

## **A statement on the farming transition to sustainable land management**

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### *1. The Issues*

The Intergovernmental Panel on Climate Change's report (August 2019)<sup>1</sup> coupled with the Intergovernmental Science Policy Platform on Biodiversity and Ecosystem Services report (May 2019)<sup>2</sup> each advise that we must achieve transformative change to limit annual average global temperature increases to within 1.5oC of 1990 levels, and to reverse the alarming decline in global biodiversity during this Anthropocene extinction event. We acknowledge the priorities of the IPCC and the Climate Change Committee (December 2020)<sup>3</sup>: first, reduce CO<sub>2</sub> and non-CO<sub>2</sub> emissions; second, increase the capacity of the land to sequester CO<sub>2</sub> emissions, third, halt the loss of existing habitats, restore and manage them sustainably to rebuild ecosystem function and resilience; and fourth, increase the area of mixed woodland by natural regeneration and habitat creation.

We also acknowledge that globally, food production and agricultural greenhouse gas (GHG) emissions are significant contributors to climate change

Agricultural land use dominates the National Park with extensive upland commons and improved lowland grasslands where sheep and beef meat production are the main farm businesses. Agriculture here is more than an employment base, it is a way of life, embedded into the landscape, culture, and society, integral to the rural economy. The landscape of the National Park owes much to the men and women who have farmed the area for hundreds of years.

We know that agricultural practice and land use are critical determinants of how climate functions and nature thrives. Along with many other industries, agriculture is facing a difficult future as pressure intensifies to decarbonise, and to adopt alternative more sustainable models of food production and land management. Here in the National Park, our landowners, managers and farmers are well placed to be part of the solution to these challenges<sup>4</sup>.

This position statement sets out how we as an Authority will work to help farmers, landowners and managers implement and capitalise on the opportunities *a future farming transition* can bring, where farm businesses will shift to a system of sustainable land

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<sup>1</sup> IPCC, 2019: [Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems](#) [P.R. Shukla, J. Skea, E. Calvo Buendia, V. Masson-Delmotte, H.-O. Pörtner, D. C. Roberts, P. Zhai, R. Slade, S. Connors, R. van Diemen, M. Ferrat, E. Haughey, S. Luz, S. Neogi, M. Pathak, J. Petzold, J. Portugal Pereira, P. Vyas, E. Huntley, K. Kissick, M. Belkacemi, J. Malley, (eds.)]. In press.

<sup>2</sup> IPBES (2019): [Global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services](#). E. S. Brondizio, J. Settele, S. Díaz, and H. T. Ngo (editors). IPBES secretariat, Bonn, Germany.

<sup>3</sup> <https://www.theccc.org.uk/publication/the-path-to-net-zero-and-progress-reducing-emissions-in-wales/>

<sup>4</sup> Professor Dieter Helm *Presentation to Policy Forum* 6 November 2020.

management, public money will pay for public benefits, and primary food production will be properly remunerated. We believe that the Authority has a responsibility to assist all land managers in this transition to ensure a more sustainable and healthier future for our environment, our communities and our local economy.

The UK's exit from the EU and the Common Agricultural Policy has enabled Welsh Government to develop and design their own system of agricultural support. Building on two previous consultation phases, the Welsh Government published the Agriculture (Wales) White Paper (December 2020), which makes explicit the phasing out of basic payments to Welsh Farmers by 2023 and the introduction of a *Sustainable Farming Scheme* (SFS), an outcomes based subsidy which seeks to reward farmers for the provision of public goods.<sup>5</sup> The basis of the SFS is the concept of Sustainable Land Management (SLM) which is described as "an internationally recognised concept, reflecting the use of land for production, while ensuring long-term productive potential and maintenance of key environmental services. Sustainable food production is the major part of this, but it also includes sustainable forestry and other types of primary production". The principles of SLM can be defined thus:

**Principle 1** Multi-functionality: land should be managed to deliver a wide range of benefits beyond food and fibre production

**Principle 2:** Sustainability: land management should reflect the principles of sustainable development

**Principle 3** Integration: land management must be integrated with rural development

**Principle 4** Subsidiarity: a framework which can reflect regional and local needs and aspirations<sup>6</sup>

SLM secures conservation of the basic resources of soils and water whilst producing high quality food, fibre and other renewable raw materials of high welfare and environmental standards. SLM works to enhance landscapes and the communities that occupy them to maintain local distinctiveness and inspirational quality.

## 2. *The evidence*

The implementation of SLM as a practice is both ancient and very new. Its heritage comes from embracing land management techniques which have their basis in centuries old practice of land rotation and animal husbandry working with the seasons and the natural capacity of the land, rooted in cultural memory of place. Its modernity stems from the opportunities new technology brings to solving some of the challenges associated with food production. It is also new in the sense that the approach is not yet widely supported, either through existing agricultural support regimes or traditional education programmes.

Despite the infancy of the SLM movement, data coming from pioneer farms is remarkably positive. The Pontbren project in Mid Wales, led by a group of neighbouring farmers supported by Coed Cymru and the Woodland Trust, has explored the use of woodland

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<sup>5</sup> Public goods are those things which we all enjoy, but which are not rewarded by the market – e.g. clean air and water, thriving wildlife, adaptation to and mitigation of climate change. Food is not a public good because it is tradeable in markets where price meets demand.

<sup>6</sup> Natural England 2001 [Principles of Sustainable Land Management](#)

management and tree planting to improve the efficiency of upland livestock farming<sup>7</sup>. The impetus for the project stemmed from the need to reduce operating costs on farm, make farming systems more economically and environmentally sustainable, and improve prospects for the next generation on these family farms. The key to these changes was to improve shelter by tree planting and restoring neglected woodland and hedges. Since then the collaborative efforts of the group of ten Pontbren farmers have gone much further, reinstating woodland management as an integral part of successful modern upland livestock farming systems, developing wood chip bedding systems applicable throughout Wales, and improving not just the economic value of their land but the environment in which they live and work. The woodland improvements at Pontbren were carefully designed to achieve the farmers' agricultural objectives by creating woodland cover that was as natural as possible and would be long-lived and easy to maintain after the initial establishment period. The hedgerow planting and management took a similar approach, and new ponds were created which benefitted both farming and biodiversity. The farmers observed that their tree planting had unexpected benefits in reducing water run-off from improved grassland. Their interest led to a major hydrological research programme at Pontbren, which has provided important new evidence of the role of trees in flood control. The Pontbren data is now being used elsewhere in the UK to develop better ways of predicting the impact of upland land use on flooding. The Pontbren project worked because it was led throughout by the farmers who actively took an innovative approach, and who were willing and able to interest and involve others in active collaboration. Such approaches are currently being explored in the Park through projects such as DCWW Mega Catchment<sup>8</sup> and the Black Mountains Land Use Partnership<sup>9</sup>.

The Black Mountains Land Use Partnership (BMLUP) is a cross-border landscape-scale Partnership comprised of local landowners, graziers and regulatory bodies. In the context of the National Park it can be seen as a pioneer in defining and implementing SLM of large areas of upland. Established through the Welsh Government's Nature Fund in 2015, the Partnership promotes the restoration and sustainable management of the Black Mountains' natural resources and seeks to improve the wellbeing and economic resilience of those who live and work in this iconic area. This partnership approach has engendered collaborative working to help move the Black Mountains towards a more sustainable. Through the action of the partnership the following key outputs have been delivered.

- Re-wetted and re-vegetated over 60ha of peatland and delivered heather management work to improve habitats and ecosystems.
- Undertaken over 320ha of bracken management works improving habitats and access for visitors, graziers and livestock.
- Developed a Payment for Ecosystems Services study to help inform how private financing of upland restoration could work.
- Delivered an education programme to over 500 local school children exploring uplands life and grazing traditions.
- Trained 56 local businesses and tourism providers to become Mountain & Moorland Ambassadors helping to sustainably promote the Black Mountains.
- Upskilled over 90 people including Young Farmer in rural skills and set up a Black Mountain Young Farmers Network.

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<sup>7</sup> <https://www.woodlandtrust.org.uk/publications/2013/02/pontbren-project-sustainable-uplands-management/>

<sup>8</sup> DCWW Mega catchment <https://corporate.dwrcymru.com/en/community/environment/our-projects/watersource/brecon-beacons-mega-catchment>

<sup>9</sup> <https://www.blackmountains.wales/>

Given the nature of land management in the Brecon Beacons, recent research on the financial sustainability of a selection of upland livestock farms (sheep and beef), applying micro-economic theory to farm accounting, is of particular relevance to the National Park<sup>10</sup>. The approach demonstrated that on the upland and marginal livestock farms examined, reducing stocking levels to that which can be sustained by the farm's naturally available grass (i.e. without artificial fertilisers), increases profit (or reduces losses), through significant savings of variable costs. In turn this could lead to significant environmental benefits by reducing some of the environmental pressure on the land, particularly where overgrazing is an issue. The findings challenged the approach often taken by upland farmers that greater profitability automatically ensues from increasing production. The results of the analysis were similar for all farms examined, whether managed by individuals, or environmental organisations, whether in protected landscapes or not and irrespective of their size (ibid, v).

The condition of Sites of Special Scientific Interest (SSSIs) is a good measure of the health of habitats and species. Our State of Park Report 2020 showed that 35% of SSSIs are in unfavourable condition, only 10% of SSSIs are under appropriate management, 56% of Special Areas of Conservation (SACs) are in unfavourable condition, and only 50% (3 of 6) designated waterbodies achieved Water Framework Directive 'good status'<sup>11</sup>. Much of this land is common land and in the ownership of the National Park Authority, its decline repeats a picture seen in other National Parks across the UK, whereby the designation alone is insufficient to prevent environmental degradation.<sup>12</sup>

A Compliance Assessment (2020) for riverine SACs by Natural Resources Wales, using revised Common Standards Monitoring guidance (2016), found 67% of the waterbodies in the Wye SAC catchment and 88% of water bodies in the Usk SAC catchment failed to meet the phosphate targets<sup>13</sup>. Precise apportionment is a matter for further research.

### 3. Our Analysis

We believe that the NPA occupies a critical position as a bridge between national policy makers and practitioners on the ground. We want to work collaboratively with a broad range of stakeholders such as farmers, land managers, Local Nature Partnership, food producers, food retailers, community members, and researchers to identify a pathway to enable sustainable land management practice to flourish.

The following table identifies some of the barriers to the wholesale implementation of SLM and the end point of the pathway. The gap in the middle of the table represents a space for collaborative action between all partners.

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<sup>10</sup> Chris Clark, Brian Scanlon & Kaley Hart (2019) [Less is more: Improving profitability and the natural environment in hill and other marginal farming systems](#) with funding from the RSPB, The Wildlife Trusts and The National Trust

<sup>11</sup> BBNPA (2020) State of the Park Report

<sup>12</sup> RSPB (2020) [A lost decade for nature](#) and Friends of the Earth (2020) [Missing in action: natural climate solutions in England's national parks](#)

<sup>13</sup> Hatton-Ellis TW, Jones TG. 2021. [Compliance Assessment of Welsh River SACs against Phosphorus Targets](#). NRW Evidence Report No: 489, 96pp, Natural Resources Wales, Bangor.

<b>Blockages</b>		<b>Where we want to be</b>
Economic flows within the food sector do not provide appropriate remuneration to primary production on the farm.		Fair trade for Beacons farmers - greater emphasis on processing and marketing primary produce in the area it is grown, strengthening links between product, place and landscape character. Improved narrative around value of landscape stewardship implicit within appropriately costed products.
Past agricultural support regimes have locked in modes of working which have unintended consequences for the natural environment and the climate.		Farmers, landowners and managers are appropriately rewarded for the public goods they provide. Land managers should see the holistic management of the full ecosystem in their care as fundamental to the success of their business model. The public should recognise the value invested by land managers (especially for our visitors).
Average farm size and labour engenders the need to utilise intensified mechanisms.		Collaborative working across farm clusters to bring about economies of scale that enable SLM to be viably employed.
There is a systemic disconnect between food production and consumption.		Consumer support for sustainable land managers and valuing their role in restoring, managing, and maintaining landscapes to rebuild ecosystem function and resilience. Purchasing decisions should be led by the sustainability of a final product and a strong market should be developed to cater for such consumer choices. Supply chains are drastically cut and direct sales from farms is a viable option.
Food waste is systemic.		All land management operates on the basis of a circular economy.
Agricultural education programmes are tailored towards productive rather than regenerative management of farmland		A greater range of rural employment and training opportunities focusing on implementation of SLM enabling people to live and work in rural areas, to retrain in SLM from traditional rural industries where jobs have been lost, to develop and to continue to develop their skills.

#### 4. Our action

The emerging *National Park Management Plan Future Beacons* seeks to ensure that the National Park becomes a rich and resilient landscape which helps our communities to live prosperously now and in the future. Our land managers and farmers are critical players in helping us achieve our vision.

We would like to see a just transition for small, family farms, which are most prevalent in the hills and uplands. We would like to see these farm businesses given every opportunity to learn and grow in this environmentally led era. This needs patience, collaboration, and courage both on the side of Welsh Government and on the side of the farm businesses.

We believe the future Sustainable Farming Scheme (SFS) within designated landscapes should be designed to empower land managers and farmers to be instrumental in delivering Management Plan objectives. As an Authority our ambition is great, but our delivery power is limited. Developing and enhancing relationships with the farmers, the custodians of the landscape, will ensure that we are better able to meet our statutory purposes and duty. We need a SFS that enables farmers to fulfil this role, to provide nature-based solutions in pursuit of the Park's purposes and duty alongside low impact food production.

We therefore commit to the following:-

*We will utilise our convening powers to strengthen and develop broad spatial partnerships of land managers and specialists, to identify 'blockages' at the local level and find deliverable solutions including natural capital solutions.*

*We will champion farmer led clusters, and contribute to such clusters where the Authority is able, either as a land manager or as relevant experts*

***We will work with the Welsh Government to develop sustainable land management projects which will act as demonstrators of good practice.***

*We will work with key partners to advocate for SLM solutions and use our position of influence to foster open dialogue with and between policymakers and our communities.*

*We will work with private finance sector intermediaries to develop portfolios of investment ready projects for Payment for Ecosystem Services (PES), building on the Black Mountains Land Use Partnership PES Sponsorship Portfolio and experience across the UK.*

*We will ensure peatlands are restored and managed sustainably, and we will promote widespread adoption of low-carbon farming practices across the Park.*

*We will work with local businesses and producers to develop and advocate for changes in access to products and consumption to benefit sustainable farming. We will centre our advocacy around a 'Sustainable Sundays' campaign which encourages the consumption of products derived through SLM.*

*We will work with landowners and land managers to increase horticultural production within the Park.*

*We will work with landowners and land managers to increase agroecology within the Park.*

*We will develop education programmes aimed at increasing knowledge of sustainable food production. We will target primary and secondary schools in our urban fringes for key areas of delivery.*

*We will work with local agricultural higher education institutions and other skills providers to develop curricula around regenerative farming methods and practice.*

*We will develop land use policy within our emerging Local Development Plan aimed at assisting farmers with the transition*

## Appendix I

### Further evidence.

The Intergovernmental Panel on Climate Change (IPCC) states that about 23% of global anthropogenic<sup>14</sup> greenhouse gas emissions come from agriculture, forestry and other land uses.

Previous UK approaches to addressing the impacts of agriculture on climate and nature have focused on voluntarily arrangements, whereby farmers enter agri-environment schemes as an additional stream of income. Despite the effort of farmers, land managers and landowners, agricultural emissions have not fallen under these voluntary arrangements. The Climate Change Committee reports that net emissions from Welsh agriculture and land use, land use change and forestry (LULUCF) in 2018 were 5.2 MtCO<sub>2</sub>e in 2018, unchanged from 2016 and only 13% down from 1990. Emissions have increased by 13% in the last decade: – Emissions from agriculture have fallen by 11% since 1990 but have increased since 2016. Emissions from livestock account for 54% of agricultural emissions, with manure and waste management (13%), soil (24%), and machinery (10%) accounting for the remainder.<sup>15</sup>

In Powys emerging data from studies commissioned by the Public Service Board show that emissions from agriculture make up 67% of total GHG emissions within the county<sup>16</sup>. In 2016 79% of Powys is in agricultural use (410,646 Ha)<sup>17</sup>. Powys makes up 66% of the National Park. Our own carbon budget work produced by The Tyndall Centre puts non-CO<sub>2</sub> GHG from agriculture for the Park area at 48% of total emissions.

Data on breeding bird numbers is widely used as a proxy measure to gauge health and resilience of our ecosystems. Many birds sit at or near the top of terrestrial and marine food chains and understanding the drivers and impacts on their populations gives us an indication of the relative health of other wildlife. Across the UK numbers of farmland birds have declined by 54% since 1970. In Wales grey partridges, yellow wagtails, tree sparrows and turtle doves have more than halved<sup>18</sup>. Our own data analysed by the British Trust for Ornithology (June 2020) shows that 8 red listed species declined by more than 50% in the period 1995-2018, 4 of which were associated with farmlands.

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<sup>14</sup> Anthropogenic is defined in this context as being of human origin or relating to human activity Allaby (2017) *Oxford Dictionary of Ecology* Oxford University Press

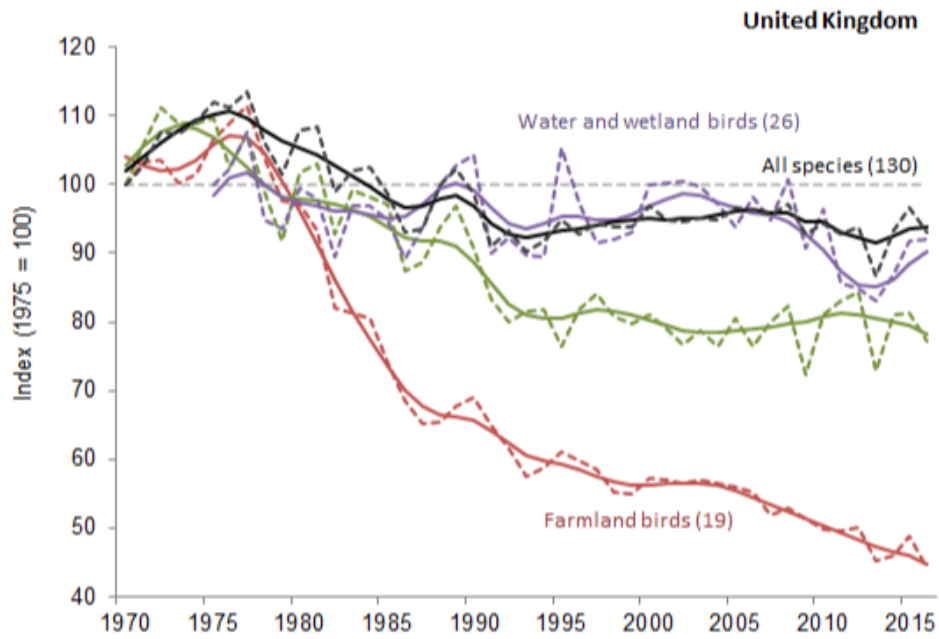
<sup>15</sup> CCC (December 2020) [Progress Report: Reducing Emissions in Wales](#) Committee on Climate Change

<sup>16</sup> Powys Public Service Board. Carbon Positive Powys - For Approval (June 2020)

<sup>17</sup> Stats Wales (2019) [Type of Agricultural Land \(Hectares\) by Area](#) Welsh Government

<sup>18</sup> Nature Friendly Farming Network (2018) [The Future of Farming in the UK](#) NNFN

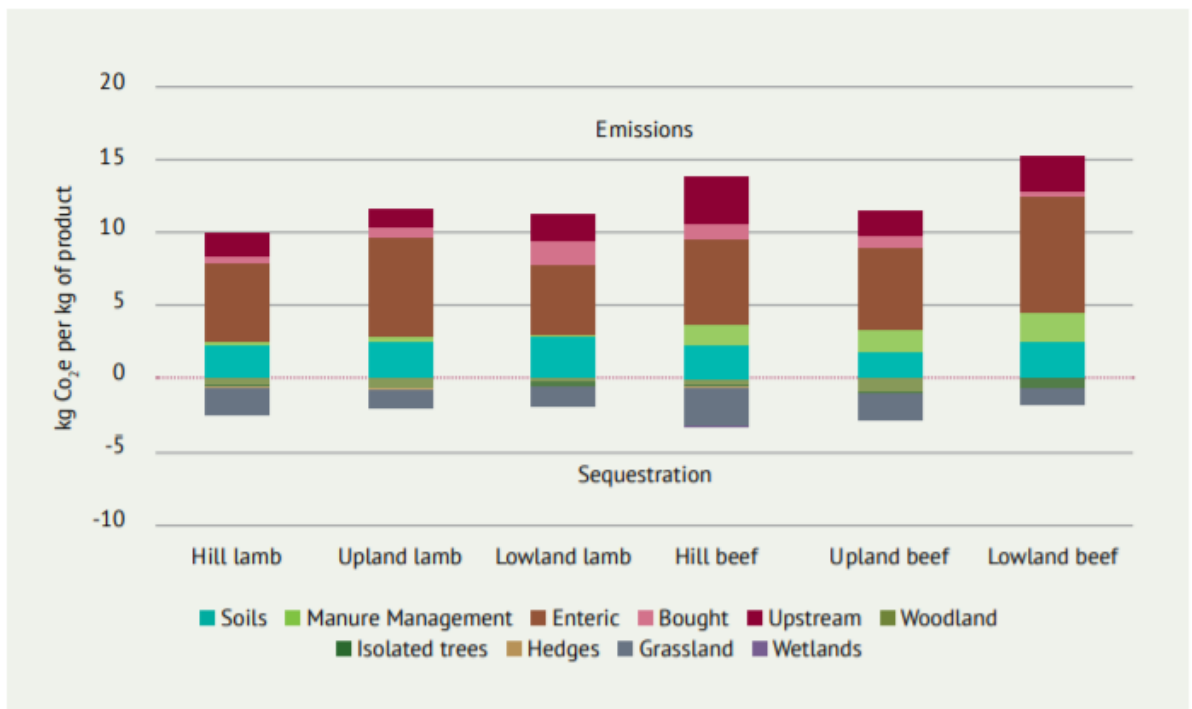




**Carbon Footprint of Lamb and Beef in Wales** from a study undertaken by Bangor University and the University of Limerick<sup>19</sup>

A detailed analysis of the carbon footprint of 20 farms across Wales was undertaken in 2020 and the results are as follows:-

<sup>19</sup> The Welsh Way (2020) [https://meatpromotion.wales/images/resources/Welsh\\_Way\\_Final\\_Eng.pdf](https://meatpromotion.wales/images/resources/Welsh_Way_Final_Eng.pdf) HCC



Source: HCC commissioned research from Bangor University, in collaboration with the University of Limerick.

The carbon footprints of the selected Welsh farms are amongst the lowest reported for lamb and beef producing countries. Comparing the figures derived from the Bangor study to global values is difficult given that data obtained from different studies have different assumptions and methodologies. However, a 2018 meta-analysis by the University of Oxford sought to compare the farm stage emissions of various studies across the world. This study showed that the farm stage detail of beef (from the beef herd) from 35 studies from twelve different countries had a range of 25.5kg – 119.7kg CO<sub>2</sub> e/kg meat. Another study has suggested that the Western Europe and Global footprint for beef production from the suckler herd was 32.0kg and 37.3kg CO<sub>2</sub> e/kg liveweight respectively. The farm stage detail for mutton and lamb from 12 studies in seven different lamb-producing countries had a range of 11.9kg to 60.9kg CO<sub>2</sub> e/kg meat according to the Oxford meta-analysis, but with most of the values falling between 20-35. Whilst caution must be exercised in directly comparing these figures, the Bangor University study does indicate that Welsh lamb and beef producers have the potential to be some of the most sustainable production systems globally.

## Appendix 2

Our current work programmes – current and committed which will help to deliver principles of SLM

Work description	Objectives	Key outputs (incl. dates)	Key outcomes (incl. dates)	Indicators and latest performance
<b>Creating market opportunities for private goods</b>				
<p>ABC for Sheep and Tourism</p> <p>(Drawn from project manager JD – may be refined from project plan).</p>	<p>Support the upland farming economy by enhancing sales of locally produced sheep meat and other produce through the visitor economy.</p> <p>Coordinating and supporting businesses in shorter food chains.</p> <p>To implement a coordinated plan to enhance the take up of local sheep meat and other local produce.</p>	<p>By March 2023</p> <p>Pilot differentiation based on the National Sheep Association's concept of ABC – Age, Breed, Countryside (or location) - and linking it to the trusted tourism brand of the Brecon Beacons.</p>	<p>By March 2023</p> <p>A solid offering for residents, visitors and nearby urban markets.</p>	<p>Delivering and managing the project within the direction set out in the Environment (Wales) Act and the Wellbeing of Future Generations Act and the Sustainable Management of Natural Resources.</p>
<b>Developing market opportunities which support diversification</b>				
<p>Stimulate economic development through Intangible Cultural Heritage tourism industry capacity.</p>	<p>Develop an ICH micro-cluster in Brecon Beacons.</p> <p>Develop a coordinated marketing strategy.</p> <p>Conduct Necessary Tourism Training.</p>	<p>By September 2021</p>	<p>By September 2021</p>	<p>See Atlantic Culturescape EAPA-744/2018 Work package 5.</p>

<b>Education</b>				
Provide comprehensive advice on being a responsible dog owner.	Continue to evolve the National Park Authority Brecon Beacons Dogs Code: <a href="http://www.breconbeacons.org/dogs">www.breconbeacons.org/dogs</a>	Maintain Brecon Beacons Dogs Code	To make available information on being a responsible dog owner.	
<b>Sustainable Development Fund</b>				
Encouraging small scale horticulture and the local food Economy	Making the Brecon Beacons part of a Sustainable Food Region	No of projects supported (March 22)	Greater purchasing & knowledge of local food (March 22)	Projects supported and local food businesses operating
<b>Wardens</b>				
<p>Work in pilot areas to integrate aspirations of the NRAP with livestock and crop production.</p> <p>Develop woodland diversity / expansion of cover with the Warden team, students and vols collaborating with land holders.</p> <p>Continue upstream flood alleviation through peatland conservation, wildfire management and farmland land use</p>			Ongoing	