figure also shows how ubiquitous or otherwise a beef calf based VCS would be if eligibility was on the same basis as the current scheme. This varies from 84% for specialist beef to 6% for specialist sheep.

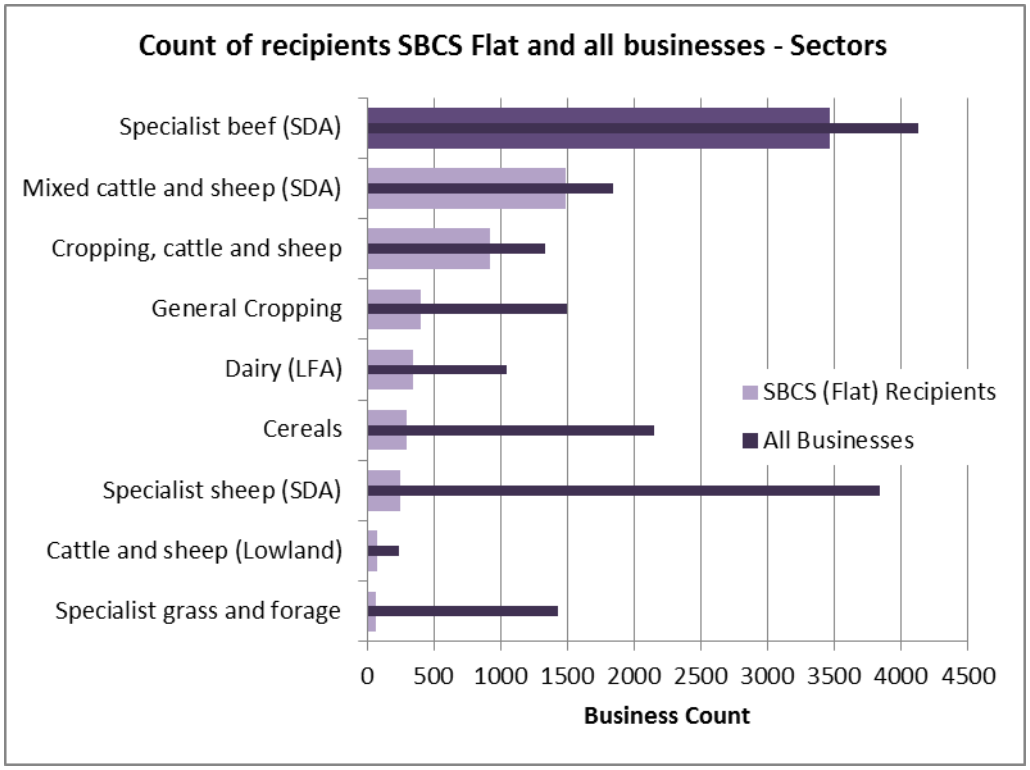


Figure 1

Figure 2 first presents the total spend by sector for those farm types receiving more than €1M, with the remaining spend grouped together. In terms of spend there is a strong concentration within the specialist beef farm type but substantial spend in both Mixed Cattle and Sheep and Cropping Cattle and Sheep types. The second chart presents the average payment per business (though this must be treated with caution since the distribution of payments is skewed). The largest average payments look to be associated with business that have both cropping and beef enterprises perhaps reflecting larger or more intensively managed units.

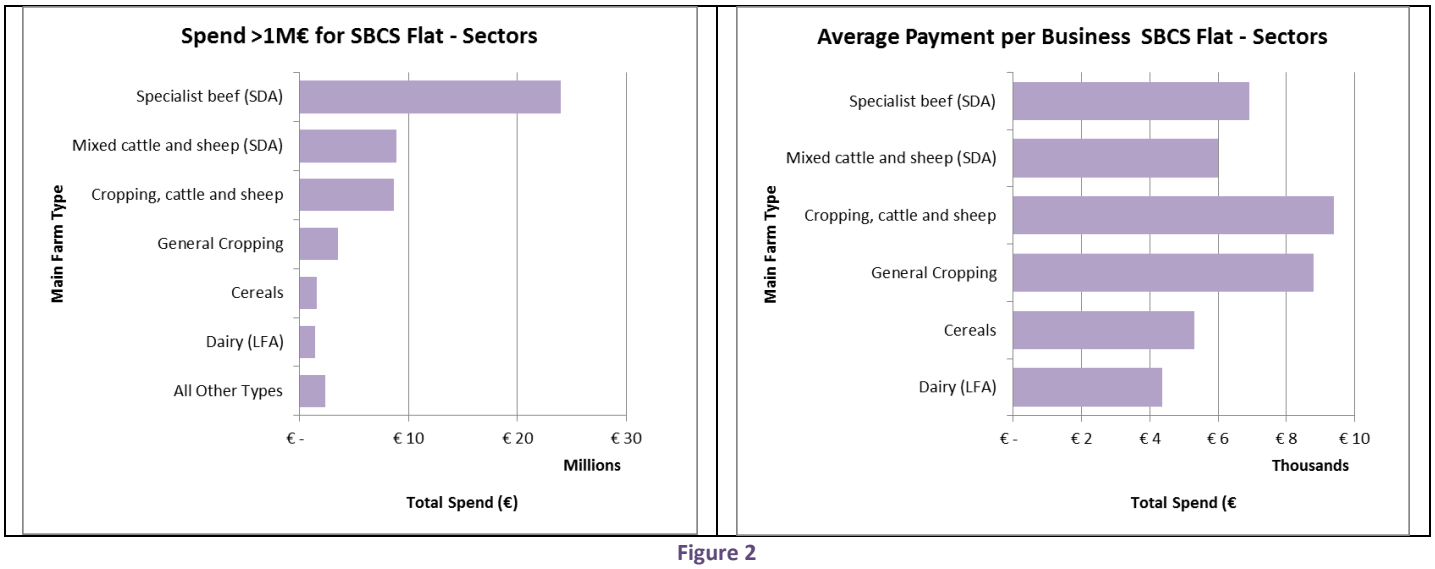


Figure 2

3.2 Benefits and Burdens

Since VCS is in effect funded by deductions from all businesses the €51.4M spend represents the maximum redistribution that could occur. At an aggregate level the effective redistribution is actually much less since a significant part of the VCS spend is used to offset the original reduction in BPS to fund the BPS budget (see Figure 3). For the SBCS flat the net positive redistribution is €17M with a strong concentration of net benefit within the Specialist Beef sector (€12M). Net funding of the VCS comes from Specialist Sheep (€5.2M), Cereals (€5.0M),

General Cropping (€3.2M) and Dairy (LFA) (€2.6M). Note that these are aggregate outcomes and do not account for within sector transfers between businesses that may result in desirable outcomes.

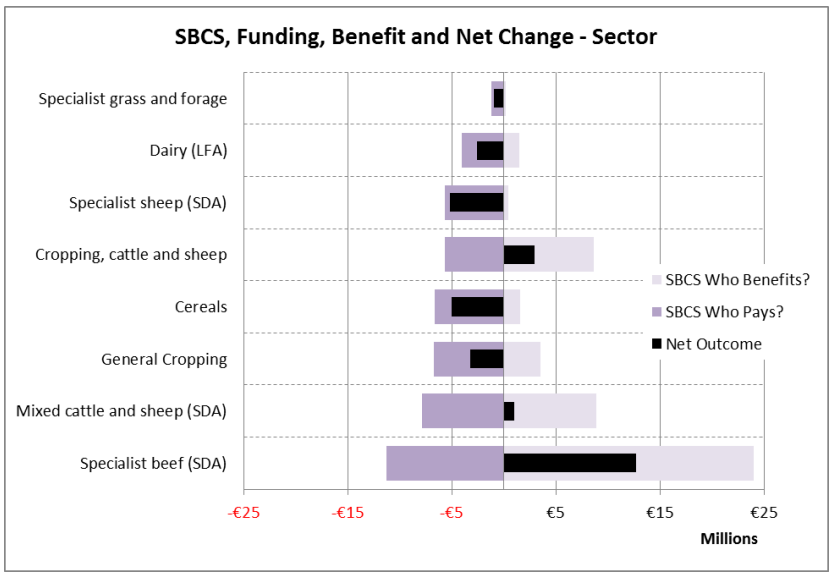


Figure 3

3.3 SBCS (Flat) + BPS scenario

This section of the report presents the outcomes of using SBCS (Flat) with the land type, farm level, three region, production weighted scenario with the RGR land type set to €27/ha.

The headline redistribution for this scenario is €131M a slight decrease from the scenario without SBCS (Flat) at €134M, and the percentage of the existing SBCS population that gain is near identical at 61%. The figures that follow provide sectoral (Figure 4), regional (Figure 5) and size class (Figure 6) detail. These use the graphical conventions defined in previous reports for the Phase 1 Modelling. The clearest outcome is in terms of the net benefit for the specialist beef sector though this is insufficient to dramatically alter the net regional or size class outcomes. The specific effects of the VCS alone are examined in Section 3.4 (next) and more detailed breakdowns of the components of change in Section 3.5.

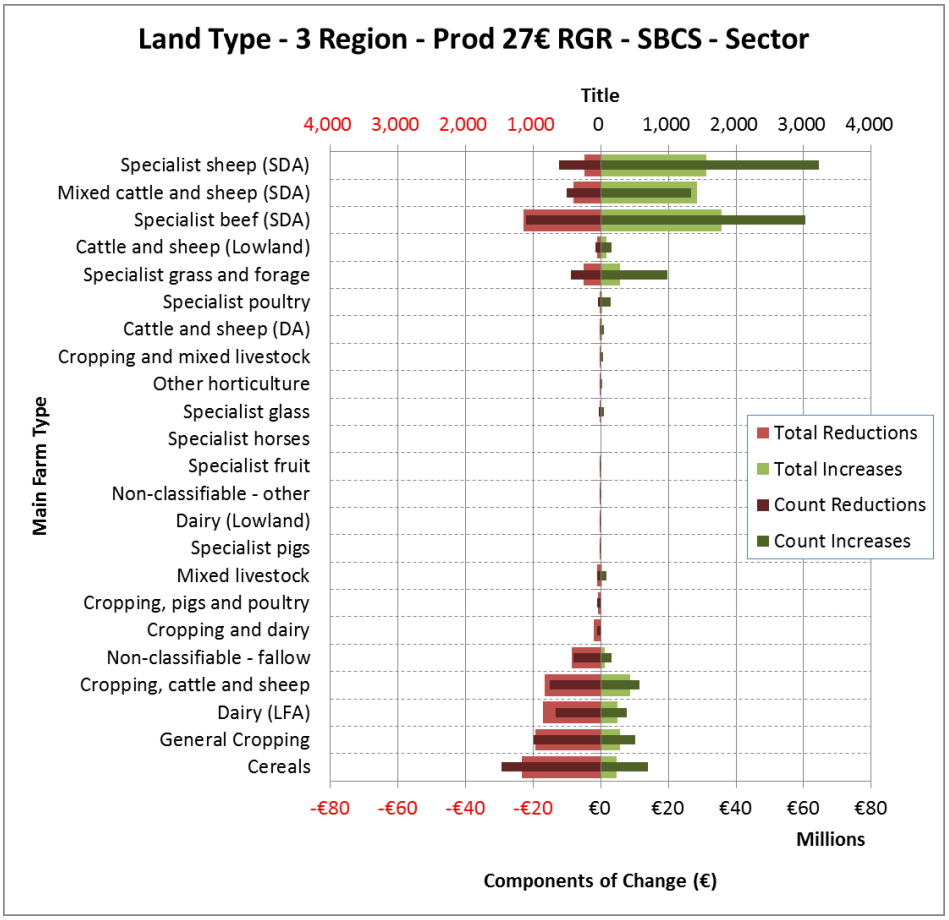


Figure 4

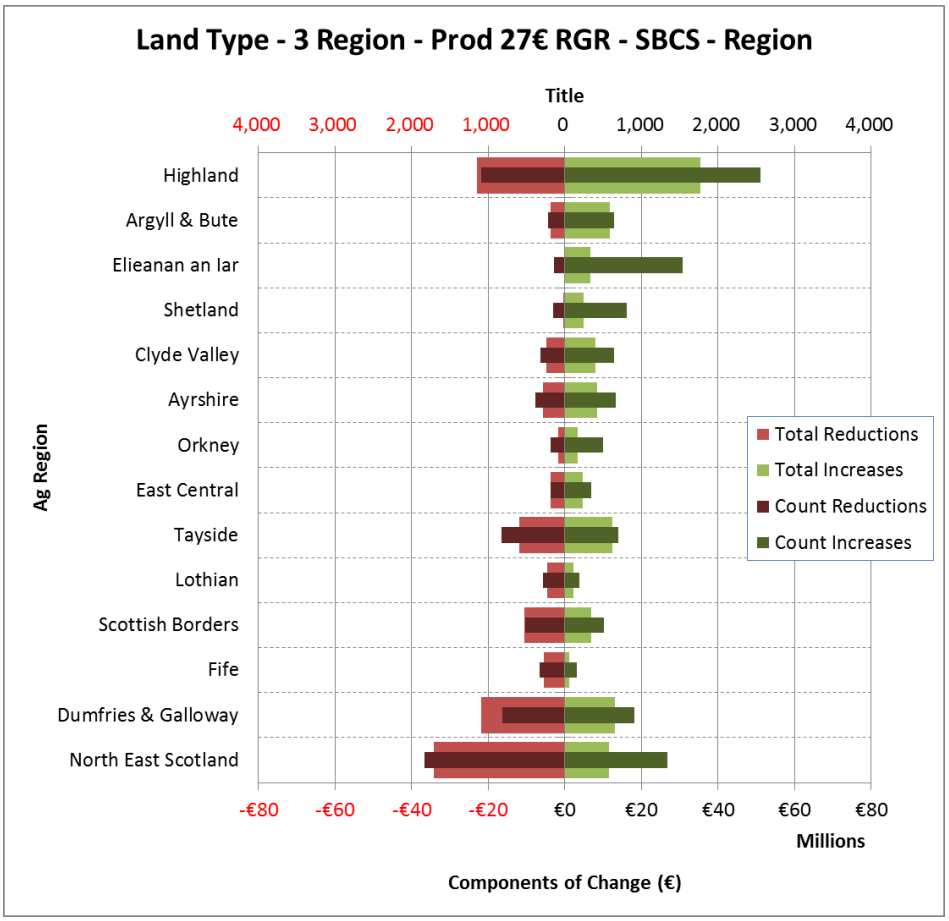


Figure 5

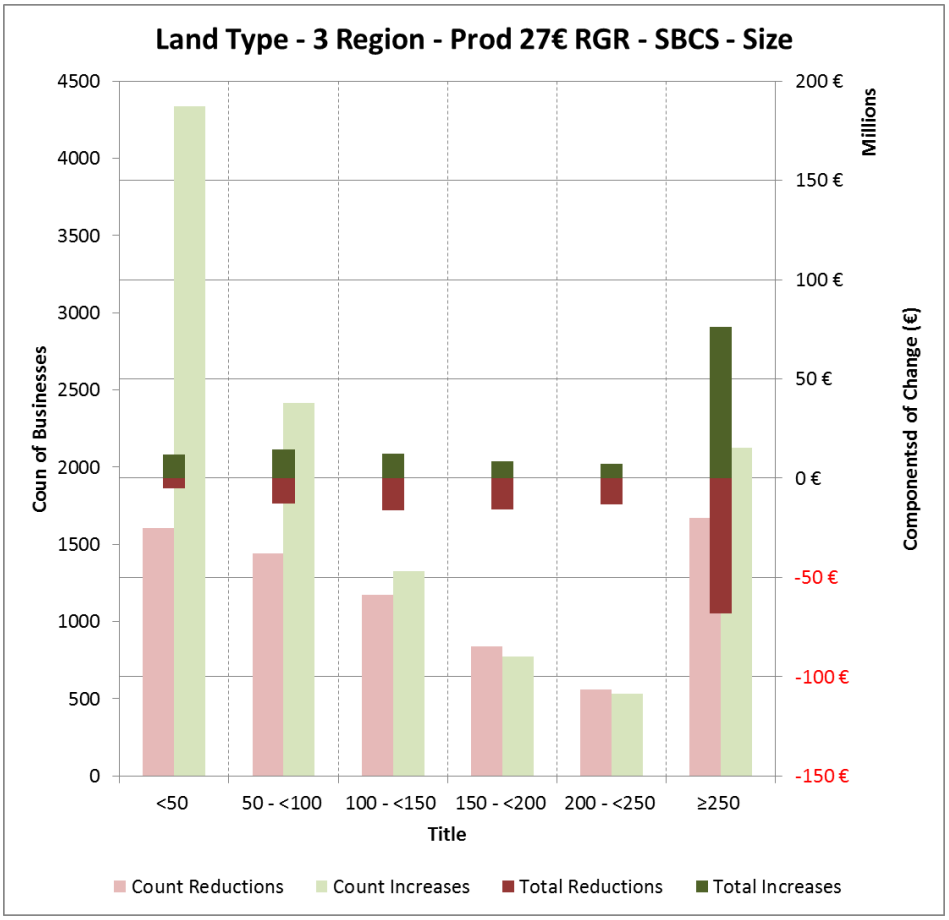


Figure 6

3.4 Overall changes by adding SBCS Flat

The following figures identify the specific changes in distribution of payments that can be attributed to the use of SBCS (Flat). Each chart show the net change in payments for sector, region or size class grouped by their net outcome in the scenario without SBCS (Flat) added. The charts thus show how adding SBCS (Flat) affects those businesses that would see increased payments (green bars) or reductions (red bars) compared with the baseline. For example for Specialist Sheep adding SBCS (Flat) reduces the increases seen in the without SBCS (Flat) scenario – the negative green bar and also makes larger the net reductions – the negative red bar. For Specialist Beef both bars are positive so reductions are smaller – positive red bar, and increases are larger – positive green bar. For Mixed Cattle and Sheep there is a balance with the reductions smaller – positive red bar, but increase also smaller – negative green bar. The balance between green and red bars determines the overall outcome for sectors of adding the SBCS (Flat). Regionally the most positive outcomes occur in Dumfries and Galloway and to a lesser extent in the North East and Orkney. For farm size the clearest effects are in businesses over 250 ha but with limited magnitudes.

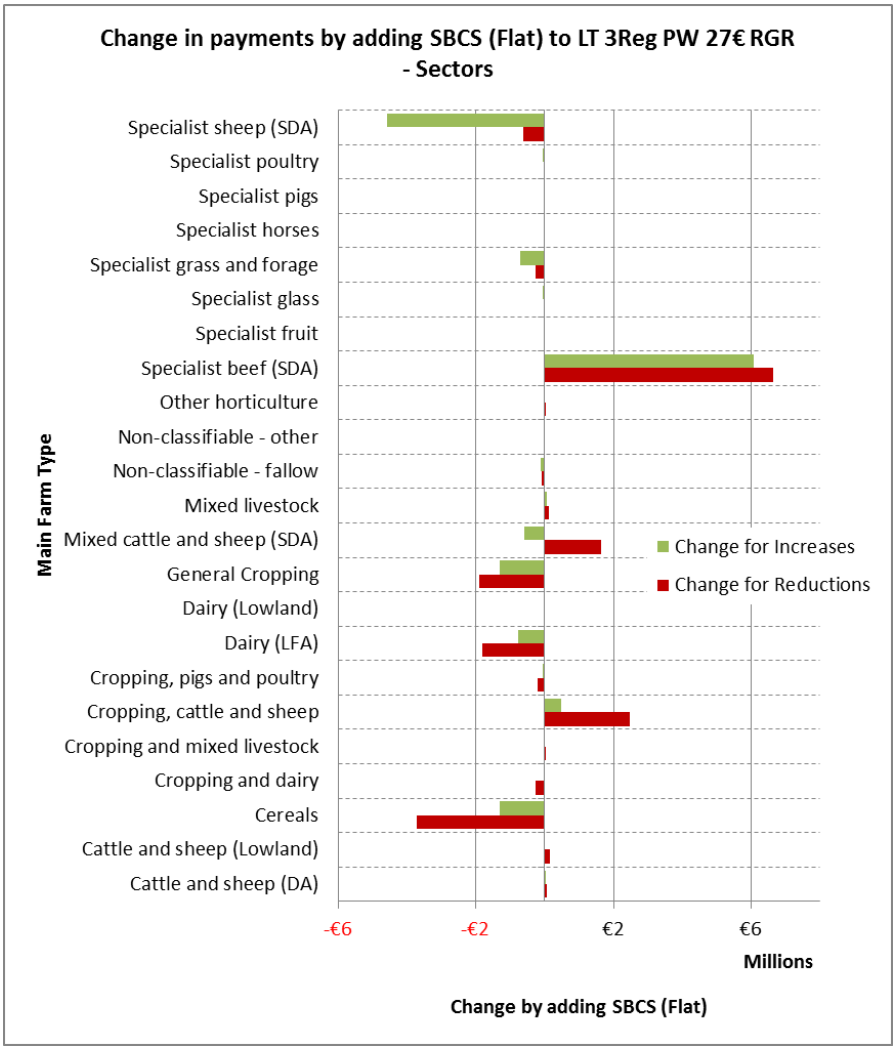


Figure 7

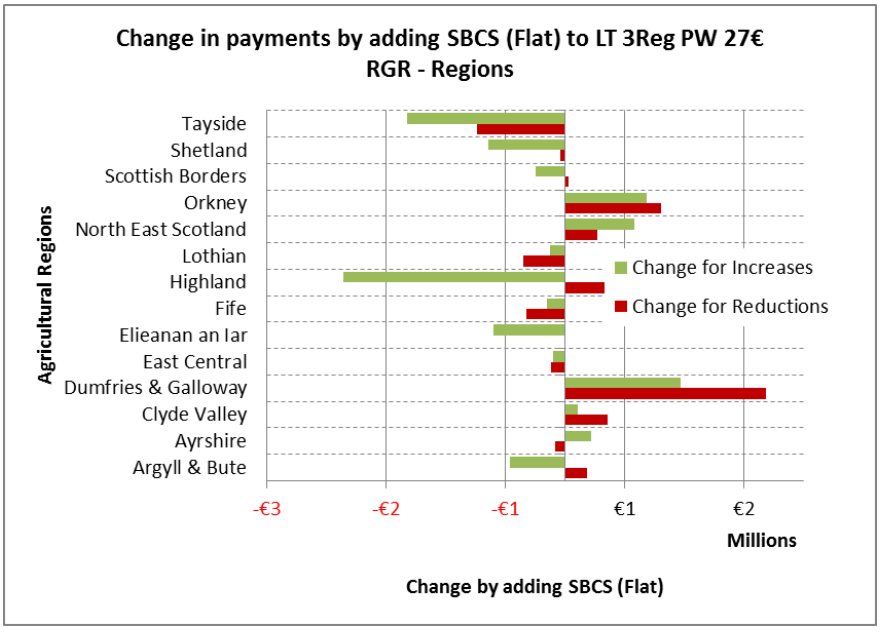


Figure 8

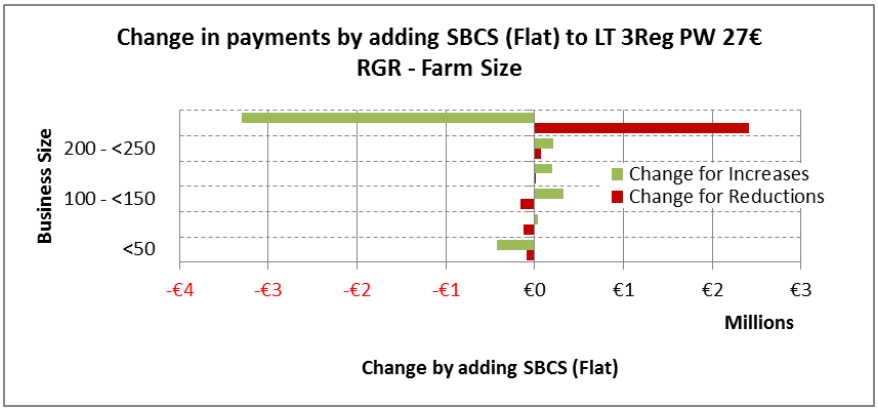


Figure 9

3.5 Components of change by adding SBCS Flat

It is possible to further disaggregate the outcomes of adding SBCS (Flat) so that it is not only the net outcomes for previous losses and gains are presented but the components of that change. These components of change are illustrated in the following table.

		Effect of SBCS (Flat)	
	Change	Reduce	Increase
Effect of the BPS Scenario	Lose	- -	- +
	Gain	+ -	+ +

So for businesses that lose relive to the baseline under the BPS scenario alone – they can see their payments reduced further or can see them increase. Similarly businesses that gain under the BPS scenario alone can also see reduced or increased payments. These components of change are significant as they define four classes of outcome and the balance of these outcomes to some extent defines the effectiveness of the SBCS (Flat) but also highlights the collateral consequences.

The two figures that follow present these components of change both in terms of the Euro value of the change Figure 10 but also in terms of the counts of businesses that fall into each component Figure 11. Change for businesses that lose under the BPS scenario alone but gain under BPS plus SBCS (Flat) are shown by the green bars. This is the magnitude of the intended outcome of using the VCS option. The graph for Euro value clearly shows the increases being concentrated in the specialist beef and related sectors. In addition, however, there are businesses that gain under BPS alone that see further increases under the BPS+SBCS (Flat) scenario, the blue bars. While the magnitude of spend within this component is not as large as for the lose-increase component it is substantial for the specialist beef farm type and indeed in terms of numbers of businesses it is the largest component of increase. It is possible to question if this funding is being used effectively unless the gains under BPS alone could be shown to be insufficient to ensure the outcomes desired. The components of change where SBCS (Flat) sees a reduction in payment have two distinct components of change. Firstly there are those businesses that gain under BPS alone but see reductions under BPS+SBCS (Flat) – the red bar. The farm types that see the largest reductions are specialist sheep and those associated with cropping. These businesses may not necessarily see a net fall versus the baseline but do see a fall relative to BPS alone. In policy terms these reductions are in effect a rebalancing of the distribution of expenditure between farm types. In effect the SBCS (Flat) is offsetting some of the net gains being made by the most extensive farm types under the BPS scenario. The final component is more problematic. This is made up of businesses that lose relative to the baseline under the BPS scenario and see further reductions with the addition of SBCS (Flat) – the purple bars. The component is concentrated in the cropping and dairy farm types.

Any overall assessment of these components of change is one that balances outcomes since with a fixed budget any gains are offset by loses either within or between sectors. It is, however, possible to question, given this analysis, if the use of a production weighted BPS scenario that weights middle quality land is the best BPS budget scenario to combine with a VCS scheme with a focus on calf rearing. It may be useful to explore the option of combining BPS (Flat) or other VCS implementations with a BPS where the highest rates are paid on the best land or a single rate is paid on a region that combines best and middle quality land.

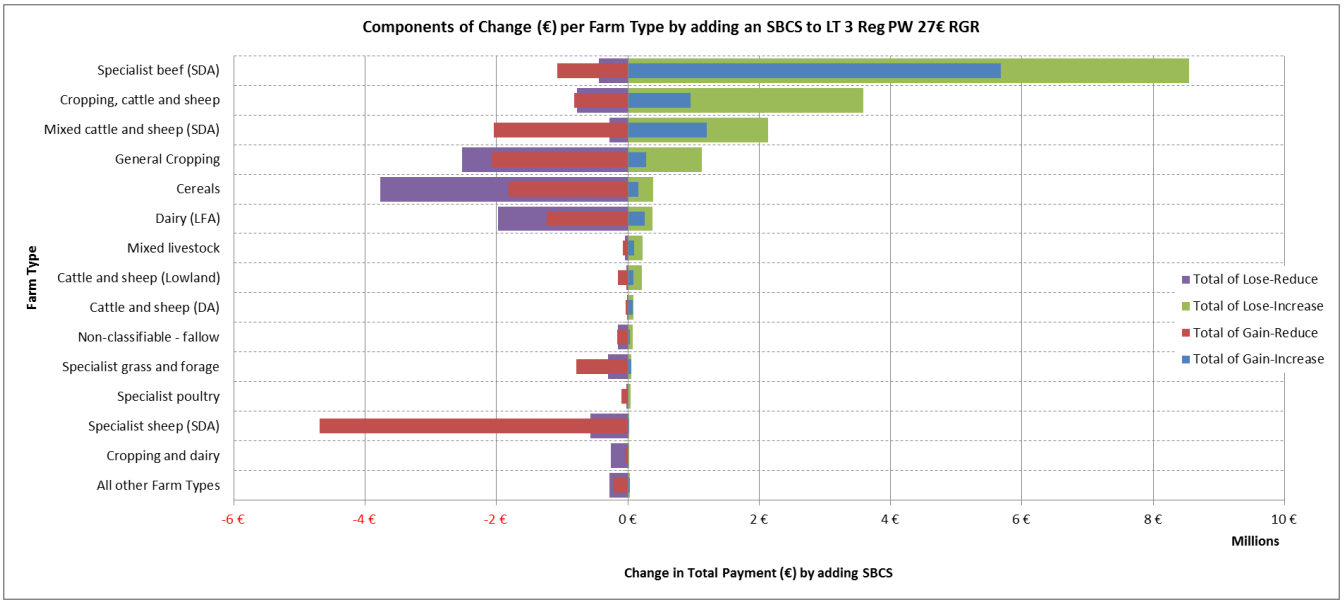


Figure 10

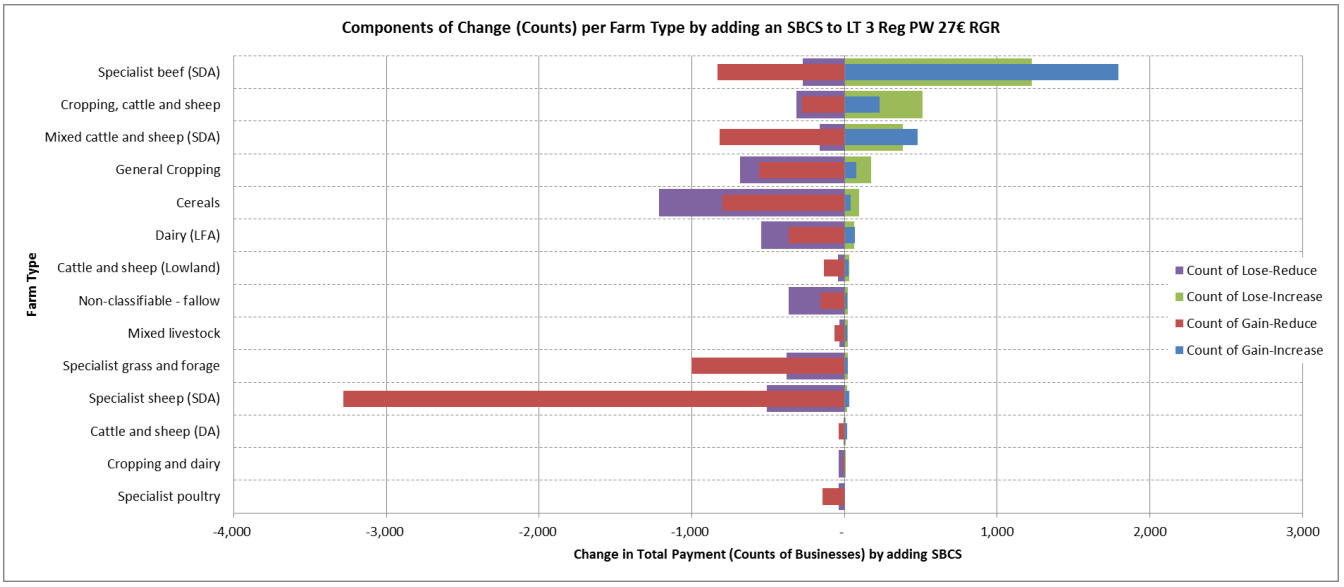


Figure 11

Finally the analysis has considered the counts of those businesses where the addition of SBCS (Flat) has moved the business from net loss to net gain or vice versa against the baseline. The chart below (Figure 12) shows the count of such businesses by farm type. This clearly shows the concentration of benefit in the specialist beef farm type and where farm types are disadvantaged. The overall numbers affects are relatively small at around 1,300 businesses and there is a near balance in numbers between gain and loss.

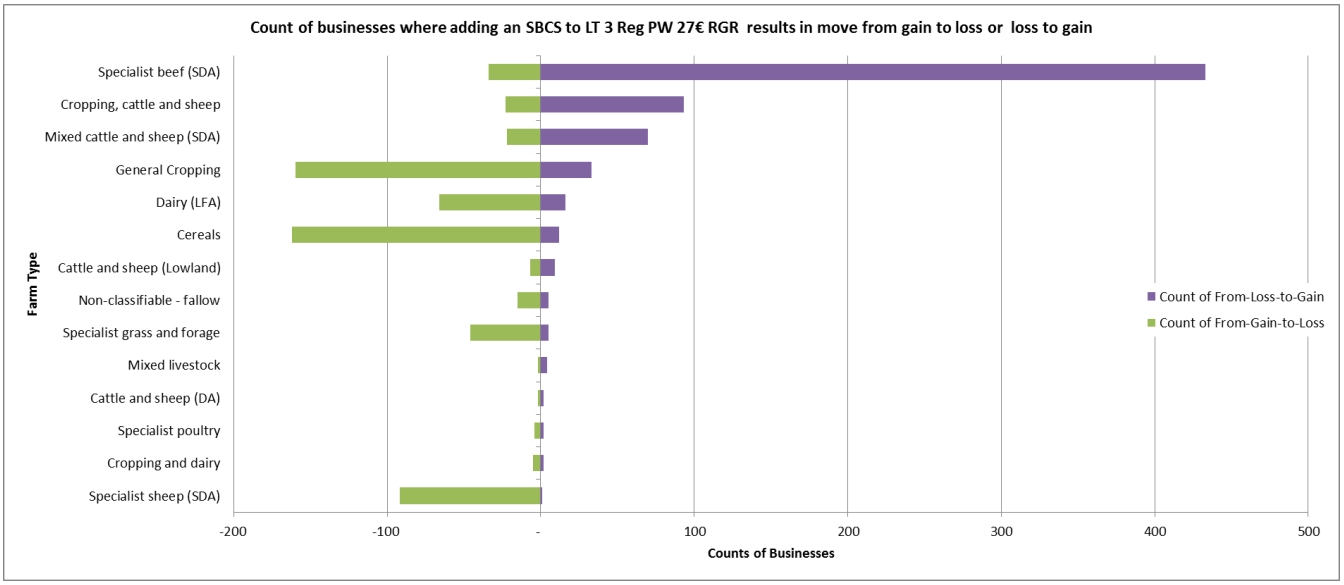


Figure 12

4 OTHER SCENARIO OPTIONS

In addition to the SBCS (Flat) option there is also the potential to weight payments, paying different rates to cohorts of varying sizes and to weight the first cohort(s) more heavily than others (front loading). There are a very large number of options possible with such schemes and it has not been possible to assess all within the scope of this paper. However, rather than provide an in-depth analysis of one or two options this section demonstrates the effects of two key parameters – the size of the cohort being font loaded and the degree of front loading. Four cohort sizes were used 12, 33, and 73 being the quartiles of the calf herd sizes for all businesses in receipt of current SBCS, the fourth added was 6 calves to highlight very small scale production, perhaps associated with crofting or small holdings. Three differentials were additional €10, €20 and €40 per calf for the first cohort. In the analysis the assumption was two cohorts only and front loading.

4.1 Effects of front loading

The following four figures outline some of the main consequences of using the various front-loading options.

The number of calves in the front-loaded and other cohort depends on the size threshold chosen. The outcomes for the four size thresholds investigated are shown in Figure 13. The crossover between front loaded and other cohorts in terms of size occurs at around 33 calves. Beyond that point the majority of calves would receive the front loaded payment. Note that the precise shape of the curve depends on the distribution of herd sizes so the lines between the cohort sizes are indicative.

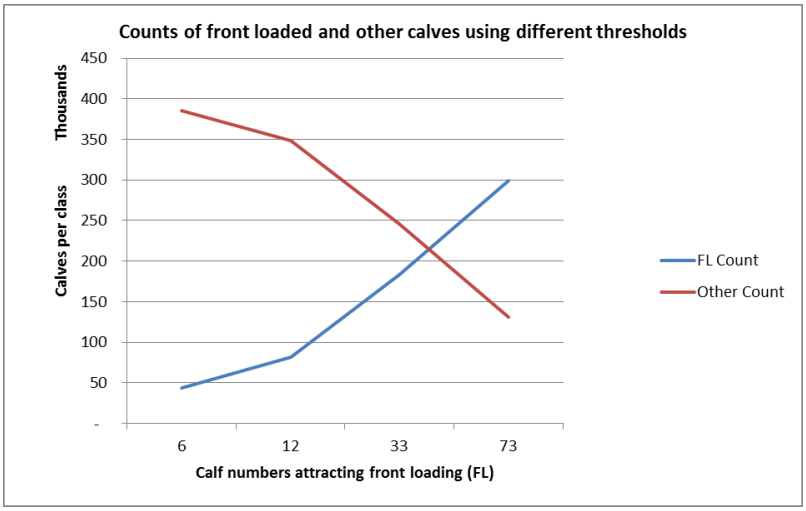


Figure 13

Figure 14 presents the rates that would apply for the combinations of cohort size and differential. The chart shows the decrease in payment rate for the second cohort as the size of, and differential for, the first front loaded cohort increases. With a fixed differential the small cohort's sizes have limited impact on rates as they affect a limited number of calves but the benefit may still be significant for very small scale and/or marginal producers. Use of large cohort sizes with a substantial differential sees the front loaded cohort taking nearly the entire budget and rates for the remaining cohort reduced to less than €40 per head. This strongly affects businesses with the largest herds (>73) but maximises uplift for three-quarters of smaller businesses (i.e. the first three quartiles). With very low rates for calves beyond 73 there would in effect be a form of capping with payments tailing off substantially beyond the €11,607 that would be paid for 73 calves at €159 per head.

The shares of budget between the front loaded and other cohorts are shown in Figure 15, with a similar pattern to the calf numbers for each size threshold; that is a crossover at around 33 calves between the two budgets. The effects of the differentials in payment rates can also be seen. From the figure it is possible to conclude that, at least for the differential values tested, the larger effect on budgets is from the size threshold used to define the front loaded cohort (though amplified by the differential).

Within the scope of this analysis it has not been possible to undertake a full impact assessment of the use of a front loaded SBCS. It is possible to comment on the additional redistribution that results from the use of front loading, when compared with a flat rate for all calves. Both larger differentials and larger size thresholds for the front loaded cohort increase overall amounts of redistribution, substantially when both larger differentials and size thresholds are combined. While individually significant, the total amounts redistributed by smaller thresholds or size thresholds on aggregate may mean that in policy terms the additional implementation complexity is not warranted. This would perhaps only be confirmed with detailed analysis of the sectors, regional and size class consequences.

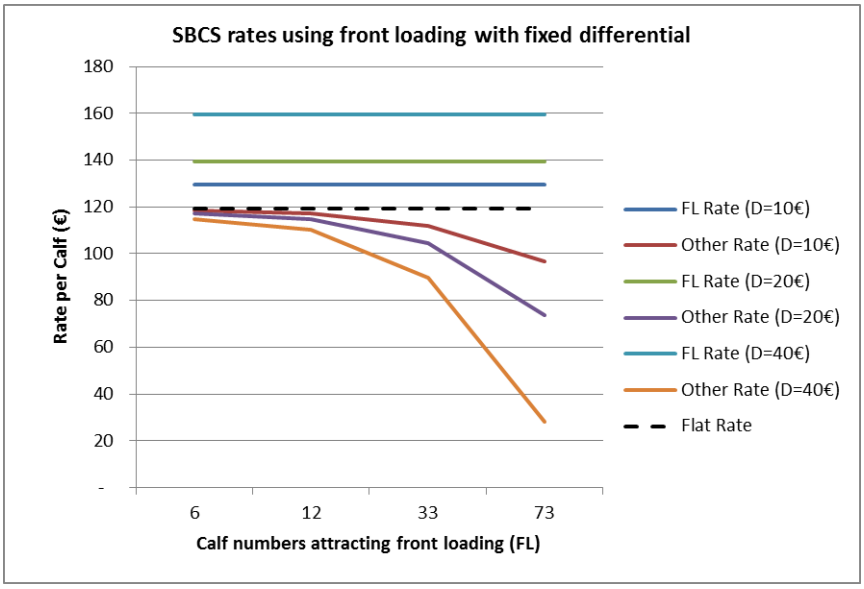


Figure 14

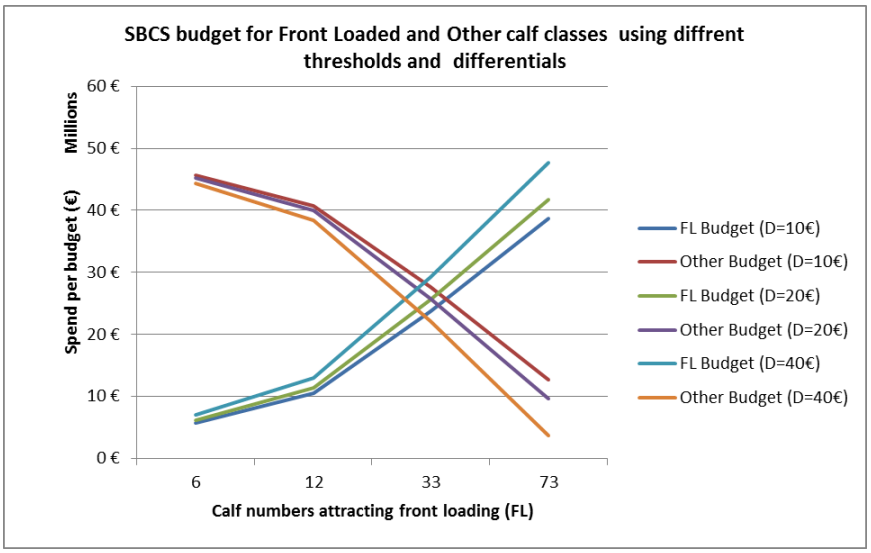


Figure 15

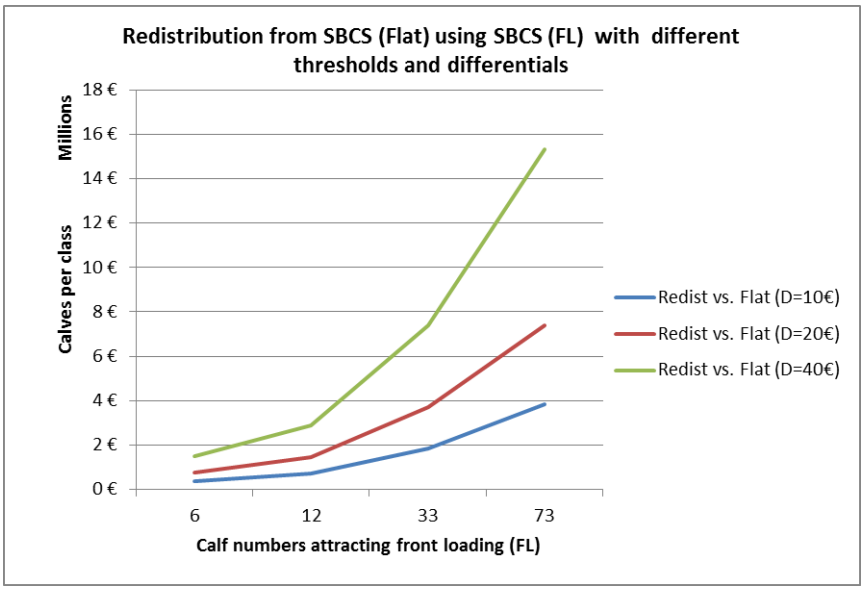


Figure 16