Soil Association Scotland's Farming with Nature Knowledge Transfer Programme

Final Report for KTIF-010-2016

August 2020

CONTENTS

ANNEXES

PROJECT TITLE/APPLICANT

1.1 Title

Farming with Nature: KTIF/010/2016

1.2 Overview of Soil Association Scotland

The Soil Association[1] established in 1946, is the UK's leading charity working for healthy, humane and sustainable food, farming and land use. The Soil Association is registered with the Charity Commission for England and Wales, charity number 206862 and with the Office of the Scottish Charity Regulator, charity number SCO39168.

The Charity has a wholly owned subsidiary Soil Association Certification Limited, the UK's largest organic certification body. This is run as a not-for-profit company that delivers parts of the Charity's strategy and generates financial returns that are put back into the Charity's wider work. It also audits other schemes including FSC and PEFC forestry standards. The Charity is a company limited by guarantee and governed by Articles of Association. The governing body of the Charity is the Board of Trustees, who are also the directors for the purposes of company law.

The Soil Association (charity and certification body) currently employs around 240 people across the UK, with 22 full-time equivalent staff based in Scotland. Income to the Charity for the financial year 2018/19 was £6,306,539, with around 10% of that income attributable to Scotland. Income is received from a range of sources including government grants, trusts and foundations, programme partner organisations and private donations.[2]

Soil Association Scotland[3] was created in 2002, to provide a focus for the Charity's work in Scotland. The Charity has a long and successful track record of working with the Scottish Government and partners organisations to deliver programmes of work for sustainable and healthy food, farming and land use. Our programmes are delivered in partnership with a wide range of public and non-governmental organisations. These programmes aim to demonstrate and enable practical solutions for transforming the way we way eat, farm and care for the natural world to restore nature, a safe climate and health. Our current partnership programmes of work include:

- 'Farming for the Future' a KTIF funded knowledge transfer and innovation programme for low input, low carbon farming and land use (KTIF/011/2016): a KTIF funded Operational Group 'Farming for Biodiversity' (KTIF/035/2020); and a project 'Landscape Leadership' to promote environmental change at landscape scale.

- Rural Innovation Support Service which brings the right people together to help farmers and crofters across Scotland to and get their innovative ideas for solving a business challenge or developing a new business opportunity off the ground. (Delivered as part of the Scottish Rural Network in partnership with Scotland's Agricultural Organisation Society (SAOS), SAC Consulting and Scottish Food and Drink.)

- Food for Life Scotland which supports local authorities across Scotland to put more local food on the table and serve fresh, healthy, and sustainable meals in their schools through the Food for Life Served Here award. (Funded by the Scottish Government.) Our UK-wide National Lottery Community Fund Food Get Togethers project supports and facilitates regular community activities that connect people from all ages and backgrounds through food.

[1] https://www.soilassociation.org/
[2] https://www.soilassociation.org/about-us/annual-review-and-finances/
[3] https://www.soilassociation.org/our-work-in-scotland/

2. EXECUTIVE SUMMARY

Farming with Nature (FWN) was a three-year knowledge transfer and skills development programme designed to work with farmers, crofters and environmental practitioners to support nature friendly farming by integrating profitable agricultural production with biodiversity and ecosystem service (e.g. soil health and water quality) objectives. FWN was part-funded by the Scottish Rural Development Programme's Knowledge Transfer and Innovation Fund with co-funding from RSPB Scotland, Scottish Water and Mains of Loirston Trust. FWN was the only KTIF funded knowledge transfer programme dedicated to farming and biodiversity for the duration of the SRDP 2014-2020.

FWN involved the delivery of farm-based knowledge transfer events, evening talks, farm demonstrations and information activities for farmers, crofters and land managers to:

- Build skills, knowledge and innovation for nature and climate friendly farming.
- Facilitate knowledge exchange, networking and collaboration between farmers, crofters and environmental practitioners.
- Mainstream nature-based solutions for challenges in the field e.g. remove need for pesticides.

Examples of key themes covered by FWN included: conservation grazing to benefit species-rich grassland and ewe management; integrating peatland restoration with livestock hill farming and crofting; using non-chemical strategies to control invasive vegetation and provide wildlife habitat; highlighting 'win-win' situations on farms where AEC options management can benefit both wildlife and production; managing farmland for wading birds.

FWN facilitated relationship building and knowledge exchange with a wide range of other stakeholders including the Scottish Government, government agencies (e.g. Scottish Natural Heritage), membership bodies (e.g. NFUS), NGOs/charities (e.g. RSPB Scotland) and research providers (e.g. Moredun Institute). FWN events were cited by several organisations as being a good/useful way to facilitate knowledge exchange (two-way flow of information) and engaging directly with famers and crofters.

Over 590 farmers, crofters and other people working in the environment and agri-food businesses participated in FWN events. The evaluation of FWN demonstrates marked increases across knowledge, ability/skills and confidence (particularly knowledge) amongst FWN participants. Results overall highlight a positive picture in terms of motivation and intention to adopt sustainable practices, and a change in attitudes towards sustainable practices, especially in relation to farming and biodiversity, climate change and low input farming. Around 80% of those participating in FWN said they were or would consider implementing positive management changes as a result of attending an FWN event.

FWN has demonstrated that there is a farmer-led demand for on-going support that values and builds on their knowledge and experience, and more opportunities for peer-to-peer support, co-creation and network building to increase skills, knowledge and confidence. Key recommendations arising from our experience of delivering the programme and findings from the evaluation include:

- Provide more opportunities (smaller groups of farmers meeting on a regular basis) which encourage greater participation with longer-term engagement.
- Support more capacity building and network development - building confidence and ability through innovation, skills and knowledge, and networks to share ideas and identify opportunities.
- Facilitate a more targeted landscape scale approach to enable farmers and land managers to collaborate and collectively deliver impactful environmental benefits across a shared place.
- Support farmer-led innovation using the Operational Group model to help farmers develop their own solutions that work for their own business, and mainstream best practice for nature-based solutions.
- Promote an outcome-based approach which gives farmers the responsibility to implement sustainable management practices which deliver integrated environmental and business benefits.
- Work with farmers and key stakeholders to identify and address barriers to uptake of nature friendly practices.

3. PROJECT DESCRIPTION

3.1 Aims and objectives

Farming with Nature (FWN) was a three-year knowledge transfer, skills development and innovation programme designed to work with farmers, crofters and environmental practitioners to support nature friendly farming by integrating profitable agricultural production with biodiversity and ecosystem service objectives. The programme focused on using organic, agroecological and High Nature Value (HNV) production methods, which have a sound scientific evidence-base for protecting and enhancing the natural environment.

Our ambition was to directly engage and support over 550 farmers and crofters working in locations across Scotland. We anticipated that many more would access information through dissemination activities and materials. We promoted the programme to farmers and crofters by focusing on farming practices which delivered win-win benefits for business and the nature – improving resilience (especially to climate change and extreme weather events), increasing productivity, and supporting wildlife and the wider environment.

The programme focused on five subject areas using agroecological, organic and High Nature Value (HNV) farming practices: (1) Non chemical control of plant and animal pests (2) Habitat creation and management (3) Crop rotation, clover leys and green manures (4) Soil nutrient management (5) Animal health planning. FWN set to achieve its environmental and sustainable production objectives by delivering knowledge transfer and skills development events and related farm demonstration, information and dissemination activities for farmers and crofters across Scotland to:

- Build skills, knowledge and innovation for environmentally friendly farming amongst Scotland's farming and crofting communities.
- Facilitate knowledge exchange, networking and collaboration between farmers, crofters and environmental practitioners.
- Disseminate and mainstream innovative practices e.g. methods that reduce or remove the need for pesticides.
- Encourage citizen science – farmers, crofters and volunteers involved in running monitoring and recording projects to measure environmental outcomes of on-farm actions.

FWN's aims and objectives had a very strong fit with the EU Rural Development Regulation (RDR) priorities and SRDP National Priorities, '2020 Challenge for Scotland's Biodiversity', 'Land Use Strategy 2016-2020' and 'Scottish Organic Action Plan' 2016-2020. The programme was delivered in partnership with RSPB Scotland and Scottish Water with support from Innovative Farmers (a Soil Association programme). We consulted with a wide range of organisations which supported the programme's aims and objectives including: Cairngorms National Park Authority, NFUS, Plantlife Scotland, RSPB Scotland, Scottish Natural Heritage, Scottish Organic Forum, Scottish Wildlife Trust, SEPA and SRUC.

3.2 Activities

Events and workshops: these were practical farm-based events and interactive workshops held at locations around Scotland designed to encourage discussion, knowledge sharing and peer-to-peer learning. Each event/workshop was led by expert speakers/facilitators and accommodated between 10–25 people. Farm-based events were a mix of one-day and half-day formats and featured presentations from expert speakers and a Q&A session, followed by a walk and talk to showcase best practice in action. Events also included an evening and a weekend format.

Conference: a one-day event which brought together a large group of farmers, industry bodies and experts together to promote share knowledge for farming with nature.

Advice and guidance: signposting to further guidance and advice was offered to all FWN participants to encourage and support the implementation of new management practices. This was provided at events and by phone and e-mail. Contacts and links to access further guidance and advice was also emailed to participants who said they wished to receive further information.

Resources: bespoke information packs were produced for each event/workshop containing copies of presentations, fact sheets, further reference sources, case studies and information about the host farm/agricultural business. A series of short videos was also produced.

Communications: this involved using a range of sources to promote all aspects of FWN including social media; editorial industry journals; case studies and short films; and attendance and presentations at external events e.g. Royal Highland Show.

Monitoring and evaluation: the internal M&E framework involved collecting quantitative and qualitative information to measure and report the progress of the FWN activities against KPIs and targets and evaluating evidence-based impacts and outcomes using affordable and appropriate methodologies.

3.4 Opportunities and problems addressed

Industry need and demand

The project was conceived in 2015/16 and used two key pieces of work to demonstrate industry need and demand for the programme in Scotland. The report 'The role of agroecology in sustainable intensification'[4] commissioned by the Land Use Policy Group of the UK's Nature Conservation agencies (including Scottish Natural Heritage) highlighted growing interest and a strong evidence-base for using agroecological approaches to deliver production, environmental and sustainability goals.

The report also made a recommendation for improving knowledge exchange on agroecological approaches, building on tacit farmer knowledge and active farmer participation, and a stronger focus on agroecological practices and systems in training, education, advice as well as research and innovation.

The 'Future of Scottish Agriculture' (a Scottish Government discussion document published in 2015) set out key vision statements. Although the document has since been superseded, the vision statements remain valid and reflect current and evolving policies (post Brexit) for agriculture, the environment and rural development. Key vision statements FWN sought to support:

- Agriculture is more profitable by producing food more efficiently and investing in natural assets e.g. healthy soils and pollinators.
- Continued support for farming which delivers social and environmental goods in remote and fragile areas.
- Agriculture can withstand shocks and adapt to changes e.g. reduced CAP support and climate change.
- Farmers take advantage of training opportunities and adopt innovative and other best practice that increase their profitability as well as becoming greener.
- Farmers work with nature to protect and enhance natural capital and ecosystem services.
- Scotland has a low carbon agriculture industry, has achieved good water quality in water bodies affected by diffuse pollution and halted the loss of biodiversity.
- Long-term productivity of farmland through sustainable management of soils, water and pollinators and farmers also benefit from efficient use of energy feed and fertiliser.

Environmental context

Farmers have a vital role to play in managing Scotland's natural environment. Farming is the dominant form of land use in Scotland, with 75% under agricultural management of which 44% is identified as High

[4] https://www.nature.scot/sites/default/files/2017-06/A1652615.pdf

Nature Value (HNV). Many of Scotland's farmers and crofters also own, tenant or manage land that is a designated Site of Special Scientific Interest and/or a Natura 2000 site.

However, the SRDP 2014-2020 clearly sets out the impact that agriculture has had on the farmed environment and the need to address the negative impacts of agricultural intensification. 'Within enclosed farmland habitats in Scotland, wild species diversity, water supply, soil quality and regulation of climate, hazards, pests and diseases have shown deterioration over the last 20 years, and the abundance of wild and domestic pollinators has also declined. More priority farmland species are declining in population size (43%) than increasing (29%) and more priority farmland habitats are deteriorating in conservation status (63%) than improving (13%).'

The economic importance of Scotland's environment is well known. Studies suggest that the elements of Scotland's natural capital that can be given a monetary value are worth more than £20 billion each year to our economy, supporting more than 60,000 jobs. Many of Scotland's growth sectors such as tourism and food and drink depend on high quality air, land and water.

Nature-based tourism in Scotland – its wildlife, habitats, landscapes and natural beauty – is worth £1.4 billion each year and directly employs over 39,000 FTE jobs. Scotland's landscapes, fertile soil and clean water contribute to Scottish food and drink's clean green image – supporting food and drink exports worth £1.9 billion pa. Examples of the value of agro-system services include insect pollination services in Scotland which are estimated to be worth £43 million per year and soil management and pest control services provided by dung beetles which are estimated to save the UK cattle industry £376 million every year.

FWN promoted the following practices, which have a sound scientific-evidence base for protecting and enhancing the natural environment through its programme of activities.

Non-chemical pest control: non-chemical methods and strategies for controlling plant and animal pests will help to reduce the use of chemical pesticides which are harmful to wildlife and the wider environment. According to the product labels: MCPA used to control soft rush is classified as harmful to aquatic life and can enter drinking water supplies; asulam used to control bracken is classified as very toxic to aquatic organisms and may cause long term effects in the aquatic environment; and metaldehyde used to control slugs is classified as dangerous to game, wild birds, and animals, and can also enter drinking water supplies.

Practices for supporting productive and healthy extensive livestock systems is crucial to the conservation of many hill and upland habitats, much of which is HNV, and a range of wildlife including priority species – e.g. farmland waders – which these habitats support. Controlling invasive soft rush and bracken will help ensure the viability of extensive livestock production, protect and enhance biodiversity and maintain significant carbon stores.

Habitat creation and management: creating and managing farmland habitats and features such as hedgerows and field margins supports pollinators, natural pest predators and other wildlife. Creating linkages between different habitats also increases ecological connectivity and creates mosaics and wildlife corridors which are associated with higher biodiversity levels within farmed landscapes. Hedgerows can also capture pollutants including pesticides and fertilisers. Creating and managing riparian buffer strips improves rainwater retention on land, reduces flooding and creates new habitats. It also improves freshwater habitat for salmonids and other wildlife including the freshwater pearl mussel which is a vulnerable priority species.

Created by people and maintained by farming, Scotland's grasslands are an important part of our natural and cultural heritage – providing valuable habitat for wildlife, grazing for livestock and beautiful and iconic landscapes. However, most grasslands are fertilised to make them more productive reducing

biodiversity. Grazing can stop the growth of quick growing species, but flowers can be trampled by over-grazing. A fine balance must be maintained to protect wildlife and grazing for livestock.

Integrating peatland restoration with active hill farming can deliver a wide range of benefits for carbon capture and storage, higher animal welfare, clean drinking water, natural flood management, wildlife and biodiversity and local businesses and jobs.

Crop rotation, clover leys and green manures: using crop rotation, clover leys and green manures reduces use of artificial fertilisers and pesticides which can cause diffuse pollution and harm wildlife including pollinators, and establishes habitat mosaics which support pollinators and natural pest predators that are also prey species for birds and small mammals. The main cause of agricultural N_2O emissions is the application of synthetic fertiliser to agricultural soils.

Farms which adopt alternative techniques including nitrogen-fixing legumes, green manures and crop rotation should reduce their GhG emissions and improve their on-farm carbon balance. Improving soil structure and soil health to improve drainage will also reduce N_2O emissions. Farms which increase the use of green manures and fertility-building leys with legumes and cover crops should reduce their GhG emissions and further the production of soil organic matter which captures CO_2 from the atmosphere and stores it in the soil.

Soil nutrient management: using best practice soil nutrient management techniques – including soil organic matter and PK testing – reduces over-use of inputs (e.g. nitrogen) which can result in GhG (denitrification to N_2O) emissions and eutrophication of water bodies (from nitrates) and harm to aquatic wildlife.

Animal health planning: techniques such as reseeding and use of faecal egg counts should help reduce the use of anthelmintics (wormers) which negatively impact on beetles. In addition to their economic importance, beetles and their grub also support other wildlife including birds and small mammals.

Economic context

At a farm business level, improving the bottom line is paramount for farmers and a fundamental objective of the programme, which explicitly promotes reduced use of externally purchased inputs (especially synthetic fertilisers and pesticides which can negatively impact on biodiversity) by using crop rotation, clover leys and green manures. Farms which adopt these principles should be able to demonstrate a range of tangible economic benefits including financial savings through reduced purchase of external inputs and reduced exposure to volatile commodity prices including synthetic nitrogen-based fertiliser.

Invasive soft rush and bracken are major problem for many farms, which can rapidly take over grassland for livestock grazing. Increasing sustainable productivity and profitability of livestock production – especially in areas of natural constraint including HNV areas – will be vital to ensuring the conservation and enhancement of some of Scotland's most important areas for wildlife and outstanding natural beauty – vital to tourism and supporting Scotland's rural economies.

Animal health planning techniques will produce healthier livestock with increased growth rates, milk yield, fertility, longevity, and reduced mortality. Beetles play a vital economic role in livestock production but are under threat from use of anthelmintics. It is estimated that dung beetles provide a financial saving to the UK's cattle industry by encouraging the growth of healthy grass and eating animal droppings harbouring parasites harmful to livestock.

Erosion and climate change are cited by the Scottish Soil Framework as the biggest threats to Scotland's soils. Climate change will also exacerbate soil erosion, pollution and flood damage, but the financial impacts through lost production can be minimised if appropriate strategies as promoted by this programme are adopted. Farms which use soil nutrient management techniques should increase soil organic matter, improve water retention and drainage, and reduce the risk of soil erosion and flooding.

Social context

FWN also sought to reduce isolation often felt amongst Scotland's farming community – providing an opportunity for farmers and crofters to get together. Based on our experience of delivering previous programmes, we anticipated that young people, women and those new to farming will be well represented.

Examples of land management practices promoted by Farming with Nature. Clockwise from top left: creating species rich grassland; non-chemical control of soft rush; creating wader scrapes; using green manures; restoring peatland; and riparian woodland planting.

4. FINANCE

Sum awarded: £160,470 was provided by KTIF at an intervention rate of 75%. Co-funding was provided by RSPB Scotland, Scottish Water and Mains of Loirston Trust.

Total approved spend: £207,960

Spend on KTIF/01/2015 over lifetime of the programme: £202,536

KTIF award spent over lifetime of programme: £157,630.85

Table 1: Detail of spend

Project development costs	
Programme Manager	£26,534
Project management & delivery costs	
Programme Manager	£52,473
Staff project costs	£841
Project Officer	£17,179
Senior Programme Manager	£22,651
Management, finance and reporting	£7,411
Fees for speakers/facilitators	
Expert speakers/facilitators	£10,344
Expert advice on biodiversity	£1,924
Pollinator demonstration project	£18,702
T&S for speakers/ facilitators	
Travel and subsistence for project staff	£9,877
Event venue costs	
Venue hire & catering	£8,708
Materials costs	
Reference materials - videos	£3,163
Publicity and evaluation	
Adverts for events	£5,318
Evaluation Officer	£8,510
Communications Officer	£8,900
Total spend	**£202,536**

Reason for the underspend on (D) T&S for speakers/ facilitators
The principal reason for the underspend of £5,424 on the total project spend is a result of an underspend for (D) T&S for speakers/ facilitators being less (£5,123) than originally budgeted for. We originally anticipated delivering 36 events to reach our target audience – more events catering for smaller numbers of participants due to covering remote areas. We were able to exceed the target with fewer events – participants were more willing to travel further distances than we had originally expected. The target was 36 events delivered for 550+ farmers/crofters. The actual achieved was 28 events delivered for 594 individual farmers/crofters/others.

We ran 12 of the events (focusing on Greening, Rush Control and Grassland Management) in a 'roadshow' format (moving from one event location to the next) which were delivered either over consecutive days or over a period of a week. This meant that there were significant savings associated with travel for speakers and project staff.

5. PROJECT AIMS AND OBJECTIVES

The purpose of Farming with Nature (FWN) was to promote and encourage the adoption of farming and land management practices which deliver integrated benefits for business and biodiversity.

FWN's environmental aims were to:

- Protect and enhance ecosystem services essential for sustainable food production.
- Protect and enhance biodiversity including actions to benefit vulnerable priority species and condition of protected areas including SSSIs, Natura 2000 and Ramsar.
- Create and enhance farmland features to establish habitat networks and mosaics.
- Minimise diffuse pollution from chemical pesticides and fertilisers which are harmful to the environment and wildlife.
- Encourage collaborative actions to achieve environmental impacts at a landscape/ecosystem scale.

FWN's sustainable production aims were to:

- Increase production by maximising the use of internal inputs and ecological processes.
- Highlight examples of profitable and resource-use efficient production.
- Improve efficiency in order to make financial savings and minimise greenhouse gas emissions arising from on-farm practices.
- Promote high animal health and welfare standards.

FWN set to achieve its environmental and sustainable production aims by delivering knowledge transfer and skills development events and related farm demonstration, information and dissemination activities for farmers and crofters across Scotland. FWN's programme objectives were to:

- Build skills, knowledge and innovation for environmentally friendly farming amongst Scotland's farming and crofting communities.
- Facilitate knowledge exchange, networking and collaboration between farmers, crofters and environmental practitioners.
- Disseminate and mainstream innovative practices e.g. methods that reduce or remove the need for pesticides.
- Encourage citizen science – farmers, crofters and volunteers involved in running monitoring and recording projects to measure environmental outcomes of on-farm actions.

Participants at the Farming with Nature 'Bringing wading birds back to Scottish farmland' event held at Threepwood Farm near Galashiels in the Scottish Borders

6. PROJECT OUTCOMES

Information regarding participants was gathered at the booking stage for events. All information regarding outputs – content, speakers, promotion, resources, photographs etc – was gathered from a dedicated programme file which is retained in electronic and paper format for compliance with KTIF grant. The evaluation focused on the programme's key objectives as set out in the original KTIF application to assess to what extent they had been met (short to medium term outcomes).

- Changes in knowledge, skills/ability and confidence amongst participating farmers and crofters
- Facilitation of knowledge exchange, networking and collaboration (between different actors)
- Adoption of best-practice actions/sustainable land management techniques and delivery of related environmental and economic impacts/benefits

The evaluation used a mix of quantitative and qualitative information. Methods to collect the information involved interviews with a sample of 19 farmers and crofters (undertaken in June 2020) who had participated on FWN (see Annex 1 'FWN participant interview results'; and comments and feedback from famers and crofters completing feedback questionnaires immediately after attending an event or providing feedback in a 6-month follow-up survey.

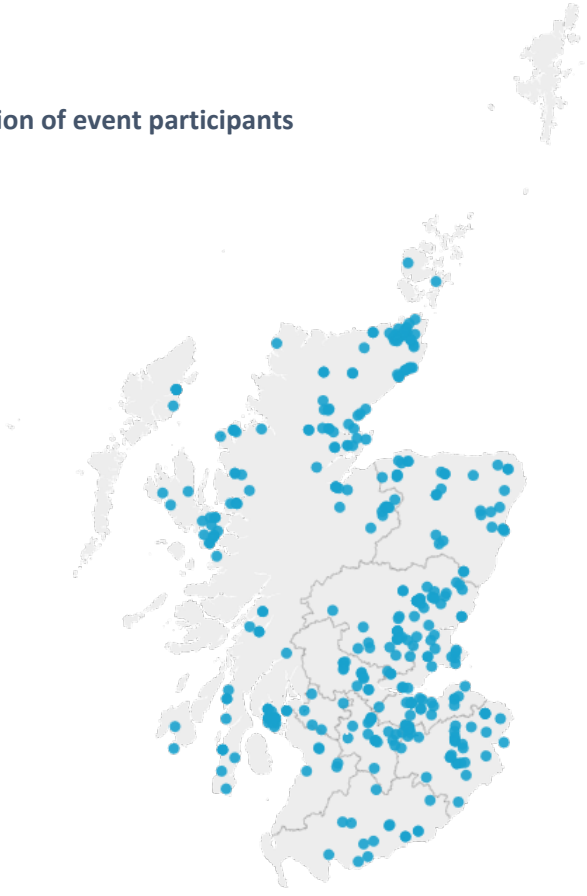
6.1 How aims/objectives were achieved

FWN objective 1: build skills, knowledge and innovation for environmentally friendly farming amongst Scotland's farming and crofting communities

Participants

FWN has engaged with a reasonably diverse/balanced mix of participants, particularly in terms of age and gender. A total of 594 individuals participated in Farming with Nature events. Of the participants: 27% are female, 20% are new to farming < 5 years), and 30% are under 40 years old. 76% of participants were farmers/crofters, 2% were foresters and the remaining 22% were involved in advisory work (environmental and farming), agri-business and other agricultural related work.

Figure 1: post code location of event participants



Knowledge transfer and skill development events

The format of the events used a mix of knowledge transfer and exchange which were designed to be interactive – practically based, involve high levels of farmer/crofter participation and encourage knowledge exchange and peer-to-peer learning.

A key objective of the programme was to increase participants' knowledge of how farming practices interact with ecological processes, and how practices used in agroecological, organic and High Nature Value (HNV) production systems can deliver environmental benefits. Speakers and facilitators were selected for their knowledge and expertise, and importantly their ability to engage, enthuse and communicate effectively with the target audience. Events were held on farms across Scotland and put farmers at the forefront of demonstrating best practice in action. The events were designed to accommodate between 10 and 25 participants depending on the subject and location, aimed at all farmers interested in profitable farming with nature.

The programme delivered: one day events to enable short presentations from expert speakers in the morning with Q&As, followed by lunch (to encourage informal networking and discussion) and a guided walk around the host farm in the afternoon to demonstrate, and connect the theory with, best practice in action; and half day events which were farm-based using a walk and talk format. Some events were also delivered as evening talks and one event was delivered at the weekend.

The programme focused on five subject areas using agroecological, organic and HNV farming practices. (1) Non-chemical control of plant and animal pests (2) Habitat creation and management (3) Crop rotation, clover leys and green manures (4) Soil nutrient management (5) Animal health planning. See Annex 2 for full 'Programme of Farming with Nature Events' including these subject areas covered by the events. See Annex 3 for 'Profit through Pollination Farm Demonstration Project' and Annex 4 'Impact of Enhancing Environmental Performance on Wildlife and Ecosystem Services'.

Farming with Nature: curlew conservation and the role of farmers, peatland and predators

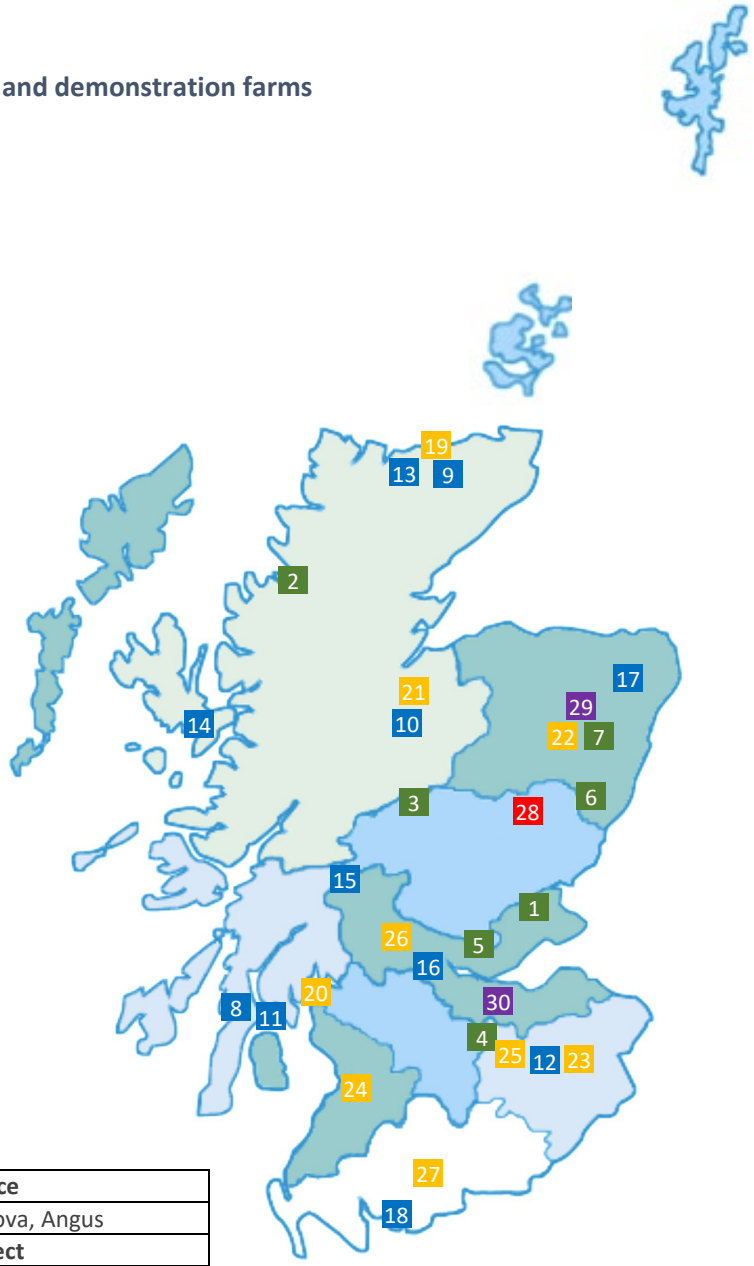
This FWN event looked at wader conservation focusing on the curlew. It was aimed at those interested in farm conservation or wanting to increase wildlife on their farm. The discussion was on agri-environment schemes and capital items, peatland restoration, predator control, rush and vegetation management and farm woodland opportunities. There was also a visit to Common Farm for a rush cutting equipment demonstration. Event feedback demonstrated the benefits of this topic.

- *I liked to hear the advice and ideas coming from different angles*
- *I also feel that the discussion afterwards was thorough and informative, and that enough time was allowed for questions and comment from the attendees*
- *Overall, a great event which gave us all a lot to think about. Well worth it*

FWN wader events looked at land management practices to benefit curlew (left) and lapwing (right)

Figure 2: map and key for Farming with Nature knowledge and skills events, conference and demonstration farms

Getting to grips with Agri-Environment Schemes	
1	9 March 2017: St Andrews, Fife
2	30 September 2017: Ullapool, Ross-shire
3	29 November 2017: Blair Atholl, Perth & Kinross
4	30 January 2018: Lamancha, Scottish Borders
Get a grip on Greening	
5	4 December 2017: Kinross, Perth & Kinross
6	6 December 2017: Laurencekirk, Aberdeenshire
7	7 December 2017: Inverurie, Aberdeenshire
Rush Control: how to tackle rushes on your farm	
8	14 February 2018: Tarbert, Argyll & Bute
9	15 February 2018: Halkirk, Caithness
10	16 February 2018: Nethy Bridge, Strathspey
11	10 May 2018: Scalpsie, Isle of Bute
12	5 March 2019: Galashiels, Scottish Borders
13	7 March 2019: Croick, Sutherland
14	8 March 2019: Breakish, Isle of Syke
Worming your way to profit	
15	7 July 2017: Crianlarich, Stirling
16	7 August 2018: Forgandenny, Perthshire
Soil, slugs and metal	
17	7 June 2018: Strichen, Aberdeenshire
Bracken control without chemicals	
18	11 July 2019: Dalbeattie, Dumfries and Galloway
Buzzing about grassland	
19	26 July 2017: Thurso, Caithness
20	23 July 2018: Inverkip, Inverclyde
21	26 July 2018: Granton-on-Spey, Strathspey
Profit from pollination	
22	27 July 2018: Inverurie, Aberdeenshire
Bringing wading birds back to Scottish farmland	
23	6 June 2019: Galashiels, Scottish Borders
24	14 November 2018: Auchinleck, Ayrshire
Managing peatlands and upland grazing	
25	7 August 2017: West Linton, Scottish Borders
26	30 October 2018: Callander, Stirlingshire
27	1 August 2019: Lockerbie, Dumfries & Galloway



Farming with Nature Conference	
28	17 October 2019: Glen Clova, Angus
Pollinator Demonstration Project	
29	Inverurie, Aberdeenshire
30	Gorebridge, Midlothian

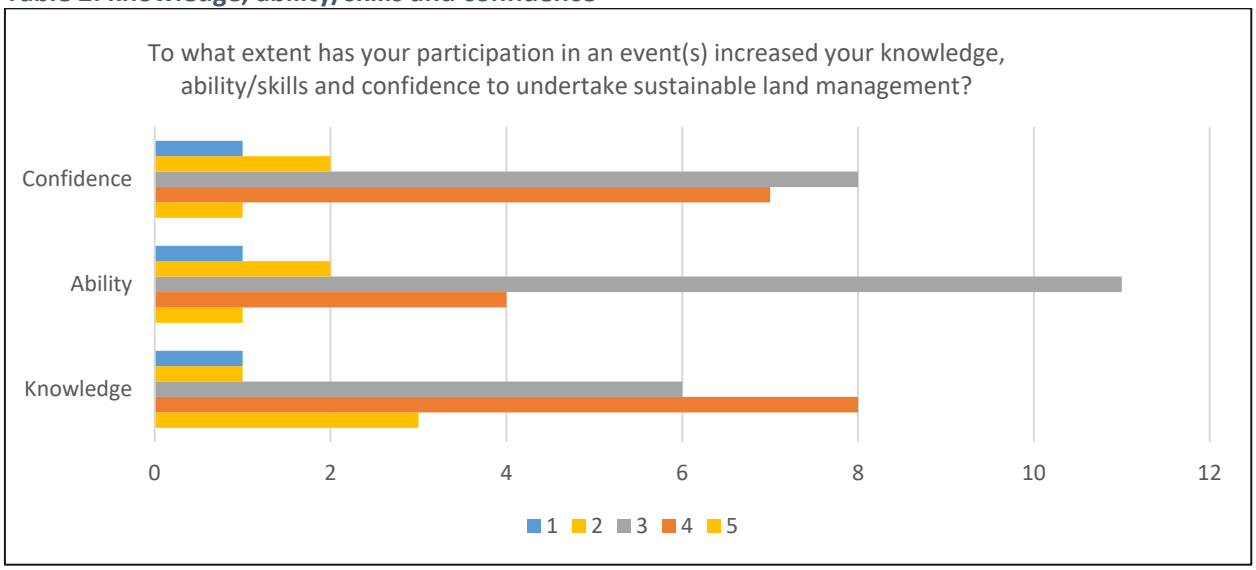
Overall, the data suggest that all factors contributed positively to participant experience at FWN events. The quality/expertise of the facilitators were aspects of the programme that were highly rated, as well as the levels of interaction between participants and the speaker, facilitator and other participants. Other well rated aspects include the speakers, the agenda, and the organisation on the day of the event. Sample of participants' comments:

- *Controlling rushes without chemicals had excellent presenters*
- *The grassland one was particularly good and guest speakers were very memorable*
- *Mostly well covered, if not, questions well answered*
- *Generally, they are always good and interesting with speakers or guides who know their subject*
- *The three events I have attended had excellent presenters and friendly atmosphere, messages were well communicated, and information was useful*
- *Overall excellent information and sharing from all involved. Local hosts were excellent and trips to see their own crofts were very useful and appreciated. Sometimes not quite enough time to dig into specific cases but enough info and guidance to make progress on the ground at home*
- *The packs were great to take home and recap on. May be better splitting group's up to give everyone one more confidence and time to speak and ask questions*

Knowledge, ability/skills and confidence

The follow-up interview survey of 19 participants carried out in June 2020 shows an increase in knowledge (3.58), ability/skills (3.11) and confidence (3.26) for nature friendly farming (Table 2) where 1 is none and 5 is high.

Table 2: knowledge, ability/skills and confidence



Sample of participants' comments:

- *I now have a lot more knowledge and understanding of the subject which will be useful*
- *I am just going to be more confident and proactive/less daunted: organise, plan and have a timeline*
- *Everything was useful. Enjoyed the sharing by experts and novice crofters – all very helpful and supportive*
- *Beneficial to see a scheme in place and underway helps show how things work on the ground*
- *Really gained a lot from walking the species rich area rather than looking at photos*
- *Learned about how farmers can benefit financially while still meeting environmental targets*

- *It was a fantastic day and I submitted an AECS application after the event with alterations made due to the advice received at the event*
- *Learned more about Peatland Conservation Scheme and the potential for carbon capture options*

FWN key objective 2: facilitate knowledge exchange, networking and collaboration

FWN facilitated relationship building and knowledge exchange with a wide range of other stakeholders including the Scottish Government, agencies (e.g. SNH), membership bodies (e.g. NFUS), NGOs/charities (e.g. RSPB Scotland) and research providers (e.g. Moredun Institute). FWN events were cited by several organisations as being a good/useful to facilitate knowledge exchange (two-way flow of information) and engage directly with famers and crofters. See 8.3 for the organisations FWN worked with to develop and deliver its activities. Sample comments from participating organisations:

- *I've found this event very useful, from a knowledge exchange with the farming community point of view.* Scientist with Moredun Institute
- *The FWN programme manages to reconcile farming and conservation issues in a practical way and provides a 'critical' bridge in reaching farmers and delivering objectives on the ground. SNH is seeking to promote the links between nature and farming and we recognise the value of this programme, without it there would be a big gap in the promotion of conservation issues.* Scottish Natural Heritage
- *Will look at more potential for collaboration to benefit habitat networks.* AECS Adviser

Farming with Nature: mainstreaming best practice for targeted selective worming

Farming with Nature worked with the Moredun Institute on disseminating areas of the research that have benefits to farming businesses, with the aim of equipping farmers with the skills, knowledge and confidence to make changes to their businesses. This work contributed to our KTIF programme by developing practical solutions to reducing anthelmintic use on farm.

FWN held an on-farm demonstration event at SRUC Kirkton where Dr Kenyon and the Moredun Institute were able to show attendees how the theory worked in practice. This event brought together farmers, researchers and conservation experts to learn from each other and share information between attendees on challenges that they also face on farm. As a direct impact of this event, and Dr Kenyon's work, attendees changed their practices on farm leading to tangible benefits on the ground.

The work Dr Kenyon has been undertaking has had a direct and measurable impact on how farmers manage their land and their livestock. Reduced anthelmintic use doesn't just save farmers money, but also reduces the risk of resistance to the drugs and helps maintain viable populations of dung beetles that are important actors in the breaking down of animal manure into organic matter.

- *Interested in all aspects. Worms and fluke relevant, rotation of treatment highlighted. All really useful and would be interested in results from fluke research*
- *Picked up some very interesting info that I didn't expect. Glorious setting, great people*
- *Most useful: grazing grassland; type and frequency of worming; info packs*
- *Will try changing worming groups every year. I didn't even think about selecting out lambs not to dose (most useful)*
- *As a result of event: Will definitely use FECs more often to reduce/optimise drug use*
- *Really excellent day. Quality of speakers great and all were approachable. Good chat within the group too. Good mix of theory and witnessing practice using equipment and field visit*

FWN key objective 3: disseminate and mainstream sustainable land management practices

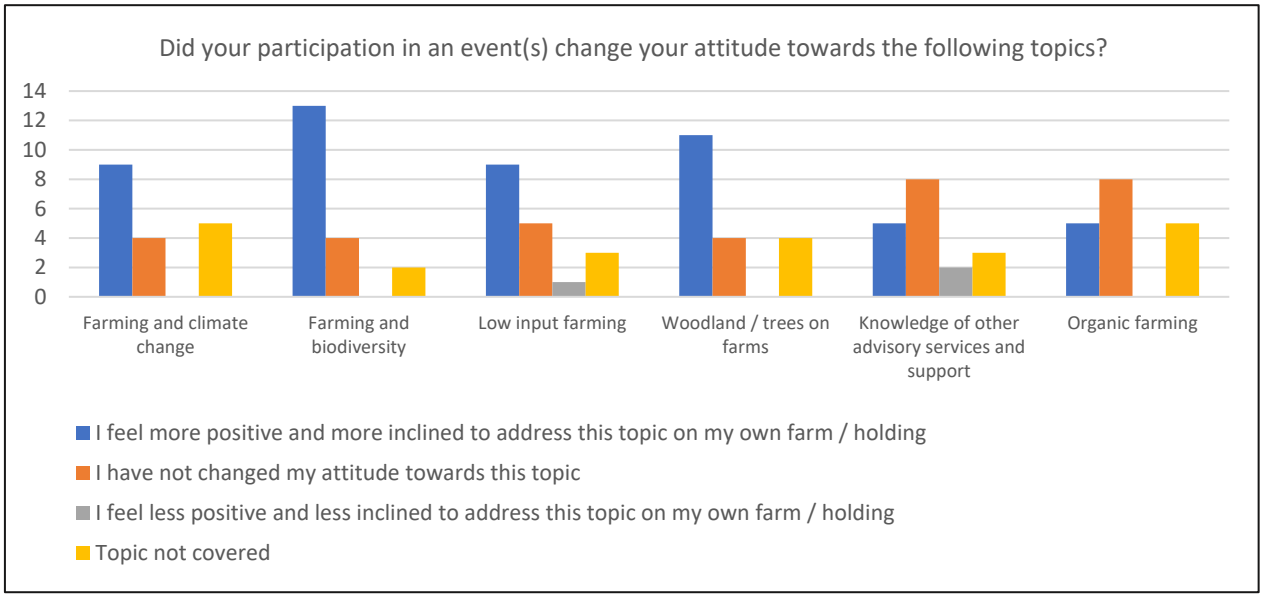
Adoption of best-practice actions/sustainable land management techniques

Immediately after the events 82% of farmers indicated they considered making changes as a result of attending the event. Analysis of survey data revealed that participants had changed their attitude most positively towards 'farming and biodiversity', 'woodland/trees on farms', 'farming and climate change' and 'low input farming' – with 76.5%, 73.3% and 69.2% of respondents respectively answering that they 'feel more positive and more inclined to address this topic on my own farm/holding' following their participation at an FWN event (Table 3). The evaluation results overall highlight a good picture in terms of motivation and intention to adopt sustainable practices.

The follow-up interview survey carried out in June 2020 showed that 12 of the 19 participants had implemented sustainable land management practices as a result of participating in FWN Our on-going feedback also suggests a good rate of participants (currently 62% of those responding to a 6-month follow-up survey) are implementing new/or adapting existing management practices. Our ambition was for 80% of farmers and crofters participating in FWN to implement new/change practices based on our experience of delivering other KTIF funded projects.

We are aware of a range of cultural, policy, financial and legal barriers to the uptake of certain land management practices as a result of delivering FWN. Examples include: the complexity of navigating the Agri-Environment-Climate Scheme (AECS); the prescriptive nature of AECS; issues around land tenure; investment in time to implement large-scale projects such as peatland restoration; and uncertainty over future payments for agri-environmental schemes including organic conversion.

Table 3: attitude towards sustainable management practices



Sample of participants' comments:

- *Reduction of rushes has increased the area for other plants to grow, increasing the diversity on the farm. This has increased productivity by providing more grazing area for sheep. The landscape has improved by reducing a dominant species [rushes]*
- *Habitat improvements have seen an increase in birds and waders. I feel quite far away from productive crofting though*
- *Greatly reduced use of fungicides*
- *Will try worm count before and after treatment and create a wader scrape in wet area of farm*
- *Michael's inspiration on grazing practices is great and encourages you to have attempt at it at home*

Farming with Nature: non-chemical rush control for grazing and wildlife

Farming with Nature rush control events concentrated on looking at long term solutions for soft rush infestation and drew on practical findings from a Soil Association Field Lab and expertise of rush control expert Ian Cairns. Rush infestation is a problem for many farmers and crofters that is worsening as the climate changes. Rushes can take over grass/clover swards, with knock-on effects for livestock productivity and profit margins and wildlife. Chemical herbicides will not prevent rush ingress and their use requires the removal of stock after application, as well as incurring additional cost.

Left: a soft rush infestation – poor for biodiversity and grazing. Right: soft rush under control providing pasture for livestock grazing and habitat for wading birds

It's clear that there is no cure-all technique to manage rushes, but careful planning and methodical groundwork can help to identify areas where easy progress is possible. Proper management of rushes is immensely beneficial to agriculture, but targeting work can unlock multiple benefits for livestock, water quality and wading birds including curlew and lapwing. These birds need rush tussocks for cover and damp areas for feeding.

Rushes are a growing problem for farmers across Scotland, but management techniques are complex and often need to be tailored to local conditions. Good grassland management (drainage, soil structure, pH, reseeding, and soil nutrients) is key to control rushes in the long-term. The series of events attracted farmers and crofters and proved popular with a high amount of follow up interest. Key areas covered included: learning how rushes grow with in order to tackle them; producing a template rush control plan for the year ahead; seeing how rush control can be combined with livestock grazing; finding out how cutting can be more effective than herbicides; and discovering how rushes can benefit farm wildlife.

Sample comments from event participants

- *Will try creating more of a strategic management plan. Ian Cairns was brilliant as ever. Really good balance between agricultural and wildlife management*
- *Most useful: Practical ideas. Good speakers*
- *Mob grazing and rotational grazing, improvements in soil fertility and soil aeration without chemicals is the message I would like to have come away with*
- *Will try deeper ploughing. Fab presentations*
- *Information on seed types very helpful and how to control rushes based on your ground type*
- *Will try reseeding. Info on topping and reseeding was best*

FWN key objective 4: encourage farmers, crofters and volunteers to run wildlife monitoring and recording projects to measure environmental outcomes of on-farm actions

Identifying and monitoring species and their numbers is vital for assessing whether management practices are progressing in the right direction for biodiversity and farming. For example, identifying key indicator plant species will show if grassland is progressing in the desired direction to benefit wildlife and grazing.

FWN encouraged farmers and crofters to be involved in measuring the impact of sustainable management practices through practical field demonstrations and the provision of supporting resource materials including videos and identification guides for plants, pollinators and birds.

FWN 'Buzzing about Grassland' events showed participants techniques for identifying and monitoring key indicator species of plants. The FWN Pollinator Farm Demonstration project provided a wealth of information including short videos on (1) how to benefit pollinators and (2) how to identify and monitor key species of pollinating insects. FWN joined forces with Bill Gray, Farm Manager at Prestonhall Farms and Dr Lorna Cole, Agricultural Ecologist, SRUC to highlight the principles in the videos for restoring and protecting our pollinating insects.

Left: a Plantlife Scotland adviser demonstrates how farmers and crofters can identify and monitor Scottish wildflowers at the Buzzing about Grassland event held at Burn of Midsands, Caithness. Right: participants at the event held at Lynbreck Croft in Strathspey showed how good grazing management can enrich the biodiversity value of grassland areas

Left: Bird's-foot trefoil is a good source of forage for cattle and nectar for insects, including (centre) one of the UK's rarest bees – the greater yellow bumblebee – and (right) the common blue butterfly

Farming with Nature Pollinator Farm Demonstration Project

How to benefit pollinators
Bill Gray talks about the benefits of wildflower margins and how they got the funding they needed for planting. To watch the first video click here. At Prestonhall Farms in Midlothian, Farm Manager

Bill Gray says the agri-environment climate scheme funding meant they could add a variety of wildflowers to what were scrubby grass margins. “We were conscious that there were no real nectar-producing plants in them,” he says. “So we decided to use the opportunity to actually turn them around and create much more beneficial margins with a wide variety of plant species in them.”

Bill says the farm’s wildflower margins not only benefit pollinator population, but also benefit the farm itself: “Hoverflies are parasitic to aphids; aphids are a damaging insect to cereal crops, for example, and other crops as well, so if we build up beneficial populations, we get a spin-off from a crop protection point of view.”

Dr Cole says wildflower strips are a great food source for pollinators in the summer. She says farmers don't need funding for flower-rich margins: you can, for example, simply not spray the outer ten metres of a crop so natural wildflowers can regenerate in the crop margins.

How to monitor pollinators
In the second video Dr Lorna Cole explains how once pollinator habitats are in place, there are cheap and easy ways to monitor the number of pollinators using them. Transect walks offer the opportunity to identify by eye the numbers and types of pollinators in a margin. Walking a standard distance each time will give more accurate numbers year on year. Watch the second video here.

“Another easy way to monitor pollinators would be to use solitary bee nests,” says Lorna. “These can be bought in a lot of different places including garden centres. You can create your own by drilling holes in fence posts. Drill them in a south-east direction – so they get plenty of sunlight – and about one metre off the ground. A little cap of mud at the end of the hole lets you know that the hole is filled up with solitary bee larvae.”

A Flower-Insect Timed (FIT) Count is another easy way to monitor pollinator numbers. Place a 50 by 50 cm quadrat, made from string or fence wire, in some target plant species, such as black knapweed or clover. Record the number of pollinators seen inside it in 10 minutes. The UK Centre for Ecology and Hydrology provides FIT Count data sheets, as well as useful information about what to count and how to count them.

Left: a solitary bee nest. Right: carrying out a FITs count – both stills from the video

6.2 Milestones

FWN was successful in meeting its key end of programme milestones (Table 4). We had anticipated delivering 36 events to reach our target audience – more events catering for smaller numbers of participants due to covering remote areas. We were able to exceed the target with fewer events - participants were more willing to travel further distances than we originally expected.

Table 4: Key outputs, targets and actual achieved

Key outputs	Target/milestones	Actual achieved
Knowledge and skills events See section 6.1 & Annex 2	36 events delivered for 550+ farmers	28 events delivered for 594 individual farmers/crofters/others
One-day conference See section 6.1 & Annex 2	One day conference held for up to 100 delegates	One day conference attended by 52 delegates
Demonstration farms See section 6.4 & Annex 3	Two demonstration farms established	Two demonstration farms established for pollinator project
Advice and signposting See section 9	Advice and support offered to 300+ farmers	Advice and support offered to 590+ farmers/crofters/others
Environmental monitoring See section 6.4	Encourage monitoring projects	Activities delivered to encourage projects
Supporting resources See section 9	Suite of supporting resources produced and disseminated	Suite of supporting resources produced and disseminated

7. LESSONS LEARNED

7.1 Issues and challenges

Policy context
Farmers and crofters need to prepare for proposed changes in support during the introduction of the proposed transition period for rural funding in Scotland. The Scottish Government's policy is to promote approaches which 'enhance their role as stewards of our natural environment and embrace an integrated approach to land use which seeks to deliver multiple benefits from the land'.

Helping farmers and crofters to plan as early as possible will be vital for ensuring long term financial sustainability and ability to continue to produce good food, as well as deliver policy objectives for the natural environment, climate change, rural development and Scotland's food and drink sector.

Programme context
Our own evidence, evidence from stakeholders (e.g. Peatland Action) and evidence from the Strategic Research Programme (SEFARI) demonstrates that a more participatory approach with longer term relationships with farmers can increase environmental outcomes, especially for large scale/long term changes in land management such as peatland restoration.

We have learned from our programme delivery that a more participatory approach, greater understanding of barriers and drivers for success (e.g. cultural, policy, financial, perceptions), and development of peer-to-peer relationships would likely result in solutions that deliver bigger and better outcomes. We have found that there is a farmer appetite for on-going support that values and builds on their knowledge and experience (less prescriptive and more adaptive); and more opportunities for peer-to-peer support, co-creation and network building to increase skills, knowledge and confidence. This is especially relevant for large scale or long-term system changes.

A more participatory and regional approach which encourages repeat attendance, networking, peer-learning, information sharing – to build the confidence and skills to aid decision-making and facilitate change to operate in a new funding and support environment post 2021.

Providing evidence that our programme work is effective and delivers positive impact is one of our key strategic objectives. Key improvements we are seeking to make to our monitoring and evaluation framework include: increasing the rate of evaluation responses from those participating in our programmes; and increasing our understanding of barriers to the uptake of certain land management practices (e.g. restoring peatland and agroforestry) and informing measures to help address barriers.

7.2 Impacts
Impacts are the longer-term results that the programme aimed to achieve and would not normally be quantifiable within the lifetime of the programme. However, the evaluation provides an early insight into the likely longer-term environmental and economic impacts of the programme.

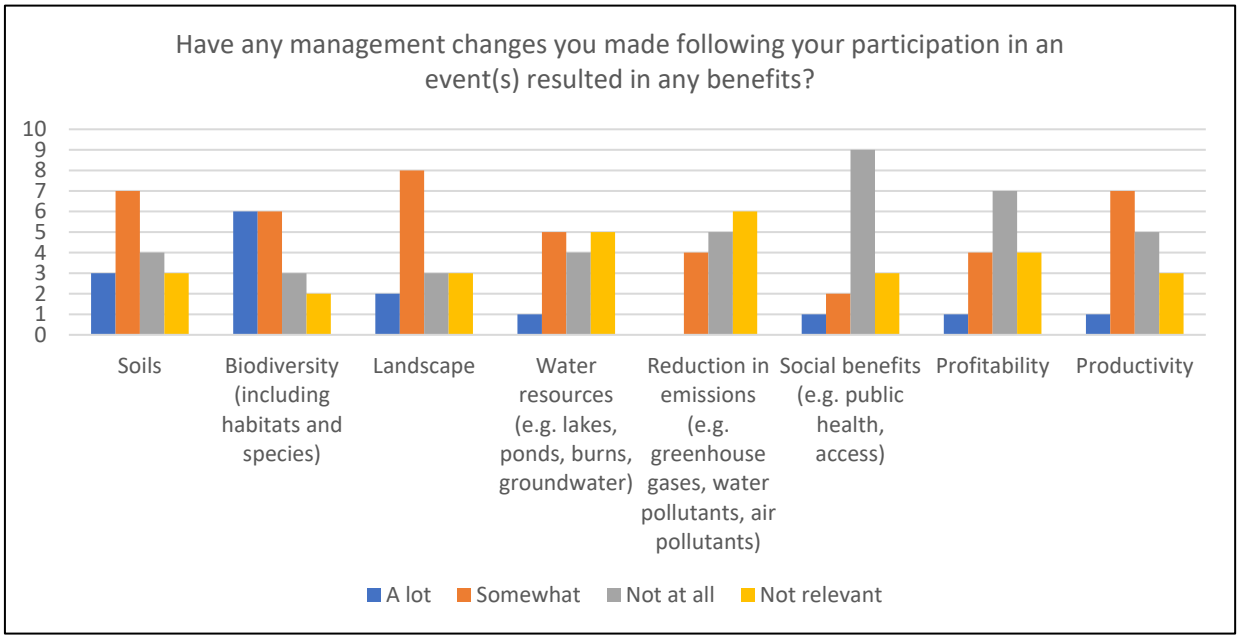
Environmental
The evaluation revealed a reasonably successful picture in terms of environmental outcomes delivered, with key positives in relation to 'soils' and 'biodiversity' and 'landscape' (Table 5). Environmental benefits from land management practice changes can be anticipated but are likely too soon to properly observe. FWN focused on enabling and empowering participants to implement changes they may hesitate to implement without the programme, and thus longer-term impacts of the theory of change are beyond the timeframe to be observed by the programme evaluation.

Economic
The evaluation found limited evidence to support economic benefits. Like environmental, these benefits may be too soon to observe (Table 5). We believe FWN will improve economic performance, especially

in the longer term. FWN promoted the reduced use of externally purchased inputs (including synthetic fertilisers, feed concentrates, etc.) by increasing recycling, re-use and efficient management of existing on-farm resources.

Farms which adopt these practices should be able to demonstrate a range of tangible economic benefits including immediate financial savings as well as longer-term positive business impacts. Refining future programme content and associated materials which makes more explicit the links between reduced reliance on inputs and farm profitability should help to increase recognition of the economic benefits.

Table 5: benefits arising from management changes made



Social

Attractive farmed landscapes rich in wildlife are an invaluable asset for increasing public use, enjoyment and appreciation of the countryside – connecting more people with nature and sustainable food production. However, there was little recognition of these wider social benefits (Table 5). Refining future programme content which makes the vital connection between how land is managed and restoring nature may help famers and crofters to increase their own recognition as environmental managers.

Whilst many participants valued the opportunity to meet-up – especially for walk-and-talk events – few said that it provided the opportunity to increase social interaction in the longer-term due to the one-off nature of the knowledge and skills events. A key recommendation 'provide more opportunities (smaller groups of farmers meeting on a regular basis) which encourage greater participation with longer-term engagement' would help to foster increased social interaction.

8. COMMUNICATIONS AND ENGAGEMENT

8.1 Publicity

Farming with Nature (FWN) was marketed and advertised to the target audience using a wide range of sources (Table 6) including Farming Advisory Service (FAS). Monitoring and evaluation of the marketing methods used to attract and engage farmers helped to ensure we used the most cost-effective methods.

Table 6: sources of promotion and reach for FWN events

Source of promotion	Reach/readership	Events promoted
Soil Association Scotland Twitter	8,000+	All events
Soil Association Scotland Facebook	780+	All events
Soil Association Scotland website farming page	1,800+	All events
Soil Association Scotland emails contact list comprising individuals, industry bodies, park authorities, land management organisations, NGOs etc (list is GDPR compliant)	Estimate: 2,000+	Selected events according to topic and locality
Rural Matters (Twitter account for the Scottish Government's Agriculture and Rural Economy Directorate)	7,000+	All events
Farm Advisory Service website & twitter	Twitter: 3,000+	All events
The Scottish Farmer: journal & website	Journal: 16,000+ per edition; website: 3,000+	Selected events depending on topic
Scottish Rural Network	Twitter: 3,000+	All events
NFU Scotland local text alerts & weekly bulletin	Alerts: 50-150 depending on location	Events being held in locality of farmers receiving alerts/bulletins
Adverts in local and regional newspapers	See table 7	Events being held in locality of paper
Adverts/flyers to various farmers' marts, vets, agricultural suppliers and machinery rings	Estimate: 10 -100	Events being held in locality of businesses and groups
Community newsletters	Estimate: <1,000	Events being held in locality of newsletter
Farmers Journal	Unknown	Selected events

'Word of mouth' recommendation was also a popular method for participants learning about upcoming events. The number of those participating in the events and the demographics and locations of the participants, demonstrate that the marketing methods used reached and engaged a wide audience of farmers across Scotland.

A key part of the programme's communications strategy was to provide follow-up support to FWN participants and disseminate findings arising from FWN. This was provided using a range of channels including:

- Bespoke resource packs provided to all individuals participating in FWN events, and contacts and links to further advice and guidance (signposting) contained in email to those wishing to receive further information (around 90% uptake since introduction of GDPR).
- Suite of technical resources covering on Soil Association Scotland website.[5]

[5] https://www.soilassociation.org/our-work-in-scotland/farming-for-the-future/resources/

- Soil Association Scotland Twitter[6] and Facebook[7] broadcasting news and highlights with relevant links.
- News page on Soil Association Scotland website.[8]
- Impact report "Farming for the Future – Our work in Scotland' which features many of the inspiring stories as told by farmers who have participated in the KTIF-funded Future Farming Scotland programme. A copy[9] is on Soil Association Scotland website. Around 1,000 hard copies have been widely distributed to stakeholders and other interested parties.
- Editorial in industry journals and websites including The Scottish Farmer and Scottish Association of Young Farmers.
- A series of short films[10] featured on Soil Association Scotland website. (Scroll down page and click on film links.)

Table 7: reach of adverts placed in local and regional newspapers

Press title	Circulation per issue (by most recent data available)
Press and Journal	41,600
The Courier	31,500
The Southern Reporter	12,500
The West Highland Free Press	5,100
Campbeltown Courier	4,800
Carluke & Lanark Gazette	1,900
Berwickshire News	3,600
John O'Groat Journal	3,500
Perthshire News	5,000
Peeblesshire News	unknown
Greenock Telegraph	9,000
Caithness Courier	7,200

8.2 Engagement with Farming Advisory Service

FWN (through the Pollinator Farm Demonstration project) also contributed to a range of additional activity delivered by several organisations including SRUC and Farm Advisory Service (FAS). These included practical guides for farmers, additional on-farm meetings, two videos produced by FAS, workshops for policymakers, and publications aimed at researchers.

8.3 Engagement with others

FWN worked with a wide range of public, private and voluntary organisations to develop and deliver its activities over its lifetime. These include:

- 5Agri
- Animal Welfare Solutions
- Buglife Scotland
- Bumblebee Conservation Trust
- Coalfields Environment Initiative
- Crichton Carbon Centre
- Esk Rivers and Fisheries Trust
- Farming and Conservation
- Heather Trust

[6] https://twitter.com/SoilAssocScot?ref_src=twsrc%5Egoogle%7Ctwcamp%5Eserp%7Ctwgr%5Eauthor
[7] https://en-gb.facebook.com/soilassociationscotland/
[8] https://www.soilassociation.org/our-work-in-scotland/farming-for-the-future/scotland-farming-news/
[9] https://www.soilassociation.org/media/17814/farming-and-land-use-report-web.pdf
[10] https://www.soilassociation.org/our-work-in-scotland/scotland-news/2019/october/18/farming-with-nature-showcase/

- IUCN Peatland Programme
- Keenan's Organics
- Kings Crops
- Moredun Institute
- National Farmers Union of Scotland
- Natural England
- Pasture-Fed Livestock Association
- Plantlife Scotland
- River South Esk Partnership
- RSPB Scotland
- SAC Consulting
- ScotFWAG
- Scotland's Farm Advisory Service
- Scottish Agricultural College
- Scottish Environment Protection Agency
- Scottish Forestry
- Scottish Natural Heritage
- Scottish Water
- Shearers, Orkney
- SNH Peatland Action
- South West Seeds
- Scotland's Rural College
- Working for Waders
- Wright Solutions

9. KEY FINDINGS AND RECOMMENDATIONS

9.1 Key findings

The following summarises the key findings arising from the evaluation of Farming with Nature (FWN) and how it met its four programme objectives.

FWN objective 1: build skills, knowledge and innovation for environmentally friendly farming amongst Scotland's farming and crofting communities

- FWN engaged with a diverse range and mix of people. FWN was valued by participants as providing high quality knowledge transfer events across various farming/land management topics.
- There is good evidence of marked increases across knowledge, ability/skills and confidence (particularly knowledge) amongst FWN participants.
- There was evidence that some FWN participants were interested in trying out innovative approaches e.g. 'mob grazing' to improve biodiversity and deliver business benefits.

FWN objective 2: facilitate knowledge exchange, networking and collaboration

- FWN facilitated relation building with other stakeholders such as Scottish Government, agencies (e.g. SNH), membership organisations (e.g. NFUS), NGOs/charities (e.g. RSPB Scotland).
- FWN events were cited by several organisations as being a good/useful to facilitate knowledge exchange (two-way flow of information) and engaging directly with famers and crofters.

FWN objective 3: disseminate and mainstream sustainable land management practices

- Results overall highlight a positive picture in terms of motivation and intention to adopt sustainable practices and change in attitudes towards sustainable practices; especially in relation to farming and biodiversity, climate change and low input farming.
- Environmental and economic benefits from land management practice changes are largely too soon to properly observe. However, there is positive feedback about the benefits of changes especially for rush management and biodiversity.

FWN objective 4: encourage farmers, crofters and volunteers involved in running monitoring and recording projects to measure environmental outcomes of on-farm actions

- Various FWN events demonstrated easy and inexpensive methods for identifying and monitoring species.
- FWN provided supporting resource materials including videos, identification guides and signposting to on-line resources.

9.2 Recommendations

Based on our learning from the delivery of FWN and key findings arising from the evaluation we have identified the following areas which we are keen to develop for future programmes.

- Provide more opportunities (smaller groups of farmers meeting on a regular basis) which encourage greater participation with longer-term engagement. This is important where significant change and investment in land management practices are required e.g. peatland restoration, conversion to organic farming and agroforestry.

- Support more capacity building and network development. Capacity building will increase confidence and ability by supporting innovation, developing skills and knowledge, and developing networks to

share ideas and identify opportunities. Network development will also contribute to social renewal by reducing isolation and increase opportunities for local approaches.

- Promote an outcome-based approach which gives farmers the responsibility and flexibility (less prescriptive and more adaptive) to implement sustainable management practices which deliver integrated environmental and business benefits.

- Encourage more farmers to carry out environmental recording and monitoring to measure the impact of their practices. This is a key part of an outcome-based approach to farming. More training and support should be offered to farmers and crofters.

- Facilitate a more targeted landscape scale approach to enable farmers and land managers to collaborate and deliver impactful environmental benefits across a wider area. Farmland is often the weak link in the chain of ecological connectivity. Finding the best opportunities for nature and people – using the Ecological Coherence (EcoCo) model – can join-up habitats across a wider area benefiting biodiversity, ecosystem health and people.

- Continue to support farmer-led innovation using the Operational Group model to mainstream best practice for nature-based solutions. Change requires innovation from the ground up: supporting those on the ground to develop their own solutions, overcome barriers, and identify drivers to transition to a productive, profitable and zero carbon future. This also depends on the development of networks of people who together can support, motivate, and work collaboratively to make change happen.

- Develop indicators and monitoring protocols to track changes in land management over longer time periods and data on land manager rationale, drivers, choice factors etc. that govern land management change.

- Increase recognition amongst environmentally friendly farmers and crofters of the role they play in restoring nature, a safe climate and health – benefiting people, the environment and economy.



Examples of Scottish wildlife associated with lowland farmland: brown hare, marsh fritillary and yellowhammer

10. CONCLUSION

The evaluation demonstrates marked increases across knowledge, ability/skills and confidence (particularly knowledge) amongst Farming with Nature (FWN) participants. Results overall highlight a positive picture in terms of motivation and intention to adopt sustainable practices, and change in attitudes towards sustainable practices, especially in relation to farming and biodiversity, climate change and low input farming.

'*The FWN programme manages to reconcile farming and conservation issues in a practical way and provides a 'critical' bridge in reaching farmers and delivering objectives on the ground. SNH is seeking to promote the links between nature and farming and we recognise the value of this programme, without it there would be a big gap in the promotion of conservation issues.'* Scottish Natural Heritage

Significant action is needed to tackle climate change, halt biodiversity loss, restore healthy ecosystems, reduce pollution and protect Scotland's natural assets. Farmers in Scotland need to be supported to enhance their role as stewards of our natural environment, as well as improve their long-term financial sustainability and support a green recovery.

Farm businesses must be supported to transition to climate and nature friendly farming and embrace an integrated approach to land use that delivers multiple benefits, as well as meeting growing demand for nature and climate friendly food. This support must also help farmers and crofters prepare to operate in a new funding and support environment following the transition period for rural funding in Scotland.

FWN has demonstrated that there is a farmer-led demand for on-going support that values and builds on their knowledge and experience, and more opportunities for peer-to-peer support, co-creation and network building to increase skills, knowledge and confidence. In summary, our recommendations for future knowledge transfer, skills development and innovation programmes are to:

- Provide more opportunities (smaller groups of farmers meeting on a regular basis) which encourage greater participation with longer-term engagement.
- Increase understanding of the barriers to the uptake of certain land management practices and explore/devise solutions with farmers, policy makers and other stakeholders.
- Support more capacity building and network development – building confidence and ability by supporting innovation, developing skills and knowledge, and developing networks to share ideas and identify opportunities.
- Promote an outcome-based approach which gives farmers the responsibility and flexibility (less prescriptive and more adaptive) to implement sustainable management practices which deliver integrated environmental and business benefits.
- Encourage more farmers to carry out environmental recording and monitoring to measure the impact of their practices – a key element of an outcome-based approach to farming.
- Facilitate a more targeted landscape scale approach to enable farmers and land managers to collaborate and collectively deliver impactful environmental benefits across a shared place.
- Continue to support farmer-led innovation using the Operational Group model to support farmers to develop their own solutions that work for their own business, and mainstream best practice for nature-based solutions.
- Develop indicators and monitoring protocols to track changes in land management over longer time periods.
- Increase recognition amongst farmers and crofters of the role they play in restoring nature, a safe climate and health.