



Learning and Change Through Monitor Farms

Final report

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The James
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Institute



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PEER-TO-PEER LEARNING:
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Executive summary

This research evaluates learning and change by farmers based on two Monitor Farms located in the Lothians and Morayshire regions of Scotland. Findings presented in this report are based on observations and interviews conducted across the three-year Monitor Farm programme period (2017-2020) and a virtual workshop conducted one year after the programme concluded (April 2021). Our study contributes in-depth qualitative insights into key features of successful on-farm demonstration found to underpin community engagement and support capacity building among farmers, including acquisition of knowledge, approaches to decision-making, and challenging norms towards achieving individual and community legacy.

Our results focus on four key features of successful on-farm demonstration identified from our research, which provide the structure to this report. These are: good facilitation, openness of host farmers, delivery of learning topics, and purposeful social interaction. We discuss these elements in the main sections of the report, supplemented by illustrative boxes and quotes to provide examples of their application and their significance in encouraging practical outcomes and approaches to farming and peer-based learning. The final section draws attention to opportunities and lessons for the future.

Key findings and recommendations

- Improved understanding of the factors that encourage **community engagement** and inspire farmers to make **changes based on new learning** are significant outcomes of this research.

Demonstrating and developing leadership

- **Effective leadership** shown by host farmers, mediation and support provided by facilitators, and engagement by community members are essential for on-farm demonstration to **build capacity, challenge norms, and support change** in the farming sector through peer-to-peer learning.
- Our findings indicate that **hosts' willingness to share information, practices, and experiences** (including successes and failures) is vital and we recommend that these characteristics should form the basis of demonstration host selection.
- We propose that **facilitation skills are more important than detailed subject knowledge** in the recruitment of facilitators for future demonstration programmes and events.
- We recommend demonstration organisers supply **clear description of the facilitators' role**, supported by **training and mentoring** where necessary, to ensure that expectations are understood, and new capacity is built to support the farming sector.
- We recommend priority investment in the **formation and nurturing of farmer 'management groups'** in future programmes to provide a clear connection between the farming community and event organisers.
- We recommend a **review of support measures and funding for groups and networks** seeded during demonstration programmes, to safeguard and enhance social and community capital in the in the period after demonstration programmes end.

Demonstrating and developing engagement

- A key role for facilitators is to ensure that **farmers are participants and not just spectators** at demonstration events.
- We recommend an approach to demonstration that places **dialogue and interaction at the forefront of the process**.

- We recommend that time be strategically built into event programmes, **including transitions and refreshment breaks between sessions** to prioritise and enable knowledge exchange and support deeper learning.
- Our findings indicate that the value of conversations over tools should be acknowledged in the context of business benchmarking groups, and we recommend **improved engagement with farmers to support alternative solutions** in situations where technical problems arise.

Demonstrating and developing new practices

- Our research confirms that **hands-on and practical demonstrations were the most memorable and impactful** delivery means for participants, and we recommend that these are given precedence in future programmes.
- The **value of engagement and interaction in on-farm demonstrations**, including dialogue with peers and hands-on and practical demonstrations, is something that **cannot be replicated through virtual means**, and we recommend that on-farm demonstration and learning re-commence post-Covid 19 alongside virtual means familiarised during 'lockdown' and social distancing interventions.
- We recommend that the **collaborative approach adopted in the Lothians be replicated** in different regions and scenarios in future demonstration projects. We also recommend future programmes initiate and support **increased cross-site visits and/or virtual networking** to encourage cross-fertilisation of ideas and sharing experiences across the national network.
- We recommend a **review of programme length and format** to support interaction with trials initiated in the context of programmes at a stage results can be assessed.

Demonstrating and developing virtual interaction

- **Extended access to learning and trial results** can be achieved using virtual demonstrations, including live streaming, recorded material, or virtual tours.
- **An online virtual farm tour is being developed collaboratively with farmers** from both community groups to facilitate ongoing learning, illustrate the impact and legacy of the Monitor Farm programme, and act as a hub for knowledge exchange.
- **The tour will show trial results** from the two Monitor Farm projects along with other **changes attributable to the Monitor Farm programme**.
- Monitor Farm hosts and other workshop participants involved in developing the tour are also acting as **virtual tour champions**, spreading the word, and **encouraging others from their community to engage and offer material**.

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1. Introduction

This research evaluates learning and change by farmers based on two Monitor Farms located in the Lothians and Morayshire regions of Scotland. Findings presented in this report are based on observations and interviews conducted across the three-year Monitor Farm programme period (2017-2020) and a virtual workshop conducted one year after the programme concluded (April 2021). Our study contributes in-depth qualitative insights into key features of successful on-farm demonstration found to underpin community engagement and support capacity building among farmers, including acquisition of knowledge, approaches to decision-making, and challenging norms towards achieving individual and community legacy.

Our results focus on four key features of successful on-farm demonstration identified from our research, which provide the structure to this report. These are: good facilitation, openness of host farmers, engaging delivery of learning topics, and purposeful social interaction. We discuss these elements in the main sections of this report, supplemented by illustrative boxes, which provide examples of their application and their significance in encouraging practical outcomes and approaches to farming and peer-based learning. The final section draws attention to opportunities and lessons for the future.

1.1 Background to the research

This research was conducted as part of the [Scottish Government Strategic Research Programme \(2016-2021\)](#), funded through the Rural and Environment Science and Analytical Services (RESAS) division. More specifically, the project contributes towards Theme 2 on productive and sustainable land management and rural economies, by assessing the effectiveness of the Monitor Farm programme as a means to increase the uptake of best practice in farming (RD 2.3.12). This study also links to the European Commission Horizon 2020 funded project: [‘PLAID’ \(2017-2019\)](#) Peer-to-peer learning: Accessing Innovation through Demonstration.

Two case studies were involved in the research, providing the context to explore key principles underlying learning and change in relation to facilitated peer-to-peer learning opportunities, such as Monitor Farms. In addition to more general reflections on features associated with successful demonstration events, our investigation focussed on three key elements to look in detail at how and why farmers might implement innovations and practices. The topic of soil health was identified in advance of data collection, as being of universal importance to farming and a key area to investigate the potential for uptake of best practice through demonstration. Lessons relating to soils as a topic of focus within the Monitor Farms programme can be found in section 4.1 (**TOPIC EXAMPLE: SOIL HEALTH AND ASSESSEMENT**). Two additional topics were identified during data collection and analysis. The first was collaboration, as an opportunity for the sector to convert social capital towards improved efficiencies on farm, which was particularly significant in the context of Lothians Monitor Farm (**SEE SECTION 4.2 – TOPIC EXAMPLE: COLLABORATION**). The second additional topic explored related to opportunities associated with mixed farming groups, which was a feature of all Monitor Farms in the programme being studied, exposing arable and livestock farmers to new knowledge, peer-based exchange, and community-level outcomes (**SEE SECTION 5.2 – INTERACTION BETWEEN FARMING TYPES**).

Investigation using case studies provides opportunities for in-depth qualitative investigation and discussion with stakeholders involved, but it is important to note that these individuals also draw on their wider experiences outside of the current Monitor Farm programme – including past programmes and other activities and events. Accordingly, it is not within the scope of this report to present an assessment of the strengths and weaknesses of the current Monitor Farm programme.

Instead, we draw on the case studies to explore aspects of them to consider how this type of on-farm demonstration might be undertaken to increase the uptake of practices that might improve profitability, productivity, and sustainability in the agriculture sector.

1.2 Monitor Farms in Scotland

The Monitor Farm programme is a type of group extension to encourage uptake of best practice and improve profitability and sustainability by the farming sector. The programme involves hosts opening-up their farm to their peers – the ‘community group’ – with visits approximately every two months over a three-year period, organised and coordinated by a facilitator. It is founded on the principle of ‘farmer led, farmer driven’ and together farmers decide what changes will be made on the Monitor Farm to improve profitability over the course of the programme. Monitor Farm Scotland is based on a model used in New Zealand and was set up in 2003, to improve profitability of Scottish farms and help them become more market-focused in the wake of the 2001 Foot and Mouth crisis.

The Monitor Farm selected is usually a ‘typical’ farm for the area in terms of type, productivity, and profitability and it is intended that it be reflective of conditions and challenges faced by farmers in the area. Each meeting focuses on a topic and experts are often invited to speak, along with practical activities where possible. At the outset of the programme the facilitator works with the Monitor Farmer (host farmer) to establish baseline figures and understanding of their farm business which will then be used to as a basis for making changes and assessing their effectiveness over the three-year period. A Monitor Farm Management Group is made up of interested community group farmers (including a group chair), who also assist in steering the Monitor Farm project. Some Monitor Farms also establish benchmarking groups (known as business groups) for farmers to compare figures with each other and those of the Monitor Farm.

The current programme was funded through the Scottish Rural Development Programme Knowledge Transfer and Innovation Fund (KTIF), with contributions from industry partners. There were originally six industry partners and the current delivery partners for the 2017-2020 programme are Quality Meat Scotland ([QMS](#)) and the Agriculture and Horticulture Development Board ([AHDB](#)) Cereal and Oilseeds. The facilitators have come from these industry bodies, agricultural consultancies ([C A MacPhail Consulting](#)), and organisations including [SAC Consulting](#) and the Scottish Agriculture Organisation Society ([SAOS](#)).

Programme aims, objectives and outcomes

The Monitor Farm Scotland programme works to a shared aim, ‘to help improve profitability, productivity and sustainability of producers through practical demonstrations, the sharing of best practice, and discussion of up-to-date issues.’ The case study farms involved in this research represent individual projects involved in the fourth round of the programme. The round was launched in autumn 2016 and initial on-farm demonstration events were held in winter 2016-17. The final community group meetings were held in February 2020.

Each round of the programme provides lessons for the next, should funding be available. Some £1.25 million was secured to fund these nine Monitor Farm projects located across Scotland for the three years of the programme (2017-2020) via the Scottish Government and the European Union’s Knowledge Transfer and Innovation Fund (KTIF). The funding does not limit or define topic selection or stakeholder involvement, except to ensure that they are progressive, innovative, relevant, and conducive to improved productivity and sustainability of farming.

Lothians Monitor Farm

This Monitor Farm project was comprised of two neighbouring farms (Preston Hall and Saughland), represented by farm managers and their teams. The two farms were formerly managed as one and

are now owned separately due to succession. One farm is approximately 650 hectares of predominately arable land (500ha), with some permanent pasture and woodland. The other is approximately 330 hectares of predominately permanent pasture, grazing 2,100 breeding sheep and 70 suckler cows at the start of the programme, with smaller areas of contracted-out arable land (60ha) and rough grazing (15ha). At the outset, an individual application to become a Monitor Farm host was made by one farm manager in relation to his livestock business. This became a joint application with the arable business of the second farm strengthening the application by collaboration and the addition of arable farming, making it more representative of farming in the Lothians area and therefore more relevant to a wider audience. It was also important to note that these two farms were operated by managers, as all the others in the current programme are operated under tenancies or owner-occupation.

Historically, the two farmers have a positive relationship as neighbours, including informal labour sharing and formal contracting arrangements. Since the start of the programme, collaboration between the farmers has increased to include aspects directly relating to delivery of the programme, and through new and innovative arrangements (grazing livestock on normally arable land on the neighbouring farm towards improved livestock health through cleaner grazing and increased organic matter and arable fertility in the longer-term). Both these farmers are recognised for being innovative and productive. Both are operating progressive systems (precision farming, paddock grazing) and are open to experimenting and changing practices for the purposes of demonstration in the Monitor Farm programme.

Within the broader aim of the Monitor Farm programme, the Lothians Monitor Farmers' individual objectives fundamentally related to analysing and challenging themselves; building on shared knowledge and learning with others in the agricultural community and industry; and to make better-informed decisions going forward. The importance of shifting farmers' mindsets towards trying new things and making smart business decisions, as opposed to decisions driven by emotion or traditional practices, is also at the forefront of the facilitators' objectives in the programme for the Lothians Monitor Farm.

Over the course of the programme both farms made significant changes in terms of business practices, both individually and collectively (**SEE BOX 1 – LOTHIAN'S MONITOR FARM BUSINESS CHANGES**).



Host-led discussion with participants on trailer tour
– Saughland Farm, October 2018

BOX 1 – LOTHIAN'S MONITOR FARM BUSINESS CHANGES

Saughland Business Changes

- Increased Cattle and Sheep numbers
- Agri-Environment (collaborative application)
- Collaboration – Sheep grazing, Cattle Outwintering
- Cattle Away Wintering Project
- Sheep - genetic improvement
- Increased Output – 410kg/lwt/ha to 664kg/lwt/ha
- Rotational Grazing and Grass Utilisation
- Benchmarking – Business Group
- Innovation – Target Selective Treatment
- Technology – Clipex Sheep handling system
- Diversification Options – Meat Box Business
- Labour – less staff but better equipped
- People - Management Team and Network in place

Prestonhall Business Changes

- Grain Store (build)
- Biomass Upgrade
- Agri-Environment (collaborative application) – Pollinator Project
- Collaboration – Sheep grazing, Cattle Outwintering
- Machinery Changes (scale)
- YEN – In-depth Analysis
- Benchmarking – Business Group
- Innovation - Virtual Agronomy
- Technology – Grain Store Barn Owl System
- Diversification Options – Farm Buildings at Rosemain
- Succession discussions - (on-going)
- People - Bill -RHASS Chair, Will and Family moved North
- Management Team and Support Network

Source: Lothians Monitor Farm Meeting Report, February 2020

Morayshire Monitor Farm

This Monitor Farm project was conducted on large mixed farm (Corskie) comprised of over 500 hectares of arable land (predominately malting barley, but also winter wheat, barley, and oats for livestock feed), almost 600 cattle (380 cross cow suckler herd, 200 cow pedigree Simmental herd, plus Simmental and Shorthorn bulls), 600 sheep, and 380 pigs. The farm is managed by an inter-generational family team and is made up of over 1,440 hectares of land, some of which is owned and some managed under agreements with neighbouring landowners. The farm has also diversified and is home to a road haulage firm.



**Moving between areas of the farm in small groups
– Corskie Farm, May 2018**

While this is a traditional mixed family farm in many ways, it is not ‘typical’ for the area from the perspective of scale. This presented an opportunity in the Monitor Farm programme to demonstrate a wide range of farming enterprises, although some elements were excluded due to health and safety restrictions (pigs). It was also recognised that the farm is managed in a progressive manner, using practices and technologies that could be demonstrated to the wider farming community. Another important factor in this farm’s application to host in the programme related to succession planning and providing an opportunity for the younger generation entering the sector to learn within the programme.

Within the broader aim of the Monitor Farm programme, the farm’s individual motivations emphasised a desire to increase efficiencies and further improve the business, by trying new and different systems and looking more deeply at systems currently used to identify areas for improvement – including aspects of the arable and livestock businesses. Engagement with the local farming community was also identified as particularly important by the facilitators, whereby the variety that the farm could offer, established reputation of the farmers, and their enthusiasm and openness to ideas were significant draws.

Over the course of the programme Corskie Farm also made significant changes in terms of trialling and implementing business practices (**SEE BOX 2 – MORAYSHIRE MONITOR FARM BUSINESS CHANGES**).

BOX 2 –MORAYSHIRE MONITOR FARM BUSINESS CHANGES

- Trialling the use of ‘Moocall’ sensors for better herd management
- Use of beef monitoring unit, allowing remote weight checks and stress-free handling
- New sheep handling system to decrease stress on livestock linked to EID tag reader
- Compaction investigation leading to cab operated tyres pressure on new tractor
- Evaluating lime products available in Morayshire, accreditation of lime products encourages farmers to source quality lime products
- Pelvic monitoring of heifers to reduce caving difficulty
- Variety trials – helping to evaluate existing and new varieties available
- Succession planning

1.3 Research approach

Nine Monitor Farms participated in the 2017-2020 programme, including the two selected for this research, based in the Lothians and Morayshire regions. Selection of case studies was based on innovative aspects for the programme. The farm representing the Morayshire project is recognisable within the farming community due to its scale and the farm’s success, including at livestock shows and sales. The farm was also involved in trialling new crop varieties and technologies that could be showcased to farmers. Lothians Monitor Farm was comprised of two independently owned and managed farms that were operating collaboratively in the Monitor Farm programme, providing a novel testbed for exploring new ways of working across farm boundaries. The two farms were also using progressive arable and livestock management techniques that provide long-term demonstration opportunities for farming communities.

Data was collected through three qualitative means: participant observation over the duration of the programme; two sets of in-depth interviews with funders, facilitators, host farmers, other farmers from the community group; and a post-hoc virtual workshop involving representatives from both

Lothians and Morayshire Farms. This combination of methods provided for detailed scrutiny of key topics and awareness of operational aspects of the programme.

Researchers attend bi-monthly meetings for the three-year duration of the programme, taking photographs and field-notes of descriptive and analytical observations. Twenty-eight interviews were conducted in winter 2017-18 to gather information about participants' experiences of the programme in its early stages, including motivations to attend, perceptions of how it was being run, and information on current practices and potential for change. An additional twenty-one interviews were conducted in winter 2019-20 to gather reflections on the programme in its final months and individual progress resulting from attendance. Finally, a post-hoc workshop was conducted a year later (April 2021) to provide a further opportunity to explore successes, opportunities, and programme legacy – including the influence of participation in the programme on farmers' response to the Covid-19 pandemic. The workshop was attended by representatives from both Monitor Farm project communities to include cross-community discussions. Due to the Covid-19 pandemic, the workshop was delayed and eventually held online. This report is based on information collected by these three means.

All quotes presented in the report are anonymised and pseudonyms are used where necessary to protect individuals' confidentiality. All photographs were taken by the researchers.



**Participant observation during demonstration event
– Corskie Farm, May 2018**

2. Good facilitation

Our research has identified four key elements that underpin successful on-farm demonstration programmes and events. This section discusses the importance of good facilitation (1), which is followed by openness of host farmers (2), engaging interpretation and delivery of learning topics (3), and purposeful social interaction (4). Understanding the importance of these four elements can help ensure that programmes and events are characterised by engagement, reciprocity, and progress.

Successful events are facilitated by multi-skilled teams and individuals who are informative, approachable, and effective in the organisation of on-farm demonstration.

“The facilitators on this Monitor Farm are very, very focused and very, very driven and it's quite good because they'll push us all the way and we need pushed and we need challenged.”
(Participating farmer)

“If you get the wrong facilitating team nothing happens” (Participating farmer)

Having the right facilitators in place can take events beyond effective organisation and management, supporting learning and change in farming by ensuring that demonstration programmes understand and support the needs of the individual hosts and community groups at large.

2.1 Organisation and event management

Facilitation of on-farm demonstration programmes and one-off events includes organisation and assistance at the time of each event to support the host and attending group in achieving the relevant outcomes. Planning and preparation are exceptionally important, as is follow-up to reinforce learning and encourage participants towards practical implementation. In the case of demonstration programmes, this responsibility extends over multiple meetings and events and requires additional commitment and measures to ensure that each event takes into account previous events and associated feedback (learning through observation and participants comments) and future events (being agile and responsive to the needs of the group).



**Group boarding trailer to access farm demonstration site
– Corskie Farm, May 2018**

Key lessons for facilitators relating to organisation and event management highlight the importance of communication skills. Box 3 lists a range of factors for facilitators to consider and underlines the difference it can make by having the right facilitators in place.

BOX 3 – KEY LESSONS FOR FACILITATORS

- **TOPIC, CONTENT, and INPUT** – ensuring that events are appropriately pitched for the target group sets the tone (creating a ‘buzz’); Monitor Farm Management Groups are an important connection between the facilitation team and community groups (**SEE BOX 4 – MONITOR FARM MANAGEMENT GROUPS**). Planning and preparation for meetings is also important (seasonal alignment, prior planting of a crop, equipment to prepare)
- **TIMING, LENGTH and LOCATION** – taking the farming day and calendar into account (distinction between summer and winter) and providing appropriate notice ahead of time are important to enable attendance.
- **EQUIPMENT and FACILITIES** – ensuring that the environment is appropriate to enable learning (visibility, sound quality, seating where appropriate)
- **COMMUNICATIONS** – making sure that logistical arrangements and the topic are shared with the farming community in appropriate ways (email, social media) and providing appropriate and accessible means of contact for community members to ask questions after/between meetings.
- **INTERPRETATION and DELIVERY** – ensuring that these reflect the needs and learning styles of the group, including opportunities for learning in situ (field, shed, etc.) and breaking into sub-groups where necessary. **SEE SECTION 4 – DELIVERY OF LEARNING TOPICS.**
- **BALANCE OF INPUT** – recognising the importance of expert input from the community group as well as host farmers and invited speakers, and time built in for interaction and discussion.
- **GROUP ENGAGEMENT** – recognising the needs of the group and using techniques that encourage engagement and inclusiveness (opportunities to contribute in ways people are comfortable with, clarifying technical language, etc).
- **VALUE OF PARTICIPATION** – challenging people to think differently and share experiences in ways that support group learning. **SEE SECTION 5 – PURPOSEFUL SOCIAL INTERACTION.**
- **PERCEPTIVENESS TO GROUP NEEDS** – being aware and understanding different scenarios that arise in group events, which sometimes calls for informed contribution and other times necessitates impartial mediation in the context of group discussions.
- **BALANCE OF TIME** – ensuring that formal and informal opportunities for knowledge transfer and exchange, discussion and networking are factored into event planning and recognised during events (time for refreshments, ‘transition time’ between demonstration sessions or stations, etc).
- **LOGISTICS and CONTINGENCY** – running events in a smooth and timely way.
- **FLEXIBILITY and OPEN-MINDEDNESS** – providing suitable opportunities for feedback and being responsive to making changes as appropriate.

“They were really good at briefing the speakers. I overheard them a number of times briefing both the host farmer, the relevant Management Team members, and also the speakers, that *‘when you’re out there don’t preach. Ask questions and get the discussion going.’*” (Programme funder)

2.2 Understanding and supporting the needs of the group

Our research observed clear support for ensuring that on-farm events are well organised and managed. It was also clear that farmers are perceptive to the more fundamental role and skills required of *good* facilitators in supporting the learning needs of community members attending such events. In this respect our findings advocate for greater attention to be paid to the characteristics,

skills, and time required for facilitators to elevate events beyond practical organisation and event management to events that build capacity in farming communities by understanding and supporting the needs of the group.

In one-off events, facilitators are limited to observation and reaction in situ, but in the context of programmes such as Monitor Farms, facilitation teams hold a central role in guiding participants through their learning journey. Their role includes on-going perception and evaluation of community response to events, group dynamics, and reactive time management based on value being generated through presentation and discussion. Our results show that good facilitators are characterised by such responsiveness, are skilled communicators, and put mechanisms in place to ensure that feedback loops are genuine (not to 'tick a box'), comprehensive, inclusive, and responsive to community needs. Monitor Farm Management Groups are an important mechanism that can support facilitators implementation of the programme (**SEE BOX 4 – MONITOR FARM MANAGEMENT GROUPS**).



**Management Group engagement in field trials and discussion
– Preston Hall Farm, February 2020**

There was widespread support that good facilitation is not a simple task and is not currently valued highly enough in terms of the time investment required to get to know the community (topics of interest, regional challenges, etc) and the practical difference it can make in terms of building capacity. Good facilitators exhibit neutrality in the process and understand that a key part of their role is enabling participants. Their role is to understand the people they are working with and what they can do to support them.

“It was all about people and understanding people, and how you communicate with people. So, we had to understand ourselves that we all brought different skills and then that mix was going to be useful. Then within the Management Group we had to sort of build this team and John’s great experience of doing that. So [...] we’ve come at it in a very human sort of understanding of human behaviour point of view. And that’s how we’ve led our project, which has been good actually.” (Project facilitator)

Our research confirmed that demonstration organisers and funders recognise the characteristics of good facilitation, in association with the skills-set of agricultural consultants.

“A consultant is often a poor facilitator because a good consultant wants to, ‘this is what you should do, you have to do it’. Whereas the facilitator needs to get the person to see what needs to be done and get them to want to do it.” (Programme funder)

These roles are often performed by the same people and include similar principles, in terms of working with people towards achieving goals. However, the manner that they are achieved is different. The role of facilitators is not to provide answers, but to support individuals and groups towards finding them themselves.

BOX 4 – MONITOR FARM MANAGEMENT GROUPS

Management Groups are made up of interested farmers who assist in steering the Monitor Farm project. These groups are at the root of implementing the ‘farmer led, farmer driven’ approach by providing a connection between the hosting and facilitation team and the wider community group. Approaches to facilitation and implementation of these groups vary across Monitor Farm projects, including frequency and purpose of meetings, roles assumed by group members, and the ensuing dynamic within demonstration events.

“For me the definition of a good facilitator is that you have a really well-run meeting, that’s got a focused theme, that delivers what the audience wants, but nobody actually knows who the facilitator is because he’s sitting in the background just watching because he’s done all the work beforehand. So, the Management Team chairs the meeting, the Management Group members they look after the breakout discussions etcetera, etcetera. So, a poor facilitator is somebody that’s standing up, welcoming everybody, doing all the introductions, keeping the thing going and nobody knows who the Management Team are.”
(Programme funder)

The above quote illustrates the power of a good facilitator in supporting and nurturing Management Group members to become part of a wider facilitation team. It also demonstrates the potential for new capacity to be built in the farming sector through farmers’ involvement in Monitor Farm Management Groups. Equally, where strength is not built in Management Groups, negative impacts can ensue.

“I don’t think the Management Group met nearly enough and the lack of questions related to get the meeting going like... Also, as part of the Management Group we should have been doing more. The...we really didn’t question a lot of the stuff really. We were told but...the whole thing was about saying that’s rubbish you know?” (Participating farmer)

Identifying individuals who are motivated and supportive of the wider aims of the Monitor Farm project is among the first responsibilities of facilitators, followed by ongoing organisational support and capacity-building to enable and instil confidence in team members. From the perspective of both farmers and facilitators, effective management groups are those who embrace their role and work with facilitators to give the project direction:

“Keeping it all moving, keep it moving with a direction and I suppose you know whilst not influencing what is going to happen, making sure that the thing has a direction. [...] They facilitated [the Management Group] meetings too and said you know, ‘*What are you trying to do here? Where are you trying to get to?*’ It was always to try and get to where are we going to be at the end of the 3 years. What are we going to have achieved from this? They were good at that, yeah, and good links with people to come and speak and things.”
(Participating farmer)

The importance of relationships generated between Monitor Farm facilitators and Management Group members also underlies an important feedback mechanism and avenue for communication with the wider community group:

“[The facilitators have] got to know the Management Group and the hosts really well [...] If something hasn’t quite gone right, we’ll tell them. [...] I can’t really think of too many...maybe one or two of the speakers maybe didn’t just quite deliver what was maybe expected, or... We would just have a chat, ‘*well we won’t do that again. We’ll do something else*’.” (Participating farmer)

For farmers to attend regular demonstration events they must perceive value for their time spent, including new knowledge and connections, which translate into outcomes. Good facilitators have the skills required to cultivate environments and encourage participation in ways that mediate and support peer-to-peer learning. Through carefully balancing formal and informal opportunities for participants to engage with the topic of events and other attendees, participants are encouraged to return for the next event. In some cases, the dynamic created led to individuals staying at the end to continue talking, in spite of busy schedules. In other cases, participants felt that time could have been managed better to provide better opportunities for discussion during the meeting.

“I think you needed to have it that there was like tea and sandwiches, a break in the middle, to actually open up and speak about things and then that could have been picked up in the second half of the meeting. [...] I think that would have...more people would have talked about it, and you’d have gained more.” (Participating farmer)

“It all depends on how long you want to stay at the end and what... Usually there’s time afterwards at the end to have a good discussion...” (Participating farmer)

“The conversations between the people who are there might make the difference to someone’s business. So, you just kind of...let them crack on with that.” (Project facilitator)

While it is difficult to measure levels of community engagement, it is helpful to consider progress in terms of the type and effects of facilitators investment in understanding the community group and creating an open and inclusive learning environment. For example, the following quote calls attention to the facilitators’ efforts and skill over time, thus establishing the conditions for meaningful peer-to-peer discussion among community members resulting in collective solutions:

“There’s a real subtlety in what...the art that he’s kind of put into creating that dynamic [...] People don’t value the real skill that goes behind getting two groups of people [arable and livestock farmers] into a field and then being able to come up...not a eureka moment, but like... That takes...that was started on day one and took, I think it was about 18 months, 2 years-in that they got that meeting.” (Programme funder)



**Community farm walk and topic discussion
– Saughland Farm, May 2018**

In the next example, the value of investment in community engagement over time is illustrated in terms of expectations established and capacity built in the group to participate in formal and informal discussions implicit within the process. The rest being a successful meeting that appeared to ‘run itself’:

“Probably one of the best days we had was 2 or 3 back [...] we got in the trailer and we set off [...] you could have run that meeting itself, pretty much, because everybody just talked about the different stations as we went around [...] it was just a really good open discussion but really informative about current grants, and policies and things that are in place, and then there was all the stuff about you know the livestock, the crops, what we were doing [...] It all just joined up.” (Participating farmer)

Expressions of disappointment were sometimes shown where farmers felt that facilitators fell short in extracting potential from events, sometimes due to missed opportunities for learning to be expanded or deepened, or more generally due to shortcomings associated with a lack of social capital generated across the process.

“They organised it well, but you know...and I’m part of it [...] This is the third one [I have attended], I would say it’s been the most poorly facilitated [...] I don’t think the Management Group met nearly enough, and the lack of questions really, to get the meeting going.” (Participating farmer)

In spite of good organisation and likeability, greater investment in participation and measures to support capacity-building within the community (e.g. Management Group development) were felt to be necessary for more to be achieved.

2.3 Capacity building in the farming community

An important element of good facilitation is enabling participants through skills development, instilling confidence, and supporting the process from the back of the room. Recognising the difference between the role of expert facilitator and expert speaker is critical in enabling communities to recognise and share their own expertise and help them to identify additional external speakers to supplement their knowledge and open-up new areas of discussion.

“We went and said we’re not coming as experts to lecture people, we’re coming in as facilitators to help people explore their potential, and go on a journey with them, and take them through the process – and I think that’s worked. They’ve bought into that. It’s been good.” (Project facilitator)

“I don’t want to blow smoke up them too much, but I think they’ve done a great job [Laughter]. I think the most important thing that they...set out with a mindset that they wanted us to lead it, and they would help us to do what we wanted to do, and all the way down the line they’ve kept plugging that. They’ve kept saying we’re here to help, this is... I know ‘farmer led farmer driven’ is a strapline for the AHDB, but I think they really wanted to invest in that, and they certainly have. There’s no question about that, and their attention to the project has been excellent.” (Participating farmer)

Bringing in innovative farmers from other areas is another example of facilitators’ endorsing the value of peer-to-peer learning, illustrating the potential for community members to embrace their expertise and demonstrate innovations and practices on their own farm where appropriate. The following example illustrates the significance of on-the-ground expertise and the value of peer-to-peer learning in terms of farmer engagement in discussions:

“He spoke for an hour and a bit, there was seventeen questions – I counted them – asked during his talk.” (Project facilitator)

The above quote also illustrates the value of discussion between farmers and the benefits of individuals discussing their home practices with others, sharing the benefit of successes and failures. Facilitators’ role includes recognising and utilising skills and expertise within the group to the wider benefit of attendees:

“Learning from not just what [the host farmer is] doing but others, like Steven. What he’s done and his explanation of how he does things – a lot of people are going away going, ‘*we’ve all learnt from it*’. We’ve had farmers there who are bigger experts than any college expert or any sort of professional expert.” (Project facilitator)

Monitor Farm Management Groups are a key mechanism by which farmers can develop leadership and other skills, in addition to other social capital and mentoring benefits associated with regular and focussed interactions with their peers over a period of time (**SEE BOX 5 -- PERSONAL JOURNEYS**). Community group meetings provide opportunities for individuals to hone these skills in a supportive environment as a member of the expanded facilitation team ‘lead from behind’ by the expert facilitators.

“Usually on the meetings, the open meetings, the open days or whatever, each Management guy takes a group.” (Participating farmer)

Mentoring is an additional role of facilitators in the context of longer-term programmes, such as Monitor Farms, during which time potential can be identified and skills and/or confidence may be developed. The following quote illustrates the value of facilitating relationships between group members and providing additional mentoring to support individual growth:

“We’ve helped them develop to become consultants in their specialism [...] It was actually Bob Jones phoned me and said ‘*I’m trying to work out my sheep*’ [...] So Steven is going to go and give him some advice. [...] So, I phoned Steven, I said, ‘*right go and see Bob*.’ I’m actually going to get Steven, I’ve got the form to fill in to get him on as an accredited advisor, so I can mentor him as an advisor. He’ll become an accredited advisor. But he needs...on the advisory side he’s really technical but he needs confidence too so we’re trying to help him along a bit.”
(Project facilitator)

The prospect of mentoring was also extended to mentoring new facilitators in the 2017-20 programme, to improve skills and opportunities for access facilitation for the future. Our research found evidence to suggest some conflation between the concepts and practice of facilitation and consulting that could benefit from reflection, including the skill-sets and demands of these roles, and the benefits of mutual exclusivity versus combining the two.

“We have very few skilled facilitators in Scotland [...] and we wanted to develop that.”
(Programme funder)

“There is a real difference between a facilitator and a consultant because if you’re a consultant it’s your job to know the answer to the question and when you’re a facilitator it’s not your job to tell the people the answers. It’s to encourage that answer and draw that from the group.”
(Project facilitator)

“I’ve seen that before, being involved with the Monitor Farm, if you get the wrong facilitating team nothing happens. It just all stagnates. People come along and they have a chat and go around, and they do some stuff and that’s it.” (Participating farmer)

Recognising that the ‘art’¹ of good facilitation is not prescriptive, and in practice goes beyond the elements of organisation and management listed at the start of this section illustrates the value of mentoring and capacity-building over time for facilitators as well as farmers to sustain and support future peer-to-peer learning programmes and events. Support and investment in facilitation should be a key priority in future demonstration events and learning programmes, including a clear remit that specifies their full role and where necessary training and access to mentoring should be offered.

¹ Dale Hunter 2007, *Art of Facilitation*, San Francisco, Jossey-Bass Books

BOX 5 – PERSONAL JOURNEYS

Many companies offer training courses and workshops to help staff develop skills, build confidence, and ensure workers are ready to seize opportunities, problem-shoot, and communicate effectively, helping them to work more efficiently. The organisations involved in developing the Monitor Farm programme recognise that farmers have fewer opportunities and that formal training routes are often less appealing to farmers.

“We need to start looking at how we can develop the farmers as an individual. Their own personal development, and we knew from previous ones that it made a big impact on the host farmer, but we needed to get that out to the wider farming community.” (Programme funder)

The Monitor Farm programme was designed to offer farmers a chance to come together and develop social and business skills in association with relevant topics to progress their farm businesses and build a more sustainable and resilient farming industry. Several participants set out (often un-intentionally) on individual journeys in the Monitor Farm programme, learning new skills and gaining experiences that helped them develop personally.

“[It] has probably given me confidence a bit to push on and do these things. So, maybe inadvertently – It’s not as if I’ve learnt about building offices through the Monitor Farm, but the personal development bit has maybe pushed me on to do it.” (Farmer)

“It has given me the confidence to set up a new business, I wouldn’t have done that without the support I have received and contacts I have built up.” (Participating farmer)

Individual achievements by Management Group members over the course of the programme also includes diversification projects, development of new businesses, presentation at events, press articles, awards, and involvement in further learning opportunities.

The nature of farming lends itself to those that are comfortable working in a relatively isolated way. Through membership in Monitor Farm Management Groups, farmers are presented with opportunities to work with others and push themselves to develop new skills and confidence.

“Yeah, happier speaking to...more comfortable speaking to...we have done more social things as well, so it’s all been good.” (Participating farmer)

“I’m not particularly forthcoming when it comes to standing up in front of people. I just can’t be... I just hate it really but sometimes you just have to push yourself into doing that wee thing [...] No, it was a good thing.” (Participating farmer)

Through opportunities to provide support to hosts and facilitators during meetings, an important part of some participants’ journey was finding their voice and being better able to speak in front of others, express their thoughts, and become more vocal over the course of the programme. Participants also recognised progress in others.

“I know there are certainly two or three people who are on the Management Group who have kind of really found their voice in the last couple of years, who came along and were a bit unsure how much they wanted to be involved but they have definitely got a lot out of being part of it.” (Participating farmer)

“It gave Jenny a lot more confidence to go and deal with people and speak to individuals.” (Host farmer)

3. Openness of host farmers

A number of characteristics were identified as important in Monitor Farm hosts: honesty, relatability, credibility, passion, and enthusiasm, but openness and willingness in their approach was most frequently identified as a defining feature of success from the perspective of participating farmers.

“Open. To be an open person. I think you need to... I think open is the word I would use, open! They need to be open to...not necessarily change but they need to be open to options of change. Open to being challenged to discussion. [...] So, communication, openness, willing to adapt, innovative I would say. You need to be quite an innovative person, or willing to be innovative. Seeing the bigger picture. Seeing that there’s something beyond where you are at the present moment in time.” (Participating farmer)

“Openness is one of the key ones, willing to share their failure and their success. I think that’s probably...to be honest that’s about it. I think all the rest is detail; if you don’t have that you’re stuffed.” (Project facilitator)

By putting themselves forward for the role of host, these farmers assume a leadership role in terms of both demonstrating attitudes and behaviours and breaking down barriers and encouraging the type of conversations necessary for incremental and transformational change.

3.1 Openness to share

Perhaps the most fundamental indicator of positive host farmers is their willingness to share the full range of their practices and experiences, from successes to failures, and offer all areas of their farm to the process for discussion. Being open with successes on the farm and sharing details on how they have been achieved allows others to compare and make changes to replicate success. Being open with difficulties and failures provides opportunities for shared learning, opportunity to overcome challenges, and working together towards solutions. Openness in this way also creates a space where people feel they can talk about ‘things gone wrong’ with others who identify with the same types of challenges.

“[The host has] got nothing to hide so the winter barley was a disaster last year. This year it’s been really good. Record. Last year it was a disaster. But because we’re on a journey and we’ve been to the fields, and we’ve all been part of it.” (Project facilitator)

“We’ve been pretty honest about what we’re doing. I think people have respected that. Even when things aren’t right, be prepared to say they’re not right. I think that’s...I would like to think people would say that of us, that they find that to be quite refreshing in a way that we were quite happy to hold our hands up and say, *‘well we made a complete pig’s ear of that’*.” (Host farmer)

The value of openness by host farmers is multi-layered, in terms of generating respect, credibility, and trust in the context of the group by showing leadership and encouraging reciprocity in the manner of discussions. Openness about their approach to farming also prompts dialogue on what it is to be a ‘good farmer’ and the lifestyle and expectations associated with that.

“I want to be respected or seen as a good farmer I suppose, and I suppose it’s a good opportunity to demonstrate that. [...] You’ve got to get the balance right, you’ve got family and other things I like away from farming, and then you sometimes feel like there’s an expectation on you to do all these things because somebody else is doing them. Or if you’re really good at farming you’ve got to be 110% farming all the time – but I disagree with that. [...] It’s been a good experience and I hope it all continues to... I’ll be able to reap benefits from that going forward.” (Host farmer)

“Good on them. They’re willing to share information so that’s...I think that makes a good host.”
(Participating farmer)

“He’s been brave having everybody in when... It’s fine when you’ve got your system up and running and you know what works and doesn’t work, whereas [the host] is kind of learning on the job at the start.” (Participating farmer)

“I asked two people, two fellow farmers [...] to put their figures in. *‘No, not interested. [The host] hasn’t come clean with what he’s doing so I’m not putting in mine’.*” (Participating farmer)

“One of the comments that we had back was how appreciative and how surprised people were, the amount of detailed information that we were able to give about the harvest performance so quickly after harvest. Now part of that’s because that’s the way we work. We’ve got all that information almost at our fingertips all the time. We’re thinking about that sort of thing all the time and I think people appreciated the fact that we were able to set out our harvest results page that had all the information on it. So, people go home with that, and they can sit down and go well how have I done?” (Host farmer)

ROSEMAINS WHEAT HARVEST 2019					WW Av 2016	WW Av 2017	WW Av 2018	WW 2019
WW 2019	WW 2016	WW 2017	2nd	2nd			1st & 2nds	
1st	2nd	2nd	60	55	172	139	131	
71				53	1519	1254	902	
73	73	72	401	8.84	9.02	6.89	10.12	
10.32	555	608	6.68	143	135	140	171	
143	8.11	8.42	171	0	50	31	91	
78	135	140	115.8	1,457	1,245	1,293	1,268	
1,554	31	43	1,259					
	1,126	1,221						

Calculations

2019
 203 @ £155
 87 @ 152
 203 @ 140
 783 @ 140

Est not sold

2018
 230 @ 150
 186 @ 167
 555 @ 150

Estimate Not Sold
 176 @ £156
 145 @ £139
 176 @ £146
 87 @ £133

C4 Dec Euroheat at option
 C4 Dec Euroheat at option

WV valued at £30/t (Not all straw baled)

Rosemains WW

Value (£/t)
9.38
9.67
7.06
8.11
8.42
10.05

PULPIC MEASURING RESULTS - SPRING 2018 CALVING - COMMERCIAL HEIFERS									
CALVIE ALA SHEED BY DELBORT Full calving EYE: -4.3				MEASUREMENTS			RESULTS		
Heifer	DOB	Heifer's Age at Calving	Heifer's Eye Depth Reading	Pulvic 1	Pulvic 2	Calving Ease Score	Calf Size Score		
EMILY X 2662	02/11/2015	581	-3.8	SMX	14	18	1	2	
FACITOR X 2945	03/11/2015	580	-5.3	BSHX	15	17.5	1	2	
COWBOY X 151	03/10/2015	571	-1.2	SMX	14	18	1	2	
WATSON X 3887	01/10/2015	570	-5.3	SMX	14.5	17	1	2	
FINNEY X 2662	11/09/2015	568	-5.3	BSHX	15	18	1	2	
WATSON X 2685	10/09/2015	557	-3.3	SMX	13.5	18	1	3	
WATSON X 255	10/09/2015	558	-5.3	SMX	14.5	18.5	1	3	
WATSON X 208	09/09/2015	556	-5.3	SMX	14	18	1	2	
DIGAN X 904	31/08/2015	552	-4.0	SMX	14	16	1	3	
FINNEY X 2662	30/08/2015	550	-1.5	SMX	14	19	1	2	
WATSON X 397	29/08/2015	548	-2.3	SMX	13	10	1	2	
WATSON X 2651	30/08/2015	545	-5.3	SMX	13.5	17	1	2	
WATSON X 109	23/08/2015	540	-5.3	SMX	14	17	1	2	
WATSON X 268	21/08/2015	536	-5.3	SMX	15	18	1	2	
EASTWOOD X 2656	02/11/2014	570	-5.3	SMX	14	19	2	3	
FOXLEY X 104	10/09/2015	569	2.6	BSHX	15	18	1	2	
WATSON X 2660	17/09/2015	567	-5.3	SMX	14.5	17	2	3	
FOXLEY X 2510	16/09/2015	564	2.6	BSHX	15	17	2	3	
COWBOY X 151	06/09/2015	562	-1.2	SMX	15	19	2	3	
DIGAN X 691	06/09/2015	556	-0.8	SMX	16	20	2	2	
DIGAN X 154	29/08/2015	547	-0.4	SMX	16.5	17	2	2	
DIGAN X 177	25/08/2015	543	-0.4	SMX	16	19	2	3	
2x4x DIGAN	21/08/2015	542	-0.4	SMX	15	17	2	3	
FACTOR X 140	22/08/2015	538	-3.3	BSHX	14.5	18	2	3	
FACTOR X 160	22/08/2015	539	-5.3	BSHX	14.5	18	2	3	
2x4x FACTOR	29/08/2015	533	-5.3	BSHX	14.5	19	2	3	
WATSON X 380	09/10/2015	573	-5.3	SMX	14	19	2	3	
FOXLEY X 262	30/09/2015	568	2.6	BSHX	14	17	3	2	
DIGAN X 685	27/08/2015	554	-0.4	SMX	16	17	2	3	
FACTOR X 222	24/10/2015	575	-5.3	BSHX	13	15	4	2	
WATSON X 2642	09/09/2015	554	-5.3	SMX	15	14	4	3	

CALVING EASE SCORE
 1 = Easy 2 = Big Bump 3 = Help 4 = Ceaser

CALF SIZE SCORE
 1 = Normal 2 = Good calf build 3 = Very Big Calf

20

BOX 6 – GRAIN STORE LEARNING JOURNEY

Identification of key challenges facing businesses at the outset of the Monitor Farm programme can provide valuable opportunity for group discussion, problem-solving, and project development. Farmers can follow the hosts' journey through implementation, including any challenges that arise. Many projects and trials in farming require time and can depend on seasonal factors, so the programme may be completed before results can be demonstrated to the community group.

A group learning journey on one host farm arose from identification of infrastructure limitations associated with grain handling and storage. Fitness for purpose (size, access), health and safety concerns, impact of markets, and other practical and financial considerations (double handling) were discussed and marked the start of a three-year project involving the host farmer and group.

"I'd highlighted a couple of things like, part of the steading basically had become really difficult to work with from a farm point of view because of the size of the equipment and access and all that sort of stuff. [...] So, the obvious thing to say was well if we built a new grain store then it would free up space within the existing sheds [...] We're just about to put a planning application in for the old part of the steading." (Host farmer)

"I think they'd come to the conclusion that that was the limiting factor of the business and that was needed to be invested in. But the whole decision process involved in that I think was quite clever and [...] they took the attendees to the Monitor Farm on that journey with them, which I think is quite important. Just going through that process for somebody young and maybe hasn't had a huge capital investment like that, it's really valuable." (Participating farmer)

Inviting input from outside of the business, including farmers who have recently completed similar projects, meant that options and costs could be discussed for new and existing facilities.

"The group was there right at the beginning, visited different stores, exactly what he wanted and then we saw it right through to the end, and I think he's made a really good job. [...] Say to them, 'well what works?' They say, 'well I don't know what works but I wouldn't do that again', and there would be one little thing everywhere you went. 'Whatever you do, don't do that', and that learning was hugely important. (Project facilitator)

Translating discussion into action, the group were then invited to view and discuss progress as it happened throughout the programme period, culminating in a tour of the finished building. While the host farmer gained from community input, participating farmers gained through involvement in the process and witnessing the store project through to completion.



Grain store tour – Preston Hall Farm, Oct 2019

"The way they went about building their grain store and everything like that as well. We've built quite a few sheds recently, so it's been interesting to see which direction they went. [...] Basically, what do you need, what shed will do what you need, and then kind of going from there. [...] It's all very well talking about everything, it's actually getting out and doing it as well." (Participating farmer)

"[The host] changing his grain system, that was all quite thought provoking for all the arable guys" (Participating farmer)

Opening-up the farm to let people view the physical set-up and environment appeals to farmers' natural curiosity to see what others are doing. High numbers, particularly at early events in the programme, demonstrates demand by farmers to see 'behind closed doors', and was sometimes identified as 'nosiness' rather than an indicator of interest or commitment to the Monitor Farm programme or community longer-term.

Among those who did regularly devote time to the programme, an expectation that host farmers would be willing to include all relevant aspects of their farm was expressed, and omission of elements was seen as an example of shrouding aspects they felt to be less favourable or attractive.

"They need to be open. [...] There was a definite interest to go and see the commercial cows [...] I think if you're in the Monitor thing you've got to see the whole picture." (Participating farmer)

"Very disappointed that we didn't get to... [The host] didn't completely open up and let us see all his farming enterprise. We didn't get up to [part of the farm] where the large commercial herd of cows were, which would be, for the majority of the folk that was there, would have been beneficial to us all. We would have been able to identify with what he's doing to what we are doing. I did feel that he just wanted to...he showed us what he wanted us to see."
(Participating farmer)

However, it is important that expressions of interest in different aspects and areas of the farm are made clear and discussed in ways that satisfy the demands of both host and community group farmers, including rationales for what is included in the programme.

"So... I think maybe folk maybe didn't challenge [him] enough, but that's not a reflection on him. That's just folk could have challenged. There wasn't many times where we had, '*why are you doing that?*'" (Participating farmer)

Openness by Monitor Farm hosts is suggested to play a role in reducing veils of secrecy that continue to characterise some aspects of farming. In combination with supportive facilitation, honesty and openness by demonstration farm hosts represents a progressive, community-based approach. In turn, such openness could eliminate peer pressure associated with holding back less favourable elements, the need for farmers to 'peer over dykes', and help farmers to identify with and aspire to making improvements and changes based on facts and figures instead of guesswork.

"[The hosts] have got roads all through their farms and they're very honest. I think honesty is really important. That's my job to break that down, the peer pressure, peering over the dykes, if you're doing that you're just going backwards." (Project facilitator)

While the value of openness is clear, it also opens farmers up to a degree of judgement and scrutiny. The importance for host farmers to have the right attitude and personality was recognised, including charisma, ability to engage, and 'thick skin'.

"I think you have to have a bit of character. [The host] is obviously...he's quite happy to...he's got enough confidence to be happy to stand up and sort of expose himself to potential abuse or whatever you would say. Folk ripping into him or... So, you need to be tough enough to take that, and he's definitely tough enough for that." (Participating farmer)

"I don't think we've ever had any issues where there's a question we can't handle and if you've got a good team, and a good management team, and a good facilitation team, if somebody does start to get jaggy somebody will jump on them which we're quite lucky that way I think."
(Project facilitator)

The importance of having good support systems in place was also identified, including the role of good facilitators, and establishing an effective and supportive Management Group.

3.2 Openness to change

As well as being open to sharing information, practices, and experiences on their farm, willingness to embrace change and try new things is a highly sought-after characteristic in Monitor Farm hosts.

“It’s a magnifying glass on their business for three and a half years. So, you need someone who is really open and who can take...who is looking to move forward. You’re looking for someone who will challenge people as well because you don’t want to just change for the sake of changing it. You want to be able to challenge people’s thinking.” (Programme funder)

Being receptive to new ideas, advice, questions, and constructive criticism, including those from other farming types, who bring different skills-sets and experiences, demonstrates open-mindedness, acknowledges the experience of others, and promotes a positive approach to growth and personal development.



Group discussion of fodder beet trials
– Saughland Farm, May 2019

Identifying the right individuals to participate as host farmers is widely believed to be critical to the process, over and above the farm they represent. Having a positive attitude to change was rated highly among characteristics of a good host farmer, alongside their ability to communicate clearly and openly with the group.

“The farmer is the most important element because the farmer has got to be open to ideas. He’s got to be not defensive about what he’s doing, he’s got to be... He’s got to accept criticism gracefully most of the time.” (Programme funder)

“One is willing to embrace change. I suppose positivity [...] Somebody that was negative in mind, they wouldn’t be much use. [...] You know you have got to be prepared to change. I don’t think you can have all these experts and people trying to...if the figures match it and say, *‘look actually this is going to be a better way of doing this...’* [...] Yeah so I think positivity, flexibility, willing to change and just tell it how it is.” (Participating farmer)

“You have to be willing to put your money where your mouth is. You have to be able to take a bit of a risk, you have to be able to accept mistakes. Yeah, you need to be open-minded. I think you have to be pretty resilient and not try and not care too much about what others think, but then you also have to...that works two ways. You’ve also got to listen and actually act on what you’re being told as well, and not just say to people you’re listening and then just do your own thing.” (Host farmer)

“They need to be willing to make some changes to their business on the back of what’s been done through the Monitor Farm Project I would say. If they’re completely stuck in their ways and they’re never ever going to change because that’s what people think they should do, it’s just...I don’t think that would quite work.” (Project facilitator)

The profile associated with becoming a Monitor Farm host may be complementary to existing respect or standing in the community, or it may come earlier in the farmer's career. The way that host farmers embrace the opportunity and the community into their business and learning journey over the period of the programme can be pivotal in relation to the farmers profile and the future direction of their business. In this respect, identifying farmers that are at the cusp of change (or 'sweet spot') places them in an appropriate position to host. Farmers participating in the Monitor Farms programme want to see and learn about existing practices on the host farm, but they also want to see the hosts learn and make change.

"He's learning, you can see...almost see [the host] learning in front of your eyes at times."
(Project facilitator)

Our research revealed support for farmers who are 'already good' to be host farmers, but without the willingness to try new things and be open to implementing suggestions coming from the community group, hosts can fall short of farmers' expectations.

"[The host] is on top of his game so...it was very good, whatever they do he does extremely well. But whether we got out of it what we should have got out of it? I don't know."
(Participating farmer)

Identifying farmers who are representative of the community in terms of performance and goals, and motivation to listen to new or alternative perspectives and take risks provides the opportunity for a shared learning journey to take place.

"In terms of the farm, you don't want to go somewhere really backward because you don't want somebody who's miles behind because then people think well if he's going to just catch up to where I am now then what's the point in me going. So, you want somebody who's relatively middle of the road in terms of performance. I think...yeah so in terms of...somebody who's got an interest as far as being... Somebody who's got a growth mindset." (Project facilitator)

"I don't think there was enough...he didn't make enough mistakes. There should have been situations where that committee should have told him to go and do something that was definitely...that definitely didn't work." (Industry stakeholder)

"We've been pretty established, that's a dangerous thing to be. That's part of the reason I got into the thing. You know? You think you're doing a good job, but there's nothing like opening yourself up to your peer group to find out whether you're actually doing it right or not, or what you should be doing. I suppose that's what underpins the project, that input from others that questions you or challenges you hopefully and then finally agrees with you that you're doing the right thing." (Host farmer)

Without a willingness to embrace feedback, host farmers lay themselves open to criticism. Conversely, host farmers who demonstrate willingness to listen to new perspectives and try new things embody leadership and demonstrate the potential and value associated with implementation of new innovations and 'best' practices.

"Some of the kind of innovation [...] on the livestock side, really driving innovation of trying to cut down wormers and things has been...because that's a major problem for the whole industry. He's been willing to take...invest in the kit that allows him to do that and it's been good" (Project facilitator)

Monitor Farm hosts who demonstrate leadership in this way are more likely to stimulate positive behaviour change by others in the wider community.

4. Delivery of learning topics

For learning to occur in on-farm demonstration events, format, delivery and exchange of information and ideas is important to stimulate interest and support engagement with the topic. This was explored extensively in the EU project PLAID² (and sister project AgriDemo), where [best practice guidelines](#) were developed based on case studies throughout Europe. Our findings with these two Scottish case studies strengthen the recommendation that the ways information is interpreted and delivered is as important as the content itself.

“People take things in completely differently. Some will take it in visually, some will take it- some will listen, some will read it... I think you’ve got to have a range. If you’re out in the field and can feel the soil and see it. And everything is visual and practical, yeah absolutely, some people learn an awful lot from that. But likewise, they might- some might love the science behind it. So, I think there’s benefit in both.” (Project facilitator)

Ensuring that the event topic and content is communicated appropriately for farmers participating in the programme is a crucial role of facilitators, including support for the host farmers in the delivery of content specific to their farm. For learning to translate into on-farm changes and impact for participants, demonstration events should support farmers to make the information their own, enabling them to translate lessons to the context of own farm, location, and production system. The way that content is presented or demonstrated, and time allocated for discussion, can have a profound impact on learning.



Handout showing grass root cores
– Corskie Farm, May 2018



Demonstration of livestock monitoring unit
– Corskie Farm, October 2018

Allowing peer-to-peer discussion between hosts and participants and between participants is crucial, therefore time should be safeguarded for such exchanges (**SEE SECTION 5 – PURPOSEFUL SOCIAL INTERACTION**). Lessons identified in our Monitor Farm case studies are listed in Box 7, including interpretation and delivery practices that stimulate interest and encourage the type of engagement necessary to induce learning and change. This section identifies key lessons for demonstration providers, drawing on two topic examples to illustrate and explore interpretation practices and their impact on farmer engagement and learning.

² [Disentangling critical success factors and principles of on-farm agricultural demonstration events \(tandfonline.com\)](https://tandfonline.com)

BOX 7 – KEY LESSONS FOR TOPIC DELIVERY AND INTERPRETATION

- **MULTIPLE DELIVERY MEANS AND SETTINGS** – helps retain attention and interest, consolidates learning, and supports different types of learners and personality types in the same session (oral presentation and/or discussion followed by seeing or experiencing examples in situ).
- **PRACTICAL and/or HANDS-ON DEMONSTRATIONS** – support visual and sensory learning and aids memorability (soil pits and digs, machinery and equipment demonstrations, handling system tours, in-field discussion of practices and techniques).
- **BESPOKE PRESENTATIONS** – communicate relevant information to the audience and personalise their experience (avoid use of old presentations intended for a different audiences).
- **RATION SLIDES/POWERPOINT** – these should not be the primary means of demonstration or presenting information but used to complement other delivery methods (to convey principles followed by a practical demonstration, as an aide to support discussion in winter meetings).
- **HAND-OUTS AND FOLLOW-UP INFORMATION** – can be used to communicate detailed information (benchmarking figures), support discussion in situ, and provide a lasting resource for participants after the event (links sent via email).
- **EXPERT SPEAKERS** – are not necessarily individuals brought in from academic or industry organisations, but includes farmers with knowledge, information, or experiences to share.
- **VARIED DISCUSSION OPPORTUNITIES** – allow participants to choose the ways they are most comfortable to engage in discussions about the topic; in addition to time spent as a whole group or in formal sub-groups, farmers appreciate time moving or transitioning between sessions (moving between different parts of the farm or during refreshment breaks) where they can engage in informal discussions with one or two other people, mixing up the group dynamics.
- **DISCUSSION TIME** – should be valued and safeguarded in the schedule to support exchange between participants, including hosts, facilitators, speakers, and other attendees (**SEE SECTION 5 – PURPOSEFUL SOCIAL INTERACTION**).
- **INCLUSION** – effective facilitation helps ensure inclusion and discussion opportunities for all; some participants might require encouragement to engage, ask questions, etc, others may prefer small group interactions (**SEE SECTION 2 – GOOD FACILITATION**).

“It was a good idea to split up into smaller groups when numbers allowed because I think definitely you got more questions and chat within the smaller groups compared to on the odd occasion if we were maybe borderline and we decided not to split them if it was a quieter type of meeting.” (Host Farmer)

4.1 Topic example: Soil health and assessment

From the outset of the Monitor Farms programme, increased awareness of best practices in soil management was among the key objectives to be addressed through demonstration and discussion.

“The key objective within the Monitor Farm programme is to make every farmer aware of the importance of soil health and give him the tools and the knowledge to assess and maintain his own soil.” (Programme funder)

Awareness of soil assessment is a fundamental principle of best practice, which endorses the value of knowledge and information to support decision-making and change. The value of knowing your own soil lies at the heart of industry best practice for good management of soils for all farming types

and practical written guidance (Valuing Your Soils³) is available. Farmers expressed their agreement that soil health needs special attention but ensuring that it takes account of existing knowledge and practices already being implemented for the sector to move forward together.

“Farmers generally I think tend to take the soil for granted. If you’re arable farming, it’s even more important.” (Participating farmer)

“The way the sort of government’s heading towards... With the sort of soil health but it was quite frustrating because we went to a meeting with SNH and they had one of their pilot projects was a farmer somewhere up north and he’d taken over a farm and he was really cutting edge because he’d done a bit of drainage and he’d done a bit of pH testing. Whereas for a normal farmer that’s sort of fundamental.” (Participating farmer)

“I’ve quite enjoyed the Monitor Farm, doing the soil structure stuff and having the soil expert speaking and it just makes you think, and you go back and look at your soils and think yeah there’s something we can improve on here.” (Host farmer)

“Let’s get the basics right here first and then once we get the basics and everyone moves forward together” (Participating farmer)

The principle of conducting assessments has been emphasised over the course of the programme, including demonstration of low-cost and accessible methods, and other more targeted solutions for common problems.

The interviews suggested that arable farmers are particularly comfortable talking about soils, including the specific treatments and nutrient inputs required. From the perspective of mixed farming, waste products associated with livestock rearing are commonly used to improve arable soil and structure; something that farmers are very aware of.

“Keeping the soil structure in good condition and keeping the organic matter up, it’s the path that people are doing and everybody is aware of it now.” (Participating farmer)

The significance of soils in the context of livestock rearing specifically appears to be less established – though an interesting example was highlighted by one farmer whereby identification of trace element deficiency through soil assessment has lifted cow fertility following treatment of the soil.

“I thought ‘I don’t need to do that, that’s a waste of time.’ They came along and they’ve tested it for me; I did know at the time I had a fertility problem with my cows, my cows are very, very big and looking show condition all the time but my fertility was always poor. ‘I can’t understand, there must be a problem.’ But now I’ve realised there was trace elements in my ground which was very low. So, by doing soil sampling, mapping, knowing where my trace element deficiencies is, I’ve now built round my own mineral that I give my cows and because of that I could have said I’ve lifted them by 15% fertility.” (Participating farmer)

Using physical and visual means to demonstrate ways that soil health and structure can be assessed and inviting peer-to-peer discussion of experiences on the topic has prompted several individuals into action and provided inspiration and mental triggers to others. Learning is supported where participants are comfortable in the environment and with the means of delivery. Field-based demonstrations where farmers can see examples can help visual learners to relate the topic to their own situation. For example, presentation followed by an in-field compaction demonstration in Morayshire helped farmers understand the importance of soil structure and the harm heavy machine could cause. This has resulted in changes in practice.

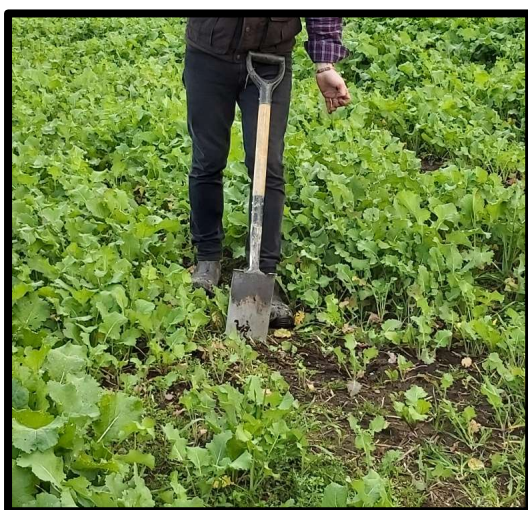
³ Available at:

https://www.crew.ac.uk/sites/www.crew.ac.uk/files/sites/default/files/publication/Valuing_Your_Soils.pdf

“Yeah, the compaction is the thing and obviously compaction affects soil structure and everything so it’s the whole bigger picture. We’re probably more conscious as well now because I pay more attention if we’re ploughing and see worms and things, just because it was all brought to our attention at that meeting. I thought that meeting was brilliant actually.”
(Host Farmer)

Reflecting on compaction demonstrations, farmers spoke of the value of discussing tyre selection and tyre pressure and seeing the differences in impact on the soil and how it made them consider their own practices. While the concept of compaction was not new to them, demonstration made them more conscious of how different types of machinery can affect the soil and raised awareness of the new technologies and methods available to alleviate impacts and implement change. This example illustrates the potential for demonstrations centred on visual impact and memorability to correlate with learning outcomes and changes on farm.

Soil health lends itself particularly well to demonstrations and discussion in the field, where farmers can see and assess examples, debate treatments or solutions in situ, and translate new learning into their own practices. This might include large-scale changes relating to machinery or inputs, or smaller more incremental changes in terms of attention to soil health and assessment practices.



Soil expert during in-field demonstration session
– Corskie Farm, October 2019



Simple soil dig using spade to assess soil
– Corskie Farm, October 2017

Reflecting on soils best practice in the Monitor Farm programme it was felt that messages on the importance of fundamental soil health were incrementally reinforced in parallel to other information sources, such as the farming press.

“I think people are realising that overworking soils is bad for the soil health, so people are saying how can I establish my crops without pulverising the soils and knocking out the organic matter and soil biology.” (Participating farmer)

“It was never really discussed before to be honest. Issues with compaction and tyre pressures and working on the land. I think that’s been a big thing through the Monitor Farm and it’s created a discussion out with the Monitor Farm as well which is a great thing.” (Project facilitator)

The importance of soil health filtered through regular discussions and observations in host farmer updates and farm tour aspects of events. In this context, farmers could connect the host’s observations and experiences to visual cues, relate them to their own experiences, and ask questions. By treating soil as a valued living resource, the aspiration for more resilient soils was also pursued through a variety of more targeted demonstration and discussion topics, including simple (and more

complex) soil analysis, compaction, quality in the application of fertilisers and lime, and the significance of organic matter and soil biology. Through regular and varied attention, the significance of soil health was found to permeate farmers' thinking and consideration in relation to their own practices for the future.

"Even the uptake of soil analysis has been greater I would say and just the whole amount of care that people need to take of their soils has definitely been highlighted." (Project facilitator)

"Since then, I've actually had the soil scientist guy out at my own farm...to do soil analysis and soil constitute parts and so I got a lot out of that." (Participating farmer)

"I thought lime was lime and I'm a lot more aware about it now, questioning [...] the testing a lot more, which I would think a lot of other folk that were present at that meetings would be doing as well." (Participating farmer)

"I think just being more aware of conditions and weather conditions when we're in the fields because damage to soil structure and...we're just being more careful where we run with trailers and things, stick to tramlines and at least we can subsoil the tramlines if it is a problem. No, I think just being more particular about looking after our soil." (Host Farmer)

Practicalities and limitations on time were identified as barriers to implementation of soil best practice. However, recognition of the benefits associated with allocating time suggests that providing farmers with such visual opportunities and being physically present and see what to do and why can act as an enabler to increased uptake.

"We don't do enough of it. It's the usual story it's always a fire engine job, there's so much to do every day you feel you haven't got time to go and take a spade out and dig, when we should actually spend time and do these things. I feel that we will pick up on it because it is more beneficial to see and do it [...] It is nice to see that, and we needed to go and appreciate it on the Monitor Farm to go home and actually do it." (Participating farmer)

In addition to regular farm updates, dedicated soil sessions provided more focussed opportunities for practical demonstration and discussion of best practice approaches to assessment and management. 'Top-down' and 'bottom-up' approaches to soil assessment and management were demonstrated, including attention to practices that influence soil health (top-down) and lessons to improve understanding of what constitutes healthy soil (bottom-up). There was suggestion that starting from the bottom-up provides farmers with longer lasting and more fundamental lessons to underpin future decision making (such as digging soil pits and comparatively analysing soil samples) but we also found support for demonstration of practical changes (top-down) in terms of the impact they can have.

"They approached it from the soil up rather than from the machine down. So, they dug the hole and saw what the damage was and then looked at ways of mitigating that damage. [...] The way they did it [there] you covered the whole range of issues that affect compaction." (Programme funder)

"The tyre compaction was probably one of the ones that most people are remembering more so than any of them. I think most people are going home and done changes more so than any other meeting [...] It was a great visit to see it actually working rather than actually seeing it on paper. You had to see it to appreciate it. [...] I've made changes as far as we double-up combine, double-up sowing, we use flotation tyres in nearly all the trailers. We don't go into fields with super singles and narrow old-fashioned tyres if it's been wet conditions." (Participating farmer)

Informal analysis through observation of soils and yield would be done as a matter of course within productive farming systems. Participants agreed that simple soil digs are an interesting and

worthwhile exercise, but we found that this is not a practice that farmers would regularly implement 'without a purpose'; in other words, to investigate issues identified by other means in the course of their work. The 'Soil My Undies' demonstration proved to be memorable as a method of soil assessment, which was based on cotton underwear buried in topsoil in multiple locations on-farm for a period of 8 weeks. The underwear was displayed during the meeting and analysed based on the principle that the more degraded the cotton, the healthier the soil in terms of organic matter. This demonstration technique resonated in farmers' minds as a fun and simple mean of investigating soil health. While it resulted in some laughter, the test was widely suggested to have 'made farmers think', increased discussion and interaction, and provided another simple and low-cost method for farmers to increase their knowledge of their own soils.

"We had that looking at how active the soils were. That bury your pants [laughter] and all that stuff was really good like. We tried that and we were looking at different ways of managing the soil." (Participating farmer)

It was suggested that farmers might trial this method on their own land through interest to see the results and compare with others, including the Monitor Farm host. However, the topic was not revisited in the programme.



**Degraded underwear displayed for discussion
– Corskie Farm, October 2017**

Farmers learned and inherent instinct in relation to their own soils remains an important means of ongoing assessment, which is increasingly being complemented by technology and data-based assessments at 4-5-year intervals. The relative scale and resource-base of different farming operations is an important factor. Cost barriers to purchasing technology were acknowledged. In this context, the use of contractors was highlighted as a lower cost means to access expensive machinery not necessarily recognised or utilised by some. This also highlighted the potential and importance of discussion in Monitor Farm meetings to share information and experiences within the community.

Our research highlights the significance of physical presence, seeing behind the scenes, and being given appropriate information and opportunities to discuss practices and issues in context to support learning and application. Farmers appreciated the mix of presentation techniques and were vocal in expressing their thoughts when the sessions were not practical enough.

"I think going into various fields and seeing you need to do something, dig various holes and testing. That, we all should be doing. In with a spade and look at the colours and looking at the time of year we should be doing it. So... I think more practical..." (Participating farmer)

"It would be better to do it in the field – something to see or something to do, but just to stand in a barn..." (Participating farmer)

A key role for on-farm demonstration programmes and events is providing farmers with opportunities for ‘nosiness’ and ‘mental note-taking’ as they in effect ‘informally benchmark’ elements of the host farm (assessment practices, soil health characteristics, cultivation practices, inputs) against their own.

4.2 Topic example: Collaboration

A key principle underpinning collaboration in the case of Lothians Monitor Farm involves the combination of arable and livestock farming. It builds on the concept of mixed farming and systems of rotation, whereby arable ground may benefit from organic matter and other gains that livestock grazing can bring, and livestock may benefit from grazing of new grass leys and other cover crops. The aim is to develop a mutually beneficial relationship which allows each individual enterprise to operate at a scale that is economically viable in the context of modern financial and political climates, and to explore how relationships might be established to ensure an equal share in the risks and rewards. Inviting the community group to observe the process and contribute to decision-making demonstrates innovation in the context of farm business management in addition to the new agricultural practices being demonstrated. Innovative thinking and discussion and interpretation of the collaboration trials is further enhanced as a result of interaction between arable and livestock farmers (**SEE SECTION 5.2 – INTERACTION BETWEEN FARMING TYPES**).

"The collaboration thing has been the big thing so they've been doing joint things using arable fields for livestock purposes and we've both been in the fields with arable farmers commenting on the livestock farmers fodder crops, or vice versa and so the willingness to do that stuff has been really good and it's quite unusual to get that going on so I would say that's been the biggest thing." (Project facilitator)

Box 8 illustrates the range of trials that were conducted over the course of the programme. Due to the nature of collaboration as an alternative business strategy, decision-making, implementation of trials, and discussion of progress and results were focused on in the context of different short and longer-term processes. Due to the nature of farming, the results of some trials could not be observed during the programme period; particularly from the perspective of environmental improvements anticipated in soils from returning livestock to arable land.

BOX 8 – COLLABORATION TRIALS

1. Machinery Sharing – maximising resources
2. Labour/skills Sharing – different busy times
3. Grazing winter forage crops – clean ground for fattening lambs
4. 2-3 year grass ley on arable land – Clean ground for livestock and improving fertility for arable
5. Collaborative Agri Environment scheme approach
6. Away wintering of Store Cattle – examining the cost effectiveness
7. On wintering of dry cows – creating additional income and adding organic matter

Source: Lothians Monitor Farm Handout, February 2020

While farmers are accustomed to working across seasons and time to produce results, demonstration of relationships and practices that generate rewards in different timeframes also necessitates discussions of trust and measures to ensure benefits are reciprocated and shared over time. In this sense, demonstration of collaboration in the programme relied heavily on the openness of the Monitor Farm hosts in terms of willingness to implement changes and trial opportunities with uncertain financial implications and likelihood of some short-term loss to achieve longer-term gains (**SEE SECTION 3.2 – OPENNESS TO CHANGE**). Implementation of trials based on ideas and suggestions

from other farmers also illustrates the value of on-farm demonstration events and programmes for community engagement.

“We're very lucky that the two host farmers [...] are trying to integrate things with each other's business that show the collaboration and I think that's a real way – I think that's how farming should evolve, is people work together, share costs, share ideas.” (Participating farmer)

*“Yes, it's basically how do you get an arable farmer to give up a field; not give up a field but I mean...either put it down to grass or have cover crops in it and things like that. So...it's like everything else it all comes down to farming is a business, money is very important.”
(Participating farmer)*

“The collaborative thing was probably the best thing of the whole...otherwise it would just be two Monitor Farms, or a Monitor Farm doing one thing but actually you had to kind of think about the other side. So, I think the host farmers both did a good job at that. They were quite willing to undertake activity. And there's a cost and a time element for you know, [one host] going down to [the other host's farm] to do stuff when it was all just on his doorstep before and vice versa. So yeah, a willingness to have... A communication and willingness making it work.” (Participating farmer)

“I was standing there and I was like, ‘right well you've got all this stuff, you don't need it [...] How about we transfer the fertility, if you like, from one field to another. [...] Let's transfer it across the road, put the bales in there, bale the straw, leave it in situ, eat everything in there with cows, leave all that as the manure on the field ready to cultivate back in.’ Biology, bacteria, the whole thing that hasn't been happening previously. [...] I think that's a good example. That was the next step forward.” (Participating farmer)

The value of dialogue and discussion on collaboration was recognised by farmers, including the significance of the joint Monitor Farm venture in the context of bigger questions relating to policy direction and environmental consequences of the status quo, and the ‘nitty gritty’ of how it might be implemented by farmers in practice.



**Discussion of trials introducing livestock to arable fields
– Preston Hall Farm, October 2019**

Through attending the Monitor Farm, community members' reflection on their own current and future practices were supported by seeing and discussing the various trials being carried out. Farmers expressed interest in trial results, including quantification of benefits (at a time when they can be calculated), and hearing hosts' reflections on challenges and lived experiences. Indeed, the prospect

of a collaborative venture being demonstrated featured in some farmers' motivation to attend. Networking with other progressive farmers was a stimulus and opportunity to establish new relationships and generate the type of social capital required to underpin future collaborative ventures of their own.

"It's quite a prevalent sort of issue in the media as well. [...] Every farm used to be mixed back in the day but it's just, you just can't do that now. Whereas at least they're looking at a way of how you could possibly do it further down the line." (Participating farmer)

"Well, I think that's the problem though, everybody has gone specialist [...] Everything is going back because people have done 20 or 30 years of this and they've ended up depleting the soil, which is our main asset, and suddenly they've gone, *'alright, hold on, this isn't working now, we're going backwards.'* So, we need to reinvent the wheel." (Participating farmer)

"It's kind of...it's given us an idea of how you could do it." (Participating farmer)

"I initially went along to this Monitor Farm because it was a collaborative project; because I was interested could I join up with someone..." (Participating farmer)

"Agricultural policy might be going back towards more mixed farming and that's what we're... For an arable farmer increasing their soil health might mean incorporating some livestock into the rotation which would be a real change of direction for our own personal business. But going to this has probably... I don't know it's certainly not turned me into a sheep farmer, but it's given me the contacts that I could either pick the phone up, or other people's sheep could be coming here." (Participating farmer)



**In-field discussion of grazing established on arable land
– Preston Hall Farm, October 2018**

From the audience perspective, the Lothians Monitor Farm demonstrated what might be possible through collaborative working, exemplified the importance of innovation in business management practices as well as farming practices, and stimulated interest in developing new collaborative relationships. Our research confirmed the importance of community dialogue at the root of the way collaboration was interpreted and engaged-with as a topic and emphasised the significance of support provided by facilitators.

"Where they were really good was when we started to talk about the collaboration side of it. They were really, really good; invested a lot of time in that and thinking, *'well, okay, so if we're going to do this, how are we (A) going to make it work? How are we going to get the benefit from it? How are we going to show the benefits from it?'*" (Host farmer)

Support provided by the facilitation team was particularly important in demonstrating collaboration in terms of affording neutrality and mediation to the process and also ensuring the particular needs of a diverse group were met (**SEE SECTION 2.2 – UNDERSTANDING AND SUPPORTING THE NEEDS OF THE GROUP**). Successful dialogue was founded in norms of engagement, trust and reciprocity instilled by facilitators throughout the process. A space was created for group members to reflect on and apply new learning, and conversations (both at group level and between individual group members) encouraged farmers to explore questions, opportunities, and barriers foreseen in their own situations.

“It’s taken the fear out of it for a lot of people because you can see a lot of the arable guys [thinking], ‘I’d really quite like to put sheep on that field but I’ve no fences, or no water...’ So, we’ve sorted some of those problems and, actually, they got to know the livestock guys as well and that trust is a lot of it because they don’t want somebody coming in, making a mess and then disappearing. So, if they know them and build that trust...” (Project facilitator)

These demonstrations of collaborative mixed farming could contribute towards wider change in the agriculture sector by exemplifying a workable alternative to farms individually implementing mixed farming practices. Farmers’ interest and support also suggests that future programmes could build on lessons by advocating for joint-hosted projects interpreting collaboration opportunities in different scenarios. Suggestion was also made to expand the reach of lessons learned in the current programme:

“Another thing I thought would be interesting is whether there’s an opportunity to do some sort of roadshow or someway where you would take [...] [the other host] and I and some of the people that have been involved in the Monitor Farm out of our area and hosted a meeting somewhere...Whether that would draw in people from that area.” (Host farmer)

Discussions of additional time or arrangements for farmers to come together at a later date to reflect on trial results illustrates the challenge of working in the context of a relatively short period of time for change to happen, and the importance of legacy derived from this type of programme (**SEE SECTION 6 – LESSONS, LEGACY AND THE FUTURE**). A ‘blueprint’ on collaboration is an anticipated outcome from the programme, reflecting experiences across the range of trials and providing a foundation the wider farming community to consider collaboration as a business strategy.

“We haven’t had an awful lot of data back and that’s the thing, we’re going to run out of time in this project to get a lot of that actual facts and figures back because part of the whole thing was trying to get a blueprint of collaboration between a livestock and arable enterprise. And I don’t feel we’ve got there yet so...but we might have to run for another year or two for all these figures to come out in the wash. Who benefits from the collaboration, or what...is there a...can you say put figures on who gets the benefits? (Participating farmer)

Members of the Morayshire Monitor Farm group, which was not involved in collaboration trials, were asked their view on whether it might work for them and if they had previously considered working collaboratively. Some mentioned the use of machinery rings, arable farms renting land to livestock producers for overwintering grazing and that the larger mixed farming enterprises were already using collaboration methods within their own business. Others were doubtful of the need for collaboration in the region due to the existing mixed nature of farm businesses in the area.

5. Purposeful social interaction

Peer-to-peer learning and sharing experiences between farmers underlies the key objectives of the Monitor Farm programme. In addition to dialogue with speakers and peers directly relating to the demonstration topic, events provide opportunity for individuals to interact and develop new and existing relationships that may be drawn upon between group meetings or at a later point in time. This new capacity developed through interactions can also be identified as a form of social capital and represents a significant outcome of on-farm demonstration events.

“You learn a lot at the meetings, but it's not all just what's on the actual programme of events for the day that you learn from. You learn from meeting someone new over lunchtime, chatting way, *'How do you farm, what's your...approach?'*” (Participating farmer)

“That networking element you know, that's hugely important too.” (Host farmer)

“I think that's sometimes the most valuable bit of the Monitor Farm. It's the bits in between that allow you to discuss with each other what it is.” (Participating farmer)

This section explores the ways that interaction has stimulated or contributed to learning and change in the case study communities, including the multiple values of social interaction, interaction between farming types, and the formation of business groups to support community benchmarking.

5.1 Multiple values of social interaction

Farmers' motivations and curiosity for attending on-farm demonstration programmes and events are multifaceted, including aspirations to learn new information and practices directly relating to the topic being presented, and opportunities to meet and discuss experiences and ideas through peer networking. However, incidental learning benefits may also be incurred indirectly through relationship development that acts as a foundation for future interactions to exchange information.



Lunch break and social interaction
– Saughland Farm, May 2019

Our research supports the importance of learning outcomes founded in peer-to-peer interaction and generation of social capital through repeated exchange over the programme period. Our results also substantiate the importance of inter-personal contact at such events, from the simple pleasures of meeting or ‘catching up over coffee and a bacon roll’, to boosting morale and mitigating against social isolation.

“Farming is more isolated than it’s ever been because there’s less people, and the more you can bring the people together, well, it boosts the morale in the farming industry, I think. But it also shares ideas and I think that’s – it’s a win-win.” (Participating farmer)

Farmers identify informal opportunities to speak to others, such as coffee breaks and transition time between sessions or locations as an important starting point for peer-to-peer learning in terms of building rapport and sharing ideas. Facilitating time for these interactions is crucial for norms of open communication and a sense of camaraderie to be built in meetings, and they are particularly important for individuals who are less confident to speak in more formal discussion forums.

“When you start talking about opportunities and options it’s amazing what comes around in conversation.” (Host farmer)

“There are people who have come to the Monitor Farm who I’ve known who they are but haven’t really known them particularly well. But they’ve got something interesting to say; whether they think that about me I don’t know [laughter] but you learn almost as much at the coffee breaks sometimes as the speakers and the topics that we’re on about. It’s just making these connections and it is a kind of forum for meeting new people and getting different perspectives really.” (Participating farmer)

“There’s usually four of us goes together. So, the one that’s furthest comes and picks everybody up, goes to the meeting and then we discuss what was at the meeting on the way home. So that’s quite nice that way, rather than all four of us not going and not talking and not...the four of us actually made a day of it you would say which was quite good.”
(Participating farmer)

Our research identified a sense of excitement and fulfilment in new knowledge generated through peer interactions. Recognising the benefits of being ‘pushed out of their comfort zone’ and interacting with others that are motivated and to learn and make changes was an important stimulus for individuals to participate in the programme. Individuals’ confidence levels also increased through emphasis placed on peer-to-peer learning and recognition of farmers as experts.

“I’m totally out with my comfort zone, but I can’t run this farm and continue to survive into the future the way I’ve always been doing it. I’ve got to keep learning. I can’t stand still. And the only way for me to keep learning is to put myself into a bunch of technical good operators, forward-thinking, dynamic guys that – yeah, push me out of my comfort zone. They make me think. They make me come home and want to do things better, do things differently, yeah, and set me that challenge. I need to be challenged.” (Participating farmer)

“Yeah, it’s been good because usually if you have an idea somebody is bound to have done it before. Then you can and speak to someone and they’ll have an idea of what you’re talking about and then kind of working back from there and drawing on their experiences as well.”
(Participating farmer)

Facilitation that is focussed on networking and individual capacity-building is important in terms of laying the foundation for norms that encourage farmers to support each other through shared knowledge and experience. Evidence of this development within the community could be witnessed later in the programme, where the group were familiar with expectations and comfortable in making their contribution.

“If a meeting is going well, we’re not saying too much. We’re doing prompting, we’re giving people opportunity, and it’s great when you get people out in the field and we’ve got arable and livestock guys and they’re all...everyone is contributing. You know you’re doing a good job when everyone is speaking, everyone is getting involved, everyone is having a laugh. Everyone is learning something.” (Project facilitator)

The above quote illustrates the intention by facilitators, but the impact is also recognised by farmers (**SEE SECTION 2.2 – UNDERSTANDING AND SUPPORTING THE NEEDS OF THE GROUP**). Attendees' willingness to engage in this way also demonstrates readiness to learn and acknowledges the value of learning both from group members and invited speakers.

"That's why you go along to these things and be involved in it, to try and pick up some tips. And the people that are there I found were quite openminded because that's why they're there. Probably the ones that don't go along are the ones that maybe should be there because they're the ones...everybody is very open about it, it's good." (Participating farmer)

Our research suggests that a combination of formal (facilitated discussion) and informal (break and transition time) opportunities for farmers to interact with peers creates supportive and inclusive conditions for different types of learners. Rapport and trust built within the community group over time, in combination with open and responsive leadership shown by host farmers (**SEE SECTION 3.1 – OPENNESS TO SHARE**), also enables sharing of news, concerns, and positive and negative learning experiences by the group that may be translated by others into their own situation.

"I think that's what came out of the Monitor meetings more than anything else, when somebody had the opportunity to air their view and then somebody else picked up on it and said X, Y and Z is what they done and I'm sure [...] we've all gained by the rest of the group going home, *'oh well such a person had that situation and they've taken it forward and they've done better with it'*. [...] It's very difficult for people to come from the back to the front and ask the question. That's why you have to try and get everybody involved." (Participating farmer)

Farmers recognised the significance of social capital generated through interaction in the programme, including current and future opportunities for farmers to connect in a social capacity as well as relating to their farming business. Networking during the programme (including between meetings via WhatsApp groups, etc.) has provided for individuals to become familiar with others' expertise, establish contacts, initiate the practice of farmers acting as 'informal consultants' for each other, and discuss other new working relationships.

"Now I could phone any of them up and ask them a question, and likewise them I suppose if they really wanted to." (Participating farmer)

"Yeah, we have got some of the livestock-arable crossover, where folk have gone and put livestock onto other farms. We've got some who are almost acting as consultants for each other, informal consultants." (Project facilitator)

"Social interaction, but also knowledge transfer, but not to the point that you're coming to hear something. You're coming to learn. You're coming to actually meet and talk [...] What's the value of that? It could be massive to one of them you just don't know." (Host farmer)

"Whether they've done anything about it I don't know but I mean you know at least the connection has been made." (Host farmer)

The value of taking time away from the farm and discussing things with others was also considerable for farmers.

"To me it's time well spent because you learn so much from other people and being in a group and discussing things." (Host farmer)

"I think there's masses of people would benefit from it, but I think they get so entrenched in doing their own thing and just working hard all the time they can't see anything outside of doing that. So, they don't go." (Participating farmer)

“Rather than just being at home every day, doing the same old chores and hoping you’re doing right, to go along and see and meet and talk. For all the four hours away from home you gained far more than you would ever do by just carrying on at home. So, by attending these things it was a big plus.” (Participating farmer)

Exposure to new ideas or ways of working was identified as a key rationale alongside having the opportunity to interact with others as part of a group.

5.2 Interaction between farming types

All the Monitor Farms in the current programme have a mixed farming element, building on recent interest in getting livestock back on to specialist arable farms, and improving soil health and structure across Scottish agriculture. In the case of Morayshire, the host farm operates traditional mixed farming practices, which is common for the region. In the Lothians, mixed farming is less often practiced but not uncommon; the area is more commonly characterised as an arable region. The Monitor Farm ‘mixed farm’ offering in the Lothian region is based on collaboration between neighbouring arable and livestock farmers ([SEE SECTION 4.2 – TOPIC EXAMPLE: COLLABORATION](#)) and attended by farmers representing approximately 75:25 arable to livestock enterprises.



Mixed group field visit and discussion of fodder crops
– Saughland Farm, October 2018

These two distinct scenarios have potentially different implications for farmers looking to improve aspects of their specialist arable or livestock or mixed farming business. Our results reflected the difference in situations. The programme presented a natural fit for mixed farmers. For specialist arable and livestock farmers the programme might represent a hindrance to learning in their own area, but overall farmers derived value from the opportunity to learn alongside those from different specialisms.

“The Monitor Farm is very valuable. Not just to myself but I’ve tried to take most of my staff with me to most meetings yeah. That’s why if you have a mix of arable and livestock then I can take everybody with me [...] and learn themselves and that like.” (Participating farmer)

“The best meeting I’ve ever been at [...] it was to do with the collaboration and the arable unit had started growing forage crops for the livestock one; but it was actually cover crops for the arable crops, but it doubled up as forage crops. It was a field of stubble turnips, and we walked into what I thought was a fantastic field of stubble turnips and all the arable guys said what a job you’ve made of this. This is fantastic, it was just green leaf from fence to fence. The livestock guys came in and said this is terrible. Jeez it’s far too thick, the bulbs will never develop, there’s no room for them and it’s the bulb that’s got all the feed in it. So, nobody...the two sides they just hadn’t clicked about...they grew it as a cover crop, as an arable

crop, and the livestock guys assessed it as a feed source. And we discovered that the two were completely different, so the discussion across the needs of the two sectors was fantastic.”
(Programme funder)

Some of the arguments in support of bringing together arable and livestock farmers include ‘cross fertilisation of ideas’ resulting from traditionally separate groups learning from each other on shared fundamentals, such as soil health and farm business management. It also provides different types of farmers with ways to see practices they are unfamiliar with, but their neighbours might be doing.

“I think there’s lots to be grasped from them that isn’t the same but if we look at it in a similar way maybe we can make more from grass crops.” (Participating farmer)

“That cross-fertilisation of information about other things that are challenging each other was actually really helpful and that continued all the way through the project.” (Participating farmer)

“We have had some people comment when we did like a mixed meeting, when it was arable and livestock together there was some of the people that came along say... if they were just arable at home, but they found it quite interesting to hear about the livestock side at the meetings because it kind of gave them a bit more knowledge about what their neighbours were doing.” (Project facilitator)

From the perspective of facilitation, it was recognised that careful attention should be paid to the level of content being delivered to mixed farming groups where livestock and arable farmers are involved (**SEE SECTION 2.2 – UNDERSTANDING AND SUPPORTING THE NEEDS OF THE GROUP**), including variety in background and knowledge bases. Different meeting formats were implemented, including specialist technical days and break-out groups and organising the event into timeslots focussing on arable and livestock aspects to cater for different needs and give farmers options regarding how they would like to participate (**SEE ALSO SECTION 4 – DELIVERY OF LEARNING TOPICS**).

“Some days we’ve split it completely [...] and then other days you go, ‘no let’s all go together’ [...] We’ve had people that have said, ‘I wish I could do both’, so we’re trying to accommodate that. We were just gauging it as we went. Generally, I think the days we have... possibly the days we’ve stayed together... Oh, I don’t know. There’s value to both ways. [...] Some days you stay together, and you get really good benefit. You’ve got the arable guys critiquing how they’ve done their crop and you say you could do it like this, and recommendations coming forward for... Yeah and that’s really good.” (Project facilitator)

The fact that groups are mixed can also support wider principles of inclusion by ensuring that sessions are pitched at the correct level and speakers are appropriate and briefed for those attending.

“I think you have to really think about what’s this person, what are they going to give, how long is it going to take, and is this person just for everyone, or is it just for a specific sector of our group?” (Participating farmer)

Wider benefit for groups such as new entrants and individuals unfamiliar or uncomfortable with technical or scientific terminology is generated by creating a space and opportunity where people feel more comfortable asking questions or seeking clarification. Mixed farming groups benefit greatly from the lowering of communication barriers (reducing and explaining jargon), providing plainer explanations of processes to aid wider understanding, and encouraging the feeling that it is ok to ask ‘silly questions’. It is, however, important to ensure that there is a purpose to mixing groups and events are facilitated to account for differences in needs. Mixing farmers without a clear purpose can create tension and could potentially pitch inclusion against innovation and progression.

“You’re never going to please everyone all the time and I think we’ve tried to strike the balance of keeping it interesting for everyone. Obviously, there are some of the...the sheep health monitoring things done in conjunction with the Moredun have gone right over the top

of my head, but that's fine because I'm sure there are some of the technical arable stuff that we get into the nitty-gritty of that is not of interest to the more stock guys. But you know we've tried to make it not too extreme on either side and almost make it so that you can dip in – because some of the meetings have been split. The arable guys will come with [one host] and will go and look at that, some of the stock guys will go up to [the other host's farm] and have a look at that. So...we've always had some joint sessions either to start or end the day with. So, we have tried to make it something for everyone but then if you want to go your separate ways to look at specific things that's how we've tried to structure it.” (Participating farmer)

“It created a super group, it challenged us because we were trying to get two things in on the same day, every day, and sort of two sections – but that was a bit of a challenge because everybody quite often wanted to be part of the other bit as well for the same reason. So yeah, it was quite hilarious at times but good fun.” (Host farmer)

The need to strike the right balance between challenging and confusing participants has been acknowledged, in terms of ensuring value for time spent and ensuring opportunities for accessing topics and interacting with other in ways that different people are comfortable with.

5.3 Benchmarking groups

Before more formal opportunities to access information on industry standards were available, a range of informal means (markets and sales, visiting others' farms, looking over the fence) allowed farmers to weigh aspects of their farm business against someone else's. The purpose of benchmarking is to generate, share, and discuss information towards better understanding and improvement of farm businesses. It relies on developing a group with a common goal and building trust.

In the context of Monitor Farms, information sharing by host farmers is a valuable resource for participating farmers and is also important in terms of setting a precedent for sharing among the wider community group ([SEE SECTION 3.1 – OPENNESS TO SHARE](#)).

“I would like to know cost per acre of staff compared to what I'm doing [...] That's why I'm going to the Monitor Farm, is to find out what his chemicals, his fertiliser, his seed, what he's doing, to see if I can get ideas to improve what I'm doing.” (Participating farmer)

Benchmarking 'business groups' are another feature of the Monitor Farms programme that aims to push a sub-set of farmers beyond their comfort-zone in terms of sharing figures and other normally confidential information with each other towards business improvements across the farming community. By doing so, strong reciprocal ties may also be formed and built-upon in other ways in the future. Examples from previous programmes illustrate these values and the strength of social capital formed in earlier groups:

“We've still got an unofficial beef group that meets [...] because of the Monitor Farm thing at [previous host farm]. We're not doing benchmarking as such but we're going to each other's farms and we're discussing why we're doing things differently [...], the reason behind why we're doing things; and because there's only 12 of us, and we've all been around each other's farms, we're not scared to ask the awkward question, or the hard-hitting questions.”
(Participating farmer)

From early in the programme our research identified that some farmers recognised the value of benchmarking and were eager to 'get stuck in', compare with others, identify weak-spots, and make adjustments based on the principles of informed decision making. Others were more reluctant in terms of joining business groups set up in the programme from the outset due to a range of factors,

including concerns relating to the amount of time and effort required, and other nervousness and other insecurities relating to business management skills.

“You can see value, it’s back to the benchmarking. What [the host is] doing is gathering data, and that’s what I’m doing with the benchmarking. Then you can act on the data.” (Participating farmer)

“Going to Monitor Farm meetings and looking to all aspects of benchmarking [...] I’m nervous of doing it. It has to be done. Everybody should be doing it.” (Participating farmer)

Business benchmarking groups were in the early stages of being developed when the first round of interviews was conducted, and due to technical issues only became properly established in the final months of the Monitor Farm. As a result, their true value in the context of this programme could not be fully discussed, and our findings often reflected farmers’ disappointment at what could have been.

“I think it was disappointing, that’s probably the one major disappointment with the whole Monitor Farm was the [benchmarking software] because that’s one of the things I was quite looking forward to getting involved in.” (Participating farmer)

“I was going to keep quiet about it, but I was really, really disappointed in the [benchmarking software] I didn’t...I joined the group at the start, and I’ve done a lot of benchmarking over the years on stuff like that and I’ll be honest I’ll be as harsh as to say I thought it was unfit for purpose especially from the livestock side of things. I spent a whole 24 hours on it trying to get our data in and it was near impossible.” (Participating farmer)

Problems relating to benchmarking software resulted in lost time (due to duplication of effort), lost opportunity (in terms of data sharing and comparisons during the programme period), and loss of participants (due to frustration). Issues were also raised in terms of the programme’s fitness for purpose for the livestock sector, which were sustained after technical issues had been resolved and arable farmers could begin to draw benefits from benchmarking during business group meetings. Indeed, groups formed in the final months of the programme after technical issues were resolved form part of the legacy outcomes one-year on from programme completion.

“We got a lot out of benchmarking group; we didn’t really get it going that particularly well in the actual farm...Monitor Farm sort of 3-year run, but since then it’s become much more a feature and in fact that is the way most of us are now keeping in touch. And, in fact, we’ve brought one or two other people into that who weren’t part of the Monitor Farm group at the time.” (Host farmer)

“It would have been great if we’d had the proper benchmarking tool from day one. We would have had a really strong group with a lot of data behind us already. But as [the host farmer] said we’ve now picked it up even though the project is finished, and this is how we’re going to keep in touch.” (Participating farmer)

While disappointment relating to benchmarking in the case study projects is not wholly attributable to issues with the software, those issues symbolise the roots of a missed opportunity where new groups could have been formed, time allowed for trust to be built, and benefits derived from open and informed conversations between peers.

“That’s what the Business Group was all about. It’s all about the conversation, the figures were there but...it was all about the conversation and then they go into really good detail” (Project facilitator)

Greater acknowledgement of the value of conversations over tools in future programmes could help prevent future disappointment and missed opportunities, and improved engagement with farmers to support alternative solutions in situations where technical problems arise is a key recommendation from our research.

6. Lessons, legacy, and the future

Improved understanding of the factors that encourage community engagement and inspire farmers to make changes based on new learning are significant outcomes of this research, based on in-depth qualitative investigation with participants involved in two demonstration projects operating within the Monitor Farms Scotland programme.

Our findings suggest lessons that may underpin future programmes and other demonstration events, interventions, or facilitated interactions. These lessons are founded in the importance and definition of key roles (particularly host farmers and facilitators) in terms of characteristics that underpin success and implementing approaches that challenge and support farmers to become active participants in community-based demonstration programmes or events. Effective leadership shown by host farmers, mediation and support provided by facilitators, and engagement by community members are essential for on-farm demonstration to build capacity, challenge norms, and support change in the farming sector through peer-to-peer learning.

“This is actually my fourth Monitor Farm I’ve been involved with [...] and I’d say this is probably the most successful one I’ve been involved with, to be honest, and probably the one I’ve got the most out of as well.” (Farmer)

Legacy effects of the case study projects are still to be fully determined. Impacts and challenges identified by farmers participating in a post-hoc workshop are highlighted, including reflections on programme outcomes in the context of Covid-19 restrictions in the months after the programme ended. A virtual farm tour illustrating learning and changes implemented as a result of the Monitor Farm programme is currently being developed collaboratively with farmers and will represent a lasting resource that could complement and add value to on-farm events and widen access to demonstration ([SEE SECTION 6.2 – MONITOR FARM VIRTUAL TOUR](#)).

6.1 Key lessons for future programmes

Successful on-farm demonstration events and programmes are founded in community interaction and peer-to-peer learning. Participant engagement in discussions and networking to support future connections present the building blocks for endogenous change and new norms based on information sharing.

DEMONSTRATING AND DEVELOPING LEADERSHIP

Our research illustrates the importance of effective leadership, in the widest sense, as the foundation of good on-farm demonstration.

Behaviours exhibited by host farmers have a profound effect on behaviours replicated by community members – in particular, openness to share and openness to implement change were identified as defining characteristics of a good demonstration host. **Our findings indicate that hosts’ willingness to share information, practices, and experiences (including successes and failures) is vital and we recommend that these characteristics should form the basis of host selection**, thus delivering a form of benchmarking to encourage discussion and evaluation at a community level.

In terms of facilitation, our findings indicate that a more subtle form of leadership demonstrated through capacity building and supporting events based on the needs of participants drawn from the local farming community is effective. Good facilitators ensure that events are well-organised and managed in terms of topic, environment, logistics, and communication, but more importantly engage with farmers and adopt approaches that enable dialogue, participation, and inclusion. The role of facilitators is different from the role of consultants, and **we propose that facilitation skills are more**

important than detailed subject knowledge in the recruitment of facilitators for future programmes. **We also recommend clear description of facilitators' role, supported by training and mentoring** where necessary, be prioritised in future programmes to ensure that expectations are understood, and new capacity is built to support the farming sector.

Farmer 'management groups' present an important opportunity for ensuring that Monitor Farm projects demonstrate appropriate topics in appropriate ways by engaging directly with a sub-group of farmers representing the interests of the community. These actors embody a link between the organisers (including hosts and facilitators) and other participants in demonstration events. Management groups also represent an important opportunity for capacity building, in terms of developing leadership skills, confidence, and social capital. Increased regular interaction with other proactive farmers in management group meetings reinforce links and bonds that may be drawn on in the future, in addition to personal development gains afforded through planning and implementation of demonstration events with hosts and facilitators. This in turn creates legacy within the community through empowerment and interaction that might support future learning and change. **We recommend priority investment in the formation and nurturing of management groups in future programmes**, including guidance and clarity in terms of expectations, commitment, and benefits for facilitators, hosts, and other farmer members. **We also recommend a review of support measures and funding for groups and networks seeded during demonstration programmes**, to safeguard and enhance social and community capital in the in the post-programme period.

Monitor Farm projects that exemplify and develop leadership in these ways demonstrate successful capacity building over time. Exhibition of such progress may be seen in events where engagement and peer-to-peer learning is both normalised and natural, and facilitation appears to be reduced to basic organisation and management:

"I think some of the best meetings we had actually didn't even need facilitation. [...] We were regularly going around on trailers or walk around the fields and [...] there was just a general discussion happening about stuff [...] There were sort of leaders within the group, and I think as a Management Group we did quite well at drawing people out, so if there was quieter people within the group we were quite good at trying to get them engaged and involved as well." (Participating farmer)

DEMONSTRATING AND DEVELOPING ENGAGEMENT

Farmers are drawn to participate in demonstration events and programmes for a variety of reasons, including desires to see and learn about new practices and technologies, and hear about and see what others are doing. Participants are drawn by the opportunity to follow host farmers' journey during a unique period of time when they are receiving support from facilitators and community members to instigate and implement change. They are also drawn by the opportunity to engage with other members of their community to reflect on and discuss their own practices. **A key role for facilitators is to ensure that farmers are participants and not just spectators at demonstration events.**

"We probably benefitted most from a combination of a strong Management Group and a really engaged Community Group who came to the meetings, so I think just about right across the board everybody had an input into what was going on." (Host farmer)

We recommend an approach to demonstration that places dialogue and interaction at the forefront of the process. Participants will not all engage in the same way, so this entails variation in the format of events to support different types of learners. Appropriate time and space in the event for discussion with others enables participating farmers to a) present new information or alternative perspectives to the wider group, and b) ruminate with others on how lessons might be translated to their own situation. Time for formal (whole or sub-group sessions) and informal dialogue and discussion should be a constituent part of demonstration events. **Time strategically built into event**

programmes, including transitions (moving around the farm) and refreshment breaks between sessions (instead of or in addition to refreshments at the start/end of events) enable knowledge exchange and support deeper learning. Indeed, social capital developed through interaction between peers should be acknowledged as a significant outcome of on-farm demonstration.

Issues with benchmarking software stifling the establishment of business groups signified a significant source of disappointment associated with the 2017-20 Monitor Farm programme. Although technical problems were resolved by the end of the programme period, social value associated with dialogue and trust generated through the process of information sharing was lost through perceived ill-judgement and mismanagement of the situation, particularly for livestock farmers. Our findings indicate that **the value of conversations over tools should be acknowledged in the context of business benchmarking groups, and we recommend improved engagement with farmers to support alternative solutions in situations where technical problems arise.**

The case studies involved in this research officially concluded their involvement in February 2020, one month before restrictions associated with the Covid-19 pandemic were implemented in Scotland. Reflecting on the impact of Covid restrictions, farmers confirmed that, while online seminars provide an effective opportunity for presenting and assessing certain types of information, **the value of engagement in on-farm demonstrations (including dialogue with peers and hands-on and practical demonstrations) is something that cannot be replicated through virtual means.**

DEMONSTRATING AND DEVELOPING NEW PRACTICES

Seeing innovation in practice was among the key programme highlights discussed by farmers, whereby **our research confirms that hands-on and practical demonstrations were the most memorable and impactful for participants.** Engaging sessions included lessons on soil compaction, lime analysis, cover crops, soil pit demonstrations, and new equipment (for example, beef monitor, and sheep handling systems) where farmers could see and discuss examples in situ.

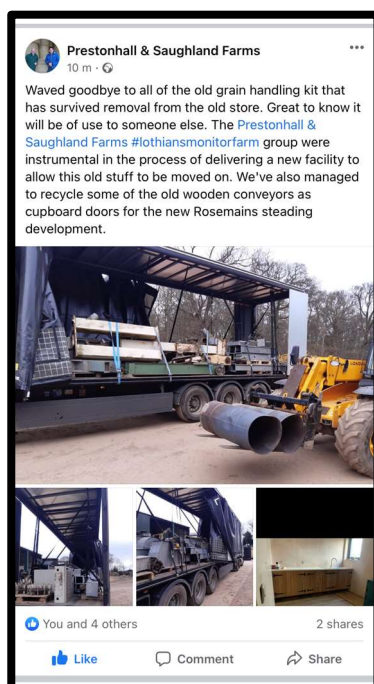
Interest was also shown in collaboration and mixed farming trials, which were an innovative element of the 2017-20 programme. These involved exposition of new relationships and agreements to implement business and land management practices towards reciprocal benefits. Trials demonstrated opportunities going beyond resource sharing to improve soil and animal health by implementing practices traditionally associated with mixed farming.

“The collaboration one probably is the thing that underpinned our project and that sharing of resource between 2 completely separate businesses proving that it can be done.” (Host farmer)

Our research indicates that this trial in joint hosting was effective in terms of cross-fertilisation of ideas and networks and perceived as a valuable experience from the perspective of hosts and participant. **We recommend that future demonstration projects replicate this collaborative approach in different region and scenarios.** Our findings also recognise the benefits of increased communication and interaction between demonstration projects in different regions. **We recommend future programmes initiate and support cross-site visits and/or virtual networking** to encourage cross-fertilisation of ideas and sharing experiences across the national network.

Trials benefitted from dialogue involving the wider community, and farmers benefitted from witnessing the process over time in the Monitor Farm programme. However, the timescales involved in farming mean that the results of trials could not be fully observed during the programme period. **We recommend a review of programme length and format to support interaction with trials initiated in the context of programmes at a stage results can be assessed.** Suggestions included optional extensions to increase programme length to five years following mid-programme review of advantage and demand, and consideration for a ‘pre-programme’ planning stage. Use of online video

conferencing software and social media also offer accessible means for community updates; particularly following the advent of Covid-19, which has widely increased use and familiarity of digital communication.



Continued sharing of host farmer's journey instigated by the Monitor Farm Programme
– screenshot, March 2021

6.2 Monitor Farm virtual tour

It was noted during the programme that there is a section of the farming community that do not engage with the Monitor farm programme meetings, whether they are time poor, do not see the relevance, or for other personal reasons are not able to attend at a set time on a regular basis. **Access to learning could be widened using virtual demonstrations**, by live streaming (a method used by Lothian Monitor Farm after the programme finished during the Covid restrictions to disseminate trial updates), recorded material, or virtual tours.

“Because you know you’ll maybe not get the guys as we were speaking about earlier, that they just won’t come to a meeting, but they might look it up on the computer and watch it from the comfort of their home if they log in and look and watch the meeting at seven o’clock at night that took place in the afternoon. You know you might catch them then” (Participating farmer)

Another farmer suggested an advantage of this could include increased collaboration between projects or individuals in different regions.

“It would be a good way of collaborating [...] If I had something that was...that I had a burning interest in and they were doing it on the Lothians Monitor meeting, would I drive all the way to Lothians to see it? I’d look it up.” (Participating farmer)

Taking this concept forward to support additional knowledge exchange and demonstrate some of the key outcomes of the Lothians and Morayshire Monitor Farm projects, **an online virtual farm tour is being developed collaboratively with farmers from both community groups**. The platform will host a range of content based on examples of learning by farmers involved and changes made on the host and community members’ farms. The virtual tour will be accessible as a resource to the wider farming community.

A demonstration of the virtual tour platform was given during the post-programme workshop (April 2021) to illustrate to farmers how a tour could be designed and to showcase the functionality we are able to deliver. The virtual tour uses 360-degree images and videos to visualise farm spaces that have been captured with specialised cameras. The 360-degree footage allows viewers to interact with the images and move around to view different angles that the cameras has captured. This enables the viewers to see unique angles not always accessible in a live tour, depending on how and where the images have been captured. The tour is put together using specialised software that creates hotspots placed at important points on the footage giving access to the embedded materials. For example, the footage of an arable field might show the top of a soil pit; by clicking the hotspot an image might be shown taken at the bottom of the pit allowing the different layers to be observed. Further icons could give access to text sheets showing soil analysis data. This visualisation could allow farmers to access vital data and be able to compare their own soil layers to that seen on the footage.



Images from filming for Monitor Farm virtual tour
– Preston Hall and Saughland Farms, June 2021

Once complete, the resource will support a range of co-produced text, images, PDFs, URL links, videos, and podcasts, allowing trial results and other outcomes to be shared interactively with viewers. **The Monitor Farm virtual tour will be used to facilitate ongoing learning, illustrate the impact and legacy of the Monitor Farm programme, and act as a hub for knowledge exchange.**

The virtual tour will be hosted on the James Hutton Institute website and will be available to view using a standard desktop, laptop, tablet, or smart phone with no additional software being downloaded. The tour will also be available to be downloaded to a smartphone to be viewed using a virtual reality (VR) headset to allow a fully immersive experience. The immersive experience also allows interaction with the materials, viewers are able to access the areas of interest to them and therefore have a unique viewing experience, in contrast to viewing a video which is viewed end to end without interaction.

Tour locations will be accessible via a map of Scotland showing the location of farms (general area as opposed to identifiable location), including the host and other community members' farms in the Lothians and Morayshire regions, and the James Hutton Institute farms at Balruddery and Glensauigh. **The tour will show trial results from the two Monitor Farm projects along with other changes attributable to the Monitor Farm programme.**

Monitor Farm hosts and other workshop participants involved in developing the tour are also acting as virtual tour champions, spreading the word, and **encouraging others from their community to engage and offer material.** Virtual tour participants will be invited to another workshop later in the year when the tour will be showcased before it goes live online as a lasting resource.

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