

Highlights Briefing



Introduction

The Testing Actions for Sustainable Farming [Phase One survey](#) was established to provide initial insight into:

- current awareness and experience of sustainable and regenerative agriculture
- the current state of uptake of sustainable farming practices
- the motivations and barriers for farmers and crofters to adopt those practices.

Participants were recruited using two different approaches:

- Random selection using a stratification methodology
- Volunteers from previous surveys and reactive volunteers

Scope of this briefing

For ease of interpretation this briefing has been written with two primary focusses.

Firstly, the briefing only considers the main farm types which are supported under the Basic Payment Scheme. All figures represented in the briefing are based on responses only from the following sectors:

- Cereal
- Dairy
- General cropping
- General cropping - forage
- Lowland Cattle & Sheep
- Mixed
- Other Cattle & Sheep (LFA)
- Specialist Cattle (LFA)
- Specialist Sheep (LFA)

The survey asked about a range of plans and audits, but for the purposes of this briefing, analysis has focussed on responses for carbon audits, biodiversity audits, and animal health and welfare plans. The actions from these plans are most comparable to the measures which will form part of the proposed payment system.

Further briefings will provide more understanding of the remaining plans not considered in this briefing.

Overview of responses¹

For the sectors listed above, the survey received 947 valid responses. These included:

Croft or farm	Farm size	Mainland or island	Region
793 farms	167 extremely small (<0.25 FTE)	815 in Mainland Scotland mainland	190 Eastern Scotland
154 crofts	155 very small (0.25<1 FTE)	132 on Scottish islands	344 Highland & Islands
	128 small (1<2 FTE)		117 North East Scotland
	98 medium (2<3 FTE)		277 Southern Scotland
	154 large (3<5 FTE)		19 West Central Scotland
	245 very large (5 or more FTE)		
Farm type			
43 dairy farms		51 cereal farms	
58 lowland cattle & sheep		81 general cropping	
255 specialist cattle (LFA)		39 general cropping - forage	
210 specialist sheep (LFA)		115 mixed	
95 other cattle & sheep (LFA)			

¹ See note at the end of this briefing on representation and quality of the data.

Extremely small² (0 <0.25 FTE) businesses had more than double their targeted representation (167 with a target of 87) whereas **very large** (5 or more FTE) businesses had less than half (245 with a target of 602).

Of those that responded to the equality questions, the majority were over 45 years old, and most were male.

Overarching trends

- 94% of respondents had undertaken at least one of the management plans/audits asked within the survey.
- 100% of dairy farms stated they had undertaken at least one of the management plans/audits.
 - Previous research has similarly found that dairy farms are already actively undertaking 'most' plans. Indeed, dairy farms [reduced their emissions by 9%](#) between 1990 and 2018, due to a decline in cattle numbers and increase in efficiency, resulting in broadly steady milk output.
 - It is also known that some milk buyers are now requiring contracts to include environmental requirements of producers.
- Large and very large farms are more likely to have done a plan or audit
 - Resources are scarce within agriculture - it is likely that large farms, who work at greater economies of scale, will have the ability to do the administrative portions of plans/audits.
 - Capital is also needed to undertake audits, enact plans, and/or invest in changes to the business as a result of those; this may be more difficult to justify or access as a smaller business.
- Crofts typically had lower uptake of relevant plans and audits than farms.
- Men were slightly, but not significantly, more likely to have done at least one plan or audit than women (96% v 91% respectively).
- 67% of responding farmers still maintain records on paper (although not exclusively), and 38% have said they need assistance with their record keeping.
 - It is likely farmers will need support/training on specific software that could help with records keeping and data recording, in order to reduce time/effort spent on this. Communications to help producers understand the benefits of such software will also be needed, as the significant upfront costs could discourage investment.

Carbon audits

- The majority of respondents (61%) had **not conducted** a carbon audit.
 - There has been a general increase in the number of carbon audits being undertaken, from 6% of respondents in 2018 to 12% in 2021.
 - Similarly, 16% of responding farms intended to do one in 2022.
 - There was a small decrease in those undertaking a carbon audit of their business between 2020 and 2021. This is most likely due to December 2019

² Farm businesses are classified by size based on their Standard Labour Requirements (SLRs), which are the theoretical numbers of workers required each year to run a holding, based on its cropping and livestock activities. More information on this can be found [here](#).

being the deadline for completing an audit under Beef Efficiency Scheme funding, possibly contributing to a drop in completion afterwards.

- Over **80% of participants who had completed an audit had outsourced them.**
- Larger businesses within the survey are most likely to undertake carbon audits.
- **Dairy farms had the highest uptake of carbon audits**, whereas general cropping (forage) followed by lowland cattle and sheep, were least likely of types to have undertaken a carbon audit.
 - Dairy farms are known to be motivated by their milk buyers' incentives and contracts, which in turn are motivated by consumer behaviours. This is due to a complex range of factors, that includes the global dairy buyers implementing types of contracts that do not exist in the beef industry, for example. Contracts such as these may explain dairy farmers' [increased uptake of agri-environmental schemes](#) and measures.

Motivations and barriers

- The most common reason for undertaking a carbon audit was as part of the Beef Efficiency Scheme (which funded carbon audits until December 2019). The second most popular reason for undertaking one was because funding was available.
- The most common reason for not having completed a carbon audit was not knowing enough about it. This was followed by the time to undertake one, and the cost.
 - Given these reasons, it is therefore unlikely that **advice in itself** will lead to a significant uptick in carbon audits on farms, but it is clearly essential to communicate the benefits of doing one on farm, where appropriate.

Further actions

- Undertaking a carbon audit **does not always result in further actions.**
 - Of those who had completed a carbon audit, 49% went on to make any changes to their business as a result.
 - However, it should be noted that some producers indicated that they had already implemented many of the measures prior to doing their audit.
- Of those who had undertaken a further action, the most popular changes resulting from carbon audits were those under the 'crop and soil management' responses.
 - In particular, these were changes to "livestock manure efficiency" and "efficient use of inputs".
 - The least popular changes were to "install heat recovery systems", "implement automated process", and "make more use of modern control systems". All of these are long-term investments that might hinder uptake.
- The most common reasons for not taking any further actions were that the **recommendations were not considered a business priority**, or no recommendations were made.
- Some businesses also indicated that the current tools for carbon audits are not standardised, or are unlikely to provide a true reflection of their practices – for example:
 - *'Agrecalc... only provides an approximation of carbon footprint, it is not user friendly.'*
 - *'There are different calculators with different methodologies and assumptions none of which have deer and are easy to fit to my farm enterprise.'*

- *'I have done this elsewhere and the information resulting from the exercise is meaningless because as yet there is no approved standard.'*

Biodiversity audits

- Only 29% of responding farms have undertaken a biodiversity audit.

Motivations and barriers

- There appeared to be significant variation in understanding what a biodiversity audit was needed for. The most common reason for respondents to have undertaken a biodiversity audit was as part of an agri-environmental scheme.
 - Other reasons mentioned by respondents was as part of feasibility studies for diversification, such as to install turbines.
- Where respondents have not undertaken a biodiversity audit, most stated this was because they did not know what it involves or how to do one.
 - This is consistently felt across the farming sector – the recent [Economic Condition of Crofting survey \(2022\)](#) also found that the most common obstacles preventing crofters from undertaking these types of activities is a lack of information on how to do this (38%), followed by the uncertainty of the potential benefit of the activities (37%).
- When asked what would encourage them to undertake a biodiversity audit, the most common response was 'financial assistance', followed closely by 'training in how to undertake a basic biodiversity audit'.
 - Advice and support is therefore critical to assist farms who want to do a biodiversity audit but potentially do not know how.

Further actions

- A significant number of respondents (80%) indicated that they were taking steps to support the creation, enhancement or preservation of suitable habitats on their land regardless of whether they had undertaken a biodiversity audit. This was far higher than the number of respondents who had undertaken a biodiversity audit (29%).
- The most common additional step undertaken regularly or occasionally was 'Maintain field and water habitat margins', followed by 'Identify and do not alter permanent natural habitats'. Planting hedges was also a common action under the 'Other' category. The least common additional step was 'Peatland/wetland restoration'.
- The survey also highlighted motivations and barriers to implementing additional steps for the creation, enhancement or preservation of suitable habitats.
 - The main reason for implementing additional steps was to support biodiversity.
 - The most common barrier was not having enough advice on what to do on their farms. Respondents also indicated that financial assistance and free or low cost advice would encourage them to carry out additional activities.
- There was no significant difference in the numbers of crofts and farms that had implemented biodiversity or habitat actions on their land.

Animal health and welfare plans

- Of livestock farmers³, 83% of farms had animal health and welfare (AHW) plan in place.
 - This high level is expected as, to be part of a Farm Assurance scheme, an AHW plan is required.
- The majority (65%) of those with a plan were updating it on an annual basis. Again, this is likely because, as part of a Farm Assurance scheme, producers will be annually inspected.
- AHW plans are often undertaken by vets on behalf of farms.
 - As Scotland faces a shortage of vets, the requirement to have an AHW plan as part of a scheme **creates increased pressure on both vets and producers.**

Motivations and barriers

- The most common reason for having an AHW plan in place was as a requirement for an assurance scheme. However, this was closely followed by 'good practice', indicating that farmers understand the benefits of the plan to their business.
- Of those who did not have a plan, many respondents indicated that they did not need a plan to be monitoring the health and welfare of their livestock. Rather, they take a reactive view.

Further actions

- Nearly all respondents who had an AHW plan also did subsequent actions (99.8%).
 - The most common of these actions included treatments to control parasites.
- However, of the 149 respondents who did not have a plan, the majority had done at least one action that they were not documenting as part of their plan. This indicates the importance of regular actions that are not necessarily written down.
 - The most common of these actions included treatments to control parasites, and actions to reduce lameness.

Conclusions

The aims of this survey were to provide insights on:

- the current awareness and experience of sustainable and regenerative agriculture
- the current state of uptake of sustainable farming practices
- the motivations and barriers for farmers and crofters to adopt those practices.

Here, the conclusions are set out under each of these aims.

Awareness and experiences

³ Arable only farms were automatically routed out of being asked about livestock-related plans, which left 875 responding. 18 respondents, who had not been automatically routed, indicated that they either did not have livestock on their holding, no longer had livestock, or livestock on their holding were not owned by them (i.e. they were owned by a third party). Their responses were also removed from the analysis of this plan. The base for the figures in this section is 852 respondents.

- The survey has given Scottish Government and stakeholders a good understanding of the broad awareness of practices by quantifying the uptake of these practices.
- However, it is important to note that the questions within the survey are not able to account for every sustainable practice that will be undertaken on farm.
- In addition, the tools and mechanisms available for undertaking actions like carbon audits are not advanced enough to capture every practice that might be done on farm.
- As such, the responses from the survey might not provide a highly accurate picture of sustainability practices in Scottish agriculture as it stands.

Uptake of farming practices

- The majority of respondents had undertaken **at least one of the management plans/audits** asked within the survey.
- However, having a plan or audit in place does not always result in uptake of further actions or changes to their farms.
- Similarly, the lack of plan or audit does not mean that farms are not already undertaking actions. Many respondents indicated that they were either already doing many of the actions prior to undertaking an audit, or in spite of an audit/plan.

Motivations and barriers

- The reasons behind undertaking an audit or plan on farms were dependent on the type of audit or plan, and the type of farm. However, in general, the motivations for undertaking a practice centred on them being part of a funding or accreditation scheme, although good practice was also highlighted for actions such as the AHW plan.
- The survey also captured the reasons why respondents had not yet undertaken an audit or put in place a plan. The barriers to undertaking practices on farms were usually **lack of funding/capital** or **lack of knowledge/support**, and a lack of clear communication of the benefits of the action.
- Many took the view that capital funding and knowledge/support should not be given in isolation of the other. Previously, capital grants have provided funding for improving business efficiency, including for new technologies or advancements. However, these do not always result in increased efficiency **if purchased without knowledge/advice or implemented in the wrong way**. Similarly, advice in itself may not be enough of an incentive to undertake audits or implement changes, especially if changes require capital outlay or resource.
- Crucially, support and incentives have to be provided in conjunction with effective engagement with hard-to-reach or unmotivated businesses. There is a clear need to communicate the **benefits of these plans and actions** and that the gains of such actions will outweigh the costs. Furthermore, there is a need to **outline those measures and actions that are the most sensible and relevant** to the individual business.

Future research

Demographics

- It is important to understand how to support small businesses, who are not undertaking actions as regularly as large businesses. Some assumptions can be made on the capital and extra resource that might be required for undertaking actions, but qualitative research would provide more nuanced understandings.

Stakeholders

- We understand that agents are often used for creating plans and/or undertaking audits, and that vets are predominantly used for creating AHW plans. Neither of these stakeholder groups have been engaged as part of the NTP.
 - Further research needs to be focussed on gathering evidence from wider stakeholders on the time/cost/resource in creating these plans and audits from their perspective. Questions should look to understand agents and other actors' roles in facilitating plans and audits, and their expectations of producers. Additionally, the research should seek to understand the staffing challenges (quantity and quality) of stakeholder groups that might severely impact the uptake of actions.
 - It is important to note that Scottish Government is currently funding an upgrade to SRUC's Veterinary Services online AHW planning software. It is anticipated that the upgrade will be more inclusive, more accessible and will be low cost for users. This will allow the producer to be at the centre of their own AHW plan, and include advisors as and when needed.
- The survey has shown that the majority of audits and actions are undertaken as a product of accreditation schemes or at the request of buyers. However, we have not looked into the links between these requests, the increase in product prices, and consumers' willingness to pay for these products. This is particularly key in light of the cost crisis and rise in costs that farmers are experiencing.
 - There is potential to explore supply chain effects into future research projects, to understand the benefits/barriers of sustainability measures on all aspects of food production and consumption.

Support and information

- Further research is needed into the flows of information between and within stakeholder groups. There is little information on how information is disseminated between peers, or between Government, agents, and producers.
 - Stakeholder mapping and systems mapping may be key to understanding the flows of information across groups, and provide insights on the best methods for targeting different groups.
- Similarly, further engagement is needed with hard-to-reach or unmotivated businesses to understand why they are, so far, unmotivated to engage in these practices. Research should focus on targeting incentives for motivating specific groups of producers to engage with agri-environmental schemes and actions.
 - The results of the Phase 1 survey cannot give in-depth understanding of motivations across groups. As such, qualitative research is recommended to gauge motivations and behaviours across the sector.

Data

- The Phase 1 survey provides us with a good understanding of what actions are being done, but not whether any data or measurements are collected as a part of those actions. There are still a number of questions around what government's expectations of producers or agents are, for example:
 - Do we require every farm to do every plan they can? Do we require them to do as many actions as they can?
 - What data are they expected to collect as a result of that? Do we expect them to have outcomes on the back of that data?
 - What evidence do we require from the producer to prove that the producer has done that action?
- The Phase 2e project will go some way to addressing these questions

Notes on this briefing

Representation and quality of data

It is important to understand the framing of these results. The responses have given a good cross-section of farm types across the survey. Therefore, responses for the entire farming sector can be said to be broadly representative. However, care must be taken when interpreting average responses, as some types (e.g. dairy) are underrepresented whereas others (e.g. Specialist Sheep LFA) are overrepresented. This creates bias in the averages used to represent the entire farming sector.

Direct comparison can also be made between farm types. Responses cannot be said to be conclusively representative for any further breakdowns (e.g. at size, region or other demographic).

Table 1. Proportions of farm types in sample and in Scotland

Farm type	Count of Sample (BRNs)	Proportion of sample	Target	Proportion of target achieved	Count of Scotland (BRNs)	Proportion of farming in Scotland
Cereal	51	5.39%	83	61.45%	1541	5.09%
Dairy	43	4.54%	122	35.25%	621	2.05%
General Cropping	81	8.55%	154	52.60%	1318	4.35%
General cropping - forage	39	4.12%	15	260.00%	8606	28.43%
Lowland Cattle & Sheep	58	6.12%	106	54.72%	1954	6.45%
Mixed	115	12.14%	181	63.54%	2960	9.78%
Other Cattle & Sheep (LFA)	95	10.03%	168	56.55%	1482	4.89%
Specialist Cattle (LFA)	255	26.93%	403	63.28%	4885	16.13%
Specialist Sheep (LFA)	210	22.18%	267	78.65%	6909	22.82%
Grand Total	947	100.00%	1499	63.18%	30276	100.00%

Comparability and standardisation

Questions across plans and audit sections were not standardised in the survey.

For carbon audits, the survey asked about measures made as a result of the audit, so we can explicitly make a link between the two. However, we cannot make an assessment of whether any actions have been done without an audit.

For biodiversity audits, the survey asked about measures undertaken generally, so cannot make the assumption that actions have been done as a result of the audit. However, we can make an assessment of respondents who have done actions without an audit.

For animal health and welfare plans, those who had undertaken a plan were asked about documented actions as a result of the plan, and those had not undertaken a plan were asked about 'undocumented' actions done without a plan.

Sample

Horticulture, pigs, poultry, and 'unknown' farm types, have been removed from the overall sample for the purposes of this analysis. Therefore, the base for any total average is 947 responses (unless specified).

Not all farm types were asked every question; arable only farms were not asked questions on any plans/audits that required livestock (breeding plan, animal health and welfare plan, and feed ration plan).

For animal health and welfare plans, 18 respondents, who had not been automatically routed, indicated that they either did not have livestock on their holding, no longer had livestock, or livestock on their holding were not owned by them (i.e. they were owned by a third party). Their responses were also removed from the analysis of this plan.

Authorship

This briefing was written by RESAS social researchers in conjunction with RPID Area Office colleagues and feed-in from the wider Testing Actions for Sustainable Farming board. Quality control was undertaken by RESAS statisticians and economists, as well as by independent academics on the ARIOB Academic Advisory Panel.