KTIF SG Final Report

Contents:

1. PROJECT TITLE/APPLICANT

1.1 Title

Monitor Farm Scotland Programme

1.2 Applicant

Quality Meat Scotland is the public body responsible for promoting the PGI labelled Scotch Beef and Scotch Lamb brands in the UK and abroad and promoting Scottish pork products under the Specially Selected Pork logo.

The quality assurance schemes run by QMS cover more than 90% of livestock farmed for red meat in Scotland. They offer consumers in the UK and overseas the legal guarantee that the meat they buy has come from animals that have spent their whole lives being raised to some of the world's strictest welfare standards.

Scotland's beef, lamb and pork producers make an important contribution to the country's economic, social and environmental sustainability, contributing over £2 billion to the annual GDP of Scotland and supporting around 50,000 jobs (many in fragile rural areas) in the farming, agricultural supply and processing sectors.

QMS also helps the Scottish red meat sector improve its sustainability, efficiency and profitability and maximise its contribution to Scotland's economy through facilitating knowledge exchange programmes as well as helping develop more integrated communications within, and between different sectors of the industry.

2. EXECUTIVE SUMMARY

2.1

The Monitor Farm Scotland was a joint project by Quality Meat Scotland and the Agriculture & Horticulture Development Board. The programme established nine innovative Monitor Farms, across Scotland (Highlands & Islands; Lowlands and Eastern regions) targeted at farm businesses typical to those areas.

The 2016-2020 programme is the first project where two sector specialist bodies come together to tackle issues facing farmers and landowners at a whole farm level. Every change to an enterprise at farm level has an impact on other enterprises within the business - that impact had been largely overlooked by previous MF projects, diluting the effect of the project in improving farm business profitability. In addition, this programme explores and critically evaluates a range of social, community, and

environmental factors to a degree that has been overlooked by previous rounds of the monitor farm programme as detailed in Sections 9 and 10.

This whole farm approach, whilst still maintaining sector specialisms, facilitated real in-roads in to changing farm business management practices, resulting in improving agricultural efficiency; environmental management and mitigating climate change. This programme had been a living example of how the Monitor Farm Scotland initiative can evolve to meet the demands of the industry and drive industry development.

Each Monitor Farm was run for three complete livestock cycles, or cropping years, holding 18 facilitated meetings across the period and was linked between meetings through social media, traditional routes and other emerging media platforms.

The use of newly created Business Groups cemented a greater range of farmers being involved in the project. Whereas the Community Groups traditionally catered for the 'average-plus' farmer (top 60%, excluding the top 15%) the creation of Business Groups provided a sufficiently challenging business environment to attract the top 15%. The output from these high performing and aspirational farmers was harnessed and shared with the Community Group creating true and effective peer-to-peer learning.

The structure of this MF programme has been its most notable success story, developing collaborative, collective community groups that embrace sharing and encourage communication with each other and the wider industry. Data from the participants upon review of the project found that 68% of farmers that responded had made positive improvements to livestock health as a result of their involvement in the programme, Similar results were found in Grassland management (72%) and Soil Management (68%). The same findings demonstrated that over 90% of those that attended monitor farm meetings and events thought it was a good use of their time, with most respondents stating that attending the meetings had made their own businesses more resilient. Full details of the final survey are shown in Annex A.

One of the most notable outcomes from the programme is that in every area where there was a monitor farm, people asked, believed the local farming community had developed closer links as a result.

3. PROJECT DESCRIPTION

3.1

In 2016, nine farms from across Scotland signed up to the initiative, which was funded by £1.25 million from the Knowledge Transfer and Innovation Fund, a part of the 2014-2020 Scottish Rural Development Fund, funded by both the Scottish Government and European Union. The project was run jointly by Quality Meat Scotland (QMS) and the Agricultural and Horticultural Development Board (AHDB).

The farms were selected to reflect the diversity in farming systems and practices across Scotland and are predominantly beef, sheep and arable farms. The aim was to help improve the profitability, productivity and sustainability of the different farm businesses through practical demonstrations, the sharing of best practice and the discussion of current issues facing farming in Scotland.

After three years of being involved in the programme, each of the nine businesses has embraced the support of the monitor farm network wholeheartedly, making numerous changes to farm management, which have ultimately made them more environmentally sustainable, as well as more profitable and resilient.

Central to the entire initiative is the support of, and communication with the whole farming industry. Through regular farm meetings with industry experts and a passionate group of local farmers, knowledge and experiences have been shared. The programme is, and will always be farmer-focused, and every individual monitor farmer has been encouraged to steer the meetings in the direction they would like, supported by input from the MF network.

Each of the nine farms had their own dedicated Management Team and an associated Business Group that worked to find solutions and best practice. They then shared their findings, both with the wider Community Groups and more generally, through various media channels, including a dedicated website.

Facilitators were also appointed to each monitor farmer to run the meetings and show how the use of accurate baseline and benchmarking information could help to improve the profitability of the monitor farm and other farm businesses in the area.

Gathering data and basing decisions on numbers and evidence has been at the forefront of this initiative, supported by AHDB's Farmbench online benchmarking system. This has highlighted areas that could be improved within individual farm businesses and focused attention on those areas which were underperforming. For some, this has resulted in a complete change in business direction. However, for most of the monitor farmers, making improvements to overall business efficiencies has been about adopting numerous small changes that add up to a more significant difference.

All these actions have helped improve business efficiencies, which in turn has helped reduce the negative environmental impact of the business. Environmental management and mitigating the effects of climate change has been a central theme of the initiative, in order to protect farmland habitats, every farm business carried out an Integrated Land Management Plan (ILMP) to show how the business worked to improve the habitats on the farm. Overall, all the businesses have made steps to reduce their Greenhouse Gas Emissions through positive action based on advice and informed by their carbon audits

With farming often an isolating and lonely profession, one of the most significant effects of the initiative has been bringing farming communities together and developing closer lines of communication. Meeting regularly, sharing ideas, and offering feedback has helped forge new friendships and foster innovative ideas and approaches through collaboration, build confidence among businesses and encouraged knowledge sharing. There have been many 'off-shoots' from the programme, including group trips to industry events and farm visits, all coordinated by the farming groups developed through the course of the MF programme.

4. FINANCE

4.1 Sum awarded

KTIF Contribution: £1,249,340

4.2 Detail of spend

KTIF Spend: £1,199,110.10 (inc. final claim).

4.3 Underspend

Underspend: £50,229.90

5. PROJECT AIMS/OBJECTIVES

5.1

The then Cabinet Secretary, Richard Lochhead MSP stated in 2014 that, 'Monitor farms are undoubtedly a great way of trying out new farming technologies and techniques and promoting best practice across rural Scotland'. These sentiments have since been emphasised by current Cabinet Secretary Fergus Ewing MSP.

Research was recently commissioned to evaluate this style of Knowledge Exchange project (Watson 2014). The report found most monitor farmers described their involvement in a Monitor Farm project to be of significant value to their own businesses, with 93% stating their participation helped improve productivity. It also revealed the value to the local farmers who regularly attend monitor farm meetings – known as the "Community Group". 95% of community group members said monitor farms were an effective forum for exchanging knowledge and almost 60% reported that monitor farm projects led to improvements in the financial performance of their own farm businesses.

This was further illustrated by participants who undertook video interviews at the closing meetings of recent monitor farm groups, and at meetings mid-way through the current monitor farm project.

It has been stated previously that a transformational change is required in farm business management to ensure businesses become, and remain, resilient. To make the required change to improve production efficiency, enhance the environment and tackle climate change, farm business managers need knowledge, and delivered in a manner which allows them to interpret it in a way in which they can then apply it to their own business. The traditional monitor farm model was an effective vehicle for KE, but there was a gap in linking all the elements together at a whole farm level, which is necessary to deliver these key objectives. This project filled that gap, and comprehensively supported all six EU Rural Development policy priorities:

- Priority 1: Fostering knowledge transfer and innovation in agriculture, forestry and rural areas
- Priority 2: Enhancing farm viability and competitiveness of all types of agriculture in all regions and promoting innovative farm technologies and the sustainable management of forests
- Priority 3: Promoting food chain organisation, including processing and marketing of agricultural products, animal welfare and risk management in agriculture

- Priority 4: Restoring, preserving and enhancing ecosystems related to agriculture and forestry
- Priority 5: Promoting resource efficiency and supporting the shift towards a low carbon and climate resilient economy in agriculture, food and forestry sectors
- Priority 6: Promoting social inclusion, poverty reduction and economic development in rural areas

The aims of this project were achieved by putting in place a consistent support and guidance framework in the form of community and business groups associated with each monitor farm. Every monitor farm was guided by the aims and objectives set out by the community groups and the aim of the monitor farmers. Because of the diversity in business size, type, location, and composition every business had tailored individual goals as to what they wanted to achieve from the programme. Broadly, however, every monitor farm worked to support the EU Rural Development policy priorities.

Priority 1: Knowledge Transfer and Innovation

Effective knowledge transfer and innovation was the basis for this project. Through converting KT to Knowledge Exchange, the project encouraged innovation, the uptake of new research through best practice and the personal development of the farm business manager(s), resulting in better informed decisions being made at farm level.

Priority 2: Farm Viability and Competitiveness

Identifying, evaluating and implementing Best Practice have enhanced performance, this priority formed the underlying aim of the Monitor Farm Programme. The introduction of whole farm benchmarking allowed businesses to track performance and encouraged competitiveness within and across farms.

In addition to this, a central focus of the programme was the drive to create and develop economically, environmentally, and socially sustainable rural businesses. This was a central theme within every business group, community group, and open meeting.

Priority 3: Food Chain Organisation and Risk Management

Promoting risk management in agriculture – the over-riding objective of this project was to create resilient farm businesses for the future. Risk management is an integral tool in creating a resilient business. Through business groups costing out projects, which could then be assessed for both financial and social drawbacks and benefits monitor farms were able to identify risk and put in place management strategies.

Priority 4: Restoring, Preserving and Enhancing Ecosystems

Restoring, preserving and enhancing ecosystems had not been given prominent enough focus in previous monitor farm projects – largely due to most of the farmers' perception of the relevance to their business. An underlying thread through this project has been the need to change the mind-set of the farmer to permit the creation of farm business resilience. Protecting and enhancing the environment is a crucial factor in building that resilience.

Although every farm is different and will have unique habitats, in general there were opportunities to integrate farming and wildlife. Some examples of where this project has helped is in developing and enhancing habitats for some of Scotland's key species, including:

- Farmland birds - yellow hammer, skylark, reed bunting and other finches and buntings
- Pollinators – bumble bees, hover flies, butterflies & moths

- Natural predators – ground beetles, ladybirds etc.
- Improve water quality – for invertebrates, fish and amphibians

Priority 5: Resource-efficient, Climate-resilient Economy

There is no more effective way to highlight resource use to farmers than to demonstrate how it impacts on them financially. Benchmarking achieved exactly that by detailing costs such as fuel, electricity, fertiliser, pesticides, feedstuffs etc. against units of production, such as tonnes of barley or kg of beef.

Illustrating one individual's use of these inputs against another's provided a great incentive to improve how effectively farmers use these inputs. By tackling the above points, this project has contributed to creating a wealthier and fairer Scotland with an agricultural sector which will operate in a Smarter and Greener manner, contributing to a Safer and Stronger food supply chain.

Priority 6: Social Inclusion and Economic Development

The monitor farm programme provided an open and inclusive forum for discussion and created a network of communications where every participant had an equal say, this was true through every business group, and every community group.

The programme also championed innovation and diversification within, and out with farming businesses and encouraged efficient businesses capable of sustainable growth

6. PROJECT OUTCOMES

6.1

The nine monitor farms were selected to reflect diversity in farming systems and practices across Scotland and were predominantly beef, sheep and arable farms. The ultimate aim was to help improve the profitability, productivity and sustainability of the different farm businesses through practical demonstrations, the sharing of best practice and the discussion of current issues facing farming in Scotland. By the end of the programme the impact had been profound.

Every one of the businesses embraced the support of the Monitor Farm network wholeheartedly, making numerous changes to farm management, which have ultimately made them more environmentally sustainable, more socially engaged, and more profitable and resilient. At the heart of the initiative is the support of the whole farming industry. Through regular farm meetings with industry experts and a passionate group of local farmers, knowledge and experiences have been shared. The programme is, and will always be, farmer-focused, and every individual monitor farmer has been encouraged to steer the meetings in the direction they would like, supported by input from the Monitor Farm network.

The Monitor Farm Scotland Programme allowed businesses to address issues that they and their surrounding community believed had been impacting the performance of their business. Covering topics as diverse as Soil compaction, Succession, Fertility and Rotational Grazing the programme embraced the diversity and built on the needs of the community group to add value to the knowledge transfer element of the project. Allowing community groups to focus on a bespoke series of events that were relevant to their area.

As well as these aims, farmers were encouraged to:

- Allow hedges to grow taller and wider in association with the new cross-compliance margins
- Add nectar sources (e.g. clovers) to field and water margins
- Manage unimproved and semi natural permanent pasture in an extensive way
- Add clover to grassland reseeds
- Retain some overwintered stubbles (no roundup pre harvest) and allow arable plants to grow in autumn
- Create open water habitats
- Leave a strip of crop un-harvested adjacent to a boundary habitat such as a hedge
- Leave a few grass margins in silage and hay fields and aftermath graze
- Aim to link habitats across the farm using field boundaries
- Be as efficient as possible in stock and crop production to integrate wildlife management on farm
- Use the monitor farm platform to discuss the best ways to achieve wildlife management and try out new innovations

The project also provided a forum for discussions on the implications of the Nitrate Vulnerable Zone regulations on farming practice and created opportunities to highlight good management.

By taking a whole farm approach, subjects which have a strong impact on climate change mitigation such as soil structure, soil health, compaction, soil erosion and run-off were more effectively tackled, without sacrificing any productivity. Institutions including the James Hutton Institute worked with MF projects looking at single sector issues and provided scientific insight to improve soil health.

The data provided by the monitor farmers undertaking ILMPs proved that restoring, preserving and enhancing ecosystems, does not mean a sacrifice in productivity. In addition to ILMPs farms also undertook detailed Environmental Audits to assess the ecosystems services supported by the farms.

6.2 Milestones

See section 8 onwards

7. LESSONS LEARNED

7.1

Due to the nature of the Monitor Farm Scotland programme and the diversity in farm businesses, each of the monitor farms and associated groups approached each three-year programme with a series of aims that are unique to that farm or area.

As a result of this, below is a description of each monitor farm's involvement as part of the wider Monitor Farm Scotland programme.

Bigton Farm, Shetland Isles – Kirsty and Aimee Budge.

The Budge family have farmed at Bigton since 1860, initially as tenants before Kirsty and Aimee's great grandfather bought the farm in 1950. The family also own nearby Toab Farm with the two farms being run side by side.

In total the farm comprises 300 hectares, most which is permanent pasture and intensive grassland. They have 240 Shetland cross Cheviot ewes which are kept on the unique 80 hectares St Ninians Isle most of the year, which can be accessed from the farm by a sandy causeway. The sisters also have 70 spring calving Saler cross Shorthorn sucklers.

For young farmers, Kirsty and Aimee Budge, the ability to draw on the support of the Monitor Farm network has given them the confidence to adopt new farming techniques and marketing strategies. In doing so, they have successfully addressed their key issues, such as boosting output and putting themselves on a path to creating a more sustainable business that can cope with the unique challenges faced on the Shetland Islands.

"The Monitor Farm programme has given us lots of support and helped with how we make business decisions, it's been good to get other farmer's suggestions. The programme has made us look at our costs in greater detail and how we can reduce them, so our business is more profitable."

- Aimee Budge

Productivity

Some of the biggest changes have focused around grassland management, with the sisters embracing the use of a grass plate meter to monitor grass growth and implement rotational grazing. As a result, grass yields have improved substantially. This, together with taking on an additional 202ha of rented land, has allowed the business to increase suckler cow numbers by 20 and ewes by 310. At the same time, they have started breeding their own Shetland replacement ewes.

The pair have also worked to reduce lamb losses from scanning to weaning by grazing ewes and lambs on alternative grazing, away from cliff edges. This has had the desired effect, reducing losses from 26% to 13%. The number of calves weaned per cow has also increased from 81% to 93% thanks to changes in management that were put in place after discussion with the monitor farm management groups. The aim is to increase weaning percentage further, to dilute the business's relatively high machinery costs.

Profitability

The formation of The Shetland Hill Lamb Group has been one of the reasons the Budges have had the confidence to take on Shetland ewes. The Monitor Farm programme identified how farmers and crofters were struggling to get good prices for Shetland lambs. As a result, the marketing group was formed to help market these smaller lambs for export to Europe for the Christmas markets, leading to an increase in value of £10-12/lamb. This developing market gave them confidence to take on the Shetland ewes as they knew they had an outlet for the pure lambs. This is an excellent example of how the Monitor Farm programme has provided a benefit, not only for the host farmers, but for the wider community group.

"The price was so poor before, but through this group you can add value to the product, and it makes it worthwhile."

- Kirsty Budge

The family has also been involved in a trial looking to improve barley yields on the Islands. The farm is one of a handful of barley producers on Shetland and receives significant income from selling grain. Through the Monitor Farms programme, they grew 0.8ha of Salome barley and increased nitrogen inputs. However, having missed a key application of growth regulator, the crop lodged. Aimee says this was a learning curve and that they will trial it again this year with half the amount of nitrogen and ensure a growth regulator is applied.

Collaboration

With Shetland Island farmers and crofters facing some unique farming challenges, coming together through regular monitor farm meetings has helped with knowledge sharing and collaboration within the community. The initiative has brought all ages of the farming and crofting community together.

Through the meetings, Aimee recognised a need to support fellow young farmers on the Islands and has subsequently to set up The Shetland Young Farmers Club, which now has 35 members. In addition, the programme has created a more integrated and open community on the Shetland Islands:

"Shetland's relative isolation has meant that the Monitor Farm project has been of even greater benefit to this area than it might have been to a more centrally located community. There's an appetite for the local group to continue after the project finishes."

- Local crofter, John A Abernethy

Key Impacts

- +11.5% of gross output as profit.
- +20% increase in grass production – enabling stock numbers to be increased.
- 93% cow weaning percentage – up from 81% at start of programme.
- 8.96kg CO_2e/kg of output (excluding sequestration).

<u>Clynelish Farm, Sutherland – Jason and Victoria Ballantyne</u>

Understanding and improving the kilograms of live weight produced per hectare has formed the basis for improvements at Clynelish Farm in Sutherland.

Clynelish Farm, near Brora in east Sutherland, is a 125-hectare farm, run by Jason Ballantyne and his wife Vic in partnership with Jason's father, Murdo. They also contract farm 48 hectares nearby and rent a further 50 hectares of rough grazing. The family runs over 900 breeding ewes, of which about half are Lairg type Cheviots and the other half Lleyn cross. The Ballantynes also have 80 suckler cows which are mostly a mixture of Simmental cross native cows which are all outwintered.

For Jason and Victoria Ballantyne, their involvement in the Monitor Farm Scotland programme has been about developing a more resilient business, less reliant on support. Through the three-year initiative they have utilised benchmarking and key performance indicators to make informed management changes.

"We have learnt a lot about our costs of production through benchmarking and feel we really have our heads round the key profit driver of increasing the kilograms of live weight produced per hectare. The expertise we have been able to tap into has given us the confidence to go ahead and try new things."

- Victoria Ballantyne

Monitoring weight gains

To get a better handle on performance, the Ballantynes were keen to embrace technology. They took part in a Monitor Farm trial looking at the daily live weight gains of their lambs. This proved instrumental in highlighting the benefits of adopting a new rotational grazing strategy under the guidance of subject expert, Trevor Cook.

"We used innovative weighing equipment to weigh lambs every week and monitor their daily live weight gains. This has shown us that rotational grazing is effective as lambs were growing up to 400g per day and averaging around 250g per day up until the end of October. Using the weighing data to inform management decisions will be a big driver for the business going forward."

- Victoria Ballantyne

With the farm running a high stocking density at grass of 3.73LU/ha, adopting rotational grazing has helped improve grass yields and thus livestock growth rates. This means the family are planning to finish 30 Stabiliser cattle on rotationally grazed grass for the first time in the summer of 2020, something they would not have tried without the support of the monitor farm programme.

Growing their own feed also fit with the Ballantyne's aims of running a low cost, forage-focused system. To explore this, they agreed to take part in a fodder beet trial through the Monitor Farm programme. The aim was to feed the beet to in-lamb ewes and some beef cattle. This included 20 newly purchased Luing heifers, which are winter grazed on the crop. They will then be turned onto the contract farmed land, which is largely rough grazing, helping to improve biodiversity.

This also complements the farm's drive to reduce its environmental impact. Following a carbon audit, the family are also planning to reseed old pastures with herbal mixes with the view to improving production efficiency.

Cow fertility

To fit with the continuous drive to improve output per hectare, the business has also been working to improve suckler cow fertility. As part of the Monitor Farm programme, an Integrated Land Management Plan was undertaken by local facilitators Willie Budge and Cat McGregor from SAC Consulting, Thurso. This identified that campylobacter was reducing fertility within the suckler herd. Through consultation with their farm vet and SAC Consulting, they have subsequently started a vaccination programme to reduce disease risk and drive performance.

This has resulted in a decrease in their variable costs per cow to £273; 20% lower than the QMS benchmark for the top third of producers and has helped increase their gross margin per cow to £520, again, sitting above the benchmark for the top third of producers from the QMS 2019 Enterprise Costings.

"Being a Monitor Farm has pushed us to do things we probably would not have done otherwise and has moved our business forward 10 years in just three. It has been fantastic to focus on some of the solutions that are available to us as farmers, and we feel that the programme has left a positive legacy for the farming and crofting community of Sutherland as a result."

- Victoria Ballantyne

Key Impacts

- +10% of output as profit on average
- The carbon footprint of the sheep enterprise is 28% lower than that of similar enterprises
- 73p per head/day – the diet cost of outwintering, a significant reduction on previous levels
- 30.72kg CO_2e/kg of output (excluding sequestration)

Corskie Farm, Moray – The Green Family

Iain Green and his team farm 1,416 hectares (809 of which is owned) with cereals, sheep, cattle and pigs. While the majority of their arable land goes for spring barley for distilling (over 526 hectares), they also grow winter barley, winter wheat and spring oats, much of which are used to feed the livestock.

Reducing soil compaction and tracking daily live weight gains to make informed decisions have been the main points of focus at the Morayshire Monitor Farm. Using technology to routinely weigh and record daily live weight gains has proved revolutionary for the Green family who have used the data to improve market returns.

Iain runs a mixed enterprise of arable, sheep and beef in a family partnership. Following the advice from the monitor farm network, he invested in a Ritchie Beef Monitor weighing system and Clippex sheep handling system, purchased using the Monitor Farm Innovation Fund, to track growth rates.

"The whole monitor farm programme has made us aware that you can't monitor something unless you measure it. We're probably more resilient now as we're making a better job at marketing fat cattle and lambs."

- Iain Green

Finisher returns

The benefits have been marked in the beef cattle, where cattle weights are automatically recorded every time an animal goes to the water trough. Cattle are now selected at the right time, which has increased finish weights by 20kg or more.

"The Beef Monitor system is the biggest benefit; I can see that in pounds and pence, it means we can hit the dead weight bang-on."

- Iain Green

Working on a £3.50/kg DW price, this extra 20kg could be worth around £70 per animal, depending on the market; making the investment well worth it in Iain's eyes. The system has also flagged the effects of management decisions on weight gains.

For example, making sudden diet changes to save costs had a detrimental effect on weight gains. Now, any diet changes are introduced gradually.

The sheep handling system has allowed easy tracking of daily live weight gains, whilst three-way drafting has eased management and lamb selection. It has also saved in labour. The system has been used to assess lamb weights as part of a feeding trial comparing the performance of lambs fed grass and concentrates or grass only. The results showed that the lambs fed grass only were heavier and more were sold finished versus those that received concentrates.

Breeding decisions

Iain's daughter, Laura Beattie, has started pelvic scoring all breeding females and culling any with small or abnormal pelvises. This has resulted in a labour saving from assisted calvings and reduced the number of caesareans, accumulating to a financial saving as well as improved animal welfare. Furthermore, 'bulling collars' have been used to automatically alert the team when a bull has mounted a heifer or cow, reducing the time required to monitor heat activity.

Soil health

Soil health has been a key area for attention throughout the three-year programme. One of the first farm meetings looked at the impact of tyre pressure on soil compaction. This highlighted that the farm's commitment to dual tractor wheels was the right one, considering results from farm demonstrations, which showed reduced compaction compared to standard wheels. With many local farmers moving away from dual tractor tyres, this pushed some to question their tyre choice.

Having seen the impact on soil compaction, Iain also invested in a tractor with the ability to adjust tyre pressure from the cab. He has since ordered a second machine with the same function. This allows pressure to be quickly adjusted in-line with weather and load.

Business performance

Being part of a benchmarking group has also proved valuable in comparing and questioning performance.

"My farm business is more efficient and cost-effective as a result of many of the ideas that have been suggested at the group meetings and I am confident that the farm – and most importantly – the soils, will be in a better condition and better placed for whatever the future holds."

- Iain Green

Key Impacts

- 6.62% Increase in net farm output
- 1.95kg/day average cattle daily liveweight gains
- -20% reduction in overall farm carbon footprint to 3.72kg CO_2e/kg of output
- +20kg increase in cattle deadweight to 397kg average.

<u>Strone Farm, Lochaber – Chris Cameron</u>

Strone Farm, a 1,200-hectare hill farm, located in the Great Glen, one of Scotland's most remote, but also wettest areas, is run by Chris Cameron in partnership with his father Malcolm and mother Eileen. the business currently runs 550 North Country Cheviot ewes and 50 pure Limousin cows.

Adopting new strategies that have ultimately helped performance, have been the main benefits of getting involved in the Monitor Farm Scotland programme, according to Chris Cameron. Over the three-year programme, he has fine-tuned flock and herd management and developed existing grassland management strategies at Strone Farm near Banavie. This has enabled cow numbers to be increased by 25%, whilst lamb weaning percentages have risen from 96% to 103%.

Improving grassland management and reducing costs have been some of the family's key aims throughout the programme. In 2018 they took on an extra 41ha of grassland at nearby Fassfern to help lower their wintering costs and ease the grazing pressure on some of their other in-bye land at Inverness.

Lamb finishing

With twin lambs requiring creep feeding on this new ground, Chris, with the support of the monitor farm network, moved to keeping lambs entire and finishing them, rather than castrating them and selling as stores. This strategy was tested as part of a lamb finishing trial that compared the two options. The family then implemented the most cost-effective strategy, which was finishing entire lambs.

As well as creating a new route to market, weaning the male lambs three weeks earlier also had an additional positive impact on ewe performance.

"The following year I had 80 more sheep with twins. That's massive for us. The ewes just had a better chance to recover and because they were going to Inverness ground for the summer, they got fatter, and their body condition score going into lambing was better, so, fertility increased."

- Chris Cameron

QMS monitor farm facilitator and senior agricultural consultant for SAC Consulting, Niall Campbell explained the results from this trial have benefited everyone involved in the monitor farm meetings. Showing that there is an alternative and there is a way to add value to lambs, which has helped increase business resilience."

Weighing lambs as part of the project also highlighted the value of monitoring weights. The business has subsequently bought an EID tag reader and their own set of scales to enable them to track cattle weights.

Grassland management

Chris says his mindset towards grassland management has also changed as a result of the programme, recognising grass as his cheapest source of feed. As a result of the monitor farm programme, he put in place steps to boost grassland yields. This includes easing grazing pressure at lambing time by taking on the extra ground and shifting the lambing period forward by two weeks to give grass longer to recover before silaging.

Silage yields and quality have improved as a result, allowing cow numbers and calf output to increase, whilst costs have remained similar.

Community

"One of the biggest unspoken challenges farmers and crofters in this part of the world face is the isolation, we just don't see our farming neighbours like we used to. The Monitor Farm programme has given us the opportunity to come together as a group with shared vision and vested interest in the future of our local community and share thoughts and ideas about how we can improve things."

- Malcolm Cameron

Key Impacts

- 10% of output as profit on average
- 47.73kg CO_2e/kg of output
- Achieved a 95% weaning rate in cattle
- 130 more head of sheep since 2015

Mill of Inverarity, Angus – The Stodart Family

The Stodarts farm 358 hectares (152 owned, 206 rented) on two separate units and their enterprises include cereals, suckler cows and sheep.

Using figures to drive decision-making and embracing new techniques such as rotational grazing has helped boost efficiencies across the mixed farming enterprise at Mill of Inverarity.

Over the three-year programme, Rob and Alison Stodart, and sons Rory and Tom have adopted a more business-minded approach, leading to big changes across the business. Since 2016, sheep numbers have increased by over 250 head, suckler herd health and fertility has been addressed and arable soil health improved.

Data analysis through Farmbench at the start of the Monitor Farm Scotland programme proved the driver for change, encouraging the Stodarts to streamline their business. The data also clearly highlighted that the suckler herd was struggling to make money, whilst fertiliser and chemical spend on the arable was above average. The family has since employed an independent agronomist and signed up to be part of a buying group, which should help arable costs.

Beef efficiencies

Fertility was highlighted as one of the main areas for improvement on the beef side. By working with several vet professionals, campylobacter was identified as an issue and they have since worked to address the problem and establish a clean herd. They have also removed the high cost, autumn calving block and focused their attentions on one spring block.

Tracking growth rates using a Beef Monitor system has also enabled finished beasts to be selected more accurately, reducing the amount of overweight cattle going to slaughter and associated penalties. The family are also replacing their continental cross cows with Aberdeen Angus to produce an easier calving animal, more suited to a forage-based system.

Forage focus

The change in stock management suits the Stodarts' renewed forage focus. Rotational paddock grazing has been adopted across both beef and sheep, which has boosted grass growth and upped utilisation. Improved grassland performance has enabled sheep stocking rates to increase by 30%.

As a result, sheep cash only net margin per hectare has increased by 29%. Lambs have also finished quicker thanks to better pasture quality, which has also facilitated a drop in concentrate use. The flock has also been split into A and B flocks and performance recording introduced. This means that replacements are only selected from the best animals.

Arable improvements

On the arable arm of the business, the Stodarts have worked to improve crop yields. This has included signing up to YEN (Yield Enhancement Network) and GPS (Global Positioning System) soil mapping the whole farm and applying Phosphorus, Potassium and lime accordingly. On EFA ground, the family have also experimented with under sowing spring barley with various mixes to help with greening. Stubble turnips have also been introduced to the arable rotation for winter sheep grazing.

Succession

The programme has also encouraged the Stodarts to talk more openly about succession. Wills have been put in place, as well as a power of attorney, Alison has taken on a more integral role in the business and Rory has become a more integrated part of the business.

"Both the community group, but more so, the business group, are far more confident speaking and discussing issues. Some of the group have changed their mindset completely and have made some radical changes to their businesses as a result of attending the meetings."

- Facilitator David Ross, SAC Consulting

Key Impacts

- 93% suckler cow scanning percentage; up from 77%
- Increase in calves weaned; up from 74% to 89%
- 30% increase in sheep stocking rates
- 80% grass utilisation – up from estimated 30-40%
- 35% reduction in fertiliser use on grassland

<u>Preston Hall & Saughland, Lothians – Bill Gray & Peter Eccles</u>

Prestonhall Farms and Saughland Farm are working together as a joint monitor farm in the Lothians.

Saughland Farm is a total of 320 hectares, 70 hectares of which is arable. Peter Eccles joined Saughland Farm as farm manager three years ago and since then has more than doubled the sheep numbers and is slowly moving the flock from inside to outside lambing. The farm has, mainly Angus sucklet cows, with some Hereford, and Limousin crosses, which complement the sheep enterprise and are integral to the grazing system.

Prestonhall Farms, managed by Bill Gray, is an arable enterprise of 660 hectares growing cereals and oilseeds on a five-year rotation. Currently the farm devotes approximately 120 hectares to spring barley, with 160 hectares of winter wheat, 70 hectares of winter barley, 70 hectares of oilseed rape and 60 hectares of oats, along with over 100 hectares of permanent pasture and 78 hectares of woodland.

Arable farmer, Bill Gray and livestock producer, Peter Eccles have used the Monitor Farm Scotland initiative to fine-tune their individual businesses and design a template on how they can work together. The benefits have been marked, with both businesses demonstrating improved output thanks to better knowledge sharing and improved technical performance. The pair now share labour and benefit from a continuous exchange of ideas.

Livestock improvements

The support of the Monitor Farm network has helped Saughland meet their target of running 2,000 ewes and 100 sucklers (Cows are currently at 93 head; up from 40 in 2016).

"The Monitor Farm programme assisted me and helped with the evolution of the business and achieving my vision. I've been leading the changes, but I had the support to make the right decisions at the right time,"

- Peter Eccles

This includes greater emphasis on grassland management, including the adoption of a new grass reseeding policy using herbal leys. However, Peter believes rotational grazing has brought the biggest benefits, allowing him to increase stock numbers significantly. Output of liveweight sales has increased from 410kg/ha to 664kg/ha – a third more output on the same area of land.

Arable improvements

For Bill, knowledge gained through the programme has helped boost crop gross margins. This has mostly been thanks to a better crop marketing strategy. The construction of a new 4,000t grain store has also "revolutionised harvest" and enabled grain to be marketed more strategically. It has also unlocked diversification options. To avoid leaving ground bare over winter, Bill has also started sowing a cover crop of black oats and phacelia into spring barley stubbles. This is incorporated into soils and followed by barley, thus helping nutrient cycling and soil structure.

"It's reduced the amount of bare soil and the amount of ploughing we're doing, which is good from a carbon point of view and it also keeps fertility near the surface."

- Bill Gray

Collaboration

The benefits of working together have also been marked. Peter has started finishing lambs on the arable land at Preston Hall, which has brought instant improvement to daily live weight gains, with access to clean fields. Bill and Peter have introduced a grassland rotation on arable land at Preston Hall and an arable rotation on grassland at Saughland. 11ha of a predominantly red clover and perennial ryegrass mix has been planted at Preston Hall, following barley. This provides clean grazing for Peter's weaned lambs and helps build soil fertility for Bill. Access to this ground avoids the costs associated with housing, drenching and creep feeding.

"We're putting weaned lambs on there for finishing and tracking growth rates. They averaged 290g/day and I had them away in one go with no additional worming."

- Peter Eccles

The Moredun Institute has been tracking lamb growth rates, alongside worm burdens as part of the monitor farm programme to establish when pasture no longer offers the benefit of clean grazing. This has been aided by the introduction of EID. Bill says livestock will benefit arable ground in the long-term by improving soil fertility and structure.

Turnips and out wintering

Peter and Bill also experimented with growing turnips after winter barley and using them to finish lambs. However, results were disappointing. Growing this crop would also compromise growing oil seed rape so it's unlikely this will be repeated. A pilot project out-wintering cattle on spring barley stubbles and supplementing with silage bales produced off the red clover leys has proved more successful. This naturally recycles nutrients back into the ground over winter.

Overall, the combined improvements mean both businesses are in a stronger position.

"Our business is in a better position. We are selling more kilos for less cost. We've got a higher output, but the same fixed costs and overheads, so our cost of production has reduced significantly. We've certainly made the farm and business more resilient."

- Peter Eccles

Key Impacts

- £324/Ha increase in gross margin on spring barley grown in 2017
- 254kg lwt/Ha Increase in output at Saughland, up from 410kg lwt/Ha to 664kg lwt/Ha
- £15/t benefit on winter barley thanks to improved storage capacity and strategic marketing (Preston Farm)
- 50-60% reduction in wormer use on lambs at Saughland thanks to targeted selective treatment through a trial with the Moredun institute.

<u>Girtridge Farm, Ayrshire – John Howie</u>

The 140-hectare Girtridge Farm sits in an elevated position just outside Dundonald in south west Scotland, and is run by John Howie and his mother and sister. The family also own a further 35 hectares of grazing land nearby.

The main farm enterprise is buying in store cattle and finishing them for sale direct to local abattoirs but the family also have a herd of 10 suckler cows. The farm runs 140 cross ewes producing Suffolk and Texel prime lambs that are mainly sold through nearby Ayr market.

Everything grown on the farm is used on-farm including 56 hectares of silage and hay and 28 hectares of spring barley.

Monitoring cattle performance, changing sheep breeding policy and embracing rotational grazing have helped raise farm output and profitability at Girtridge Farm, Kilmarnock. Having the support of the monitor farm network has helped John Howie

make informed business decisions that have led to a 66% increase in output and moved the business from loss to profit.

Having studied accounts and finance at Strathclyde University, John returned to the family farm with an understanding of figures but was less confident about the application of new farm management techniques. As a result, he turned to the Monitor Farm Scotland programme to gain new knowledge. Three years later and gross profit has risen from -12% of output to +12% of output and the farm's carbon footprint has reduced by 26%.

"Being part of the monitor farm process has been challenging but rewarding. It has pushed me to make changes happen but has also given me the confidence to see them through. Before, the farm was a family farm and that's fine, but now it's a business. We look at the farm's potential and maximise output and profit off every acre."

- John Howie

Since the start of the programme the focus of the business has been on expanding the ewe flock and improving efficiencies across the 220-250 head of finishing cattle.

Grazing efficiencies

Rotational grazing, combined with routine liming and reseeding, has helped boost grassland performance, enabling ewe numbers to be increased from 135 to 500. This has led to a 46% increase in stocking rates. Lambs have also achieved daily live weight gains of 377g/day on grass alone.

John has also undertaken a full change in sheep breeding policy to make better use of grass. This has involved changing from Mule and Texel x ewes to predominately Aberfield x Lleyn animals. Following a trial with different terminal sires, the business has also shifted towards using Abermax tups, rather than Suffolks or Texels.

"Looking at the death register and 100-day growth rates, the Suffolks were growing the fastest, but had the highest losses. The Abermax had slightly lower growth, but less losses. That's why we went down the Abermax route."

- John Howie

Silage quality has also improved, thanks to having younger leys and cutting earlier. At 11.8ME and 15% crude protein, this has helped reduce the cost of the beef finisher ration, leading to his feeder's margin increasing by 0.12p/head/day.

Improved ventilation in the cattle sheds and better water provision has also boosted intakes and raised growth rates which has helped lower days to slaughter from around 27 months to 22 months.

Handling and monitoring

Through the Monitor Farm Scotland project, the community group and management group co-designed a new cattle handling set up, that the Howie's have since built. This includes weigh bars, which enables growth rates to be monitored. Combining this with EID management tags and a UHF reader also allows automatic recording and tracking.

By recording daily live weight gains, feed conversion efficiencies can be tracked and the poorer performers in the herd can be identified. That has influenced the type of cattle John buys or sells allowing John to be efficient when margins are tight.

As a direct result of advice at one of the monitor farm meetings, John now records and monitors faecal egg counts as a tool for deciding when to treat for worms.

"John has significantly increased his output with minimal additional capital expenditure," he said. "He's still farming the same land, but the efficiencies we've made have allowed him to increase output and profitability on the same fixed cost structure."

- Facilitator, Raymond Crerar from SAC Consulting

Key Impacts

- +66% increase in output.
- 46% increase in stocking rates thanks to improved grassland performance.
- £90,000 increase in livestock sales output from 2017 to 2019.
- 8.65kg CO2e/kg of output (carbon footprint, excluding sequestration) - A 26% reduction.

<u>Whitriggs Farm, Borders – The Mitchell Family</u>

The Mitchells, who are keen to both develop their farm business and safeguard it for future generations, currently farm 442 hectares of mainly semi-permanent and permanent grassland. They also grow approximately 40 hectares of winter wheat and oats for feeding their stock.

The Mitchells have 170 suckler cows which are a combination of Beef Shorthorn cross and Aberdeen Angus cross and 200 red deer.

The Monitor Farm Scotland farm in the Scottish Borders has used the support available through the programme to drive change and build business resilience. A 14% improvement in profitability and a lower carbon footprint are some of the headline benefits seen at Whitriggs Farm following their involvement in the Monitor Farm Scotland Programme.

Throughout the three-year programme, the Mitchell family have not been afraid to make some big changes to their farm business, spurred on by the support of the Monitor Farm network. One such change was removing their sheep flock altogether, to focus on beef and a new deer enterprise.

They have also worked hard to make better use of farm inputs, reduce wastage and improve output. As a result, the carbon footprint of their beef enterprise has dropped by 30%, whilst farm profitability has increased to 38% of gross output. Consequently, they have improved business resilience and safeguarded their future.

Succession support

Stuart took over the day-to-day management of the business in 2018 and now runs the farm alongside parents, Robert and Lesley. Having the support of fellow farmers and industry experts as part of the Monitor Farm network has been instrumental in supporting Stuart during this succession phase.

Efficiencies & marketing

One decision made as part of the Monitor Farm programme was to condense the calving block from ten to six weeks. In the first year this involved using synchronisation and artificial insemination to get late calvers calving at the start of the following block. Since then, stock bulls have been used. This has led to an increase in calving percentage, from 85% to 94% in the three-year period, helping output from the beef enterprise rise by 25% over the course of the programme.

Benchmarking performance

Benchmarking has also proved a valuable tool in aiding business decisions. At the start of the programme, benchmarking highlighted that the performance of their 1,000-ewe flock was below average compared to similar systems. Working with vet Andrew Robinson, they screened the flock for Maedi Visna (MV). When a high proportion in the flock tested positive, they made the hard decision to cull all the ewes.

Having already started a small deer herd, the Mitchells then costed out business options with the Monitor Farms facilitators. As a result, the business is now increasing the numbers in the deer herd, rather than re-stocking with sheep.

"The business is more profitable than at the start. There are a few factors; they're probably more conscious of cost, they've diversified into deer and their output has increased. Overall the business is just efficient, more profitable, and more sustainable,"

- Facilitator, Colin MacPhail from 5AgriGroup

One of the most significant changes thanks to the monitor farm programme is the creation and development of stronger community links and an openness to exchange knowledge and ideas.

"The Monitor Farm programme has been a valuable social network for farmers and it helps inspire and give confidence through the discussions. I have lost count of the number of people who have mentioned that they have started the succession conversation after our Monitor Farm meeting."

- Stuart Mitchell

Key Impacts

- 5.52kg CO2e/kg of output (total farm carbon footprint) - down from 26.94kg CO2e/kg output in 2017.
- 38% of gross output as profit in 2019 (up 14% from 2016)
- +30 increase in suckler cow numbers over three years.
- 24 months - the average age at first calving, compared to 36 months at start of programme.

<u>Clonhie Farm, Nithsdale – Andrew and Aileen Marchant</u>

The stock numbers on Clonhie have increased significantly since the Marchants took over and the farm now has 900 breeding ewes and 230 ewe lambs, with the couple hoping to reach their target of 1,200 ewes in the near future.

They have also established a small herd of eight Luing cows and plan to build the herd up to about 40 in order to sell females and store cattle in the future.

As a new and ambitious farm business, involvement in the Monitor Farm Scotland programme has provided the technical support to drive sustainable expansion at Clonhie Farm, Nithsdale.

Over the three-year programme, Andrew and Aileen Marchant have drawn on the advice of the Monitor Farm network to boost output per hectare. This has led to improvements in grassland management, resulting in an 18% uplift in dry matter yield per hectare, allowing ewe stocking rates to be increased by 30% and a herd of deer to be introduced. The farm's carbon footprint has subsequently dropped by 15.2%.

"The Monitor Farm programme has given us a better understanding of how to develop our business sustainably and in a profitable manner"

- Andrew Marchant

The Marchant's began as new entrants in 2012. Since then, they have undergone rapid expansion on their 300ha farm. Having started with 12 sheep, they now have a flock of 1,000 ewes, 30 pedigree Luing cows and 175 red deer.

Throughout the Monitor Farm programme, the family has adopted a two-pronged approach to increasing performance, focusing on grassland management and ewe genetics.

Grassland management

Lime has been applied to some of the farm's most productive ground to raise soil pH and direct drilling is used to rejuvenate swards. Forage rape and kale are now used as an entry for a full grass reseed, whilst providing cost-effective winter keep.

Rotational grazing, rather than set-stocking, has also benefited grass yields. Deferred grazing - where grassland is shut up from the end of August until January/February - has significantly reduced the cost of keeping ewes in good condition through the winter.

"When we tested the grass on 21st January, crude protein was 21% at 11.2ME. To buy that level of concentrate would be expensive. It's been a real eye opener for everyone in the group."

- Andrew Marchant

Better grass quality has reduced concentrate requirements and thus costs. However, Andrew says he is not afraid to feed, if it is the most cost-effective way to maintain animal condition as the monitor farm programme has allowed Clonhie to become more targeted with feed and fertiliser now.

Ewe breeding

A change in ewe breeding policy is also part of the farm's long-term goals to make better use of forage and improve output. The Marchants have now closed the flock and are moving away from North Country Cheviot x Lleyns and Texel x ewes, to Aberfields and Highlanders. Targeted culling is also being adopted to ensure they only breed replacements from the best animals, which in turn reduced lameness.

Challenges

After identifying a cobalt deficiency in the region, Andrew also undertook a trial looking at the effects of injecting lambs with vitamin B12 at marking time. The results showed that those that received the injection were 1.32kg heavier at weaning compared to those that didn't. This delivered a return on investment of £1.74/lamb by weaning. All lambs were subsequently injected in 2018.

Programme facilitator, Judith Hutchinson, says the business has made big strides by addressing numerous small things that create a 'multiplier effect'.

"I believe Andrew is on the brink of taking off. I think there will be considerable improvements in financial performance, productivity, sustainability and environmental footprint over the next few years,"

- Judith Hutchinson

Key Impacts

- 15.2% - reduction in whole farm carbon footprint, down from 36.94kg CO2e/kg output to 31.31kg CO2e/kg.
- 25.3% - reduction in carbon footprint on the sheep enterprise
- +18% - increase in grassland dry matter yields per hectare.
- 5kg of concentrate/ewe fed to the flock in 2019 – a 75% reduction
- Sheep lameness reduced by 30-40% (estimated) through vaccinating and culling

"The Monitor Farm programme is also beneficial to the community. A lot of people farm on their own and it's quite isolated. There's a great social aspect to the monitor farm programme."

- Andrew Marchant

8. COMMUNICATION & ENGAGEMENT

8.1 Detail throughout the project's lifetime

Communication with the Monitor Farm programme and the wider community had a key role in the success of the project. Challenges and successes faced by the nine farming businesses were disseminated through multiple communication channels in the following forms:

- Videos
- Features in Livestock+
- Press releases
- Press coverage
- Facebook events

<u>Videos</u>

Nine videos were produced and launched by QMS during the three-year programme with a further four videos produced and launched collaboratively with AHDB. Additionally, AHDB launched another four videos. The 'Impact video' compiles interviews of Monitor Farmers and members of the business and community groups. This video really highlights the importance of the project for the community and social aspect, receiving over 1,040 views to date.

Unfortunately, due to the outbreak of the coronavirus pandemic, filming had to be cancelled for further videos. Some examples of the videos created can be found in the Annexes section of this report.

<u>Features in Livestock+</u>

The Livestock+ is a QMS publication produced quarterly each year. The magazine has a series of informative and technical features from various aspects of the supply chain. Each member of the QMS assurance scheme (over 10,500 members) receives a copy of the Livestock+, providing an excellent opportunity to showcase the Monitor Farm programme. The

Livestock+ has included eight focus features throughout the Monitor Farm programme. Subjects have included technical topics such as suckler cow herd efficiency to the social aspect of farming businesses for example, confidence and attitude to change.

Press Releases

Press Releases have been the main form of communicating findings in the Monitor Farm programme to the wider farming community. This is largely due to the uptake from media as a direct result, leading to greater reader audience. 139 press releases have been issued by QMS and AHDB over the 3-year period across all nine Monitor Farms. Topics have varied from environmental sustainability to maximising pasture potential. Press releases were issued with the results of trials conducted through the programme as well as summarising statements of the changes each Monitor Farm business has made over the three years, all with the end goal of building resilient, sustainable businesses.

Press Coverage

The Monitor Farm Scotland programme has been a regular feature in large farming media publications such as The Scottish Farmer and Farm Journal Scotland. Smaller and regional publications have also included coverage, leading to a more intimate relationship between the Monitor Farms and their local community. Items of press coverage, not including The Scottish Farmer or Farm Journal Scotland accumulates to 247 features throughout the course of the programme, excluding Scottish Farm Features and QMS column. The breakdown of this total includes headlines *'Whitriggs sees benefits from Monitor Farm Project'* in the Berwickshire News to *'Advice helps monitor farmers cut costs and improve profitability (Shetland)'* in the Press and Journal.

Facebook Events

Creating Facebook events was identified as a simple and effective way of raising awareness of Monitor Farm meetings amongst the local communities. 44 Facebook events were created during the project to attract new and returning people along to the meetings. These were shared widely across social media platforms to grasp a wider audience within the Scottish farming community.

8.2 FAS Engagement (if applicable)

FAS Engagement came through specific support of an element of this project. Focussed on key sites, trials were conducted on the value of fodder beet sowing with results disseminated to a wider industry audience.

FAS were also heavily involved in the delivery of core elements of the programme, in particular the Integrated Land Management Plans, and Carbon Audits.

In addition to this, an infographic guide to fodder beet was created to be made available to farmers in time for the 2020 fodder beet planting season.

8.3 EIP-AGRI Engagement (if applicable)

N/A

9. KEY FINDINGS & RECOMMENDATIONS

Community support

Undoubtedly, one of the most obvious successes of the Monitor Farm Scotland Programme has been the creation and development of closer more open community relationships.

The monitor farm programme provided an open and inclusive forum for discussion and created a network of communications where every participant had an equal say, this was true through every business group, and every community group.

For example, of the respondents that answered the Monitor Farm Survey, 85% said that the Monitor Farm Scotland Programme had allowed them to form new networks and build relationships with other farmers and stakeholders from within their farming community, while 69% said it had helped them build relationships out with their immediate farming community.

Knowledge Exchange between peers

The value of the Monitor Farm Scotland Programme is evidenced by the responses of the attendees to the monitor farm events, with almost all respondents saying the main reason for them attending was that they were looking to improve their own knowledge and inform their businesses to improve their own business performance.

Almost all (93%) of respondents agreed that the Monitor Farm meetings were a good use of their time with around 90% of people likely to recommend Monitor Farm meetings to a friend or colleague.

These monitor farm meetings have also proved a valuable method of communicating the subject matter in an engaging way that results in real change on the ground. According to respondents most, surveyed made changes to aspects of their businesses including Soil management, grazing management, sheep management, and general animal health.

Value of the programme in building resilient businesses

Positive changes being enacted in the businesses of people who attended monitor farm meetings, demonstrates the clear value of the Monitor Farm Scotland programme in developing resilient businesses.

When surveyed 48% of respondents said that their businesses are more profitable as a result of attending monitor farm meetings while 56% present of those who responded said that their business was more resilient as a result of attending monitor farm meetings.

Future projects would be hugely beneficial to the industry if they developed this element of their aims and provided the initial steps towards economically resilient business

The value of online resources

While not an initial ambition of this Monitor Farm Scotland programme, the engagement with resources produced online has been clear to see in the communications outcomes expressed in this report.

While there is a clear benefit to hosting on farm meetings for the benefit of those who are able to physically attend the digital engagement that we have received as part of our communications policy has shown that there is an appetite for content and resources to be shared as widely as possible to remove the geographical restriction on access to the content and resources.

As part of the project a ‘monitor farm hub’ was created and populated with content from the monitor farm project to provide a free-to-all site which would allow better access to all the

findings, content, and resources produced as part of the Monitor Farm Hub. (www.monitorfarms.co.uk)

In future, monitor farm content should aim to be hosted on an online platform like the Monitor Farm Hub so it can be accessed by the wider industry and even public.

10. CONCLUSION

Over the course of this 3-year programme, the 9 monitor farms that took part in the programme hosted 162 open meetings attended by an average of 47 people, totalling over 7,500 attendees over the course of the programme. The importance of the programme to improving community networks was fundamental to the success of the monitor farm program with almost 68% of attendees at meetings being local farmers.

Of those who attended monitor farm meetings 70% allowed them to form new networks and build stronger relationships with their farming communities, with 93% of attendees saying that attending a monitor farm meeting had been a good use of their time. The successes of the monitor farm programme has been built on the exchange of knowledge and the tangible benefit that has come from attending monitor farm meetings with over half of farmers who attended saying that their own business is more resilient as a result of knowledge gained from a monitor farm meeting.

When asked what aspects of the monitor farm programme were the most important, those who had attended meetings said that they believed that it was because it was locally relevant, had a strongly farmer-led agenda, and provided them with a unique opportunity to share experiences with others.

The conclusions drawn from the survey of those who attended the monitor farm programme showed that the real value of the monitor farm Scotland programme was to allow businesses to improve their own economic, environmental, and social sustainability by creating closer and more open farming communities.

Above all, the monitor farm Scotland programme is unique. Owing to the fact that it is farmer-led, it allows the community group to guide the programme to identify themes that are relevant to them which allows the organic development of bespoke, regional knowledge transfer programmes that help build resilient farming and rural communities.

11. ANNEXES

A comprehensive library of resources is available on the Monitor Farm Hub.

www.monitorfarms.co.uk

A summary of the programme can also be found in the Monitor Farm Scotland 2016-2020 Impact Report:

www.monitorfarms.co.uk/sites/default/files/qms_impact_report_2020_spreads.pdf

The hub is a collection of the meeting reports, and the 36 theme reports that were created as part of the monitor farm programme over the course of its 3 years. They range from entry level best practice advice to technical case studies covering a diverse array of subjects, from soil health to succession planning.

Video's created as part of the monitor farm Scotland programme can be found on the QMS YouTube channel:

https://www.youtube.com/user/QMSMooTube

Attached as Annex A. is a copy of the Monitor Farm Survey data.