

**THE IMPACT OF BREXIT
SCENARIOS ON GRAZING FARMS
IN THE LAKE DISTRICT
NATIONAL PARK**

Report for AHDB

Submitted by

Agra CEAS Consulting

Telephone: *44 (0)1233 812181

Fax: *44 (0)1233 813309

E-mail: info@ceasc.com

www.ceasc.com

Job No2937/BDB/8th January 2018

Contents

1. INTRODUCTION	1
2. BACKGROUND	2
2.1. SCENARIOS	2
2.2. PRICES	3
3. METHODOLOGY	4
3.1. APPROACH TO MODELLING FUTURE DOMESTIC POLICY SUPPORT	4
4. RESULTS	6
4.1. INITIAL IMPACT	6
4.2. FOCUS ON SUPPORT PAYMENTS	7
4.3. SUBSEQUENT ADJUSTMENTS	8
5. KEY ISSUES TO CONSIDER	11

Acknowledgement

The Farm Business Survey Unit at Newcastle University thanks sincerely all the farmers who have voluntarily provided records and information on which this report is based.

The basic information on which this report is based was collected on behalf of, and largely financed by, the Department for Environment, Food and Rural Affairs and is Crown Copyright.

Caveat

The weights used in this data presentation are based on the size stratified (by SLR) population of commercial LFA Grazing farms of the Lake District National Park in 2010.

I. Introduction

Informa Agribusiness Consulting produced a quantitative assessment of the likely impact of three Brexit scenarios for the Agriculture and Horticulture Development Board (AHDB) in the summer of 2017 (Technical Report).¹ This report was used as the basis for an AHDB Horizon report entitled Brexit Scenarios: an impact assessment.²

In order to better-understand the implications of Brexit for the Lake District, the Lake District National Park authority requested that the AHDB use the model developed by Informa Agribusiness Consulting to investigate the impact of the three Brexit scenarios on the income of grazing farms in the Lake District National Park. The AHDB commissioned Informa Agribusiness Consulting to carry out this work.

This short report sets out the background, method used, the results and key issues to consider.

¹ Bradley, D. and Hill, B. (2017) Quantitative modelling for post-Brexit scenarios. Final report for AHDB. Submitted by Agribusiness Consulting | Informa: https://ahdb.org.uk/brexit/documents/Quantitative_Modelling_For_Post_Brexit_Scenarios-12oct17.pdf

² AHDB (2017) Brexit Scenarios: an impact assessment. Agriculture and Horticulture Development Board Horizon Market Intelligence October 2017: https://ahdb.org.uk/brexit/documents/Horizon_BrexitScenarios_Web_2017-10-16.pdf

2. Background

2.1. Scenarios

The Technical Report sets out the scenarios and how these were “operationalised” and the reader should refer to this for full details. The technical report also contains a thorough literature review of all the Brexit-related research which had been made publicly available at the time of writing.

The OECD explains that scenarios are not predictions of what is likely to happen; rather, they provide a structured framework within which to think about outcomes. Scenarios offer a “*consistent and coherent description of alternative hypothetical futures*”. An outline of three scenarios was provided by the AHDB. These contained the following five elements:

- public support for agriculture;
- access to migrant labour;
- post-exiting the EU regulatory environment;
- trade relationship with the EU; and,
- trade relationship with the rest of the world (RoW).

The AHDB scenarios were designed to present the *range* of likely outcomes from the negotiations to exit the EU and on the design of post-exit national policy; it is felt likely that any actuality will lie within these bounds. To this end, one scenario, termed “**Evolution**”, presents an outcome which, as closely as possible in the circumstances, represents the continuation of the *status quo*, i.e. a Free Trade Agreement (FTA) between the UK and the EU (to replace membership of the single market) and support at the current CAP levels. Inevitably, this leads to an increase in the costs of trading as various activities not necessary in a single market have to be introduced, such as inspections at the border (“trade facilitation costs”, the expected magnitude of which can be estimated from literature on current experience).

At the other extreme are two scenarios that involve versions of reduced support levels, restrictions on labour from other EU Member States, changes in the regulatory burden, and trade relations. Of these, one, termed “**Fortress UK**”, presents an outcome which represents a failure to agree an FTA between the UK and EU and the reversion to the use of World Trade Organisation (WTO) rules and Most Favoured Nation (MFN) tariffs. This is combined with a reduced level of support in which Pillar I direct payments are removed but partially replaced with higher levels of Pillar II payments, and restrictions are placed on all migrant labour. The other, termed “**Unilateral Liberalisation**”, is designed to reflect a situation in which the UK opens up its domestic market by a unilateral removal of tariffs on trade with the rest of the world. Again, there is a reduction in public support, though less severe, and restrictions on migrants apply to regular workers only (not casual labour). In these respects, “**Unilateral Liberalisation**” can be seen as an intermediary position between the other two scenarios. The regulatory burden is also lightened in this scenario, reflected in lower costs of production. The details of the scenarios were refined and agreed in discussion with the AHDB.

Taken together, the three scenarios sketch out a frontier of outcomes deemed possible by the AHDB and for which first-order impacts can be estimated and then compared. From this position, subsequent order responses can be considered. Together these allow a reasoned opinion to be developed of the implications of the scenarios for farms in the Lake District.

2.2. Prices

The prices used under the different trade scenarios were derived using a gravity model and validated in discussion with AHDB staff. Full methodological details can be found in the Technical Report. Price changes are a function of the UK's net import/export position, the cost of trade friction and the imposition of tariffs. The full set of price changes are contained in the Technical Report; only beef and sheep prices are relevant for this exercise and these are shown in Table 2.1. It should be noted that the FAPRI model³, run on behalf of the UK's four agricultural departments, broadly corroborated our price changes with the only significant point of difference relating to the beef price under **Scenario 2: Unilateral Liberalisation** where FAPRI showed a decline in price of 45%. This is explained by the FAPRI use of a world beef price substantially below the EU beef price; this was also the case in the work carried out for the NFU.⁴ However, we use the latest data sources; had we not done this we would have estimated a much more significant decrease in the beef price under this scenario. We also use a trade weighted blended tariff rate rather than the tariff for beef carcases (which does not reflect the structure of UK beef imports).

Table 2.1: Beef and sheep price changes under the scenarios

	Scenario 1: Evolution	Scenario 2: Unilateral Liberalisation	Scenario 3: Fortress UK
Beef	+4.55%	-0.45%	+21.45%
Sheep	-5.00%	-20.04%	-25.42%

³ Davis, J., Feng, S., Patton, M. and Binfield, J. (2017) Impacts of Alternative Post-Brexit Trade Agreements on UK Agriculture: Sector Analyses using the FAPRI-UK Model. FAPRI-UK Project, Agri-Food and Biosciences Institute and University of Missouri. August 2017.

⁴ Berkum, S. van, R.A. Jongeneel, H.C.J. Vrolijk, M.G.A. van Leeuwen and J.H. Jager (2016) Implications of a UK exit from the EU for British agriculture. Study for the National Farmers' Union (NFU), Warwickshire, UK. Wageningen, LEI Wageningen UR (University & Research centre), LEI Report 2016- 046.

3. Methodology

The data on farm incomes used in this exercise were provided by the Farm Business Survey Unit at Newcastle University. The sample size was 14 in 2014, 16 in 2015 and 15 in 2017. These are relatively small samples and individual performance will vary around the average. These data were weighted to represent the 432 commercial LFA Grazing farms of the Lake District National Park.⁵

There are some small differences in the data compared to that used in our original research for the AHDB. For example, income from diversified activities is not separately identified (it is included within “crop and miscellaneous” revenue); “sales commission” is separately identified within the Lake District data. These differences have no implications for the calculation of Farm Business Income.

Financial data were provided for the 2014, 2015 and 2016 lamb crops. Data for the first two years were converted to 2016 prices (i.e. put in real rather than nominal terms) using the same index used in the Technical Report. The data were then averaged across the three years to reduce inter-year variability.

A model was built to reflect the structure of the data provided and this was then linked to the scenarios developed in our Technical Report. The same underpinning methodology that was presented in the Technical Report was also used here. Figures were rounded to the nearest £100.

It is important to note that the model provides an assessment of the first-order impact. This means that adjustments that farmers might make to their farm management in terms of production intensity, enterprise mix, etc. as a result of price signals from the market are not accounted for. The likely subsequent response to the scenarios is considered in qualitative terms in section 4.3.

3.1. Approach to modelling future domestic policy support

The way in which we have treated public support under Scenarios 2 and 3 needs to be carefully understood. The coefficient for reallocating support to Pillar II is calculated at the all-England level and then applied at the sector level. This means that the current Pillar II allocation for each farm type is inflated using the global coefficient, so that total support at the all-England level will be equal to 50% of the current total under **Scenario 2: Unilateral Liberalisation** and 25% of the current total under **Scenario 3: Fortress UK**. It therefore does not follow that support under scenario 2 (scenario 3) will be 50% (25%) of total current support for specific farm types as the balance between Pillar I and Pillar II supports differs.

⁵ The Farm Business Survey is representative of all farms with a Standard Output of at least €25,000. Farms below this threshold are not represented meaning that the findings here do not represent very small farms. In the UK as a whole the FBS field of observation includes 51% of the farms recorded in the Farm Structure Survey although these account for 96% of total Standard Output and 82% of Utilised Agricultural Area. See Hill, B. and Bradley, D. (2015) Comparison of farmers' incomes in the EU Member States. Study for the European Parliament.

Farm types with a high proportion of Pillar II payments will therefore see Pillar II-type payments exceed their current total support under **Scenario 2: Unilateral Liberalisation**. On the other hand, sectors with a high proportion of Pillar I payments in total support will face a very substantial reduction in total payments. Grazing farms in the Lake District received an average of £59,222 in Pillar II payments for the three years examined. In contrast, LFA producers in England as a whole (which includes these Lake District producers) received an average of £11,588. The grazing farms in the Lake District would therefore receive a very substantial uplift in Pillar II payments under scenario 2 (and to a lesser extent scenario 3) while producers in other sectors across England would see substantial reductions in support.

The rationale behind this approach is that it is easier to foresee an extension of the current distribution of Pillar II payments than a distribution which favours those farmers in sectors currently less reliant on these. The distribution of potential future support under Pillar II-type schemes is an issue that will need to be addressed by policy makers (see Chapter 5). Clearly taking other approaches to the distribution of support post-Brexit could have a significant impact on the level of support received by specific farm types (see section 4.2).

As in our Technical Report, our assumption is that Pillar II-type support provides additional revenue rather than income foregone (as is currently the case). If Pillar II-type support were to be provided only on an income foregone and cost incurred basis, then FBI would be reduced by the magnitude of these payments (see section 4.1). Again, this is a critical point for policy makers to consider (see Chapter 5).

4. Results

4.1. Initial impact

The baseline Farm Business Income (FBI) for grazing farmers in the Lake District National Park derived from the data provided is £55,400. Figure 4.1 shows that this remained virtually unchanged under **Scenario 1: Evolution**. FBI under **Scenario 2: Unilateral Liberalisation** increased substantially to £83,600 while FBI under **Scenario 3: Fortress UK** fell to just £7,900.

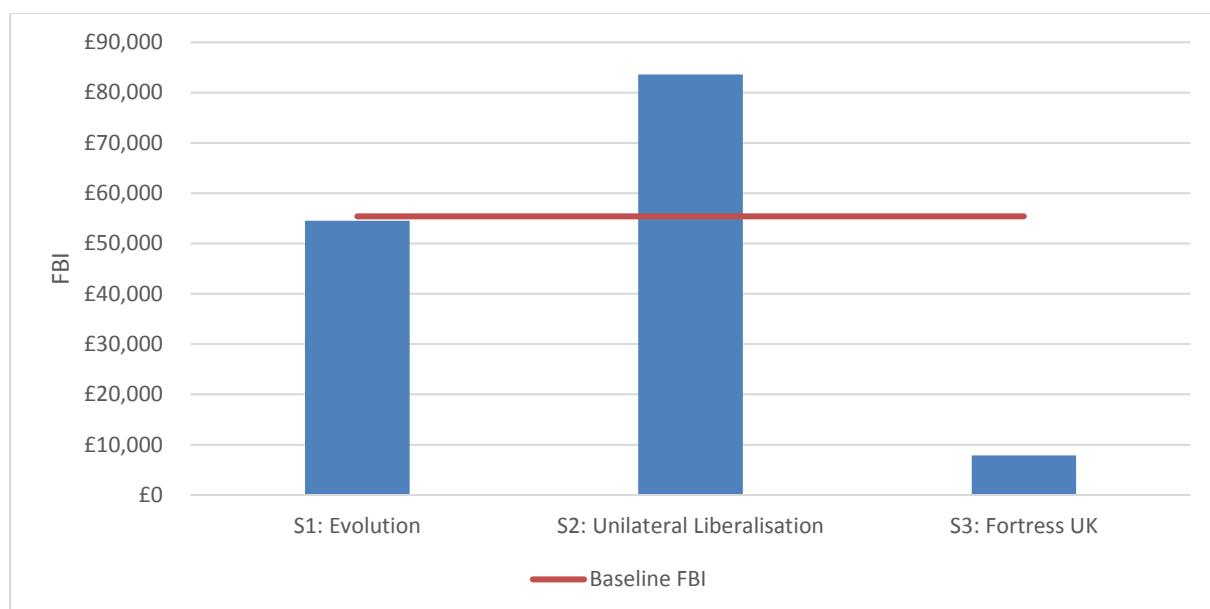


Figure 4.1: Impact of the scenarios on FBI: Lake grazing farms

The components that make up FBI are shown for the baseline and each scenario in Figure 4.2. Comparisons between the scenarios reveal that the key driver of the changes in FBI is domestic support policy. Pillar I payments provide £51,100 and Pillar II payments £59,200 under the baseline scenario. Without this support, grazing farms in the Lake District would make a loss with an FBI of -£55,900. The loss of Pillar I support alone would leave grazing farms with an FBI of just £4,300.

As support remain unchanged under **Scenario 1: Evolution**, FBI falls only marginally as a result of trade friction costs from leaving the single market. FBI under **Scenario 2: Unilateral Liberalisation** increases sharply, despite the reduction in revenue from production, because the loss of Pillar I payments is more than compensated for by the increase in Pillar II support. As noted in section 3.1, this results from the way in which we have assumed Pillar II payments will be distributed; sectors with high Pillar II payments (of which Lake District grazing farms are one) will benefit disproportionately. Alternative ways of distributing Pillar II support and the impact that this would have in the Lake District are examined below in section 4.2. FBI under **Scenario 3: Fortress UK** drops substantially due mainly to the reduced level of support available under Pillar II compared to that under the second scenario; revenue from production under this scenario is reduced more than under scenario 1, but not as much

as under scenario 2. FBI is also reduced under the second and third scenarios by the additional costs of fixed labour and marginally under scenario 3 by additional costs for casual labour. There is a small benefit to FBI under scenario 2 from the assumed reduction in regulatory costs.



Figure 4.2: Impact of the scenarios on components of FBI: Lake District grazing farms

Data were not available to examine the impact of the scenarios by farm size or economic performance. However, there is no reason to suppose that the outcome would be any different to that presented in our Technical Report. Of greatest note is that high performing farmers, i.e. those with the most favourable ratio of output to inputs, will be best placed to withstand the challenges of Brexit under any of the scenarios.

4.2. Focus on support payments

The complete removal of Pillar I and Pillar II support would make FBI under **Scenario 2: Unilateral Liberalisation** lowest under all scenarios (-£70,000) rather than highest. However, if future support were to be distributed proportionally in the same way that Pillar II support is distributed currently and assuming that these payments represented additional income and not just income foregone/additional costs incurred, grazing farmers in the Lake District would be well protected from the impacts of a decision to unilaterally remove tariffs on imports (as shown in section 4.1).

An alternative distribution of public support could involve each farm receiving 50% (scenario 2) or 25% (scenario 3) of its total current Pillar I and Pillar II support. Under this approach, FBI for grazing farms in the Lake District would be substantially negative under both **Scenario 2: Unilateral Liberalisation** and **Scenario 3: Fortress UK** (Figure 4.3). Under both scenarios this approach would leave Lake District farmers worse off than if Pillar I payments were simply removed and Pillar II support were left at the current level because Pillar II support currently accounts for more than half of total support.

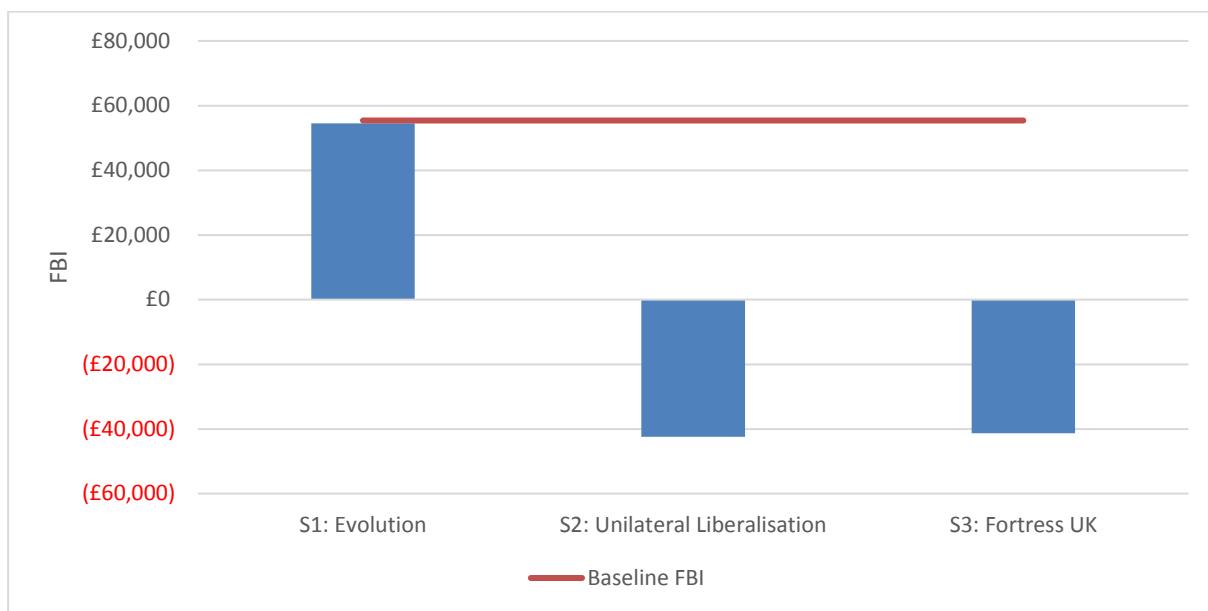


Figure 4.3: Impact of the scenarios on FBI: Lake District grazing farms, individual allocation of Pillar II-type support

4.3. Subsequent adjustments

Despite the substantial first-order impacts arising from the Brexit scenarios examined here, it should be noted that the literature points to the proven ability of UK farmers as a group to absorb and adjust to shocks and pressures. Harvey, et al. (2013)⁶ demonstrate this in the Lake District with reference to the cut in support following the removal of the Hill Farm Allowance and the 2001 Foot and Mouth Disease outbreak. These authors note that many farmers, if not most, have survived, if not actually prospered, and some have found opportunities to make fairly radical adaptations and adjustments to their businesses.

The very small impact of **Scenario I: Evolution** on farm incomes compared with the baseline means that many of the existing key trends in the beef and sheep sectors will in effect, continue. Whilst UK retailers do have an interest in stocking UK products, upland lamb is more usually exported and it is unlikely that domestic demand for this type of lamb will alter without specific marketing efforts.

There will still be a wide variation in the range of performance, profitability and scale of activity, and this will remain a highly fragmented sector. This is driven largely by topography and the lack of opportunities for introducing mechanisation to the farms, and reflects the use of family and/or seasonal labour.

⁶ Harvey, D., Thompson, N., Scott, C. and Hubbard, C. (2013) *Farming & Farm Forestry in the Lake District*. A report for the Lake District National Park Partnership, Farming & Forestry Task Force. Centre for Rural Economy & School of Agriculture, Food and Rural Development, Newcastle University. June 2013.

Though the price changes indicate an expected change in the balance of output towards beef and away from sheep, it must be noted that land farmed in the LFA for sheep is often not suitable for beef farming and this will continue to act as a constraint on any major switch of farm activity. This is exacerbated by the different types of labour required to manage and operate these farms.

Overall, **Scenario 1: Evolution** will result in little change to grazing farms in the Lake District, although some relatively minor rebalancing away from sheep and towards beef is likely where this is possible.

The way in which public support is distributed will be vital in driving subsequent adjustments under **Scenario 2: Unilateral Liberalisation**. If Pillar II-type support is distributed between sectors in the same way that it is now, then grazing farms in the Lake District will have higher FBIs than they do currently and this implies no pressure to make changes. In fact, such an outcome might hinder structural adjustment and allow more marginal farmers to continue for longer than under the current operating framework.

An alternative distribution of Pillar II-type support would though expose grazing farms in the Lake District to the realities of their current dependence on public support and leave them with substantially negative FBIs. In this case, unless the farm household has substantial income from other sources, only the very best farmers will be able to stay in business; others will eventually be forced to exit the sector. The most indebted farmers will be at most risk. These changes will force a restructuring of the sector, with associated falls in land prices which would be likely to feed through to a reduction in rental value over time. Farmers can be expected to exit from marginal land first, although this may involve renting out the land or share farming rather than land sales. Unless land is absorbed by others in the process of restructuring, this will ultimately return to bracken and heather.

The loss of EU export markets, which is likely under this scenario, will make this a particularly difficult sector to be involved in unless public support is increased to compensate. Without appropriate public support, the overall sector will shrink under this scenario, aggravated by the continuing decline in domestic demand for upland sheep, despite retailer interest in promoting British lamb. Those farmers more reliant on the lamb export trade will be more at risk than those serving UK markets. Unless keeping sheep is a requirement of future public support, it is possible that the sheep population will decline considerably with consequential impacts on habitats and biodiversity (not necessarily negative), especially in the more remote areas and on the steepest slopes.

UK retailers tend not buy sheep from the LFA regions (i.e. hill/light lambs, etc.); the product has traditionally been exported and not sold in the domestic market to any great extent. Overall, the market for sheep from LFA regions will remain depressed, although increased effort to market upland sheep could conceivably boost domestic demand.

Given the reliance on public subsidy, it can be expected that there will be greater interest in Pillar II-type support, more farm diversification activity (that is, non-agricultural activities on farms) and a need

to generate more off-farm income, with the consequence of more part-time farmers. However, not all farmers are able to diversify or obtain off-farm income. A proportional distribution of Pillar II-type support will maintain current farm structure, but other ways of allocating Pillar II-type support would be likely to accelerate the polarisation of farm sizes. A switch from sheep to beef to improve market returns is not always possible for technical reasons.

Overall, the outcome from **Scenario 2: Unilateral Liberalisation** is heavily dependent on the way in which future Pillar II-type support is distributed. Under a proportional approach, grazing farms in the Lake District would be well insulated from market signals. However, other approaches to the distribution of Pillar II-type support could result in many producers leaving the sector or relying on off-farm income. Enterprises with a greater focus on sheep be under greater pressure than those focused on beef.

Under **Scenario 3: Fortress UK**, FBI is substantially reduced. The loss of marginal farmers is likely under this scenario, even if Pillar II-type support is distributed between sectors in the same proportion as currently (land may be rented or share farmed rather than sold); those serving lamb export markets will be hardest hit with no increase in domestic demand for upland lamb expected, despite retailer interest in stocking British produce. The best managers will try something different – this might be the better use of genetics, the use of online selling, or the development of diversified activities and/or off-farm jobs – but many others will be unwilling or unable to do this and simply will not be able to survive financially with their traditional way of farming. This could have serious consequences for the farming environment and social infrastructure.

Sheep farmers are more likely to exit from the sector than beef producers, not least due to the loss of export markets and relative lack of domestic demand for upland sheepmeat. Beef producers will benefit from a stronger domestic market and lower reliance on exports markets. The apparent unwillingness of UK retailers to stock upland-sourced beef and sheep means that there is no drive to develop integrated supply chains and afford upland farmers some of the protection that these can offer. Switching of farm activity will be difficult for many due to the type of land found and the farming culture.

There will be increased interest in Pillar II-type support, especially from smaller-scale and/or less efficient producers.

Overall, **Scenario 3: Fortress UK** will make the future prospects for grazing farmers in the Lake District look especially challenging; only the most efficient producers will be economically viable without off-farm income.

As a general point, low performers are already making losses in this sector and to move forwards under this scenario from farming alone, it will be necessary to be in the high performing category of farms.

5. Key issues to consider

This exercise has highlighted the **importance of the current support system for farmers in the hills** (also noted in Harvey, et al., 2013). This support currently accounts for 57% of total revenue (26% Pillar I and 30% Pillar II) and clearly the removal or cutting back of this support would have a significant impact on the viability of upland farmers. The consequences of some upland farms being unable to continue in business should be considered in terms of the impact on the wider Lake District economy, including the impact on tourism (would other farmers expand or would land be abandoned?). The potential impact on the environment should also be considered. Potential impacts of reductions in support are explored further in Harvey, et al. (2013) and these are relevant here.

The **magnitude of future support** in the hills is therefore a critical factor and a key issue for stakeholder organisations to focus on. It should be noted that the Government is sympathetic to this case, as evidenced by the Secretary of State's speech to the Oxford Farming Conference on 4 January 2018 where he noted the contribution upland sheep farmers make to rural life and iconic landscapes.⁷ In evidence to the House of Commons' Environment, Food and Rural Affairs Committee, the Secretary of State noted the need to provide support to hill farmers "for several years to come".⁸

It is also important for stakeholder organisations to consider the **design of future support policies**. Currently support provided under Pillar II is in the form of compensation for income forgone and additional costs incurred, but we have assumed here that future support under Pillar II will represent genuinely new income which will be distributed as it is currently (i.e. with more funds disbursed in the hills and to livestock farmers). If, in practice, the government is not able to design a Pillar II policy under which support can be provided which is additional, then stakeholders may wish to examine the case for some form of specific payment to hill farmers such as the Scottish Government's Less Favoured Area Support Scheme. In making such a case it will be important to demonstrate areas of market failure and the public benefit of such support, prominent themes in the Secretary of State's speech to the Oxford Farming Conference.

Stakeholders should also focus on the **distribution of future domestic support**. As highlighted in section 3.1 and again in the results (Chapter 4), the way in which the total pot of available support is distributed is crucial to the farmers in the Lake District. Under a distribution of even limited support which matches the current distribution of Pillar II payments, Lake District farmers can be relatively well shielded from the likely negative impacts on FBI driven by trade relationships; under one scenario FBI would even be higher than it is currently. Other ways of distributing future domestic support will leave farmers in the Lake District less well protected and with negative FBIs under two scenarios.

⁷ <https://www.gov.uk/government/news/farming-for-the-next-generation>

⁸ <http://data.parliament.uk/writenevidence/committeeevidence.svc/evidencedocument/environment-food-and-rural-affairs-committee/brexit-trade-in-food/oral/76033.pdf>

The **role of agriculture within the wider rural economy** should also be considered. Thomson (2011)⁹, in his examination of hill farming in Scotland, noted a backwards multiplier of 1.7 (meaning that for every £1,000 of sheep output there is £700 of additional output in supply industries such as feed merchants and veterinarians). Thomson reported a forward multiplier of 1.5, mainly related to the meat processing industry. Although as a small geographical unit, the multiplier effect in the Lake District will “leak out” into surrounding areas, some knock-on impact on the Lake District’s wider rural economy can be expected under some scenarios and some future support assumptions.

The data made available for this exercise did not allow a breakdown of performance by size or performance level. However, the findings in our Technical Report, where we were able to investigate the impact of the scenarios on different farm sizes and performance levels, showed quite clearly that the **best performing farmers, i.e. those that have the highest ratio of outputs to inputs, are better protected from the impact of all the scenarios**. Farmers should therefore take steps to improve their performance. A first step is to understand their own performance and be able to compare it to others through, for example, benchmarking. This will allow farmers to highlight costs which might be reduced and aspects of their businesses where they could improve outputs.

Given the importance of export markets for upland sheep, **consideration should be given to how domestic markets could be expanded** should export markets be closed off due to new trade barriers. For example, it might be possible to market the breeds used in the Lake District (Herdwick, Swaledale, etc.) either in their own right or as regional products; higher welfare production methods could also potentially be encouraged and marketed.

Farmers will of course consider changing their enterprise mix. However, the enterprises available to farmers in the hills are limited. Some may consider forestry and stakeholders will need to consider how this might affect the landscape and tourism. Some compromises might be possible. Thompson (2011) notes (in the Scottish context) that instead of farmers having to choose between sheep or trees, agroforestry, especially silvopastoral systems could be a novel alternative for the hill and uplands. There may be greater interest in the generation of renewable energy and again the trade-off between this form of economic activity and landscape and tourism will need to be considered.

⁹ Thomson, S. with contributions from Holland, J., Waterhouse, T. and Morgan-Davis, C. (2011) [Response from the hills: Business as usual or a turning point? An update of “Retreat from the Hills”](#). Rural Policy Centre, SAC. November 2011.