

*ISBE Conference, 26<sup>th</sup> - 28<sup>th</sup> October 2022*

# Are the connections with land-based industries important for rural businesses in Scotland?

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*Leading the way in Agriculture and Rural Research, Education and Consulting*



# What I will cover...

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- Introduction
- Data & Methodology
- Empirical results
- Conclusion and recommendations



# Novel insights on Scotland's Rural & Island Economies (NISRIE)



The 2022-2027 Strategic Research Programme of the Scottish Government's Rural and Environment Science and Analytical Services (RESAS) Division



**Aim:** Deliver a comprehensive and impactful **evidence base** through examination of **issues, challenges, opportunities** and through novel models to **better understand and thereby support economies, communities and land reform objectives** in these regions to ensure sustainable, inclusive and just futures.

## Theme E – Rural futures

- Rural Economy
- Rural Communities
- Land Reform

Represents a significant investment in new research theme by RESAS



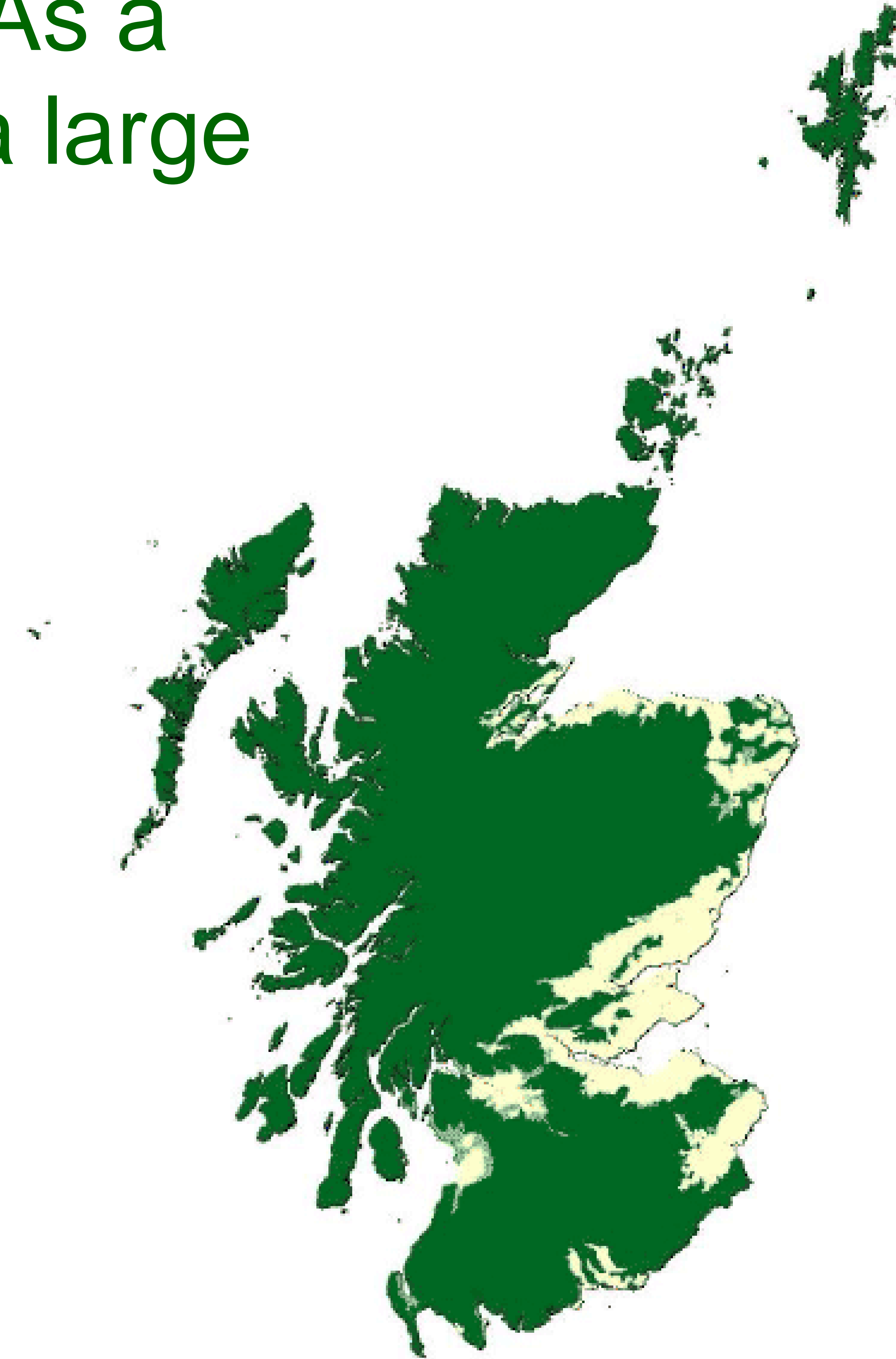


# Introduction (1)

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- **98% of Scotland's land area is classed as rural.** As a result, Scotland's land use and rural policies cover a large geographical area (The Scottish Parliament, 2021).
- **75% of Scotland's land is used for agriculture,** followed by forestry (12.5%) (NatureScot, 2019).
- Agriculture's role in rural economies in Scotland has shifted over the past two decades, **moving away from land-based businesses to non-land-based businesses** such as tourism, food and beverage activities (Thomson et al., 2017).





# Introduction (2)

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- **The role of the land-based sectors** (i.e., farming, forestry and estate activities) is still claimed to be **significant for local and rural economies** (Thomson et al., 2018).
- Recent policies (e.g., Common Agricultural Policy, Agriculture Bill, etc.) have mainly focused on the economic contributions of land-based businesses and their activities. While **enterprises outside these sectors in rural areas have been overlooked** (Thomson et al., 2018).
- It is still unclear from the existing evidence on:
  - what **the challenges of the connections** between non-land-based businesses and land-based sectors are, and
  - **how important these non-land-based industries** are as contributors or catalysts to rural businesses in Scotland.

# Data (1)



- Rural Business Survey (RBS) 2020: 1,500 businesses in 4 Scottish regions: Aberdeenshire, Dumfries & Galloway, the Scottish Borders, and Tayside.
- It is a telephone survey of business owners and managers whose primary focuses are not agriculture, estate or forestry.

**Relationship with landed estate industry**

**31.21%**

**Relationship with forestry industry**

**24.09%**

**Relationship with farming industry**

**56.77%**

**% of businesses**

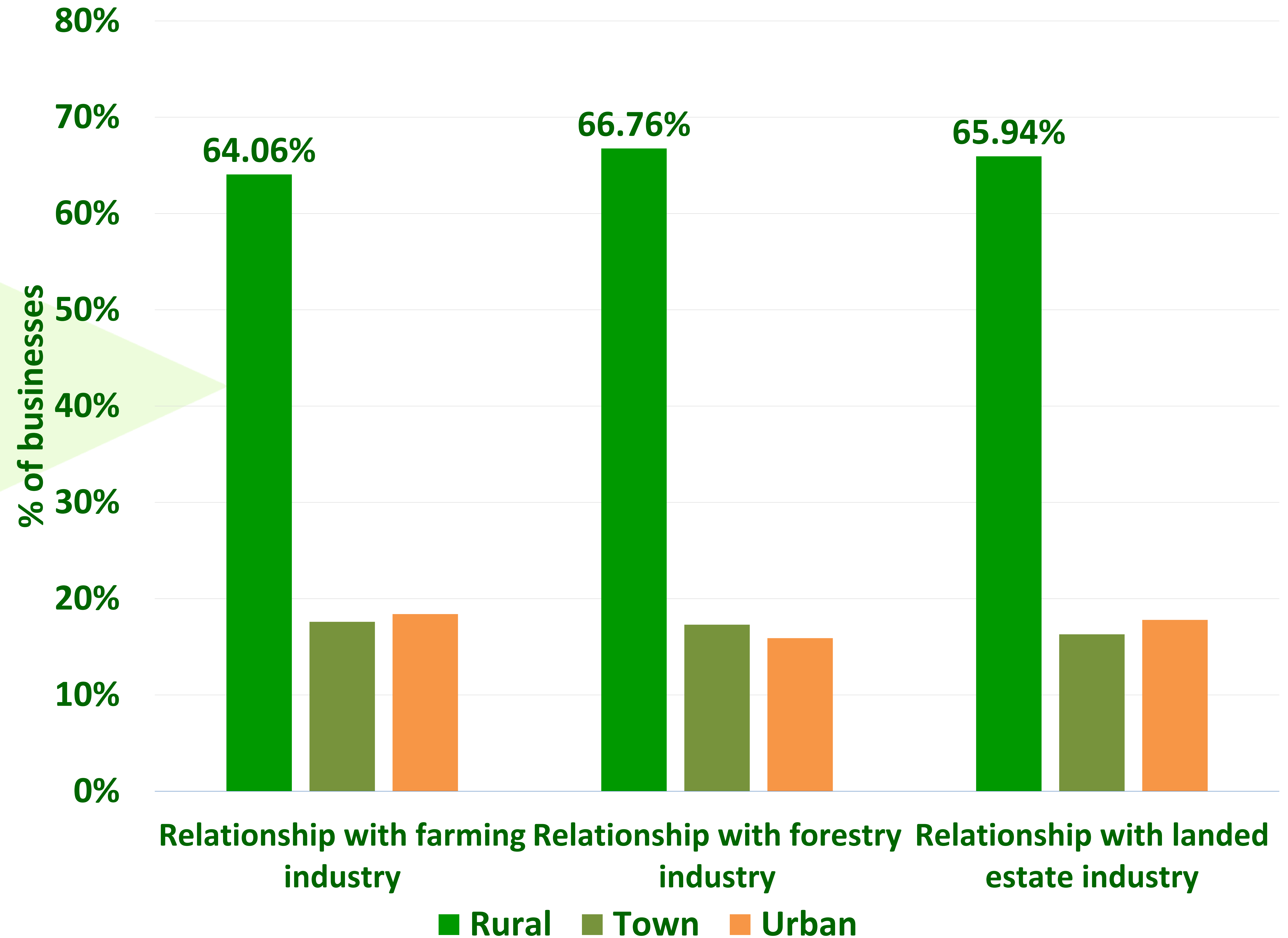


# Data (2)

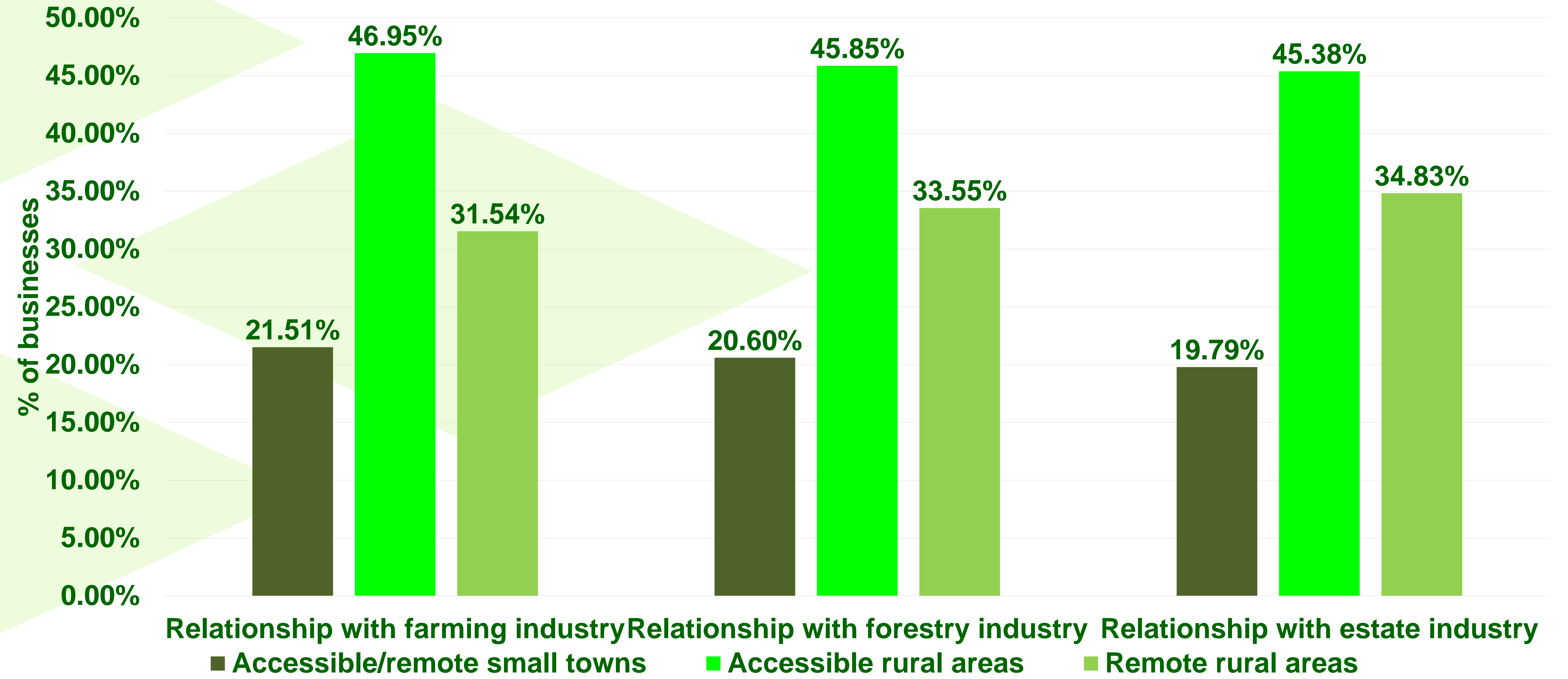


## The 2016 Scottish Government urban-rural classifications

Class name	Description
Large Urban Areas	Settlements of 125,000 people and over.
Other Urban Areas	Settlements of 10,000 to 124,999 people.
Accessible Small Towns	Settlements of 3,000 to 9,999 people, and within a 30 minute drive time of a Settlement of 10,000 or more.
Remote Small Towns	Settlements of 3,000 to 9,999 people, and with a drive time of over 30 minutes to a Settlement of 10,000 or more.
Accessible Rural Areas	Areas with a population of less than 3,000 people, and within a 30 minute drive time of a Settlement of 10,000 or more.
Remote Rural Areas	Areas with a population of less than 3,000 people, and with a drive time of over 30 minutes to a Settlement of 10,000 or more



## The relationship with land-based industry by rural-town classifications





# Empirical Analysis



## Analytical framework: 3 Steps

1) The link between rural businesses and the connection with land-based industry:

$$\text{Logit}(\mathbf{P}_i) = \beta_0 + \beta_1 \text{RURAL}_i + \beta_2 \mathbf{X}_{2i} + \dots + \varepsilon_i \quad (1)$$

- $\mathbf{P}_i$  = the probability of i-th firms having the relationship with land based sectors;
- $\mathbf{X}_2$  = a set of business characteristics (e.g. size, age, sector, region, business type, etc.);
- $\varepsilon_i$  = error term.

2) The key determinants of the relationship with land-based industry among rural businesses:

$$\text{Logit}(\mathbf{P}_i) = a_0 + a_1 \mathbf{X}_{1i} + a_2 \mathbf{X}_{2i} + \dots + \varepsilon_i, \text{ where } i\text{-th firms} = \text{RURAL} \quad (2)$$

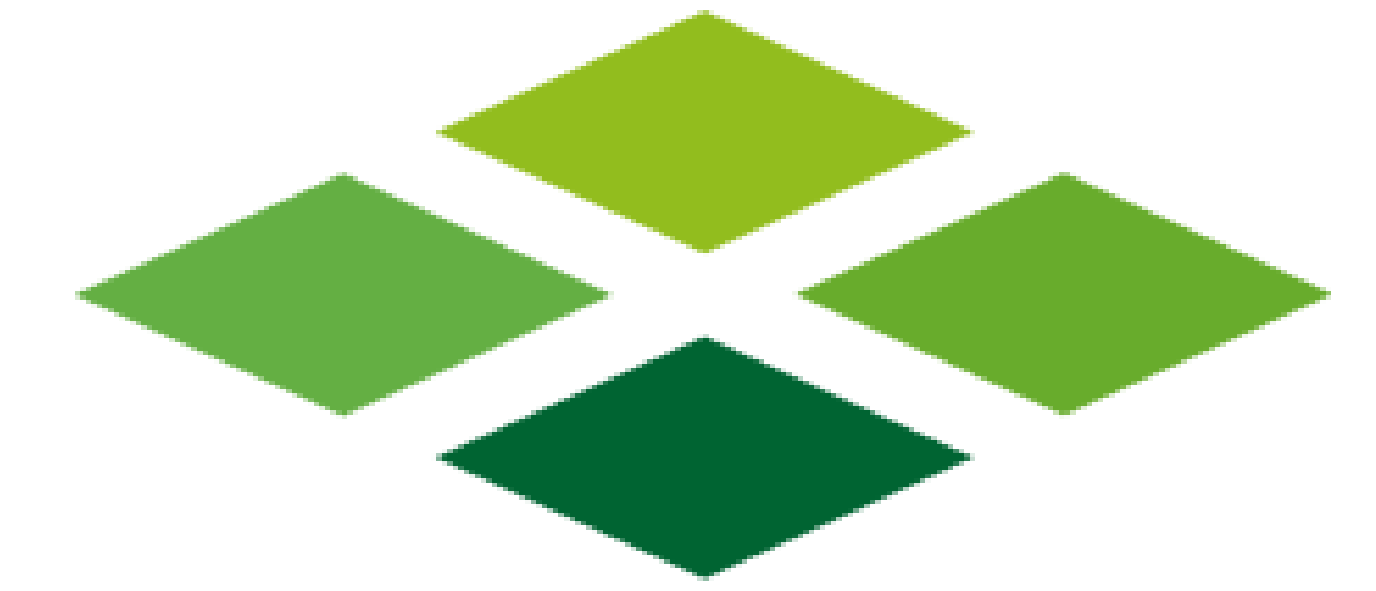
3) Crosstab Analysis: Exploring business performance, challenges (e.g. Brexit) and future plans among rural businesses that have the relationship with land-based industry for 3 rural-town classifications







# Key findings (2)



## Table 2 Key determinants of the connections with land-based industries among rural businesses in Scotland

- 1) Rural businesses that have imported goods/services **are more likely to have** the connections with all land-based industries, but those who have exported **are more likely to have** the link with forestry industry.
- 2) **Women-led businesses** in rural areas **are less likely to have** the connection with landed estate industry.
- 3) **Micro and small businesses** in rural areas **tend to have** the relationship with farming industry, while small businesses are **more likely to have** the connection with landed estate industry.
- 4) Rural businesses in primary sector **are more likely to have** the connections with farming and forestry industries. Also, these businesses that have the connection with farming industry tend to operate their businesses in construction, wholesales, professional and admin sectors.
- 5) Rural businesses that reported difficulties in skilled staff recruitment and digital connectivity as a major obstacle **are more likely to have the relationship** with landed estate industry, while those that reported cash flow as a major concern **tend to have the link** with farming and forestry industries.
- 6) Rural businesses having the connection with farming industry **tend to report** government financial support as their main concern, while they **are less like to report** access to new markets as their main obstacle.

*Notes: \*, \*\* and \*\*\* denote statistical significance at the 10, 5 and 1% levels, respectively*



# Key findings (3)



Table 3 comparative analysis of business performance between rural businesses in different rural classifications in Scotland

Annual turnover	Farming			Forestry			Landed estate		
	Accessible/ remote Small Towns	Accessible Rural	Remote Rural	Accessible/ remote Small Towns	Accessible Rural	Remote Rural	Accessible/ remote Small Towns	Accessible Rural	Remote Rural
Less than £50,000	29.8%	27.6%	22.5%	41.3%	27.1%	20.3%	50.0%	23.9%	23.0%
£50,001 - £200,000	33.3%	30.4%	38.1%	28.3%	35.3%	35.1%	21.4%	34.5%	35.0%
£200,001 - £500,000	14.9%	15.0%	20.0%	10.9%	14.1%	23.0%	7.1%	12.4%	18.0%
£500,001 plus	21.9%	27.1%	19.4%	19.6%	23.5%	21.6%	21.4%	29.2%	24.0%
Total	114	214	160	46	85	74	56	113	100
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

In the last 12 months, has your annual turnover?	Farming			Forestry			Landed estate		
	Accessible/ remote Small Towns	Accessible Rural	Remote Rural	Accessible/ remote Small Towns	Accessible Rural	Remote Rural	Accessible/ remote Small Towns	Accessible Rural	Remote Rural
Increased	36.4%	31.2%	30.4%	39.7%	35.1%	23.2%	35.1%	29.0%	30.4%
Stayed the same	37.1%	42.5%	43.0%	37.9%	41.0%	48.4%	41.9%	42.6%	44.0%
Decreased	26.4%	26.3%	26.6%	22.4%	23.9%	28.4%	23.0%	28.4%	25.6%
Total	140	308	207	58	134	95	74	162	125
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

*Green denotes statistically significant response using Chi-square test ( $\chi^2 : p < 0.05$ )*



# Key findings (4)



## Comparative analysis of future plans between rural businesses in different rural classifications in Scotland

Within the next 5 years, which of the following investments are you planning on making to your business	Farming			Forestry			Landed estate		
	Accessible/remote Small Towns	Accessible Rural	Remote Rural	Accessible/remote Small Towns	Accessible Rural	Remote Rural	Accessible/remote Small Towns	Accessible Rural	Remote Rural
Land/Buildings	20.9%	25.7%	27.2%	24.2%	32.6%	31.7%	20.0%	26.2%	28.8%
Machinery	36.5%	37.8%	37.3%	29.0%	47.1%	37.6%	30.7%	39.5%	40.9%
Digital equipment	46.6%	32.2%	33.2%	54.8%	39.9%	42.6%	54.7%	37.2%	40.2%
Other equipment (e.g. office equipment, furniture etc.)	35.8%	26.9%	27.6%	30.6%	31.2%	31.7%	37.3%	26.7%	26.5%
Staff recruitment/skills	41.2%	27.6%	33.6%	46.8%	37.7%	39.6%	42.7%	27.9%	41.7%
None	15.5%	25.4%	24.0%	14.5%	19.6%	20.8%	10.7%	24.4%	25.8%
Total	148	323	217	62	138	101	75	172	132
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

*Green denotes statistically significant response using Chi-square test ( $\chi^2 : p < 0.05$ )*

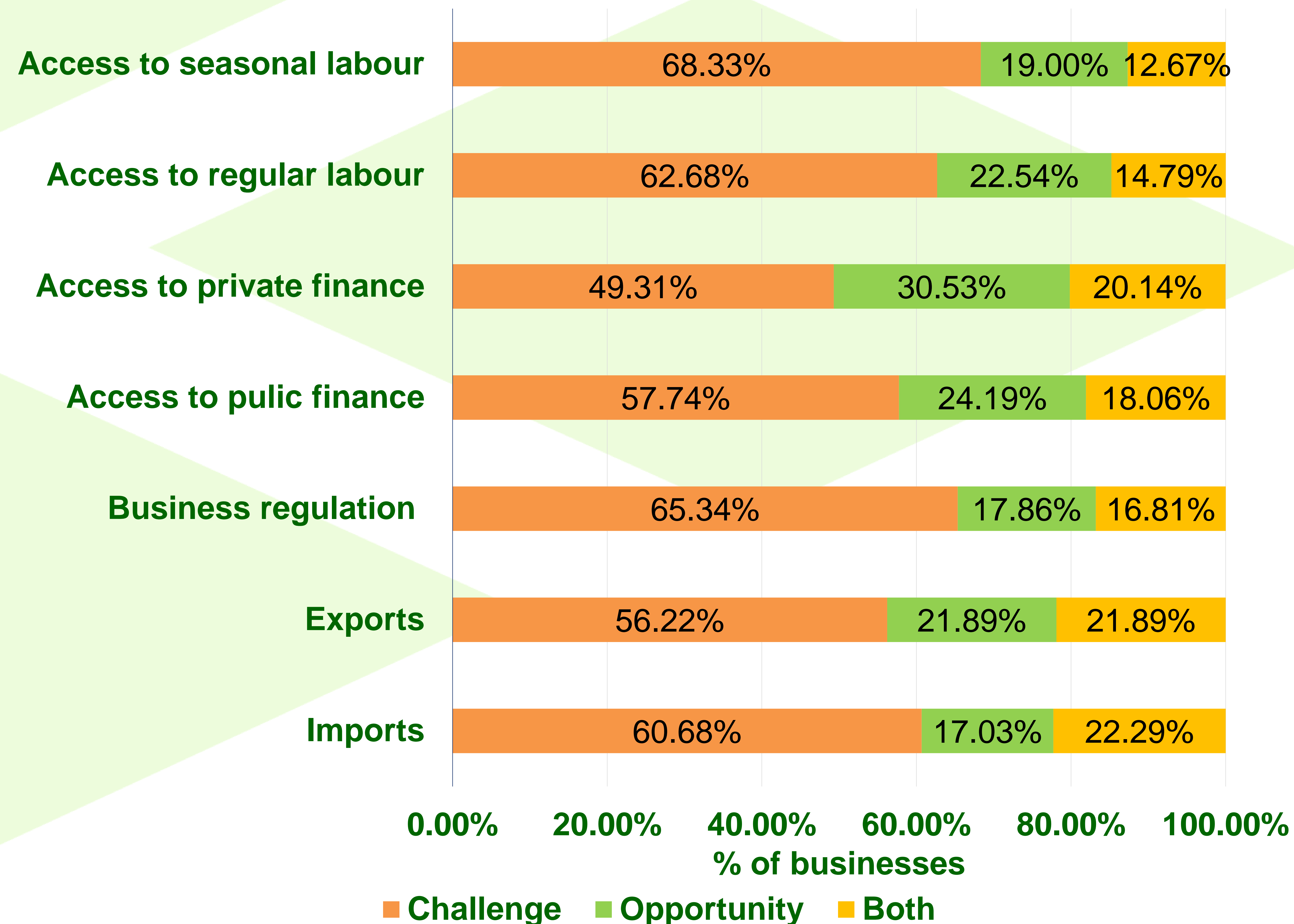


# Key findings (5)



## Comparative analysis of challenges related to Brexit between rural businesses that have the relationship with farming industry in different rural classifications in Scotland

As a result of Brexit, do you see the following as a challenge or an opportunity for your business? – All rural classifications



For different rural-town classifications:

- **Access to seasonal labour** and **business regulation** are reported as a key business challenge among rural businesses having the connections with three land-based industries for all rural classifications.
- More businesses having the relationship with **landed-estate industry** in **accessible rural areas** reported an access to seasonal labour as a key business challenge (65.9%) compared to remote rural areas (57.6%) and accessible/remote small towns (28.6%).

*The results is statistically significant differences using Chi-square test ( $\chi^2 : p < 0.05$ )*



# Conclusion and Recommendations

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- Rural businesses outside the land-based sectors significantly rely on the land-based industries. **Future policies and business support should focus on the needs of these businesses**, particularly small businesses, women-led firms, and exporting/importing businesses.
- **Digital connectivity and digital infrastructure improvement** are still urgently needed for businesses in small towns and remote rural areas, particularly for businesses that rely on online platforms for their business services and operations.
- Cash flow is seen as a major concern for rural businesses having the relationship with farming/forestry industry. This emphasises the **improved communication and collaboration between suppliers, financial agencies (e.g. banks) and farm businesses** to focus on the immediate needs to help with budgeting and managing payments and repayments.
- As a result of Brexit, **access to both regular and seasonal labour and business regulation** are the major challenges for rural businesses. However, **the challenging patterns are different** across rural classifications.



# Thank you!

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