



## Appendices:

The future of 'High Nature Value' farming systems and their ability to provide public goods in a Post-Brexit world in the NUCLNP.

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Prepared by: ADAS

## 5 Appendices

### 5.1 Data analysis

#### 5.1.1 Aims

As part of the wider High Nature Value Farming project, the data analysis element has provided both a foundation of evidence of the current circumstances and a basis for recommendations, future scenarios and opportunities to be considered.

The main indicator used is Farm Business Income, which is a measure of profitability. Farm Business Income refers to the Total Farm Gross Margin, less the sum of the fixed costs incurred. It represents the business' surplus, or deficit of income before any notional charges (e.g. unpaid labour or rent). Farm Business Income also includes all inseparable diversified activities. However, if the diversified enterprise is effectively entirely separate from the farming business, e.g. it has separate VAT and management, it is considered outside of the farm business and not included in the Farm Business Income calculation.

The data analysis work assessed:

1. The structure and state of farm economics in the NUCLNP area
2. The reliance and impact on income streams under three policy scenarios
3. The first levels of impact, showing the scale and distribution of farms affected.

#### 5.1.2 Method

The methodology for this project involved various elements.

##### 5.1.2.1 Analysis of other studies

A focused review of relevant literature was undertaken to identify findings from other research relevant to the NUCLNP. Included is literature was "Brexit Scenarios: an impact assessment" by AHDB, October 2017.

Publication	Author	Year	Summary of method & findings
Hill Farms in Nidderdale AONB & Yorkshire Dales National Park. Future Farming Trends, Economic Viability & The Delivery of Environmental Enhancement and Public Goods.	Nidderdale AONB	2009	<ul style="list-style-type: none"><li>• Uses Defra June Survey Data and FBS data.</li><li>• Breakdown of farm type of LFA further into SDA Moorland.</li><li>• Has aggregated support payments, unsure what is BPS and AES. Calculates support as a % of profit, so appears much higher.</li><li>• Uses business profit/loss before and after unpaid labour as the indicator.</li></ul> <p><b>Findings:</b></p> <p>The farm model forecasts suggest that farmers in Nidderdale AONB and the Yorkshire Dales National Park will face financial pressure that is likely to affect the environment and landscape of these designated areas. There may be an opportunity for farmers in the uplands to be rewarded for delivering public goods.</p>

High Nature Value Farming in the Yorkshire Dales - Buckden Parish case study	Helen Keep, Yorkshire Dales National Park Authority, and John Akrigg, Windle Beech Winthrop	January 2014	<ul style="list-style-type: none"> <li>• In-depth face-to-face interviews with 12 farmers from within the study area to ascertain their views on the challenges faced when farming in a High Nature Value Farming area.</li> <li>• Quoted some FBI data for LFA regions.</li> </ul> <p><b>Findings:</b></p> <p>Farmers derived nearly 55% of their income from livestock sales, with the balance made up through subsidies. Farmers were interested in developing new ways of working to have more control over managing the habitats on their farm and at a landscape scale.</p> <p>Some recommendations going forward include developing landscape scale schemes to enable work towards a commonly agreed environmental farming aim.</p>
North Pennines AONB. High Nature Value Farming Research.  A report for the North Pennines AONB partnership	European Forum on Nature Conservation and Pastoralism and Cumulus Consultants Ltd.	December 2013	<ul style="list-style-type: none"> <li>• Uses FBS NUTS 1 region (e.g. North East) as basis for conclusions.</li> <li>• Uses FBI as an indicator.</li> <li>• The FBI for LFA grazing livestock farms in the North East region was, on average, £40,012 in 2011/12.</li> <li>• 97% of the profit of the farm business comes from the Single Payment Scheme and agri-environment scheme payments.</li> <li>• Agricultural enterprises are very important in terms of output, but this is outweighed by the associated costs leading to a minimal or negative contribution to profit from the agricultural enterprises.</li> <li>• Shares other FBS data for a comparison, using indicators such as investment in machinery, labour, and farm size.</li> <li>• Conducted a farmer survey for perceptions of profitability, support etc.</li> </ul> <p><b>Findings:</b></p> <p>The study found that the Upper Dales area contains some key areas of biodiversity such as blanket bog, species-rich hay meadows and rich bird fauna. There are also many key ecosystem services delivered in the area with significant</p>

			<p>economic value. The farmer survey found significant variation in FBI, however should be interpreted with caution as only looked at 7 farms. It was found that small changes on farm could have a huge impact on farm business income in these areas. Many farmers were keen to improve the quality of what they were doing but without significant intensification. However, many farmers felt that agri-environment schemes lacked flexibility and that they were misunderstood by field officers. It was recommended that alongside initiatives, building trust amongst stakeholders in the area was key.</p>
High Nature Value Farming in the Northern Upland Chain Nidderdale AONB Agricultural Economy	Mervyn Lewis, Joseph Bonner and Martin Riley. Rural Business Research	2013/14	<ul style="list-style-type: none"> <li>• Uses FBS data to see farm income over time, and then by farm type to see sources of income in 2012/13. Commentary on LFA farms in particular.</li> <li>• Uses FBS data to compare Nidderdale region, specialist sheep in Yorkshire/Lancs and premium average. Sample sizes are small, 7, 22 and 7 respectively. Compares many financial results over these three groups including FBI, fixed and variable costs etc.</li> <li>• Perception survey with 7 farmers on farm management, profitability, support payments etc.</li> </ul> <p><b>Findings:</b></p> <p>There has been a decline in cattle numbers in the Upper Nidderdale region, largely due to a decoupling of production and support payments. Farm Business Income experiences significant volatility year on year and support payments make a significant proportion of income. The farmer survey found that many farmers were already receiving maximum environmental payments with the remainder actively looking at joining schemes. Most farmers felt they would not be able to make ends-meet without this or off-farm income. Farmers wanted to be more actively involved in designing schemes that are specific to their area.</p>

Brexit Scenarios – an impact scenario	AHDB	2017	<p>This paper considers three policy scenarios and assesses the impact of this on four areas of concern namely (i) the terms of international trade (ii) domestic agricultural policy (iii) migrant labour and its availability; and, (iv) the UK regulatory environment. The scenarios involved are:</p> <ul style="list-style-type: none"> <li>• Scenario 1: Pillar I and Pillar II payments are retained and there is no restriction on migrant labour.</li> <li>• Scenario 2: Pillar I payments are removed and Pillar II-type payments increased to equal 50% of the total current Pillar I and Pillar II support, migrant labour is restricted to 50% of current levels, the costs of complying with regulations is reduced by 5%.</li> <li>• Scenario 3: Pillar I payments are removed and Pillar II payments increased to equal 25% of the total current Pillar I and Pillar II support, migrant labour is restricted to 50% of current levels for both regular and casual labour. (AHDB Horizon, 2017)</li> </ul> <p>The key findings of the report suggest that in the sectors where subsidies account for a significant proportion of farm business income, there will be a dramatic immediate impact to farm profitability.</p> <p>In terms of LFA Grazing Livestock, it was found that FBI is virtually unchanged under Scenario 1: but it decreases by around 50% under Scenario 2: Unilateral Liberalisation. Under Scenario 3: FBI becomes negative. The Farm Business Income is higher (positive) for the higher-performing farms and medium performance farms only become negative in Scenario 3.</p>
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Table 1: Literature reviewed for data analysis methodology

#### 5.1.2.2 Regional Farm Business survey data

Farm viability was assessed using Farm Business Income data to ascertain the proportion of income that comes from BPS and AES for farms in the NUCLNP. This data was taken from the Farm Business Survey (FBS) where it was filtered by region at the Nomenclature of Territorial Units for Statistics (NUTS) 2 level. This provided county level data, for the purposes of this research five regions selected, which were:

1. Northumberland and Tyne and Wear

2. Tees Valley and Durham
3. Cumbria
4. Lancashire
5. North Yorkshire

For the purposes of this research, Dairy and LFA Grazing Livestock were initially selected as the farm type within the study area.

Following the workshop, it was agreed that the Dairy farming data should be excluded from the study because the predominant farm type in the study area is LFA grazing livestock.

Data was selected for the years 2011/12 through to 2016/17, the latest dataset available.

A yearly average Farm Business Income was calculated for LFA Grazing Livestock farms across the time period, which was further broken down into the four income streams (Agriculture, Diversification, BPS and AES). It was observed that the agricultural element of Farm Business Income consistently produced a loss.

Three policy scenarios were considered relating to the change in support payments expected after the UK exits the European Union. The first scenario, the baseline, reflects the current scenario. Scenario 2 was the removal of income from BPS only and Scenario 3 was the removal of both BPS and AES, which is considered as the worst case scenario. It is expected that the UK exit from the EU will also have impacts on labour, trade relationships with the EU and the rest of the world and the regulatory environment. These factors are likely to impact on FBI but are outside the scope of this study, which focuses on support payments.

#### 5.1.2.3 *Limitations of the data*

There were some limitations with the data and omissions in the various datasets.

In the raw data files, data points were missing for three listed reasons:

- D Data suppressed in accordance with FBS Disclosure protection rules
- F Too few observations to give reliable estimate.
- V Too much variation in observations to give reliable estimate.

This meant that in some cases average figures were not from all five regions and in 2 instances no data points were available so data was missing for two years. This was not considered to be an issue as the results of the data analysis was considered for accuracy at the stakeholders' workshop.



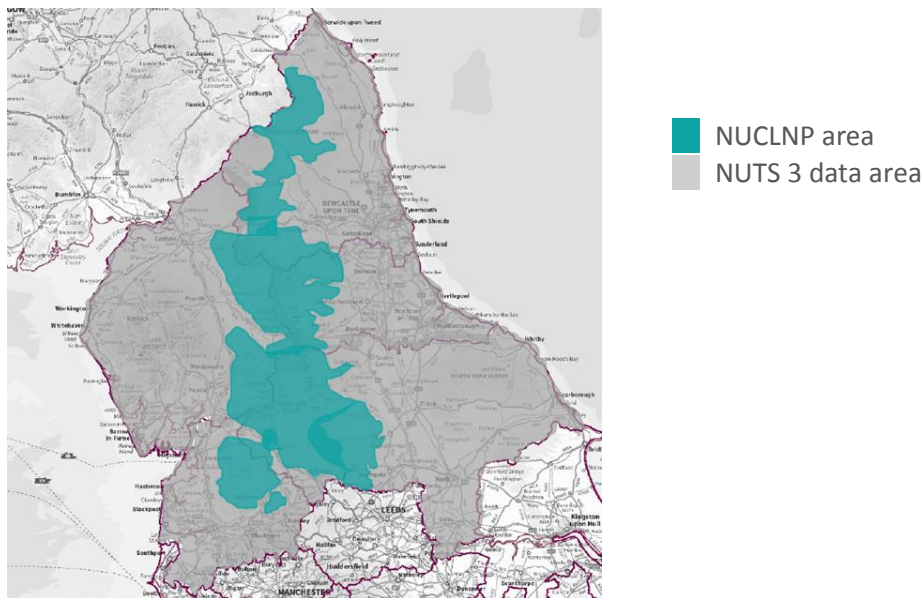


Figure 1 Comparison map of NUCLNP area and the NUTS 3 data coverage

Additionally, as the data could only be collected at the NUTS 2 county level at this stage, this was a limitation as it inevitably has included farm economics data for farms outside of the study area.

### 5.1.3 Results

#### 5.1.3.1 Results from Farm Business Survey regional data

The average Farm Business Income over time was plotted and is shown in Figure 9 below.

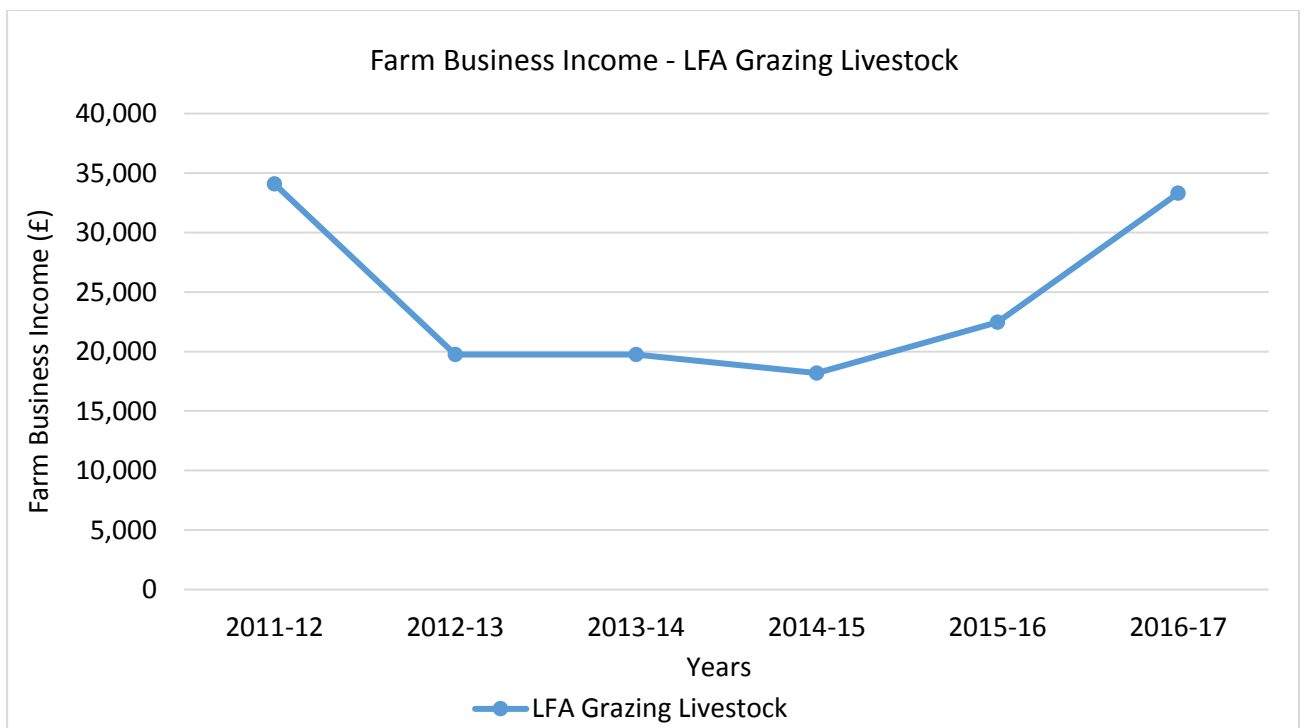


Figure 2: Average Farm Business Income for LFA Grazing Livestock

This analysis showed some initial volatility, with a fall in FBI between 2011/12 and 2012/13 of around 40%. This then remained fairly stable until 2014/15 where FBI started to increase, with a significant rise between 2015/16 and 2016/17 of around 30%. The decline in FBI from 2011/12 through to 2014/2015 was caused by increases in variable and fixed costs which were not compensated by increase in output

from agricultural income plus the impact of a weak Euro against the Pound, particularly in 2014/2015, which affected the value of the Pillar 1 payments.

The proportion of the income streams of Farm Business Income was considered. The red line denotes where the values become negative.

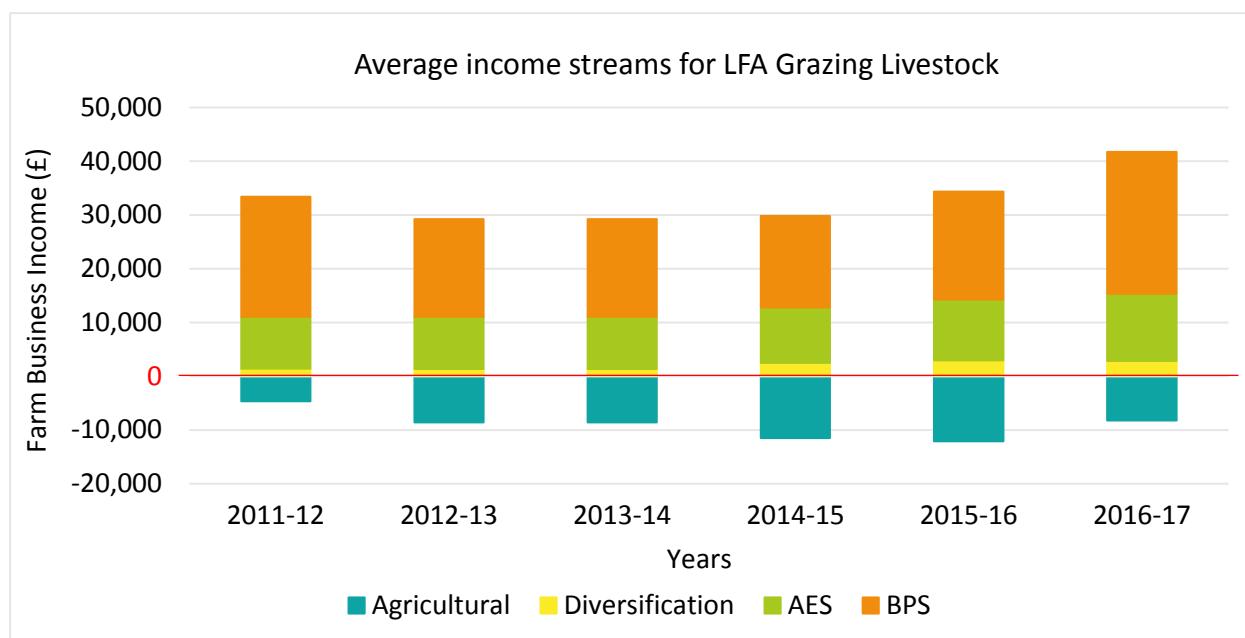


Figure 3: Average income streams for LFA Grazing Livestock

In terms of the average income streams for LFA Grazing Livestock, there was a consistently large proportion of income from BPS. The proportion of income from BPS, AES and diversification remained relatively constant across the time period. However, the element of income from agriculture, which consistently operated at a loss, varied much more where the loss is double in 2014/15 compared to 2011/12.

Following this, the three policy scenarios were considered for LFA Grazing Livestock. This used the scenarios set out in the methodology to consider Farm Business Income on the removal of BPS and then the removal of all subsidies.



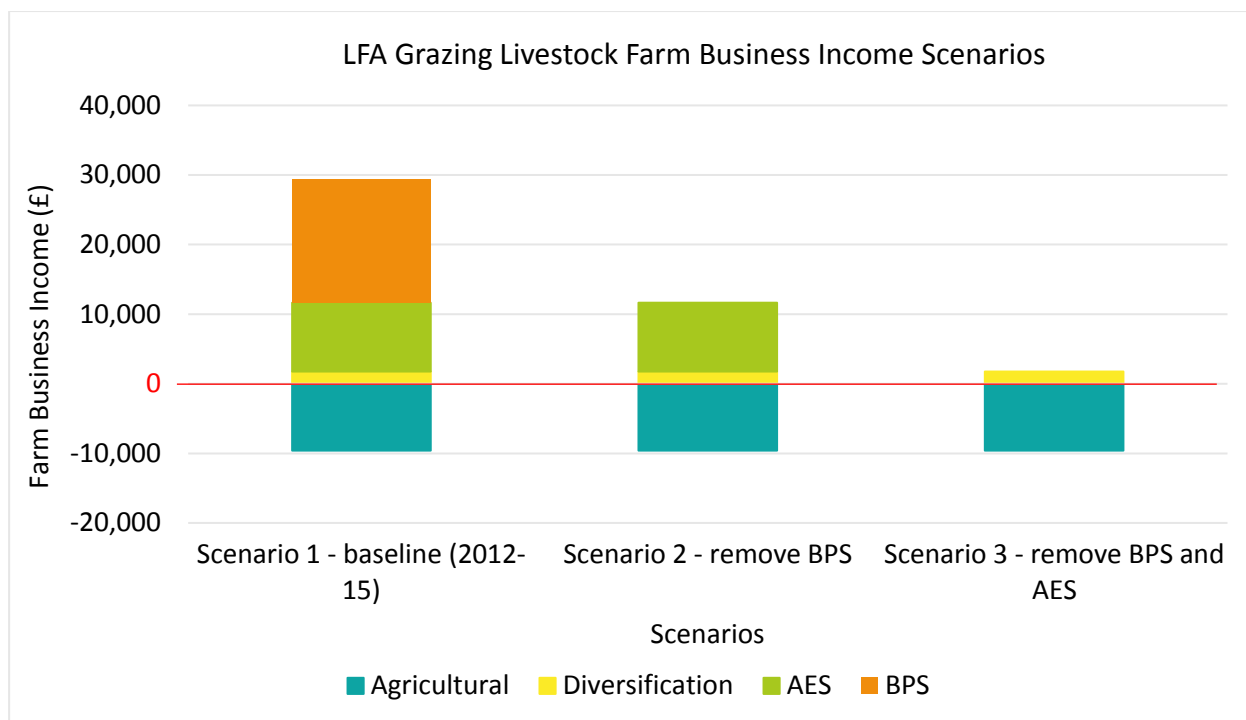


Figure 4: Farm Business Income scenarios for LFA Grazing Livestock

In terms of the scenarios, it should be considered that in Scenario 2 the farms could be breaking even at best but making a loss in scenario 3. However, with the inclusion of unpaid labour and any rental costs, which are excluded in the Farm Business Income calculation, the situation will be even worse with businesses likely to be making a loss without off-farm income or non-farm enterprises.

#### 5.1.4 Analysis and Findings

The analysis showed that the agricultural element of Farm Business Income was consistently negative across all of the years in question and across all of the policy scenarios.

The findings of the policy scenarios showed that in Scenario 2 and 3, the business was breaking even in Scenario 2 and then operated at a loss in Scenario 3. In reality, as FBI excludes unpaid labour, the business was not in a position to be able to provide a return to the farmer in either scenario.

From the stakeholder workshop, it was thought that the Farm Business Income figures were higher than expected. The FBI figure is calculated before any charge is made for unpaid labour of the farmer and spouse. Therefore in reality, the FBI figures would be worse, they would be more negative, representing a greater loss. It was also noted however, that the FBI did not include the impact of off-farm income generation of the farmer or spouse (including part time work and contracting), which were considered to be contributing significantly in many situations to farm businesses in the study area.

The stakeholder workshop participants deemed that the proportions of income streams for Farm Business Income were broadly correct. In a report of Hill Farming by Rural Business Research, it was found that the average LFA Grazing Livestock farm earned "63% of its total revenue (output) from crop and livestock farming activities, 21% from the Basic Payment, and 12% from specific agri-environment payments. The balance of revenues (4%) is earned from diversification activities." (RBR, 2015). The data for this study area considered the raw numbers of these income streams, rather than the percentage of the total revenue as in the wider Hill Farming report, however, the study area data was broadly aligned with this wider Hill Farming Report.

The impact of these scenarios will require farmers to take action. Improving efficiency (reducing variable costs, reducing fixed costs, looking at performance data, improving genetics etc.) will help to mitigate the impact of a reduction in support to some degree but in terms of Scenario 3, further change will be needed. The attendees of the workshop also highlighted diversification and increasing off-farm income as ways to increase FBI.

The RSPB report (2017) suggested that in a worst case scenario it would be likely to see a polarisation of action taken by farmers in the LFA Grazing Livestock area. Some would seek to farm their way out of reduced support by improving production and productivity and others would choose to deliver public goods in return for public payments, or turn to forestry; or give up farming altogether. Either situation would lead to impacts on the special character of the protected landscapes in the NUCLNP study area.

## 5.2 Health and Harmony

The Defra consultation “Health and Harmony: the future for food, farming and the environment in a Green Brexit” was coded to identify opportunities and public goods of interest. Exerts from HH are below.

Health and Harmony Citation	Recommendation	Other evidence
<p><i>“Farm businesses can already manage their risks through diversification of income, financial planning and the use of tax smoothing.”</i></p> <p><i>“into energy generation, tourism and commercial forestry)”</i></p>	1. Explore opportunities for diversification	Workshop
<p><i>“widespread adoption of precision agriculture, pioneer new approaches to crop protection and encourage more commercial research to improve plant breeding and agronomic techniques”</i></p> <p><i>“precision slurry spreading system which offered an efficient and low risk slurry application and management solution.”</i></p> <p><i>“widespread adoption of precision agriculture, pioneer new approaches to crop protection and encourage more commercial research to improve plant breeding and agronomic techniques”</i></p>	2. Consider what precision agriculture/ technology could be used in the uplands to increase.	Literature <sup>1</sup>
<p><i>“Farmers and government also take action to reduce and mitigate on-farm risks, particularly through animal and plant health biosecurity measures.”</i></p>	3. Explore opportunities for decreasing inputs.	Workshop
<p><i>“We will maintain the same cash total funding for the sector until the end of this parliament: this includes all EU and Exchequer funding provided for farm support under both Pillar 1 and Pillar 2 of the current CAP. This commitment applies to each part of the UK.”</i></p>	4. Where appropriate provide support to farmers in the NUCLNP to draw down funding, especially for infrastructure improvements from the current funding structure.	Workshop
<p><i>“build on and widen existing traditions of co-operatives to encourage a stronger culture of cooperation, transparency and fair dealing as part of a modern, 21st century food chain.”</i></p> <p><i>“We want to encourage more farmers to benchmark themselves against the best and commit to Continuing Professional Development (CPD)”</i></p> <p><i>“want to explore how collaborative research ventures, involving farmers and other partners (such as research</i></p>	5. Explore opportunities for working collaboratively. Possibly as part of a Test and Trial.	

<sup>1</sup> <http://beefandlamb.ahdb.org.uk/returns/project-farms/north-york-moors-swaledale-breeders-operational-group/>

<p><i>syndicates) can develop a new generation of agricultural technology.”</i></p> <p><i>“Funding for collaborative projects: incentivising land managers to work together to secure environmental improvements at landscape and catchment level. This funding will support co-ordinated action on areas such as diffuse water pollution and the protection of priority habitats, where land managers need to work together across multiple sites in order to deliver environmental benefits.”</i></p>		
<p><i>“A transparent and properly functioning food supply chain should provide affordable, safe food for consumers.”</i></p> <p><i>“add value to their products,”</i></p> <p><i>“Accessing new markets will allow our farmers to export more British produce and increase their profits as well as to spread risk”</i></p> <p><i>“Building on the GREAT Britain campaign, we want to help develop a British brand that can help inform those choices.”</i></p>	6. Explore opportunities to link with supply chains and adding value to products.	
<p><i>“We are already taking action through apprenticeships: we will create more apprenticeships, widen participation and create progression for apprentices.”</i></p> <p><i>“We will explore new business models and the scope for reforming agricultural tenancy laws to support succession planning and remove barriers to investment.”</i></p>	7. Provide information on exiting farming, including succession, use of apprentices and other opportunities outside of farming.	workshop
<p><i>“We will also consider funding innovative approaches to improving farm animal welfare.”</i></p> <p><i>“We are mindful that farmers have to compete with overseas producers whose farm animal welfare standards may not be as robust as our own.”</i></p> <p><i>“We want to safeguard the welfare of our livestock, building on our existing reputation for world leading standards.”</i></p> <p><i>“We will also consider funding innovative approaches to improving farm animal welfare.”</i></p> <p><i>“We want high standards in animal welfare”</i></p> <p><i>“We are considering whether providing greater clarity of information to consumers could support higher welfare production.”</i></p>	8. Develop ideas for Test and Trials.	Workshop

<p><i>“The UK’s unique landscape also makes it a widely sought after location for film and television, thus providing an important advantage for the UK’s creative arts industry over its international competitors.”</i></p> <p><i>“We will work with farmers, land managers and environmental experts to Trial new approaches.”</i></p> <p><i>“This could involve measures which increase awareness and support the creation and maintenance of buffer strips next to waterways, to reduce water pollution caused by fertiliser run-off from agriculture.”</i></p> <p><i>“We can improve biodiversity, incentivise practices which support carbon sequestration and greenhouse gas reduction to help to tackle climate change and continue to support woodlands and forestry. This could be achieved through support for landscape scale restoration projects, hedgerow creation and habitat management. We can conserve and enhance our landscapes and rural heritage and increase the quality, diversity and access to nature-based recreation and tourism. We will also continue to recognise the benefits of organic production, support projects which prevent flooding and encourage new measures to promote nature-friendly farming.”</i></p> <p><i>“Capital grants: supporting land managers to adopt sustainable practices and reduce negative environmental impacts in a transition towards a fuller application of the ‘polluter pays’ principle.”</i></p> <p><i>“Innovative mechanisms: we will explore new approaches with the potential to achieve better environmental outcomes and improve value for money.”</i></p> <p><i>“Piloting will continue during the ‘agricultural transition’ period, alongside further Testing to roll out results-based payments for additional environmental land management options. The results of the first pilots will inform the design and approach for a new environmental land management system to be introduced from 2022.”</i></p> <p><i>“simplify Countryside Stewardship schemes, cross compliance and remove or reduce current ineffective greening requirements, before we move to a new regulatory regime.”</i></p> <p><i>“The new system will pay for the provision of environmental benefits, and will provide support for farmers and land managers as we move towards a new</i></p>	9. Implement Test and Trials.	Workshop
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<p><i>environmental baseline based on the ‘polluter pays’ principle.”</i></p> <p><i>“New Environmental Land Management schemes: offering multi-annual agreements to support the delivery of valuable environmental improvements countrywide.”</i></p> <p><i>“New Environmental Land Management schemes: offering multi-annual agreements to support the delivery of valuable environmental improvements countrywide.”</i></p>		
<p><i>“Dame Glenys Stacey will be conducting a thorough and comprehensive review of the inspections regime, seeing how inspections can be removed, reduced or improved to lessen the burden on farmers while maintaining and enhancing our animal, environmental and plant health standards.”</i></p>	<p>10. NUCLNP Hill farming Panel to offer insights into Hill farming to inform future policies including inspection regimes</p>	

## 5.3 Workshop report

### 5.3.1 Background

On the 15<sup>th</sup> August 2018 ADAS facilitated a workshop under the instruction of the NUCLNP in Middleton-in-Teesdale to discuss the ‘*Opportunities for High Nature Value farming and their ability to provide public goods in a post-Brexit world*’. Board members from The Northern Upland Chain Local Nature Partnership (NUCLNP) including; farmers, stakeholders from designated areas (National Park Authorities (NPA) and Areas of Outstanding Natural Beauty (AONB)) and other local NGOs attended to shared their knowledge on the local farming landscape and opportunities after the UK’s exit from the EU. The workshop objectives included:

1. Gaining views on the Farm Business Survey (FBS) data analysis of current economic position.
2. Understanding the potential impacts of economic scenarios produced in the data analysis.
3. Understanding what the NUCLNP Board think are the public goods in the NUCLNP region.
4. Gaining views and ideas on the development of a pilot scheme to reward farmers in the study area for delivery of public goods.

### 5.3.2 Workshop structure and aims

Following a welcome from Richard Betton and Adrian Shepherd the workshop was introduced by Farah Najeib of ADAS who discussed the context, agenda and format of the workshop. The workshop was roughly split into two sections, the first focussing on data analysis of FBS and scenario discussions and the second focusing on opportunities for the NUCLNP after the EU Brexit. The agenda was as follows:

Timing	Agenda Point
12:00 - 12:10	Welcome
12:10 - 12:50	Farm economics and scenarios
12:50 – 13:00	Messages from the Defra consultation paper, Health and Harmony
13:00 – 13:30	Lunch
13:30 – 15:00	Prioritisation and discussion of opportunities for payment for the delivery of public goods
15:00	Close and thank you

During the workshop stakeholders were split into 3 tables, each facilitated by an ADAS facilitator. The stakeholders were split to make sure there was a mix of stakeholders and locations across the NUCLNP on each table. All notes were captured by facilitators on flip charts as the discussion took place before being converted into electronic notes.



### 5.3.3 Workshop outcomes.

This section aims to reflect the general themes, key points and discussion which took place in the workshop. The views captured do not always reflect everyone who is part of the discussion and individual views have not been attributed to named stakeholders. The attendee list, slides presented and electronic notes have been included for completeness and referencing purposes only.

#### 5.3.3.1.1 Farm economics and scenarios

Farm Business Income figures were presented to the room for both LFA grazing and dairy farms. Data was shared on total farm business income and the percentage split of those incomes by AES, BPS, income from agriculture and income from diversification. The data presented was from the FBS survey and covered a wider area than NUCLNP.

#### 5.3.3.1.2 Dairy total income and percentage split.

Dairy farms in the NUCLNP tend to be smaller than those in the wider NUTS 3 area and deliver more niche products. There are a small number of larger farms in the Yorkshire Dales NPA. There appears to be a trend towards increasing dairy cow numbers on existing farms.

There was some difficulty understanding if the figures presented were representative of the farms in the NUCLNP due to no dairy farmers being present.

It was agreed that for the rest of the project, dairy farming data will not be used as it represents a very small number of farms and limited land coverage within the study area.

#### 5.3.3.1.3 LFA Grazing total income and percentage split.

There was a general consensus that the total Farm Business Income was higher than expected, but the percentage split by income streams seemed accurate. Other income streams such as off-farm income from family and contracting work are not included in the Farm Business Income and in reality, these streams are vital in keeping farms within the study area afloat. Comments were made that extensive livestock farming can be profitable, but it is important to minimise variable costs to optimise output from the enterprises. Fixed costs such as rent are harder to manage but implementing a low input system may help to control fixed costs around items such as machinery and labour.

#### 5.3.3.1.4 Scenario analysis

A set of three scenarios were shared for both dairy farms and LFA grazing farms, the scenarios were:

1. Baseline: FBI with percentage income split average over 2012- 2015.
2. Removal of BPS.
3. Removal of BPS and AES.

#### 5.3.3.1.5 Income streams

Under scenario two and three, the importance of other income sources were identified including:

- Off-farm income.
- Diversification. However, there are limits to this.
- Increase in reliance of a new regime of AES payments.
- Payment for the delivery of public goods via AES or other.
- Decrease variable costs.
- Change in enterprise make up (for example increase cattle numbers, decrease sheep numbers or visa versa).

- Scaling their farming practice up or down.
- Looking to produce output more efficiently.
- Using volunteers, creating a “sustainable farming tourism”

#### 5.3.3.1.6 Adapting to the scenarios

The impacts of the scenarios are going to be different depending on farmer’s circumstances and individuals will need to identify impacts, be flexible and consider different options. Farmers should already be developing business plans and seek to move towards more efficient production. It was felt that farmers in the NUCLNP will find it difficult to react to scenarios two and three because Pillar 1 and Pillar 2 support from the current CAP is such a significant proportion of their current income. Upland farms are more limited in terms of options due to the nature of the land and designations can also impact on their activity. It will be harder for tenant farmers to “*ride out the wave*” if scenario two or three became reality because rents still have to be paid. Some tenant farmers are currently disadvantaged in that the landowners take BPS and/or AES payments. In order for them to take advantage of any new support, the situation would need to change so that the managers received the payments rather than the owners.

It is likely that fixed costs and market prices will also change but it is unlikely that farmers will be able to do very much about this other than react and so it is important for them to think about these impacts when planning for the future. Ultimately under scenario two and three there could be large scale changes to the study area with farmers leaving the industry, loss of traditional skills, degradation of habitats, impacts on species such as waders, loss of amenity value and landscape dereliction.

#### 5.3.3.1.7 Unintended consequences

A number of unintended consequences were identified at the workshop which could happen as a result of further reductions in Farm Business Income as a result of potential changes to the support regime. Attracting new entrants to farming and finding successors to AHA tenancies could become an issue. If there is a reduction in the number of farming families within an area then this will impact on the local communities such as schools, services and other rural businesses.

*“I would get out, before there is nothing left.”*

*Quote 1 NUCLNP farmer scenario 3 reaction*

Under scenario 2 AES payments in their current form would become a more significant element of Farm Business Income. Farmers are forced to wait for their payments and are unable to control when they arrive in the bank account. This may cause cash flow problems and impact on the ability to pay for goods and services required for agricultural production.

If there were fewer farmers working in the study area, it would likely lead to changes in the landscape, which could make it less attractive for visitors. This would impact on local tourism, other tourism related businesses and local communities.

### 5.3.3.2 Opportunities for the NUCLNP after the exit of the UK from the EU

Workshop attendees were given 1000 'NUCLNP pounds' and asked to put the money onto the ecosystem service where they thought the NUCLNP had the most to offer in terms of the importance or the quantity of public goods that could deliver the service.



Figure 5 Place your money on your ecosystem services activity.

Table 2 A table to show the amount of money placed on each Ecosystem Service by attendees at the workshop

Ecosystem service	NUCLNP money placed
Aesthetic Landscape	20,000
Wildlife/ biodiversity.	16,000
Recreation – health and wellbeing	14,000
Water quality	14,000
Education	13,000
Animal health and welfare	12,000
Soil quality – erosion control	4,000
Inspiration/ Sense of Place	3,000
Flood alleviation	1,000
Climate regulation	1,000
Heritage/ sense of place	800
Pollination	500
Air quality	100
Pest control	0

The top three ecosystem services were taken forward to discuss in smaller groups. The groups were encouraged to identify public good delivered in the NUCLNP, identify the quantity, quality and location of the public goods and create the outline of a potential scheme based on that ecosystem service.

#### 5.3.3.2.1 Aesthetic landscape: public goods.

Public goods identified included:

- Protected aesthetics cared for.
- Views (barns, walls, heather, moorland, hedges, rivers, small woodlands).
- Open access.
- Protected landscapes.
- Recreation.
- Education.
- Cultural landscape – people still there and working in it.
- Air quality, Water quality for residents.
- Income – from B and Bs, arts, photography.
- Bird watching.
- Sports (eg, gliding).
- Walking.

#### 5.3.3.2.2 Aesthetic landscapes: quality, quantity and location.

The views the NUCLNP offer are varied and the aesthetic quality of them is very subjective. Generally visitors like to visit these iconic landscapes to view the variety and colours that the landscape offers. Some visitors enjoy the look of the landscape without understanding fully what they are looking at and some will have more appreciation of why the landscape looks as it does and the elements that the landscape is made up of.

This group proposed a multiple objectives programme focused on the aesthetics, but also promoting the cultural landscape and recreation in the region for people who don't live there (tourists). Farmers/land owners would be responsible for delivering this landscape. In doing this there could be additional benefits such as delivering the right conditions to enhance important habitats and delivering habitat for priority species. An element of visitor engagement and education was recommended to connect the landscape with the visitors to try to minimise the negative impact of increased visitor numbers.

An unintended consequence was identified in that if a scheme was protecting a particular "image" of farming, it could become a barrier to changes to enterprises, farming techniques and could limit uptake of innovative techniques for grassland management for instance.

A need to provide infrastructure was identified which was linked to provision of education. Facilities such as visitor centres, access routes might be needed. Comments were made on who would pay and also that the infrastructure itself may pose a risk to changing the aesthetics of the area.

The amount of recreation is dependent on location, but it was felt there are honey-pots scattered throughout the study area. Where tourism is high, it needs to be responsible tourism and there is an opportunity to increase the quality of tourism. There may be areas where access can be improved to encourage sustainable tourism, perhaps in less well visited areas.

*"[There could be...] More on the voices from the land, education and photography on farming families"*

*Quote 2 Quote on the cultural landscape*

#### 5.3.3.2.3 Aesthetic landscape: developing a scheme



#### 5.3.3.2.4 Recreation and wellbeing: public goods.

Many of the public goods identified for this ecosystem service were the same as the landscape ecosystem service. Only additional public goods identified have been included below:

- Farmers contribute to a healthy community, and provide services to the area beyond agriculture. An example would be in early Spring 2018 when roads were cleared and kept open by farmers with snow ploughs.
- Farming and rural skills are important culturally and enable local events like agricultural shows to take place. These events are popular with locals and visitors.
- A farmed landscape can help to connect and educate visitors and local community. For example guided walks on management of traditional haymeadows.
- Produce animals which are part of the landscape and draw people to visit e.g lambing in Spring.
- Fresh air – provides improved wellbeing.
- Peace and quiet.
- Sense of freedom.
- Farmers are often information providers and informal educators.
- Dark skies bring people to the area for star gazing.

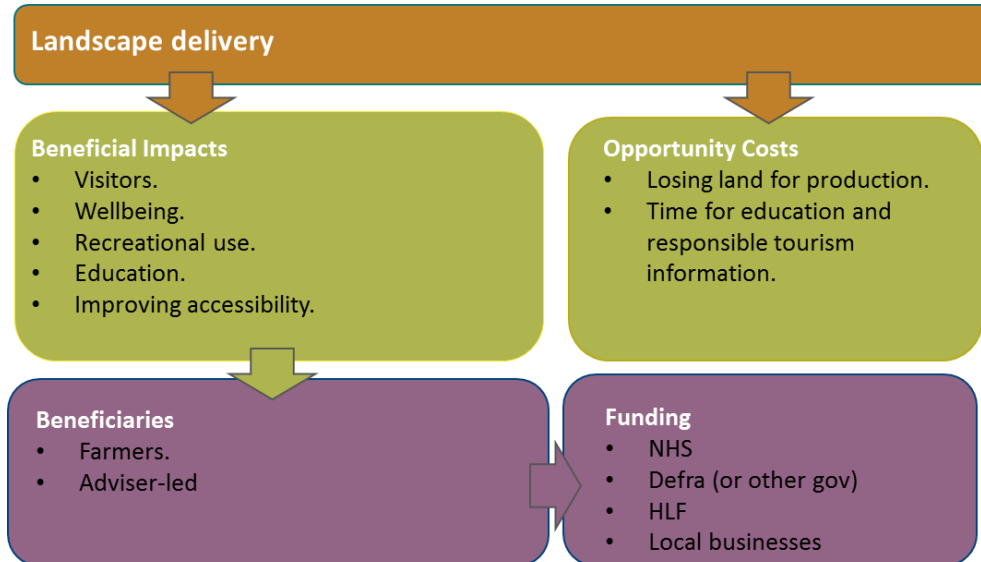
#### 5.3.3.2.5 Recreation and wellbeing: quality, quantity and location.

The visual landscape provides the location for many of these public goods. Different users choose to visit different areas for different reasons. There is scope throughout the study area. The variation in the landscape provides multiple opportunities for delivery of these public goods. Continuation and enhancement of the features that make up the landscape are important.

*“We need to be rewarded for maintaining the landscape”*

Quote 3 Quote on the maintenance of the landscape

#### 5.3.3.2.6 Recreation and wellbeing: developing a scheme



#### 5.3.3.2.7 Wildlife and biodiversity: public goods

Public goods identified are:

- Management of livestock and grazing leads to delivery of a wide range of habitats such as high value upland meadows, allotments and moorland.
- Farmers are responsible for the management and timing of nutrients, for sward management and control of injurious weeds and non-native species. This management delivers wildlife and biodiversity.
- Opportunity for farmers also to deliver other environmental enhancement such as flood prevention using grazing livestock.
- High priority species require particular habitat management which is deliverable through livestock management.
- Maintenance of walls and hedges needed to keep livestock in.
- Mosaic of habitats is dependent on farming.
- Heritage breeds of livestock may be needed for certain habitats.
- Using the genetic characteristics of livestock is required to optimise management of biodiversity.
- Skills base, knowledge and intuition of farmers – ability to adapt to weather and climate.
- Grazing livestock delivers – management of moorland, interlinking habitats, control of non-native sp. (Himalayan Balsam Ragwort).

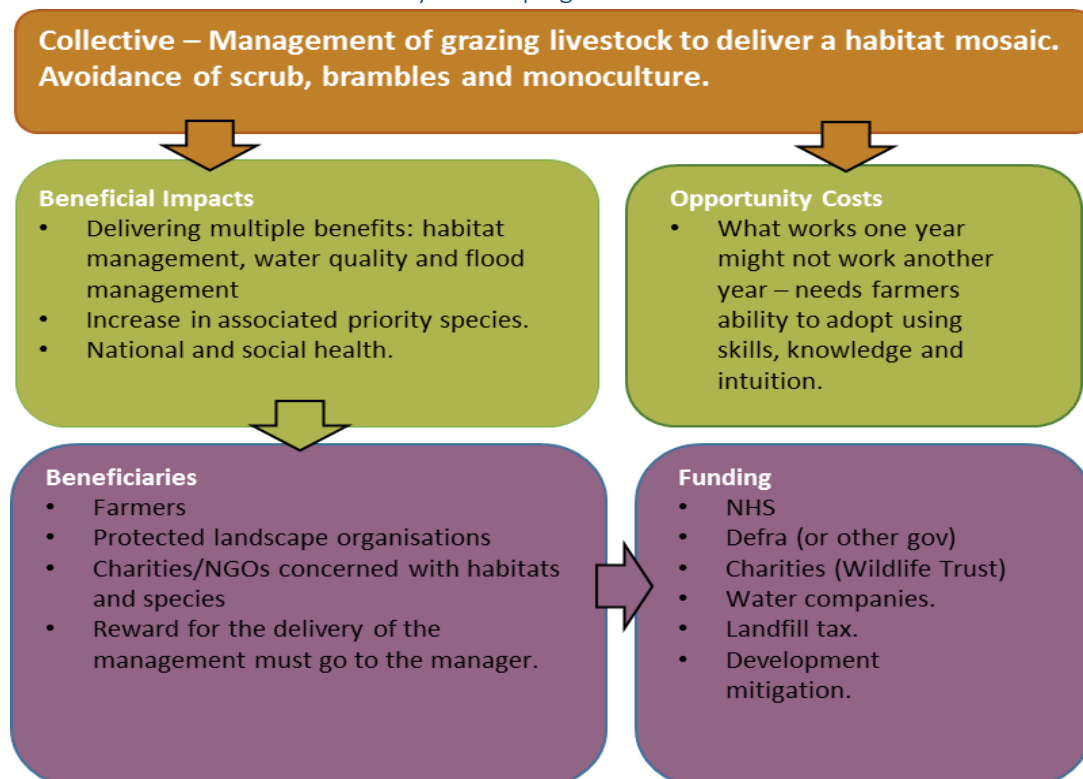
#### 5.3.3.2.8 Wildlife and biodiversity: quality, quantity and location

These public goods are delivered in all areas of the NUCNLP. All of those who are interested in the uplands need to understand what the uplands deliver and increase farm profitability by delivering public goods, not just agricultural income.

The habitats need to be maintained and this could be done through a scheme where farmers agree to and are paid to deliver a particular habitat, deliver the appropriate conditions for priority species or possibly the right sward conditions for natural flood management. The management of the desired outcome is the

responsibility of the farmer and the main condition is that it is delivered through grazing livestock management. This in turn will require stockproof boundaries to be restored/maintained which will have landscape benefits. The livestock become the tool to generate an additional income stream, as well as being the agricultural produce.

#### 5.3.3.2.9 Wildlife and Biodiversity: developing a scheme



#### 5.3.3.3 Considerations when developing a scheme.

During the afternoon session stakeholders identified several things they felt were important when developing a scheme for the NUCLNP.

##### 5.3.3.3.1 Scheme process

There was a general consensus that a local adviser lead scheme would be positive. With advisers working with farmers to identify public goods and on their farm to identify how best to deliver public goods. If the advisor is local and the scheme is developed with the farmer there will be an increase in understanding of the scheme and trust between the scheme provider and the farmer.

*“Trust is the key”*

*Quote 4 on the importance of trust with the scheme provider*

Local collaboration is important and involving all stakeholders even if their aims do not completely align with each other's.

##### 5.3.3.3.2 Scheme payment

It was widely considered that payment by results was the best way of achieving good outcomes from the scheme. However there was contradiction on what the farmers should be paid for, with some wanting to be paid for the habitat they provide and others thinking it was important to be paid for each individual public good. Additional payment for capital items is needed. An individual noted that they felt the scheme shouldn't be competitive.



#### 5.3.4 Attendee list

Stakeholder name	Stakeholder organisation	Table
<b>Farah Najeeb</b>	<b>ADAS facilitator</b>	<b>1</b>
Richard Harker	Nidderdale AONB farmer	1
Andrew Taylor	Forest of Bowland AONB farmer	1
Sarah Robinson	Forest of Bowland AONB	1
Stephanie Bird-Halton	Natural England	1
Adrian Shepherd	Yorkshire Dales National Park	1
<b>Fiona Tweedie</b>	<b>ADAS facilitator</b>	<b>2</b>
Helen Keep	Yorkshire Dales National Park	2
Richard Betton	Chair of Northern Hill Farming Panel, North Pennines AONB farmer	2
Marian Wilby	Nidderdale AONB	2
Garry Schofield	Yorkshire Dales farmer	2
<b>Carla Turner</b>	<b>ADAS facilitator</b>	<b>3</b>
Peter Blackwell	Forest of Bowland AONB farmer	3
Stuart Nelson	Northumberland National Park farmer	3
Janet Fairclough	RSPB	3
Robert Phillipson	North Pennines AONB Farmer	3

### 5.3.5 Slides presented

This section is a record of the slides presented in each section of the workshop for reference purposes.

#### 5.3.5.1 Farm economics and scenarios



Opportunities for High Nature Value farming and their ability to provide public goods in a post-Brexit world.

#### Agenda

Timing	Agenda Point
12:00 - 12:10	Welcome
12:10 - 12:50	Farm economics and scenarios
12:50 - 13:00	Opportunities from Health and Harmony
13:00 - 13:30	Lunch
13:30 - 15:00	Discussion of opportunities in the local area
15:00	Close and thank you



#### What data is used?



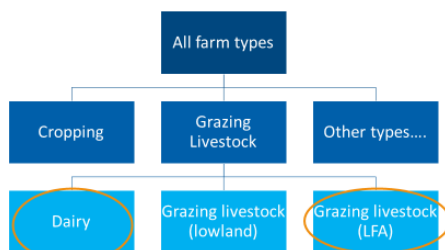
NUCLNP Area



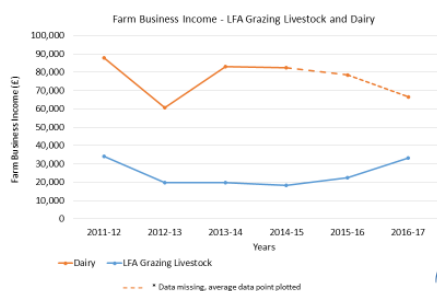
Data study area



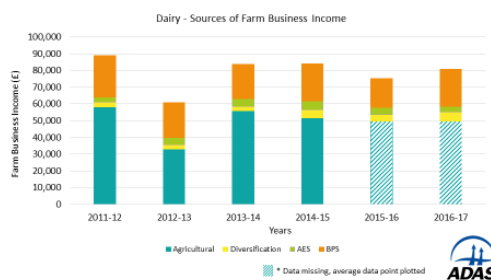
#### Data: farm type



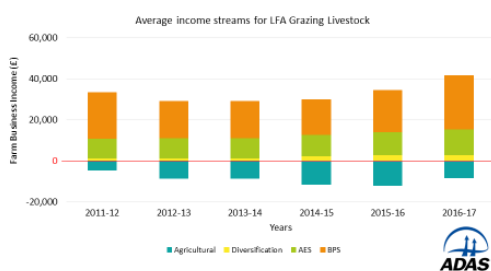
#### Farm Business Income over time



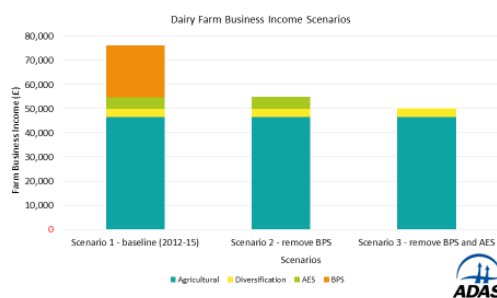
#### What makes the Dairy Farm Business Income?



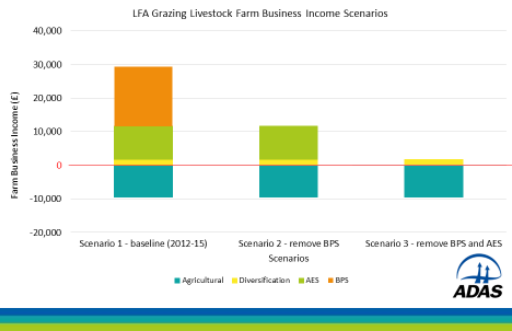
#### What makes the LFA Grazing Livestock Farm Business Income?



#### Scenarios - Dairy



## Scenarios – LFA Grazing Livestock

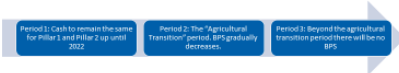


### 5.3.5.2 Opportunities from health and harmony

#### Health and Harmony

- Recognised that upland farming:
  - is heavily supported by direct payments and agri-environment scheme payments.
  - has opportunity to provide public goods, such as: carbon sequestration, biodiversity such as pollinators, landscape appearance and clean water provision

- Identified important time periods for agriculture:



- There is an opportunity to support farmers to produce these public goods.

A public good: a commodity or service that is provided without profit to all members of a society, either by the government or by a private individual or organization.

#### Public goods from Health and Harmony

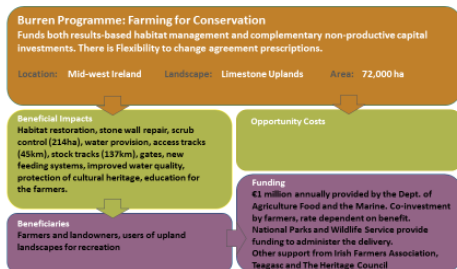


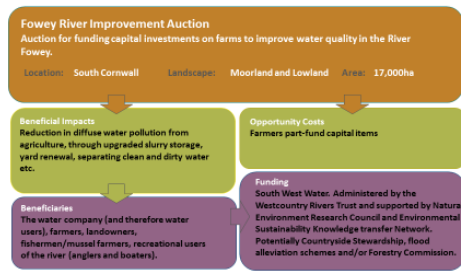
## Case Studies

- Five case studies in total: Black Mountains Land Use Partnership, Burren Project, Pumlumon, Fowey River Improvement auction, Coigach and Assynt Living Landscape (CALL).
- They have different:
  - funders,
  - aims,
  - beneficiaries
  - processes.



### 5.3.5.3 Discussion of opportunities





## 5.4 Case studies

### ***Burren Programme: farming for conservation***

<i>Aims</i>	To conserve and enhance semi-natural grasslands and landscapes, and protect and improve water resources. Funds both results-based habitat management and complementary non-productive capital investments.
<i>Reference link</i>	<a href="http://burrenprogramme.com/the-burren/">http://burrenprogramme.com/the-burren/</a>
<i>Location/landscape</i>	Mid-west Ireland, Limestone Pavement, 72,000 ha.
<i>Beneficial impacts</i>	Habitat restoration, stone wall repair, scrub control (214ha), water provision, access tracks (45km), stock tracks (137km), gates, new feeding systems, improved water quality, protection of cultural heritage, education for the farmers.
<i>Beneficiaries</i>	Farmers and landowners, users of upland landscapes for recreation. Currently has 5 year contracts with around 350 farmers.
<i>Process</i>	<p>Trusted knowledgeable advisors: A panel of Advisors has been drawn up for the purposes of the programme. These trained BFCP Advisors have undergone an intensive training course and must participate in annual 'refresher' courses on farming for conservation in the Burren. The Farmer must pay for the services of his/her Burren Life Programme Advisor, however, they can chose the advisor they would like to work with. There is an action based payment and a results based payment. For results based payments they have developed a robust clear scoring system.</p> <p>Annual checks take place on all 160 farms during which around 1000 fields are assessed for Measure 1 payment. The initial assessments are conducted by trained farm advisors (11 in total, paid for by the farmer) and are repeated annually.</p> <p>The BFCP team independently review all Field Scores as part of their farm plan checks. This usually entails a site visit. In some cases all fields are scored again by BFCP staff, in other cases only fields which show a change in score are checked.</p> <p>Fields which change by 2 or more scores are always checked.</p> <p>DAFM officials conduct a 5% whole farm check annually.</p> <p>They have kept the paperwork light and keep the details in the farm plan. The project is flexible and practical. Farmers are encouraged to understand why they are completing actions and how they will be monitored.</p>
<i>Governance</i>	There are seven members of the Burren Programme team, led by the Programme manager Dr Brendan Dunford.
<i>Funding</i>	<p>The Department of Agriculture, Food and the Marine (DAFM) provide €1m annually to Burren Life farmers. The National Parks and Wildlife Service (NPWS) of the Department of Arts, Heritage and the Gaeltacht provide funding to administer the delivery of the Burren Life Programme through the project team in Carron.</p> <p>The Burren Life Programme also enjoys the strong support of the Burren branch of the Irish Farmers Association (Burren IFA) and Teagasc, both of whom were centrally involved in the original BurrenLIFE project, and from a range of other stakeholders including The Heritage Council who co-fund the Field Monuments Advisor position.</p>

*Black Mountains Land Use Partnership*

<i>Aims</i>	To bring positive social, economic and environmental change through the implementation of cooperative and sustainable land management across the Black Mountains landscape
<i>Reference link</i>	<a href="http://www.blackmountains.wales/#charities">http://www.blackmountains.wales/#charities</a>
<i>Location/landscape</i>	South-east Wales, Sandstone hills, 24,600 ha.
<i>Beneficial impacts</i>	Bracken management, peatland management (revegetation and stabilisation) for carbon emission reduction, education provision to schools, increasing resilience of next generation of farmers through a grant-supported skills programme.
<i>Beneficiaries</i>	Farmers (particularly young-farmers), graziers, landowners, local schools, the tourism industry, local businesses, Local Authority, Welsh Water, National Trust.
<i>Process</i>	Focus is on improving the habitat condition of the BMLUP and monitoring the impact this as on tourism and farming productivity.  The BMLUP employs two rangers to work in the local area. They coordinate activities, such as bracken clearing and encourage responsible tourism. Bracken management and peatland restoration itself is largely carried out by external contractors. Tenants are responsible for follow on management.
<i>Governance</i>	The BMLUP is formed of stakeholders in the local area including NPA, graziers, landowners and Natural England. The Chair of the group is the National Sheep Association.
<i>Funding</i>	Welsh Government and the EU. Secretariat role provided by Brecon Beacons National Park Authority. Looking at viability of a PES scheme for carbon and other services.

*Pumlumon: Living Landscapes*

<i>Aims</i>	Since 2008, the Montgomeryshire Wildlife Trust (MWT) has been working with local communities, land managers, statutory agencies, and both local and national businesses to restore and enhance the resilience of the ecosystem within the project area; piloting an integrated approach whereby the ecosystem services (i.e., water quality, flood risk reduction, carbon safeguarding) can be better delivered via the mechanism of sustainable land management.
<i>Reference link</i>	<a href="http://www.montwt.co.uk/what-we-do/living-landscapes/pumlumon-project">http://www.montwt.co.uk/what-we-do/living-landscapes/pumlumon-project</a>
<i>Location/landscape</i>	Mid-Wales, Cambrian Mountains, 40,000 ha.
<i>Beneficial impacts</i>	Carbon storage by restoring peat bog, reconnecting habitats, storing flood water, bringing back wildlife, recreating habitats, developing green tourism, community involvement, skills and training, development of natural capital markets.
<i>Beneficiaries</i>	Farmers, landowners, recreational users, water consumers (3 million depend on rivers whose source is within the project area), downstream towns and villages, the tourism industry, local communities,
<i>Process</i>	<p>The Payment for Ecosystem Services (PES) model proposes an exchange designed to support the provision of ecosystem services (ESS) (or actions anticipated to deliver these services) from land management. Classically, this could include: payments by water users in return for land management practices that reduce diffuse pollution of water courses or off-setting payments from companies for land management that results in carbon sequestration. However it also allows for other types of exchange, such as volunteer workforces from an employer helping to improve recreational access points to common land or co-investment in outdoor recreation facilities by an NHS Trust as investment in preventative health. As current mechanisms for supporting sustainable management of nature resources change or are lost, PES represents an important area for investigation in Wales and beyond.</p> <p>The current iteration of the PP, funded by the Welsh Governments' RDP, has three main phases. Phase 1 seeks to select viable 'supply chains', which represent feasible systems of delivery by which ESS can be secured for prospective buyers. In the second phase, individual buying entities will be identified for each supply chain and will be engaged in a structured approach. Depending on the outcome of the initial meetings, the third phase will involve follow-up meetings/negotiation with the most interested prospective buyers.</p>
<i>Governance</i>	Montgomeryshire Wildlife Trust is the lead organisation. The delivery team includes RSK ADAS and Andrew Darnton Research and Analysis
<i>Funding</i>	<p>Countryside Council for Wales; JP Getty; Biffa Award; RDP; Waterloo Foundation: the Wildlife Trusts; Welsh Government (Core and RDP); Communities and Nature; EA; Defra; Heritage Lottery Fund</p> <p>In future, possibly visitors and Rheidol power station.</p>



<i>Aims</i>	Auction for funding capital investments on farms to improve water quality in the River Fowey.
<i>Reference link</i>	<a href="http://randd.defra.gov.uk/Document.aspx?Document=11542_FoweyAuctionFinalReportNe01">http://randd.defra.gov.uk/Document.aspx?Document=11542_FoweyAuctionFinalReportNe01</a>
<i>Location/landscape</i>	South Cornwall, Lowlands and Moorlands, 17,000ha
<i>Beneficial impacts</i>	Reduction in diffuse water pollution from agriculture, through upgraded slurry storage, yard re separating clean and dirty water etc.
<i>Beneficiaries</i>	The water company (and therefore water users), farmers, landowners, fishermen/mussel far recreational users of the river (anglers and boaters).
<i>Process</i>	An auction based PES mechanism. All farmers are contacted and asked to propose project funding and indicate the grant required to undertake that work. Projects are then ass simultaneously, with those offering the best value-for-money receiving financing.
<i>Governance</i>	Administered by the West Country Rivers Trust and supported by Natural Environment Res Council and Environmental Sustainability Knowledge transfer Network.
<i>Funding</i>	South West Water. Potentially Countryside Stewardship, flood alleviation schemes and/or Fo Commission.

*Coigach and Assynt Living  
Landscape – CALL*

<i>Aims</i>	Landscape-scale restoration project with a 40-year vision.
<i>Reference link</i>	<a href="https://coigach-assynt.org/">https://coigach-assynt.org/</a>
<i>Location/landscape</i>	North-west Scotland, Mountain and Moorland, 63,500 ha
<i>Beneficial impacts</i>	Manage and improve condition of heritage features, access paths, phone app with landscape routes, outdoor education, develop skills, tree planting using stock from local nursery, research and deer management.
<i>Beneficiaries</i>	The community, including landowners (charitable and private), community interest groups. Visitors and recreational users of the area.
<i>Process</i>	Small team comprising focussing on scheme manager, woodland education, crofting and rural projects training events and visitor manager.
<i>Governance</i>	
<i>Funding</i>	Heritage Lottery Funded, Coigach Salmon Fisheries Ltd, EB Scotland, Esmee Fairburn, European Outdoor Conservation Association, Gannochy Trust, Garfield Weston Charitable Trust, Highland Council, Historic Environment Scotland, John Muir Trust, Land trust, Pilgrim Trust, Scottish Mountaineering Trust, Scottish Natural Heritage, Scottish Rural Development Programme, Scottish Wildlife Trust, SSE, University of Stirling, Wren.