



Image: **Community group field walk** (source: Sharon Flanigan)

## Introduction

This research assesses learning and change on two Scottish Monitor Farms (Lothians and Morayshire). This report presents initial findings of key factors that enable learning by farmers to understand how they can be equipped to implement new innovations and practices.

We focus on features of successful demonstration, using soil assessment as an example of best practice, working together, and opportunities associated with different Monitor Farm hosts.

The research is being carried out as part of the Scottish Government's Strategic Research Programme (2016-21) and the European Commission Horizon 2020 'PLAID' project (2017-19).

## Key findings

**Successful on-farm demonstration** builds on good communication. Demonstration events help everyone to engage and share opinions, encouraging useful and interesting discussions. Of particular importance are:

- **Good facilitation** – multi-skilled teams and individuals who are informative, approachable, and effective in the organisation of on-farm demonstration;
- **Openness of host farmers** – in terms of sharing successes and failures, working with and learning from the community group;
- **Interpretation that encourages engagement with the topic** – including hands-on experiences, in-situ discussion of relevant topics, and sharing resources to communicate specific information and help recall details.

**Soil assessment** is fundamental to soil management best practice and is recognised as such by farmers. Monitor Farm 'soil sessions' were found to be engaging and complimentary to year-round discussion of soil in farmer updates, farm tours, and other topic areas. Key findings were:

- **Practical activities** – such as soil pits, digs, and initiatives such as 'Soil My Undies', promote knowledge exchange, interaction, and to help improve understanding;
- **Instinct versus data** – knowledge and experience through farming practice together with new technologies and means to access them have become standard practice for some farmers over a 20-year period;
- **Importance of purpose** – resource availability is important in determining whether farm-scale soil assessment is conducted as routine and whether localised assessment is conducted following the identification of problems.

**Working together** is encouraged by Monitor Farms, including formal and informal means of improving farm businesses in association with others. Of significance was:

- **Mixed farming through collaboration** – demonstration of collaboration between neighbouring arable and livestock farmers has provided lessons on the practical benefits, challenges, and negotiation of terms to ensure equitable share in risk and reward;
- **Benchmarking** – Monitor Farm meetings and business benchmarking groups provide opportunities for farmers to analyse and better understand their business in relation to the host farmer and others in the community group;
- **Building social capital** – new and existing relationships may be developed through attending community demonstration events, which enable farmers to learn from, and with each other, and establish contacts and networks they can build in the future.

**Host farms** involved in this research represent different opportunities in their regions and to the Monitor Farm programme in terms of learning and its translation into value for hosts and community group members. Notable points are:

- **Scale as a barrier and opportunity** – difficulties in replicating some aspects of hosts management practices and use of technology are acknowledged, while their capacity to trial and showcase new innovations is also valued;
- **Mixed farming groups** – enable discussion, exchange and new opportunities for learning between different farming types – but can also present challenges in terms of pitching information and discussions at the right level;
- **Joint-hosting** – provides of demonstrating collaboration in practice, bringing different farming types together, and a shared and mutually-supportive learning journey.



## Background to the Research

This research is being 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, this 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). The research is also being done in association with the [European Commission Horizon 2020 funded 'PLAID' project \(2017-2019\)](#) (Peer-to-peer learning: Accessing Innovation through Demonstration), looking at case studies of demonstration activities on commercial farms.

Two case studies are being researched, which provide the context for exploring 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 (which underlies the report as a whole), we present three key areas of focus that allow us to look in detail at how and why farmers might implement new innovations and practices. These are: 1) conducting soil assessment as an example of best practice; 2) working together in innovative ways; 3) opportunities associated with different host farms and farmers.

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. Accordingly, it is not within the scope of this report to present an assessment of the case study Monitor Farms *per se*, but 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.

## Monitor Farms in Scotland

The Monitor Farm programme is a type of group extension to encourage uptake of best practice and improve profitability. The programme involves hosts opening-up their farm to their peers – the 'community group' – with visits every two months over a three-year period, organised and coordinated by a facilitator. 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 act on behalf of farmers in the area. Each meeting focuses on a topic and experts are often invited to speak. At the outset of the programme the facilitator works with the Monitor Farmer to establish baseline figures and understanding of their farm business which will be 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 whose figures are compared to those of the Monitor Farm.

The programme is currently funded through the Scottish Rural Development Programme Knowledge Transfer and Innovation Fund (KTIF), with contributions from industry partners. There were originally 6 industry partners and the current delivery partners for the 2016-2020 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 and agricultural consultancies (e.g. [C A MacPhail Consulting](#)). Facilitators in the 2016-2020 programme also represent [SAC Consulting](#) and the [Scottish Agriculture Organisation Society \(SAOS\)](#).

## Research approach

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

Data was collected through participant observation and in-depth interviews with funders, facilitators, host farmers, and other farmers from the community group. This provides for detailed scrutiny of key topics and awareness of operational aspects of the programme. Researchers attend bi-monthly meetings for the duration of the programme, taking photographs and field-notes of descriptive and analytical observations. In addition, 28 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. This report is based on information collected by these means (up to winter 2018-19) and will be revised following further participant observation field-notes and interviews (scheduled for winter 2019-20). Quotes are anonymised to protect individuals' confidentiality.



Image: Participant observation on farm (source: Sharon Flanigan)

## Monitor Farms: Aim and Objectives

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.'*<sup>1</sup> The fourth round is now more than half-way through the three-year programme period, following its launch in autumn 2016 and initial on-farm demonstration events in winter 2016-17. Each programme round provides lessons for the next. Funding is provided by the Scottish Government and the European Union's Knowledge Transfer and Innovation Fund (KTIF). For the current round, £1.25 million was secured to fund the nine Monitor Farms located across Scotland for the three years of the programme. 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 is comprised of two neighbouring farms, 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, and 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 that the 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 (e.g. grazing livestock on normally arable land on the neighbouring farm, to improve livestock health through cleaner grazing while increasing organic matter and arable fertility in the longer-term). Both these farmers are recognised for being innovative and productive. Both are operating progressive systems (e.g. 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 relate 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.

### Morayshire Monitor Farm

This Monitor Farm is conducted on large mixed farm 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.

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. It was also recognised that the farm is being managed in a progressive manner, using practices and technologies that can be demonstrated to the wider farming community. Another important factor in this farm's application to host in the programme relates 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 emphasise 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.



Image: Closer look at oil seed rape flower (source: Sharon Flanigan)

<sup>1</sup> <https://www.monitorfarms.co.uk/>

## Features of Successful On-Farm Demonstration

Providing opportunities to support peer-to-peer learning is at the foundation of on-farm demonstration programmes and events, such as Monitor Farms, to make some sort of improvement or change to current practice. Through this research we have identified three key themes that emphasise the significance of people and communication in pursuit of learning and change through on-farm demonstration. These relate to the importance of good facilitation, openness of host farmers, and interpretation that encourages engagement with the topic. Together these three key elements highlight features of demonstration programmes and/or events that foster engagement and interesting, relevant and useful exchange of information, ideas, and experiences.

### Importance of good facilitation

Successful events are facilitated by multi-skilled teams and individuals who are informative, approachable, and effective in the organisation of on-farm demonstration. Having the right facilitators in place helps ensure that on-farm demonstration events and programmes:

- Are appropriately pitched in terms of topic, content and input (e.g. speakers) for the target group (create a ‘buzz’);
- Take the farming day and calendar into account, in terms of timing, length and location for meetings (e.g. distinction between summer and winter) – and provide appropriate notice ahead of time;
- Make and communicate logistical arrangements and the topic to the farming community in appropriate ways (e.g. email, social media) – and provide appropriate and accessible means of contact for community members to ask questions between meetings;
- Are well organised in terms of ensuring the format and interpretation are appropriate for the group, including opportunities to learn in situ and breaking into sub-groups where necessary;
- Have the right balance between host farmer and invited speaker input for the group and the topic – and recognise the importance of expert input from the community group;
- Are well facilitated and inclusive in terms of encouraging engagement, recognising the needs of the wider group (e.g. opportunities to contribute in ways people are comfortable with, clarifying technical language, etc);
- Are well facilitated in terms of challenging people to think differently, while recognising the value of experience;
- Are well facilitated in terms of being perceptive to different scenarios, which sometimes calls for informed contribution and other times necessitates impartial mediation in the context of group discussions;
- Have the right balance of time for knowledge transfer and knowledge exchange, including formal and informal opportunities for discussion and networking (e.g. ‘transition time’ between demonstration sessions or stations);
- Run smoothly and to time, while allowing for contingencies;
- Provide suitable opportunities for feedback, are open-minded, and make changes as appropriate.

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*“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.”*

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### Openness of host farmers

By putting themselves forward for the role of host, these farmers assume a type of leadership role in terms of demonstrating attitudes and behaviours that underpin learning and support change in their farm businesses. Openness in their approach is beneficial to the process and people involved in the following ways:

- 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 (e.g. identification of factors within and out-with individuals’ control, ways to overcome challenges and work 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;
- Being open to new ideas, advice, questions and constructive criticism – including those from other farming types, who bring different skill-sets and experiences – demonstrates open-mindedness, acknowledges the experience of others, and promotes ‘the right attitude’ to growth and personal development;
- Being open with information, such as costs, materials, techniques, processes, and timings, provides an opportunity for benchmarking at a community level – and encourages others to share their own experiences in the context of discussion;



Image: View of paddock grazing from trailer (source: Sharon Flanigan)

- 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. This also helps to reduce veils of secrecy that have sometimes characterised the farming community in the past;
- By demonstrating new and innovative practices being undertaken on the farm others may be inspired to implement or trial, which provides opportunities for on-going discussion and benchmarking of practices and progress;
- Providing an open and honest picture of decision-making, practices and the importance of discussion (leading by example) instils confidence in others to try things for themselves (i.e. see then do);
- While the value of openness is clear, it also opens farmers up to a degree of judgement and scrutiny. On that basis, the importance for host farmers to have the right attitude and personality (including charisma, ability to engage, and ‘thick skin’), and have good support systems in place (e.g. facilitators, family, co-host), was also recognised.

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*“There’s some quite strong characters that come along to [the Monitor Farm] and they are never afraid to say what they are thinking. But that is good... there’s always a good bit of banter from the community group back and fore, and [the host] doesn’t always get an easy time... but that’s part of the learning process for the Monitor Farm. I would say it’s all beneficial.”*

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## Interpretation that encourages engagement with the topic

For learning to occur in the context of on-farm demonstration events, the format or delivery and exchange of information and ideas is important to stimulate interest and support engagement with the topic.

- Learning is supported where participants are comfortable in the environment and with the means of delivery;
- Different types of learners and personality types respond to different means of delivery, so it is helpful for information to be communicated in multiple ways (e.g. oral presentation or discussion complemented by seeing or experiencing examples in situ);
- Opportunities for first-hand experience of the environment or practice being discussed are popular means of stimulating interest and supporting engagement with the topic (e.g. soil pits and digs);
- ‘Field-based’ (or shed-based, etc.) demonstrations where farmers can see the crops or animals in the environments they are being reared helps visual learners to relate the topic to their own situation;
- Demonstration events which vary formats (e.g. presentation followed by tour) or environments over the day (e.g. shed, field, yard) help retain attention and interest;
- By providing different opportunities for individuals to speak in large or small groups, participants may choose the time and place most comfortable for them;
- Participants appreciate opportunities for informal discussion while transitioning between elements/ environments in the programme (e.g. walking and talking in small groups);
- Sparing and appropriate use of projector and slides for delivering information may be used to complement other delivery means but should not be the primary means of demonstration or presenting information where other more appropriate means are available. For example, presentation to convey principles followed by a practical demonstration, or presentation of topics in winter meetings;
- Use of hand-outs can help to convey detail information that may be used later.

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*“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.”*

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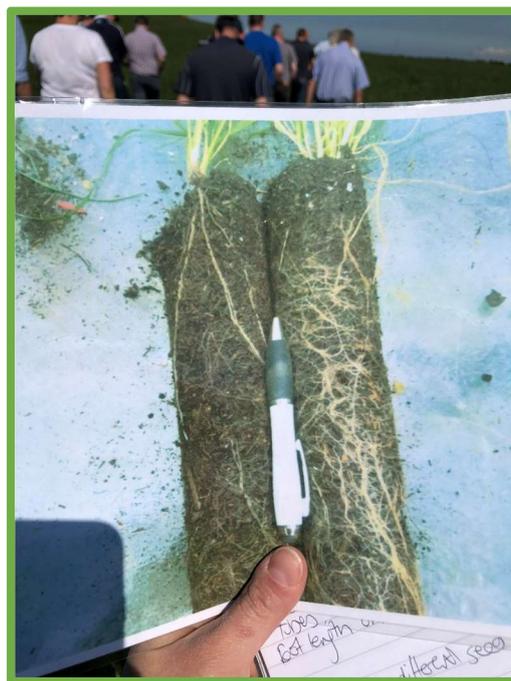


Image: Handout showing grass root cores (source: Sharon Flanigan)

## Exploring Demonstration Approaches and Learning Practices

An important purpose of this study is to shed light on ways that learning in the context of on-farm demonstration programmes, such as Monitor Farms, impacts on how farmers manage their farms. The next three sections focus on different aspects of the Monitor Farm programme (soil assessment, working together, and demonstration hosts) to consider how participation might inform future decision-making. These sections provide a deeper look at demonstration approaches and how learning on Monitor Farms impacts at the individual farm and farmer level. These sections also contribute towards suggestions for improving intervention techniques to increase uptake of new innovations and industry-defined best practices.

# Soil health and assessment

This section explores the approach taken to soils in the Monitor Farm case studies in terms of demonstration, topic discussion, and whether attention to soil health and encouragement to conduct soil assessment (as 'best practice') provides for more informed decision-making.

## Key lessons

- A general focus on soil health filters through the Monitor Farm programme, through regular discussions of conditions (wet, dry...) and treatment (inputs, cultivation practices) to more specific consideration for assessment processes.
- Farmers adopt an approach to assessment deemed appropriate for their individual situation, often acknowledging the limiting factors – which can be summarised in terms of time and money.
- In terms of implementation, there was some evidence of change following specific coverage of assessment in 'soil sessions', which will be re-visited during research interviews in winter 2019-20 to investigate the extent and impact of changes made.
- 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 ('muck') are commonly used to improve arable lands.
- 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.
- Using a variety of physical and visual means to demonstrate ways that soil health and structure can be assessed appears to have prompted several individuals into action and provided inspiration and mental triggers to others.
- It appears that the organisers' objective to instil or rouse the *principle* of conducting soil assessment in farmers' thinking has been successful and may induce further and more widespread implementation of assessment practices, which will be re-explored at the end of the Monitor Farm programme period.
- 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, but suggestions that farmers can gain access to technology and skills through contractors was identified as an important means of circumventing these types of issues.

## Best practice

Increased awareness of best practices in soil management through demonstration and discussion is among the key objectives to be addressed in pursuit of the overall aim of the Monitor Farms programme. Soil assessment is a fundamental principle of best practice, which endorses the value of knowledge and information to support decision-making and change. 'Knowing your soil' lies at the heart of industry best practice for good management of soils for all farming types and practical written guidance (['Valuing Your Soils'](#)) is available. The principle of conducting assessments is emphasised over the approach, including demonstration of low-cost methods accessible to all.

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*"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."*

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## Demonstration and discussion

Soil-related topics are a constant feature throughout the programme meetings (e.g. in farm updates) in addition to dedicated 'soil sessions' held in year 1, which provided a more focussed opportunity for practical demonstration and discussion of best practice approaches to assessment and management.

Soil sessions included contribution by invited industry experts in addition to input from the hosts, facilitators, and community groups. During these sessions the community groups were provided opportunities to view soils, discuss samples and methods of assessment, and discuss other topics and issues specifically significant to soils.

Practical and visual examples were found to be particularly appealing in terms of demonstrating and engaging farmers in assessment practices. For example, viewing soil pits and digging holes in the soil provided simple visual and tactile means of assessing aspects of soil type, structure, and organic matter.

Digs and pits in different areas of the farm and field provided for different qualities to be considered (including comparative

assessment of soils on arable and livestock land, field boundaries, etc.) and sample pots from different parts of the country provided further examples.

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*"That was a good session. You could have possibly spent another two hours standing (at the hole) talking about it... I would say that was the best meeting so far, the soil one, yeah."*

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Demonstrations using farm machinery with different tyres and tyre-pressures to illustrate impact and how issues of soil compaction might be lessened were well received.

The combination of demonstration, participation, discussion and take-home information for farmers provided an effective means of for sharing knowledge and tools to stimulate change.

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*"They were all down on their hands and knees poking at the soil – what a difference in the level of engagement... The fear factor is they don't actually know what they're supposed to look at... when in actual fact, all they need is a spade."*

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## Soil assessment using 'Soil My Undies'

Cotton underwear buried in topsoil in multiple locations on-farm for a period of 8 weeks was analysed based on the principle that the more degraded the cotton, the healthier the soil in terms of organic matter.

This demonstration technique resonates in farmers' minds as a fun and simple mean of investigating soil health.

While discussion of this test resulted in some laughter, it was widely suggested to have 'made farmers think', increased interaction, and provided another simple and low-cost method for them to increase their knowledge of their own soils.

It is believed that this is a method that farmers will trial on their own land through interest to see the results and compare with others, including the Monitor Farm host.

The impact of this demonstration extends beyond the Monitor Farm community group through promotion to social media communities and subsequent local and national media uptake.

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*"A visual thing really gets to the point very quickly, rather than trying to describe it."*

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Image: Underwear displayed for discussion (source: Claire Hardy)

While the novelty of the exercise is a factor in terms of the attention it has received, its simplicity also contributes to its effectiveness in securing the importance of soil testing in farmers' minds.

The results of this test at one Monitor Farm raised more questions than answers, prompting further assessment in association with the programme, including plans for coordinated testing across community group farms and discussion of the results in a future meeting.



Image: Simple soil dig using spade to assess soil (source: Claire Hardy)

## Scientific testing

Benefits associated with more scientific testing (complimentary to assessment based on experience and instinct) also attracted interest. For some farmers, this type of testing has been standard practice for over 20 years.

Discussing scientific testing on their farms stimulated by the soil session, some farmers who had conducted testing in the past were prompted to re-test and others were stimulated into new action to test their soils.

Actions based on results and recommendations were also discussed and the potential for increased yield and profitability resulting from new knowledge was highlighted.

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*"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."*

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## Impact and implementation

Participants generally agreed that simple soil digs are an interesting and worthwhile exercise (including a suggestion that digging a hole is 'one of the best things to do to see what you find'). However, this is not a practice that farmers would regularly implement 'without a purpose' (i.e. investigating issues identified by other means) and analysis would be done as a matter of course within productive farming systems.

Reflecting on compaction demonstrations, farmers spoke of the value of 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, this 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.

Interview discussions also emphasised the significance of seeing things like this on other farms. This highlights that Monitor Farm demonstrations provide farmers with an opportunity for 'nosiness' and 'mental note-taking' as they effectively benchmark elements of the host farm (e.g. soil health and characteristics) against their own.

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.

## Working together through Monitor Farms

This section explores the various ways that ‘working together’ in the two Monitor Farm case studies has stimulated or contributed to learning and or change for those involved. This section also reflects on the prospects of benchmarking groups and the significance and development of ‘social capital’ in Monitor Farm community groups and across the programme more broadly.

### Key lessons

- Collaborative and social aspects of this round of the Monitor Farm programme includes traditional opportunities for social learning and generation of social capital through repeated peer-to-peer interaction, which are complemented by progressive and novel opportunities to see and experience ways for farm businesses to work together towards mutual benefit.
- Demonstration of collaboration between neighbouring arable and livestock farmers at Lothians Monitor Farm provides lessons on the practical benefits and challenges of farm businesses working together, including invitation of community group members into discussions and illustrating processes of negotiation towards the development of an equitable joint-venture relationship. The type of approach demonstrated builds on the traditional concept of ‘neighbouring’, while seeking ways that both parties involved share risk and rewards.
- From the audience perspective, Lothians Monitor Farm demonstrates what might be possible through collaborative working and exemplifies the importance of innovation in business management practices as well as farming practices.
- The Lothians collaboration trial illustrates an option towards the improvement of soils depleted by years of prevailing cultivation practices. Before-and-after testing of soils on fields involved (e.g. 2-3-years grazing on ground normally cultivated for arable crops) could provide a particularly powerful example and illustrative tool towards increased uptake of ‘collaborative mixed farming’ by the Monitor Farm community group and wider agriculture community in future years.
- Benchmarking in the Monitor Farms programme provides information for farmers to better understand and improve their own business relative to others.
- Benchmarking ‘business groups’ push farmers to move beyond their comfort-zone in terms of sharing normally confidential information with each other. By doing so, strong reciprocal ties are also formed that might be built on in other ways in the future.
- Monitor Farms’ capacity for peer-to-peer inspiration and learning and alleviation of social isolation through opportunities for networking and community development are also highly valued by those involved.
- A particularly effective technique that encourages networking is event planning that provides for time spent transitioning between elements (e.g. walking together, shared car journeys, trailer tours), time spent in small and large group discussions (in situ on-farm and in meeting spaces), and time built-in for refreshments. This helps to secure a variety of opportunities for social learning and provides quality time throughout the event and programme for social capital to develop.

### Social capital and social learning

The benefits of immersion in peer learning groups in order to share and discuss best practice underlies the basic premise and objectives of the Monitor Farm programme. However, in addition to sharing information and experiences directly relating to the topic and session being attended, participating in Monitor Farm community groups provides for individuals to develop new and existing relationships that may be drawn upon outside of the group or at a later point in time (i.e. social capital).

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*“It’s often as is the case, not so much the meeting you’re at, it’s the people you meet at it. What you learn. Who you learn from.”*

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Community group members recognised the significance of social capital generated through Monitor Farms, both from a social and a business perspective. For example, the importance of peer-to-peer learning and motivation was highlighted in instances where individuals returned home and made changes to their business or practices based on information and inspiration by their peers.

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*“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.”*

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The significance of social interaction was frequently described in the interviews. This ranged from the simple pleasures of meeting or ‘catching up over coffee and a bacon roll’, to boosting morale and mitigating against social isolation.

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*“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.”*

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The importance of meeting other farmers in an agricultural environment provides opportunities to build relationships in an informal setting, giving them a chance to share ideas, and see and hear about what other farmers are doing in their locality. These things contribute towards the emphasis organisers put on informal parts of the event and highlight the importance of ‘transition time’ between locations and sessions.

## Demonstration of collaborative working on Lothians Monitor Farm

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 benefits that livestock grazing can bring), and livestock may benefit from grazing of new 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.

Collaboration-related trials are undertaken with support from specialist facilitators and are demonstrated and discussed with the community group. Examples include:

- Sheep grazing on a 2/3-year rye grass and red clover leys – assessing the fertility and soil structure benefit to the arable farmer and the grazing benefit to the livestock farmer.
- Smaller parcel sheep grazing to benefit the livestock farmer when fodder is short and to generate income for the arable farmer on previously unused areas.



Image: **Discussing grazing trial in situ** (source: Sharon Flanigan)

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*"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."*

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Another important aspect of this trial in collaborative working through the Monitor Farms programme is exploring how the relationship might be established to ensure an equal share in the risks and rewards.

By inviting the community group to participate in this process demonstrates innovation in the context of farm business management, in addition to new agricultural practices being demonstrated.

Support provided by the facilitation team is particularly important, in terms of providing practical advice relating to agricultural practices and business arrangements, but also in terms of providing suitable mediation for the process.

Participants were interested in the host farmers' collaborative arrangements and some suggested that they would potentially be interested in developing collaborative relationships of their own.

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*"I would probably say the main motivation for me would be the collaborative farming. I like sheep, so it's- I've been trying to justify them here, but it's quite hard when you can make more money out of arable. So, it's interesting to see how they're going to balance trying to have some form of sheep."*

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### Potential impacts

The results of collaboration trials being undertaken are as-yet uncertain, though a more immediate impact is expected to be felt from the livestock side than the arable.

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.

This trial in joint-hosting may also be replicated in different scenarios in future rounds of the Monitor Farm programme.

## Benchmarking

The concept of benchmarking within the agriculture sector is not new. Even 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. Benchmarking will be an important topic in the final report.

- Business benchmarking groups were still in the early stages when the first round of interviews was conducted.
- Some community group members were eager for continued opportunities to interact in this way, 'to get stuck in, compare with others, identify weak-spots, and make adjustments'.
- For others benchmarking was considered as an important thing to do, but also something that takes 'time and effort' and makes them 'nervous' of analysing things that are 'letting the side down' in terms of business costs.
- Opportunity to benchmark individually against the Monitor Farmer, based on figures and other information shared in community group meetings is also important. For example, during 'farm update' sessions and directly in response to the meeting topic being discussed on farm.
- In the context of benchmarking, characteristics and resources of the Monitor Farm host are believed to be important in terms of replicability of approach by the wider community group (see 'choosing host farms' section).

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*"Going to Monitor farm meetings and looking to all aspects and benchmarking... I'm nervous of doing it. It has to be done, everybody should do it."*

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*"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."*

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## Opportunities associated with different host farms

This section considers the significance of Monitor Farm hosts in terms of programme delivery and benefits to the different stakeholders involved. Key features that characterise the host farms in this research are scale and representativeness of the Morayshire host farm and the experimental collaborative arrangements being trialled in the Lothians.

This section also reflects on the mixed nature of groups attending the Monitor Farms in two quite different farming regions, representing potentially different implications for community group members and hosts on account of their identification as (principally) arable, livestock, or mixed farmers.

### Key lessons

- Selection of hosts impacts on what they can offer in the Monitor Farm programme. The characteristics of different hosts represent different opportunities and challenges relative to their associated farming communities. Both host farms in this research represent a slightly different prospect from the norm in the Monitor Farm programme.
- Joint-hosting provides for the demonstration of collaboration in practice (discussed in the previous section) and promotes learning across traditionally separate groups of farmers. This approach also provides for a mutually-supportive learning journey for the host farmers – which may become a defining feature of future rounds of the Monitor Farm programme, that promotes collaboration, mixed farming, and new social learning across farm boundaries and farming types.
- The impact of mixed farming Monitor Farm groups is relative to the area and type of farming represented: new opportunities, lessons and challenges for learning are greater where groups would not naturally have come together.
- The representativeness of Monitor Farm hosts has a significant influence on community members' motivation and engagement with the programme.
- In some cases, farmers value the opportunity to observe the Monitor Farm as a successful case in the context of their industry and see new technologies and innovation. In other cases, farmers' inability to relate their own situation to what they see on the Monitor Farm poses challenges for learning and acts as a barrier to attendance.

### Mixed farming groups

All the Monitor Farms in the current programme have a mixed farming element, building on recent 'upsurge and interest' in getting livestock back onto specialist arable farms, and improving soil health and structure across Scottish agriculture.

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*"There's good variety and it's not just focussed on one area of farming I would say, which is quite a good thing."*

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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 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 and attended by farmers representing approximately 75:25 arable to livestock enterprises.

These two distinct scenarios have potentially different implications for farmers looking to improve aspects of their specialist arable or livestock or mixed farming business. For mixed farmers this Monitor Farm programme presents a natural fit. But for specialist arable and livestock farmers the programme might represent a hindrance to learning in their own area.

Different meeting formats have been trialled, including specialist break-out groups and organising the event into timeslots focussing specifically on arable and livestock aspects.

Some of the arguments in support of bringing together arable and livestock farmers include the importance of 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 might introduce, including possibilities and benefits underlying the current industry drive in the direction of mixed farming. However, some community group members have also said that they are not interested in topics that are not directly relevant to them.



Image: Discussion between farming types to improve fodder kale  
(source: Sharon Flanigan)

From the perspective of facilitation, it is 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 and bring together quite different backgrounds and knowledge-bases.

By lowering communication barriers (e.g. reducing and explaining jargon) and providing plainer explanations of processes to aid wider understanding, demonstrations can cater to a broader audience range (e.g. new entrants, individuals unfamiliar or uncomfortable with technical or scientific terminology) and create a space where people feel more comfortable asking questions or clarification. However, 'mixing' farmers without a clear purpose can also create tension in terms of facilitating learning in groups with different needs and potentially pitches inclusion against innovation and progression.

The need to strike the right balance between challenging and baffling participants has been acknowledged, in terms of ensuring value for time spent.

## Choosing host farms

Each Monitor Farm host involved in this research is considered to be productive and innovative, which are important characteristics for their credibility and appeal as demonstration farmers. Implementation of progressive systems and openness to experimentation and change for the purposes of demonstration was also significant in their selection for the programme.

Ensuring a complementary range of host farms across the country is also important in the context of the programme (e.g. farm type, tenure, management, challenges and opportunities, etc). The two Monitor Farm hosts involved in this research each represents something different in the context of the programme. For the Lothians Monitor Farm this relates to their joint-hosting and collaborative-working trials (see collaborative working section). In the Morayshire Monitor Farm this relates to the relative scale of operations in the context of the region it is located, which has been identified as both a barrier and opportunity for learning.

### Representativeness

Characteristics and resources of the Monitor Farm host are believed to be important in terms of relatability and replicability of approach by the wider community group. In Morayshire, questions have been raised whether the large scale of their operations limits their suitability to host in the context of the Monitor Farm programme.

Concerns were raised by some farmers who perceive 'difficulty' in terms of achieving comparable results to those of the host farm without access to the type of machinery or purchasing power afforded by scale. In this respect, 'serious levels of capital investment' required to implement progressive practices using the type of 'high-tech kit' of the host farm presents a significant 'hurdle' for some of the farmers to relate back to their own farm.

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*"They are there for a reason, to learn... most people try and relate it back to their own situation. It's quite difficult...that's going to be the biggest hurdle. I know a couple of folk who were at the first meeting, 'well there's no point me coming back to this from my wee place up on the hill.' ... The scale is incredible and what he can do most people go, 'I can't do that, I'm afraid'."*

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Interviewees also described feeling 'daunted' going on to the farm on account of its scale and 'perfect' presentation. While some farmers recognised the value and potential of 'coming away with a nugget that really does benefit their business', other farmers ceased to attend Monitor Farm meetings as they could see 'no point' in comparing their small-scale operation to those of the Monitor Farm host.

### 'Right farm, right farmer, right attitude'

The reputation of the Morayshire host farm is also believed to have acted as motivation for attendance based on 'nosiness' to see the farm and 'what's new' in terms of kit and practices. Community group members are interested to hear about the 'nuts and bolts' of the host farm business to better understand how things are done and why – relating to financial aspects as well as practical aspects of running a farm.

In this sense, the host farm may be held up and described as an example of 'good practice' and act as a stimulus for wider discussion among the group and how they operate at home, and potentially inspiring change on return home after meetings.

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*"I'll tell you one thing that I have picked up on and I never did it before and now I do it, although I don't do it 100%, is [the host farmer] carries a wee notepad – a wee notebook with him and every little thing in the day he writes it down... Instead of just dismissing that I'll jot it down in the book, then I'll write it in the diary and then...and it maybe means nothing, but it might just be handy."*

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Willingness to share and listen have been identified as important characteristics for success – on the part of hosts and community group members, as new opportunities and/or strategies to overcome even the biggest challenges (e.g. barriers of scale) may be found together.

### Opportunities

Scale also underlies variety in the farm's offering and potential to engage a wide range of farmers in the community group. The 'impressiveness' of the current Morayshire host farm and farmers was widely acknowledged by participants – and the farm was even pitched by one farmer as an exemplar by national standards. The diverse nature of the farm and its ability to 'cater for everyone' were recognised as key opportunities associated with its selection.

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*"You have a huge cereal enterprise, you've got a sheep enterprise, you've got a cattle enterprise... So, there's a lot to see in three years. He's growing winter barley, spring barley, he's got wheat. A huge range of stuff to look at. The pedigree cattle, aye – it's an impressive farm to look round."*

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The value of its selection for the Monitor Farm programme also relates to the farm being able to take land out of standard commercial production to trial products and practices on behalf of the group. Hosting the group was also identified as a prompt for the farmer to implement new things that they might otherwise have waited to do, or not done at all. Support from industry and community members were also adding value for the host farmer.

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*"[The host] is in a fortunate position, he can try things and not put too big a blemish on the rest of the farm enterprise. Other people haven't got the scope... So, we are fortunate that [the host farm] is on a scale that we can manage to suggest and do things. That a big thing that we've been lucky to be involved with."*

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Image: Demonstration of new equipment – beef weight monitor (source: Sharon Flanigan)

## Next steps for this research

In the coming months, engagement in Monitor Farm meetings will continue in both regions. Interviews will be arranged during the winter period (2019-20), which also marks the final months of the current round of the Monitor Farm programme. The interviews will investigate each of the themes in this report. The final report will present an updated and comparative perspective and assessment of learning and change by the individuals involved towards understanding the longer-term impact of peer-to-peer demonstration programmes, such as Monitor Farms.

We are interested in reflections on the research update presented in this report, which may be communicated using the details below.



Image: Field walk to find location for new trial (source: Sharon Flanigan)

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