

Knowledge Transfer & Innovation Fund (KTIF)

Annual Project Progress Reports – 2022

Overview:

As part of the on-going monitoring requirements, active KTIF funded projects submit a progress report at the end of the calendar year. The purpose of which is to see how the projects are progressing and assist in disseminating initial results and outputs.

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KTIF 2022 Annual Progress Reports and all information contained in this document are accurate and up-to-date to the time this information was collated which is 23 January 2023.

KTIF Ref No – KTIF/006/2022 – Quality Meat Scotland

1. Project Title: Monitor Farm Scotland Programme (2022-2026)

2. Project description:

The aim of the programme is to instigate positive transformational change in innovative sustainable farming practices on nine farms across Scotland and to use the learnings from these farms for the benefit of farmers across Scotland. Our aim will be achieved through assisting to build resilient, dynamic farms focused on attaining full economic, social, and environmental sustainability. The methods used and results achieved will be developed using the data gathered from the 100+ farming businesses participating in the programme and will help create outputs in greater detail and at a larger scale than any Scottish knowledge transfer programme has ever achieved.

3. Financial support awarded and spend to date:

Award - £1,789,270. The spend to date: claimed up to the end of November 2022, £14,817.99 leaving a balance of £1,774,452.01 available to claim. Tenders have now been awarded and more regular meetings are now under way so costs will increase but remain within projected figures.

4. Operational Group membership:

Quality Meat Scotland and AHDB Cereals & Oilseeds

5. Project start and end dates: 01/05/2022 – 31/08/2026

6. Progress to date including milestones achieved:

- The recruitment of one programme manager and three Regional Advisers
- The establishment of nine new Monitor Farms
- Launch panel session of nine new Monitor Farms by Cabinet Secretary
- First workshop for Monitor Farmers
- First on farm meetings completed
- Tenders awarded for ILMPs (SAC) and soil sampling (SoilEssentials)
- Details of sustained attendance at Monitor Farm meetings are below

Monitor Farm	No. of Meetings	Total Attendance	Average Attendance
Argyll	1	51	51
S. Ayrshire	1	75	75
Banff & Buchan	1	59	59
Deeside	1	73	73
Dumfries	1	67	67
East Lothian	1	39	39

Roxburghshire	1	51	51
Stirlingshire	1	72	72
Strathspey	1	83	83
Total	9	570	63

- The first open on farm meetings attracted 570 people across 9 meetings
- Evaluation framework for collating feedback from events in development
- Monitor Farm Hub webpage hosts information on MF meetings, MF Meeting reports and additional technical information and features.
- Dedicated FB, Instagram and Twitter accounts established for the programme
- FB pages established for all MFs and populated by Monitor Farmers
- Monitor Farm Strategic Board membership finalised following 1st meeting
- Management groups being established following 1st on farm meetings

7. Main benefits realised to date, including opportunities identified:

- A strong sense of community is developing between the nine Monitor Farms
- Integration between the monitor farms within each cluster is developing
- Strong engagement at meetings with multiple volunteers for management groups
- Opportunities to develop new industry champions from the ranks of these Monitor Farmers
- Strong connections have been established between the Monitor Farmers and the delivery team
- Positive discussions regarding the programme within the industry

8. Challenges, issues and lessons learned:

- Recruitment of Regional Advisers proved difficult and was delayed as a result. This has delayed some work however a strong delivery team is now in place and driving the programme forward
- The inhouse delivery team means there is not the local connections so comms networks surrounding each farm has proven more difficult but has been achieved

9. Communications and engagement

In addition to the monitor farmers own activity, both QMS and AHDB communications teams actively engaged in the programme delivering significant output and engagement since the programme began. In depth press reporting will be included in the December report.

10. Next steps:

- Establish management and community groups for each Monitor Farm
- Hold 1st meetings for management groups
- Complete soil sampling and ILMPs on each farm and determine benchmarking metrics for management groups
- On farm videos for all 9 Monitor Farms
- Capture change on Monitor Farms and by Management and Community group members
- Using facilitated group discussions to assess and enhance personal and professional development of project participants.
- Develop the monitor farm hub for information to be accessible to all and easy to navigate
- Build on sharing and disseminating information and key lessons learned from the host farms across the wider agricultural and rural network
- Seek feedback and evaluation from all participants to drive future activity.
- Ensure audit and reporting requirements are fully met to evidence progress.

KTIF Ref No – KTIF/007/2022 - SAOS

1. Project Title: Data driven decisions in potatoes – tackling the climate challenge (phase 1) project.

2. Project Description:

Scotland is famous for the quality of potatoes it produces, but the continued success of the Scottish potato sector depends on its ability to adapt to changing circumstances. In particular, reducing the carbon footprint and improving the sustainability of potato production. Due to the associated high level of inputs required, potatoes is a crop with a considerable impact on the environment and associated GHG emissions. The challenge is to improve the productivity of the potato sector, reducing its GHG emissions and impact on the natural environment through improved decision making. Anecdotal experience suggests, that for a variety of reasons, Scottish potato growers are failing to make use of the data generated on-farm and from the supply chain. Growers are foregoing the insights and opportunities afforded by effective data management and analysis. The project will focus on tackling this through the improved use of data; leading to an improved awareness of the carbon footprint, inefficiency, and importantly a lower impact on the environment. There are two linked but distinct elements to the project, namely: 1. Forming a benchmarking group, including estimating the carbon footprint for Potatoes. 2. Improving the data generated back to growers to support their decision-making.

3. Financial support awarded and spend to date:

£21,244 (75% KT funding). No claim has been submitted as yet.

4. Operational Group membership if applicable:

Scottish Potato Co-op and SAOS.

5. Project start and end dates:

01 May 2022 - 31 Mar 2023.

6. Progress to date including milestones achieved:

An Operational Group has been established that meets online.

Successfully recruited 8 growers to form a Benchmarking Group. Three of the members also involve their sons – good to see ‘Next Gen’ farmers involved in the project.

All participating farmers have been trained and supported to use AHDB’s Farm Bench. The information is inputted online by each participating grower and covers their whole farm, not just the potato enterprise.

The Benchmarking Group have met three times to date (May, July 2022 and January 2023).

7. Main benefits realised to date, including opportunities identified:

The project's benefits to date: There are enormous benefits of forming a benchmarking group (taking growers together on a learning journey, breaking down the barriers, peer-peer learning, shared experiences and adoption of best practice, route for personal development and building self-confidence, amongst others). All leading to improved farm performance and a reduction in the environmental impact.

Other benefits from the project to date include:

Provision of real farm enterprise data, showing the cost of producing a tonne of potatoes, the different elements of the main costs, the key performance indicators, across a range of potato growers.

The project showcases to the wider farming community what can be achieved by farmers themselves taking proactive ownership and action.

8. Challenges, issues and lessons learned:

There is a real reluctance amongst many farmers not to participate in benchmarking groups. The reasons are varied – lack of awareness and understanding of the benefits of benchmarking, fear of sharing personal confidential information, a lack of time to input the data, a lack of confidence, fear of coming bottom in terms of performance, amongst other things. The benefits of benchmarking are well proven. However, there is a real challenge to engage and get more farmers involved in business benchmarking. This needs further work to identify potential solutions. Activity on the information generated by an enterprise, supply chain and co-op has yet to really start. We know that there is an issue in general with information overload. What is needed is critical analysis and interpretation to translate the information generated into useable data that influence farmers actions. In addition, part of the challenge is presenting the data in a farmer friendly format. The real test of the value of data is as a result, what action is taken?

9. Communications and engagement:

To date the project has been restricted to working with the 8 potato growers in the benchmarking group. In the next phase, the project's aims, results and learning will be shared with the full SPC membership and wider potato industry.

10. Next steps:

A SPC members meetings is scheduled for 25th January 2023 to share the project's aim and outcomes to date, plus gather feedback on what additional data would growers like to see.

Carbon audits will be undertaken on all Benchmarking Group members farms using Agrecalc. The results will be benchmarked and shared at the next meeting.

Another meeting of the Benchmarking Group is scheduled for 8th March 2023. This will involve visits to two farms and discussion of the carbon audit results

An online webinar is scheduled for March to share the project's results and learning amongst the wider potato growers and industry. This event will be recorded so there is a lasting legacy for the project.

An article will also be produced for the agricultural press.

KTIF Ref No – KTIF/008/2022 - SRUC

1. Project title: Trustable & secure IoT sensors for measuring biodiversity with decision grade data

2. Project description:

To co-develop standardised processes for biodiversity measuring IoT sensors, digital devices and their software applications. This will ensure that both government and financial organisations can test the validity and veracity of inputs, and trustability of security certificates from softwares and IoT and digital measuring devices. The standardised processes will be drafted, then tested in pilot sites with different connectivity qualities, improved following feedback from pilots and review from Trustable Credit's stakeholders and thereafter, made available - open source - to all, globally.

To test the ease of application of the standardised processes on IoT sensors and digital measurement devices deployed in different landscapes and levels of connectedness: at SAOS Aberdeenshire demonstration farms (rural) and SRUC's Hill & Mountain research centre (rural/remote), Lauriston Farm (urban), RSPB's Glencripesdale Estate (remote). Iterate and improve the standardised processes for practical application ease, and decision-grade data robustness, following the gathering feedback from their application at a range of pilot locations with varying landscapes and levels of connectedness.

Review the drafts with Trustable Credit stakeholders, European biodiversity measurement networks such as EuropaBON, TNFD.

Publish the standardised processes open source and free, and formalise them into the natural economy sector in the UK.

3. Financial support awarded and // spend to date:

£62,832 // £16,640

4. Operational Group membership if applicable:

N/a

5. Project start and end dates:

20.07.2022 to 31.03.2023

6. Progress to date including milestones achieved:

see table at end.

7. Main benefits realised to date, including opportunities identified:

The iteration to the processes because of fieldtrips and testing with user-groups such as farmers, rangers, third-party suppliers.

8. Challenges, issues and lessons learned:

Team members were out sick for long periods in December, when we'd hoped to publish, this now pushed to this month.

9. Communications and engagement:

Partner deployments following processes at all farms and the reserve successful Trustable Credit working group dissemination and feedback session, first engagements with Scottish Business Resilience Centre made.

10. Next steps:

Publish online and begin marketing and dissemination activity – SAOS conference, SRUC newsletters, FAS video, etc.

Date	Topic	Actions	Who
21.07.22	Kick-off meeting	HR to send briefing Powerpoint to team HR to ask for permission (SG KTIF) to tell TCWG about the granted project and timelines. JG to arrange session at H&MRC with JH DM & sensors	Core Team
24.07.22	Newsletter to Trustable Credit Working Group	Brief them on the project and timelines for their input	HR
28.07.22	Visit to H&MRC	Reviewed the sensors at the Centre, reviewed data output and organisation	JG, JH, DM
02.08.22	Drafting workshop 1	Brainstorm, agreement of timeline and steps approach. JG to send HR some document templates used for IASME cysec accreditation	HR, JG
04.08.22	Discussion of open access online site for standardised processes	ML to consider document database and review process timeline and steps diagram	HR, ML
10.08.22	Drafting workshop 2	Invite JG to Sharepoint (HR asked Jarleth 10.08) JG to work on data governance and white-labelling docs	HR, JG
06-10.08.22	Visits to Aberdeenshire Farms	First site of SAOS demo farms and their set up and sensors	PM, PC

10.08.22	Core Team Steering Meeting 2	Discussion of Bronze, Silver, Gold ideas of compliance	Core Team
01.09.22	Drafting Workshop 3	Discussing Sharepoint list approach to Compliance List	HR, JG
13.09.2022	Drafting Workshop 4	Discussing Miro updates, template docs and user journeys as tech team	HR, JG, ML
14.09.22	Core team Steering Meeting 3	Discussing Miro updates, template docs and user journeys as tech team	Core Team
21.09.22	Presentation of standardised processes technical discussion meeting	SQL database for docs linking to front end webpage. Useability and user journeys, difference between 3rd party vendor and ranger/famer user established.	JG, ML, HR, PC
23.09.22	Process checking - with already set up sensors	H&MRC fieldtrip to test ranger process of v 1.2 with sensor sets and data at HMRC.	HR, JG, JH.
30.09.22	Developing compliance process - flowchart and spreadsheet	Following learning with v. 1.2, developing v. 1.3 with JG to test with RSPB	HR, JG
4/5.10.22	Process checking - with new sensors – RSPB Glencripesdale trip	Fieldtrip to RSPB Glencripesdale reserve to deploy 20 sensors out of the box on a new site using v 1.3 of the compliance tracker and the newest version of the Miro ranger/farmer process flowchart. Editing v 1.3 flowchart according to practical difficulties and pragmatic solutions discovered.	HR, (NL via UIF project)
25.10.22	Lauriston Farm trip	To discuss with the team the set up of their 5 camera traps and audio recorders	HR, Lauriston Farm team
25.10.22	Core team Steering Meeting 4	Reported on Fieldtrip. Agreed that PC would give HR & JG a tour through sensors set-up as a third party provider user journey.	Core Team
07.11.22	Developing the 3 rd party/consultant user journey	PC took us through the activities he undertakes to set up sensors for clients and showed us the dashboards they provide for customers.	HR, JG, GN, PC

22.11.22	Core team Steering Meeting 5	Planned the steering group meeting, reviewed the 3 rd party consultant journey and discussed. Planned the KE and publishing activities upcoming.	Core Team
29.11.22	Trustable IoT Wider Working Group meeting	Present user journeys – third party sensor provider and farmer/ranger/land manager. Gather feedback. hosted by the Scottish Nature Finance Pioneers network for wide reach	Core team, Wider Working Group
30.11.22	Tech team catch up on the comments from the wider working group	JG and PC to amend user journeys with suggestions from the group on Miro board	JG PC HR
14.12.22	Core team Steering Meeting 6	Reviewed MLs visualisation of the use journeys for online publication, and discussed the third party user journey's checksheet – should it be a spreadsheet too?	JH PC ML HR
10.01.23	Tech team meeting on publishing processes online	Decided on a Wordpress.org Wiki implementation	ML HR
11.01.23	Core team Steering Meeting 6	Discussed approach to publication, dissemination activities upcoming and video production	JH HR PM PC JG

KTIF Ref No – KTIF/009/2022 – Soil Association (Scotland)

1. Project title: Reducing Inputs - An Integrated Approach

2. Project description:

'Reducing Inputs' aims to inspire and inform farmers and growers to reduce their use of external inputs including synthetic nitrogen-based fertiliser, pesticides and herbicides; to reduce carbon footprints, tackle disease resistance, improve soil health and ecological performance, protect natural capital, and boost financial resilience.

Many of the themes and approaches highlighted will draw on learnings which have been tried and tested through Soil Association's peer-led projects, including Innovative Farmers Field Labs and FAB Farmers, and include a combination of:

- Soil health - building soil fertility (e.g. using cover crops); baselining soil health; building soil organic matter; reducing tillage for soil health
- Nature-based integrated pest management; controlling pests and weeds without chemicals
- The role and importance of diversity; intercropping
- The role of low input, agroecological and organic approaches in whole-farm resilience and reducing unpredictable external costs.

Activity and outputs include:

- An on-farm demonstration event showcasing integrated, low-input and agroecological management approaches
- Two interactive webinars exploring low-input and agroecological approaches
- One farmer-focused case study highlighting key measures and approaches
- A range of dissemination materials including practical resources, blogs, and press content
- Regular communications and dissemination throughout the project.
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3. Financial support awarded and spend to date:

None – Since this is such a short project, we will submit only one claim, at the end of activity in March 2023.

4. Operational Group membership if applicable:

Not Applicable.

5. Project start and end dates:

November 2022 to 31st March 2023.

6. Progress to date including milestones achieved:

Host farmers and technical speakers recruited for farm walk and webinars; event dates set for Feb & Mar delivery; engaged with industry stakeholders incl. FAS and

NFUS; ongoing promotion of events. Social media ongoing; resource/ content creation ongoing.

Milestones:

- December–Jan – engage with industry stakeholders (*ongoing*)
- December–Jan – recruitment of host farmers and speakers (*complete*)
- February – delivery of on-farm event
- February–March – delivery of webinars
- Throughout – comms content and practical resources created and published; monitoring / evaluation carried out
- 31st March 2023 – all resources completed; monitoring/evaluation completed; final report submitted.

7. Main benefits realised to date, including opportunities identified:

- Industry stakeholders and farmers engaging with a topic which has a bearing on climate and biodiversity targets
- Identified opportunities to link like-minded farmers together for peer support
- Identified an appetite for more knowledge exchange on this range of topics.

8. Challenges, issues and lessons learned:

Can be challenging to organise activity in a short timeframe.

9. Communications and engagement:

The events featured in Soil Association’s national newsletter and SA Scotland’s monthly newsletter, which generated significant interest and subsequent registrations. Engagement has also been high with social media posts, which has driven activity on SA websites as well as partner websites and events calendars including Scottish Rural Network, Scottish Dairy Hub, FAS.

10. Next steps:

- Deliver farm walk and webinars
- Complete creation of technical resources and case study
- Continue with social media engagement and dissemination.

KTIF Ref No – KTIF/010/2022 - SAOS

1. Project Title: Decarbonising malting barley

2. Project Description:

The project's primary aim is to raise the awareness and understanding amongst arable farmers of the GHG emissions associated with producing malting barley. To help arable growers on their journey to transition to lower carbon production systems for malting barley, to meet the expectations of both the Scotch Whisky Industry and Scottish Government. The Scotch Whisky sector have created a roadmap to get to net zero by 2040 (SWA Net-zero Report June 2020). The SWA study showed that 37% of the GHG emissions attributed to malt whisky comes from the production of barley on-farm. To achieve the ambitious targets set by the Scottish Whisky Industry, will require farmers to play their part and drastically cut their emissions associated with barley production. The question is, how can this be achieved? The first step is to better understand what is the current carbon footprint of malting barley and what are the main sources of emission?

3. Financial support awarded and spend to date:

£37,287.75. (75% KT funding). One claim has been submitted for £12,659.29 on 22/12/2022.

4. Operational Group membership if applicable:

East of Scotland Farmers, Highland Grain and SAOS.

5. Project start and end dates:

01 May 2022 - 31 Mar 2023.

6. Progress to date including milestones achieved:

Operational Group meetings are being carried out monthly online.

Successfully recruited 16 pilot farmers, 8 from each co-op. The pilot farmers represent a range of farm systems, soil types, scales and geographic locations.

Collected two representative soil samples from each pilot farm, which received comprehensive soil analysis and soil health assessments.

Carbon audits have been undertaken on all pilot farms using AgreCalc, the results have been benchmarked and shared with all pilot farmers.

Brief desk research was completed to identify the potential actions producers can take to reduce the GHG emissions in malting barley production.

The pilot farmers have met 3 times to discuss the project's aims, share the results from the carbon audits, soil analysis and desk research on reducing emissions.

A presentation was provided by Agrecalc management to explain the carbon audit process, the value and limitations of the calculations.

7. Main benefits realised to date, including opportunities identified:

The project's benefits to date:

Provision of real farm data, showing the current carbon footprint for producing a tonne of malting barley under a range of different production systems.

Improved understanding of the sources of GHG emissions and how they can be reduced.

Appreciation of the importance of soil health and the benefits of building soil carbon.

Signposting for readily available materials for arable growers on how to reduce their GHG emissions.

Promoting the benefits of increased farmer co-operation, farmers working together to find practical solutions. The co-operative model presents a huge opportunity for Scottish agriculture to take the leadership role to make things happen. Action to deliver both economic and environmental gains will become progressively more difficult as the industry advances through 'easy wins' and lower cost solutions, thus the need for increased co-operation.

8. Challenges, issues and lessons learned:

The results from the carbon audits highlighted the importance of accurately inputting the data into the calculator. The individual results contained numerous errors which needed to be amended. The validation of the results relied on the consultant undertaking the audit.

The carbon audit results showed a large variation between farms on a per ha basis, however, when applied to a carbon footprint per tonne of malting barley, the results were surprisingly similar.

The main factor determining the carbon footprint of malting barley was the crop yield. The 2022 season produced a record crop with above average high yields.

The main sources of GHG emissions for malting barley were fertiliser use and energy. These represented circa 75% of the total GHG emissions.

The project's initial focus was on spring barley for malting barley, we now recognise that there is actually a need to adopt a whole farm approach, whilst keeping a specific focus on the spring barley crop, which is the most important of

all cereals in Scotland.

The lack of clarity, guidance and forward direction at farm level both from a policy perspective and research output into reducing emissions is seen as a barrier by farmers.

9. Communications and engagement:

To date the project has been restricted to working with the 16 pilot farmers. These are all progressive farmers, highly regarded by their peers. In the next phase, the project's aims, results and learning will be shared with the full co-op membership and wider farming community.

10. Next steps:

To undertake meetings with the wider membership of each co-op, to explain the need for the project, why reducing GHG emissions is important, the results and learning from the project to date, and share plans for the project to continue in the coming year. It is also important to engage with the wider co-op members to gather their views and what they would like seen done. From the onset the project wanted to adopt a bottom-up approach, with farmers themselves taking responsibility for action through their grain co-ops. An online webinar is planned for 02 March to share the project's results and learning amongst the wider arable farming community and industry. This event will be recorded so there is a lasting legacy for the project. An article will also be produced for the agricultural press.

Ref No: KTIF /011/2022 - Nourish Scotland Ltd

1. Project title: Agroecology: enabling the transition

2. Project description:

Our project supports farmers, crofters, and growers at different stages of their agroecological journey: from awareness to engagement to action. We aim to widen and deepen understanding of agroecology through a farmer to farmer / crofter to crofter cooperative learning programme. This includes 6 regional farmers / crofters / growers knowledge exchange groups each focused on a specific topic, webinars led by farmers & researchers, and proactive communications feeding into local, regional, and Scottish platforms.

3. Financial support awarded and spend to date:

Financial support awarded: £112,500.00

Spend to date: £74,594.19

4. Operational Group membership if applicable:

The Landworkers' Alliance, Nature Friendly Farming Network, Pasture for Life, Soil Association, Propagate and Nourish Scotland.

5. Project start and end dates:

30.06.2022, 31.03.2023

6. Progress to date including milestones achieved:

07.07.2022	Project partnership fortnightly meetings re-start
28.07.22	Farmer / crofter / grower recruitment begins & webpage launch
26.08.22	Group farm visits begin
13.08.22	Public project launch. Press release in Scottish Farmer
19.10.22	All 6 regional & topic groups set up: Pasture Poultry Feed (West Coast), Market Gardening (Central Scotland,) Supporting Biodiversity within Island-based Farming & Crofting (Isla, Jura, Gigha & Colonsay), Grazing (North East Scotland), Soil Health (South West Scotland), & Biodiversity & Profitability (Scottish Borders).
11.11.22	Webinar series begins.
07.12.22	Partnership meeting reviewing plans for final months

7. Main benefits realised to date, including opportunities identified:

Farm visits & webinars have empowered group members to share expertise & showcase their work, enabled newcomers to learn from those more experienced in the practice, increased theoretical and practical knowledge in the 6 different group topics, increased participants knowledge on enterprise approaches, created a space

for participants to openly and productively discuss agri-environment schemes, and provided socialising and networking spaces for a livelihood that can be isolating. All the above have been supported by creating relaxed, safe, and friendly spaces for participants to interact. This has also enabled participants to co-construct their learning journey, suggesting topics to discuss and farms/crofts to visit.

Groups involving multiple island communities are more difficult to coordinate due the remoteness of some of these. Even though logistically it has been challenging, farmers and crofters are glad to be involved, opening opportunities for learning between participants as well as for organisers.

The continued rise and instability of inputs has brought a range of farmers/crofters/growers into the project including those already practicing agroecology and those with more conventional practices.

Participants attending all webinars have said they would implement some of the practices they heard about in the events.

Farmers, crofters, and growers from the 6 groups are keen to meet each other. We see a valuable opportunity in re-orienting our resources from remaining webinars towards hosting an in-person knowledge exchange event in March.

8. Challenges, issues, and lessons learned:

Building strong group relationships takes time. Particularly for a group to co-create a learning journey. The delay in receiving grant confirmation & permission to publicize reduced an already tight timeline to build trust & relationships between group members. To recruit participants many one-to-one conversations were necessary. In contrast, the Soil Health Group, where participants had a stronger pre-existing bond, group members have more smoothly bought into the co-development of the learning journey. More time will allow the newly formed groups to reach this stage.

Less farmers / crofters / growers than registered are attending webinars. Feedback tells us this is due to Zoom fatigue, the time of year, and the availability of more in-person events. We aim to increase numbers by liaising with the Farming Advisory Service's fortnightly podcast and reaching out to participants from the previous round of this project. Still, people who had registered but did not attend the event are contacting us to access recordings.

It has been challenging to hold farm visits in winter due to difficult weather, shorter daylight hours and ferry cancellations. Running this project in a multi-year format would increase the possibility of farmers / crofters / growers to take part in these knowledge exchange groups.

9. Communications and engagement:

89/60 farmers/crofters/growers are engaged in a regional group which meets face to face and online over a six-month period

82/300 farmers/crofters take part in at least one of the national online learning events

154 farmers /crofters / growers registered for the webinars.

3004/2000 farmers/crofters/others download information on the project/watch online content

2/6 pieces about the project and the farmers/crofters involved in farming, local or national media

6,910 /100,000+ social media impressions

10. Next Steps:

In the new year we will deliver 3 more webinars, 7 farm visits and a final in-person knowledge exchange event. We will conduct exit interviews and write a knowledge exchange report to evaluate methods used. We will also form part of the Farming Advisory Service & Farmerama podcast episodes, promoting the project and showcasing the work of people in our knowledge exchange groups.

Ref No: KTIF /012/2022 - Royal Society for the Protection of Birds

1. Project title: Wader Friendly Farmers – Building a stronger network

2. Project Description:

The project is looking to increase the number of farmers, landowners and agents who are engaged with the Working for Waders Initiative (WFW), increasing the area of land positively managed for waders and improving data collection from the projects. This will be delivered by running a series of demonstration and knowledge exchange events in different parts of Scotland, supported by other materials including case studies. The visits allow farmers, conservationists, and agricultural experts, to exchange knowledge, discussing the challenges waders face, the options which are available to help waders through agri-environment, the latest research and best practice monitoring. These events will explore the wider agronomic, environmental and business implications of managing for waders on each farm. We want events to identify more win: wins where sustainable farm management aligns with wader management.

The project aims to:

- Share existing wader friendly farming practice across a range of project areas across Scotland.
- Build a greater understanding of how wader friendly management could also help farmers reduce on-farm emissions and protect soils allowing them to improve the wider environmental footprints of their farming businesses.
- Create a stronger wader friendly farming network community with support from a range of organisations to guide, advise and share practices increasing knowledge sharing across and between groups.
- Create legacy resource in the form of videos, webinars, case studies and stories highlighting existing best practice and potential actions to restore and enhance farms for waders.
- Establish a bigger network of farmers who engage with WfW and benefit from future WfW activities including forums and training.

3. Total Value of Project:

£37,100 KTIF contribution to the Project: £27,825

Spend so far: c£6,500.

4. Operational Group membership if applicable:

RSPB Scotland and WfW

5. Project start and end date:

1st August 2022 – 31st March 2023

6. Progress to date including milestones achieved:

- With the help of partners arranged delivery of a farmer event in Clyde Valley in December and organised the delivery of a further eight farmer focused events (Strathspey, Angus Glens, GWCT Auchnerran, Clyde Valley, Skye, Oban, Shetland and Glenlivet) in February and March 2023. In addition, there are two planned agent events in March (D&G and Dingwall). We are also talking to another two projects about running further events by the end of March.
- Agreed a lead to develop the film and podcast content over the next few months and identified the case studies which will be developed in February.
- Agreed speakers for 4 webinars to be run in February and March.
- Started promotion of the events through the various project leads and organisations.

7. Main benefits realised to date, including opportunities identified:

Following discussions with WfW partners and various projects on the ground we have been able to develop a series of site visits spread across Scotland. Some of these project areas have had limited engagement with WfW so far. We have identified new ways for WfW to engage with farmers, advisors and government during the lifetime of this project and beyond. This includes running several events specifically targeting agents. We have recognised that it is important that discussions on farm are fed back into developing governmental policies and have identified ways to do this. We have also identified several gaps in the products currently offered by WfW. Some of these we will be able to develop as outputs of this project.

8. Challenges, issues and lessons learned:

We have adapted our approach slightly since the application to our engagement with the farmers and how we develop some of the products. There was a delay in the start of the project whilst we waited for WfW to finalise a review of their ways of working and priorities. As a result of the review, we have identified new opportunities for engagement beyond the life-time of the project.

9. Communications and engagement:

This project is to be communicated through various channels within RSPB, through Working for Waders and it's individual partners and Nature Friendly Farming Network. Materials will be badged as Working for Waders and will be linked to existing materials and information via the Farm Advisory Service. Project areas are leading on the promotion of the events to local farming contacts with some support at a national level through WfW.

10. Next steps:

- Promotion of events and webinars to ensure there is sufficient take-up
- Successful running of remaining events.
- Finalising case studies, webinar for participants and network members, completion of film content.
- Promotion of outputs of project through networks.

KTIF Ref No – KTIF/013/2022 - SRUC

1. Project title: Farm Carbon Storage Network

2. Project description:

Project seeks to raise awareness of the value of carbon stored on farms through the establishment of a Farm Carbon Storage Network. Five farms have been selected across Scotland representing the main farming systems (beef and sheep, dairy, arable and crofting). A reliable estimate of above ground biomass (carbon storage in hedges and trees) and soil organic carbon stocks will be calculated for each farm using an innovative approach which combines the use of LiDAR surveys and soil testing. The results will provide a quantitative value on the farms natural assets that will benefit the maintenance and enhancement for climate and biodiversity action while increasing the knowledge base of farmers, policy makers and the general public.

3. Financial support awarded and spend to date:

Award £85,970, spend to date (15/01/23) £41,430 (approx. 48%).

4. Operational Group membership if applicable:

N/A

5. Project start and end dates:

Start Date: 30/6/2022, End Date: 31/03/2023

6. Progress to date including milestones achieved:

Project was divided into the following tasks:

- Set up farm network – complete. Five farms were selected across Scotland covering the main farming systems; Auchmore Farm, beef and sheep farm in the northwest, Mains of Balgavies Farm, arable farm in the northeast, Easter Bavelaw Farm, sheep farm in the central belt, Auchinbay Farm, dairy farm in the southwest and Kilkenneth Croft on the Isle of Tiree.
- Desktop study to review existing data and finalise methodology – complete, available datasets on each farm were collected and an initial desktop study was carried out to determine the requirements and any limitations for the soil and UAV surveys. The soil sampling and LiDAR survey methodologies were agreed at this stage and LiDAR based studies for biomass quantification were compiled to determine the best available methodologies for carbon stock estimation.
- LiDAR survey of each farm using UAV – 95% complete, a LiDAR survey of above ground biomass was completed at each of the selected farms using the Matrice 300 drone. Multiple drone flights were carried out on each farm to capture all relevant areas of land. Final survey flights to be completed week of 23rd January.

- Soil survey of each farm – Samples have been collected at each farm and sent for analysis to NRMs Carbon Check analysis.
- Data processing & analysis of results – 40% complete, LiDAR data is being combined, cleaned, and classified in preparation for running it through various algorithms to estimate above ground biomass carbon stocks. Soil sample results have all been received and are being converted into a GIS displayable format for data analysis and the final reports.
- Production of report for each farm – Incomplete, case study to be produced for each farm on completion of data processing and analysis of results.
- Communication of results through on farm open days (2 no.) & 1 no. webinar – Incomplete, open days and webinar scheduled to take place throughout March 2023. One on-farm event to be held near Auchmore Farm (northwest), one on-farm event to be held on or near Easter Bavelaw (central) and one webinar to ensure access to a wider geographic audience.
- Dedicated webpage reporting on project progress – complete. Webpage created and will be updated as reports are produced.
- Visual GIS presentation of results – incomplete. Presentation to be finalised on completion of case studies.

7. Main benefits realised to date, including opportunities identified:

The project has generated a lot of interest across the industry with farmers, businesses and industry bodies getting in contact for further information. The project has been featured in farming and national press and is to be featured on BBC Scotland's Landward programme. We have had discussions with Northern Ireland's ARCZero project discussing collaboration with data collection and analysis.

8. Challenges, issues and lessons learned:

There have been a number of challenges experienced throughout the data collection phase of this project, in particular, the weather has hampered our ability to collect drone data often requiring multiple visits to the sites. Unfortunately, there is no solution to this, however in the future we will be able to tailor our survey methodologies to optimise field days and make better decisions on when to visit the site and fly. Soil sample analysis is expensive and striking a balance between good data and price took longer than expected. One of the largest issues is the difficulty in accessing field collected data on Scotland's various woodland species. Access to this data would allow for us to potentially tailor our calculations to Scotland rather than a larger climate region level that includes samples taken from other less representative countries.

9. Communications and engagement:

A dedicated webpage has been created and shared through SAC/SRUC social media channels to provide information on the project. This will be updated with

access to each farm case study and event information as the project progresses. SAC/SRUC social media channels have also be used to push notifications of the survey work as it has been completed on each farm. A press article was published by SRUC at the beginning of December promoting the project which was also picked up by some national papers (The Courier and Farmers Weekly) and has generated a number of direct enquiries. An opportunity to promote project though Landward has also been scheduled for February.

10. Next steps:

Complete the UAV survey data processing and above ground biomass calculations for each farm, produce a case study for each farm and GIS story map overview of the project, promotion and hosting of on-farm and webinar events to discuss findings and engage with farmers and policy makers. Collect farmer feedback, examine opportunities to further expand & develop the network.

END