

Annual Progress of KTIF Projects - Summary Report 2018

Knowledge Transfer and Innovation Fund (KTIF) – Background

The Knowledge Transfer and Innovation Fund forms part of SRDP and has **2 aims**:

1. Firstly, to provide support to Non-Governmental Organisations (NGOs) to promote skills development and knowledge transfer in the agricultural sector e.g. coaching, workshops and farm visits.
2. Secondly, to support the running costs of Operational Groups¹ to deliver innovative projects which aim to improve agricultural competitiveness, resource efficiency and environmental performance.

Note 1: The membership of Operational Groups can vary depending on the type and needs of the project. Groups can comprise, for example, a farmer working in collaboration alongside a researcher, consultant and industry representative to deliver a project.

Initial 2014-2020 Budget:	(£10M)
Indicative Budget - reduction due to austerity measures:	£6M
Currently Committed (at Dec 2018):	£5.063M
Remaining indicative Budget (at Dec. 2018):	£0.937M

Note: Un-shaded areas of the table (below) cover skills development / knowledge transfer projects under measure 1.1 (**Aim 1**).

Shaded areas of the table (below) cover innovation projects i.e. European Innovation Partnership (EIP) under measure 16.1 (**Aim 2**).

Communications arrangements KTIF Projects: A communications process to cover KTIF is in place with all project coordinators. SG will be alerted to ensure that Scottish Ministers have the opportunity to promote awards, attend events and review the progress of these projects.

- The Rural Payments & Services and Scottish Rural Network websites are used to communicate and invite bids. Link below:
<https://www.ruralpayments.org/publicsite/futures/topics/all-schemes/knowledge-transfer-and-innovation-fund/>

<u>Project Name</u>	<u>Project Aims (1 & 2)</u>	<u>Status</u>	<u>Value</u>	<u>Fund rate</u>	<u>Duration</u>	<u>Notes (KT or Innovation projects)</u>
Soil Association: 'Future Farming Scotland'	Aim 1: To use low input and sustainable approaches; building financial and environmental resilience in a changing climate.	KTIF/001/2015: Approved - Sept. 2015.	£345K	75%	3-years	Knowledge Transfer (KT) Measure 1.1
AHDB Diary: 'Scottish Dairy Business Impact Groups'	Aim 1: To improve resilience and global competitiveness in milk production throughout Scotland; through improved efficiency.	KTIF/002/2015: Approved - Oct. 2015.	£222K	75%	3-years	Knowledge Transfer (KT) Measure 1.1
SAC Commercial: 'Live Lambs Project'	Aim 2: To improve lamb survival and farm profitability. Operational groups (OG's) of sheep farmers; advisors; researchers and commercial companies.	KTIF/003/2016: Approved - July 2016.	£81K	100%	3-years	Innovation European Innovation Partnership (EIP): Measure 16.1
Quality Meat Scotland / AHDB: 'Monitor Farm Programme'	Aim 2: To establish 9 innovative Monitor Farms across Scotland to improve profitability, productivity and sustainability of producers	KTIF/004/2016: Approved - April 2016.	£1.25 M	100%	3-5years	Innovation European Innovation Partnership (EIP): Measure 16.1
SAOS Ltd: 'Skinny Milk Project'	Aim 2: SAOS will focus on the lean management approach. It is specifically targeted at individual Milk Supply Association members and their farms.	KTIF/005/2016: Approved - April 2016.	£143K	100%	3-years	Innovation European Innovation Partnership (EIP): Measure 16.1
AHDB Potatoes: 'Strategic Potato (SPot) Farm for Scotland'	Aim 1: To highlight value to the wider potato industry, economically and environmentally, of embracing change through improved crop management practice.	KTIF/006/2016: Approved - April 2016.	£112K	75%	3-years	Knowledge Transfer (KT) Measure 1.1 (Focus Area 2A)
Wholesome Pigs Ltd: 'Pig Production Efficiency'	Aim 2: The Operational Group (OG) will use emerging technology to build a new innovative system to improve efficiency of Scottish pig production.	KTIF/007/2016: Approved - April 2016.	£91K	100%	3-years	Innovation European Innovation Partnership (EIP): Measure 16.1

ANM Group: ‘Livestock Development Programme’	Aim 1: To combine the best KT methods from the Scottish MF and Irish “BETTER Farms” programmes to deliver technical information	KTIF/008/2016: Approved - April 2016.	£678K	75%	3.5 -years	Knowledge Transfer (KT) Measure 1.1
Scottish Crofting Federation: ‘Skills Boost Programme’	Aim 1: To increase primary agriculture skills for 1200 participants - existing and in-coming crofters and smallholders – over 1260 training days.	KTIF/009/2016: Approved - April 2016	£268K	75%	3-years	Knowledge Transfer (KT) Measure 1.1
Soil Association: ‘Farming With Nature’	Aim 1: The programme will focus on using organic, agro ecological and High Nature Value (HNV) production methods, and enhancing the natural environment.	KTIF/010/2016: Approved - Oct. 2016.	£160K	75%	3-years	Knowledge Transfer (KT) Measure 1.1
Soil Association: ‘Farming For The Future’	Aim 1: To support farmers across Scotland interested in productive and profitable farming and land use, using low-input and sustainable approaches.	KTIF/011/2016: Approved - Sept. 2018.	£260K	75%	2-year, 4-month	Knowledge Transfer (KT) Measure 1.1
SAOS Ltd: ‘Skills for farmer co-operation and co-ops’	Aim 1: To build strong knowledge and skills base amongst farmers and crofters, to underpin the development of farmer co-operation.	KTIF/012/2016: Approved - Oct. 2016.	£296K	75%	4-years	Knowledge Transfer (KT) Measure 1.1
SRUC: ‘Reducing Antimicrobial Use in Dairy Farms’	Aim 2: To encourage dairy farmers to reduce their antibiotic usage at drying off by practicing Selective Dry Cow Therapy.	KTIF/013/2016: Approved - Dec. 2016.	£172K	100%	3-years	Innovation European Innovation Partnership (EIP): Measure 16.1
Scottish Organic Milk Producers: ‘Grass to Milk: Organically’	Aim 2: To improve the profitability and resilience of producers of organic milk.	KTIF/014/2016: Approved - Dec. 2016.	£61K	100%	3-years	Innovation European Innovation Partnership (EIP): Measure 16.1
Quality Pork Ltd: ‘Benchmarking Carcase Quality in Scottish Pigs’	Aim 2: Benchmarking will demonstrate what is possible and existing knowledge transfer and advisory networks.	KTIF/015/2017: Approved - April 2017	£115K	100%	3-years	Innovation European Innovation Partnership (EIP): Measure 16.1

Farm Stock Ltd: 'Building Resilience into Scotland's Lamb Supply Chains'	Aim 2: Scottish lambs killed each year are slaughtered and the number is declining. 'Lean thinking' will be used.	KTIF/016/2017: Approved - July 2017.	£188K	100%	3-years	Innovation European Innovation Partnership (EIP): Measure 16.1
Moray Beekeepers Association: The Healthy 'BEES'	Aim 1: The overall aim is to improve honeybee husbandry, beekeeping skills and honey bee health.	KTIF/017/2017: Approved - Dec. 2017.	£53K	75%	3-years	Knowledge Transfer (KT) Measure 1.1
SRUC: 'Fast Breeders'	Aim 2: The key issue this project will address is the inherently slow rate of genetic improvement in dairy cattle on female side.	KTIF/018/2018: Approved - October 2018.	£100K	100%	1-year	Innovation European Innovation Partnership (EIP): Measure 16.1
Scottish Agronomy Ltd - 'Foresight Farms'	Aim 2: Foresight Farms is a new, farmer-led project that places high quality data and its use at the heart of farm management decisions	KTIF/019/2018: Approved - October 2018.	£96K	100%	1-year	European Innovation Partnership (EIP): Measure 16.1
SAOS Ltd. – 'East West Grazing'	Aim 2: The project provides innovation as cattle moving from West to East for wintering is not uncommon.	KTIF/020/2018: Approved - December 2018	£36K	100%	1-year	European Innovation Partnership (EIP): Measure 16.1
SAOS Ltd - 'Feasibility of using woodchip bedding for livestock'	Aim 2: Project set up to look at the practice of using wood chips, wood fines and/or sawdust as animal bedding.	KTIF/021/2018: Approved - December 2018	£36K	100%	1-year	European Innovation Partnership (EIP): Measure 16.1

KTIF Annual Project Progress - Summary Report 2018

KTIF Ref No – KTIF/001/2015 (completed project)

Project title: Future Farming Scotland (delivered by Soil Association Scotland)

Project description: Future Farming Scotland (FFS) was a knowledge, skills and innovation programme for farmers, crofters and land managers across Scotland interested in using sustainable management practices for productive and profitable farming and land use. FFS was delivered by Soil Association Scotland in partnership with Quality Meat Scotland, Forestry Commission Scotland and Innovative Farmers. The overarching aim of the programme was to promote actions which were good for business, the environment and climate. The key objectives of FFS were to:

Build knowledge and skills for productive, profitable and sustainable farming and land use.

Encourage, develop and support farmer-led innovation.

Increase production by maximising the use of internal inputs and ecological processes.

Improve efficiency to make financial savings and minimise greenhouse gas emissions arising from on-farm practices.

FFS involved the delivery of knowledge transfer and skills development events – farm-based ‘walk-and-talk’ events and interactive workshops – and related information and dissemination activities. The emphasis was on low-input and low carbon farming practices focusing on soil, nutrient and grassland management, animal health and productivity, woodland creation and management and organic farming techniques.

In addition, FFS delivered field labs – a farmer-led approach to practical research and development – which brought together small groups of farmers with a researcher or facilitator to trial potential solutions for overcoming practical challenges in the field. Examples of field lab subjects included green manures, controlling soft rush, cultivating soil health, and controlling leatherjackets without chlorpyrifos.

Financial support awarded and spend to date:

Maximum KTIF grant of £345,545 with co-funding provided by *Quality Meat Scotland, Forestry Commission Scotland, Innovative Farmers and The Prince of Wales’s Charitable Foundation*. *KTIF grant spent (to be verified in final claim) will be in the region of £340,000.*

Operational Group membership if applicable: N/A

Project start and end dates:

1 September 2015 to 31 October 2018. (An extension of two months to the original end date was approved by the Scottish Government.)

Progress to date including milestones achieved:

1,201 individual managers participated in the programme exceeding the approved grant application target of 1,000.

88.7% of those land managers have adopted new sustainable land management practice/s exceeding the approved grant application target of 88%.

As a result, 45% have put more than half their holding under new management practices and 21% have implemented new management practice/s across their entire business holding.

This equates to over 800 square miles of agricultural land (equivalent to the size of East Lothian local authority area) being managed more sustainably.

A major highlight for FFS was winning the 'Food and Farming' category of the prestigious RSPB 'Nature of Scotland Awards 2016' which celebrate the people, projects and organisations working to protect Scotland's wildlife and natural environment. An impact report of our farming and land use work including Future Farming Scotland is available on our [website](#).

Main benefits realised to date, including opportunities identified:

An independent evaluation of FFS was carried out by Collingwood Environmental Planning (CEP). Key findings from the evaluation include:

'Both horizontal [field labs] and vertical knowledge exchange event types deployed by Soil Association Scotland for the programme were highly rated'.

'Event ratings are consistently high across all topics. In particular, the quality and expertise of the specialists and facilitators was highly rated'.

'The evaluation of programme outcomes revealed strong evidence that participants had increased their knowledge, ability/skills and confidence of sustainable land management practices'.

Challenges, issues and lessons learned:

The CEP evaluation highlighted a range of recommendations to inform our future work including: how to further involve government, agencies, and other wider stakeholders; encouraging repeat attendance/longer-term engagement with land managers; developing activities around harder to engage with topics e.g. sustainable management of on-farm water resources and pollution; and exploring how to develop indicators and monitoring protocols to track changes in land management over longer periods of time.

Communications and engagement:

A range of methods were used to keep event participants engaged and to disseminate the results of the programme to the wider farming community, stakeholders and other interested organisations and individuals including: an annual conference; handy resources on our [website](#) including films; social media; case studies; post event reports; and editorial in journals. We worked closely with a wide range of organisations

who provide speakers and materials in-kind e.g. Woodland Trust Scotland, Cairngorm National Park Authority and Forestry Commission Scotland.

FFS used a variety of methods to target and attract participants including: Soil Association Scotland 'What's On' e-newsletter; adverts in local and farming press; NFUS text alert service; various websites including Scottish Rural Network; word-of-mouth recommendation; and flyers to local marts and vets.

Next steps: FFS completed on 31 October 2018. We are using evidence from the CEP evaluation and SEFARI, and Scottish Government and industry guidance around future policy to inform the development of our future farming and land use work.

KTIF Ref No – KTIF/002/2015

Project progress report: Scottish Dairy Business Impact Groups (delivered by AHDB Dairy)

Project Description:

The Scottish Dairy Business Impact Groups project proposed to establish a number of new Scottish Dairy Business Impact Groups. The participating farmers will benefit from benchmarking and knowledge exchange activities, helping stimulate improvement in the businesses physical and financial performance and allowing them to operate more sustainably.

Financial support awarded and spend to date:

The project grant offer (16-10-15) was for a maximum of £222,330 with a timescale of October 2015 – September 2018.

In the year January 2016 – December 2016 the project had £57,179.94 of actual costs – lower than the maximum predicted in the application of £90,480. The grant claim for 75% of the eligible actual costs during the period was £42,884.95

In the year January 2017 - December 2017 the project had £32,461.66 of actual costs, the maximum predicted in the application for the period was £90,480. The grant claim for 75% of the eligible actual costs during the period was £24,346.24

The final figures for the year January 2018 – September 2018 (project end) are not yet available but are anticipated to again be significantly below the maximum predicted in the application of £67,860.

Project Start & End Dates:

The grant offer letter dated 16/10/15 states the grant period is October 2015 to September 2018

Progress to date:

During 2016 six Business Impact groups were established covering many of the main milk fields in Scotland, 3 of the groups (Orkney, Aberdeen and Borders) are based in areas where there has previously been limited dairy knowledge exchange activity due to geographical isolation and sparse milk fields.

All the farmers in each group were visited by a member of the Farm Economics team at AHDB and helped to individually complete a financial benchmarking exercise. A feedback meeting was then held with each group where individual results were discussed and each business had the opportunity to compare their figures across the group. Many of the recruited farmers had not previously benchmarked, and found the process very challenging.

In addition to benchmarking each group benefited from a number of technical meetings, with input from a range of respected experts and speakers covering topics such as “use of genomics in cattle breeding” with Andy Dodd technical expert from

AHDB “calf rearing” with Willy McCarthy a vet, “reducing your feed costs” with Tim Davies a senior consultant at Kite

Group Location	No participants	No dairy farm businesses	Demographic/notes	Aim
Orkney	5	5	Second generation	To have sustainable milk field in Orkney
Dumfries	5	5	Family farms (1 robotic, 1 new entrant)	To be able to survive volatility
Ayr	10	8	Family farms who have faced extremes of volatility	To become more resilient and use lessons from past to future proof businesses.
Stranraer	9	9	Young farmers (<35 years old)	To gain full understanding of businesses to allow future succession
Lothian & Borders	8	6	Progressive family farms; 2 in conversion to organic	To reduce costs to become more profitable
Aberdeen & Stirling	10	10	Mixture of systems, progressive outlook	Share opportunities and challenges.

Main benefits realised to date, and opportunities identified:

43 dairy farm businesses have participated in discussion group activity, and benefited from the social and business support this offers. Expert technical input and advice has been tailored to meet the needs of each group. The Ayr Business Impact Group acted as a catalyst for the successful establishment of buyers group, with the aim of achieving savings for the farmers through pooling of purchasing decisions and benefitting from the economies of scale.

Challenges, issues and lessons learned:

Three key challenges have emerged in delivering the Scottish Dairy Business Impact Groups, staff changes at AHDB Dairy, enthusiasm / commitment of the farmers to engage in the financial benchmarking exercise, and lower overall expenditure than

predicted. The AHDB staff changes and subsequent challenges impacted 5 groups directly facilitated by AHDB (Orkney, Dumfries, Ayr, Stranraer and Lothian & Borders). The management and facilitation of the Aberdeen & Stirling group was contracted to a third party (Saviour Associates) and as such has been immune to the problems outlined above.

During the delivery of the project the established AHDB Knowledge Exchange Manager, Sharon Lauder secured a new post at First Milk and in the spring of 2017 left her role at AHDB, this resulted in a 'pause' in meeting activity for 5 of the groups whilst AHDB recruited a replacement KE manager.

Iain Pirie took up the post of AHDB Knowledge Exchange Manager in the autumn of 2017 and met with members of each group to re-establish contact and deliver facilitated group meetings with expert technical input. Iain did not stay with AHDB very long, and left his employment in the spring of 2018, this resulted in a further 'pause' in meeting activity for 5 of the groups whilst AHDB recruited a replacement KE manager.

During the summer of 2018 members of each of the 5 effected KTIF groups were contacted by AHDB and kept informed of the issues we faced and planned progress. Bespoke data collectors (Caroline Montgomery and Colin McPhail) were contracted to work for AHDB and visit the participating farms to complete another benchmarking exercise. Many of the farmers have not been able to complete the exercise as appropriate data was not available. Five farms in the Ayr group successfully submitted data and participated in a formal benchmarking feedback session. Some individual farmers also submitted benchmarking data, but not enough from any group to justify formal group feedback meeting.

The management and facilitation of the Aberdeen & Stirling group was contracted to a third party (Saviour Associates) and as such has been immune to the problems outlined above. That group has met regularly and consistently throughout the term of project including a number of study tours to inspiring and successful farmers outside the region (most recently to North Yorkshire). A summary example of the meetings notes from the May 2018 meeting of this group is attached.

Next Steps:

The formal KTIF funded project Scottish Dairy Business Impact Groups came to an end in September 2018. AHDB recognises that farmers in 5 of the groups did not receive all the expected delivered outcomes, and is currently working with the farmers that wish to engage to agree a plan of activity during 2019, all future activity will be funded directly by AHDB. It is likely that 3 groups, Ayr Aberdeen & Stirling and Orkney will continue to engage with AHDB and benefit from business/ technical input, the Ayr have also expressed continued interest in business benchmarking.

Appendix

Example of Aberdeen & Stirling recent meeting group meeting

Brief review of the meeting, include;
Main objectives achieved; Problems/issues? What went well/successes? Next meeting object
 Visit J McLean & W Willis to see the improvements and changes in their business challenge them on grazing infrastructure and business structure & governance

Host/Venue: Peterhead & Inverurie

Name of Guest Speaker/Technical EO used: NONE

Partners involved: None

Numbers of others attended: None

Number of farmers attended: 12
Risk Assessment done: Yes

Brief review of the meeting, include;

Evening meal & group review and update since we last met

Morning at J Mclean discussing their conversion to organic and how best to invest and layout his grazing infrastructure

Afternoon Visit William Willis look at their new milk vending machine & discussing integrating his brother Angus into family business R&R, succession, governance

Problems/issues: NONE

Agenda/Main points of meeting (including minutes for DairyPro):

14 May

7pm Set the scene, review and what has everyone in the group been up to highs and lows since we last met

15th May 9am Farm walk looking at existing set up & discussing budget available to spend

10.30 split into groups – track, water & fencing

Breeding, feeding & COP

11.30 Groups feedback advice, recommendations & plans

12pm. Jean & John agree action plan and time line – meeting closed

1pm. Farm walk and introduction to milk vending business & family situation update

3pm. Split succession & family governance

Under pinning existing business & developing new projects

4pm group feed back advice recommendations

4.30 family agree action points & time lines – meeting close

Code	Category	Time spent
BM	Business Management	4hr
E	Environment	15 mins
GM	Grassland Management	30 mins
HW	Health & Welfare	30 mins
L	Legislation	30mins
LP	Livestock Production Systems	1/2
N	Nutrition	

PD	Personal Development	2 hrs
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Action Plan:

The next meeting is a group trip to visit 4 other businesses looking at organic, staff management, managing multiple units, governance and time management & communication 28-30 August

KTIF Ref No – KTIF/003/2015

Project title: Live Lambs (delivered by SRUC)

Project description:

The aims of this three year project are to identify the main barriers to achieve an increase in the average number of lambs reared per ewe and identify solutions which improve farm profitability and viability, enhance animal welfare and reduce the carbon footprint in sheep enterprises.

Financial support awarded and spend to date:

£81,314 awarded, spend up to 3rd January 2019, £51,051

Operational Group membership if applicable:

Membership includes the 42 strong sheep group for forward thinking farmers. Representatives from the group, SAC Consulting, SRUC research and the commercial partners also meet regularly to discuss project progress.

Project start and end dates:

Commenced July 2016, for a three year period finishing June 2019.

Progress to date including milestones achieved:

Five focus farmers selected, representing a cross section of different Scottish sheep systems (*yr 1*)

Two focus farm training days and four open meetings (*yr 1 & 2*)

One webinar pre lambing for focus farmers (*yr 2*)

Performance data gathered and benchmarking initiated (*yr 1*)

Continued data gathering, analysis and interpretation (*yr 2*)

Four operational group meetings (*yr 1 & 2*)

Regular body condition scoring by all focus farms (*yr 1 & 2*)

Farm specific rations drawn up for all focus farms, showing excellent results at lambing for milk in ewes and lamb size at birth (*yr 1*)

Formulation of rations based on a Digestible Undegradable Protein source to meet the ewe requirements in late pregnancy as well as assisting to source good quality, local feed supplies that would supplement their silage. (*yr 2*)

All farms using preventative vaccinations for abortion (*yr 1 & 2*)

One video of a lamb post mortem, to help identify the causes of lamb deaths (*yr 2*)

Working alongside the European Project “SheepNet”

Main benefits realised to date, including opportunities identified:

A farm management approach to lamb losses based on five key areas (*yr 1*)
Improved late pregnancy rations (*yr 1 & 2*)
Increased body condition scoring resulting in more ewes on target for mating (*yr 1*) and lambing as well as weaning decisions being made on condition score (*yr 2*)
Understanding of the importance of minimising stress at lambing (*yr 1*)
Knowledge of the heritability of lamb vigour and maternal genetics to influence ewe replacement strategies (*yr 1*)
Vaccination to prevent abortion and improve fertility (*yr 1*)
Tools to record causes of lamb losses and support to act on the results (*yr 1*)
Mineral nutrition knowledge (*yr 2*)
Understanding causes of lamb losses through use of post mortems (*yr 2*)
Holistic approach to prophylactic antibiotics at lambing time (*yr 2*)
Importance of attention to detail and colostrum management (*yr 2*)
Approach to pasture management influencing lactation performance (*yr 2*)

Challenges, issues and lessons learned:

The main challenge was cancelling the pre lambing meeting due to the weather, in response we held a webinar for the focus farmers. All involved are behind the concept of the project and there is continued communication between members and facilitators.

Communications and engagement:

Four reports have been issued to Operational and Wider Group members (*yr 1*)
Articles have been produced for Farming Monthly National, Farm Business, The Scotsman, The Courier, Press and Journal, SAC Beef and Sheep News, EIP-Agri Newsletter (*yr 1*)
A presentation and poster was delivered at the EIP-Agri Innovation Summit in Lisbon by Poppy Frater (*yr 1*)
The project was also featured in a Scottish Rural Network video <https://www.ruralnetwork.scot/case-studies/live-lambs> (*yr 2*)
Article produced for the The Courier and P&J, as well as well as a focus in the Scottish Farmer of one of the focus farmers (*yr 2*)
Farming Today interview (*yr 2*)
Post mortem video posted on YouTube and circulated through SRUC twitter (*yr 2*) <https://www.youtube.com/playlist?list=PLVdYIkNPNi-zIJ-qIM2KLu5nSvvpUzGSo>
[A pull up created and publicity of the project at Scot sheep](#) (*yr 2*)

Next steps:

The project will continue with the aim of reducing lamb losses, through targeted management and recording.

The next open meeting is planned for early February to focus on pre-lambing management. This is being held at one of the top performers who have the second lowest lamb losses of the group – Broomhouse Farm.

The final meeting will be held on June 4th at Roslin Institute. This will be a conference style meeting to share the project findings.

2018-19 flock performance figures will be aggregated and analysed to track progression.

Innovation ideas from SheepNet will be explored for relevance to the project and implemented on the focus farms where possible.

KTIF Ref No – KTIF/004/2015 (delivered by QMS/AHDB Cereals & Oilseeds)

Project Title: Scottish Monitor Farm Programme

Project description:

The aim of the Monitor Farm Scotland programme is to help farmers and crofters identify opportunities to improve the productivity, profitability and sustainability of their businesses. Key activities include knowledge exchange between peers, personal and professional development of farmers, farmer driven innovation, mentoring, cooperation and collaboration, resource use efficiency and environmental enhancement and protection.

Financial support awarded and spend to date:

Award - £1,249,340. The spend to date: claimed up to the end of November 2018 will be £715,040.83 (£600,757 + £114,283.83) leaving a balance of £534,299.17 available to claim.

Operational Group membership:

Quality Meat Scotland, AHDB Cereals & Oilseeds and The Moredun Institute

Project start and end dates: 01/04/2016 – 31/03/2020

Progress to date including milestones achieved:

- The establishment of nine new Monitor Farms with associated management groups, community groups and facilitated business benchmarking groups.
- Baseline audits on all MFs (Farm business review, environmental audit and Carbon audits) all completed
- Details of sustained attendance at Monitor farm meetings are below.

Monitor Farm	No. of Meetings	Total Attendance	Average Attendance
Angus	9	468	52
N. Ayrshire	12	508	42
Borders	13	585	45
Lochaber	9	320	32
Lothians	12	490	41
Morayshire	10	670	67
Nithsdale	11	644	59
Shetland	12	501	42
Sutherland	12	349	29
Total	100	4535	45

- Average 37% of attendees are under 40 and 22% are female
- 26 Business Group meetings and 26 Management group meetings held.
- Monitor Farm Hub webpage hosts information on MF meetings, MF Meeting reports and additional technical information and features.
- Facebook pages established for all MFs and populated by Monitor Farmers
- Two Monitor Farm conferences held.
- Management groups drive activities on the monitor farms and some are leading the monitor farm meetings.

- Links are being developed to research and development activity eg Moredun (Lothians and Borders) and James Hutton Institute (Lothians)
- Environmental audits (including carbon footprint) across all 9 farms have been featured at monitor farm meetings and were a key part of stimulating discussion on the topic at the second MF conference.
- More than 20 'try outs' across the network driven by management and community groups and are based on results from MF benchmarking and changes introduced on the farm.
- Succession planning and understanding personal/professional goals and have been addressed at Monitor Farm meetings and business group meetings.
- A soft approach to increasing awareness of mental issues has been part of the programme.

Main benefits realised to date, including opportunities identified:

- A strong sense of community is developing within each monitor farm management, business and community groups, and between the monitor farmers in the network. This includes shared ideas and experiences within and between Monitor Farm hosts, facilitators, community groups and business groups.
- Collaboration between the monitor farms within the network is ongoing.
- Developing young people- includes developing new entrant farmers and young facilitators.
- Wider Industry involvement includes input as management group members, speakers and resource for try outs from a range of vets, feed, seed and pharmaceutical companies and agricultural accountants.
- Host farmers have made positive changes to their farm businesses due to benchmarking, community and management group input.
- Opportunities to develop new industry champions from the ranks of these Monitor Farmers and associated groups.

Challenges, issues and lessons learned:

- Embedding the 'Farmer Led Farmer Driven' ethos has been challenging but is reaping rewards as the project progresses. Need to acknowledge the time needed for Management, Business and Community groups and facilitators to evolve and work effectively as trust is built between all involved.
- Personal development and rural leadership has been difficult to facilitate but there has been clear development in the monitor farmers who have embraced change. They have also become more confident in communication to both the community groups and in the media.
- Although there were challenges with 'Farmbench' business groups have been established and meetings run with a clear business focus.
- The new look 'Farmbench' (launching early 2019) includes feedback from the MF project incorporated to address issues encountered. Additional support is now available from AHDB to improve the uptake and quality of benchmarking.
- Environmental initiatives on farm that seek to improve biodiversity and greenhouse gas emissions have demonstrated some examples of a 'win-win' between production, profit and environmental impact on monitor farms.
- Developing links between Research & Development on some Monitor Farms has been challenging. A consequence of the 'farmer led farmer driven' approach is that the agenda for the project is led by the management group

who may not have an interest or knowledge of relevant Research & Development. QMS and AHDB will continue to offer support to the Management groups to deliver this.

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. This includes:

- Nine MF videos produced and launched by QMS – combined views 146,215
- Three MF videos produced and launched by AHDB C&O – combined views of 2,056
- Three more MF videos currently in production by QMS with plans to do a further three later in the year.
- Eight MF focus features in QMS's livestock plus magazine, mailed to 10,000 livestock farmers across Scotland.
- 128 press releases issued by QMS and AHDB C&O
- 233 items of press coverage collated (this is likely to be much higher as doesn't include FJ and TSF coverage)
- In 2018, 44 fb events on the QMS fb page had a combined reach of over 104,000

Next steps:

- Continue with planned activities and build on impact to date – review against details on MF annual plans and evidence change achieved.
- Seek to enhance the 'farmer led, farmer driven' concept and encourage increasing responsibility for the project by the farmers involved, including measuring success and developing a legacy for the programme.
- Improve facilitation to encourage greater farmer participation at some of the community group meetings
- 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 to include theme reports that chart the progress of on farm changes or try outs and group activities.
- 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 from facilitators are fully met to evidence progress.

KTIF Ref No – KTIF/005/2015

Project title: Skinny Milk Project (Delivered by SAOS Ltd.)

Project description: The aim of the project is to improve and secure the viability of the participating farmers and the wider MSA milk field by creating more resilient businesses with embedded capacity for ongoing improvement.

The key objective of the project is to introduce the principles of lean management into the dairy sector through the delivery of a pilot project and thereby:

Provide farmers with a new approach to undertake their own lean management reviews and thus the opportunity for continuous improvement.

Improve farmer understanding of Critical Customer Requirement's (CCR's) and their ability to achieve them thus benefiting their customer.

Improve the accuracy of milk forecasting to enable more efficient processing and marketing.

Share the knowledge established in the course of the project with the wider MSA membership.

Reduce the costs of milk production on the participating farms by 1.4ppl.

Financial support awarded and spend to date:

Support awarded: £143,120

Claimed 30 March 2017: £52,495.39

Claimed 31 May 2018: £54,870.62

Funds remaining: £35,753.99

A further claim is scheduled for 2019 covering the project work completed from June 18 to March 19

Operational Group membership if applicable:

SAOS

LEAN TeamGB

Cara Consultants

Milk Suppliers Association

Project start and end dates:

Starts: 01/04/16

Ends: 31/03/19

Progress to date including milestones achieved:

As per the project application completed key milestones include:

The distribution of a project summary to MSA members to highlight the project and the potential for participation by April 2016

Undertaking early pilot lean management individual mapping days with 3 differing farm sizes (small medium and large) and utilizing three differing production systems (intensive housed, low cost grass based and composite) by August 2016

Development of case studies of the 3 early pilots and analyses undertaken by August 2016

Publication of a simple website to highlight the activities of MSA with a separate project page publishing and promoting 14 case study examples of the work undertaken by December 2018 (see www.msa.scot)

Presentation of the findings of the project to the membership at member meetings in 2017 and 2018

Undertaking 27 supply chain individual mapping days by December 2018 with a further 3 recruited for Jan/Feb 2019

The project is on target to deliver 30 individual mapping days over the course of the 3 year project.

Main benefits realised to date, including opportunities identified:

On average, the potential financial savings identified to date is 6.59 pence per litre. Given the individual nature of the mapping days the opportunities identified for improvements are wide ranging. A key recommendation common across a number of farms is the need to produce regular management accounts. This will help to measure performance and identify where key savings can be made.

Other opportunities highlighted include:

The need for more business planning

The need for regular management meetings to monitor and manage business performance

Use of external expertise to facilitate improvements

Improvements in grass production to reduce variable costs

Improvements in overhead costs to reduce fixed costs

Assess different structural options

Increase output

Improve communications

Establishment of standard operating procedures

Empower staff and provide training

To conclude, positive feedback has been received from most of the farms that have participated to date. All of these farms say that they will make changes to improve the viability of their businesses.

One participant commenting on the process said *"I really liked the whole idea and principles of the work undertaken on the farm. It was well delivered, it helped to formalise our thoughts and it confirmed that our direction of travel was correct. The process is one which we can use again to review and improve other parts of the business"*.

Challenges, issues and lessons learned:

A key lesson has been the identification that many farms are currently making profits which are less than their single farm payments. In other words without support, many of the dairies are loss making. The management ability required to address this situation is often lacking. Another issue to contend with are the family relationships this project brings into focus. Not all the businesses visited have families who are united in adopting a new common approach which is necessary to bring about much needed change. A final issue is that of culture. Too often the participants find it challenging to accept change is necessary and that external expertise has the ability to find practical solutions.

Communications and engagement:

A number of measures have been taken to communicate about the project and engage members. They include:

Letters, emails and MailerLite communications to MSA members highlighting the availability of the project

Development and distribution of case studies identifying the project process and benefits brought about by the project

Publication of the case studies on the MSA website

Presentations made at MSA producer meetings summarising the project process and benefits brought about through participation

Next steps:

Complete the final 3 farm mapping days, their follow up reports and the final summary report from the project.

KTIF Ref No – KTIF/006/2015 (delivered by AHDB Potatoes)

Project title: Strategic Potato Farm (Spot Farm)

Project description:

SPot Farms are a knowledge exchange concept designed to demonstrate in a practical and commercial environment the benefits of AHDB funded research and development.

Within the SPot farm, concepts to maximise production efficiency alongside environmental sensitivity and efficient use of resources will be made accessible to levy payers and other interested members of the potato industry through a variety of channels.

Themes delivered 2017 &

- Cultivation – reducing costs and improving soil structure
- Cover Crops – over winter benefits to soil
- Seed Inputs – increasing yield and reducing costs
- Nutrition – lowering N input
- Blight – Using new technology to understand risk

Financial support awarded and spend to date:

Awarded: £111,911 grant

Spent to date:

Set up: £5241

Year 1: £29190

Year 2: £30091

Operational Group membership if applicable:

N/A

Project start and end dates:

May 2016 – Jan 2020

Progress to date including milestones achieved:

2017: Number of people engaging with project > 298

Age 31% <45

2018: No. 250, 45% <45

Communications and engagement:

2017

Results Day – 9th March 2017

NFUS Farm Walk - 23rd May 2017

International Farm Management Association – 4th & 6th July

Open Day – 12th July 2017

Committee meeting – 30th Aug 2017

British Potato – 22nd Nov

2018

Results Day - 8th March 2018

NFUS Farm Walk - 23rd May 2018

Open Day – 10th July 2018

Tesco Producers Group – 17th July

Pre Basic Growers Association – 19th July

2019

Results Day - 28th Feb 2019

NFUS Farm Walk - May 2019

Schools Educational Day – June 2019

Open Day – 9th July 2019

Final Results Day – Dec 2019

Publications

<https://potatoes.ahdb.org.uk/sites/default/files/Cultivation%20Depths%20Trial%20Results.pdf>

3 page Article Farmers weekly 07/07/17

Main benefits realised to date, including opportunities identified:

2016 identified improvements of 11t/ha in packout yield, this was adopted across the whole business in 2017 and further initial results from 2017 can show reduced costs and increased yield in adoption of improved practice through research.

Challenges, issues and lessons learned:

Focus on packout yield

Adopting new technology

Sharing own experience with growers

Reducing input costs & waste

Attention to detail and communication with whole team

Supply chain engagement – producing what sells

Next steps:

Results meeting 28th Feb 2019 – indications are that we will be in a position to demonstrate more cost savings and increased yields using the improved practice recommendations made by growers and research. The dry season has given some additional data which contrasts with previous.

2019 season – we will deliver same themed demo stations so we can identify how they respond to different seasons. We are also looking to introduce new technology and maintain cost improvements to the business. Links with the supply chain have been very successful and providing industry with actual pack-out figures has really gained interest from growers giving them confidence to try new approaches.

KTIF Ref No – KTIF/007/2015

Project title: Innovative Use of Emerging Technologies to Improve Pig Production Efficiency (delivered by Wholesome Pigs Scotland Ltd)

Project description:

In this novel project, an operational group has been established to use emerging technology to build a new system to improve the efficiency of Scottish pig production. The combination of health and performance data is the perfect driver for change and now the technologies are emerging that will allow the collation and analysis of data from a range of different systems. This has created an evolving knowledge base to provide sustained impetus for improved Scottish product by:

- Utilising raw data from a number of pre-existing and emerging but untapped, unconnected sources
- Implementation of methodologies developed in RESAS Strategic Research Programme 2011-16 to integrate datasets
- Applying innovative analytical methods to that data using skilled staff, computer technology and developing tools
- Communication of results to pig farmers using novel data visualisation methodologies to drive change
- Use results to inform industry and government environmental, health & welfare policies and so improve the competitiveness of Scottish pigmeat

This initiative will promote best practice through benchmarking health and production performance across the Scottish industry and the involvement of all pig producers and their veterinarians who participate and measure the benefits of implementing identified solutions within their own rural business.

Financial support awarded and spend to date:

£390,696 awarded; £310,981 claimed (up to Yr3 Q2)

Operational Group membership if applicable:

Wholesome Pigs (Scotland) Ltd

Scottish Pig Producers Ltd

SRUC

British Veterinary Association Scotland

Quality Meat Scotland

Project start and end dates:

04/04/2016 – 29/03/2019

Communications and engagement:

- M1.1: Focus groups for output design completed - ACHIEVED
- M1.2: KTE network design and operation finalised - ACHIEVED
- M1.3: Data transfer mechanisms between data owners and ERU operational – PARTIALLY ACHIEVED (see section 8)
- M1.4: Review meetings with stakeholders to finalise outcomes completed - ACHIEVED
- M1.5: First individual reports generated - ACHIEVED
- M1.6: Dynamic health mapping system operational - ACHIEVED
- M2.1: Individual report generated for all units on a quarterly basis - ACHIEVED
- M2.2: Review meetings with stakeholders completed - ACHIEVED
- M2.3: Automation of routine report generation completed - ACHIEVED
- M2.4: Preliminary evaluation of project outputs and delivery completed - ACHIEVED
- M2.5: Full evaluation of project delivery, outputs and outcomes completed - DELAYED

Main benefits realised to date, including opportunities identified:

The project is delivering the intended benefits and has developed powerful tools to drive health and welfare improvement in the Scottish pig herd. The outcomes set by the Operational Group:

Sarcoptic mange has reduced to 0.07%

Enzootic pneumonia has been reduced by 24.6%

Baseline levels have been established for PRRS (40.7%) and salmonella (16.3%) but not for progressive atrophic rhinitis because it is so rarely seen

There have been no outbreaks of swine dysentery

Pleurisy incidence has unfortunately increased by 18%

Disease mapping is now at the heart of the planning process for control and elimination of PRRS in Scotland, an ambitious programme currently being developed through the Rural Innovation Support Service.

Challenges, issues and lessons learned:

The main delays have been caused not by technical or innovation challenges but by delays in getting data sharing agreements in place. In some cases, this is due to genuine misunderstandings of GDPR but from AHDB, there is a deliberate attempt to

block access to the data because the findings are inconvenient for the data owner. The main lesson is not to underestimate the amount of time that this can take.

The OG also underestimated the difficulty of getting all the vet practices to use the same electronic form for their Quarterly Veterinary Reports, with most of them still submitting paper or pdf versions that need to be manually entered into the database.

Communications and engagement:

Producers have been receiving personal upgraded reports. Wider stakeholder groups have been briefed on the project at the following meetings:

Scot Gov animal health group on 6th August

Pig Monitor Farm on 6th November

Scottish Pig Health Group on 7th December

Next steps:

Acquire antimicrobial and Real Welfare datasets from AHDB Pork

Undertake full evaluation of the project

KTIF Ref No – KTIF/008/2016

Project title: Farm Profit Programme (Delivered by ANM Group)

Project description:

The Farm Profit Programme is a joint venture between ANM Group and the Farmers Journal. Over three years, the programme has one simple aim – making livestock pay. Six Farms have been selected across the North and North-east of Scotland, representing their area and particular farm types. Each farm has had a full business Focus review and a three-year plan put in place. Farm profit consists of a combination of price, output and performance. To address the issue of profitability, farmers must focus on improving the things they can control, and this starts inside the farm gate. Improving the level of technical efficiency in animal health, breeding and grassland management leads to an increase in farm output, giving a far greater impact on farm profit than changes in sale price. Two dedicated advisers deliver the project through implementing best practice and improved on-farm management. Eight Focus Groups are also to be implemented to further spread the message from the Focus Farms.

Financial support awarded and spend to date:

Total expenditure approved - £904,140

Total expenditure funded - £678,105 grant from KTIF

Total amount claimed to date (100%) i.e. 12/04/16 to 30/06/18 – £365,942.29

Total grant element claimed (75%) i.e. 12/04/16 to 30/09/18 – £274,456.71

Operational Group membership if applicable:

ANM Group

Irish Farmers Journal

Project start and end dates:

Project start date – 12 April 2016

Project end date – 31 March 2020

Progress to date including milestones achieved:

Two advisors appointed and six Focus Farms recruited

Producer Groups established and meeting regularly. Invitations have been accepted from other groups beyond the project too, meaning further spread of the messages 44 meetings having been held.

On-line home page created and updated weekly, since February 2017

5 technical bulletins produced for distribution.

Social media presence regularly updated, with good levels of engagement

Industry stakeholders (NFUS, SRUC, SAYFC and local discussion groups), actively seeking the engagement of the programme at events to disseminate project outputs as messages are seen as relevant, practical and transferrable.

Main benefits realised to date, including opportunities identified:

Benefits identified to date:

Improved gross margin. Year 1 benchmarking showed an average increase in gross margin of £115/cow and £3/ewe across the 6 farms from the original baseline. Year 2 benchmarking is currently being conducted.

Farm output. All of the Focus Farms suffer from a high level of fixed costs in relation to their level of output. 5 of the farms are increasing their stock numbers to improve output one is streamlining their stocking whilst actual numbers remain static.

Winter forage crops. The establishment of forage crops to carry stock for a portion of winter has allowed the costs of winter to be reduced across several farms. Not only is the winter cost lower, the use of machinery and fuel to make the feed and deliver it is reduced, further adding to the bottom line and improving overall sustainability.

Challenges, issues and lessons learned:

Different rates of learning. Each of the farming families have progressed at different rates, with some making significant gains early on, whilst others have been slower to change. Giving the farmers greater ownership of their goals has improved this. This is also important for the long term as once the project finishes, each farm will require to go on without the facilitators.

Implementing the farm plans required a greater level of initial input than first anticipated. Due to this, focus group meetings were slower to start. Activity has since increased.

Resilience. The 2018 summer challenged the farms quite heavily. Whilst aiming to increase stocking rates, drought proved that some farms are coming upon their limit. However, whilst the drought was difficult, it has made each farm look differently at their system, to identify weak points and aim to reduce the business exposure to external factors

Communications and engagement:

One of the keys of the project is a weekly update article, available online free at either www.farmersjournal.co.uk or www.anmgroupp.co.uk. Also in print in the pages of Farmers Journal Scotland. Weekly article readership now averages around 3000 impressions between online and print. Five project guides have been produced, detailing progress and learnings from each farm, complete with snippets from the Focus Groups.

Having had around 400 viewers across Scotland logged on to a live stream of a meeting, coupled with a further 400 hours engagement, the project will live stream another meeting on 21st February.

A number of other videos have been created and promoted via social media and Youtube. These have seen total in excess of 180 000 views.

Next steps:

Begin to step back from farmers, to help them transition toward a lower level of support. First step is to have them set their own 2019 goals.

Open meeting in February to promote the results two years in

Continue with group meetings

KTIF Ref No – KTIF/009/2016

Project title: Crofters and Smallholders Skills Boost 2016 - 2019 (delivered by SCF)

Project description:

Crofters and Smallholders Skills Boost 2016 – 2019 is a three-year project aimed at increasing primary agriculture skills for 1200 participants - existing and in-coming crofters and smallholders – over 1260 training days. Increasing skills will improve viability of crofting agriculture and will provide associated economic, social and environmental benefits to rural communities.

Financial support awarded: £267,618 and spend as of 18 December 2019 is £222,142

Operational Group membership if applicable: N/A

Project start and end dates:

1 July 2016 – 20 June 2019

Progress to date including milestones achieved:

Milestones Year 1 (1 July 2016 – 30 June 2017)	Progress
<ul style="list-style-type: none">• Appoint 3 Project Staff	Achieved
<ul style="list-style-type: none">• Source appropriate office accommodation for project staff working out-with SCF Head Office.	Achieved
<ul style="list-style-type: none">• Develop paperwork and processes to support new project components.	Achieved
<ul style="list-style-type: none">• Develop new 4 stage evaluation process to fully monitor and evaluate outcomes and impacts.	Achieved
<ul style="list-style-type: none">• Refine existing administrative and financial processes to support project.	Achieved
<ul style="list-style-type: none">• Hold initial project training event for Local Course Directors and Support Staff.	Achieved
<ul style="list-style-type: none">• Market the project.	Achieved
<ul style="list-style-type: none">• Run 5 Access to Crofting Tool Kit events.	Achieved
<ul style="list-style-type: none">• Run 25 Bitesize Skills Events	26 Achieved
<ul style="list-style-type: none">• Run 4 Bitesize Skills (Woodland Trust) Events	5 Achieved
<ul style="list-style-type: none">• Run 6 Township Training Events	Achieved
<ul style="list-style-type: none">• Hold 2 Project Advisory Committee Meetings	Achieved
<ul style="list-style-type: none">• Hold 5 Project Management Review Meetings	Achieved
<ul style="list-style-type: none">• Achieve training targets of 400 Participants.	510 Achieved
<ul style="list-style-type: none">• Produce end of year Progress Report for funders.	Achieved
Milestones Year 2 (1 July 2017 – 30 June 2018)	
<ul style="list-style-type: none">• Run 5 Access to Crofting Tool Kit events.	Achieved
<ul style="list-style-type: none">• Run 25 Bitesize Skills Events	35 Achieved
<ul style="list-style-type: none">• Run 4 Bitesize Skills (Woodland Trust) Events	3 Achieved (only 3 required this year)
<ul style="list-style-type: none">• Run 6 Township Training Events	Achieved
<ul style="list-style-type: none">• Hold 2 Project Advisory Committee Meetings	Achieved
<ul style="list-style-type: none">• Hold 3 Project Management Review Meetings	Achieved
<ul style="list-style-type: none">• Achieve training targets of 400 participants.	591 Achieved
<ul style="list-style-type: none">• Hold 1 project evaluation event for Local Course Directors	Achieved
<ul style="list-style-type: none">• Produce end of year Progress Report for funders.	Achieved
Milestones Year 3 (1 July 2018 – 30 June 2019)	
<ul style="list-style-type: none">• Run 5 Access to Crofting Tool Kit events.	3 Achieved
<ul style="list-style-type: none">• Run 25 Bitesize Skills Events (only 14 required this year)	9 Achieved
<ul style="list-style-type: none">• Run 4 Bitesize Skills (Woodland Trust) Events	4 Scheduled for May 19
<ul style="list-style-type: none">• Run 6 Township Training Events	3 Achieved
<ul style="list-style-type: none">• Hold 2 Project Advisory Committee Meetings	Achieved
<ul style="list-style-type: none">• Hold 3 Project Management Review Meetings	2 Achieved
<ul style="list-style-type: none">• Achieve training targets of 400 participants.	179 Achieved
<ul style="list-style-type: none">• Hold 1 project evaluation event for Local Course Directors	Due in February 2019
<ul style="list-style-type: none">• Produce end of year Progress Report for funders.	Due in June 2019

KTIF Ref No – KTIF/010/2016

Project title: Farming with Nature (delivered by Soil Association Scotland)

Project description:

Farming with Nature (FWN) promotes innovative 'win-win' land management practices, which deliver integrated benefits for farming businesses and biodiversity. It is currently the only knowledge transfer programme of its kind in Scotland dedicated to this activity. FWN is delivered in partnership with RSPB Scotland and Scottish Water, and is supported by a wide range of organisations including NFU Scotland, Quality Meat Scotland, SNH, SEPA, SRUC, Scottish FWAG and various eNGOs. FWN's key objectives are to:

Encourage and enable more of Scotland's farmers to adopt nature-friendly farming and land management practices which are profitable and productive.

Protect ecosystem services essential for sustainable food production.

Integrate the restoration and conservation of habitats and wildlife (especially priority e.g. peatland and waders) within Scotland's farming landscapes.

FWN involves 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 environmentally-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. to reduce/remove need for pesticides.

Examples of key themes covered by FWN to date include:

Conservation grazing to benefit species-rich grassland and ewe management.

Integrating peatland restoration with livestock hill farming and crofting.

Using non-chemical strategies for controlling soft rush on pasture and creating habitat for rare breeding waders.

Highlighting 'win-win' situations on farms where AEC options management can benefit both wildlife and production.

Showing how to make Ecological Focus Areas work for farming and biodiversity.

Financial support awarded and spend to date: maximum KTIF grant of £160,470 with co-funding from RSPB Scotland and Scottish Water. KTIF spend at 31 December 2018 is £

Operational Group membership if applicable: N/A

Project start and end dates: 1 November 2016 – 31 October 2019.

Progress to date including milestones achieved:

Key performance indicators are to directly involve 600 farmers, crofters and land managers in FWN events and for 80% of those involved to implement new actions/change the way they farm/manage the land to benefit the environment and their business. To date, FWN has delivered 19 events held at locations across Scotland for 465 individual farmers, crofters and other land managers and is on track to meet the target of 600.

Through our own evaluation we have found that participating land managers give usefulness of information provided by FWN activities a high rating (93%), and 88% (questioned at the time of the event) have pledged to implement a new land management practice as a result of participating on FWN. We are currently carrying out a more in-depth evaluation of the programme to ascertain actual change in land management practices. Recent improvements to our evaluation techniques will reveal more detail about FWN's impact, but we can already see that 64% of those surveyed after six months have successfully implemented a management change on their farm with 23% making change across more than half of their land holding. 77% reported an increase in their knowledge and 38% in their skills and confidence.

Main benefits realised to date, including opportunities identified:

We have received positive feedback from key stakeholders including SNH through a member of staff who has participated in FWN events. '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.'

Challenges, issues and lessons learned:

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 (Stability and Simplicity) 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 them 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.

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 changes in land management such as peatland restoration. Consequently, we have been thinking about developing more participatory and regional activities which encourage repeat attendance, networking, peer-learning, information sharing; and build the confidence and skills to aid decision-

making, and critically facilitate change to operate in a new funding and support environment.

Communications and engagement:

Methods used to keep event participants engaged and to disseminate the results of FWN to the wider farming community, stakeholders and other interested parties include; on-line resources; social media; case studies; post-event reports; and editorial in journals e.g. The Heather Trust's annual report. Methods to target and attract participants include: our 'What's On' e-newsletter; adverts in local and farming press; NFUS text alert service; websites including Scottish Rural Network; and word-of-mouth recommendation.

Next steps:

FWN objectives reflect the current direction of Scottish Government policies for farming and the environment, providing a great opportunity to engage and support farmers to deliver practical solutions that effectively support policy change. We want to maintain the quality and momentum of FWN, and build its profile as a centre of excellence recognised by farmers across Scotland as a go-to source of information and inspiration on how farm businesses can work hand in hand with nature. The current KTIF funding for Farming with Nature finishes on 31 October 2019. At present, the KTIF is not accepting any applications for knowledge transfer projects (our request for an extension was not accepted) and we are actively seeking funding to enable its continuation to at least 41 March 2020.

KTIF Ref No – KTIF/010/2016

Project title: Farming with Nature (delivered by Soil Association Scotland)

Project description:

Farming with Nature (FWN) promotes innovative 'win-win' land management practices, which deliver integrated benefits for farming businesses and biodiversity. It is currently the only knowledge transfer programme of its kind in Scotland dedicated to this activity. FWN is delivered in partnership with RSPB Scotland and Scottish Water, and is supported by a wide range of organisations including NFU Scotland, Quality Meat Scotland, SNH, SEPA, SRUC, Scottish FWAG and various eNGOs. FWN's key objectives are to:

Encourage and enable more of Scotland's farmers to adopt nature-friendly farming and land management practices which are profitable and productive.

Protect ecosystem services essential for sustainable food production.

Integrate the restoration and conservation of habitats and wildlife (especially priority e.g. peatland and waders) within Scotland's farming landscapes.

FWN involves 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 environmentally-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. to reduce/remove need for pesticides.

Examples of key themes covered by FWN to date include:

Conservation grazing to benefit species-rich grassland and ewe management.

Integrating peatland restoration with livestock hill farming and crofting.

Using non-chemical strategies for controlling soft rush on pasture and creating habitat for rare breeding waders.

Highlighting 'win-win' situations on farms where AEC options management can benefit both wildlife and production.

Showing how to make Ecological Focus Areas work for farming and biodiversity.

Financial support awarded and spend to date: maximum KTIF grant of £160,470 with co-funding from RSPB Scotland and Scottish Water. KTIF spend at 31 December 2018 is £

Operational Group membership if applicable: N/A

Project start and end dates: 1 November 2016 – 31 October 2019.

Progress to date including milestones achieved:

Key performance indicators are to directly involve 600 farmers, crofters and land managers in FWN events and for 80% of those involved to implement new actions/change the way they farm/manage the land to benefit the environment and their business. To date, FWN has delivered 19 events held at locations across Scotland for 465 individual farmers, crofters and other land managers and is on track to meet the target of 600.

Through our own evaluation we have found that participating land managers give usefulness of information provided by FWN activities a high rating (93%), and 88% (questioned at the time of the event) have pledged to implement a new land management practice as a result of participating on FWN. We are currently carrying out a more in-depth evaluation of the programme to ascertain actual change in land management practices. Recent improvements to our evaluation techniques will reveal more detail about FWN's impact, but we can already see that 64% of those surveyed after six months have successfully implemented a management change on their farm with 23% making change across more than half of their land holding. 77% reported an increase in their knowledge and 38% in their skills and confidence.

Main benefits realised to date, including opportunities identified:

We have received positive feedback from key stakeholders including SNH through a member of staff who has participated in FWN events. '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.'

Challenges, issues and lessons learned:

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 (Stability and Simplicity) 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 them 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.

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 changes in land management such as peatland restoration. Consequently, we have been thinking about developing more participatory and regional activities which encourage repeat attendance, networking, peer-learning, information sharing; and build the confidence and skills to aid decision-

making, and critically facilitate change to operate in a new funding and support environment.

Communications and engagement:

Methods used to keep event participants engaged and to disseminate the results of FWN to the wider farming community, stakeholders and other interested parties include; on-line resources; social media; case studies; post-event reports; and editorial in journals e.g. The Heather Trust's annual report. Methods to target and attract participants include: our 'What's On' e-newsletter; adverts in local and farming press; NFUS text alert service; websites including Scottish Rural Network; and word-of-mouth recommendation.

Next steps:

FWN objectives reflect the current direction of Scottish Government policies for farming and the environment, providing a great opportunity to engage and support farmers to deliver practical solutions that effectively support policy change. We want to maintain the quality and momentum of FWN, and build its profile as a centre of excellence recognised by farmers across Scotland as a go-to source of information and inspiration on how farm businesses can work hand in hand with nature. The current KTIF funding for Farming with Nature finishes on 31 October 2019. At present, the KTIF is not accepting any applications for knowledge transfer projects (our request for an extension was not accepted) and we are actively seeking funding to enable its continuation to at least 41 March 2020.

KTIF Ref No – KTIF/011/2016

Project title: Farming for the Future (delivered by Soil Association Scotland)

Project description:

Farming for the Future (FFF) is a knowledge transfer and innovation programme for farmers, crofters and other land managers across Scotland who are interested in productive and profitable farming and land use, using low-input and low carbon approaches to build financial and environmental resilience. A key feature of the Soil Association Scotland programme is to be responsive to industry needs and flexible in order to respond to new policies and priorities, in particular, *Stability and Simplicity* proposals for a rural funding transition period and Scotland's Climate Change Plan actions for agriculture. FFS's objectives are to:

Build knowledge and skills for productive, profitable and sustainable farming and land use.

Encourage, develop and support farmer-led innovation.

Increase production and profitability by maximising the use of internal inputs and ecological processes.

Improve efficiency to make financial savings and minimise greenhouse gas emissions arising from on-farm practices.

Raise awareness of the opportunities that technology and smart farming presents.

FFF covers the broad themes of soil, nutrient and grassland management, animal health and productivity, and woodland creation and management with an emphasis on promoting new best practice. FFF is also promoting other evidence-based management systems which are newer to Scotland including agroforestry and mob (type of conservation) grazing.

FFF involves the delivery of knowledge transfer, innovation and skills development events (farm-based 'walk-and-talk' events, interactive workshops and field labs) and related information and dissemination activities. A new feature is to deliver knowledge transfer in different formats: physical attendance at event; real-time through webinars; downloads from our website (including films for broadcast on websites and at external conferences and events) and links in e-newsletters and messages to publicity groups.

Financial support awarded and spend to date:

Maximum KTIF grant of £259,890 with co-funding provided by *Quality Meat Scotland, Forestry Commission Scotland, Innovative Farmers*. *KTIF spend as at 31 December 2018 was just over £41,000. We are projected to be on budget and claim the full KTIF grant awarded.*

Operational Group membership if applicable: N/A

Project start and end dates: 1 September 2018 to 31 December 2020

Progress to date including milestones achieved:

Key performance indicators are to directly engage 700 farmers, crofters and land managers in FFF activities and for 80% of those involved to implement new actions and change the way they farm/manage the land to benefit their business and the environment. To date, FFF has delivered four events for 112 individual farmers, crofters and other land managers held at locations across Scotland. Our forthcoming [programme](#) for February 2018 includes:

Five 'Getting Grass Greener' events to be held in Inverness, Inverurie, Perth, Lockerbie and Melrose aimed at livestock farmers to get the best out of the grazing season

'How to Plant Trees on your Farm' event at Bonar Bridge, Sutherland

A new Field Lab looking at conservation grazing

Based on attendance to date and bookings for forthcoming February 2018 events, FFF is currently on target to meet/exceed its participation targets. We are refining our evaluation system to collate, extract and interpret quantitative and qualitative data to build a larger evidence-base and inform and improve our activities and methods of delivery to effect change.

Main benefits realised to date, including opportunities identified:

Moving to a new funding and support system as a result of the UK leaving the EU presents both huge challenges and opportunities. FFF activities are highlighting the opportunities by encouraging farmers to think differently about how they manage their land and business, and help prepare for likely future direction of travel proposed in The Scottish Government's *Stability and Simplicity* and NFU Scotland's *Steps to Change*. Scotland's Climate Change Plan (2018-2032) also sets out a suite of new priorities and policies for agriculture and related land use sector to reduce its greenhouse gas emissions.

Integrating farming with other forms of productive and sustainable land use, diversifying farm businesses and income, protecting and enhancing the environment, being innovative and making actions practical to implement are key objectives advocated by the Scottish Government and NFU Scotland. FFF reflects all these priorities.

Challenges, issues and lessons learned:

Discussed above.

Communications and engagement:

FFF is using a variety of methods to target and attract participants including: Soil Association Scotland 'What's On' e-newsletter; Twitter and Facebook; adverts and editorial in local and farming press; NFUS text alert service; various websites including Scottish Rural Network; word-of-mouth recommendation; and flyers to local marts and vets. Communication activities currently under development include case studies, film/s, refreshed resource pages on our website.

We are communicating our wider 'Farming for the Future' work through our impact and what-we-do report which is available on our [website](#).

Next steps:

We will work with our funding partners, Scotland's land managers and wide range of organisations and individuals to deliver Farming for the Future. Our aspiration is to exceed our targets and deliver real impact – more farmers adopting low input and low carbon management practices and putting more of their land under sustainable management.

KTIF Ref No – KTIF/012/2016

Project Title: Skills for farmer co-operation and Co-ops (delivered by SAOS Ltd)

Project description:

The overall aim is to build a strong knowledge and skills base amongst Scottish farmers and farm co-ops to underpin the development of farmer co-operation and supply chain collaboration in Scotland. This in turn will contribute to a strong, profitable, innovative and market-oriented agricultural industry.

A variety of learning and knowledge transfer events are delivered to share knowledge, develop skills and best practice as a route to support farmers to co-operate and for farm co-ops to improve their performance for farmer member benefit.

Financial support awarded and spend to date:

Max grant of £295,785, claimed £145,863.40 (to 31 Oct 2018). Grant rate 75%

Operational Group membership if applicable: N/A

Project start and end dates: 1 Nov 2016 - 31 Oct 2020. 4-years

Progress to date including milestones achieved:

The project has successfully completed its second year, the half-way point of the four-year project. The participation rates on the main activities are:

Director & Coop staff Development (13 workshops) - 154 participants

Forums (5) - 52 participants ongoing

C-MiP workshop (2) - 20 participants

Annual Co-op Conference (2 conferences) - 215 farmers & co-op staff

Master Seminars (4 events) - 105 farmer directors and co-op staff

Co-op 'Know How' Newsletters - 800 farmer directors and co-ops; 9,500 farmers and crofters (quarterly)

'Next Generation' group - 10 participants ongoing

SRUC students – presentations on 3 campuses every year, 100 students.

Main benefits realised to date, including opportunities identified:

The project is all about capacity building (developing human capital), providing farmers, directors, co-op managers and staff with the skills and knowledge to improve their understanding of cooperation and how to make it more effective. A key aim is to improve the confidence of the individual, to inspire them to take action. A measure of success is implementation, individuals doing something.

The demand from a range of individuals /groups is more than expected. We are delivering additional activities beyond the planned programme through our own resources.

Challenges, issues and lessons learned:

This is a comprehensive (8 activities) long-term project (4-years) so having the flexibility to amend the activities is invaluable to ensure the outcomes are as planned and we meet developing needs. For example, we have delivered a number of additional training events: e.g. Complying with GDPR regulations (25 participants); Sales and persuasion skills (19 participants); 'The art of being a successful chairperson' (19 participants).

Recruitment to some of the farmer-directors workshop has been a challenge. Farmers are increasingly time constrained so getting time to get off farm can be an issue for some. Our promotional activities could be improved. Generic promotion has limited success, individual invitations are much more effective.

The cost of hiring venues and providing catering has increased significantly over the period. We are finding many hotels now require pre-payment prior to the event.

Need to say something about the 'Next Gen' groups and their challenges

We have moved on from simply thinking on the workshop /event as the sole focus of the training, to adopting a pre and post-workshop element of training. For example, prior to a training event we would run a pre-workshop questionnaire to help individuals think about their needs and issues, with the collected response used at the workshop.

Forums (community of practice groups) have been particularly successful and are an extremely effective way to develop individual capability. Experience shows it is really effective for encouraging individuals to adopt best practice / try things through peer learning. There is also more commitment from the group as they take ownership of the forum, identifying topics, venues, and speakers.

The independent Management Board established to provide an oversight of the project has been very successfully. There are 5 members of the board who meet every 6-months. Their independent advice and support has been invaluable.

Communications and engagement:

We have successfully adopted video technology to extend the learning beyond those present at an event. For example, Pat Machray was a guest speaker sharing his experience of being a chairman. We videoed his presentation, put it online and it has now been viewed over 100 times.

As identified earlier, promotion and recruitment could be improved.

Next steps:

Continue to deliver the programme whilst being flexible to emerging needs, striving to improve the quality of the learning experience and its effectiveness.

KTIF Ref No – KTIF/013/2016

Project title: Reducing Antimicrobial use in Scottish Dairy Farms (delivered by SRUC)

Project description:

In the dairy industry it is current practice to dry cows off and administer intra-mammary antibiotics to reduce the incidence of mammary infections during the dry period and in early lactation. Use of Selective Dry Cow Therapy (SDCT) could significantly reduce the prophylactic use of antibiotics, with cows receiving only a teat sealant at drying off. This practice is becoming more widespread and some supermarket contracts are now requiring farmers to practice SDCT.

The project aimed to set up groups of dairy farmers in Scotland who were keen to reduce their antibiotic usage through the practice of SDCT and monitor their herd performance data to determine the success of SDCT in relation to cows receiving antibiotics at drying off. Farmers have their cell count and mastitis data monitored to assess the impact of SDCT and ensure there is no detrimental effect on cow health and performance.

Ultimately the project aims to reduce the use of antibiotics in dairy farming, increase farmer engagement and build confidence in SDCT and fit in with retailer and government antibiotic use reduction strategies.

Financial support awarded and spend to date:

£171,880 was awarded for a three year period from 1st December 2016. The spend for year 1 was £31,811 which was significantly behind budget for reasons discussed in the year 1 report. Current spend to date at the end of December 2017 was £115,894, with just under £56,000 left to spend in the remaining 12 months. Increase in spend has been due to organising and delivering 3 discussion group meetings in both Aberdeenshire and Ayrshire in 2018 (which involved paying for first-class veterinary guest speakers) and more time spent on data collection and analysis and report writing for each farm to provide them with feedback on their data and progress with SDCT.

Operational Group membership if applicable:

The operational group consists of a number of personnel from the various project partners. The project partners alongside SAC Consulting are University of Edinburgh, animal health company Zoetis and milk processor Müller. A farmer representative is also involved (Laura Barron, Darrahill Farm in Aberdeenshire).

Project start and end dates:

This is a three year project which officially started on 1st December 2016 and will therefore be due for completion by 1st December 2019.

Progress to date including milestones achieved:

So far 4 discussion group meetings have been held in both Ayrshire and Aberdeenshire. Attendances at these meetings has improved since they were opened

up to all Müller suppliers in the area and not just farmers participating in the project. This has helped get the message out about the need to reduce antibiotic usage further. Also being able to tell more farmers that on many farms there is no detrimental effect of SDCT is encouraging to those currently not doing it.

In Aberdeenshire there are currently 8 farms are involved in the project, with one stopping dairying and another in, plus two more who are keen to join.

In Ayrshire, in the last 12 months 1 farm dropped out but another 3 farms were recruited, bringing the number up to 10 participants.

Numbers at the three discussion group meetings held in each area in year 2 are detailed in the table below:

Meeting	Topic	Farmers	Reps/Other	Vets	Total
1 Aberdeenshire	- Treatment of Mastitis	11	1	4	16
1 - Ayrshire	Treatment of Mastitis	4	3	1	8
2 Aberdeenshire	- Control of Environmental Mastitis	9	4	5	18
2 - Ayrshire	Control of Environmental Mastitis	19	6	3	28
3 Aberdeenshire	- Maximising Milking Efficiency	9	2	5	16*
3 - Ayrshire	Maximising Milking Efficiency	10	4	0	14

*Total does not include myself or guest speaker

Main benefits realised to date, including opportunities identified:

The main benefits to farmers being involved in the project so far have been:

Data analysis and feedback with how they are progressing with SDCT and comparing this to cows receiving antibiotics at drying off.

Access to expertise of guest speakers at discussion group meetings, as well as benefiting from hearing other farmers experiences with SDCT. These meetings provide excellent regular opportunities for knowledge exchange.

Free bacteriology testing of mastitic milk samples to identify the pathogens causing mastitis has helped discussions between farmers and vets on the best antibiotics to use to target effective treatment.

Free bulk milk tank sample testing to identify the main source of mastitis causing pathogens along with further advice from consultants and vets.

Reduction of antibiotic usage at drying off – this will satisfy the requirements for those who are part of Müller's Tesco Sustainable Dairy Group where it is now compulsory to practice SDCT on 10% of their herd.

Cost saving in the region of £8-£13/cow at drying off (depending on what dry cow antibiotic is used).

Research has shown that cows on SDCT are less likely to have mastitis in the following lactation caused by coliform bacteria.

Challenges, issues and lessons learned:

It remains a challenge achieving high numbers of farmers at discussion group meetings. Partly this is due to there being so many other meetings in the area organised by various groups. On farm meetings and good speakers, new to the area has helped boost recent attendances.

There is still some resistance to the uptake of SDCT in the industry. However, the general feel is that this is reducing as Müller (and other milk buyers) are more closely scrutinising antibiotic usage and either recommending, or making SDCT compulsory on a proportion of the herd.

SDCT is becoming more widespread in the industry and with many of the project farmers doing SDCT relatively successfully, this gives confidence that the practice can be implemented with little detrimental effect to cow health and herd performance. This message will be spread to other dairy farmers in Scotland at the end of the project through a conference and other routes.

Communications and engagement:

Every 6 months each farmer receives an update on how their herd is progressing with any areas of concern identified for further discussion with their own vet.

A project update with initial findings was published in the January 2018 issue of Milk Manager News, which is a Scottish Farm Advisory Service funded publication. Another article will be published in Milk Manager News in March 2019 with more detailed findings. This information is available to all dairy farmers and industry representatives through the Farm Advisory Service website.

Next steps:

The fifth discussion group meeting for Aberdeenshire and Ayrshire groups will be held in April 2019 and will be on the subject of Breeding for Mastitis Resistance and Somatic Cell Counts. The final group meeting will take place around August 2019 on Nutrition and Management of Dry Cows for enhancing immunity and reducing mastitis infections of dry period origin.

Data from each farm will continue to be collected and analysed up until mid-late summer, allowing time for final analyses and reporting of data before the project ends.

Towards the end of the year a conference will be held in central Scotland which will discuss the project findings and include key speakers in the area of SDCT and mastitis. This conference will be targeted at dairy farmers, vets and dairy industry representatives (i.e. from milk processors, animal health companies etc). The plan is to invite the participating farmers in the project to a tour round Müller's Bellshill processing plant which has recently undergone at £15million investment before attending the conference.

KTIF Ref No – KTIF/014/2016

Project title: Grass to Milk Organically (delivered by SOMP Ltd)

Project description:

This project aims to improve the profitability and resilience of producers of organic milk in Scotland. The group will use innovative techniques to work together in order to share learning and data they produce around the maximisation of grass use and improved husbandry techniques.

Financial support awarded and spend to date:

The total support awarded under the KTIF Innovation project is £ 61,440

£ 22,205.39 invoiced until 31st Sept 2018 (awaiting final paperwork to submit fourth claim July-Sept18).

£ 1368.37 currently pending until end of Dec 2018 (LIC).

Operational Group membership if applicable:

Allan Clark; Andrew Robinson; David & Tom Hamilton; Gavin & Jonny Lochhead; Ian Robinson; John & Graham Jamieson; Keith Martin; Sandy Bergius; Michael McCreath; Murray Brown; Ross Paton & Callum Wylie; Stewart Burt; William, Anne & Angus Willis; Robert & Sarah Jane Drummond

Project start and end dates: 1/3/17-1/12/19

Progress to date including milestones achieved:

12 members have a platometer;

7 members linked up on Agrinet (a couple are using other programmes);

4 on-farm meetings held

Year 2 Topics covered - 2018

The value of early spring grazing

Spring Rotation Planning

Tools for proactive decision making

Dealing with challenging climatic conditions – wet spring/dry summer!

Soil fertility – targeting the most limiting factor (expert speaker Sinclair Simpson)

Dry cow management at pasture

The main milestone achieved this year was to see the on-farm investment into grazing infrastructure – the importance of which was highlighted and demonstrated by visits in Yr 1. Also

2018 offered the opportunity for farmers to see all grazing extremes in a single year – a very wet slow spring through to summer dry/drought conditions in some cases in summer into autumn.

Main benefits realised to date, including opportunities identified:

Benefits:

The sharing of experiences in relation to grazing but also other aspects of dairy farming (both positive and negative experiences – farmers trust farmers!)

More members now make use of grazing technology regularly and have implemented grazing strategies to utilise more grass

More members now have improved grazing infrastructure and are in the position to extend the grazing season and grow/utilise more grass regardless of the conditions

One member spent £50,000 less on purchased feed in Yr 1

Between Yr 1 – 2 members have witnessed the best and the worse conditions for grazing based on climatic conditions. This will give them confidence in future years

Depending on the location of meetings nearby members are taking the opportunity to bring along their staff so the knowledge transfer is extending down through the management structures

Opportunities:

The long-term value of investing in grazing infrastructure – year on year return

The long-term value of understanding how to manage pasture to achieve higher growth and utilisation

Lower reliance on expensive bought in feed to create a more resilient farming business

Networking with like-minded farmers creates an excellent environment for engagement and knowledge transfer

Challenges, issues and lessons learned:

Challenges/issues:

Engagement with online resources seems low

Weather/ground conditions in early 2018 meant members with little/no grazing infrastructure were unable to implement their new grazing strategies

Variation in grass growth across the season has provided many learning opportunities in relation to surplus (late spring) and deficit (summer & autumn) management – even in year 2 some were not prepared or engaged enough make good decisions and reverted back to a traditional approach

Lessons learned:

I have been humbled to see the immense progress some members have made – particularly members who perhaps are not so forth-coming at meetings – once again it is great to see the discussion group ethic catering to all levels

Realisation of how difficult it is to manage pasture well without good grazing infrastructure in challenging weather conditions

Communications and engagement:

On-farm meetings

Auchencairn - Kirkcudbright (12 attendees) – affected by snow

Galashiels – Scottish Borders (21)

Dumfries – Dumfries & Galloway (22)

Netherburn - Lanarkshire (24)

Email communication group – 24 members

Txt communication group set up – 18 members

WhatsApp group set up – 14 members

Agrinet links set up – 7 members

Next steps:

Understand more about why engagement with online resources is low and attempt to rectify

Next on-farm meeting scheduled for Feb 26th – encourage members to come with information to complete Pasture/Crop eaten calculation along with other figures pertaining to the improvement in pasture management over Yrs 1 & 2

Plan the remainder of the meetings targeting some of the less engaged members if possible

KTIF Ref No – KTIF/015/2017

Project title: Benchmarking Carcase Quality in Scottish Pigs (delivered by Quality Pork Ltd)

Project description:

A new operational group was formed involving two farmers cooperatives, a farmer owned processing company, the UK division of Europe's largest pork processor and a Scottish technology company. It will be led by Quality Pork Ltd, the medium-sized company that owns Brechin abattoir and which is a company limited by guarantee owned by 53 Scottish farmers.

A Quality Project Manager will be employed to measure saleable meat yield, pH and other quality measures on every carcase from the summer of 2017. Various existing measurement tools will be tested out for their ease of use at the high line speed that Brechin abattoir operates at. Innovent Technology will develop their qBox database to enable the new quality measure to be included and reported. Routine carcase quality benchmarking will take place every quarter for SPP and Scotlean members.

This information will also be shared with QMS to feed into their existing knowledge transfer network, such as the Pig Monitor Farm, and also with Wholesome Pigs (Scotland) for integration into the "Innovative Use of Emerging Technologies to Improve Pig Production Efficiency" project (KTIF/007/2015).

In the later stages, other novel technologies will be tried out on site to judge their potential as the basis for a new method of grading and valuing Scottish pigs.

This project will focus producer attention on the performance of their end product in the eyes of both processors and consumers. Benchmarking will demonstrate what is possible and existing knowledge transfer and advisory networks will inform them of the on-farm actions that can improve quality. The ultimate aim is to improve the quality of Scottish Pork and provide genuine points of difference for the challenging post-Brexit marketplace.

Financial support awarded and spend to date:

£114,920 originally awarded; revised down to £94,930; approx. £40,000 spent but not claimed so far due to a complication arising from business registration.

Operational Group membership:

Quality Pork Ltd

Scottish Pig Producers Ltd

Tulip UK Ltd

Innovent Ltd

Quality Meat Scotland

Project start and end dates:

Progress to date including milestones achieved:

The project was significantly delayed due to a catastrophic fire at the QPL Brechin abattoir, the location for the project activity. This only re-opened in mid-November 2017. Despite the initial delay, the intention is to complete the project by the original date so the activity will be compressed into two and a half years. This revised plan was approved by Scottish Government in December 2017.

M1: Recruitment of Quality Project Manager (Achieved April 18)

Dr Patricia Rojas Bonzi, a veterinarian from Paraguay with experience of meat quality trials in Denmark and Hungary, started as the QPM in April 18.

M2: First yield and pH measurements taken (Achieved June 18)

Over a 10-week period from June, batches from at least three farms per week selected at random were measured for pH, temperature, drip loss and colour. These results have been cross-referenced with farm and abattoir data such as genetics housing type, travel distance and time in lairage. Advanced statistical techniques have been applied to identify significant differences. Future measurement periods will target specific batches to build the evidence base.

Remaining 3 milestones are on schedule.

Main benefits realised to date, including opportunities identified:

The project has demonstrated that all carcasses monitored fell within the acceptable range for the different parameters and therefore the quality of the output from Brechin abattoir can be considered good. The project has identified what equipment is required to undertake routine measurement of quality factors at Brechin abattoir and has pioneered drip loss assessment using trim samples rather than the usual whole tenderloin.

Challenges, issues and lessons learned:

The biggest challenge was the site for the project activity being out of action for four months. Contingency actions absorbed so much management attention from the project partners that the project received little attention between August and November. Even with hindsight, it is difficult to see how this could have been avoided. Sampling was also delayed by a month this July when the national CO₂ shortage affected the site.

Recruiting a new graduate to be the Project Manager proved to be more difficult than originally envisaged. Luckily Dr Bonzi has exceeded expectations and is proving both highly competent and motivated, so the original project outcomes remain achievable within the shorter time period.

Communications and engagement:

The project has not generated any outputs for dissemination. The project itself has been presented to industry and stakeholders at two Points of Difference meetings with a total of 30 attendees.

Next steps:

Start second round of carcass quality monitoring

Prepare first benchmarking reports for producers

Sort out business registration & admin issues so that claim can be submitted

KTIF Ref No – KTIF /016/2017

Project Title: Building Resilience into Scotland's Lamb Supply Chains (delivered by Farm Stock Ltd)

Project Description:

The project will seek, in a fully integrated supply chain from farmer to retailer (M&S), to develop on farm production protocols for the production of the ideal M&S carcass at different times of the year (May - July, August – December and January - April) thereby providing producers with production guidelines and benchmarks for different target markets.

It will also model and test mechanisms to influence producer behaviour in terms of both the supply pattern, which is out of synch with demand, and the proportion of out of spec carcasses which is currently far too high and represents a major and unnecessary cost to the supply chain.

Financial Support Awarded and Spend to Date:

The project began on 1st July 2017 and claims totalling £72,833.22 have been submitted for Year 1 and the first quarter of Year 2 ie from 1st July 2017 to 30th September 2018.

Operational Group Membership:

The Operational Group consists of 12 farmer producers (9 in the first year) representing different sheep management systems and geographical locations

Farm Stock (Scotland) Ltd as the marketing organisation and project leader Scotbeef as the abattoir

Marks & Spencer as the retailer

SRUC – managing farm trial work plus investigation of pricing systems, supply chain integration and better data management

SAOS – as advisor on markets and supply chain issues

Project Start and End Dates: 1 July 2017 to 31 May 2020

Progress to Date Including Milestones Achieved:

Initially nine farmers contributed lambs to the project in year 1 with a further three more added taking the number of participating farmers to 12 in year 2

In Year 1: nine farms sent 578 lambs for sampling at Scotbeef for pH and cool curve monitoring; a subset of 106 were taste tested

In Year 2: 508 lambs have been pH monitored to date (24/01/2019) of which 84 have been taste tested.

In Year 1: Health, genetic and feeding data collected from the nine initial farmers

Lamb grades for Year 1 were analysed and reported back to the operational board in July 2018

Two farms were modelled using FARMAX software which models feed supply and demand, to review system efficiency, quantify key performance indicators and plan lamb supply through the year

Knowledge transfer material used to describe how to practically monitor lamb growth rates shared with farmers in both video and written format

Review of chain data completed and options laid out for further investigation and, where agreed, implementation

Year 1 report shared with farmers and external stakeholders to describe preliminary project findings

Main Benefits Realised to Date, Including Opportunities Identified:

Preliminary indications on breeding and feeding factors that influence meat quality (will seek to confirm key factors in Year 2)

Better understanding of retailer demands and meat quality parameters amongst all project partners and farmers

Consultant discussions with farmers to help improve system sustainability in terms of efficiency, social responsibility and product quality, e.g. antibiotics usage, lamb performance, ewe nutrition, grassland management

Identification of weaknesses in data management and options for correction identified for action

Challenges, Issues and Lessons Learned:

Initially we hoped to follow the parentage of the lambs through to slaughter but not all farmers are able to track dam and sire of the lambs. A further difficulty is managing the EID tag reading at the abattoir, and where there is a tag misread on the production line, the rest of the line cannot be read. As a compromise, we collect as much data on the breeds as we can and have potential to monitor parentage on a subset of farms.

Scotbeef have improved their sampling methods and have complemented the taste testing panel with a mechanical tenderness measurement.

2018 saw substantial lamb and ewe loss in the spring due to weather, particularly affecting Blackface producers. The addition of three extra farmers that supply later lamb will help offset this.

A lot of data is available on kill sheets. However, its value is not being realised thanks, in part, to the poor flow of this data between the processor, farmer and FSS. Work is in hand to turn this data into useful information.

Communications and Engagement:

Participating farmers are visited regularly to collect the data and discuss the results

All Year 1 farmers have received a full report documenting their meat quality results

A progress report was put on the FSS website in October and also made available to Scotbeef and M&S for circulation.

A video has been produced to encourage farmers to monitor lamb growth rates.

Next Steps:

One of the main focuses going forward will be to explore the options for manipulating lamb availability to better match consumer demand. Meanwhile, we aim to get another 700 lambs pH tested and 140 taste tested over the next three months providing a good insight into late season lamb eating quality.

Year 3 data collection will commence in June with the first of the new season lamb coming through. We are continuing to gather farm system data to aid the development of the production blueprints.

KTIF Ref No – KTIF/017/2017

Project title: The Healthy 'BEES' Project 2017-2022 (delivered by Moray Beekeepers Association)

Project description:

Development and delivery of 24 beekeeping courses

Financial support awarded and spend to date:

£52,740-00, £19862.24

Operational Group membership if applicable: N/A

Project start and end dates:

1/12/17 to 30/11/2020

Progress to date including milestones achieved:

All 8 courses for 2018 have now been completed and 96 students have attended them.

Main benefits realised to date, including opportunities identified:

The eighth course, 'The Move from Hobbyist to Bee Farmer' had a full complement of 12 students. The student feedback was again excellent!

Challenges, issues and lessons learned:

Each course will be reviewed and student feedback taken on board with a view to improving future courses.

Communications and engagement:

The Scottish Beekeepers Association (SBA) have given us free advertising on a monthly basis in their magazine which goes out to c1500 members.

'The Beekeepers' Quarterly' magazine (out next month and circulated throughout the world) will have a report on the Healthy 'BEES' Project.

The courses are advertised on the MBA website and Facebook pages and there are now 836 likes and 850 follows on the Facebook page.

Next steps:

Courses planned for 2019 are now advertised. The first course in April is full and the others are filling up.

KTIF Ref No – KTIF/018/2017

Project title: Foresight Farms (delivered by Scottish Agronomy)

Project description: Foresight Farm is a benchmarking project, focus on identifying quality in farm data holdings to demonstrate the economic benefits of using data to drive business decisions. The project will create two supported and facilitated farmer groups to investigate and benchmark how farm data across several Scottish farm businesses are collected, analysed and presented and how the results are used to improve profitable and sustainable business decisions.

Project Management: Lingsay Wong (Project Manager), Urban Foresight

Project Lead: Eric Anderson, Scottish Agronomy

Financial support awarded: £95,880

Projected Spend Q1 (Feb/Mar 2019): £17,575.00

% of Milestone and Tasks Completion: 14 %

Operational Group membership: Scottish Agronomy, Urban Foresight, EQ Accountants, Scottish Agricultural Organisation Society (SAOS), Jane Craigie Marketing, 4front Farming Co. Limited, Arable Ventures Ltd., Jas D Reid & Partners, P Chapman & Co., J. C. Bell Ltd. & Fairfield Farms.

Project start and end dates: 1st of November 2018 to 30th November 2019

Project Benefits & Opportunities: The pilot project is unique in its sense that it focuses on data for decision making (labour, purchases and machinery use) on farm fixed costs in arable farming where these account for over 50% of the total cost of combinable crop production. At the end of the projects, the Operational Group of farming businesses would be able to develop key performance indicators that will result in increased profitability at farm level. The factors affecting profitability will be highlighted through the data collected and analysed.

Challenges/Issues and Lessons learned: As the Operational Group consists of 10 members from different part of Scotland, it could be difficult for everyone to gather together to discuss project details. To mitigate this, members have been very cooperatives in using online and telephone to ensure information are communicated. We are also in the midst of organising a cloud-sharing platform where members can access project information.

Communications and engagement: Jane Craigie Marketing, led by Susannah Pate in this project, is part of the Operational Group. She is in the midst of creating a marketing strategy to disseminate and promote the project to the wider farming business. More progress will be reported on the next Project Progress Summary.

Progress to date and next step:

Dates	Title	Venue	Status
20 th November 2018	Project initiation meeting	EQ Accountants, Forfar	Completed
20 th November 2018	First Operational Group Meeting	EQ Accountants, Forfar	Completed
8 th February 2019	Milestone: Preparation and signing of Memorandum of Understanding (MoU) and Non-Disclosure Agreement (NDA)		Completed
22 nd February 2019	Second Operational Group Meeting and First Business Group Meeting (North)	EQ Accountants, Forfar	Scheduled
25 th February 2019	First Business Group Meeting (South)	SAOS, Rural Centre, Islington	Scheduled
March/April 2019	Third Operational Group Meeting 2 (Software and benchmarking training)	TBC	TBC
April 2019	Second Business Group Meetings Data quality, ownership, security and value	TBC	TBC
May/June 2019	Data and finance skills and training with South Farm Demo	TBC	TBC
July 2019	Lean business visit	TBC	TBC
August/ September 2019	Future planning for profit with Mid-Scotland Farm Demo	TBC	TBC
October 2019	Final Operational Group meeting	TBC	TBC
November 2019	Project reporting, case studies and conclusion		By 30 th of November 2019

KTIF Ref No – KTIF/019/2018

Project title: Fast Breeders (delivered by SRUC)

Project description: The key problem that this project will address is the inherently slow rate of genetic improvement in dairy cattle on the female side.

Position – a group of three farmers is seeking to take an innovative and collaborative approach to improving output of their dairy herds through genetic selection and advanced reproductive techniques. The process of genetic improvement in dairy cattle is undertaken on the basis of selecting the most highly rated bulls to cross with the most productive cows in any given herd. Bull selection is influenced by the traits that are deemed to be the most desirable for a particular management system and location. Thereafter the most promising heifer calves are selected to replace cows already in the herd. The three farmers concerned all manage low input spring block calving herds. In a spring calving herd, it is critical to maintain a tight calving pattern so it is typical to first artificially inseminate (AI) the cows using specially selected bulls and then to sweep up the remaining cows which have not conceived with a live beef bull. Typical rates of successful AI conception run at 65%. It is the female calves of the 'AI-ed' cows (around half of the 65%) which are used to produce replacement heifers. Due to calf mortality and morbidity this effectively means most of the female calves are used as replacements and the opportunity for genetic selection of females is low.

Financial support awarded by PAC in November 2018 (subject to conditions - now met):

Grant award - £99,788.92 - project commences 1st April 2019

KTIF Ref No – KTIF/020/2018

Project title: East West Grazing (delivered by SAOS Ltd)

Project description: The project provides innovation as although cattle moving from West to East for wintering is not uncommon, it tends to be to indoor units on a “bed and breakfast” basis. This project seeks to test a low cost, low carbon system with less reliance on cereals based diets and greater utilization of grazing ground both in the summer and winter. The project will also seek to put a financial, environmental and social cost against these movements to ascertain the true value of the collaboration.

The project will also involve individuals forming relationships of trust and mutual benefit proving the principle of farm scale and semi-formal co-operation.

The final aim is to provide a roadmap for greater numbers of livestock farmers to co-operate to create an efficient and profitable sector and ensure that livestock production remains feasible in disadvantaged areas.

Financial support awarded by PAC in December 2018 (subject to conditions - now met):

Grant award - £36,360 - project commences February 2019

KTIF Ref No – KTIF/021/2018

Project title: Practical, environmental and financial feasibility of using woodchip bedding for livestock in the West of Scotland. (delivered by SAOS Ltd)

Project description: Project set up to look at the practice of using wood chips, wood fines and/or sawdust as animal bedding. It will define the type of wood chips and fines being used in Scottish farming at present and will summarise the risks and benefits of using the main types. Practical experimental trials will then be conducted on four farms located throughout the West of Scotland. The physical and chemical properties of the wood products used will be defined, and the impact of the resultant woodchip/dung mixtures on soils will be quantified and evaluated with a view to determining the future value of woodchip and/or sawdust products for use as animal bedding.

Financial support awarded by PAC in December 2018 (subject to conditions - now met):

Grant award - £35,482- project commences February 2019

**Scottish Government
Agriculture Policy Division
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