

Knowledge Transfer & Innovation Fund (KTIF)

Annual Project Progress Reports – 2021

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.

Contents:

KTIF Number	Project Name	Lead Facilitator	Page
KTIF/001/2021	Agroforestry in Action 2	Soil Association (Scotland)	2-3
KTIF/002/2021	Soil Health – A Route Towards Net Zero for the Scottish Livestock Industry	Farm Stock Ltd.	4-9
KTIF/003/2021	Farmers in the Field Video Case Studies	Forth Resource Management Ltd.	10
KTIF/004/2021	Carbon Trotterprints	Wholesome Pigs Scotland Ltd.	11-12
KTIF/005/2021	Agroecology: Facilitating Mindset Change	Nourish Scotland Ltd.	13-15

KTIF 2021 Annual Progress Reports were received on 24 January 2022. All information contained in this document was accurate and up to date at the time of receipt.

KTIF Ref No – KTIF/001/2021 (Soil Association Scotland)

1. Project title: Agroforestry in Action 2

2. Project description:

The project will build on the success of our 2021 'Agroforestry in Action' (AIA) programme, leveraging the knowledge acquired to further raise awareness and provide farmers, crofters and land managers with resources and information on the opportunities for agroforestry in Scotland; and its benefits for productive and sustainable farming, resource efficient land management, the environment, nature and a safe climate.

The project will be delivered in partnership with Scottish Forestry and will focus on delivering specific and practical knowledge transfer events; supporting the creation of regional networking groups on agroforestry; and continuing to consolidate resources and knowledge from across Scotland on our Agroforestry Web Hub.

3. Financial support awarded and spend to date:

KNOWLEDGE TRANSFER AND INNOVATION FUND (KTIF): financial contribution towards the net actual costs of the project up to a maximum grant of £18,862 over the period 01/12/2021 to 31/03/2022. The grant rate for this project is 75%.

Industry match funding: £3,000 from Scottish Forestry; £3287 from Soil Association.

Spend to date: £2,775.

4. Operational Group membership if applicable:

Not applicable.

5. Project start and end dates:

01/12/2021 to 31/03/2022.

6. Progress to date including milestones achieved:

Hosts, topics, speakers and dates for webinars have been set with project partners, which will complement Scottish Forestry's Integrating Trees Network events. Production of case studies and web resources has started; and will continue through the course of the project. Event topics will include economic aspects of agroforestry including alternative income streams; and the role of hedges and riparian planting.

Initial sessions of the regional learning networks have also been organised for February and March 2022.

No milestones were planned to be achieved in December 2020.

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

The project team have been identifying and linking activity, projects and stakeholders currently involved or interested in agroforestry across Scotland and the wider UK, to amplify shared learning and opportunities for collaboration. There is also an opportunity to engage with policy development through membership of a Scottish Forestry working group.

8. Challenges, issues and lessons learned:

Nothing to date.

9. Communications and engagement:

- Promoted new project through SAS comms channels.
- Promoted upcoming events through SAS comms channels and wider networks.
- Engaged with a range of stakeholders engaged in agroforestry to promote signposting and collaboration.

10. Next steps:

- Delivery of webinars during February and March 2022
- Production of digital resources incl. 3 case studies
 - Continue to develop and highlight Scottish Agroforestry Hub
 - Continue communications & engagement activity
- Coordination of peer network meetings
 - Ongoing establishment of peer network group/s
- Continue to identify barriers to uptake and communicate these to policy makers

KTIF Ref No – KTIF / 002/ 2021

1. Project Title: Soil Health – A Route Towards Net Zero for the Scottish Livestock Industry

2. Project Description:

The project has been designed to demonstrate to both the Scottish Government and producers how attention to soil health benefits both agricultural production and the wider environment. It will endeavour to show how the Scottish livestock industry can contribute to reducing climate change and moving towards net zero by identifying and encouraging soil management practices that:

- Optimise soil carbon levels
- Raise Nitrogen Use Efficiency (NUE)
- Improve flock productivity
- Lift profitability

3. Financial Support Awarded and Spend to Date:

The project was awarded £69,877. First Claim is being compiled.

4. Operational Group Membership:

The Operational Group consists of:

- Farm Stock (Scotland) Ltd – providing project management, the recruitment of participating farms and the coordination of the activities of the participating partners.
- 20 participating farmers with 4 as demonstration farms.
- KBevan Consulting – providing specialist input on analysis of farm productivity, soil sample data, fertiliser usage and options for improvements.
- SoilEssentials Ltd – providing soil sampling and analysis.
- Albion Environmental – Dr Bill Crooks providing soil scientist specialist input at the four farm visits.

5. Project Start and End Dates:

10 November 2021 to 31 March 2022.

6. Progress to Date Including Milestones Achieved:

Soil data was collected from the 4 demonstration farms in December with the remaining 16 farms completed by 24th January.

Most soil test results returned for the 4 demonstration farms. Some issues with soil biology tests (see section 8). Results being distributed to remaining farmers as processed.

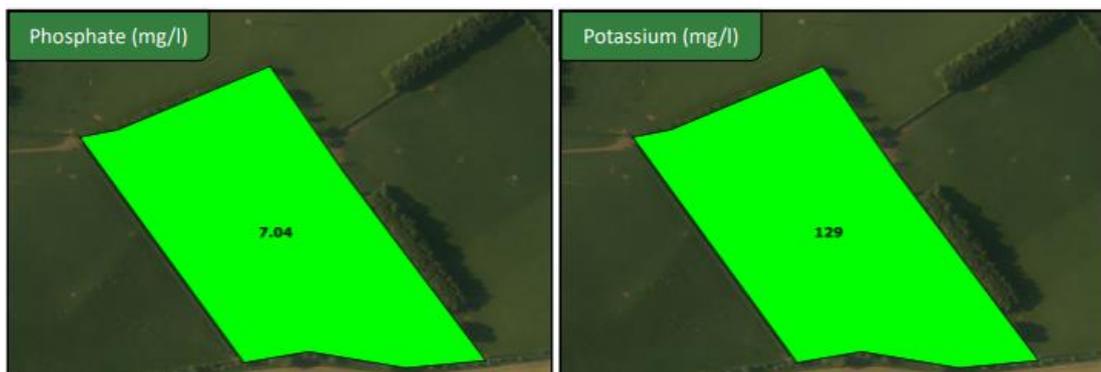
Production, fertiliser, lime and manure usage data collected and completed for the 4 demonstration farms.

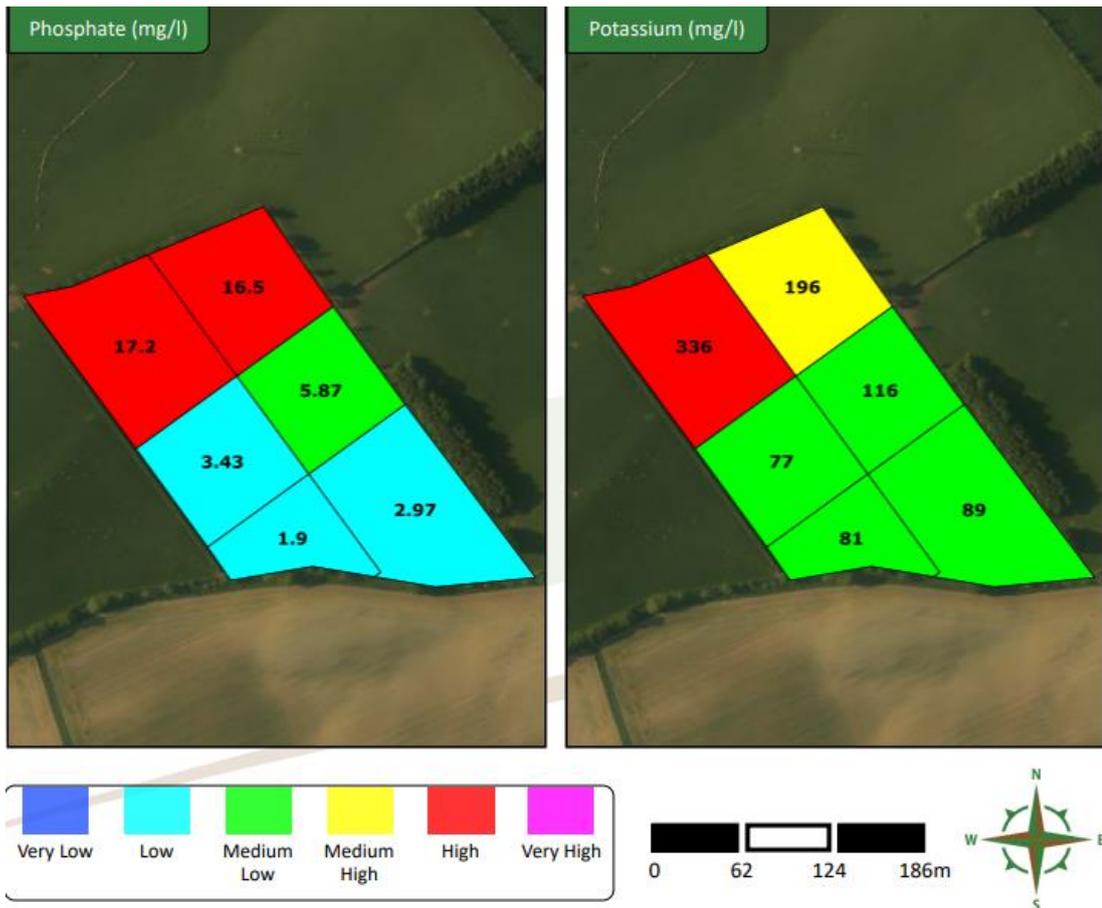
Having refined tools for collecting fertiliser usage information etc, tools sent out to remaining 16 farmers.

The 4 on-farm meetings have been successfully completed. Excellent feedback from farmers.

7. Main Benefits Realised to Date, Including Opportunities Identified:

Soil testing based on subsectors of a field gives far better understanding of soil health compared to results based on an overall field average as demonstrated by below example.





Discussions at the farm meetings revealed that reasons for in-field variation are often predictable (eg, livestock consistently “camping” in parts of a field because of better shelter or less steep; location of water troughs or rushy areas). Knowledge of such factors prior to soil sampling could greatly improve the targeting and value of soil testing and the potential cost-benefits of such targeting should be investigated further.

Initial soil results suggest that soil health on dry-stock farms is generally good. Synthetic (bagged) nitrogen usage is also lower than often reported in the media. The relationship between soil health, productivity and soil carbon capacity will be examined further as more results are returned.

Farmers have been particularly interested to learn more about soil carbon given the level of reporting in the press and media. The testing and comparison of two carbon methods, which differ significantly in cost, is a key focus of the project.

Discussions on farm were directed to highlight how farmer actions to influence soil health have implications for greenhouse gas emissions, water and air quality as well as farm productivity. These linkages are not always appreciated, so the knowledge transfer part of the project is proving very useful.

Further to the previous point, the use of the Nitrogen Use Efficiency (NUE) agro-environmental indicator is new to almost all farmers and provides another way to measure performance. The real-world calculation of NUE has given rise to some data collection issues that SG will find of interest.

Farmers' knowledge of the organic manures (mainly slurry and dung [FYM]) is variable. Calculating actual quantities of these manures is generally poorly understood and a simple tool has been developed to help.

Given the high price / lack of availability of bagged fertiliser this year, the farmer interest in making better use of organic manures including those available from elsewhere, has been high. Making the farmer population in general more aware of their options given high fertiliser prices would be suggested as an immediate priority for the Scottish FAS.

8. Challenges, Issues and Lessons Learned:

Wet and stormy weather in early December delayed the start to the testing programme with Covid precautions also adding difficulties. But the testing process has worked very well thanks to the efforts of the SoilEssentials team.

Consequently, the decision was taken to defer 4 on-farm meetings until January. Thankfully all meetings were blessed with good weather, which along with clear COVID protocols (eg, self-testing) and outside basis of meetings has resulted in 4 very successful and COVID free meetings.

Overall, the meetings have attracted excellent feedback from the farmers. The small groups and a soil specialist that speaks in terms farmers understand, has been key.

The importance of consistent testing standards at labs was raised by most groups. That farmers also noted that they receive soil sampling results that often come from English labs that use a numbering rather than colour code system normally used in Scotland. Being familiar with how the two systems compare is important.

An objective of the project was to assess the value of novel new soil biology tests in measuring soil health. Some issues of testing and interpretation have been raised, which was anticipated and will be looked at closer in the remainder of the project.

Developing a soil health scorecard and reporting format that is both simple and effective as a management tool is important. Most farms have a large number of fields so managing the data from each field requires a robust management information system. The project should provide some indications on how best to communicate soil health to farmers.

Some refinement of the data collection tools was required and will be further polished as they are used by the remaining 16 farmers.

Farmer confidence and competence with tools, apps, etc varies. Scotland is fortunate in having a wealth of high quality soil information available. Helping farmers use this through better use of smart phones in particular, would give Scottish agriculture an advantage over most other countries where no such information resource exists.

Finally, the focus has been on the in-bye or improved parts of livestock farms as only these fields typically receive fertiliser, lime and manure. But many of the farms in the project have significant hill or rough grazing. The state and management of soil health on these even larger areas, that include high organic peats, needs urgent investigation.

9. Communications and Engagement:

To date communication between project partners and participating farmers has been excellent with all partners fully committed and engaged. The participating farmers in particular have fully grasped the principle and importance of soil health and are keen to improve their understanding of influencing factors.

Farmers were emailed an overview of the project at the outset in mid-November and an update just before Christmas. Also, a WhatsApp group was set up at the start for each of the 4 groups to post relevant information and encourage farmer-to-farmer discussion. The project is also being reported to the wider Farmstock farmer community via the website and weekly market update.

The team has made members of the farming press aware of the project and a phased plan for communicating the purpose and findings of the project is currently being completed.

Given recent announcements by the Scottish Government regarding the upcoming National Test Programme and how soil health may be an important part of the programme, it might be opportune to liaise with the funder to ensure that any press releases maximise impact.

Communication will continue throughout the operational group with webinars and social media with the final report and findings communicated to the Scottish Government and the industry as a whole.

10. Next Steps:

Complete and return all soil test results to all farms (end of Jan).

Collect production, fertiliser and manures data from remaining 16 farmers (by 10 Feb).

Complete 2 webinars for each group (8 in total) by the end of February.

Work with each farmer to draw up their own soil health plan.

Draw together the findings of the project into a readable, concise report for submission to SG by the end of March.

KTIF Ref No – KTIF/003/2021

1. Project title: Farmers in the Field Video Case Studies

2. Project description:

To create 3 video case studies on the environmental benefits of applying (1) organic compost and (2) digestate to land, and on the (3) benefits of grass in an arable rotation for the production of biomethane, to promote regenerative agricultural practices. Case study videos would be sent to watch in the individuals own time, with a virtual Q&A session held at a later date.

3. Financial support awarded and spend to date:

Awarded £4,374. Spend to date £0.

4. Operational Group membership if applicable: N/A.

5. Project start and end dates:

Start date 10th January 2022. End date 28th March 2022.

6. Progress to date including milestones achieved: N/A.

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

8. Challenges, issues and lessons learned: N/A.

9. Communications and engagement: N/A.

10. Next steps:

Project work will commence 10th January with 2 weeks for planning the video content, making arrangements for filming, and advertising videos in farming publications.

Filming will take place weeks 14th and 21st February, with the following two weeks for editing.

The videos will be uploaded to YouTube on the 14th March, with links sent out to those who have signed up.

Online Q&A session will be held on 28th March.

KTIF Ref No – KTIF/004/2021

1. Project title: Carbon Trotterprints

2. Project description:

The aim is to enable annual carbon audits to be undertaken on all Scottish pig farms and encourage subsequent actions to reduce emissions through benchmarking.

Successful delivery of four objectives will deliver this aim:

- 1) Developing a central database to hold the raw data required to complete the various commonly used carbon calculators
- 2) Understanding what data can be provided by third parties such as feed companies or supply chain cooperatives and establishing data sharing protocols for them
- 3) Designing a benchmarking system for the key carbon metrics
- 4) Better understanding the obstacles to routine carbon auditing in the pig sector and reporting by the three main Greenhouse Gases

3. Financial support awarded and spend to date:

£35,100 with £0 claimed so far.

4. Operational Group membership if applicable:

- Wholesome Pigs (Scotland) Ltd
- Laurence Gould Partnership
- Black Isle Tech
- SRUC
- Quality Meat Scotland

5. Project start and end dates:

10/11/2021 – 18/03/2022.

6. Progress to date including milestones achieved:

The project is progressing according to the schedule proposed.

After analysing the data requirements for four different carbon calculators, an initial database structure to hold the raw data has been designed. Farms have been recruited and the data collection is currently underway. Discussions continue with feed companies and the supply chain cooperatives.

M1: Database design – COMPLETE

M2: Data collection from 15 farms plus feed companies and supply chain – UNDERWAY

M3: Carbon footprints completed using the “back end system” – end of Feb 21

M4: Benchmarking and individual farm reports circulated – mid March 21

M5: Final report completed – end of March 21

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

The project is still at too early a stage to identify main benefits.

8. Challenges, issues and lessons learned:

The pig sector is undergoing the most acute crisis for a generation, with processors unable to take enough pigs building up a backlog on farms, escalating feed prices and dropping pig prices. This is making it difficult to get enthusiastic participation from producers but there is no easy solution.

9. Communications and engagement:

Covid-19 regulations mean that there have been limited opportunities for face-to-face contact with producers since the project started. Benchmarking reports and wider industry communications will be circulated towards the end of the project.

10. Next steps:

- Populate the system with farm, feed and supply chain data
- Run the data through three different carbon calculators
- Circulate benchmarking reports to producers
- Submit final report

KTIF Ref No – KTIF/005/2021

1. Project Title: Agroecology: Facilitating Mindset Change

2. Project description:

[‘Agroecology- facilitating mindset change’](#) is a collaborative project delivered by a unique partnership of organisations brought together through the LINK food and farming subgroup: The Landworkers Alliance, Nature-Friendly Farming Network, Pasture-Fed Livestock Association, Soil Association, The Food, Farming & Countryside Commission (FFCC) and Nourish Scotland.

The aim of the project is to widen the understanding of agroecology which is only just creeping onto the mainstream in Scotland and in turn, to support the shift towards a low-carbon and climate-resilient economy in the agriculture, food and forestry sectors. The partners are delivering this through a peer-led farmer to farmer/ crofter to crofter cooperative learning programme.

3. Financial support awarded and spend to date:

£43,575 and NIL claimed to date.

4. Operational Group membership if applicable:

N/A.

5. Project start and end dates:

10 November 2021 to 31 March 2022.

6. Progress to date including milestones achieved:

- Steering group convened and regular bi-monthly meetings held and scheduled until March.
- Online survey undertaken by LWA and PFLA to guide the design of the learning programme- 43 respondents (for feedback see Main Benefits section below).
- Themes of farmer/ crofter-led groups and facilitating organisations finalised -
 - Low-input livestock – Landworkers’ Alliance;
 - Pasture-fed in the Borders – PFLA;
 - Arable Systems– Soil Association Scotland & FFCC;
 - Market Gardening – Landworkers’ Alliance;
 - Crofting – Nature Friendly Farming Network.
- Learning events programme scheduled - recruitment in progress.

- Tues 25 Jan Pasture-Fed in the Borders with Matt Griffin, Edston Farm, Peebles (in-person)
- Thurs 3 Feb (3-4.30pm) - Integrating livestock into arable systems with Johnnie Balfour (online)
- Thurs 3 Feb (7-9pm) - Sheep health & nutrition with Poppy Frater, Katharine Sharp, Victoria Ballantyne (online)
- Tues 8 Feb- Soil health for growers with Audrey Litterick and Scottish farmers (online)
- Tues 22 Feb tbc- Agroforestry in the uplands with Andrew Barbour & Nikki Yoxall (online)
- Sun 27 Feb - An introduction to the principles of regenerative grazing iNikki Yoxall, Grampian Graziers Dingwall Community Centre/ Blackwells farm (in-person)
- Late Feb date tbc- Intercropping (online)
- Friday 18 Feb - Crofting: Managing for Biodiversity with Phil Knott, Wildlife Croft, Sleat Peninsula on the Isle of Skye (in-person)
- Thurs 3 March- Composting and fruit tree pruning/agroforestry at East Neuk market garden, Fife (in-person)
- Sat 5 March- 'The Green Bowl' how we set up a food hub- hosted by Helen O'Keefe/ Tessa Dorien, Elphin, Assynt, Sutherland (in-person)
- w/c 7 March- Setting up a small-scale poultry business, speaker tbc (online)
- w/c 14 March - Green manures, cover crops or another topic (online)
- Mid-March tbc - Growing apples and barley together in a silvoarable system (in-person)
- Mid-March tbc – *Crofting, grazing and the potential of NoFence technology tbc* (online)

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

The survey showed a high level of interest in learning and knowledge exchange. Most notable was the crossover of interests between livestock keepers and veg producers, with both interested in diversification and integration.

Enthusiastic responses from potential hosts for on-farm visits as well as farmers and crofters willing to share their knowledge and experience at events.

The interest showed by other farming and crofting organisations outwith the partnership. We are working in collaboration with NFUS to deliver the Pasture-fed in the Borders events and the SCF to support the Crofting events. There are very few on farm/croft events being run at the moment so interest is high and this is something all the partners organisations want to build up over 2022 for farmers and crofters.

8. Challenges, issues and lessons learned:

Slight delay in finalising and recruiting due to the uncertainty brought by Covid over December. However, the partners are delighted to be able to continue with

a blended learning programme with the first on-farm event being held on Tues 25th Jan.

9. Communications and engagement:

Press Release and [webpage](#) launched Mon 24 Jan and partners have begun promoting through social media channels. Film maker recruited and five farmer/crofter case study films identified and filming has begun.

10. Next steps:

To finalise the details of all the events and deliver the learning programme and short films. Time will also be spent on designing and delivering the evaluation and review event and the short public facing report in March.

END