

Mapping land use support systems and access pathways in Scotland

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October 2023

DOI: <http://dx.doi.org/10.7488/era/5005>

1 Executive summary

1.1 Introduction

Land use transformation (and related reductions in greenhouse gas emissions) will be necessary to achieve Scotland's ambitions to reach net zero emissions by 2045 as well as biodiversity and climate change targets. A variety of support systems for land use transformation, such as financial support and advice, are already in place. This study aims to understand how and why land managers engage, or not, with these support systems. This helps inform how policy could be best deployed to accelerate the process of change.

1.2 Influences on land manager decision making

We found substantial evidence for land manager behaviour and decision making that influences engagement with support systems. Their decisions are determined by a range of interacting internal and external factors, primarily related to financial, practical and cultural influences, which can be enabling or restricting, such as:

- personal values and knowledge
- perceived loss of control
- social norms/pressures
- trust in sources of information and advice e.g. land agents
- administrative burdens/transaction costs
- financial incentives
- awareness and understanding
- clarity of the benefits of change.

Restrictive barriers are compounded by context specific factors that vary across individual businesses, such as tenure, business scale and biophysical constraints.

1.3 Findings

Overall, the public sector grant-giving support network is logical to use. Most schemes are accessed through the Rural Payments and Inspections Division (RPID) portal. Other schemes are straightforward with regard to procedures. The RPID portal only requires one set of login credentials to access a wide range of support systems. Support systems under this umbrella are easy to access and do not require additional login credentials.

The administrative burden associated with applying to schemes, i.e. form filling, is a barrier to engagement. Procedural support (i.e. form filling by an adviser) is widely available from both public and private advisory sources but requires additional resource to procure. This is distinct from practical support, such as site-specific implementation advice, which was frequently mentioned by stakeholders as key to facilitating the uptake of environmental management practices and yet less readily available.

Land managers often decide whether to engage with support and advice based on confidence in its source. For example, farmers are more likely to trust advisers or organisations that have a background in practical farming over those from a consulting or academic background.

Land managers in Scotland primarily access public funding support. Some access private finance to supplement their income or achieve specific goals. Those accessing private finance generally do it to avoid the conditionality of public funding support and retain operational control over the management of their land. Combining Agri-Environment Schemes and e.g. the Peatland Code is perceived as overly cumbersome, with interactions between schemes, different application dates and the need to demonstrate additionality proving complex.

The breadth of support sources is confusing for some land managers. Better alignment, or at least signposting between sources, would be helpful. Ideally this needs to be via people as well as (rather than just) an online portal. This will enable land managers to choose the correct support more readily, according to their own circumstances.

Applicants would prefer administrative simplicity and greater flexibility. Therefore, efforts to streamline application and monitoring processes, reduce information burdens, widen application windows and vary contract lengths, are justifiable.

Administrative touch points and contractual constraints are only one influence on land manager behaviour. Improved accessibility and flexibility will not, by themselves, increase overall engagement with land use change. Other measures will also be needed such as attractive payment rates, sufficient technical advice and training, and management flexibility. Further research from workshops with potential support recipients, ideally out of peak summer work season, would help understand how future engagement can be maximised.

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2 Abbreviations table

AECS	Agri-Environment Climate Scheme
ARE	Agriculture and Rural Economy Directorate
BPS	Basic Payment Scheme
ENFOR	Environment and Forestry Directorate
FAS	Farm Advisory Service
FGS	Forestry Grant Scheme
JHI	The James Hutton Institute
MLDT	Modern Limited Duration Tenancy
NFUS	National Farmers' Union Scotland
NGO	Non-Governmental Organisation
LDT	Limited Duration Tenancy
LFA	Less Favourable Area
LFASS	Less Favourable Area Support Scheme
PCC	Peatland Carbon Code
QMS	Quality Meat Scotland
RPID	Rural Payments and Inspections Division
RSABI	Rural Payments and Services
RSPB	Royal Society for the Protection of Birds
WT	Woodland Trust
SAF	Single Application Form
SAOS	Scottish Agricultural Organisation Society

SCF	Scottish Crofting Federation
SEPA	Scottish Environment Protection Agency
SLE	Scottish Land and Estates
SLDT	Short Limited Duration Tenancy
SOPA	Scottish Organic Producers' Association
SRUC	Scotland's Rural and Agricultural College
SUSSS	Scottish Upland Sheep Support Scheme
SSBSS	Scottish Suckler Beef Support Scheme
STFA	Scottish Tenant Farmers' Association
WCC	Woodland Carbon Code

3 Introduction

Rural land use in Scotland directly supports the national economy, rural communities, and local businesses. Sustainable land use holds a key role delivering Scotland's biodiversity goals and response to climate change. Agriculture is the second largest source of greenhouse gas emissions in Scotland, behind the transport sector, with emissions largely coming from livestock and soils.¹ In order to achieve biodiversity recovery and climate mitigation and adaptation, agricultural transformation is required to reduce emissions, and capture carbon in vegetation and soils. A continued, long-term expansion and integration of regenerative agriculture, afforestation and peatland restoration will be necessary and is currently underway as part of the plan to achieve Scotland's net zero targets.

This research was undertaken to gain a better understanding of the key influences that have a bearing on land manager decision making, including their motivations, what they want to achieve for their operation and their appetite for change.

The aims of the project were to map current support services across different land use sectors to inform our understanding of a land manager's ability to make decisions and access funding and advice for different land uses. One of the key influences on land manager decision making is their awareness and engagement with support systems. "Support systems", for the purpose of this report, refers to all sources of support that a land manager in Scotland could access to aid their management of their operation. This includes the following sources:

- Public funding support (e.g. Agri-Environment Climate Scheme (AECS))
- Private funding support (e.g. Woodland Carbon Code (WCC))
- Procedural and practical support from advisors, both public and private (e.g. Farm Advisory Service (FAS))
- Informal networks (Family, friends, and peers)

We looked at availability and links between existing and relevant land use information systems, support services, and current incentives for land use transformation which are directly related to achieving Net Zero and/or nature restoration.

Through stakeholder interviews and other evidence, we established where, when and how different rural land managers interact with the systems and services; we then collated the evidence for issues and barriers to access them. The results are presented using SWOT and PESTLES analysis, conclusions, and visualisations.

When we defined "land manager" we focussed our research on managers of agricultural land, including moorland, peatland and forestry, whether that be farmers, crofters, large estates or organisations such as NGOs.

Understanding land manager behaviour in relation to their awareness of, and drivers of actions that support (or not) environmental outcomes is complex. Decisions and outcomes

¹ [Scottish Greenhouse Gas Statistics 2021](#). Accessed 15/02/2024

in this area are a result of multiple interactions between agronomic, cultural, social and psychological factors, all of which sit within the national, regional and specific site context (Mills et al, 2016). Therefore, understanding land manager engagement with current support systems will prove equally complex.

To further our understanding, we carried out an evidence review of the literature. This informed the design of typical land manager archetypes to facilitate the analysis of how specific sectors in Scotland are engaging and accessing support systems. Please see Table 6 in Appendix B for the longlist of archetypes. The long list was used to gather further data, through stakeholder interviews, from both support providers and receivers, across the spectrum of land manager sectors in Scotland. Twenty-five stakeholder interviews were conducted, with participants ranging from support recipients such as crofters and farmers, to support providers and academics. Views from the agriculture, forestry and peatland sectors were captured. Attitudes relating to land managers' ability and willingness to engage with support systems as well as what determines the level of engagement with these systems were explored. This included the types of support available, their pros and cons, as well as whether they were felt to be accessible, credible and available.

Reflecting its relative prominence within public expenditure and land-based businesses in rural areas, agriculture dominates much of published literature on land-use support. This evidence was supplemented by feedback from stakeholder interviewees, including individuals representing other sectors. The final step was to map the experience of six chosen, prioritised, archetypes in more detail. These are presented in section 6.2.

Full details of our methodology can be found in [Appendix A-D](#).

This study included:

- Carrying out a rapid literature review. (methodology in Appendix D)
- Identifying and mapping the most prominent existing and relevant land use information systems, support services and the current incentives for land use transformation directly related to achieving Net Zero and/or nature restoration. (Appendix A)
- Developing typologies for land managers who might engage with these systems. (Appendix B)
- Agreeing a discussion guide (see Appendix C) for semi-structured interviews.
- Identifying a list of target candidate interviewees who were chosen to represent recipients of support, providers of information and advice, and academic experts. (Appendix C)
- Analysis of where, when, and how land managers interact with the systems and services.
- Presentation of evidence for issues and barriers to access these systems and services from the stakeholder interviews.

3.1 Introduction to land manager decision making

The literature is consistent in reporting that land manager decision making, regarding the use and management of their land, and therefore support system engagement, is influenced by both internal and external factors which combine to create individual circumstances. (Buamgart-Getz *et al.* 2012; Mills *et al.* 2016; Barnes *et al.* 2021; Conti *et al.* 2021; Thompson *et al.* 2021a).

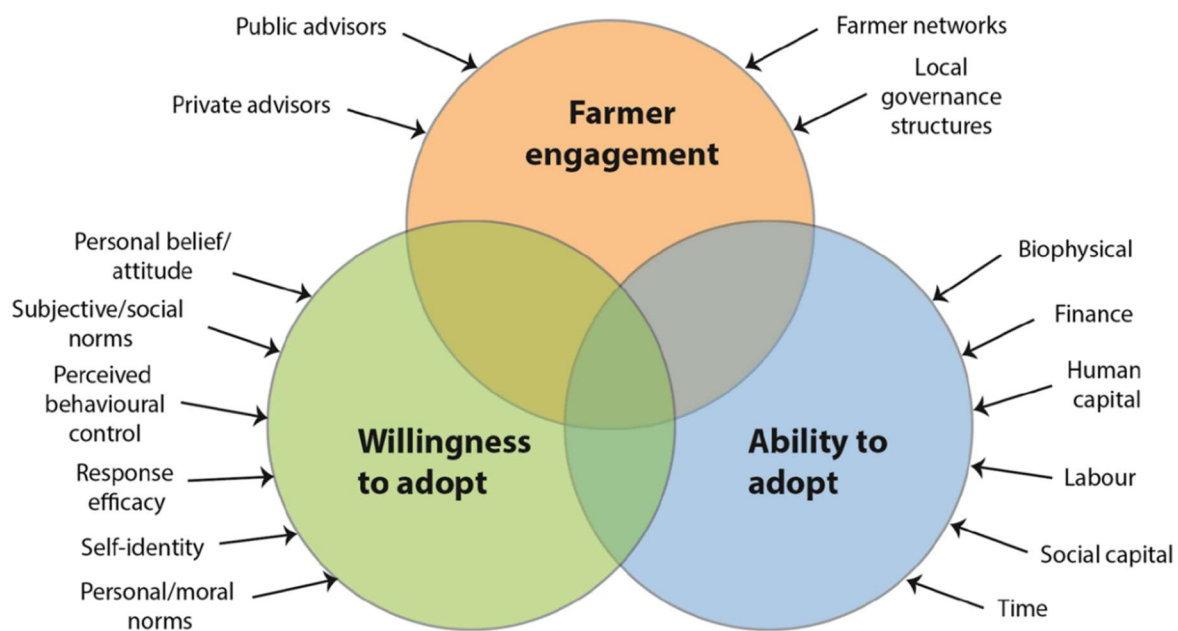
These factors affect a land manager's willingness and ability to adopt environmental management practices. The importance of this is underlined by the fact that climate is the most important element of agricultural productivity in many instances (Scottish Government, 2012). Therefore, once bio-physical conditions (an external factor in itself) have determined what management measures are suitable for a land manager, the wider range of internal/external factors will influence engagement with specific support systems offering funding, information, advice, and training. **Table 1** below displays the different internal and external factors that influence land manager decision making, as identified by Thompson *et al.* (2021a).

Table 1 – Internal and external factors influencing land manager decision making – (adapted from Thompson *et al.* (2021a)).

	Factor	Description
Internal	Risk perception	Extent to which a land manager is open to changing practices.
	Values	Extent to which a land manager has a positive view of environmental measures.
	Knowledge	Extent to which a land manager understands how to implement environmental measures and how these compare to other potential land uses such as recreation, housing, renewables etc.
	Socio demographic, age and location	Specific land manager characteristics, including sociodemographic background, education, age and location.
External	Funding, cost and policy indicators	Access to funding (e.g. subsidies, private investment), cost of changing practices and perception/stability of the policy environment.
	Land characteristics	Key characteristics, such as farm size, tenure, type (arable, mixed, dairy etc.), biophysical condition, whether there is currently active land management.
	Support system accessibility	Complexity and accessibility of support systems, i.e. how complicated support systems are perceived.
	Knowledge availability, sharing, and awareness	Land manager knowledge of alternative practices and preference of farmer on method of engaging with wider network and support systems (verbal, formal etc.)
	Cultural	Networks and connectivity, social norms (what is perceived to be right and wrong) and influence of peer group.

The way these factors affect and interplay with land manager willingness – and their ability to adopt environmental practices – are shown in Figure 1 (after Mills et al. (2016)). For example, a land manager with limited resources, reliant on informal networks of support, with a strong anti-change personal attitude is unlikely to engage with environmental practices and support systems. Another land manager with higher access to finance, human and social capital, more formalised support networks and a positive outlook on environmental practices would be more likely to engage.

Figure 1 – Factors influencing land manager engagement, willingness and ability to adopt (from Mills et al. 2016).



These examples are clearly extreme ends of the spectrum. Landowners will all have a unique set of factors that influence their decision making when it comes to adopting environmental practices and engaging with specific support systems. It is for this reason that understanding and predicting land manager environmental behaviour and engagement with support systems is complex.

It is important to note that most of the literature on the subject of land manager engagement/motivations with support systems focuses on farmers. For example, (Sutherland *et al.* 2011) who state “research into actor influences on land use change (attitudes, motivations and objectives held by individuals and groups) has traditionally focused on single sectors, particularly farming. Neither is the range of landholding entities addressed, as emphasis is typically on private owners.”

Some studies (Ambrose-Oji, 2019; Tyllianakis *et al.* 2023) have explored wider land manager engagement with support systems in detail, however the focus in the academic literature remains centred on farmers. The reasons behind this focus are not currently clear, but it may be due to the large engagement of the agricultural industry with support systems, particularly financial support.

We have attempted to fill this gap in the literature through targeted stakeholder interviews with individuals representing land managers outside, as well as within, the agricultural industry.

Our evidence review has suggested that engagement with current support systems is primarily influenced by certain personal values and knowledge, perceived loss of control, excessive administrative burdens/transaction costs, a lack of credible financial incentives, a lack of awareness, understanding and clarity of the benefits of certain support schemes and social norms/pressures. These barriers are then further compounded by context specific factors that vary across individual businesses, such as tenure, business scale and biophysical constraints.

Land manager engagement with support systems is discussed in more detail in Section 6

4 Review of support systems

The next stage of this study attempted to identify the current land use support systems that land managers are engaging with in Scotland. This allowed us to map current support services across sectors in Scotland. Once we established the variety of support systems, we could begin to understand how land managers are interacting and engaging with these systems, whilst identifying key barriers and opportunities that could be used to inform future policy support.

We achieved this by firstly identifying a range of typical land manager archetypes in Scotland, followed by a review of all visible support systems identified through academic and grey literature review.

More detail on the types of support available is given in Appendix A Support in terms of funding is available from Government and the Private sector. Advice and information can be sought from direct Government sources plus third-party sources funded by Government (e.g. the Farm Advisory Service) but also independent third-party provision. Third sector, charities and Non-Governmental Organisations also provide landowners with advice and funding to undertake measures that align with their objectives.

4.1 Initial land use support system mapping

The infographic on the following page (Figure 2) displays a high-level mapping overview of the current land use support systems in Scotland and the extent to which land managers are engaging with each. Most land managers engage with government agency support and funding, with agricultural land managers doing this to a greater extent. This is mostly limited to schemes such as BPS and LFASS as these offer large rewards for less administrative actions compared to other schemes, such as AECS. Other land managers are more likely to be engaging with corporate buyers and private sector sources of support, such as emerging natural capital opportunities.

Figure 2 demonstrates clearly that the land manager support network in Scotland is a complex entity, with different land managers drawing from a wide range of support sources.

Whilst it has not been possible to quantify the exact support flows between support providers and support receivers, we have provided an indication of the overall network and flow of support in Scottish Agriculture, helping us map current land manager engagement with support systems.

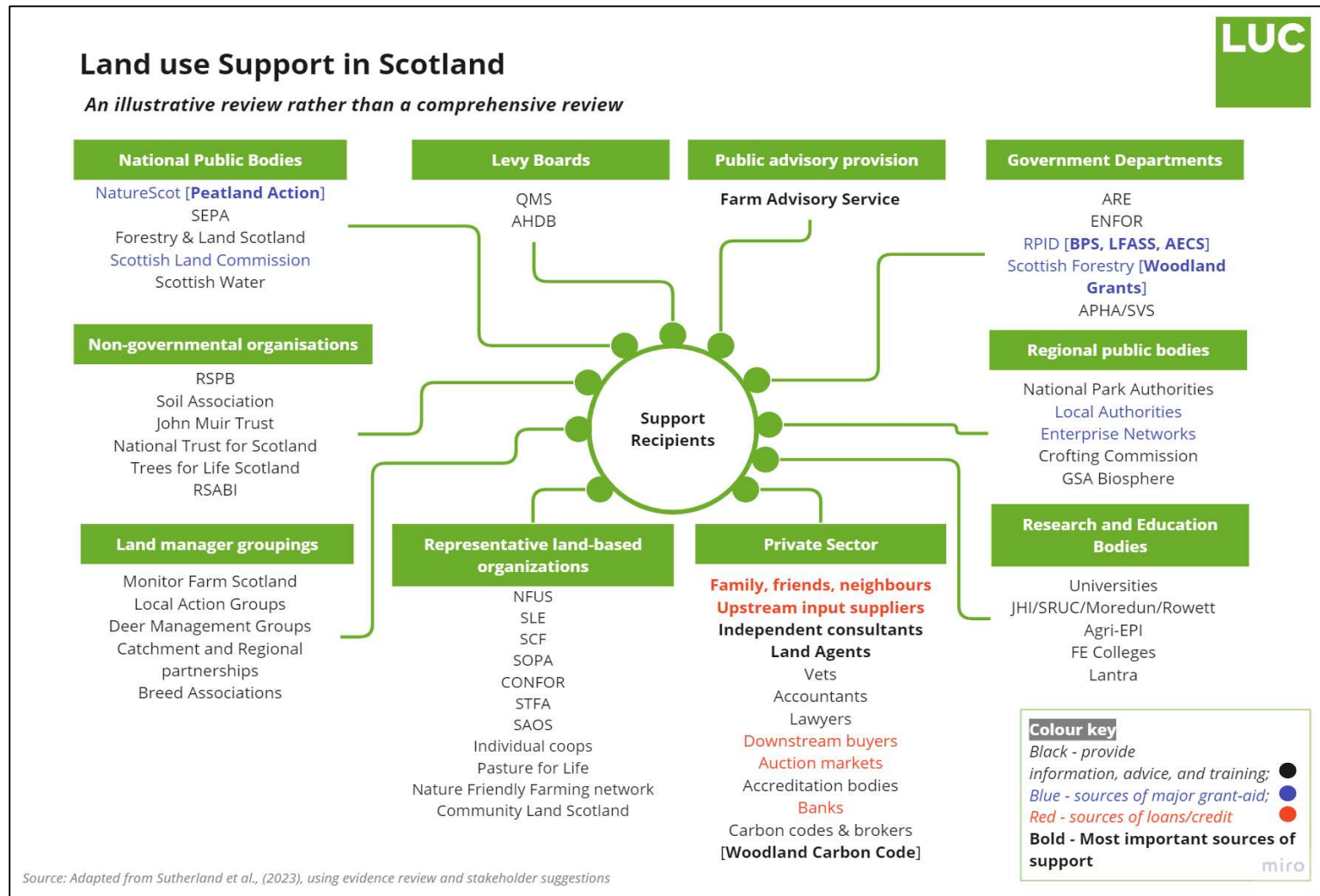


Figure 2 – Land use support system providers in Scotland. Source: Adapted from Sutherland et al. (2023)

5 Stakeholder views on engagement with support systems

It was recognised from the outset that the results of the evidence review must be calibrated against the lived experience of key stakeholders. We were able to conduct 25 interviews, and had scheduled to supplement this with additional workshops, but it proved very difficult to gain substantive input from planned workshops due to the timing overlap with the peak summer workload alongside harvesting.

We have captured the results of the stakeholder feedback below. This should be read alongside the review of the literature which is presented in section 7. Whilst there are significant similarities between the evidence from the literature review and stakeholder perceptions from the interviews, we recognise that this evidence would be usefully supplemented by a more in-depth form of action research with a wider stakeholder group, in particular potential support recipients, which would help to deliver more substantive results.

5.1 Factors influencing land managers' decisions.

Stakeholder interviewees identified many factors influencing the ability and willingness of land managers to change management practices and/or land use patterns. Although varying in terms of emphasis and specific examples offered, there was a high degree of agreement across stakeholders (and consistency with the literature) regarding the main categories of (interacting) influences, which can be summarized as follows:

5.1.1. Confidence and understanding

Land management involves a range of tasks requiring both practical skills (e.g. handling livestock and machinery) but also organizational (e.g. resource allocation) and strategic (e.g. business planning). Changing land management practices and/or land use patterns requires expanding this skill set. However, not all land managers currently have the necessary skills, leading to many having a low understanding of how to change and low confidence in abilities to change successfully. Conflicting messages about the definitions, relative merits and compatibility of different practices (e.g. afforestation, regenerative agriculture) cause significant confusion, reinforcing an underlying wariness of changing unnecessarily.

Indeed, stakeholders were concerned that basic awareness amongst many land managers of requirements for change under both future agricultural policy, but also private supply-chain pressures, is still very low. Clearer and more consistent messaging from government and industry leaders would help, particularly if it was accompanied by more detail on practical support measures, including funding levels, the provision of information, advice and training, and any implications for future eligibility for land-related tax breaks and other public funding sources.

5.1.2. Resource constraints

Although any given parcel of land can be used for a variety of purposes, its underlying natural capital and biophysical characteristics (e.g. climate, topography, soils) exert a significant influence over its inherent suitability for different uses. Consequently, land managers do not all face the same land use possibilities to deliver particular ecosystem services. The Less Favoured Area (LFA) designation recognizes this in agricultural production terms but variation in suitability to deliver other ecosystem services is also recognized through various environmental designations (and indeed spatial targeting of agri-environment measures).

Farm type provides a convenient, albeit crude, indicator of likely flexibility in agricultural land use, with many hill and upland livestock farms being particularly constrained. The JHI Agricultural Land Capability Map (and equally the forestry suitability map) offers a more refined indication, but greater use of maps to categorise potential to deliver wider, environmental services would be helpful. For example, High Nature Value (HNV) farming.

Beyond biophysical constraints, farm businesses are also constrained by the availability and quality of other resources - in particular, working capital, equipment and labour.

Stakeholders stressed that many farm businesses operate on very slim margins and are risk averse, limiting the scope for experimentation and investment in new management practices or forms of land use. Financial support can help to overcome this, as can support scheme contracts' length and flexibility. However, labour scarcity and the relentless nature of farming often leave little spare time to devote to engaging with the process of change.

Geographical remoteness and/or poor communications connectivity can add further challenges. So can small scale – smaller businesses with fewer resources (especially labour) typically lack both the economies of scale and flexibility available to larger businesses to accommodate/experiment with change. This limits their ability to be creative and do something different. Some larger businesses have recruited in-house expertise and/or they directly commission academic and other consultants, particularly in relation to emerging nature-based solutions and rewilding exercises.

5.1.3. Transaction costs

The transaction costs of seeking information, advice, training, and external funding to implement change can be significant. To make it easy for all applicants, sources of information, advice, training and funding should be easy to locate. Administrative processes for applications, monitoring and reporting should be simple and accessible, including in their choice of language and terminology.

Stakeholders acknowledged that accountability for public expenditure necessarily requires a degree of bureaucratic oversight. However, they expressed concern that the complexity of some funding schemes² was a deterrent to some applicants, including those with little spare

² The level of detail offered by stakeholders regarding specific public funding schemes varied, but most suggested that agri-environmental type schemes were more complex to enrol in.

time and/or an unfamiliarity with administrative processes. This phenomenon was described as 'form anxiety'. The difficulties of coordinating across multiple sources of information, advice and training were recognized, and it was suggested that clearer signposting and the use of one-stop-shops would be welcome.

Smaller businesses lacking the staff and/or finance to hire specialist advisors may be particularly affected by transaction costs, facing a proportionately greater burden than larger businesses. For example, there is often a fixed cost element to application processes regardless of the level of funding sought and having to seek information directly rather than being able to delegate to staff can have a high opportunity cost.

5.1.4. Tenure

Farm tenure exerts a direct influence over land managers' ability to undertake change, particularly between different land uses. Specifically, whilst owner-occupiers have the freedom to choose how they manage their land, tenants are constrained by the terms of their lease. The degree of restriction varies across different types (e.g. length) of tenancy, with crofting tenure adding some further complexities, particularly in relation to common grazing.

In most cases, agricultural tenancies restrict the range of land use activities permitted. For example, afforestation and non-agricultural enterprises are typically precluded from leases by default (although may be agreed via negotiation). Moreover, non-agriculturally productive parcels of land (e.g. pre-existing woodland, riparian habitats) are often excluded from the area covered by a lease. Consequently, the ability of many tenants to implement and benefit from land use change is currently constrained.

However, some stakeholders believed that the issues around tenure constraints had become better understood in recent years and were hopeful that the forthcoming Agriculture Bill would address many of them.

5.1.5. Motivations and norms

Beyond the practical constraints suggested above that influence a land manager's ability to change, willingness to change is also affected by various factors. In particular, by an individual land manager's attitude towards and motivation for land management and by cultural norms held by family, friends and peer groups.

Land managers need to perceive how change fits with business viability and continuity. Some land managers (e.g. rewilding estates, NGOs) may be motivated to undertake change primarily by seeking environmental improvements. Others may be more motivated by the traditional farming values centred around food production, and they be more fundamentally opposed to activities perceived as incompatible with growing or rearing consumable produce. The latter is particularly relevant to debates around afforestation and (to a lesser extent) peatland restoration.

Many land managers are starting from a mainstream farming perspective, although not all are; other groups are perhaps more open to change such as community groups, foresters

and horticultural producers. Stakeholders suggested that variation in willingness to change was likely to be significant across the full population of land managers and would complicate any targeting of encouragement to change.

Stakeholders also noted that willingness to change could ultimately be influenced by financial pressures, whether via public funding or market signals, but that sustainable change would require cultural shifts – winning hearts and minds. This implies a need for clear industry leadership backed-up by the provision of information, advice and training plus (probably) encouragement for generational renewal. Negative perceptions of bureaucracy and of support payments simply flowing to advisers (a ‘consultants charter’) are widespread.

5.2 Types and sources of support

Stakeholders identified different types of support for land managers, distinguishing funding from other forms of support.³

5.2.1. Funding

Funding was further divided into public and private, although the emphasis was very much upon public funding. Public funding for land management is dominated by agricultural support, notably decoupled area payments plus limited voluntary coupled support. Significant funding is also available for forestry and peatland restoration, plus wider agri-environmental schemes, innovation funds and various capital grant schemes. Public funding is also available to land-based businesses from other sources, such as the Enterprise Networks (see **Table 2** for listing).

Stakeholders regarded public funding as essential to achieving management and land use change; in particular to offer financial incentives (or at least reduce disincentives) to make change worthwhile and to encourage any necessary capital investments. However, it was noted that inflation continues to erode the real terms value of public funding, decreasing the leverage that it has over management decisions.

Private funding for changing land management is also available. For example, there are high-profile cases of new and large landowners essentially self-funding and/or harnessing emerging environmental funding mechanisms. The latter include the Woodland Carbon Code and the Peatland Code.

However, the accessibility of such mechanisms to all land managers (e.g. tenants, common grazing, smaller holdings, community owners) is imperfect. Moreover, considerable uncertainty exists over the future value of carbon credits, and the possibility of claims over them by downstream supply-chain partners. Consequently, notwithstanding Scottish Government aspirations to increase private funding, stakeholders expressed some scepticism about the potential of private funding to replace public funding.

³ Although in practice there may be some overlap since funding may be made available to facilitate interaction with other forms of support. For example, grants to attend training sessions.

5.2.2. Non-funding support

Stakeholders also sub-divided non-funding support, into procedural support to help land managers navigate bureaucratic processes (e.g. advice on how to complete application forms, enrol in training programmes) and support to help with actual activities on-the-ground (e.g. training in new management practices). Both were regarded as necessary, but the degree of procedural support required relates back to concerns about transaction costs.

Procedural support tends to either take the form of information and general advice provided by the source of any funding, or the form of professional assistance to comply with application and reporting processes. For example, public funding is accompanied by online (and sometimes print) public guidance material plus online, phone and (sometimes) face-to-face advice on (e.g.) eligibility criteria, payment rates and evidence requirements. Private sources (e.g. land agents, consultants) often mirror this, but also offer further hands-on assistance to gather necessary data and complete paperwork plus more bespoke advice for individual land managers.

Practical support is similarly available in different forms from a variety of sources. Indeed, stakeholders emphasized the huge variety of forms and sources (see **Table 2** for listing). For example, information is available via print and social media from public (e.g. Scottish Government, NatureScot, SEPA, Universities), private (e.g., levy bodies, consultants, input suppliers) and third-sector (e.g. NGOs) providers and advice can be offered one-to-one or one-to-many⁴ either online or face-to-face. Moreover, face-to-face may involve a simple meeting or a site visit or demonstration. Vocational training (e.g. via Lantra or colleges) tends to involve face-to-face events, but online training can suit some strategic and planning type skills development. Stakeholders suggested that the breadth of support sources was confusing for some land managers and better alignment or at least signposting between sources would be helpful, although signposting ideally needs to be via people as well as (rather than just) an online portal, for land managers to define the correct source of support for their own individual circumstances.

Importantly, stakeholders also stressed the role of informal sources of information and advice. For example, family and friends plus unrelated business professionals (e.g. accountants, vets). Peer group networks (local but also international) of like-minded people can also be important – indeed some stakeholders identified these as particularly relevant for emerging practices such regenerative agriculture and agro-forestry which some stakeholders regarded as not well-served by more formal support mechanisms. Peer networking can be encouraged through trained facilitators and funding.

5.2.3. Availability, accessibility and relevance

Uptake of information, advice and training requires land managers to trust the source and to see the relevance of what is being offered. This poses a demand-side challenge in persuading land managers of the need for change and relates back to points made above

⁴ i.e. one advisor to one land manager or one advisor to many land managers

regarding the need for clear, consistent messaging from government and industry leaders to set the tone – particularly in relation to strategic business skills and new technical skills.

However, it also poses supply-side challenges in terms of the availability and accessibility of information, advice and training. Government only has leverage of this through either direct provision itself, or funding of third parties to provide support. Stakeholders noted that availability was already patchy geographically and in terms of specialist topics. Moreover, they were not confident that public funding levels would be sufficient to cover all future requirements – implying a need to prioritise particular topics or groups of land managers, and/or to rely more upon online and one-to-many methods (despite experiential, hands-on learning being viewed as more effective).

Citing diminishing returns and the 80/20 rule⁵, some questioned the merits of trying to accommodate all ‘hard to reach’ groups (e.g. smaller producers, new entrants, women, the very young, those with poor mental health). However, the Women in Agriculture initiative was cited as a good example of targeting.

Furthermore, even if future funding was sufficient, stakeholders were not confident that sufficient appropriate advisors would be available in the short-term. Trust depends on perceived credibility and, rightly or wrongly, in many cases this requires advisors to have agricultural backgrounds – yet the types of management and land use changes required extend beyond agriculture. This implies a need to upskill existing advisors but also to recruit advisors from different backgrounds – either to work in teams or (hopefully) to be accepted as credible by land managers.

Stakeholders offered a variety of solutions to this problem, including allowing the Farm Advisory Service (FAS) to evolve in terms of its modes of operation and topic coverage but also to sub-contract other independent and/or specialist advisers (including existing land managers) as appropriate. Deployment of RPID staff to offer advice as well as conducting inspections was also suggested, reminiscent of previous policy eras and also, to some extent, emulating more recent practice in forestry and catchment management.

The use of facilitators rather than advisors was supported by some stakeholders, reflecting (possibly) easier recruitment (technical expertise is less essential than people skills) and perceived advantages of facilitated experiential learning rather than expert instruction.

It was also suggested that advisors should be included more formally in policy design and monitoring processes since they are well placed to offer insights into how ideas will be received and implemented on-the-ground. It was noted that total formal advisory capacity includes those working for input (e.g. seed, feed, fertiliser) suppliers as well as those aligned with FAS or working independently.⁶

⁵ The Pareto principle (also known as the 80/20 rule) states that roughly 80% of outcomes come from 20% of input effort.

⁶ For example, the AIC estimates that its members deploy c.125 staff in Scotland under Feed Adviser Register (FAR) system, which compares with c.140 FBBASS accredited advisers.

Table 2 - Cited examples of support

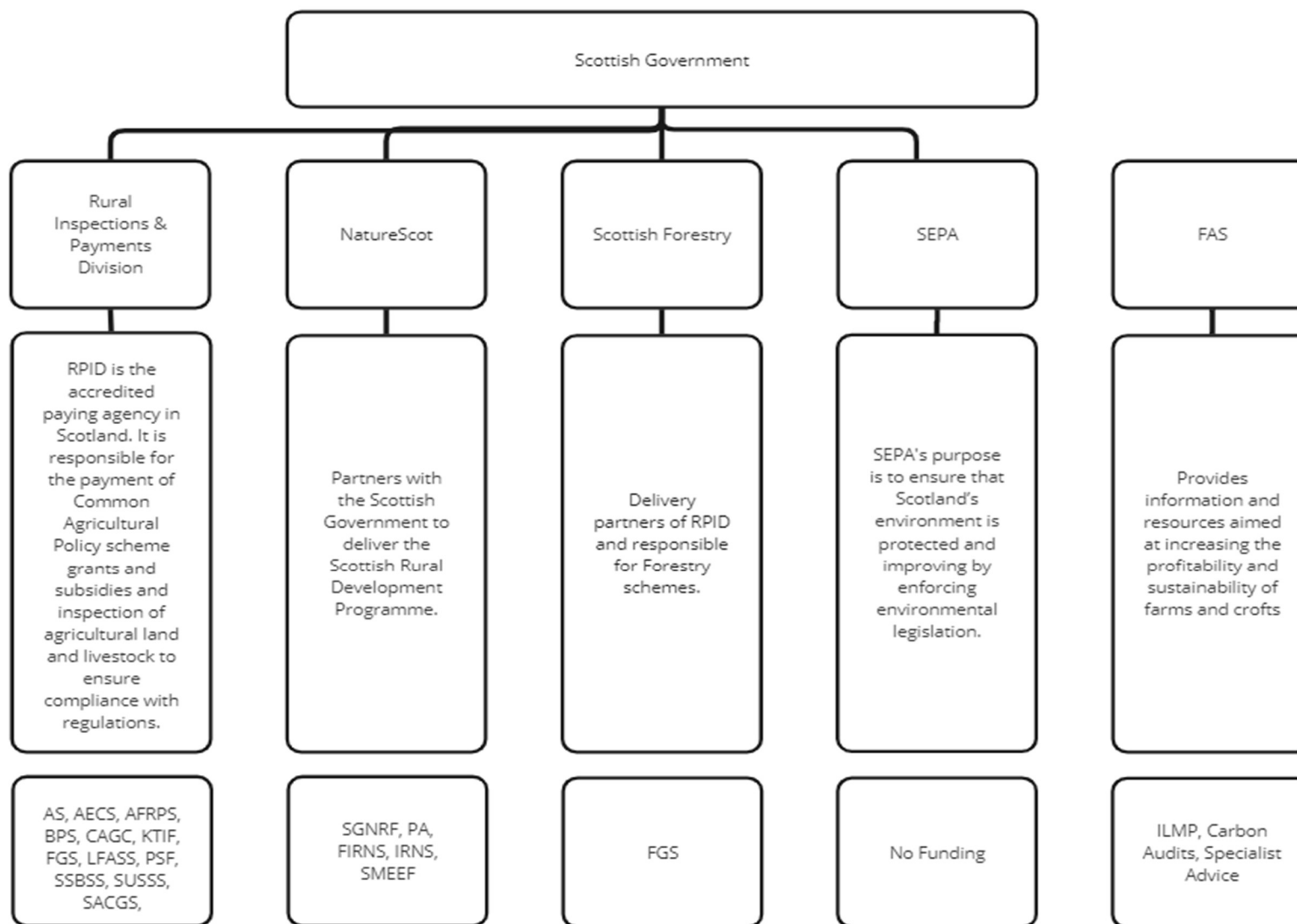
Category	Funding (for investment, working capital and income support)	Info/advice/training (via print & social media, online, telephone, face-to-face, demonstrations, one-to-one, one-to-many etc).
Private, independent	Loans. Equity partners. Crowdfunding. Impact bonds. Carbon markets.	SAC Consulting, ADAS, Land Agents. Forest Carbon. Scottish Agronomy. Smaller independent consultancies (e.g., 5 AGM, ScotFWAG). Vets. Accountants. Contractors. Ringlink Scotland.
Private, tied	Input suppliers and marts (credit lines). Downstream buyers (credit lines, grants).	Feed/Fertiliser/Seed/Machinery suppliers. Banks. Downstream supply-chain.
Public, national	Ag and forestry support/grants. Research grants. Peatland Action grants.	Scottish Government. SEPA. Forestry & Land Scotland. FAS. Scottish Land Fund.
Public, local		RPID Area Offices; RLUPs; National Parks.
Research body	Grants.	SRUC, JHI, Mordun, Universities EPI-Agri
NGO	Woodland Trust grants.	RSPB, Wildlife Trusts, Soil Association. Lantra.
Land manager organization, formal		QMS. AHDB. SAOS. Confor. RICS. STFA. NFUS. SLE. SCF. NBA. NSA. DMG. Monitor Farms.
Land manager organization, informal		Peer-to-peer. Innovative Farmers. Pasture for Life. Nature Friendly Farming Network.
Neighbours/personal network	Business partners.	Neighbours. Business partners.
Family	Friends and family. Non-farming income.	Inter-generational.
Generic business support	Loans.	Enterprise Networks, Business Gateway. Local Authorities. Banks

6 Land manager experiences of support systems

As part of this research project, we attempted to identify and map all existing and relevant land use information systems, support services and the current incentives for land use transformation directly related to achieving Net Zero and/or nature restoration. An outline of all the support schemes identified can be found in [Appendix A](#). We then collected additional information on a sub-set of current support systems administered by the Scottish Government, to explore specific touch points for land managers. To frame this exercise, we firstly mapped the main agencies within the Scottish government that are responsible for the relevant land manager support systems (Figure 3).

Figure 3 underlines that multiple agencies are responsible for providing and administering support to land managers in Scotland. This has the effect of increasing administrative burdens for land managers if systems across agencies are not in sync in terms of data collection and system operation.

Figure 3 - Agencies responsible for land manager support in Scottish Government



6.1 Insights from the literature

We can gain significant insight from published grey literature about where, when, and how land managers interact with support systems and services. There are three highly relevant published pieces of work. The first is the RPID customer satisfaction survey (RPID, 2021), where RPID customers gave their views on the application process and how it could be improved. 2147 customers filled in this survey, providing a robust sample size to gather insights from. The second piece of work is the NatureScot Research Report 1254 (NatureScot, 2021), where biodiversity outcomes were evaluated. This included a quick survey of applicants' views on the application process. The third piece of work is 'Doing Better Initiative to Reduce Red Tape for Farmers & Rural Land Managers' (SRUC, 2014) where regulations (or their implementation) that impinge on business decisions were identified and solutions were put forward to address these.

6.1.1. Administrative burdens

The general literature review (reported in Section 7) and Stakeholder views (reported in Section 5) revealed that the administrative burden and 'form anxiety' associated with support schemes can significantly affect land manager engagement with support systems.

We can relate this to the RPID survey responses, in particular the question 'Applications made to other schemes in the last twelve months'. Interestingly, 77% of RPID customers stated that they did not make another application to another non-SAF (Outside BPS, LFASS, AECS, FGS) scheme in the last 12 months.

Groups who had not made another scheme application are compared below:

- More owners (80%) than tenants (74%) and business partners (70%);
- More other businesses (84%) and farms (79%) than crofts (73%);
- More older (84%) than younger (66%) customers; and
- More customers that completed their SAF with support (81%) than those that completed it on their own (74%).

This would suggest that for the majority of RPID customers, the main support systems they are engaging with fall within the bracket of the SAF administrative process. It appears that many land managers are only engaging with SAF and not applying for schemes outwith this (e.g. AECS, Peatland Action etc.). Although it is difficult to draw conclusions from this question alone, the supporting evidence from this report would suggest that the administrative burdens are a considerable factor in preventing land managers from engaging with other support systems outside their SAF application.

For instance, the RPID survey found that a substantial number of RPID customers felt that application processes were too complicated, or the application forms were too long or complicated. When asked what customers' main reasons for dissatisfaction with information from RPID, the main two reasons given were:

- 1) The application process is too complicated (53%)
- 2) Application forms are too long/complicated (52%)

Furthermore, in the 2013 RPID customer satisfaction survey, the most common reason for dissatisfaction with information from RPID was ‘not enough information being available’ (29%). This suggests that the administrative burden involved with applying for rural funding schemes has become a more significant influence on farmer decisions in the period between 2013-2021.

The challenges of administrative burdens are further reinforced when customers were asked about the ‘aspects of RPID’s performance customers would like to see improved’ where the most popular answer was ‘application forms are easy to complete’ (42%). One respondent was quoted:

“Website and all forms etc. need to be rewritten and simplified. They need to be clear and concise and user friendly. Use words not acronyms. Use far fewer words.”

We find further evidence to support this in SRUC (2014) where a list of recommendations is provided to the Scottish Government on how to reduce red tape burdens placed on farmers and land managers. Recommendation 5 states that an IT system should be developed that reduces the form filling burden for farmers and land managers – reducing administration costs. This recommendation also suggests that a full review of data requests from farmers and land managers is undertaken to ensure that duplication is minimised.

Despite this point being raised in 2014, the findings from the RPID survey suggest that from 2013 to 2021 administrative burdens on land managers applying for government support schemes have increased.

6.1.2. Support required to access funding

There is also substantial evidence that suggests that many land managers in Scotland require support to submit applications to financial support systems. Evidence for this is provided by the RPID survey, where the following three points were cited as the reasons why customers needed some support with their Single Application Form submission:

- 1) Personal (e.g., first time completing form, learning disability) – 43%
- 2) Mistakes (e.g., want to avoid mistakes) – 41%
- 3) Forms (e.g., difficulty accessing forms, take too long to complete) – 34%

This would suggest that many land managers find the current administrative processes involved with submitting applications to support systems a significant barrier to engagement and require support to ensure that they can access these. The response to this question suggests that the current complexity is leading landowners to obtain procedural support to complete their applications.

Of those that are using procedural support to complete applications, SRUC agents are the most common support agents being used (48% of cases). Interestingly, other business (not farmers) used commercial agents to support applications 51% of the time.

6.2 Land manager support system mapping

This section presents three infographics (drawn from RPID survey data and our findings from the previous sections of this study) representing the typical land manager pathways to

access agricultural support systems in Scotland. Each infographic is broken down into four main sections (from left to right). The first section, motivations, highlights the broad overarching motivations that a land manager is looking to achieve within their business objectives. This includes motivations such as ‘business support’ and ‘woodland establishment’. The following section highlights the agency touchpoints that a land manager will engage with if they decide to follow one or multiple of the previous motivations. This includes both the agency (such as RPID) and the specific scheme that relates to that motivation (such as the Forestry Grant Scheme for Woodland establishment). The third section shows the administrative actions that are associated with engaging with each different support scheme, including information such as what IT system is used (e.g. RPID portal) and if support is generally needed by a third party. The final section details what kind of login credentials are needed for each administrative action and if these are shared or unique for each scheme.

Figure 4 represents all the pathways open to land managers, providing an overview of the support system landscape. **Figure 5** highlights the pathways that a typical farming land manager could take. **Figure 6** highlights the pathway that a non-farming land manager, such as an estate, could take. The following sub-sections draw out some of the key findings and help understand where, when and how land managers interact with support systems and services.

6.2.1. Figure 4 – land manager support system map

This figure presents an overview of all the motivations, touchpoints and administrative actions that a land manager could undertake if they were to take certain pathways. Key points from this infographic include:

- It appears that land managers only need to have one login credential to access all support services via RPID (Rural Payments and Inspections Division) in Scotland. This is the RPID portal login, where land managers can access the SAF, AECS application, SSBSS & SUSSS form and FGS application. For those schemes not under the umbrella of the RPID portal (Peatland Action), online submissions are required that do not require login credentials (FAS applications still require RPID Business Reference Number however). This would suggest that login credentials do not pose a significant barrier to land manager engagement with support systems.
- Regarding touch points, RPID is the agency that land managers are most likely to be engaging with for funding. This is because the most popular support schemes (BPS, LFASS, AECS etc.) are administrated through this agency. Other support schemes that are not administrated by RPID, such as the Forestry Grant Scheme, are still accessed through the RPID portal. FAS and Peatland Action support schemes are accessed outwith the RPID portal, but require relatively simple administrative inputs to complete.
- Overall, the RPID public sector support system network is administratively logical from a high-level perspective. The majority of schemes are accessed through the RPID portal, and those that are not are procedurally straightforward in terms of

required steps. However, the level of detailed information needed by certain schemes makes accessing a wide range of these extremely challenging for some land managers in Scotland (recalling from section 5 that land managers differ widely with respect to skills and confidence to tackle administrative processes and implement management changes). For example, AECS applications are considered very complex due to the level of information that needs to be provided along with the lengthy application form/process. Furthermore, Forestry Grant Scheme applications require a level of detail that is beyond most typical land managers' (farmers etc.) knowledge, leading to a reliance on external specialists to complete applications.

- On the whole, this would suggest that the complexities in land manager support systems, including the level of detail needed for specific applications are reducing engagement with systems that could encourage improved environmental management practices. This does not take into account private schemes, such as the Woodland Carbon Code, which would only add to this complexity.
- All other things being equal, administrative simplicity is preferable to complexity and (for applicants) greater flexibility is preferred. Hence efforts to, for example, streamline application and monitoring processes, reduce information burdens, widen application windows and vary contract lengths, are justifiable. However, accountability for public expenditure requires a degree of bureaucracy to ensure that funds are disbursed and used as intended, and simplicity and flexibility for applicants may impose additional complexity for administrators. Consequently, there are trade-offs, and the scope for improvements in process design alone will typically be limited.
- This implies that other steps need to be taken to improve accessibility, including the provision of additional procedural information and advice – which necessarily incurs additional public administrative costs, raising familiar questions regarding the appropriate degree of such assistance and whether it should be universal or targeted at specific groups.
- Moreover, administrative touch-points and contractual constraints are only one influence on land manager behaviour, implying that improved accessibility and flexibility will not by itself increase overall engagement with land use change. Other measures will also be needed. For example, attractive payment rates, sufficient technical advice and training, and support for capital investments.

6.2.2. Figure 5 – farmer decision pathway map

This figure presents an indicative pathway through the support systems that would be taken by a land manager (farmer) who does not have any specific environmental goals (woodland establishment, peatland restoration) but would like to improve the efficiency of their operation and reduce their overall impact on the environment. It is important to stress that this pathway is **indicative, and it is not intended to represent all farmers in all locations**. In reality, as explained in the literature review in section 7 later, all land managers will have a unique set of motivations, barriers and opportunities regarding land management practices that will affect their engagement with support systems. The findings from this infographic are summarised below:

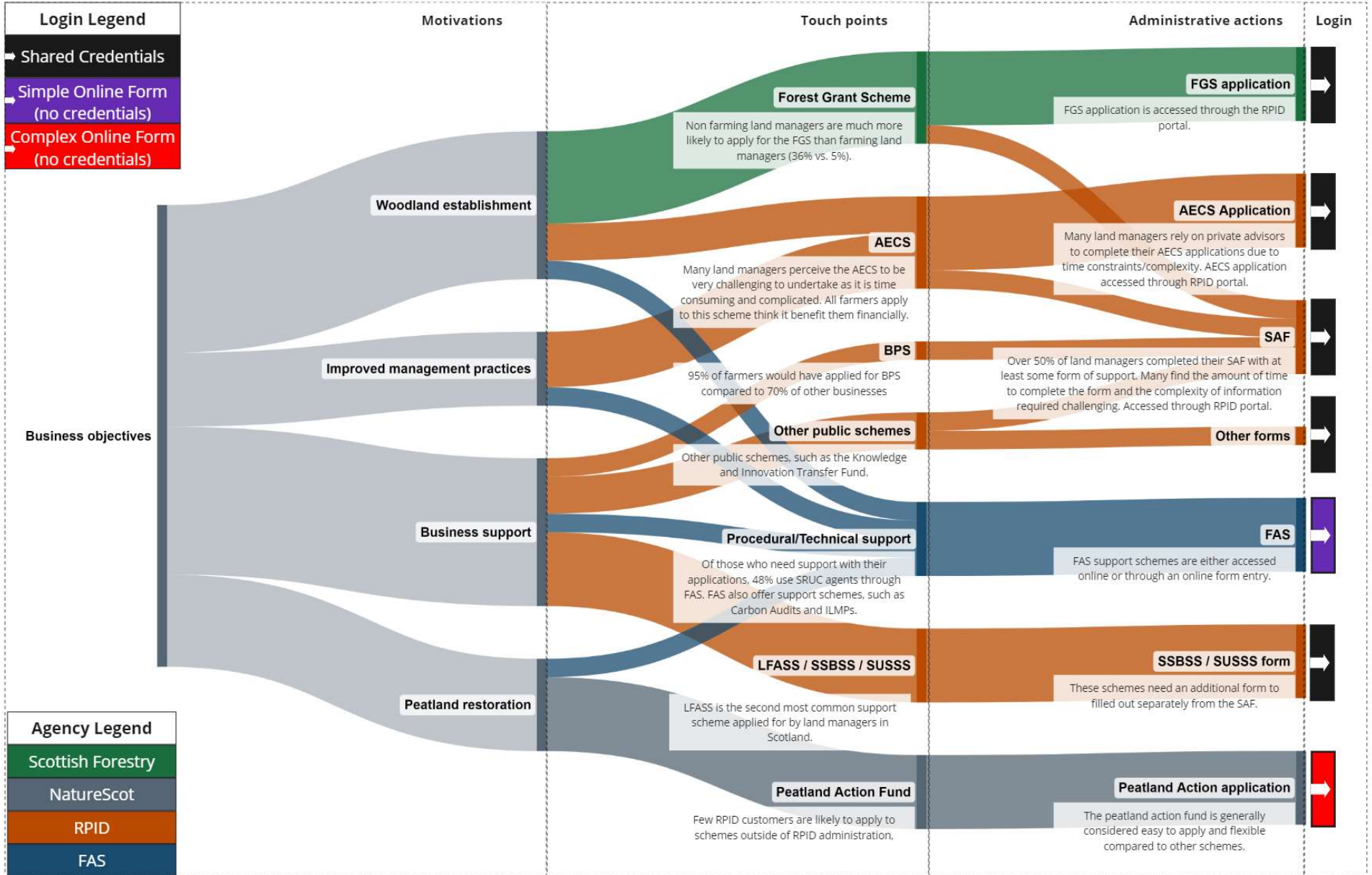
- The majority of farming land managers will be engaging with support systems that are accessed through the SAF process (BPS etc.) as these are familiar and provide a high level of financial support for a relatively small administrative and practical input.
- Land managers of this type could also be engaging with AECS. This provides the land manager with an opportunity to improve the economic performance of their operations, whilst also benefitting the environment. Land managers will often choose options that require the smallest practical/administrative inputs compared to financial returns. Many land managers will require support from a third party to complete their AECS application due to the complexity of information required.
- Many land managers of this type will rely on FAS and other agents, along with informal networks, to provide procedural support to their applications to support systems. This is because farming land managers are often time-poor due to their focus on practical activities on farm, relying on others to assist with the administrative processes of applying to support schemes.

6.2.3. Figure 6 - Non-farmer decision pathway map

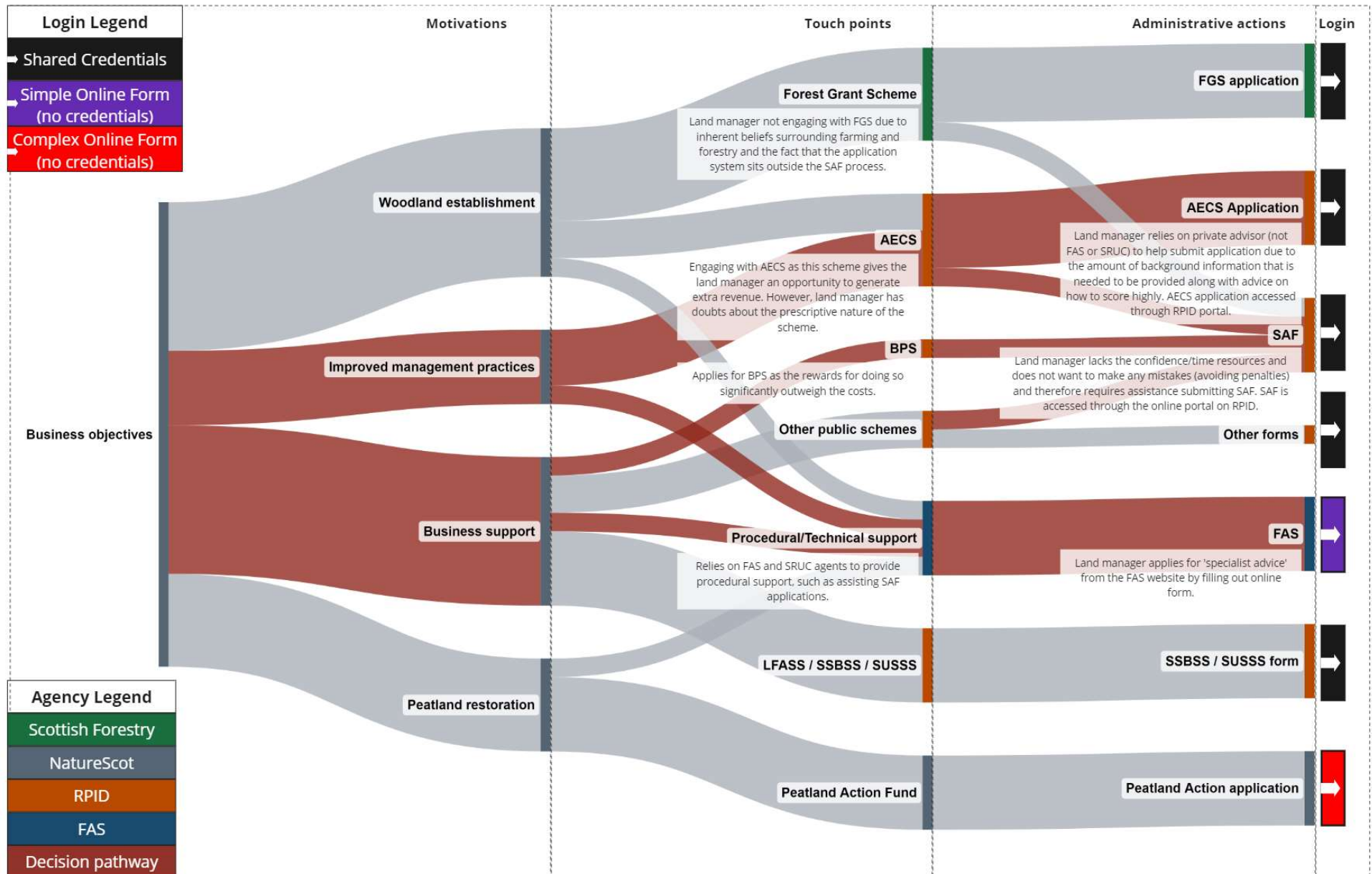
This figure presents an indicative pathway through the support systems that would be taken by a land manager (non-farming) who is looking to diversify the use of their land, improving economic and environmental performance simultaneously. Again, it is important to stress that this pathway is **indicative, and it is not intended to represent all non-farming land managers in all locations**. In reality, as explained in the literature review, all land managers will have a unique set of motivations, barriers and opportunities regarding land management practices that will affect their engagement with support systems. The findings from this infographic are presented below:

- Non-farming land managers are much more likely to engage with a wider range of support systems outwith those administered by RPID. This may be due to a mixture of different beliefs, fewer/different constraints on time and resources and more desire to diversify income streams to ensure financial resilience.
- These land managers still often rely on external specialists to assist with certain elements of the application process, such as external forestry consults when applying for the Forest Grant Scheme.

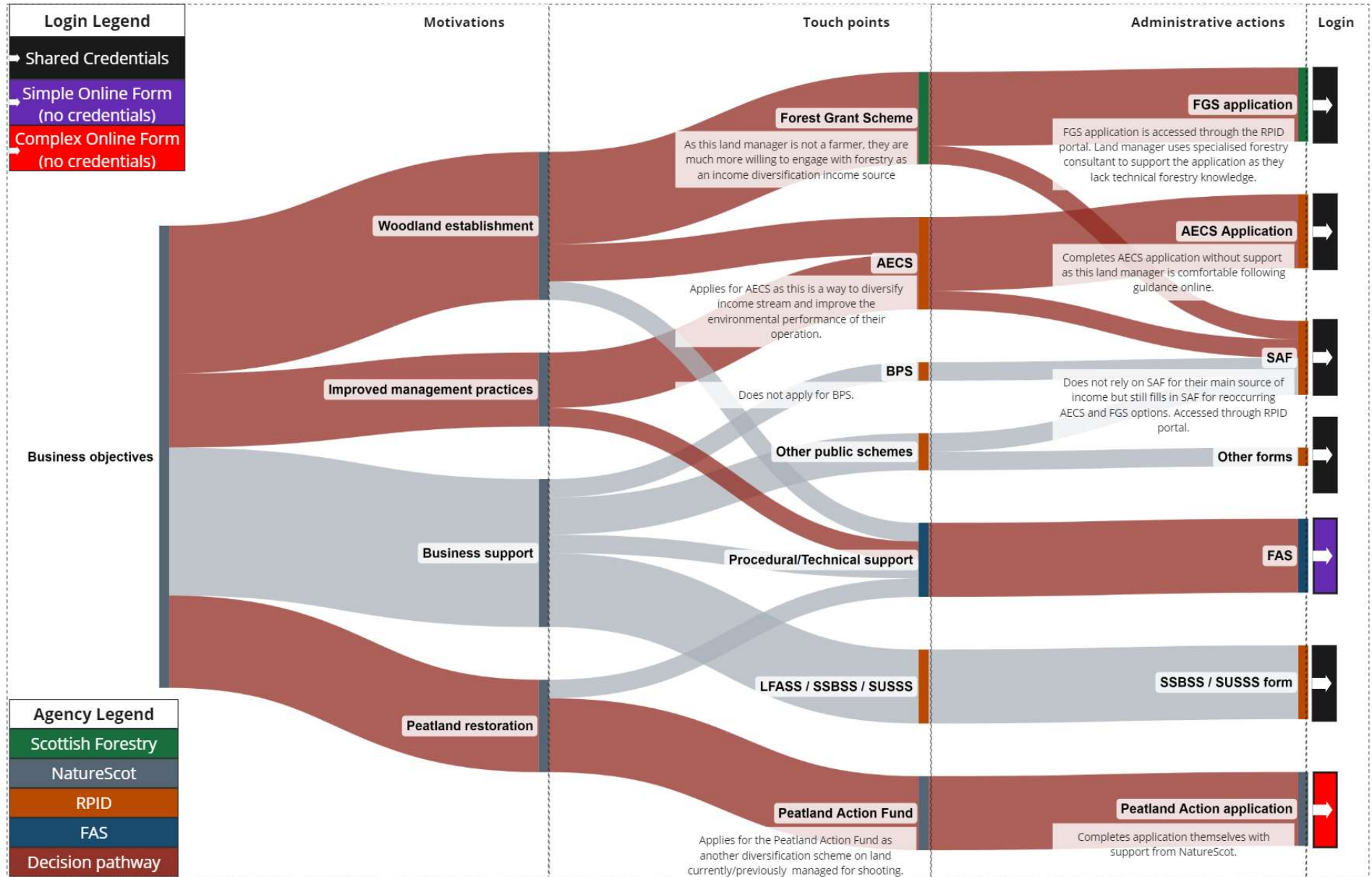
6.2.4. Figure 4. Land manager support system map



6.2.5. Figure 5 - farmer decision pathway map (N.B. this is indicative and not intended to represent all farmers in all locations.)



6.2.6. Figure 6 - Non-farmer decision pathway map (N.B. this is indicative and not intended to represent all non-farming land managers in all locations.



7 Land manager attitudes - a review of the literature

7.1 Factors affecting engagement with support schemes

The literature review highlighted that internal factors such as attitudes, beliefs and personal values can have a significant impact on engagement with support systems.

7.1.1. Values and knowledge

It was recognised as far back as the 1970's (Gasson 1973) that farmers do not always make financially rational decisions and that a range of social and intrinsic factors may also be prioritised; risk perception, values and knowledge are particularly influential in business decision making.

Land managers, in particular farmers, generally have a strong sense of self and are often influenced by their intrinsic values. This theme can be explored when looking at land manager attitudes towards planting trees on their land. Historic literature suggests that land managers have a resistance to creating woodland and forests, due to traditional values surrounding the belief that measurable productivity and growth are their traditional core purpose. Burton *et al.* (2008) explores the importance of the 'good farmer' identity, where social status and personal validation is derived by the evidence of delivering a skilled role on landscapes, i.e. livestock farming. Burton (2004) concludes that planting woodland and forest (afforestation), as well as engagement with other non-farming activities, represents both a loss in productive output and a symbolic loss of the opportunity to demonstrate farming skill and knowledge.

Farmers often resist afforestation on this basis, with agriculture and forestry historically being viewed as competitors for land rather than complementary land management practices that could be adopted as a sustainable approach to single proprietary unit diversification (Nicholls, 1969; Hopkins *et al.* 2017). Therefore, as many farmers perceive themselves to be farmers only, they are unwilling to change their practices due to inherent values that are tied to their current activity. This trend is likely to be seen across most landowners, not just restricted to afforestation, who will possess their own objectives, values and knowledge. For example, Moxey *et al.* (2021) note that the willingness to participate in peatland restoration schemes is highly variable, and that cultural ties shape attitudes towards restoration activities.

On the other hand, some land managers have intrinsic values that prioritise attempting to balance the need for a productive enterprise and protecting/enhancing the environment. Mills *et al.*, (2017) found that it was common to hear that farmers were attempting to find a balance between production and environmental management, which were not always seen as conflicting needs.

This is reflected by the well documented finding that farmers (and land managers as a whole) are often willing to adopt environmental measures if they are perceived to increase the efficiency of on farm activities and therefore prove cost effective (Feliciano *et al.* 2014). For example, Farsted *et al.* (2022) noted that climate mitigation measures are mainly

perceived as, treated as, and appreciated for offering farm-beneficial functions other than climate change mitigation by Norwegian farmers. This is also reflected in the Farm Practices Survey (2022) where 44% of farmers thought that reducing emissions would improve farm profitability and that the main motivation for farmers to take action to reduce GHGs on farm was that it was considered good business practice (84%).

Unsurprisingly, those land managers that are personally concerned/motivated to address climate change are more likely to be undertaking environmental management measures on their land. Those who are less engaged are likewise less likely to be undertaking environmental management practices.

7.1.2. Ease of transition, control and risk perception

An important aspect of land manager engagement with support systems is the perceived degree of control afforded by the available schemes and the ease of operational transition.

Academic literature in this area has focused on exploring the barriers that prevent uptake of Agri-Environment Schemes (AES), specifically focusing on schemes that restrict land manager's ability to control and own the final product that is being delivered. For example, Lampkin *et al.* (2021) suggest that a top-down prescriptive approach of some AESs has failed to engage farmers in a way that would give them ownership of the delivery of environmental goods. This view is supported by Daxini *et al.* (2019) who found that the intention to follow a Nutrient Management Plan is primarily driven by perceived behavioural control.

Thompson *et al.* (2021) further suggest that farmers are more likely to participate in AESs if they retain some control over implementation, which requires flexible terms and regular monitoring. Therefore, it appears an important element of how land managers engage with current support systems involves analysing the degree to which each support system will affect operational control.

Another key internal factor that will influence land manager engagement with support systems is risk perception. Multiple sources suggest that the clarity and certainty of the final objective of any support scheme is important to its uptake and success. Analysis from the James Hutton Institute (Rajagopalan and Kuhfuss, 2017) suggested that the uptake of the Agri-Environment Climate Scheme (AECS) was restricted by the lack of flexibility in options, along with the uncertainty on the environmental outcome due to the influence of external factors outside of the land managers' control (climate, pests etc.)

Kuhfuss *et al.* (2018) also suggest the success of AES may vary depending on the clarity of the objectives and perceived challenges in achieving them. For example, afforestation is a relatively easy concept to understand and is generally low risk, however peatland restoration is much more difficult conceptually and is seen as a higher risk option. Indeed, peatland restoration may seem to be of high risk because UK peatlands are at the southern limit in the northern hemisphere and therefore at risk due to anticipated climatic changes.

The tolerance of land manager to the inherent risks that are involved with engaging with support schemes that require alterations in management practices is an important factor in determining uptake.

7.1.3. Socio-demographic, age and education

The traditional view within the literature is that older land managers are less willing to change land management practices and that younger and more educated farmers are more willing to adopt new practices and engage with environmental support schemes. Sutherland *et al.* 2016; Mills *et al.* 2016; Brown, 2019)

This is often supported by evidence that younger people have a higher degree of environmental concern, risk tolerance and openness to new practices (Dessart *et al.* 2019). Therefore, younger land managers may be more able to engage with support systems and understand the requirements and trade-offs involved. Benni *et al.* (2022) reported that the age and education of farmers was not found to affect time requirements to fill in administrative burdens. This suggests that the transaction costs associated with support systems does not interplay with age and education levels of applicants.

When analysing the factors behind farmers' adoption of ecological practices, Thompson *et al.* (2023) found that socio-economic factors were insignificant more often than they were significant. Despite these findings, Tyllianakis and Martin-Ortega (2021) argue that the evidence base suggests that wealthier land managers stand to gain more than less wealthy land managers in enrolling in AESs. The impact of socio-economic and demographic factors on land manager engagement is therefore likely to vary considerably across different sectors and organisational structures.

7.1.4. Engagement and trust of official advice vs. informal networks

Due to the rise of information available (mainly through the expansion of digital services), answers can be found to many real-world and agricultural issues and questions online. Rust *et al.* (2021) suggest that farmers have previously often relied on in-person advice from traditional 'experts', such as agricultural advisors, to inform farm management practices. Sutherland *et al.* (2013) stress the importance of the perceived credibility of sources of advice. This view is supported by Daxini *et al.* (2019) who found that trust in technical sources of information (e.g. advisor and discussion group) is found to be a more influential determinant of farmers' attitude, subjective norm and perceived behavioural control than trust in social information sources (e.g. family and the media).

Nonetheless, Birner *et al.* (2006) and Sutherland *et al.* (2022, 2023) highlight the breadth of sources of information, advice and training utilised by land managers, encompassing family and friends, peer groups, accountants, vets, input suppliers, private consultants, NGOs and public sector bodies, accessed in different modes including via print and social media, online, one-to-one meetings, group meetings and events/demonstrations.

This is discussed further by Rust *et al.* (2021), who suggest that farmers are now changing their information sources due to the rise of online sources of knowledge and advice, foregoing traditional 'expert' advice in preference for peer-generated information. They

found that farmers regularly use online sources to access soil information and often changed practices based on information from social media. Results from their survey suggested that farmers placed more trust in other farmers and peer networks rather than traditional 'experts', particularly those from academic and government institutions, who they believed were not empathetic with the farmers' needs.

This could be further compounded by many farmers deciding not to engage with advisory services at all. Dunne *et al.* (2019) found that almost one-third of farmers in Ireland were not using extension services and a further third had contracts with private sector and public sector advisors.

Research from the James Hutton Institute (Hopkins *et al.* 2020) also found that new entrants to farming are less likely to engage with subsidies and support systems than existing farmers in the sector. In particular, new entrants did not think that the 'official' Farm Advisory Service (FAS) and the Scottish Government were helpful when starting their enterprise. This finding is mirrored by Labarthe *et al.* (2022), who suggest that new entrants to agriculture are often disconnected from knowledge structures, as they often operate businesses that are not typically addressed by advisory services. Other 'hard to reach' or less engaged groups can include women farmers and those suffering from poor mental health (Hurley *et al.* 2022).

Understanding how land managers engage with knowledge networks and their trust of these networks is an important factor in determining their experience of support systems. By improving farmers' awareness, it is expected that changes in behaviour would be reflected in the adoption of improved management practices. However, Okumah *et al.* (2021) argue that the limited research in this area so far has shown that the link between awareness and adoption exists. This link is indirect and is mediated and moderated by other factors. Nevertheless, on balance, it seems that hypothetically, with all factors being equal, more awareness is better than less awareness.

7.1.1. Summary

The willingness of land managers to engage with forms of support for changing management practices and land use patterns is influenced by a number of internal factors. These include the compatibility of change with land managers' self-identify of what it means to be a land manager, particularly a farmer – something that is ingrained and often inter-generational, making it difficult to alter in the short-term. Similarly, inflexible management prescriptions are at odds with cherished decision-making autonomy and change can be perceived as incurring higher than acceptable levels of risk, although attitudes can be softened if prescriptions align with personal or business objectives.

Weak confidence and understanding regarding the purpose and practicalities of change reinforce business-as-usual, with a lack of trust in the credibility and relevance of available sources of information, advice and training further constraining engagement. Such internal factors vary across individual land managers, but there is some evidence that greater openness to change may be associated with (younger) age and (greater) education but also

that some groups, including women, new entrants with no prior experience and people suffering from poor mental health, may be further disconnected from support systems.

7.2 External factors influencing land manager engagement with support schemes

Alongside the internal factors identified above, there are significant external factors that influence land manager behaviours, including the physical, environmental, business structure, financial, knowledge availability, social norms and time factors on land management.

7.2.1. Funding, costs and policy indicators

As with any business operation, the need to generate revenue to ensure the survival of the business is a high priority for any land manager. The majority of land managers, especially tenants, seek to make a profit from their land. Therefore, financial considerations are paramount to the landowners' decision-making process, underlining the importance of support schemes and their potential to influence change.

Previous research has indicated that given the unpredictability of agricultural and land-based activities, only when economic conditions were stable could land managers focus on other activities – including environmental considerations (Scottish Government, 2012). Measures that do not guarantee financial benefits – e.g., that may have a negative impact on production or come at a cost to the farmer – are unlikely to be adopted in the absence of other tangible benefits.

In the latest Farm Practices Survey (2022), 32% of farmers who were already taking actions to reduce GHG emissions stated that environmental measures were too expensive to implement. This may explain why Ruto and Garrod (2009) found payment rates to be a key driver and Pineiro *et al.* (2021) conclude that interventions that lead to short term financial benefits have higher adoption rates than those that concentrate on delivering ecological service provision. This view is supported by Mills *et al.* (2016) who state that current financial incentives and regulatory approaches have had a degree of success in encouraging environmental practices, but these are ultimately transient drivers that have not led to long-term sustainability.

Within this, policy uncertainty may further hinder the uptake of environmental land management practices. Kuhfuss *et al.* (2018) describe these uncertainties as:

- differences in sources in funding (public vs private)
- eligibility rules
- financial uncertainty of prices in the carbon markets and
- potential emerging markets that may provide better results.

This is further compounded by whether a payment by results or an activity model is used. Moxey *et al.* (2021) reinforce this point by suggesting that peatland restoration work is hindered by the perceived ineligibility for agricultural support payments, tax breaks and concerns over future support arrangement and carbon market fluctuations.

7.2.2. Bio-physical constraints, tenure and structure

Environmental constraints often limit which environmental measures can be implemented on a spatial scale. Location, climate and environmental quality are key determinants of which support schemes are viable for a land manager's piece of land as they affect what is implementable practically in local conditions in relation to opportunities. An example of this is the large amount of peatland and moorland that provides potential for peat bog restoration management practices: in these locations woodland planting should be discouraged (Lampkin *et al.* 2021). Paulus *et al.* (2022) provide further evidence to support this point by suggesting that environmental management practices are more likely to be implemented on sites with unfavourable agricultural conditions.

Two more important factors are the size of the enterprise and the tenure of the land. Regarding tenure, a meta-analysis of 46 studies (Baumgart-Getz *et al.* 2012) looking at the adoption of best-management practices found secure tenure to be a positive indicator of adoption, and the findings are likely to apply to climate friendly measures as well. This suggests that land managers who either own their land or are on secure tenancies with a good relationship with their landlord are more likely to adopt environmental measures due to the long-term security that their tenure status affords them.

Multiple sources within the literature also suggest that larger enterprises may be more willing and able to engage with support systems, particularly those with environmental outcomes (Mills *et al.* 2013; Paulus *et al.* 2022). Smaller enterprises are likely to have fewer opportunities to take elements out of production and fewer resources to apply without impacting their net income.

7.2.3. Ease of access to support

A key determinant of engagement with support systems is the perceived and actual accessibility of these schemes.

If a scheme is considered to be straightforward and easy to apply for, there is likely to be high engagement. The opposite is true of a scheme that is considered complex and time consuming. For example, for land managers the administrative load (transaction costs) and time commitment is often the determining factor on whether to participate or not. A common criticism of AESs is that they often carry high transaction costs, especially in comparison to more traditional support schemes (Kuhfuss *et al.* 2018).

Lampkin *et al.* (2021) suggest that schemes have become increasingly complex, partially in response to regulatory, audit and compliance issues. The administrative burden can also vary across enterprise type, with Benni *et al.* (2022) finding that dairy producers face substantially higher transaction costs than arable producers. Furthermore, once schemes are in place, the ongoing maintenance requirement for many AES (reporting etc.) can prove a further barrier to uptake (MacKay & Prager, 2021).

The Peatland Code can be used to understand some of the accessibility issues found in the Scottish agricultural sector. Moxey *et al.* (2021) suggest that the administrative burden associated with applying for joint funding via AESs and via the Peatland Code is perceived as

overly complex, with interactions between them further increasing this. The study notes that the issue of interacting schemes occurs when having to demonstrate additionality, aligning funding cycles between different sources and coordinating across multiple land managers and investors.

Novo *et al.* (2021) also found that challenges in understanding the application process and funding mechanism were a barrier mentioned by interviewees in their study regarding the peatland carbon code.

Therefore, the perceived and actual transaction costs associated with support systems are a barrier to uptake. When looking to address this, Westway *et al.* (2023) caution that simplicity is important to encourage uptake, however oversimplification of schemes can lead to unintended consequences and needs to be balanced against public accountability for expenditure.

7.2.4. Knowledge availability, sharing and awareness

Engagement with support schemes and uptake of specific on farm measures is frequently linked with the knowledge and understanding of the individual land manager (Toma *et al.* 2018).

A lack of knowledge and understanding has been frequently cited as a key barrier to new management practices. This is further enhanced when new technological and informational processes are needed for alternative practices and if the costs/benefits are not clear or easy to judge. This finding is supported by results from the Farm Practitioner Survey (2022), where the most reported reason for not taking action was being unsure on what to do due to too many conflicting views (44%). These informational barriers are important as 30% responded that a lack of information was another key reason for not taking action.

This sentiment is echoed by two specific examples in Scotland. Firstly, Moxey *et al.* (2021) found that the awareness of the need for and benefits of peatland restoration is generally not well known amongst land managers, along with the voluntary market of the Peatland Code. Secondly, Lozada & Karley (2022) suggest that more evidence and greater awareness are needed amongst land managers about the financial and social outcomes of agroecological practices to facilitate uptake.

There is also evidence that land managers have a difference in ability to adopt new practices due to a variance in resources. Larger scale land management operations may have more resources and the ability to bring in consultants and agents for any new opportunities and land management practices. This is in comparison to smaller scale land managers who may not be able to approach new opportunities in the same manner due to (e.g.) a lack of time and cash plus higher overhead and transaction costs and less scope to cope with risk.

As an example, it has been suggested that small scale agroecological farmers might disproportionately suffer from a lack of access to incentives, despite delivering to environmental policy targets, or see incentive schemes as contrary to their farming ethos (Lozada & Karley 2022). This involves access to specialist advisors, where more profitable

enterprises will be able to access specific advice on a more frequent basis compared to less profitable enterprises.

7.2.5. Social norms

As seen in section 4.2 above, farmers do not always make rational economic decisions and are influenced by societal goals and norms (Mills *et al.* 2017), the influence of a land manager's peer group is likely to determine the extent to which they engage with specific support systems and management practices. This is observed in multiple studies (Kuhfuss *et al.* 2016; Cullen *et al.* 2020; Cusworth, 2020) where peer behaviour has been deemed to influence land manager uptake of environmental practices to a varying degree through framing of what it means to be a 'good farmer'.

Howley *et al.* (2021) suggest that social norms can be harnessed to encourage pro-environmental behaviours in land managers. The researchers found that providing farmers with an opportunity to demonstrate their "green credentials" to their peer group can encourage conservation practices.

7.2.6. Summary

The ability of land managers to engage with changing management practices and land use patterns is influenced by a number of external factors. At a practical level, biophysical characteristics, and the area of land available will determine the suitability of alternative practices and land uses, but also the scope for experimentation and risk management. Equally, tenancy restrictions may impose legal constraints on freedom to change.

As businesses, the financial consequences of making changes matters. Funding needs to cover actual cash costs but also opportunity costs (time, income forgone) and transaction costs. The latter arise from application and reporting processes, both for funding and/or non-funding support, and can be disproportionately burdensome for smaller land managers. Separately, access to support can vary in terms of eligibility but also the availability of information, advice and training. Importantly, internal factors such as social norms and peer group pressure strongly influence land managers' self-identity. This affects their perception of whether different management practices and land use patterns are compatible with their own values.

7.3 Discussion guide

The findings from the literature review suggested that we should focus on three main themes when we were drilling into the details with key stakeholders:

- identify the main determinants of ability and willingness to change land use and land management practices, to give us a clearer understanding of the key factors that influence land manager decision making, including their motivations, what they want to achieve for their business or organisation, and their appetite to change.
- focus on the existing support systems that land managers are engaging with and their experiences of doing so. This allowed us to identify and map all existing and relevant land use information systems, support services and the current incentives for land use transformation directly related to achieving Net Zero and/or nature

restoration and understand some of the key barriers/opportunities regarding land manager engagement with these systems.

- explore how land managers are accessing these support systems, which allowed us to explore where, when and how the land managers interact with the systems and services.

The interview methodology and more detail on the interview questions can be found in Appendix C, and the findings are summarised above in section 5.

8 SWOT & PESTLE analysis

This section provides the details of a SWOT and PESTLE analysis on the current land manager support systems in Scotland and were informed by the literature review and stakeholder engagement exercises.

8.1 SWOT analysis

Strengths	Weaknesses
<ul style="list-style-type: none">• There are a wide range of funding and support schemes, giving land managers choice of which how to engage.• Some land manager types are self-sufficient and do not rely on public support systems to achieve their desired goals and outputs, for example large scale rewilding estates.• NGO's and other charitable organisations generally have a more formalised internal system that gives them the capacity to take advantage of support systems and absorb the transaction costs associated with these.• Some sources of private funding are already well established and are being accessed by some Scottish land managers, such as the Woodland Carbon Code.• The majority of current support schemes are administrated through RPID. This means that land managers only need one set of login credentials to access the administrative processes of all support systems.	<ul style="list-style-type: none">• Many land managers in Scotland lack the technical understanding and/or risk appetite to change management practices without extensive support or tangible demonstrations.• Lack of clarity from government and industry leaders regarding priorities and trade-offs creates uncertainties and inhibits change.• Many land managers remain uncertain of where to find information, advice and training, but also lack trust in the credibility and relevance of some sources.• Most agricultural land managers are used to taking basic payment scheme payments and what is expected in return for this is perceived to be quite minimal from land managers perspectives. Therefore, increasing or changing support thresholds/minimum criteria is likely to encounter resistance.• Many support systems, in particular AECS, are considered overly complex by land managers who find them difficult to understand and apply for. This leads to resentment over the administrative burden involved in applying and maintaining AECS agreements.• Land managers perceive support rules to be overly restrictive, impacting their ability to have control over outcomes on their farm.

	<ul style="list-style-type: none"> • Lack of adequately trained advisory agents to provide support to land managers as they look to engage and undertake new environmental land management practices. • Many land managers in Scotland are constrained by bio-physical attributes which limit the management measures and activity type that they can undertake on their land. • Due to small operating margins along with limited access to skilled labour, machinery and specialist advice – many land managers are risk adverse. They are therefore less likely to engage with support systems that do not adequately cover risks. • Many land managers have in built attitudes towards certain land management practices and are therefore unlikely to engage with any support system that challenges their pre-defined beliefs and attitudes. This is particularly evident with forestry, with many farmers viewing tree planting on agricultural land in a negative light. • Many land managers will choose to engage with the financial support system that maximises profit for the least amount of input. • There has been an increase in the perception that support service application processes are too long/complicated amongst land managers, potentially affecting engagement with support schemes. • Land managers often rely on assistance, whether this be public/private/network to fill in support system application forms.
<p>Opportunities</p>	<ul style="list-style-type: none"> • Threats
<ul style="list-style-type: none"> • Land managers engage with support systems and new management practices when in-person evidence and demonstration of the success of these systems/practices is available. • Larger holdings and particular industries (dairy, arable) are more willing to undertake environmental management practice changes and engage with new support systems that facilitate this. 	<ul style="list-style-type: none"> • "Hard to reach" groups may not be reachable through support systems. Attempting to do so could cause resourcing issues that could lessen the impact of targeted support and funding. • Land managers are severely time restricted and do not have enough time to understand all the latest practices and standards that are expected of them.

<ul style="list-style-type: none"> • Emerging natural capital markets. • Increasing the number of skilled advisors and/or facilitators could increase the uptake of environmental management practices and engagement with support schemes. • Land managers generally consider GHG mitigations measures to increase farm profitability. This would suggest that many land managers would engage with support systems that improve the GHG performance of their operations. • Simplifying or condensing application processes could increase the level of engagement with any upcoming support systems. • Land managers are using a wider range of new information sources, such as social media and other digital sources, to access informational support. Harnessing these digital communication methods could allow support to be accessed by a large range of land managers in Scotland using a one-to-many approach. • This research has indicated that land managers generally trust others that are in the profession (i.e. other land managers) over formalised advisors. Harnessing this trust and providing more peer-to-peer resource in Scottish agriculture is a potential opportunity to increase impactful support provision. 	<ul style="list-style-type: none"> • Smaller holdings may be unable to keep up with increased 'transaction costs' if new support schemes are implemented that require an increased administrative burden. • Many land managers in Scotland rely on support systems to keep their enterprises profitable. Any changes to how these support systems are accessed could therefore prove unpopular. • Climate change is likely to change the environment in which land managers are operating in, meaning that future land use opportunities could be constrained by future climatic conditions. • Poor responsibility around emerging natural capital markets.
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8.2 PESTLE analysis

Political	<ul style="list-style-type: none"> • Continuing uncertainty and impact of Brexit on agricultural markets, including loss of tariff free export market, loss of labour pool and changes to CAP and subsidy schemes. • Uncertainty surrounding the funding scheme that will replace CAP and other EU aligned systems in Scotland. • Increased political discussions about the validity of taking agricultural land out of productivity for other environmental goals. • Political instability has the potential to change input market prices (such as the spike in fertiliser prices due to the war in Ukraine). • New Scottish Agriculture and Rural Communities Bill has been published, in addition to forthcoming Land Reform and Natural Environment bills which will bring in new legislation that land managers will need to comply with. • Political commitments to a Just Transition.
Economic	<ul style="list-style-type: none"> • Cost-price squeeze on farm-gate margins due to supply-chain pressures make many agricultural land managers heavily dependent on public funding. • Uncertainty over future budgetary flexibility to maintain support funding for land-based businesses. • Loss of income and uncertainty post-CAP until new funding systems are in place and understood by land managers. • Emerging private finance (e.g. woodland carbon code) offers potential new income streams, but it is unregulated and subject to considerable uncertainty. • Price volatility linked to political and geopolitical circumstances.
Social	<ul style="list-style-type: none"> • Many ingrained beliefs towards land management processes are generational, and it may take a generational refresh for certain attitudes to become redundant. • There is uncertainty of transition if older land managers are less likely to engage with support systems than younger land managers. • There is an indication that land managers with a higher degree of education and those with higher environmental understanding are more likely to engage with support systems – particularly those with environmental outcomes. • There is a risk that 'hard to reach' groups, who are often already marginalised, will not benefit from future support systems, meaning they are less likely to engage with new management practices. • Land managers with learning difficulties, i.e. dyslexia, will have trouble engaging with more administrative requirements and burdens of future support systems if the requirements are too complex. • There is an increasing reliance on social media and other digital platforms to share knowledge and access informational support. • There is an increasing social awareness/view that taking productive agricultural land out of productivity to pursue an environmental goal could impact food security in the UK.

Technological	<ul style="list-style-type: none"> • Potential for new technological solutions, such as autonomous and alternatively fuelled machinery and methane inhibitors, to lower the carbon emissions resulting from land manager activities in Scotland. • The adoption of new lower carbon technology in Scottish Agriculture is likely to require significant financial investment. • AI and other technological developments have the potential to reduce the administrative burden on land managers in Scotland if harnessed effectively. • Improving internet connectivity in remote areas may increase land manager access to support systems. • Simplifying administrative systems online could facilitate land manager access to support systems.
Legal	<ul style="list-style-type: none"> • There is a complex regulatory framework surrounding rural land use in Scotland. • Land tenure arrangements, notably crofting tenure and farm tenancies, constrain access to both public and private environmental funding sources. • Upcoming Agriculture Bill will introduce new legislative changes.
Environmental	<ul style="list-style-type: none"> • Twin biodiversity and climate emergencies, as expressed in policy objectives and targets, imply significant and rapid change for Scottish rural land management. • Climate change itself will affect land management, requiring adaptation to wildfire, drought and pest/disease risks plus general growing conditions.

9. Conclusions

Our research has reinforced existing findings in the literature surrounding land manager behaviour and decision making. Reflecting its relative prominence within public expenditure and land-based businesses in rural areas, agriculture dominates much of published literature on land use support and this was supplemented by stakeholder interviews, including with individuals representing other sectors.

The key message is that land manager engagement with support systems is determined by a range of interacting internal and external factors. These relate to financial, practical and cultural influences on both willingness and ability to engage. This is supported by the following conclusions:

- The administrative systems associated with land use support in Scotland are perceived as logical from a high-level perspective. Most interactions with the system are through the RPID portal, which only requires one set of login credentials to access a wide range of support systems. Those support systems not under this umbrella are easy to access.
- However, the administrative burden associated with applying to these schemes, i.e. form filling, is the main barrier to engagement. Some land managers have more resources available to absorb this administrative burden, such as large estates,

investment owners and rewilding estates. If several schemes are appropriate this burden will increase.

- Procedural support (i.e. form filling by an advisor on behalf of a land manager) is widely available from both public (FAS, SAC) and private advisory sources. However, this is distinct from practical support, such as site-specific implementation advice, which was frequently mentioned by stakeholders as key to facilitating the uptake of environmental management practices, and yet less readily available, and can depend on location.
- We found that land managers often decide whether to engage with support and advice based on the credence of its source. For example, farmers are more likely to trust advisers/organisations that have a background in practical farming over those from a consulting/academic background.
- Another key determinant of engagement with support systems was the level of control associated with outcomes/management practices. Stakeholders mentioned that the perceived prescriptive nature of AECS and forestry related grants would prevent land managers from choosing to access these support services.
- Land managers in Scotland primarily access public funding support, with some accessing private finance to supplement their income or achieve specific goals. For those accessing private finance, this is generally done to avoid the conditionality of public funding support and retain operational control over the management of their land.
- A lack of knowledge and understanding has been frequently cited as a key barrier to new management practices. This is further enhanced when new technological and informational processes are needed for alternative practices and if the costs/benefits are not clear or easy to judge.

Going forwards, administrative simplicity is preferable to complexity and (for applicants) greater flexibility is preferred. Therefore, efforts to streamline application and monitoring processes, reduce information burdens, widen application windows and vary contract lengths, are justifiable. However, accountability for public expenditure requires a degree of bureaucracy to ensure that funds are disbursed and used as intended, and simplicity and flexibility for applicants may impose additional complexity for administrators. Consequently, there are trade-offs, and the scope for improvements in process design alone will typically be limited.

As our literature findings highlight, administrative touch points and contractual constraints are only one influence on land manager behaviour. This implies that improved accessibility and flexibility will not by itself increase overall engagement with land use change. Other measures will also be needed such as attractive payment rates, sufficient technical advice, training and management flexibility.

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11. Appendices

Appendix A – Support system overview

As part of the desk-based research element of this report, we attempted to discover as many of the existing official support systems available to land managers in Scotland as possible. This included visiting Scottish Government resources, such as the Rural Payments and Services website⁷, along with an internet trawl through other resources – such as NatureScot's summary of the Agri-Environment and Climate Scheme⁸. We used this information to compile Table 5 below, giving a summary of all the available sources of support and an indication, where possible, of how land managers are engaging with this support system.

To help understand how land managers are engaging with support systems, we identified and defined the key support system providers. These are outlined below:

Government – publicly funded support systems. These can come in the form of general funding support schemes (such as BPS) or more targeted schemes with environmental objectives (AECS). Government funding also underpins other forms of support, such as the Farm Advisory Service. Generic, rather than agricultural-specific business funding is also available from local and central government, but is generally regarded as less relevant to land managers.

Private sector – Land managers routinely access private sector funding in the form of overdrafts and loans offered by banks, plus calling upon personal networks (friends and family). Other sources of short-term credit include auction markets and input suppliers. More novel funding sources such as crowdfunding and impact bonds have emerged in recent years, as have voluntary carbon markets e.g. the Woodland Carbon Code and the Peatland Code.

Knowledge networks and advisory services – Land managers draw on a range of informational support when making decisions. This includes direct government sources plus third-party sources funded by government (e.g. the Farm Advisory Service) but also independent third-party provision. The latter includes advisory services tied to input suppliers as well as independent consultants but also, importantly, less formal reliance upon friends and family plus peer-to-peer networks.

Third sector, charities and NGOS – Certain groups with defined goals, such as nature protection and restoration, also provide landowners with advice and funding to undertake measures that align with their objectives. These groups are often landowners themselves.

⁷ <https://www.ruralpayments.org/>

⁸ <https://www.nature.scot/doc/scotlands-agri-environment-and-climate-scheme-summary>

Table 5: Support scheme overview

Scheme	Primary ⁹ Type of support	Description	Project providers	Support providers	Land manager experience of support system
Decoupled area payments: Basic Payment Scheme/Greening/LFASS (also National Reserve)	Financial	The Basic Payment Scheme (BPS) acts as a safety net for farmers and crofters by supplementing their main business income. Greening is a top-up to the BPS. The National Reserve helps new and young farmers who do not automatically qualify for BPS entitlements. LFASS (Less Favoured Area Support Scheme) is a separate decoupled area payment, but covers most farm businesses, particularly beef and sheep farms. Payment	Croft, Grazing, Mixed farm, Arable, Dairy, Pig & Poultry, Soft fruit, Estate (multi), Community ownership	Government agencies	Many land managers, particularly farmers, rely on basic annual payments to ensure profitability in their enterprises. For example, even with support payments, only 60% of dairy farms were profitable in 2018. ¹⁰ Those in the crofting and grazing industry have relied on support on the basis of what businesses 'have' or 'had' rather than what they 'do'. ¹¹ LFASS calculation methods have resulted in many businesses with historically managed higher livestock numbers getting overcompensated whilst other units that have since grown are not receiving full support payment levels to reflect their higher production and activity levels.

⁹ Financial support is normally accompanied by at least the provision of information but sometimes also more interactive advice.

¹⁰ <https://www.webarchive.org.uk/wayback/archive/20220804182342/https://www.gov.scot/publications/dairy-sector-climate-change-group-report-2/documents/>

¹¹ <https://www.gov.scot/binaries/content/documents/govscot/publications/independent-report/2021/06/blueprint-sustainable-integrated-farming-crofting-activity-hills-uplands-scotland/documents/hill-upland-crofting-group/hill-upland-crofting-group/govscot%3Adocument/hill-upland-crofting-group.pdf>

Scheme	Primary ⁹ Type of support	Description	Project providers	Support providers	Land manager experience of support system
		rates per ha vary according to geography.			
Voluntary Coupled Support (VCS): Suckler Beef Support Scheme (SBSF)/Scottish Upland Sheep Support Scheme (SUSSS)	Financial	The SBSF and SUSSS are supplementary payments per selected animal, available to suckler beef and sheep farms in selected areas.	Suckler beef and sheep farms	Government agencies	An attempt to target support payments at particularly vulnerable types of farming receiving low decoupled support.
Woodland Carbon Code	Financial	The Woodland Carbon Code (WCC) is the UK's voluntary carbon standard for woodland creation projects. It provides reassurance about the carbon savings that woodland projects may realistically achieve.	Estate (multi) Estate (sporting) Estate (conservation) Charity organisation Estate (investment) Commercial forestry Community ownership	Corporate buyers Government agencies	Preliminary results of the analysis of Project Design Documents suggest that carbon is only one consideration amongst other factors. This is demonstrated by differences in planting and management decisions, which affect the type and uses of the woodland created. This is corroborated by interviews with developers and landowners, who expressed a wide range of interests and intentions behind woodland creation. ¹²
Peatland Carbon Code	Financial	The Peatland Code is a voluntary certification standard for UK peatland projects	Estate (multi) Estate (sporting)	Corporate buyers	The Peatland Code itself is largely unknown amongst land managers and restoration practitioners. As a comparator, awareness of the Woodland

¹² <https://www.hutton.ac.uk/sites/default/files/files/WCC%20Poster%20Website.pdf>

Scheme	Primary ⁹ Type of support	Description	Project providers	Support providers	Land manager experience of support system
		wishing to market the climate benefits of restoration. It provides assurances to carbon market buyers that the projects they are investing in are credible and deliverable.	Estate (conservation) Charity organisation Estate (investment) Commercial forestry Community ownership	Government agencies	Carbon Code is notably greater, as is its uptake.
Peatland Action	Financial	The main source of public funding for peatland restoration, covering a proportion of upfront capital.	Estate (multi) Estate (sporting) Estate (conservation) Charity organisation Estate (investment) Commercial forestry Community ownership	Government agencies	Proactive raising of awareness by NatureScot and iterative changes to payment rates and terms and conditions have achieved relatively high uptake rates, but the pace needs to quicken further if ambitious restoration targets are to be met.
Agri-Environment Climate Scheme	Financial	The Agri-Environment Climate Scheme (AECS) promotes land management practices	All	Government agencies	Over 3,200 farmers, crofters and land managers have AECS contracts out of the regular 18,000 CAP claimants.

Scheme	Primary ⁹ Type of support	Description	Project providers	Support providers	Land manager experience of support system
		<p>which protect and enhance Scotland’s natural heritage, improve water quality, manage flood risk and mitigate and adapt to climate change. About £30-40 million is awarded annually to land managers.</p>			<p>The AECS covers 1,16 million hectares of agricultural land under management contracts representing about 20% of agricultural land.</p> <p>Comments on the application process include:</p> <p>“Guidance is awful even for someone who has much experience in this area such as an agent/manager like myself. It is difficult to find all the information on the internet and too bureaucratic. Guidance can change. Before, there was a booklet to guide you through everything, but now it is on the internet and can change with little knowledge of changes that may have happened to various measures/payments etc.”</p> <p>“It’s a 5-year scheme so there can be problems when planning, as it is difficult to change options and areas during the scheme, which is sometimes important in arable rotations to get the best from the land”.</p>

Scheme	Primary ⁹ Type of support	Description	Project providers	Support providers	Land manager experience of support system
					“Not difficult for an adviser, but it would be a lot of problems for a farmer, on his own, to do”
Forestry Grant Scheme	Financial	The Forestry Grant Scheme supports 1) the creation of new woodland and 2) the sustainable management of existing woodlands. There are eight categories under which support can be applied for; agroforestry, woodland creation, forest infrastructure, woodland improvement grant, sustainable management of forests, tree health, harvesting	Estate (multi) Estate (sporting) Estate (conservation) Charity organisation Estate (investment) Commercial forestry Community ownership All farming archetypes	Government agencies	<p>Some farmers are put off engaging with this support system due to inherent views that planting trees is not what a typical 'good farmer' would do – representing a lack of skill that may reduce their standing amongst peers.</p> <p>Some farmer archetypes also do not engage with this support system as it is outwith the administrative system that they normally engage with.</p> <p>The MacKinnon Report¹³ attempted to identify the key administrative barriers in current support schemes and propose solutions to remove some of the burden on scheme applicants. This may have led to a streamlined application process to this support scheme.</p>

¹³ <https://www.gov.scot/binaries/content/documents/govscot/publications/corporate-report/2016/12/mackinnon-report/documents/analysis-current-arrangements-consideration-approval-forestry-planting-proposals-pdf/analysis-current-arrangements-consideration-approval-forestry-planting-proposals-pdf/govscot%3Adocument/Analysis%2Bof%2Bcurrent%2Barrangements%2Bfor%2Bthe%2Bconsideration%2Band%2Bapproval%2Bof%2Bforestry%2Bplanting%2Bproposals.pdf>

Scheme	Primary ⁹ Type of support	Description	Project providers	Support providers	Land manager experience of support system
		and processing and forestry co-operation.			
Sustainable Agriculture Capital Grant Scheme	Financial	The Sustainable Agriculture Capital Grant Scheme (SACGS) provides support to businesses so that they can invest in equipment to reduce harmful ammonia emissions and reduce adverse impacts on water quality resulting from the storage and spreading of livestock slurry and digestate.	Grazing Mixed farm Dairy Pig & Poultry Arable Estate (multi)	Government agencies	There is little evidence on how land managers are engaging with this support system.
Scottish Land Fund	Financial	The Scottish Land Fund is a programme which supports community organisations across Scotland to own land, buildings, and other assets.	Public Community ownership	Charity Government agencies	A recent evaluation report of the Scottish Land Fund ¹⁴ found that 92% of applicants rated the overall process involved in the fund as either good or very good. The report concluded that the "fund is highly valued and seen as a vital tool for community groups who wish to

¹⁴ <https://www.gov.scot/binaries/content/documents/govscot/publications/research-and-analysis/2021/03/scottish-land-fund-evaluation/documents/scottish-land-fund-evaluation/scottish-land-fund-evaluation/govscot%3Adocument/scottish-land-fund-evaluation.pdf>

Scheme	Primary ⁹ Type of support	Description	Project providers	Support providers	Land manager experience of support system
					transform land and buildings in their local areas." On this evidence, it would appear that land managers are positively engaging with this support system.
Preparing for Sustainable Farming	Knowledge	This scheme helps farmers and crofters to further their understanding of how farming and food production can be even more economically and environmentally sustainable. Scottish farmers can claim funding for carbon audits, soil sampling and analysis and animal health and welfare interventions.	Croft, Grazing, Mixed farm, Arable, Dairy, Pig & Poultry, Soft fruit, Estate (multi),	Government agencies	There is little evidence on how land managers are engaging with this support system.
Knowledge Transfer and Innovation Fund	Knowledge	The scheme has two aims: 1) to promote skills development and knowledge transfer in the primary agricultural sector and 2) deliver	Croft, Grazing, Mixed farm, Arable, Dairy, Pig & Poultry, Soft fruit, Estate (multi)	Government agencies	The Farm Advisory Service ¹⁵ have published multiple reports summarising the activities undertaken as part of the Knowledge Transfer and Innovation Fund. For example, the project 'Agroforestry in Action' highlighted that their agroforestry

¹⁵ <https://www.fas.scot/publication-type/ktif-reports/>

Scheme	Primary ⁹ Type of support	Description	Project providers	Support providers	Land manager experience of support system
		innovation on-the-ground improvements in agricultural competitiveness, resource efficiency, environmental performance and sustainability.			advice videos have had over 8,000 views at the time of writing in 2021.
Nature Restoration Fund	Financial	The Nature Restoration Fund (NRF) is a competitive fund launched in July 2021, which specifically encourages applicants with projects that restore wildlife and habitats on land and sea and address the twin crises of biodiversity loss and climate change.	Estate (multi) Estate (sporting) Estate (conservation) Charity organisation Estate (investment) Community ownership	Government agencies	We found little evidence on how land managers are engaging with this support system other than a published list of successful projects.
The Water Environment Fund	Financial	The Water Environment Fund is targeted on projects which will derive the greatest benefit to Scotland's rivers and	All	Government agencies	We found little evidence on how land managers are engaging with this support system.

Scheme	Primary ⁹ Type of support	Description	Project providers	Support providers	Land manager experience of support system
		neighbouring communities.			
Advisory Services (FAS)	Knowledge	The Farm Advisory Service (FAS) offers a range of advisory services to Scottish farmers, such as livestock and soil management, water management, specialist advice and integrated land management plans (ILMPs). FAS is part of the Scottish Rural Development Programme (SRDP) which is funded by the Scottish Government, providing information and resources aimed at increasing the profitability and sustainability of farms and crofts.	Croft, Grazing, Mixed farm, Arable, Dairy, Pig & Poultry, Soft fruit, Estate (multi)	Government agencies	<p>A recent evaluation of the FAS service concluded that "Overall, there is clear evidence that the FAS One to Many service has delivered a wide-ranging programme which, insofar as we have data, appears to be well-regarded by those who use it." Highlighted points include those below:</p> <p>Delivering over 800 events over a range of geographical locations, with consistently high feedback. As many as 15,656 people attended these events between 2016/17 and 2019/20.</p> <p>Provision of a small farm and crofter subscription service, providing subsidised advice to 2, 188 crofters and 287 small farms in 2019/20.</p> <p>Providing technical information, including a Farm Management Handbook. Between January 2020 and August 2020, 108,674 technical documents were downloaded.</p>

Scheme	Primary ⁹ Type of support	Description	Project providers	Support providers	Land manager experience of support system
					It would therefore appear that land managers, in particular farmers, in Scotland are engaging heavily with this support service.
Farmer Clusters	Knowledge	Farmer Clusters are groups of farmers and land managers that come together under the guidance of a 'facilitator' or advisor to work cohesively in their locality. The approaches can differ, with sources of funding varying across Britain. Currently, only two Farm Clusters are registered in Scotland.	Croft, Grazing, Mixed farm, Arable, Dairy, Pig & Poultry, Soft fruit, Estate (multi),	Charity	We found little evidence on how land managers are engaging with this support system.
Monitor farms/forests	Knowledge	Monitor farms are managed by Quality Meat Scotland and AHDB Cereals and Oilseeds as a form of demonstration farm for new practices and innovative technologies.	Croft, Grazing, Mixed farm, Arable, Dairy, Pig & Poultry, Soft fruit, Estate (multi),	Government agencies	A previous report from 2014 highlighted that monitor farms have been successful in practical and effective knowledge exchange and delivered a positive impact on farm practices and performance. More recent evaluation of engagement with this support system is not available.

Scheme	Primary ⁹ Type of support	Description	Project providers	Support providers	Land manager experience of support system
		Improving carbon performance is one of the key themes of this.			
Carbon positive	Knowledge	Managed by SAOS as a platform for collating farm data on natural capital and carbon footprints	Croft, Grazing, Mixed farm, Arable, Dairy, Pig & Poultry, Soft fruit, Estate (multi),	Private sector	We found little evidence on how land managers are engaging with this support system.
Croft Woodlands and Crofting MOREwoods	Knowledge	The Woodland Trust's "Croft Woodlands" advisory team offers crofters, smallholders and common grazing committees free advice on tree planting as well as training, educational resources, assistance with grant applications and funding for tree planting.	Croft, Grazing, Mixed farm, Estate (multi),	Private sector Charity Government agencies	From 2015 to 2020, this support scheme supported the planting of over a million trees in the Crofting Counties and helped bring over 1000ha of woodland into sustainable management.
The Facility for Investment ready Nature in Scotland	Finance	Through the Facility for Investment Ready Nature in Scotland (FIRNS), grants of up to £240,000 will be offered to organisations and	All	Government Agencies	We found little evidence on how land managers are engaging with this support system.

Scheme	Primary ⁹ Type of support	Description	Project providers	Support providers	Land manager experience of support system
		partnerships to help develop a viable business case and financial model, to attract investment in projects that can restore and improve the natural environment.			
Facility for Investment Ready Nature Scotland Grant Scheme	Finance	The FIRNS is a joint initiative between NatureScot, the Esmée Fairbairn Foundation and the National Lottery Heritage Fund Supporting the development of environmental projects in Scotland that: -align with the Scottish Government's Interim Principles for Responsible Investment in Natural Capital -aim to value and monetise ecosystem services derived from	Charity organisation Community organisation Local Government	Government Agencies	Seven projects have been selected to be funded by FIRNS.

Scheme	Primary ⁹ Type of support	Description	Project providers	Support providers	Land manager experience of support system
		the restoration of natural capital assets, in a model that will attract and repay investment or support an investment model that can be scaled up and duplicated elsewhere.			
Private agricultural consultancies	Knowledge	Private consultancies offer a range of management and consultancy services to rural land managers, providing support and guidance. This usually focuses on commercial development of the business and can include advice on estate management, planning, building consultancy, renewables and tax and funding advice.	Estate (multi) Estate (sporting) Estate (investment) Commercial forestry Community ownership All farming archetypes	Private sector	We found that all archetypes are engaging with private agricultural consultancies to some extent. Some are using these services to offer procedural support, such as help completing application forms etc. whereas others are using more specialised services, e.g. forestry.

Appendix B – Archetype methodology

8.1.1. Archetype identification

The first priority was to define a baseline list of Scottish land manager archetypes¹⁶ in discussion with the project steering group.

Archetypes are a useful tool when trying to simplify the heterogeneity of land managers in Scotland and provide context to the following sections of analysis. The simplified archetypes were then used to underpin the mapping elements of this study. Firstly, archetypes were used to provide a high-level overview of how different land managers are engaging with support systems in Scotland. Secondly, the archetypes were used to identify potential climate change mitigation project providers in Table 6 below. Thirdly, archetypes were discussed with participants at the stakeholder workshop to explore the extent to which each archetype is interacting with support systems in the manner to which is expected based on stakeholder interviews and our literature review.

The following archetypes have been informed by Mills et al. (2017) (see Figure 1) where three main factors are defined that influence a land manager's willingness and ability to undertake environmental management.

These are listed below:

1. **Willingness to adopt** – willingness of land managers to undertake environmental land management practices and the intrinsic factors (e.g., motivations, beliefs, social norms) affecting land managers environmental behaviours.
2. **Farmer Engagement** – where land managers enter into dialogue, discussion and collective problem framing with those who hold environmental knowledge and expertise.
3. **Ability to adopt** – farm characteristics (e.g., tenancy, scale, skills and capital constraints), that influence land manager's decision making in relation to environmental management and their ability to adopt new practices.

Mills et al. (2017) found that land managers tend to exhibit different sub-optimal positions within this conceptual framework. These positions are found below:

1. **Willing and engaged only** - willingness to undertake environmental management activities on their land, but this has not translated into behaviour because the manager does not have the ability to do so.
2. **Able and engaged only** - undertaking environmental management and has engaged with advice, but lacks sustained motivation to maximise environmental benefits.
3. **Willing and able only** - actively undertaking environmental management, but has not engaged with any advice which means that land is not delivering its full environmental potential.
4. **Disengaged** – not engaged with any environmental management, either because they were not willing, they do not have capacity, or they dislike outside interference or are concerned with loss of control or management flexibility.

¹⁶ a very typical example of a certain person or thing.

Some characteristics are more readily observable than others. For example, farm type, size and tenure status are recorded routinely, levels of financial, human and social capital or personal attitudes less so. Nevertheless, it is possible to construct example archetypes that can be used to explore how different configurations may affect land use decisions.¹⁷ The Table on the following page is an attempt to illustrate a broad range of potential land manager archetypes in Scotland. This has been arranged primarily based on activity, as this is the most observable difference between land manager types. We have provided a hypothesis of the likely size, tenure and engagement along with a brief description of key characteristics and indication of location. Words in **bold** indicate that this characteristic applies to the archetype.

In further developing these archetypes, we hypothesized additional influences on ability and willingness to change land management/use:

- i) Tenure restrictions (particularly short-term leases and crofting tenure, notably common grazing) constrain automatic freedom to change (and reap rewards);
- ii) Small scale incurs proportionally higher transaction (e.g., application) costs, although transaction costs also deter larger land managers. Small scale also constrains availability of labour/capital/land to make changes.
- iii) Availability of advisers (particularly for non-traditional topics) perceived as credible and relevant is limited, especially/ in remoter areas.
- iv) General lack of policy certainty also deters change.
- v) Biophysical conditions constrain land use options.
- vi) Financial circumstances constrain ability to change – but also affect relative importance (leverage) of public funds e.g., market revenues and/or non-land income may matter more, making some land managers less responsive to policy (i.e., opportunity cost vary) even if public funding is generous.
- vii) All of the previous influences are mediated through cultural identities, social norms and personal motivations – willingness to change will vary within any given category of activity, size, tenure, region, biophysical circumstances and financial circumstances.

¹⁷ e.g.: Mustin, K., Newey, S. and Slee, B., 2017. Towards the construction of a typology of management models of shooting opportunities in Scotland. *Scottish Geographical Journal*, 133(3-4), pp.214-232.; Sutherland, L-A., Barlagne, C. and Barnes, A.P. 2019 Beyond 'hobby farming': towards a typology of non-commercial farming; Barnes, AP; Thompson, B; Toma, L. 2022 Finding the ecological farmer: a farmer typology to understand ecological practices within Europe.

8.1.2. Archetype table

Table 6 - Archetypes

Activity	Size	Tenure	Description	Region	Priority*
Crofting	Small Medium Large	Crofting Tenant Crofting Owner	Traditional small-scale sheep and suckler cow producers in highlands and islands LFA area with a small area of arable crops grown for livestock feed on the croft with the livestock grazing on the common grazing (which is shared with multiple crofters in the township). There are around 20,000 crofts in Scotland.	Highlands & Islands North East South East South West All	YES
Grazing (mixed beef and sheep)	Small Medium Large	Tenant (LDT/SLDT/MLDT) Tenant (grazing) Tenant (secure) Owner	Single or multiple farms managed solely for beef and sheep purposes. Typically, they possess the lowest earnings of any farm types which may limit ability to adopt environmental measures.	Highlands & Islands North East South East South West All	
Mixed Farm	Small Medium Large	Tenant (LDT/SLDT/MLDT) Tenant (grazing) Tenant (secure) Owner	Single or multiple farms managed (either all owned or mixture between tenanted and seasonal lets) across Scotland, enterprises vary, from specialist pig, dairy, arable, beef and sheep units to soft fruit and veg growing. Can vary in size/output/profitability.	Highlands & Islands North East South East South West All	YES

Activity	Size	Tenure	Description	Region	Priority*
Arable	Small Medium Large	Tenant (LDT/SLDT/MLDT) Tenant (grazing) Tenant (secure) Owner	Single or multiple farms managed solely for arable purposes. Concentrated in the South East/North East and generally make lower profits than other activities such as specialist horticulture and dairy. Around 10% of Scotland's total agricultural area in 2019 was arable land.	Highlands & Islands North East South East South West All	
Dairy	Small Medium Large	Tenant (LDT/SLDT/MLDT) Tenant (grazing) Tenant (secure) Owner	Single or multiple farms managed solely for dairy purposes. Generally the most profitable type of enterprise in Scotland which may increase their ability to adopt environmental practices. Often possess a large environmental impact. In 2021 dairy cows numbered 174,200 in Scotland.	Highlands & Islands North East South East South West All	YES
Intensive pig & poultry	Small Medium Large	Tenant (LDT/SLDT/MLDT) Tenant (grazing) Tenant (secure) Owner	Single or multiple farms managed solely for pig & poultry purposes. As of 2020 there were 14.4 million poultry and 337 thousand pigs.	Highlands & Islands North East South East South West All	
Soft fruit	Small Medium Large	Tenant (LDT/SLDT/MLDT) Tenant (grazing) Tenant (secure) Owner	Single or multiple farms managed solely for soft fruit purposes. In 2020 the estimated total area of soft fruit was 2,200 hectares.	Highlands & Islands North East South East South West All	

Activity	Size	Tenure	Description	Region	Priority*
Estate (Multi farm/croft)	Small Medium Large	Tenant (LDT/SLDT/MLDT) Tenant (grazing) Tenant (secure) Owner	Similar to a farm owner, may employ a factor or a land agent to have day to day responsibility for the land management interests and overseeing the entire estate incl. tenants, will likely have other land based income such as renewables, forestry, holiday/residential lets, sporting etc.	Highlands & Islands North East South East South West All	
Estate (Sporting)	Small Medium Large	Tenant (LDT/SLDT/MLDT) Tenant (grazing) Tenant (secure) Owner	Estate that is managed solely for sporting purposes. Willingness to adopt is constrained by the desire to keep sporting estate, e.g. deer and grouse, in its current state. However, environmental management is often a priority for these land managers.	Highlands & Islands North East South East South West All	YES
Estate (Conservation)	Small Medium Large	Tenant (LDT/SLDT/MLDT) Tenant (grazing) Tenant (secure) Owner	Purchased for environmental ethical reasons, usually removed from agricultural production and returned to nature through rewilding (tree planting, peatland restoration). Pro-environmental goals of land management increase willingness to adopt however unlikely to engage with wider advice.	Highlands & Islands North East South East South West All	
Charity organisation	Small Medium Large	Tenant (LDT/SLDT/MLDT) Tenant (grazing) Tenant (secure) Owner	Purchased and managed for environmental reasons, may carryout limited agricultural activity using livestock to graze habitats. Main activity is nature restoration/conservation. Reliance on charitable funding could constrain the ability to adopt.	Highlands & Islands North East South East South West All	YES

Activity	Size	Tenure	Description	Region	Priority*
Public ownership	Small Medium Large	Tenant (LDT/SLDT/MLDT) Tenant (grazing) Tenant (secure) Owner	Land owned and managed by public bodies (including Local Authorities). Examples of this could be the MoD, who own 64,900 hectares in Scotland. Normally managed with a primary function in mind, such as training zones.	Highlands & Islands North East South East South West All	
Estate (Investment)	Small Medium Large	Tenant (LDT/SLDT/MLDT) Tenant (grazing) Tenant (secure) Owner	Land managed with investment priorities, either through natural capital (carbon offsetting) or commercial production of timber. Often used to offset internal carbon emissions of large corporations (such as Aviva) and therefore disengaged with wider support systems.	Highlands & Islands North East South East South West All	YES

*Priority – this column indicates that this archetype was identified as a priority for this research project by the steering group.

Appendix C – Interview methodology

8.1.3. Interview methodology for land use support

A Discussion Guide (see below) for semi-structured interviews was developed and a list of target candidate interviewees was also drawn-up and agreed. Candidate interviewees were chosen to represent recipients of support, providers of information and advice, and academic experts.

Semi-structured interviews were arranged in advance by email and conducted mostly by video conferencing with some conducted by mobile phone. Interviews lasted 25 to 85 minutes and occurred between 17th June and 3rd August 2023. Overall, 25 interviews were conducted with 28 interviewees (plus one by email only). The list of interviewees is shown in the table below.

Written notes were taken during interviews, and subsequently converted into reflective summaries immediately afterwards to capture key insights. The use of formal thematic coding and software analysis was not deployed and, to protect commercial confidentialities, no quotes have been attributed to individual interviewees.

Table 7 - Interviewee's organisation

Interviewee's organisation	Principally representing
Confor	Support recipients
Scottish Tenant Farmers Association	Support recipients
Community Land Scotland	Support recipients
NFUS	Support recipients
Rewilding Scotland (email only)	Support recipients
SCF	Support recipients
Milk Suppliers Association	Support recipients
Institute of Auctioneers & Appraisers in Scotland	Support recipients
Scottish Land and Estates	Support recipients
Pasture for Life	Support recipients
RSPB Scotland	Support provider
Lantra	Support provider
Scottish Agricultural Organisation Society	Support provider
South of Scotland Enterprise	Support provider
Independent Forestry Consultant	Support provider
Forest Carbon	Support provider
Peatland Code	Support provider
SAC Consulting	Support provider
ScotFWAG	Support provider
Soil Association	Support provider
Agricultural Industries Confederation	Support provider
Future Ark and FLS non-exec Director	Support provider
University of Leeds	Academic expert
University of Gloucestershire	Academic expert
University of Aberdeen	Academic expert

Royal Agricultural University	Academic expert
James Hutton Institute	Academic expert

As with all efforts to canvass opinion from industry stakeholders, the approach taken was limited by the resources and time available to conduct interviews – further interviews might have produced additional insights. Moreover, it is possible that the profile of interviewees or selective answering of questions by them could bias reported findings. However, there was a high degree of consistency across interviews (and with the literature) in terms of the issues identified, implying that participation was in good faith.

i. Discussion guide

1. What factors influence land managers' ability to adopt new management practices and/or land uses?
2. What factors influence land managers' willingness to adopt new management practices and/or land uses?
3. What types of support are required? What determines engagement with them?
4. What sources of support are available? Any pros and cons for different sources?
5. What mode of (non-funding) support are available? Any pros and cons for different modes?
6. What affects the availability, accessibility and credibility of (non-funding) support?

Appendix D - Literature review methodology

We undertook a focused literature review to identify existing policy and research relating to existing support systems in the agricultural industry in Scotland. In order to conduct a robust, rapid evidence review, key search terms were agreed with the steering group. Search terms were applied to both academic search functions and generic search providers. This ensured a wide range of academic and grey literature was captured. Search terms can be found below in Table 8.

Table 8 - Search terms

Theme	Search term
Support systems	<p>Land manager; support systems, access to funding, grants, loans, barriers to funding, barriers to finance, incentives (Scotland, UK)</p> <p>Low-carbon farming; support systems, access to funding, grants, loans, barriers to funding, barriers to finance, incentives (Scotland, UK)</p> <p>Financing land support measures (Scotland, UK)</p> <p>Land use change support systems (Scotland, UK)</p> <p>Green finance and agriculture (Scotland, UK)</p> <p>Private finance and agriculture (Scotland, UK)</p> <p>Government support of; rural economy, rural environmental objectives, agricultural environmental objectives (Scotland, UK)</p> <p>Additional terms for specific support systems: Forestry grant scheme, woodland grants, woodland carbon code, peatland code, conservation funding, peatland advisory services, Peatland Action, Nature restoration fund (Scotland, UK)</p>
Land manager decision making and motivations	<p>Path dependence in Scottish Agriculture.</p> <p>Land manager; decision making, motivations, motivations in seeking change, land use change, access to knowledge, access to skills, knowledge sharing, advice, training, information gathering, barriers to change, sunk costs and stranded assets (Scotland, UK)</p>

	<p>Agricultural; decision making, motivations, motivations in seeking change, land use change, access to knowledge, access to skills, knowledge sharing, advice, training, information gathering, barriers to change, sunk costs and stranded assets. (Scotland, UK)</p> <p>Land manager; diversification activities. (Scotland, UK)</p> <p>Agricultural; diversification activities. (Scotland, UK)</p> <p>Land manager; experience of support systems, engagement with support systems, experience of funding, experience with subsidies, experience of applications, experience with support systems. (Scotland, UK)</p> <p>Agricultural; experience of support systems, engagement with support systems, experience of funding, experience with subsidies, experience of applications, experience with support systems. (Scotland, UK)</p>
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Key

Words in **bold** are the truncated search term, with the phrases following added onto the stem to broaden the use of the stem word. Where (Scotland, UK) is indicated, these terms will be added to the end of each search term in that group.

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