

Scotland's Rural College

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# Farmer past and intended investment behaviours: evidence from the large scale farmer intentions survey

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## Summary

Investment in farm capital underpins Scottish Government goals for a sustainable and productive industry. We examine the intentions and past behaviours for on-farm and off-farm investments. Using the farmer intentions survey - a survey of 2,494 Scottish farmers conducted in 2018 - we find that large numbers of farmers have declared an increase in the capital value of the farm and have mostly reinvested in their buildings and machinery over the last five years - with most of the investment in the medium to very large farm sizes.

Very large farms are investing the most in capital around agricultural production and medium sized farms have invested the most in agroforestry. On average 18% of farms have increased their off-farm investments.

As regards intentions to invest, a large proportion of the farms who did not invest in the last five years have no intention of investing in the next five years. Looking at the factors which drive investment in agricultural capital, we find this is characterised by higher incomes and larger farm size, but also succession factors as well attitudes to risk taking.

In addition, those farmers who declared a more positive attitude towards Brexit also intended to increase farm capital investment. We also find a greater intention to invest in agroforestry across all farm sizes compared to the last five years which may be indicative of changes expected in the replacement of the CAP.

Framing an agricultural policy for Scotland should focus on encouraging sustainable investment in both agricultural and environmental capital to encourage efficiency gains and meet climate and biodiversity targets in the future. Barriers exist to investment and these are structural - in terms of size and income - but also behavioural - e.g. attitudes towards investment, as well as generational - in terms of succession and entry into the sector.

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## 1.0 Introduction

Farmers are generally slow to invest against changing economic environments and this is generally to do with farming operating on different business cycles to the economy (Kuminoff and Wossink, 2010; Pietola and Wang, 2000). However, with the UK's withdrawal from the European Union and replacement of the Common Agricultural Policy it may be that investment behaviour may change in line with expected changes to policy in Scotland.

The purpose of this briefing is to present results from a farmer intentions survey to understand investment behaviour in the past five years, as well as intentions to invest in the next five years. This period covers the UK's withdrawal from the EU and, as such may provide indications that investment patterns are changing in response to policy change (Breen *et al.*, 2005; Bougherara and Latruffe, 2010; Barnes *et al.*, 2016).

## 2.0 Method

A telephone-based survey of Scottish farmers, crofters and smallholders was conducted over the summer of 2018. A spatially representative sample of 11,000 businesses was selected using information from the Scottish Government's June Agricultural Census (JAC) stratified by region, business size and farm type. For a large scale survey such as this, the JAC sampling framework is the most appropriate as it gives national level coverage and detailed information on agricultural activity, and it means that background information requirements are minimised. As the JAC reports at an agricultural holding level the data was aggregated (where appropriate) to business level<sup>1</sup> in order to ensure the sampling framework was as representative of Scottish agriculture as possible. A total of 2,494 farmers, crofters and smallholders engaged with the survey, 24 per cent of whom were female.

The FIS collects both past activities and future intentions. A number of these relate to investment behaviour both on and off-farm. We categorise investment behaviour into a) agricultural production capital, i.e. investment into new capital, new technologies, b) environmental activities, i.e. investment into agroforestry and renewables, and c) off-farm investment. Farmers were asked a series of questions concerning their past behaviour (pre-2018) and their future intended behaviour towards these activities.

## 3.0 Results

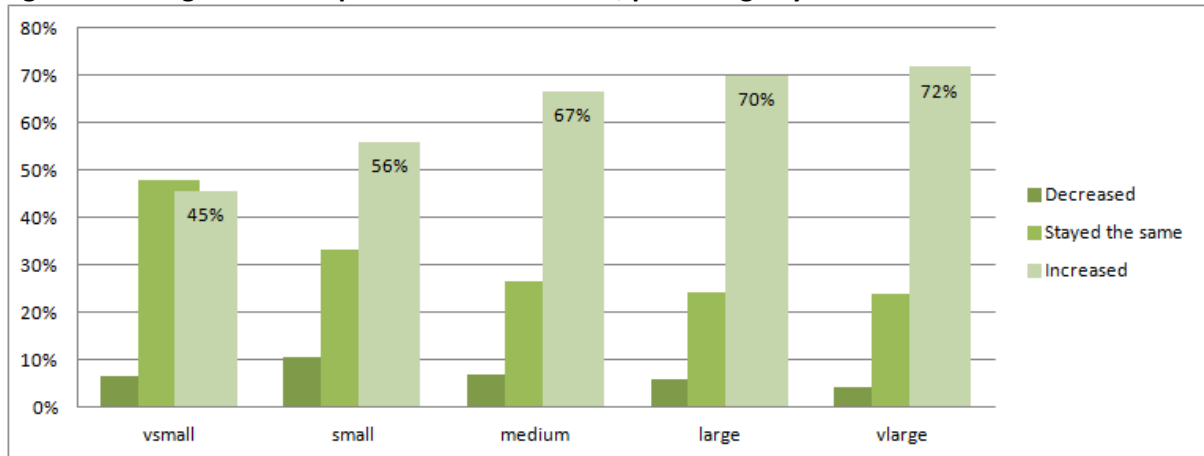
### 3.1 Past Investment Behaviour

Figures 1 and 2 show the responses to questions around the capital value of the farm and the level of reinvestment that has occurred over the last five years. These show that for most farms the capital value has increased for larger farms but for very small farms the majority have stayed the same. In terms of non-land assets, the majority of farmers within each size category claim to have invested in both machinery and buildings. This is especially true of the medium to very large groups who have the largest proportion of investment.

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<sup>1</sup> A farm or croft business may be made up of multiple agricultural holdings

**Figure 1. Changes to the Capital Value of the Farm, percentage by farm size**



**Figure 2. Reinvestment activity over the last five years, percentage by farm size**

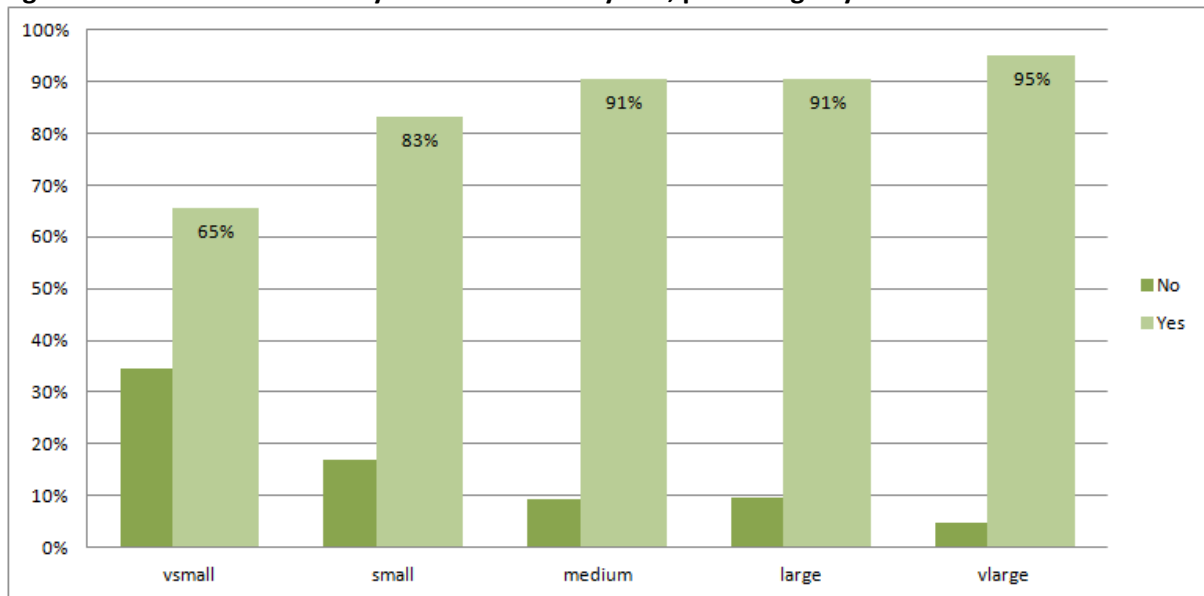
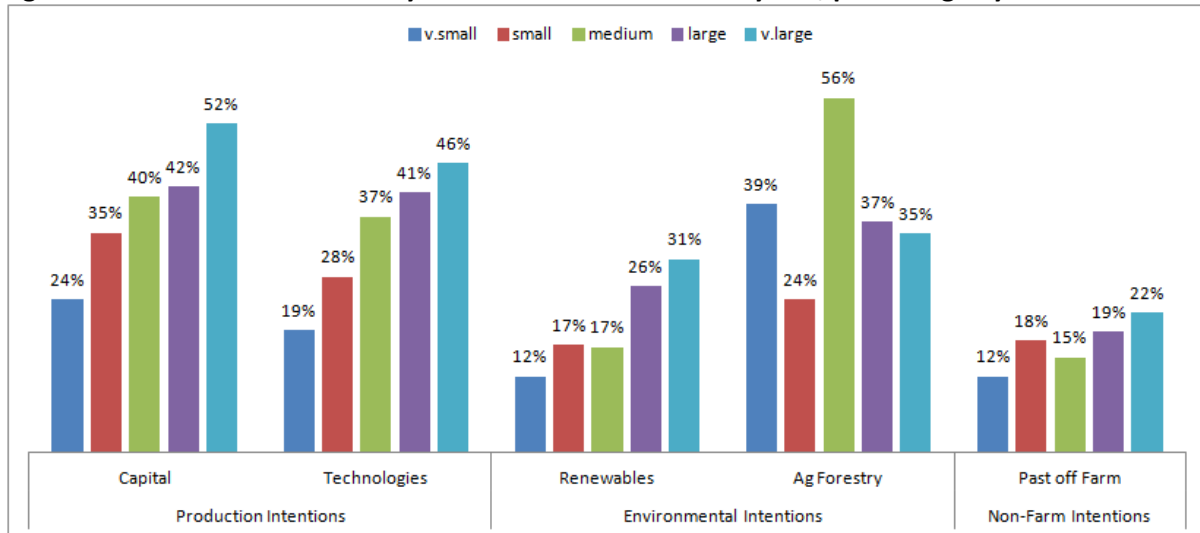


Figure 3 takes shows activity by three categories of investment, namely for productivity, for the environment and for non-farm activity. It reveals that for most categories investment increases by farm size. This is true aside from agroforestry where very small farms and medium sized farms indicate the highest proportion of investment compared to other farm sizes. Off-farm investments are much lower than either agricultural or environmental activities.

**Figure 3. Increased investment by farm size over the last five years, percentage by farm size**



The table below shows the relationship between the grouped agricultural and environmental investments (shown in figure 1 above) over the last five years. It shows the combinations of patterns of investments. This is shown as a percentage of the overall response (2,494). Overall, around 40% of the farmers have not invested in any of the agricultural or environmental activities over the last five years. For those purely investing in agricultural activities, around 25% of the respondents have invested in at least 1 activity, with 11% investing in both. Sole investment in environmental capital is lower, with around 7% of farmers investing in either renewables or agroforestry - but a higher percentage of roughly 10% invested in both an agricultural and an environmental investment. However, the proportion investing in both agricultural and environmental activities is low. Hence, the majority of activity has focused on agricultural production investment.

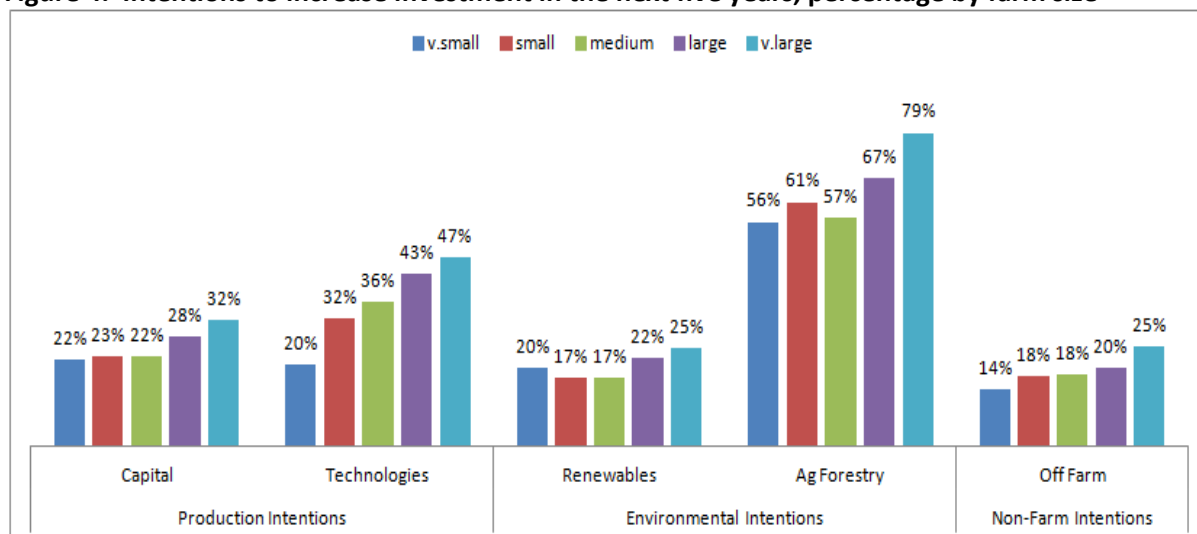
**Table 1. Distribution of investments over the last five years**

Agricultural	Environmental			Total (N)
	None	One big investment	Two big investments	
None	39.1%	6.5%	0.3%	1,146
One big investment	24.2%	9.8%	0.8%	868
Two big investments	10.6%	7.4%	1.2%	480
Total(N)	1,843	593	58	2,494

### 3.2 Intended Investment Behaviour

The next figures and tables show the respondents' intended behaviour over the next 5 years. Generally these show lower levels of intended investment compared to the previous period in terms of agricultural capital, though similar levels for agricultural technology. Less investment in renewables but increased levels of investment in agroforestry can be seen. There are generally similar levels of investment off-farm between the past 5 years and the next 5 years.

**Figure 4. Intentions to increase investment in the next five years, percentage by farm size**



To compare past investments with intended investments, Table 2 shows the proportion of those past investments compared to future intentions. Those who did not invest in the previous period were more likely to not invest in the next five years. For those who made 1 investment in the last 5 years, around half (43%, 55%) do not plan to invest in the next 5 years. This percentage goes down as the number of past investments increase.

**Table 2. Distribution of intended against past investment behaviour, row percentages**

		Intended Investment									
		Agricultural			Environmental			Off-Farm			
		0	1	2	0	1	2	0	1		
Past 5 Years	0	76%	16%	8%	0	77%	20%	3%	0	86%	14%
	1	43%	39%	18%	1	55%	35%	9%	1	54%	46%
	2	26%	36%	37%	2	35%	42%	23%			

To identify the characteristics of those intending to invest in agricultural capital itself we applied a chi-square test. This offers a simple way to understand whether there are differences in characteristics and intention to invest. In summary our findings tell us:

- Farmers intending to invest in agricultural capital are more likely to have incomes above £100,000 and be very large in size, compared to other groups.
- These farmers are more likely to have identified a successor, have over 20 years experience and have inherited the farm and be classified as a risk taker, compared to being risk averse
- Farmers who see Brexit as more of an opportunity than a barrier are more likely to invest in their agricultural capital
- Farmers who have taken on the farm in the last five years tend to have a higher intention to invest in agricultural capital than established farmers. Though this would be expected given the need for capital accumulation compared to longer term farming.

## 4.0 Summary

Over the period 2013-2018 there was an overall increase in both the capital value of the farm and investment in non-land based assets. Whilst medium to very large farms have invested the most, small and very small have invested proportionately less.

A cohort of farmers who have not invested in the farm recently have no intentions to invest in the future. Both structural and behavioural factors determine investment, including both attitudes to risk aversion and perspectives towards Brexit itself.

For those farmers intending to invest, agroforestry was noted as the main increase across all farm sizes, compared to past behaviour. Remaining agricultural investments tended to remain stable, with similar levels of investment compared to the last five years. This may indicate only a slight change in behaviours since the UK withdrawal from the EU, but also may reflect uncertainty towards agricultural production, compared to environmental and climate, goals within a replacement agricultural policy for Scotland.

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