Local Food in Scotland:

What is it, and what can it offer?

A Discussion Paper

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October 2023

Scottish Government Strategic Research Programme 2022-2027

SRUC-E1-1: Novel insights on Scotland's rural and island economies (NISRIE)

Deliverable D4.1: Briefing on regional food impacts in Scotland: A discussion paper exploring what is considered 'local food' - including perceived advantages and disadvantages of the local food / regional food movement, in a Scottish context.

Project Background

- The Scottish Government funds a five-year (2022-2027) programme of strategic research through the Rural and Environment Science and Analytical Services (RESAS) Division to advance the evidence base through the Environment, Natural Resources and Agriculture (ENRA) Research Portfolio.
- **Rural Futures** is one of five themes within the strategic research programme. Within Rural Futures, three research topics are focused on issues relating to: the **rural economy**, **rural communities**, and **land reform**. There are two projects within each topic led by Scotland's Rural College (SRUC) and the James Hutton Institute (JHI). Within the rural economy topic, the two projects are:
    - Novel insights on Scotland's rural and island economies (NISRIE).
    - Informing a socially and spatially just future for the Scottish rural economy: pinpointing opportunities, assets and support needs.
- The first project, **NISRIE**, is led by SRUC and aims to provide new data insights on a range of themes, including: (i) rural enterprises and workforce from analysis of secondary data, and through qualitative case studies; (ii) emerging concepts and best practice relating to community wealth building; (iii) impacts of agricultural policy evolution in a just transition; (iv) the contribution of regional food economies; (v) new experimental concepts on economic peripherality; and (vi) assessment of challenges regarding economic infrastructure (affordable housing, transport and digital connectivity). This report is an output of the NISRIE project.
- We aim to provide a more robust evidence base to support local, regional and national policy making. The project is closely linked to SRUC's rural communities project: Reimagined Policy Futures: Shaping sustainable, inclusive, and just rural and island communities in Scotland (ReRIC). Through our Rural Exchange we will produce accessible evidence, including written publications, open datasets, podcasts, blogs and other online material available to all.

Suggested citation: Thomson, S.G., Pate, L., Atterton, J., Merrell, I. and Ritchie C. (2023) Local Food in Scotland: What is it, and what can it offer? A Discussion Paper. An SRUC output from the NISRIE project funded by the Scottish Government. DOI: https://doi.org/10.58073/SRUC.24434167.

Version 1 (October 2023).

Executive Summary

What were we trying to find out?

- There has been a **growing interest in local food economies** in Scotland (and the rest of UK and Europe) since the early 2000s. There is renewed interest in local and regional food, stimulated by the resilience shown by the sector during a prolonged period of **turbulence in food supplies caused by the UK's withdrawal from the EU, the Covid-19 pandemic, and the cost-of-living crisis** – including impacts from the war in Ukraine.
- The First Minister, Humza Yousaf MSP, launched ***Sustaining Scotland, Supplying the World: Scotland's Food and Drink Strategy*** **in 2023**, where it is recognised that the "***food and drink industry is an essential component of Scotland's cultural identity and a significant contributor to our economy***" (Mairi Gougeon, MSP). As well as having ambitious growth targets for international exports the strategy also acknowledges the growing demand for local products in local markets.
- The Good Food Nation (Scotland) Act 2022 includes obligations on the Scottish Government to produce a national good food nation plan that can support social and economic wellbeing, the environment, health and wellbeing, economic development, animal welfare, education, and child poverty. The importance of the food sector in Scotland's economy and the need for resilient supply chains are recognised.

What did we do?

- The role of local and regional foods is a topic that is under-researched, with definitional issues that means statistical profiling of the sector and its economic impact remain challenging. We therefore looked at **definitions** of local food, the reported **advantages** and **disadvantages** of local food, perceived **barriers** to local food production, and **ways of measuring** local food production.
- We explored why it is important to have **agreed definitions** if the economic contribution of local and regional food economies is to be assessed. We also provided an **overview of existing statistical data** on the food and drink sector in Scotland, identifying data challenges and gaps.

What did we learn?

- Whilst there have been **aspirations for Scotland to be more reliant on 'local food' and 'shorter supply chains'** for some time, there is **no universal definition of local food**, with the Scottish Government (2021)[1] concluding that *"local food means different things to different people."*
- There is **wide acceptance that 'local' relates to a geographic context or has become synonymous with short and sustainable supply chains with more equitable relationships between consumers and producers** than mainstream globalised food systems. However, it is important to recognise that consumers can

[1] Local food for everyone – a discussion: consultation - gov.scot (www.gov.scot)

buy products via long supply chains that are considered local, or products from afar via short supply chains.

- The **lack of an agreed definition can be problematic for quantifying socio-economic and cultural impacts of local and regional food systems**, which is further confused by the fact that producers can operate in both local and more distant markets. A **lack of definition can also be problematic in terms of delivering to public policy objectives**, for example the regulatory requirements to buy local food through public procurement – as recently proposed in England.
- The **data and context for Scotland's food and drink sector is rarely broken down spatially**, rather focusing on the sum of the parts to demonstrate the worth of the sector as a whole to Scotland. That is despite most businesses engaged in the sector having workforces of less than 10 employees. Official statistics suggest **there are c.17,500 food and drink enterprises across Scotland**, but that number is **an underestimate** as it does not include, for example, local branches of larger businesses, nor small-scale sole traders that are not Pay As You Earn (PAYE) and or Value Added Tax (VAT) registered.
- In Scotland agriculture dominated (79%) the total number of food and drink workplaces in 2022, followed by fishing and aquaculture (12%) with **processing and manufacturing of food only accounting for 5.4% of workplace sites and drink manufacturing 3% of the business sites**. However, the number of drink manufacturing units more than doubled between 2010 and 2022, averaging a 7.5% annual increase in the number of units.
- The **food and drink sector accounted for 23% of total rural employment in 2021**, but only 1.8% in urban areas. Again, reflecting primary sector prevalence, rural areas consistently account for c.70% of Scotland's food and drink sector workforce.
- The **food and drink sectors are dominated by micro-enterprises**, which are businesses with fewer than 10 employees. Indeed, **58% of businesses in the sector in 2022 were sole traders/partnerships with no employees** (accounting for 15% of sectoral jobs), whilst a further 30% had less than 5 employees (17% of sectoral jobs). With c.90% of food and drink businesses having less than 5 workers there is a need to **ensure different support structures (advice, grants and peer-to peer learning and mentoring) are provided for small and micro businesses** compared to the 1.2% of medium (50-249 employees) and large (250+ employee) food and drink businesses that contributed 48% of sectoral employment in 2022.
- In 2020 the food manufacturing sector accounted for £5.7 billion turnover (39% of total food and drink turnover of £14.8 billion), followed by the drink manufacturing sector (£4.5 billion and 29%), agriculture (£3.5 billion and 24%) and fishing and aquaculture (£1 billion and 7%). Importantly for local economies is the waged economy (compared to shareholder dividends in large businesses that can lead to economic leakage) with **c.14% of turnover spent on staff costs**. **40% of the estimated £2 billion staff costs were spent in the food manufacturing sector, with 29% in the drinks sector, 24% in agriculture and 7% in aquaculture.**

- Previous studies have considered the **spatial concentration of food and drink sector** businesses by geography, with other studies demonstrating the relative importance of local, regional, national and international supply chains and customer bases.
- **Food and drink businesses are a vital component of Scotland's tourism sector**, with Visit Scotland estimating that visitors spend £995 million on food and drink whilst holidaying in Scotland each year. Eating local seafood, salmon, beef, lamb, venison, soft fruit, etc. alongside the flavours of Scotland's huge range of drink offerings is an increasingly important part of tourists' experience of Scotland – providing a connection to Scotland's landscape, cultures and communities.
- The **local food sector demonstrated great resilience during the Covid-19 pandemic.** Since then there have been many calls to build a greater reliance into Scotland's food systems in the future – focusing more on local food rather than relying on 'just-in-time', highly processed food that conventional systems have increasingly become synonymous with.
- There are **many perceived benefits of local and regional food systems, ranging from higher economic multiplier effects** (less leakage of jobs and money from economies) **to better environmental performance and reduced societal inequalities.**

What do we recommend?

- **Challenges in increasing the economic impacts of local food remain - related to motivations, skills, infrastructure and support.** Scottish Government funded initiatives such as Regional Food Groups, Regional Food Tourism Ambassadors, and the Regional Food Fund, along with the provision of innovation support (e.g. through Interface), local food incubator and accelerator hubs and specialist business support and advice **remain an important feature of the local food infrastructure landscape of Scotland**.
- To effectively assess the contributions of local and regional food economies **agreeing definitions is an important step**. The new provisions for a 'Code of Practice on Sustainable and Regenerative Agriculture' in the Agriculture and Rural Communities Bill can **help improve trust from farm to fork and support sustainable production methods that are key elements of 'local food'**.
- The next step of this NISRIE project will **examine Scottish regional food data sources** in more detail. We aim to review the statistical data around **regional food networks**, use existing datasets to **estimate characteristics of clusters of regional food**, and a **summarise data and information on the 18 formalised Regional Food Groups within Scotland**.

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1 Introduction

1 There has been a growing interest in local food economies in Scotland (and the rest of UK and Europe) since the early 2000s. The Scottish Government, and other organisations, have promoted the concept of 'local food' to meet many societal and policy goals - including producing food in a more environmentally friendly manner helping to meet climate change targets, supporting local economies, and improving the diet of the nation.

2 Within the Scottish Government's 2022-27 Strategic Research Programme[2] the question **What are the benefits, and challenges, in developing a regional food economy in rural and island communities?** was posed. As a starting point to address this question an assessment of local, regional and short supply chain definitions and food enterprise data has been undertaken to assess challenges in **measuring** local and regional food economies. The report then focuses on the challenges and opportunities to embed local food at the heart of resilient rural and island economies, which will be explored in subsequent years of this project.

1.1 Background

3 Aspirations for Scotland to become more reliant on 'local food' and 'shorter supply chains' have been in the pipeline for many years, with Scotland's first 'National Food and Drink Policy – A Recipe for Success' launched in 2009. Becoming a Good Food Nation (2014) set ambitions that by 2025 "*Scotland will be a Good Food Nation"* where *"Scottish suppliers will have developed their offering so that **local** increasingly equals fresh, healthy and environmentally sound."*

4 The Good Food Nation (Scotland) Act 2022 introduced a requirement for public bodies (such as local authorities and health boards) to produce, consult on and publish good food nation plans. Whilst it further provided a legal requirement to establish the Scottish Food Commission to have oversight of the good food nation plans, there were criticisms in some quarters[3] that the legislation did not go far enough to support local and regional food producers and networks.

5 There has been a growing interest in local food economies in Scotland (and the rest of UK and Europe) since the early 2000s. Indeed, there is an apparent strength and increasing maturity in the local food movement in Scotland – with a move from independent artisanal producers and farm shops working individually, to the establishment of organised farmers markets[4], through to more recent evolution of co-ordinated regional food groups supporting the network of independent food and drink producers across Scotland[5]. However, it is a topic that is under-researched, with

[2] https://www.gov.scot/collections/environment-agriculture-and-food-strategic-research/
[3] See: https://yourviews.parliament.scot/raine/good-food-nation-scotland-bill/consultation/published_select_respondent
[4] Scottish Farmer's Markets (scotlandwelcomesyou.com)
[5] Regional Food Groups | Scotland Food and Drink

definitional issues meaning statistical profiling of the sector and its economic impact remain challenging.

2 Food and Drink in numbers – what about 'local'?

6 The headline importance of Scotland's food and drink sector is well understood and reported[6,7,8] and forms one of six 'growth sectors' set out in the 2015 Scottish Economic Strategy[9]. Food and drink remains a priority in the National Strategy for Economic Transformation (2022)[10]. In industry and Scottish Government discourse there is reflection that there has been an "*explosion*" in the local food movement[11] across Scotland, but it remains poorly defined in terms of the economic contribution it makes to the Scottish and regional economies.

7 It is the *de facto* position that statistics and reporting on the economic contribution of Scotland's food and drink sector remains focused on the totality of the sector – including a large amount of product destined for the rest of the UK and international markets (such as whisky). Whilst many large scale, often multinational, food and drink companies do have local manufacturing bases, and do supply local markets, it is not their primary focus – albeit they do impact on local economies through employment and input supply chains. Indeed, even in the Scottish Government's 2021 local food consultation[12] it was headline national figures that set the context for the 'discussion'.

8 In official food and drink statistics there appears limited consideration of local or regional food sectors or economies. However, this lack of data on the scale and extent of local and regional food economies, is in part definitional, and in part related to the reality that many food and drink businesses service local, regional, national, and international customers. For example, successful 'local' producers can achieve economic growth (through their successful products) building regional / national / international customer bases meaning a geographic definition appears naturally less appropriate than consideration of the of business scale.

2.1 Food and Drink Sector in Numbers

9 It is important to acknowledge how Scotland's 'food and drink sector' is defined for statistical purposes, as that also frames any discussion around 'local and regional food economies'. The official food and drink statistics published by the Scottish Government include sectors engaged in both primary production and food and drink

[6] See Office of the Chief Economic Adviser (2023) Growth Sector Briefing - Food and Drink
[7] See https://www.fdfscotland.org.uk/fdf/business-insights-and-economics/facts-and-stats
[8] See https://foodanddrink.scot/about-the-industry/
[9] Scotland's Economic Strategy - gov.scot (webarchive.org.uk)
[10] https://www.gov.scot/publications/scotlands-national-strategy-economic-transformation/
[11] https://www.gov.scot/binaries/content/documents/govscot/publications/consultation-paper/2014/06/recipe-success-scotlands-national-food-drink-policy-becoming-good-food/documents/00453219-pdf/00453219-pdf/govscot%3Adocument/00453219.pdf
[12] Scottish Government (2021) Local food for everyone – a discussion https://www.gov.scot/publications/local-food-everyone-discussion/documents/

manufacturing. The food and drink sector includes the following Standard Industrial Classification of economic activities (SIC) codes: SIC 01: Crop and Animal Production, Hunting and Related Service Activities and SIC 03: Fishing and Aquaculture (primary production); as well as SIC 10: Manufacture of Food Products and SIC 11: Manufacture of Beverages (food and drink manufacturing).

10 On that basis the Scottish Government estimated that in 2022 there were c.17,500 enterprises in Scotland's food and drink sector[13] based on VAT registrations and businesses registered for Pay as You Earn (PAYE) taxation. That population does not include branches of larger businesses (deemed 'local business units' by the Office for National Statistics - ONS). The published figures are further underestimated since those small-scale sole traders that are non-PAYE and non-VAT registered are not included in official business datasets. These non-registered businesses are spread across many parts of the food and drink sector, but particularly in agriculture where, for example, there are c.18,500 businesses in receipt of direct agricultural support payments.

11 Caveated by the same underestimations of small businesses, the ONS Inter Departmental Business Register (IDBR) suggests c.18,000 'local business units' (including branches and subsidiary locations of larger businesses) in Scotland's food and drink sector (noting numbers are rounded to nearest 5 for disclosure requirements). The number of business units per SIC 3-digit code[14] are provided in Table 1 with the key points:

- Agriculture dominated the number of food and drink business units with 79% of sectoral workplaces in 2022. Within agriculture most units in 2022 were livestock producers (7,270 in 2022), mixed farms (5,035) and cropping farms (1,070). The number of agricultural units has remained very stable since 2010 but there were 18% fewer cropping units and 11% fewer livestock businesses in 2022 compared to 2010. Those classed as mixed farms increased by 13% in the same period.
- Fishing (1,900 workplaces) and aquaculture (260 workplaces) accounted for 12% of food and drink sector business units in 2022. There were 15% more fishing sector workplaces in 2022 compared to 2010, but the aquaculture sector remained relatively static with only marginal (4%) decline.
- Processing primary products accounted for 1.8% of business sites in 2022 and as a combined sector contracted marginally between 2010 and 2022. However, there was a decline in both the processing and preserving of meat and production of meat products sector and the processing and preserving of fish, crustaceans and molluscs in the period. There was some increase in the number of units processing and preserving of fruit and vegetables.
- The food manufacturing sectors accounted for 3.6% (645) of the business units in 2022, with more than half the units engaged in the manufacture of bakery and farinaceous products. Between 2010 and 2022 the number of food manufacturing

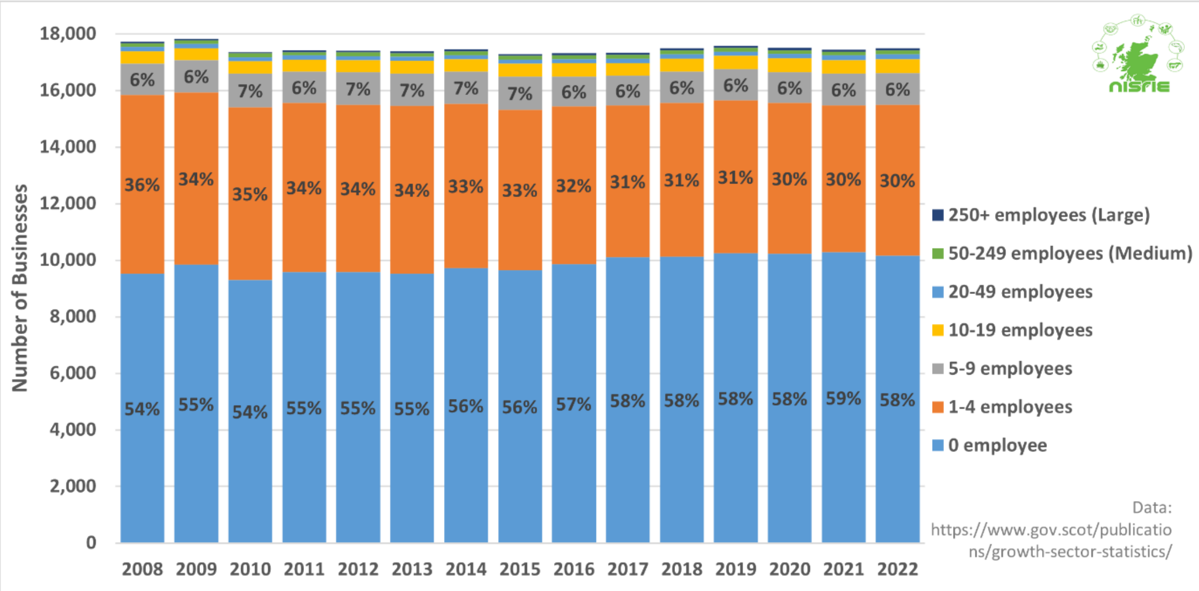
[13] https://www.gov.scot/publications/growth-sector-statistics/
[14] See http://www.siccodesupport.co.uk/home/

sites rose by 22% despite a decline in the number of businesses manufacturing dairy products.

- The drink manufacturing sector accounted for 3% (540) of the food and drink sector workplaces in 2022. The number of drink manufacturing units more than doubled between 2010 and 2022 averaging a 7.5% annual increase in the number of units.

12 Figure 1 demonstrates that the vast majority of food and drink businesses in Scotland are micro-enterprises, that is there are less than 10 people employed in the business. Indeed, 58% of businesses in the sector in 2022 were sole traders/partnerships with no employees, whilst a further 30% had less than 5 employees meaning nearly 90% of food and drink businesses had less than 5 employees.

Figure 1 Number, and size of Scotland's food and drink businesses



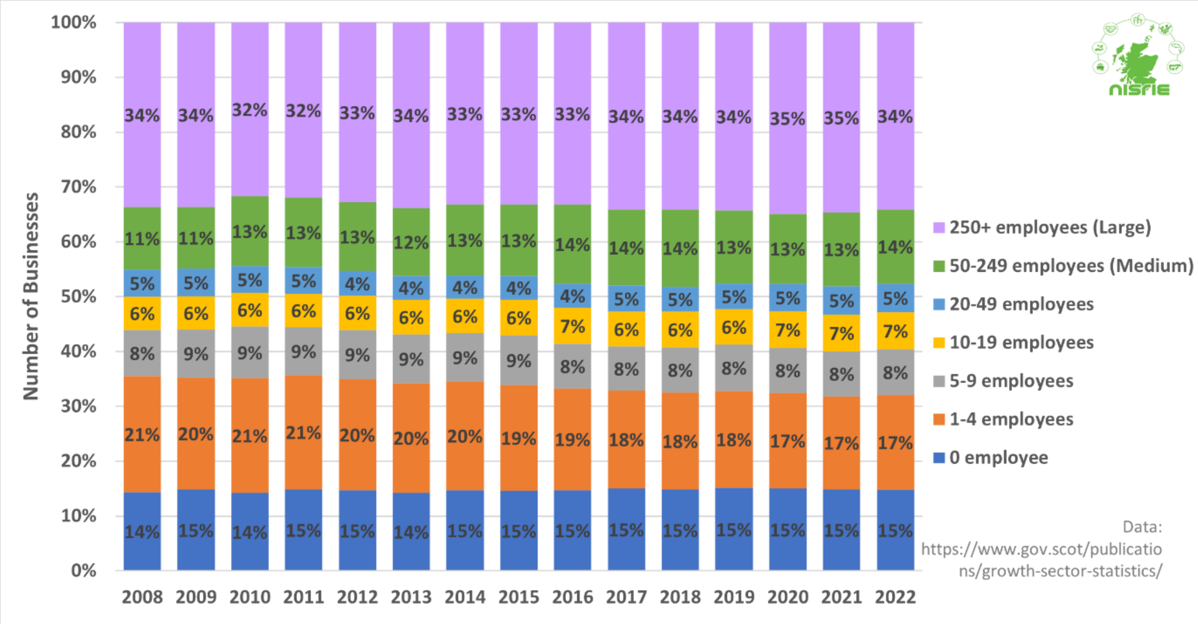
13 Despite the dominance of very small businesses in the food and drink sector, large businesses (250+ employees) accounted for 34% of total employment in the sector in 2022, with medium sized enterprises (50-249 employees) accounting for a further 14% of sectoral employment (see Figure 2). At the other extreme, sole traders and businesses with less than 5 employees accounted for 32% of sectoral employment in 2022, further revealing their importance from a waged economy perspective.

Table 1 Estimated number of local food and drink units in Scotland

Industry	2010	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
011 : Growing of non-perennial crops	1,310	1,305	1,295	1,285	1,255	1,225	1,195	1,165	1,150	1,135	1,115	1,075	1,070
012 : Growing of perennial crops	30	35	30	35	45	40	45	45	50	45	55	40	35
013 : Plant propagation	20	25	20	25	25	25	30	25	25	25	25	30	35
014 : Animal production	8,240	8,225	8,170	8,110	8,025	7,905	7,840	7,700	7,685	7,580	7,450	7,330	7,270
015 : Mixed farming	4,430	4,530	4,595	4,620	4,705	4,740	4,805	4,835	4,900	4,985	4,990	5,010	5,035
016 : Support activities to agriculture & post-harvest crop activities	340	380	425	465	520	580	620	670	685	740	755	795	830
017 : Hunting, trapping & related service activities	55	50	55	60	65	60	65	60	60	55	55	55	60
031 : Fishing	1,655	1,605	1,655	1,650	1,665	1,675	1,705	1,755	1,840	1,900	1,930	1,925	1,900
032 : Aquaculture	270	250	250	240	245	260	265	265	275	280	270	270	260
101 : Processing & preserving of meat & production of meat products	130	125	130	125	115	110	110	110	115	110	110	115	120
102 : Processing & preserving of fish, crustaceans & molluscs	175	175	165	155	155	155	145	145	160	150	150	150	155
103 : Processing & preserving of fruit & vegetables	35	30	30	30	35	35	40	40	40	40	35	40	45
104 : Manufacture of vegetable & animal oils & fats	5	5	5	5	5	5	5	5	10	5	10	5	5
105 : Manufacture of dairy products	95	85	85	80	80	80	75	75	80	80	70	70	80
106 : Manufacture of grain mill products, starches & starch products	15	15	15	15	15	15	10	15	15	15	15	15	15
107 : Manufacture of bakery & farinaceous products	305	275	275	285	290	315	310	335	335	330	315	330	350
108 : Manufacture of other food products	110	105	115	115	125	135	135	145	145	155	165	175	195
109 : Manufacture of prepared animal feeds	40	40	35	35	40	40	40	40	45	45	40	50	55
110 : Manufacture of beverages	230	225	235	240	265	285	335	375	420	455	485	510	540
Total Food and Drink	**17,490**	**17,485**	**17,585**	**17,575**	**17,675**	**17,685**	**17,775**	**17,805**	**18,035**	**18,130**	**18,040**	**17,990**	**18,055**

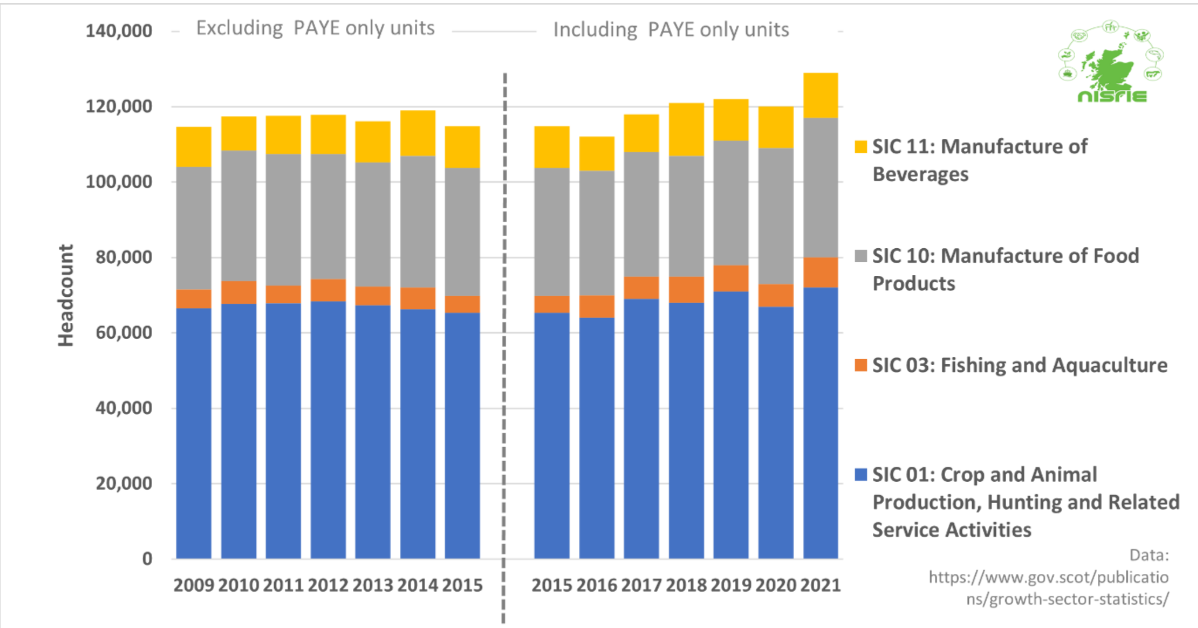
Data: ONS Inter Departmental Business Register accessed through **NOMIS**
All figures are rounded to avoid disclosure. Values may be rounded down to zero and so all zeros are not necessarily true zeros. Totals across tables may differ by minor amounts due to the disclosure methods used. Furthermore, figures may differ by small amounts from those published in ONS outputs due to the application of a different rounding methodology.
Disclosure control methods were revised on 6th October 2015. Users may notice minor changes to some cell counts when comparing with data downloaded prior to this date.
In 2015, ONS extended the coverage of businesses to include a population of solely PAYE based businesses that were previously excluded because of the risk of duplication. Improvements in matching of administrative data and research into those units excluded has indicated that the risk of duplication is very small. The addition of these businesses brings the publication in line with Business Demography and the BIS Business Population Estimates, both of which include these businesses. For more information, see
http://www.nomisweb.co.uk/articles/news/files/UKBusinessCoverage.pdf

Figure 2 Food and Drink Employment by business size



14 The food and drink sector is estimated to account for 4.9% of employment in Scotland in 2022. Figure 3, however, demonstrates that the majority (62%) of the employment in the 'food and drink' sector is with primary producers (56% in agriculture and hunting, and 6% in fishing and aquaculture) with food manufacturing (29%) and drink manufacturing (9%) having smaller workforces.

Figure 3 Food and drink sector workforce by broad standard industrial classification



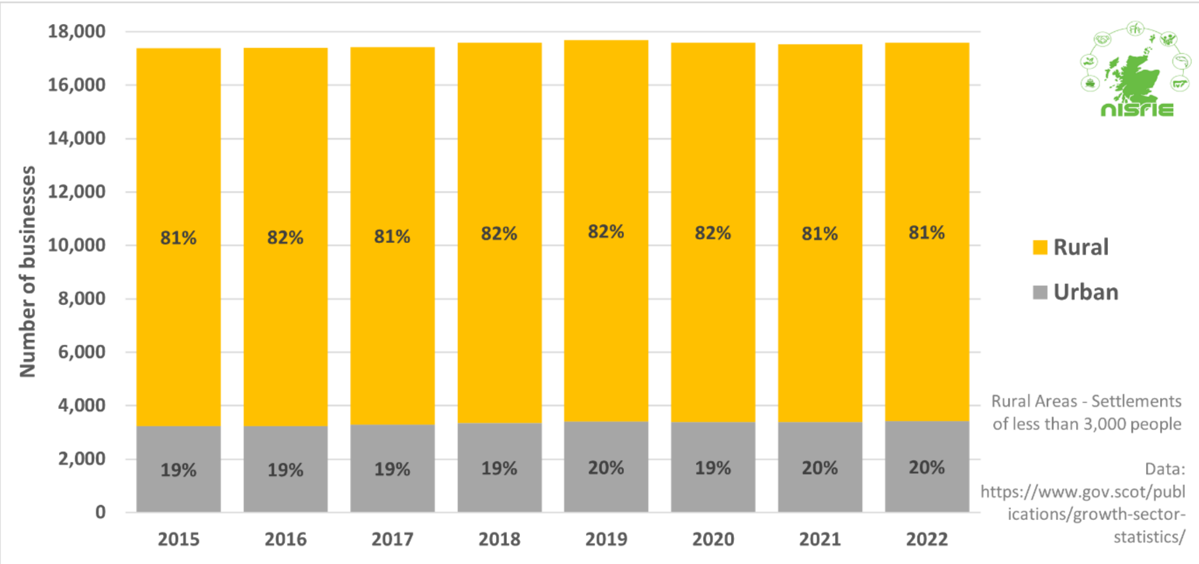
Agricultural Workforce – Headcount v FTE estimates:

It is worth noting that the official statistics likely over-estimate the regular employment in agriculture. The data gathered through the June Agricultural Census provides the estimates for headcounts and these headcounts include a significant part-time workforce.

Using the 2016 EU Farm Structure Survey[15] data, NISRIE estimates suggest that the agricultural regular workforce headcount (35,491 people on 14,928 agricultural holdings) compresses by 62% when estimating Full Time Equivalents (FTEs) – to 21,835 FTEs (see Annex 1). If this compression factor is used for the estimated headcount of 59,406 regular workers across all Scottish holdings[16] it would compress the workforce to around 36,500 FTEs (excluding any overtime and extended hours worked which it is recognised as a feature of the industry). It should however also be added that the regular employment figure excludes c.8,000 casual and seasonal employees in 2022 and c.9,200 seasonal migrant workers in 2017 (Thomson et al 2018[17]).

15 Reflecting the high proportion of primary sector businesses in the food and drink sector it is unsurprising that the majority of Scotland's food and drink sector is located in rural areas, with over 80% of business classed as rural – in settlements of less than 3,000 people (Figure 4). This means that trade, policy and fiscal decisions on the food and drink sector have a disproportionate impact on rural economies.

Figure 4 Rural – urban location of food and drink businesses



16 Table 2 further reveals that the food and drink sector accounted for 23% of total rural employment in 2021, but only 1.8% in urban areas. Again, reflecting primary sector

15 Farm structure and methods: survey results - gov.scot (www.gov.scot)
16 https://www.gov.scot/publications/results-scottish-agricultural-census-june-2021/documents/
17 https://www.gov.scot/publications/farm-workers-scottish-agriculture-case-studies-international-seasonal-migrant-labour/documents/

prevalence, rural areas consistently account for c.70% of food and drink sector employment in Scotland.

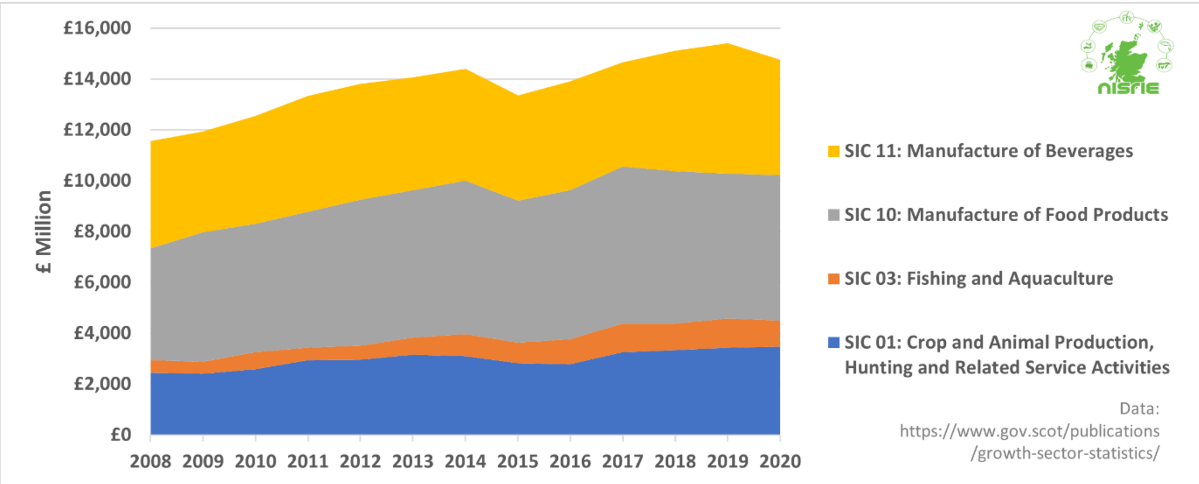
Table 2 Rural-Urban food and drink employment

		2018	2019	2020	2021
Food and Drink as proportion of total employment	**Urban**	1.7%	1.6%	1.7%	1.8%
	Rural	22.3%	22.0%	22.3%	23.1%
Rural-Urban split of Food and Drink employment	**Urban**	30%	30%	30%	31%
	Rural	70%	70%	70%	69%

Source: Scottish Government[18]

17 Scotland's food and drink sector is regularly reported to be a £15 billion sector[19]. Figure 5 demonstrates that sectoral turnover peaked at £15.4 billion in 2019 before falling back to £14.8 billion in 2020 (a result of the Covid-19 pandemic, Brexit issues and a unilateral 25% import tariff placed on single malt Scotch Whisky by the US in 2019, which was subsequently lifted in 2022[20]).

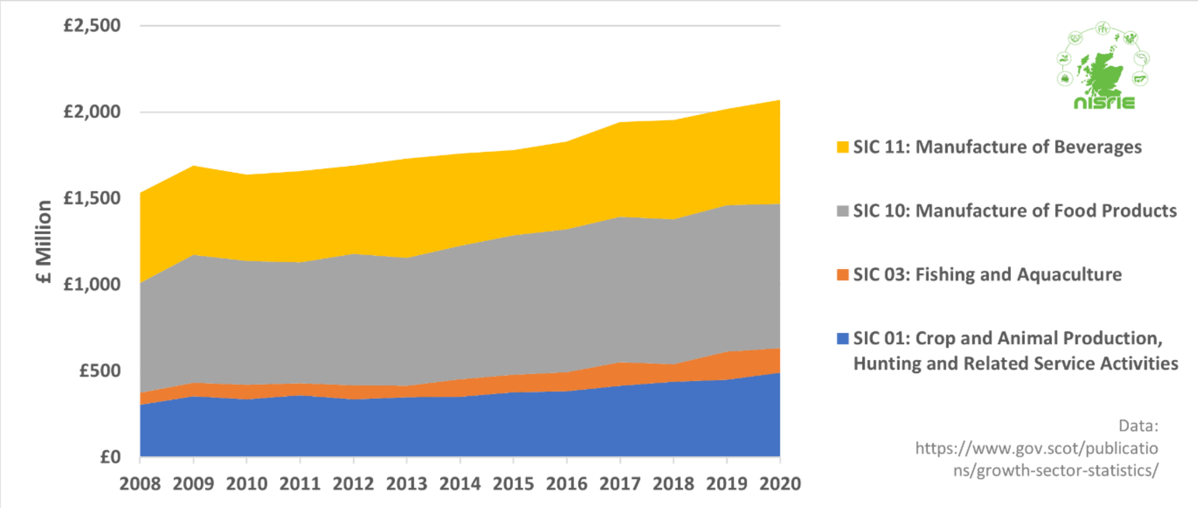
Figure 5 Food and drink sector workforce by broad standard industrial classification



18 An important impact of the food and drink sector on local and regional economies is the waged economy. Whilst there remains no breakdown of data to assess the wage impacts of 'local food', the multiplier effect from household income is undoubtedly important across the sector as a whole - particularly where there is high density and reliance on the food and drink sector in local economies. Figure 6 reveals that c.£2.1 billion (14% of turnover) was spent on labour costs in the sector in 2020, with food manufacturing accounting for 40% in 2022, followed by drink manufacturing (29%) and agriculture (24%).

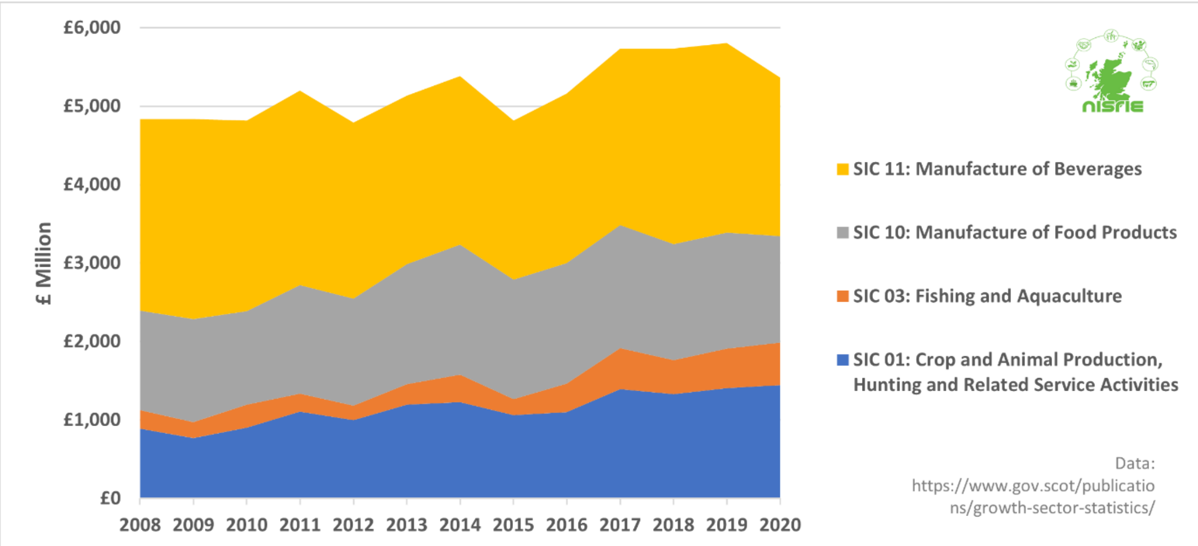
[18] Local authority area statistics database
[19] https://foodanddrink.scot/about-the-industry/
[20] See https://www.gov.scot/publications/estimating-impacts-tariffs-uk-exports-single-malt-scotch-whisky/

Figure 6 Food and drink sector labour costs by broad standard industrial classification



19 The gross value added (GVA) of Scotland's food and drink sector in 2020 was estimated to be c. £5.2 billion (see Figure 7). Drink manufacturing accounted for 38% of sectoral GVA in 2020 with agriculture (27%) food manufacturing (25%) and fishing and aquaculture (10%) all playing important roles. It is worth noting that with increased farm diversification activities (including into food processing and non-agricultural activities) it makes estimating the employment and GVA impacts from the food and drink sector even more challenging.

Figure 7 Food and drink gross value added by broad standard industrial classification



Skills

Skills Development Scotland have developed three Sectoral Skills Assessments[21] for primary production and manufacturing to provide an evidence base to inform future investment in skills. The sectoral assessments include assessments of the current context (demographic change, automation and digital economy) as well as drivers of change in the sector and include useful skills profiles, assessment of sectoral performance – including fair work and gender pay gaps – employment and modern apprenticeship offerings and assessment of future demand.

The Agriculture, Forestry and Fishing (2022) assessment predicts a decline in employment of 2.6% between 2025-2032 despite predicting an increase in the demand for 'green jobs' as Scotland tackles the dual climate and biodiversity crisis – including for example increased jobs in peatland restoration.

Food and Drink Primary Production (2022) assessment predicts a decline in employment of 2.8% between 2025 and 2032 despite a predicted 1% growth in the short term (2022-2025). The predicted longer-term decline follows longer term declines in employment that the sector has experienced. This is partially affected by declines in migrant labour availability and subsequent business adjustments, but also through increased technology uptake.

The Food and Drink Manufacturing (2022) assessment predicted a 6% decrease in food and drink manufacturing employment between 2025-2032 on back of a forecasted fall of 1.2% between 2022 and 2025. The current economic climate and ongoing labour shortages remain a main consideration in these forecasts, alongside greater uptake of automation technologies.

2.2 Covid and the food and drink sector 'bouncing forward'

20 The recent Covid-19 pandemic highlighted the fragility of the food system in Scotland and many other countries. The impact of the Covid-19 pandemic caused consumers to change how they shopped and consumed food, as some food systems struggled to maintain usual food supplies. The already concentrated food supply chain became even more concentrated in the early phases of the pandemic as the hospitality sector closed, with Dimbleby, 2020[22] estimating that 97% of food transactions took place through 10 retailers – with food shortages, hoarding and empty shelves frequently observed.

[21] https://www.skillsdevelopmentscotland.co.uk/what-we-do/skills-planning/sectoral-skills-assessments/

[22] Dimbleby, H. (2020) The national food strategy: Part one. Available from: https://www.nationalfoodstrategy.org/wp-content/uploads/2020/07/NFS-Part-One-SP-CP.pdf

21 The pandemic and issues with conventional, "*global and just- in- time supply chains"* stimulated renewed interest on 'local' as a more resilient food system – particularly since many supply gaps were filled by local food producers that offered innovative approaches to food supply (Jones, *et al.,* 2022[23]). This might include direct selling to consumers, either face-to-face or online deliveries. This unexpected scenario, and the higher level of resourcefulness and flexibility in the supply chain resulted in creation of new income streams (whether through adaptation or emergence of the new opportunities) for producers (Galanakis, *et al*., 2021)[24].

22 Jones, *et al. (2022)* refer to the local food sector 'bouncing back' and responding to societal needs during the failures of centralised distribution systems. They further report on the many calls for local food systems to 'bounce forward' to bring "*transformative resilience for the food system as a whole….into a more socially and ecologically just and beneficial food system.*"

23 In Scotland, the concept of the wider food and drink sector (albeit not focused on local) 'bouncing forward' was embedded in the National Strategy for Economic Transformation.[25] The Food and Drink Industry Leadership Group[26] emphasised the growth potential for the sector to increase its value from £15 billion in 2020 to £30 billion by 2030 – and "*if supported accordingly, will have a disproportionately larger role to play in facilitating [post-covid] economic recovery across the whole of Scotland in light of geographical spread and relative importance to island, rural and remote communities*."

24 However, much of the opportunity for growth (and associated challenges) identified by the Leadership Group related to growing international markets and maintaining a presence in post-Brexit EU markets – with no real consideration of local and regional food opportunities. However, the Tourism Industry Leadership Group[27] did identify opportunities for "*further developing and growing the Food Tourism proposition, supporting the local food and drink producers and bringing two key sectors even closer together*."

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[23] Jones, S., Krzywoszynska, A. and Maye, D. (2022) Resilience and transformation : lessons from the UK local food sector in the COVID-19 pandemic. The Geographical Journal, 188 (2). pp. 209-222. https://doi.org/10.1111/geoj.12428

[24] Galanakis, C.M., Rizou, M., Aldawoud, T.M., Ucak, I. and Rowan, N.J., 2021. Innovations and technology disruptions in the food sector within the COVID-19 pandemic and post-lockdown era. Trends in Food Science & Technology, 110, pp.193-200. https://doi.org/10.1016/j.tifs.2021.02.002

[25] Scotland's National Strategy for Economic Transformation - gov.scot (www.gov.scot)

[26] See Evidence from Industry Leadership Groups and Sector Groups

[27] Tourism and Hospitality Industry Leadership Group - gov.scot (www.gov.scot)

Food and Drink Tourism:

Food and drink businesses are a vital component of Scotland's tourism sector, with Visit Scotland estimating that visitors spend £995 million annually on food and drink whilst holidaying in Scotland[28]. A 2015-2016 Scotland Visitor Survey reported that 1-in-5 survey participants had visited a whisky distillery on holiday[29], for example, with this large number of visitors leading to local employment of tour-guides, as well as further economic spill overs into the local hospitality sector, increasing demand for local accommodation, but importantly local Scottish food and drink. Acknowledging and measuring such impacts are an important part of assessing local and regional food economies'

The ambitious Food Tourism Scotland Strategy (2018) set out a vision that by 2025 (i) "*more than 75% of food and drink distributors in Scotland will have adopted a Scottish product identifier*" and (ii) "*the amount of Scottish produce being sourced across food tourism businesses will have doubled*." Further, by 2030 the ambition is for local food to underpin the tourism sector with "*local products being tracked and traced from production to consumption".* Such data would revolutionise our understanding and monitoring of local and regional economies and provide insight into the importance (or not) of local food beyond the tourism sector.

'Destination Scotland: The Power of Food Tourism' conference in March 2023 reemphasised the importance of food tourism in Scotland "*driving visitors, economic growth and reputation".*

3 What is Local Food?

Summary

In this section we report that "local food means different things to different people" which creates data challenges. Often local food is associated with non-conventional food networks, relationships with food, defined geographical areas, distance to market, quality, sustainability, short supply chains, or delivers certain benefits (e.g., freshness, traceability or sustainability), etc. Many international definitions of local food exist differing by region, country and, importantly, context. Local is often cited the context of distance from market (and supermarkets in the UK also widely promote their commitment to local producers and local food – often without defining the terms). However, some stakeholders – such as Nourish – advocate for short supply chains rather than local food, per se.

[28] Visit Scotland (2017) Opening up Scotland's larder to our visitors - Exploring the role of food & drink in the visitor experience. https://www.visitscotland.org/binaries/content/assets/dot-org/pdf/research-insights/opening-up-scotlands-larder-to-our-visitors

[29] Visit Scotland (2018) Whisky Tourism – Facts and Insight https://www.visitscotland.org/binaries/content/assets/dot-org/pdf/policies/whisky-tourism-facts-and-insights

3.1 Alternative Food Networks (AFNs)

25 The concept of 'local food' is well known and used among the public and in the food and drink sector, but there is implied understanding of what local actually means - often being associated with a sense of place. However, 'local food' as a definition with clear parameters does not exist, with the Scottish Government (2021)[30] concluding that *"local food means different things to different people".*

26 There has been much academic discussion on what constitutes 'alternative food networks' (see Michel-Villarreal, *et al.* 2018[31]) that are associated with "*concepts such as locality, quality, spatiality, embeddedness, sustainability and short food supply chains.*" Tregear (2011)[32] suggested that "*mainstream agrifood systems, shaped by global capitalism, have strong marginalising and dehumanising effects, and that AFNs have the potential to redress those effects*".

27 These networks can include farm shops, farmers markets, community-supported agriculture, box-schemes, etc. Essentially, this includes any network of food producers and consumers (or 'food web') not considered conventional[33] - regarded by many as 'short supply chains' (Renting et al., 2003[34]). Another term which is often used is the informal food economy'. While this term is sometimes associated in international literature and research with activities which may be regarded as the grey economy (e.g. street food sellers) or operating outside usual regulations (e.g on food hygiene), it has also become associated with these non-conventional food networks[35].

28 Many alternative food networks have evolved from both supply (environmental sustainability, quality, organic, etc interests of producers) and demand perspectives (e.g. animal welfare, environment and health concerns) that act as a counter to globalised conventional systems (Feagen, 2007[36]) with a summary of key factors found in Michel-Villarreal *et al.*'s systematic review shown in Table 3.

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30 Local food for everyone – a discussion: consultation - gov.scot (www.gov.scot)

31 Michel-Villarreal, R., Hingley, M. and Bregoli, I (2018) Defining alternative food networks: A systematic literature review. In: International Food Marketing Research Symposium, June 2018, University of Bournemouth, UK. Defining alternative food networks - A systematic literature review.pdf (lincoln.ac.uk)

32 Tregear, A 2011, 'Progressing knowledge in alternative and local food networks: Critical reflections and a research agenda', Journal of Rural Studies, vol. 27, no. 4, pp. 419-430. https://doi.org/10.1016/j.jrurstud.2011.06.003

33 Renting et al. refer to conventional food networks as a "more standardised industrial mode of food supply"

34 Renting, H., Marsden, T. K., & Banks, J. (2003). Understanding Alternative Food Networks: Exploring the Role of Short Food Supply Chains in Rural Development. Environment and Planning A: Economy and Space, 35(3), 393–411. https://doi.org/10.1068/a3510

35 The extent and nature of informal food networks in the Western Isles of Scotland is currently being explored in research by the Universities of Stirling and Edinburgh. More information on this work is available here: scottish-gov-cpg-rural-policy-keeping-food-local-final-161122-2.pdf (sruc.ac.uk)

36 Feagan, R. (2007) The place of food: mapping out the 'local' in local food systems. Progress in Human Geography 31(1) (2007) pp. 23–42 https://doi.org/10.1177/0309132507073527

Table 3 Themes and characteristics of AFNs definitions

Themes	Characterstics
Difference	Alternative to the industrialised food supply Differ from conventional food supply systems Contrasted with large scale, industrial agribusiness Resistance to dominant market logic Counter to the dominant (or conventional) Corrective to conventional agri-food systems Operate outside of corporate-industrial food regimes
Reconnecting	Reconnect producers with consumers Re-connection between producers and consumers Flows of product that connect people Ways to reconnect food producers with consumers Reconnecting consumers and producers
Proximity	Potential to short-circuit long supply chains Closer links Shorter distances Rooted in places Embedded in place Local Re-localisation Direct sale
Sustainability	Commitment to sustainable food production and consumption Economically viable and use of ecologically sound production and distribution practices Environmentally friendly/sustainable High quality and ecologically and/or ethically superior goods Defined by an explosion of organic, fair trade, quality and specialty goods Organic, sustainably grown food

Michel-Villarreal, *et al* (2018)

3.2 Defining local Food Systems?

29 Enthoven and Van den Broeck (2021)[37] emphasise in their review of food systems literature that definitions of 'local' differ by region, country and, importantly, context. They offer that in the US local foods are defined in statute as being marketed "*less than 400 miles from the origin of the product, or in the State in which it is produced*", whilst in Canada local food is "*food produced in the province or territory in which it is sold, or food sold across provincial borders within 50 km of the originating province or territory*." They add that there is increased complexity in what is considered local food as supermarkets (such as Waitrose, Sainsbury Tesco, Aldi, Lidl, Morrisons etc. in the UK) widely promote their commitment to local producers and local food, without always defining what they mean by local and/or using different definitions of local.

[37] Enthoven, L.& Van den Broeck, G. (2021) Local food systems: Reviewing two decades of research. Agricultural Systems, vol. 193. https://doi.org/10.1016/j.agsy.2021.103226

30 CPRE (2012)[38] suggest that the 'local food webs' concept can help capture interactions between suppliers and consumers of food defining them as: "*the network of links between people who buy, sell, produce and supply food in an area. The people, businesses, towns, villages and countryside in the web depend on each other*". The concept of local food webs in Scotland could further build on regional and local food groups and provide a more focused lens to assess local food systems.

31 Stein and Santini (2022)[39] further distinguish between 'local' food systems and 'short supply chains' reflecting that the latter often relate to a system with a limited number of intermediaries between farmers and consumers - and that consumers can buy products via long supply chains that are considered local, or products from afar via short supply chains. Whilst important to recognise, this adds further complexity in defining what is a local food system.

32 CPRE (2012) highlighted that, in defining local food, many approaches have been taken by academics and industry, specifically using relating to four key typologies:

(1) **Local food defined according to product, process and place attributes** – for example products protected through the EU's Protected Designation of Origin (PDO) and Protected Geographic Indication (PGI) system.

(2) **Local food produced, processed and retailed within a defined radius** – with 30 miles commonly used (perhaps due to major retailers such as Waitrose[40] influence)

(3) **Local food that delivers certain benefits** – based on climate footprint, social or environmental benefits (such as organic, pasture for life, etc) that may also be associated with perceptions of quality, freshness, traceability and sustainability.

(4) **Local based on type of outlet** – that includes direct sales from farmers to consumers (e.g. farm shops, farmers markets, box schemes), but may include other intermediaries such as 'local', 'small', 'independent' shops such as delicatessens, green grocers or butchers.

33 Building on similar themes, several further definitions of 'local food' have emerged – often focusing on the geographical context. For example Waltz (2011)[41] defines local food as "*food that is produced within a short distance of where it is consumed, often accompanied by a social structure and supply chain different from the large-*

[38] Campaign for the Protection of Rural England (2012) From Field to Fork: The value of England's local food webs. [From_field_to_fork___The_value_of_Englands_local_food_webs_interactive.pdf (cpre.org.uk)]

[39] Stein, A.J., Santini, F. The sustainability of "local" food: a review for policy-makers. Rev Agric Food Environ Stud 103, 77–89 (2022). https://doi.org/10.1007/s41130-021-00148-w

[40] We're backing British (waitrose.com)

[41] Waltz, C.L.. (2010). Local food systems: Background and issues. Nova Science Publishers Inc. ISBN: 1617615943

scale supermarket system." Kneafsey et al., (2013)[42] extend this concept of place within their definition that in local food systems "*foods are produced, processed and retailed within a defined geographical area*". CPRE (2012) were, however, much more specific in their definition of local food with more guidance on the 'what' and 'where' that are so often missing in definitions. They define local food as: "*raw food, or lightly processed food (such as cheese, sausages, pies and baked goods) and its main ingredients, grown or produced within 30 miles of where it was bought.*"

The Scottish Government (2021) suggested in their consultation on 'Local Food for Everyone: a discussion' that local food has **some of each of the following** features:

- It is produced **locally** (this includes your town, region or elsewhere in Scotland).
- It has **short supply chains** (there are fewer steps between the primary producer of the food and the person who eats the food).
- It is **sustainably produced** (i.e., produced in a way that is better for the natural environment than large scale industrial production).
- It is produced in a way that places an emphasis on building better **relationships of trust, information, fairness and support** between local food producers and the people buying and eating their food.

34 In the Scottish Government's 2021 consultation process, the majority (80%) of respondents said they agreed with the proposed definition (above) of local food however some did note that the definition was wide-ranging and not specific with some suggesting a need for a *"more geographic delineation of local food".* This Scottish Government definition implies that local food will remain dependent on individuals' perceptions, and therefore it might include (or exclude) a number of defining factors that can lead to vague and ambiguous interpretations and result in inconsistent interpretations of 'local food'.

35 In contrast to many definitions, Nourish Scotland (2015)[43] stress that 'local' is not simply (or even mainly) about location, stressing that: "*local food is a relationship, not simply a commodity, and the way local food is bought and sold preserves the meaning and story of the food. Local food is typically unprocessed or minimally processed, with no hidden ingredients, and is produced on a human, not industrial, scale*." Indeed, Nourish advocate for short supply chains rather than 'local' food.

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[42] Kneafsey M, Venn L, Schmutz U, Balasz B, Trenchard L, Eyden-Wood T, Bos E, Sutton G, Blackett M, authors Santini F, Gomez Y Paloma S, editors. Short Food Supply Chains and Local Food Systems in the EU. A State of Play of their Socio-Economic Characteristics.. EUR 25911. Luxembourg (Luxembourg): Publications Office of the European Union; 2013. https://publications.jrc.ec.europa.eu/repository/handle/JRC80420

[43] Nourish Scotland (2015) Growing the Local Food Economy in Scotland http://www.nourishscotland.org/wp-content/uploads/2015/06/Local-Food-Economy-Report.pdf

Scotland Food and Drink – the Knowledge Bank

The Knowledge Bank provides a valuable insight service to food and drink sector suppliers, processors, retailers and consumers. It offers a variety of customised market research, data analysis and consumer insight. They have strong suggestions on 'provenance' and some insights into Scottish consumers perceptions of 'local'.

The Knowledge bank report that more than half of Scottish shoppers are willing to **pay more to buy products with Scottish labels** and a fifth say that **Scottish provenance has become more important during the cost-of-living crisis**. Consumers report that **buying Scottish supports local economies** and **two-thirds consider that Scottish labelled products are of higher quality** with **nearly 60% thinking Scottish products are more sustainable.**

36 Defra (2022)[44] provided an even more concise definition that includes specific proportions of regional ingredients due to local food targets being proposed for public sector food procurement. They define locally produced food as being: "*Ingredients produced/grown/caught within the same region as it is consumed, or a neighbouring county (for counties at regional boundaries – this may include counties in Scotland and Wales). Multi-ingredient foods may qualify as 'locally produced' if at least 50% quantity (Kg or L) of their ingredients are produced/grown/caught in the local region."*

37 In Scotland, the Scottish Government's Procurement Commercial Improvement Programme[45] (PCIP) has scrutinised the benefits of progressive procurement, with an increased emphasis being placed on facilitating access to procurement by SMEs and the third sector to deliver wider economic and social benefits. Community Wealth Building principles are being embedded into the procurement process, for example by Scottish Borders Council, to develop and strengthen the local rural market.

3.3 Characteristics of local food in Scotland

38 Even with tight definitions statistical challenges remain in assessing local food due to spatial definitions (Feagan, 2007) – in short, how to distinguish 'community', 'local' and 'regional' from more globalised systems and producers that can lead to multiple conflicting meanings of local food.

39 A variety of characteristics associated with 'local' food emerge (see Figure 8 for an illustration) from the literature and are actively used by industry in Scotland.

- 'Local' was most commonly described within a geographical context. For some, **local means 'Scottish'** as implied by the Scotland Food and Drink

[44] Defra (2022) Public sector food and catering policy for England. The Government Buying Standards for Food and Catering Services (GBSF) https://consult.defra.gov.uk/public-sector-food-procurement/food-and-catering-consultation/
[45] https://www.procurementjourney.scot/pcip/pcip-overview

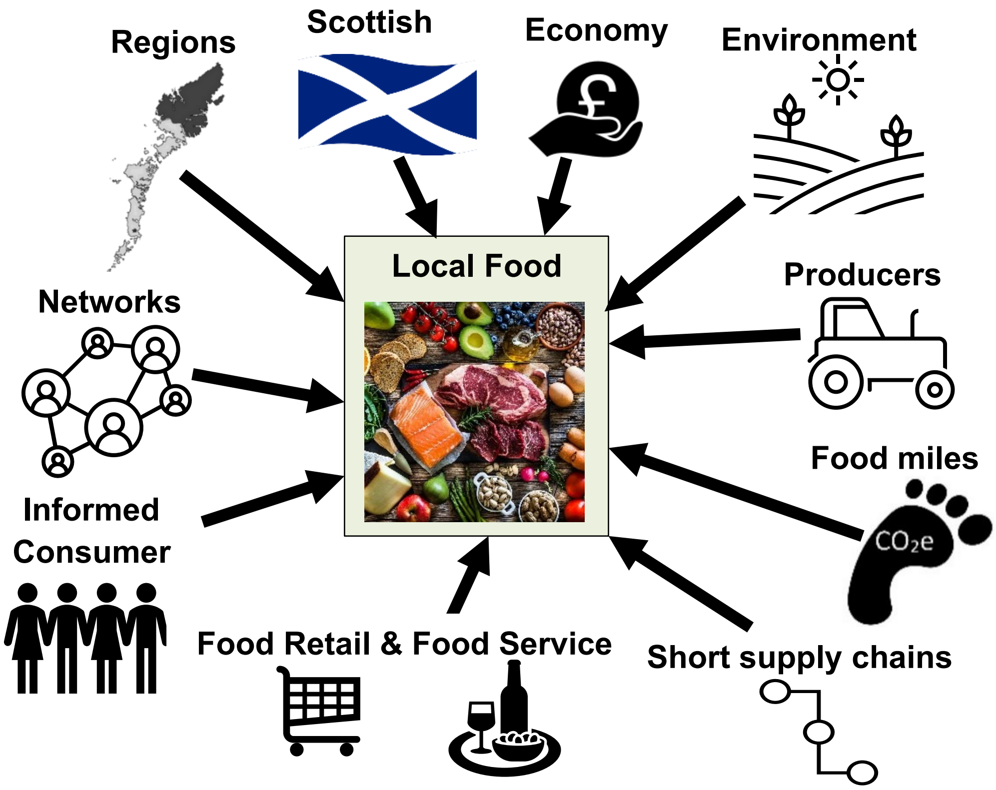
Partnership (2020)[46] where they discussed how to improve the "local, Scottish market" conveying the idea that local food means Scottish.

- **Local is often used along with "regional"** or food being produced in or around a certain town. The use of the term regional food is possibly driven by the work of the regional food groups which are in operation throughout Scotland. There are also food towns, including for example Castle Douglas, and food and drinks trails such as Elgin Food and Drink Trail, Lanarkshire food trail and Arbroath Smokie trail which bring a more discrete geographical boundary to the definition of 'local'.
- Food being sourced within a stated geographical distance is not new, however the idea of '**20 minute' communities or neighbourhoods or cities** has been gaining traction and this incorporates local food in its ideology (Our Place, 2022).
- There is an underlying perception that locally produced food is **better for the environment and more sustainably produced** compared to more mass-produced food. Its **lower carbon footprint** has been discussed with improvements being realised from all or a combination of lower carbon farming, more efficient processing, more environmentally friendly packaging and fewer food miles. Local food and **food with short supply chains** are in some instances used interchangeably; these short supply chains usually mean food does not travel as far and can be on the plate more quickly.
- 'Local' food can have social and community benefits as the 'local' food can aspire to **build better relationships between the producer and consumer**, which also aims to **improve trust**, and information about food and **provide a fairer return to the producer**. *"The shorter the supply chain is the easier it is to maintain and communicate the authenticity and originality of the food".*
- 'Local' can be a **'brand'** that attracts a premium through **place-based value,** such as protected brands. Watts and Jones (2021)[47] suggest that "*one of the ways where social and economic development in remote and peripheral areas has been sought is through the development of 'place-based value'. An exemplar for his approach in the food and drink sectors is the EU's [European Union's] …schemes*".

[46] Scotland Food and Drink Partnership (2020) Recovering from coronavirus and fuelling BREXIT preparation

[47] Watts, D. and Jones, S. (2021) Food and Drink Innovation and Clustering in Scotland's Highlands and Islands: review of opportunities for engagement with the Arctic Region. A report to SEFARI and Highlands and Island Enterprise. Food and Drink Innovation and Clustering in Scotland's Highlands and Islands: review of opportunities for engagement with the Arctic Region | SEFARI

Figure 8 Illustration of what constitutes local food in Scotland



4 Measuring local food

40 There has been limited developments since Ricket Hein *et al* (2006)[48] argued for a systematic assessment of where local food systems existed, or were lacking, in the UK and Ireland – arguing that a 'geography of local food systems' should be developed. Watts et al (2010)[49] developed a database of 'local food' enterprises in Scotland and Revoredo-Ghia et al (2010) noted that many of these businesses were engaged in multiple retailing methods (e.g. farm shop, online, markets, etc), concluding that: "*a significant number of local food enterprises are clearly already engaging in the supply of food beyond their own area, and in this respect making an increased contribution to their local economy and to food security.*"

41 The Cabinet Secretary for Rural Affairs and Islands, Mairi Gougeon, noted[50] that "through encouraging more locally based production and circular supply chains, we can reduce the distance food travels, as well as enabling more people to be able to get out and grow their own food." Within the joint Industry and Scottish Government "Recovering from Coronavirus and fuelling Brexit preparation" programme there are commitments to "Deliver a deeper programme with major retailers and foodservice

[48] Ricketts Hein, J. & Watts, D. (2010) Local food activity in the Republic of Ireland and Great Britain, Irish Geography, 43:2, 135-147, DOI: 10.1080/00750778.2010.514733
[49] Watts, D, Leat, P, and Revoredo-Giha, C (2010) Local Food Activity in Scotland: Empirical Evidence and Research Agenda. Regional Studies, pp. 1–19 https://doi.org/10.1080/00343400903380416
[50] https://www.gov.scot/publications/local-food-everyone-discussion/documents/

customers to increase listings and showcasing of Scottish products in Scottish and UK outlets" and to "Implement the next phase of 'Support Local' national supplier directory."[51]

Protected Geographical Food and Drink

In 1993, the European Union created three schemes of geographical indications and traditional specialities, to promote and protect names of quality agricultural products and foodstuffs. The schemes were Protected Designation of Origin (PDO), Protected Geographical Indication (PGI) and Traditional Specialty Guaranteed (TSG).

According to eAmbrosia the legal register for names of agricultural products and foodstuffs, wine, and spirit drinks there are 16 registered products that relate to Scotland (listed in Annex 2).

Following Brexit the UK Government has mirrored the EU schemes and has a UK register of Geographical Indication (GI) schemes that protect the geographical names of food, drink and agricultural products.

4.1 Measuring spatial concentration and localisation ratios

42 Examining 'embeddedness' in the Scottish food and drink sector Copus *et al.* (2016) noted that "*it is perhaps not very surprising to discover that food and drink SMEs have relatively localised footprints*." They reported that 37% of inputs to Scottish food and drink SMEs surveyed, and 47% of the outputs sold were transactions with suppliers and customers within an hour's travel time of the manufacturing site. They generated localisation ratios[52] that reflected the proportion of transactions taking place within 1-hour from the processing site in comparison with other national and international sales (see Figure 9 for idealised transaction footprints). For their sampled businesses they reported high input (0.68) and sale (1.05) localisation ratios.

43 Whilst the sample size across different food and drink categories was relatively small in Copus *et al*.'s (2016) study, they reported high input localisation ratios (reliance on purchases within 1 hour travel time) for *Fruit/vegetables* (2.08), *Dairy/cheese* (1.56) and *Fish/seafood* (0.98), each with low proportions of inputs sourced from outside Scotland. In contrast the *drinks sector* (both *soft* and *alcoholic*) had relatively low input localisation ratios and higher proportions of inputs sourced from outside Scotland (36% and 45% respectively) revealing input supply leakage. *Meat products* (2.73) and *Bakery products* (3.98) had very high output localisation ratios revealing a high degree of interaction and reliance on markets within 1-hour travel time from the

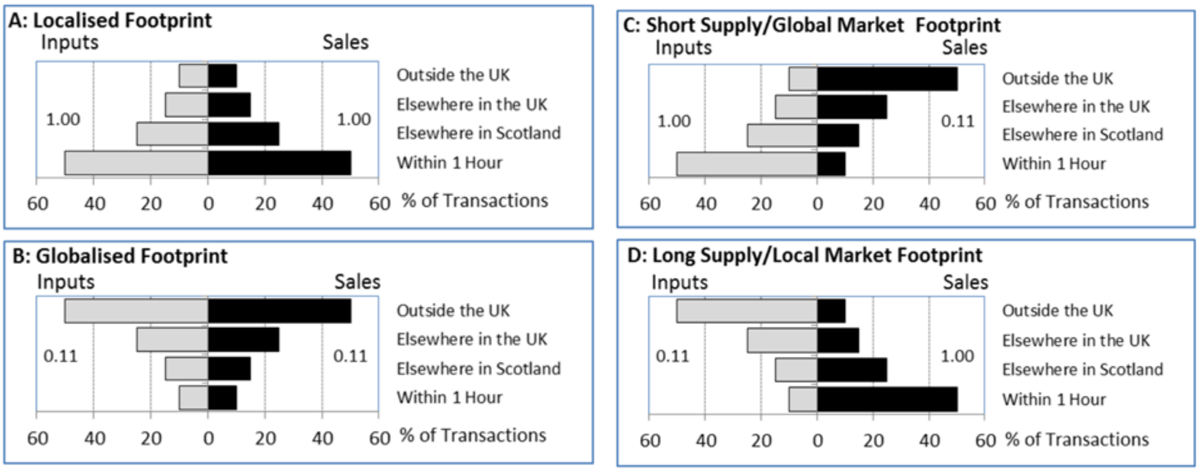
[51] https://foodanddrink.scot/support-local/

[52] Defined as: "ratio of the mean percentage of transactions in the within 1-hour category to the total of the mean percentages within three other categories [outside UK, elsewhere in UK and elsewhere in Scotland]." The higher the ratio the greater the frequency of inputs or sales transactions made within 1 hour of the processing site.

processing plant. The *Fish/seafood* (0.19) and *Alcoholic drinks* (0.3) categories had weak reliance on local markets with 44% and 40% of sales occurring outside Scotland (meaning downstream leakage from any further business use of outputs).

44

Figure 9 Idealised transaction footprints for Scottish food and drink businesses



Source: Copus et al (2016)

Table 4 Localisation and transactions outside Scotland, by product Group.

Main Product	Respondents	Input Localisation Ratio	% inputs from outside Scotland	Output Localisation Ratio	% sales outside Scotland
Bakery products	25	0.54	16.0	3.98	3.5
Dairy/cheese	12	1.56	14.3	1.13	2.8
Drinks: alcoholic	18	0.25	45.3	0.30	40.3
Drinks: non alcoholic	9	0.26	35.6	1.59	11.1
Fish/seafood	13	0.98	11.7	0.19	44.3
Fruit/vegetables	4	2.08	17.5	1.50	5.0
Grains/cereals	4	0.48	12.5	1.05	25.5
Meat products	15	0.74	12.7	2.73	2.9
Processed/ready meals	10	0.75	25.5	1.33	11.2
Other	13	0.67	33.5	1.38	17.0

Source: Copus et al (2016)

45 Watts and Jones (2021)[53] also reported that, in a survey of 640 small and medium sized food and drink sector businesses, there were (statistically significant) higher levels of engagement with distant main suppliers in the Highlands and Islands Enterprise (HIE) area– reflecting a necessity to engage with specialist suppliers and customer bases more distant than in other parts of Scotland. Despite their remoteness HIE based businesses had main suppliers (57%) and main customers

[53] Watts, D. and Jones, S. (2021) Food and Drink Innovation and Clustering in Scotland's Highlands and Islands: review of opportunities for engagement with the Arctic Region. A report to SEFARI and Highlands and Island Enterprise. [Food and Drink Innovation and Clustering in Scotland's Highlands and Islands: review of opportunities for engagement with the Arctic Region | SEFARI]

(54%) within 30 miles – with the rest of Scotland having 64% of main suppliers and 68% of main customers located within 30 miles.

Table 5 Respondents' distance from their main supplier and customer by region

Distance from main:	Region	Distance (miles)					Respondents
		< 11	11-30	31 - 50	51 - 100	> 100	
Supplier	**HIE**	33%	24%	11%	10%	22%	168
	Rest of Scotland	42%	22%	15%	11%	10%	313
Customer	**HIE**	29%	25%	12%	8%	25%	119
	Rest of Scotland	45%	23%	9%	10%	14%	222

46 Watts and Jones (2021) also calculated location quotients to assess the relative spatial concentration of businesses in different industrial sectors within regions – and how patterns have changed over time. A location quotient of over 1 demonstrates higher density of a specific type of enterprise within a region compared to the country as a whole (with values of over 1.5 considered meaning strong spatial concentration) - with the converse true for values under 1 where sectors are relatively less concentrated.

47 For example, as shown in Table 6, in 2019 Na h-Eileanan Siar had 5.32 times more concentration of fishing sector businesses (down from 8.17 times in 2012), whilst Argyll and Bute had 12.99 times greater concentration of businesses engaged in aquaculture than for across Scotland as a whole. Table 6 further demonstrates that whilst all HIE regions have higher concentrations of fishing, aquaculture and processing and preserving of fish crustaceans and molluscs businesses compared to the whole of Scotland, Shetland has extremely high concentrations of fishing and aquaculture businesses. Similarly, Moray has high concentrations of businesses in Distilling, rectifying, and blending of spirits (11010) and extremely high concentrations of businesses in the Manufacture of malt (11060) sector (reflecting the Speyside whisky cluster).

Table 6 Spatial concentrations of food & drink activity in Scotland's Highlands and Islands, 2009-18

Industry (SIC)	Local authority	Location quotients 2009	2012	2015	2018
Fishing (031xx)	Argyll and Bute	3.79	3.05	3.6	3.69
	Na h-Eileanan Siar	6.17	8.17	6.48	5.32
	Highland	3.37	2.63	3.85	3.64
	Moray	5.98	5.73	4.02	3.74
	Orkney	2.66	6.53	3.43	3.59
	Shetland	11.66	15.32	19.11	22.68
Aquaculture (032xx)	Argyll and Bute	12.28	9.3	13.43	12.99
	Na h-Eileanan Siar	24.39	27.32	22.64	20.94
	Highland	6.8	7.46	5.06	5.36
	Orkney	12.31	3.83	36.86	35.38
	Shetland	25.94	42.19	32.45	31.89
Processing and preserving of fish, crustaceans and molluscs (10200)	Argyll and Bute	2.51	3.44	3.48	1.97
	Na h-Eileanan Siar	3.57	4.49	5.95	6.43
	Highland	1.8	2.18	2.03	2.2
	Moray	1.84	1.87	1.62	1.94
	Shetland	9.71	9.77	7.67	7.71
Manufacture of dairy produce (105xx)	Argyll and Bute	1.26	0.93	1.23	1.25
	Orkney	4.64	5.74	8.85	5.53
Manufacture of bakery and farinaceous products (107xx)	Na h-Eileanan Siar	0.98	1.01	0.99	2.03
	Moray	9.64	9.73	9.57	9.37
	Orkney	1.05	1.08	1.26	1.24
Distilling, rectifying and blending of spirits (11010)	Argyll and Bute	2.38	2.73	2.96	3.32
	Moray	8.75	8.89	8.98	9.06
	Orkney	1.17	0	1.22	1.83
Manufacture of malt (11060)	Argyll and Bute	1.79	2.23	4.31	4.13
	Highland	3.2	4.03	2.87	2.64
	Moray	14.78	18.18	22.85	25.41
Manufacture of non-distilled alcoholic drinks (11020-11050)	Highland	2.49	2.92	2.14	2.03
	Orkney	3.19	4	3.73	2.8

5 Advantages and disadvantages of 'local' food

5.1 Inequalities of conventional food systems

48 De Schutter (2017)[54] refers to western consumers having ever-decreasing time to spend on food shopping and cooking, thereby becoming reliant on processed and ultra-processed 'convenience' foods. Indeed, Hasnain, et al. (2020)[55] report that the UK has the third largest sales volume per capita of ultra-processed foods out of 80 high and middle-income countries with the "*most processed diet of countries in Europe*." Further, De Schutter notes how globalised conventional food chains and the availability of out of season produce in supermarkets has broken "*relations of*

[54] De Schutter, O. (2017) The political economy of food systems reform. European Review of Agricultural Economics, Vol 44(4). https://doi.org/10.1093/erae/jbx009
[55] Hasnain, S., Ingram, J. and Zurek, M. 2020. Mapping the UK Food System – a report for the UKRI Transforming UK Food Systems Programme. Environmental Change Institute, University of Oxford. https://www.eci.ox.ac.uk/research/food/downloads/Mapping-the-UK-food-system-digital.pdf

production and consumption from their local embeddedness." This 'cheaper food paradigm' (Rivington et al., 2022[56]) comes with significant costs and implications for human health, the environment and resilience of food systems – factors that led many to call for a rebalancing towards more local, resilient food systems.

49 Beyond the food sector concerns about inflationary pressures, supply uncertainty and Environmental, Social and Governance (ESG), economic and geopolitical uncertainty is leading to what Ernst and Young (2023)[57] refer to the 'great supply chain reset' across many sectors of the economy. They suggest that *"Future supply chains, or supply networks, should support efforts to reduce material consumption and carbon footprint and increase circularity and biodiversity. They also need to be resilient enough to withstand environmental and geopolitical shocks and adapt to changing legislative measures.*"

5.2 Local economic benefits

50 Stein and Santini (2022)[58] point to evidence that in terms of social sustainability, local food systems "*can contribute to rural development and a sense of community*". Moreover, Sustain (2021)[59] argue that local food systems can lead to "*greater economic prosperity but also to engender closer and more transparent relationships between supply chain actors*". CPRE (2012) further add that that local food systems are an essential part of a viable farming sector and support rural economies, create jobs and "*build community and connections".* The dispersed nature of many small food enterprises also mean that *"individually they are below the radar ... but when connected add up to more than the sum of their parts"* (CPRE, 2012). Despite the apparent importance and opportunities that local food offers, Guilbert et al. (2022)[60] refer to the "*image problem of local food as 'a middle class hobby'",* that suggests concerted action is required to further mainstream it in our culture.

51 Coe at al. (2022)[61] note that despite higher costs associated with local convenience stores compared to supermarkets, consumers still value having the option to shop for food locally – and that there is a movement from simply buying food locally towards "*sourcing food locally*". Whilst not specifically food related, research by Visa

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56 Rivington M, Duckett D, Iannetta P, Hawes C, Begg G, Polhill JG, Loades K, Newton A, Aitkenhead M, Lozada-Ellison LM, Neilson R, Gandossi G, Stewart D, Wardell-Johnson D, Udugbezi E, Lorenzo-Arribas A, Dinnie L, Benton T, King R. Burgess P. (2021). An Overview assessment of the COVID_19 pandemic on UK food and nutrition security.pdf (hutton.ac.uk)

57 https://www.ey.com/en_gl/consulting/how-the-great-supply-chain-reset-is-unfolding

58 Stein, A.J., Santini, F. The sustainability of "local" food: a review for policy-makers. Rev Agric Food Environ Stud 103, 77–89 (2022). https://doi.org/10.1007/s41130-021-00148-w

59 Sustain (2021) The case for local food: building better local food systems to benefit society and nature

60 Guilbert, S., Winter,M., Lobley, M. & Wilkinson, T. (2022) Covid-19 and the UK Food System: Learning Lessons and Building Back Better. A Centre for Policy Research report for the Transforming UK Food Systems SPF Programme. Covid-19 and the UK Food System: Learning Lessons and Building Back Better - Transforming UK Food Systems (ukri.org)

61 Coe, S., Malik, X., Francis-Devine, B., Ward, M., and Nikki Sutherland (2022) Debate on supporting local food infrastructure - Debate Pack, 5 September 2022, Number CDP 2022/0155 CDP-2022-0155.pdf (parliament.uk)

(2021)[62] found that more locally concentrated supply chains and customer bases, plus local employment, all contribute to higher proportions of consumer expenditure being retained locally when ‘buying local’.

52 The Covid pandemic brought the vulnerabilities of our food systems (including ‘local’) into sharp focus, particularly where there is heavy reliance on foreign labour for fruit and vegetable harvesting, and meat and seafood processing (Guilbert et al., 2022[63]). Further vulnerabilities in our food systems have been exposed by the geopolitical turmoil caused by the war in Ukraine and resulting energy and agricultural input cost inflation – so called ‘agflation’ (Andersons, 2022[64]). Whilst ‘local food actors’ responded to the Covid food crisis by ‘plugging the gaps’ in mainstream food supply (Krzywoszynska, et al., 2021[65]), demonstrating resilience through persistence, adaptability and social capital – some local food actors were more vulnerable due to lack of diversity and capacity – and lack of political capital (Jones et al 2022[66]).

53 In a recent UK Government consultation (Defra, 2022[67]), it was proposed that local food and food produced to higher environmental production standards should be prioritised in public sector procurement. They propose that buying authorities should aim for half of their food spend to be on local food or food certified to higher environmental standard (Linking Farming and Environment (LEAF) standard or equivalent). Further proposals for a minimum of 20% spend on food with the higher environmental standards, with further emphasis on healthy foods and on seasonal UK food, particularly local ‘traditional’ dishes were also mooted. It is noteworthy that Defra highlighted expected higher costs associated with local food procurement:

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62 Visa (2020) Where You Shop Matters - Why shopping locally means more than shopping visa-wysm-report-2020-031220.pdf

63 Guilbert, S., Winter,M., Lobley, M. & Wilkinson, T. (2022) Covid-19 and the UK Food System: Learning Lessons and Building Back Better. A Centre for Policy Research report for the Transforming UK Food Systems SPF Programme. Covid-19 and the UK Food System: Learning Lessons and Building Back Better - Transforming UK Food Systems (ukri.org)

64 Andersons Centre (2022) Cost of farming squeeze apparent. Cost of Farming Squeeze Apparent - The Andersons Centre

65 Krzywoszynska, A., Jones, S., Maye, D. (2022) Riding the waves. The long perspective on the COVID-19 pandemic from UK’s local food system actors in 2020-21.. DOI: 10.5281/zenodo.6380040

66 Jones, S., Krzywoszynska, A. and Maye, D. (2022) Resilience and transformation : lessons from the UK local food sector in the COVID-19 pandemic. The Geographical Journal, 188 (2). pp. 209-222. https://doi.org/10.1111/geoj.12428

67 Defra (2022) Public sector food and catering policy for England. The Government Buying Standards for Food and Catering Services (GBSF)

Costs of Local Food Procurement (Defra)

"*The policy [De Minimis Assessment](#) demonstrates that the proposed changes present minimal costs to businesses, as far as we are aware*."

"*We have also identified costs associated with procuring food locally or to a higher environmental standard, though we expect these costs to be passed onto the exchequer and/or consumers. This relates to higher price premium across the affected food types including: meat and meat products at 10%; fruits and vegetables at 20%; eggs produced in a barn system at 7% and free-range at 14%; and fair-trade cocoa, banana, tea and coffee at 15%.*"

Defra (2022) De Minimus Policy Assessment for Food Procurement Consultation

54 In Scotland, there have been interesting developments relating to school meals with the Scottish Government and local authorities committed to *"providing the healthiest food to children and young people. This commitment is underpinned by a duty to provide school meals that meet strict nutritional requirements, including encouraging the use of fresh, local and sustainable produce."*[68]

5.3 Environmental Performance

55 Sustain (2021)[69] argue that "local food in itself is not by definition beneficial for people or nature, but there is both a strong correlation between the two" whilst the Good Food Movement[70] argue for the role of "local food producers, processors and retailers in supplying UK consumers in a socially and environmentally sustainable manner".

56 However, Stein and Santini's (2022)[71] review of literature on the performance of local food systems according to key sustainability criteria (GHG emissions, other environment, food security, other social, economy) "*confirmed that 'local food' cannot be equated with 'sustainable food*'" and that the sustainability of food systems was determined by a complex set of factors.

[68] https://www.gov.scot/news/making-school-food-healthier/
[69] Sustain (2021) The case for local food: building better local food systems to benefit society and nature
[70] Good Food Movement | Sustainable Food Places
[71] Stein, A.J., Santini, F. (2022) The sustainability of "local" food: a review for policy-makers. Rev Agric Food Environ Stud 103, 77–89. https://doi.org/10.1007/s41130-021-00148-w

Food Miles v Carbon Footprint

There is a frequent perception that low food miles are correlated to lower greenhouse gas emissions. However, the evidence does not fully support that conclusion:

The "*notion that "food miles" could be used as an indicator for a product's carbon footprint has been widely rejected in the literature; a food product's carbon footprint depends much more on land use, production efficiencies, economies of scale in transport, or whether it is plant-based, than on the distance it travelled*."

Stein and Santini's (2022)

5.4 Consumer perceptions of 'local'

57 CPRE (2012) research asked 1,500 shoppers (across 12 main locations) to select their three most important reasons for buying local food if they bought it (88% reported buying local food). Their results (Figure 10) demonstrate a wide variety of ethical, socials and personal reasons for buying local, with the top three responses being supporting local producers (56%), quality (54%) and support of the local economy (51%). CPRE asked why people did not buy more local food, and the main reasons (see Figure 11) related to cost (58%), availability and choice (51%) and convenience / time (25%).

Figure 10 Reasons for buying local food in 12 main English locations (CPRE)

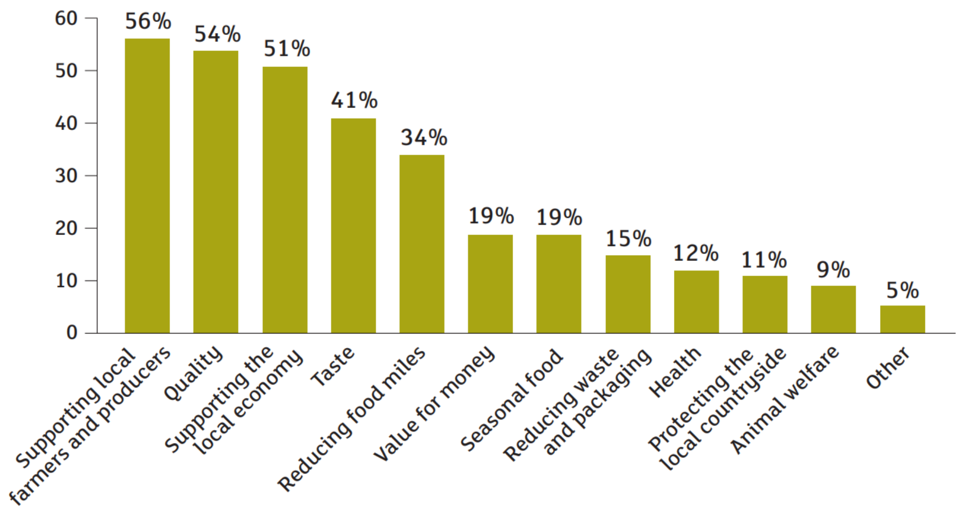
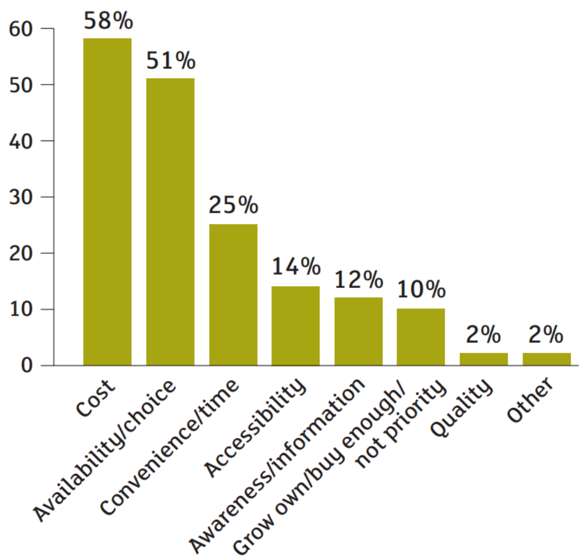


Figure 11 Reasons for not buying more local food in 12 main English locations (CPRE)



5.5 Summary of advantages and disadvantages associated with local food

58 There are many advantages discussed in the literature that relates to 'local' food and these are summarised in Table 7 below.

Table 7. Summary of advantages and disadvantages of 'local' food

Advantages	Disadvantages
Direct selling and smaller supply chains mean more of the market value goes to the producer. So, producers can receive a fair price and can do the 'value adding' themselves.	Small supply chains can be inefficient and can use more energy to transport as supermarkets are moving large volumes of food at a time and ships, trains and larger lorries use less fuel per unit of food compared to smaller vehicles transporting smaller amounts of food.
Local food chains are about building relationships with consumers which create value and meaning around the product and the origin. Local food can re-link urban and rural areas.	Local branding doesn't always translate when exporting. Seasonal food is also more expensive and has a shorter lifespan.
Seasonal food is promoted, which is often associated with traditional varieties and growing methods.	Local food can be expensive therefore it is not available nor affordable to everyone.
Local food is more traceable due to direct selling and short supply chains. Local food (Scottish food) has higher levels of regulation than food produced in some other countries including, food safety, higher levels of animal welfare and environmental protection.	Focusing on local markets can mean other markets are not entered, such as the export market.
Lower food miles reduce the need for transport and refrigeration minimising greenhouse gas emissions.	Evidence suggests that lower 'food miles' do not necessarily equate to low carbon footprints for a complex set of reasons.

Advantages	Disadvantages
Local food can contribute to the local economy by keeping money and jobs within the local communities, including through recycling of expenditure.	Overreliance on local food can have negative impacts on food security particularly when there are shocks – crop failure, and extreme weather.
Place-based value can be monetised using Geographical branding e.g. PGI.	Public procurement is not always set up well for smaller producers.
Food waste can be reduced with shorter supply chains and more products being sellable e.g. vegetables that are not uniform in shape, which would be rejected by the supermarkets.	Not all 'local' food is produced sustainably or fairly.
Local food can improve food availability and food and food security.	Local food taken too far could result in less food being produced e.g. hyper-local where crops are grown in urban areas usually indoors.
Local food can retain traditional skills in farming and food production. Therefore, preserving cultural heritage: "*without farming we couldn't diversify, without diversifying we couldn't farm*" (anon).	Local food production that extends to indoor industrial farming is energy intensive and costly to set up and operate.
Local food can reduce unnecessary packaging.	Shopping for/procuring local food can be time-consuming, particularly when buying directly from producers.
Local food systems can be flexible and can adapt quickly in crisis. Local food systems can encourage a diversity of scales of food producers, manufacturers and retailers.	Can be hard to access these markets especially in rural areas.
Local food forms the backbone of food tourism, which creates employment often in rural areas. Quality characteristics of local food can be prioritized.	Distribution (especially from rural areas) and general access to markets (even local markets) can be challenging and costly. For islands risks and costs associated with ferry cancellations can be significant.
Shorter supply chains can encourage cooperation between businesses which builds trust between enterprises. Local food can be fresher as it can be sold straight from the producer.	Risk management is a challenge for many local food suppliers, particularly to market demand changes that may be affected by national and social media news / influences. Whilst it is important to have a range of market outlets (direct local and online) to minimise risks that comes with cost and capacity issues.

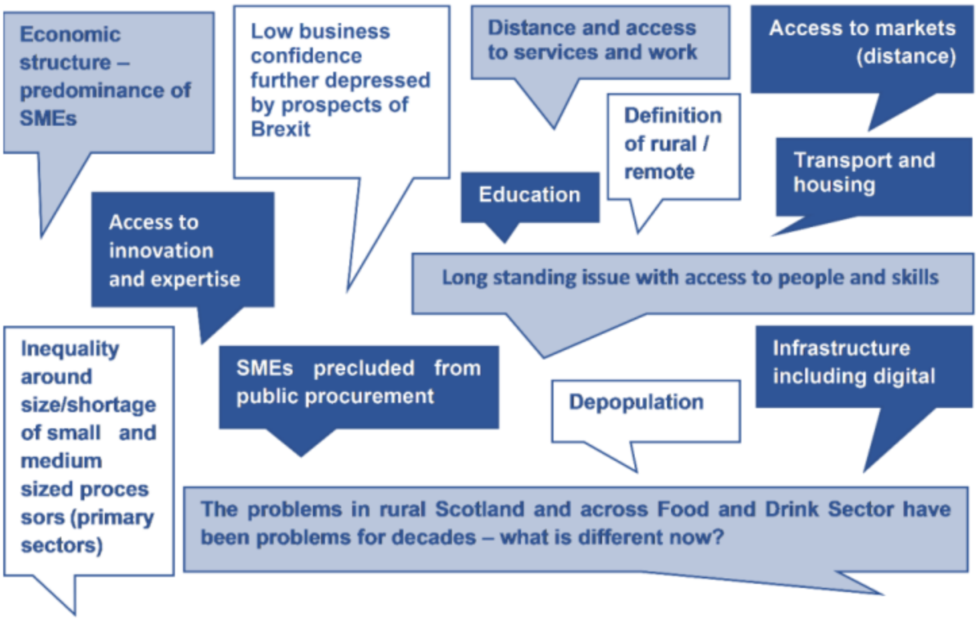
6 Barriers to 'local' food production

59 Jones et al (2022)[72] reported a number of challenges (identified by a Specialist Advisory Group) that Scotland's food and drink sector faced pre-Covid (see Figure

[72] Jones, S., Williams, A., Kelloe, A., Burton, I., Jaimieson, E., Bestwick, C., and Duckett, D., Roberts, D. (2022) COVID-19 Food and Drink Sector Specialist Advisory Group for Scotland's Rural Economy & Expert Advisors. SEFARI Report. Available at: https://sefari.scot/document/covid-19-food-and-drink-sector-specialist-advisory-group-for-scotlands-rural-economy-expert-advisor

12). These, often persistent, challenges included: demographic change; peripherality from markets and services; public procurement exclusion; dominance of micro and small enterprises; economic infrastructure (including transport, housing and digital); labour force; business confidence, etc. They highlight that whilst technological solutions can perhaps overcome some labour challenges in the sector, the majority of businesses are not of a sufficient scale to be able to afford the required capital to embed automation technologies in their processes.

Figure 12 Challenges influencing the food & drink sector in rural Scotland pre-COVID



Jones et al (2022)

60 In the wider academic and industry literature there have been many reported barriers to 'local' food production identified. These can be divided into three main categories that will be expanded on below:

- Desire and capacity to sell 'local food'
- Skills required to sell 'local' food
- Infrastructure issues

6.1 The desire and capacity to sell 'local food'

61 Selling 'local' food requires a change in mindset for many producers (especially farmers) who may be used to selling through integrated supply chains to larger processors and retailers. Selling to larger organisations can be efficient as they buy large quantities, often of the raw product close to when it is ready. Direct selling requires farmers (and collaborators) to not only grow food but to store it, package it, process it, market it, and sell it - or find someone that will do this for them. These tasks might not be desirable to some farmers who simply want to grow food or don't have capacity (financial or infrastructural) to support these processes. Changes in

farm management may also be required to grow products that are more suitable for the 'local' market.

62 Further, farmers may need to consider seasonality of produce and assess how they can ensure year-round supply of product. Many opportunities to sell 'local' food require cooperation, and not all farmers want to do this. Some farmers are not able to sell their produce directly due to their contractual arrangement with buyers and supermarkets. This is an area that is currently being explored by the Food Ethics Council[73]. The regulatory burden[74] of selling directly and processing food and drinks can often discourage farmers from wanting to be involved in selling their products locally.

6.2 Skills required to sell 'local' food

63 Selling food 'locally' can require additional skills particularly if the product is going to be sold directly to the consumer. Understanding how to store, process, package and market food are all skills that producers will require to make a success of local selling. Acquiring these skills can be a barrier to businesses breaking into and growing within the local market. Skills development is costly both in terms of training costs and time, and some farmers can find it difficult to get someone to work on the farm when they are away for training. Intermediaries and experts can help new-starts or micro businesses with marketing and logistics.

6.3 Infrastructure issues

64 It can be difficult for farmers who are in remote or peripheral areas to sell their food locally, it is much easier for farmers who are located near urban centres to market their food locally as they are closer to the demand. Coe et al. (2022)[75] refer to the problem that consolidation in the geographical spread of abattoirs has led to higher processing costs for farmers – something highlighted by speakers and attendees at the Scottish Parliament's Cross Party Group on Rural Policy on 'Keeping Food Local'. Local Food Hubs are being offered as a benefit to local producers[76] (including for farmers[77] by the Food Research Collaboration[78]) providing "*a 'missing link' in food and farming systems*".[79]

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[73] Food Ethics Council – Fair and resilient food systems
[74] For example: Food safety regulations & legislation | Food Standards Scotland | Food Standards Scotland
[75] Coe, S., Malik, X., Francis-Devine, B., Ward, M., and Nikki Sutherland (2022) Debate on supporting local food infrastructure - Debate Pack, 5 September 2022, Number CDP 2022/0155 CDP-2022-0155.pdf (parliament.uk)
[76] See https://www.sruc.ac.uk/all-news/rethinking-food-strategies-and-the-implications-for-food-hubs/
[77] See The Value of Food Hubs: Farmers' Perspectives - Food Research Collaboration
[78] About Us - Food Research Collaboration
[79] Guzman, P . and Reynold, C. (2019) Food Hubs in the UK: Where are we and what next? Food Hubs in the UK: Where are we and what next? - Food Research Collaboration

65 Moreover, transporting local food to consumers, or along the value chain can be costly (Jones *et al.,* 2022[80]) – particularly in recent times when fuel prices have been inflated, and can be unreliable (e.g. ferry cancelations, road closures due to weather). Many remote and island areas remain further disadvantaged by poor digital connectivity that can hamper opportunities (Jones et al., 2022). In many areas, there is a shortage of facilities to help new start-ups to store, process and package local products. More strategic food incubators[81] and food production / storage facilities could help overcome some of these problems, as can greater collaboration and strategic alliances with local outlets (hotels, restaurants, institutions, cafes and shops) that are interested in local food.

6.4 Cooperation and Support

66 Several examples of cooperation and support structures to help 'local' producers and groups in Scotland to develop strength, resilience and reputation of the food and drink sector exist. These are largely delivered in partnership between the Scottish Government and sectoral organisations (summarised in Annex 3) including the Scotland Food and Drink Partnership (and its Knowledge Bank); Regional Food Groups; Regional Food Tourism Ambassadors; Farmers' Markets and food festivals; the regional food fund; and community partnerships/hubs.

7 Discussion points

67 Building on the evidence presented here, the final section of this report discusses a set of issues that are critical to future work in this project.

7.1 Does it matter that 'local food' is different to different people?

68 It may be argued that a precise definition is not required**,** taking the Scottish Government's local food consultation position that *"there is a need for flexibility within this definition as different people will define 'local food' in different ways."* There appears to be widespread acceptance that local food means different things to different people not only within Scotland (80% of consultation respondents) but also in other countries (e.g. Martinez, 2010 focusing on the United States)[82]. There were some suggestions within the responses to consultation that a *"more specific geographic delineation of local food"* was needed. There were some calls to include metrics such as drive times or mileage within any local food definition – including within the context of 20-minute neighbourhoods.

[80] Jones, S., Williams, A., Kelloe, A., Burton, I., Jaimieson, E., Bestwick, C., and Duckett, D., Roberts, D. (2022) COVID-19 Food and Drink Sector Specialist Advisory Group for Scotland's Rural Economy & Expert Advisors. SEFARI Report. Available at: https://sefari.scot/document/covid-19-food-and-drink-sector-specialist-advisory-group-for-scotlands-rural-economy-expert-advisor
[81] See for example: Food and drink hub to be built in Scotland (foodmanufacture.co.uk) and HIE Food and Drink TechHub https://www.hie.co.uk/latest-news/2022/july/05/32m-for-food-and-drink-tech-hub/
[82] Martinez, S. W., Hand, M. S., Da Pra, m., Pollack, S. L., Ralston, K. L., Smith, T. A., Vogel, S. J., Clark, S., Lohr, L., Low, S. A., Newman, C. (2010). Local Food Systems: Concepts, Impacts, and Issues. Economic Research Report 96635, United States Department of Agriculture, Economic Research Service. http://dx.doi.org/10.22004/ag.econ.96635

69 However, in some contexts a more precise definition of local food may matter – particularly if for example, new rules are established around proportions of public procurement food budgets to be spent on local food and food of high production standards (see Defra, 2022[83]). With an ambiguous definition it is impossible to categorize food (and drink) in to 'local' and 'not-local', particularly if local becomes synonymous with short supply chains (noting that consumers can buy products via long supply chains that are considered local, or products from afar via short supply chains – Stein and Santini, 2022[84]).

7.2 What are the data challenges

70 Jones et al (2022) concluded that "*place based identity could be promoted more to add provenance, authenticity value and attract investment. Understanding the value of placed regional characteristics is critical to informing a unique narrative that could develop a longstanding relationship with customers and consumers*."

71 The Scottish Government definition acknowledges that local food must have some element of: (i) locality; (ii) have short supply chains; (iii) be sustainably produced, and; (iv) form trust, information, fairness and support buyers and sellers of food. However, without a stricter definition the socio-economic impacts of 'local' and 'regional' food in Scotland will remain elusive. Without being able to assign enterprises (or proportions therein) as being local (or otherwise) means that quantification of local food impacts on regional economies, such as value creation, employment and social cohesion therefore will remain focused on national and regional Standard Industrial Code datasets, consumer purchase data, or case studies. Indeed, a rich source of data on 'local' food is held by regional food groups (some have been operating for many years) and reports relating to these groups.

72 Whilst there are many data sources that contain information about the food produced, retailed and purchased in Scotland, there is currently no definitive dataset for 'local' food – although the 'Support Local' national supplier directory[85] is a good starting place. If such databases include Standard Industrial Classification of Economic Activities (SIC) it would permit the data to be interrogated according to business activities and the products that they produce – thereby providing novel insights into Scotland's rural and island regional food economies. The difficult issue of quantifying the proportion of 'local' food versus food destined for other markets remains a data challenge.

73 It is hoped that going forward within this project that data from various sources can be used to create a larger dataset to help understand this important food sector.

ENDS

[83] Defra (2022) Public sector food and catering policy for England. The Government Buying Standards for Food and Catering Services (GBSF) https://consult.defra.gov.uk/public-sector-food-procurement/food-and-catering-consultation/

[84] Stein, A.J., Santini, F. The sustainability of "local" food: a review for policy-makers. Rev Agric Food Environ Stud 103, 77–89 (2022). https://doi.org/10.1007/s41130-021-00148-w

[85] https://foodanddrink.scot/support-local/

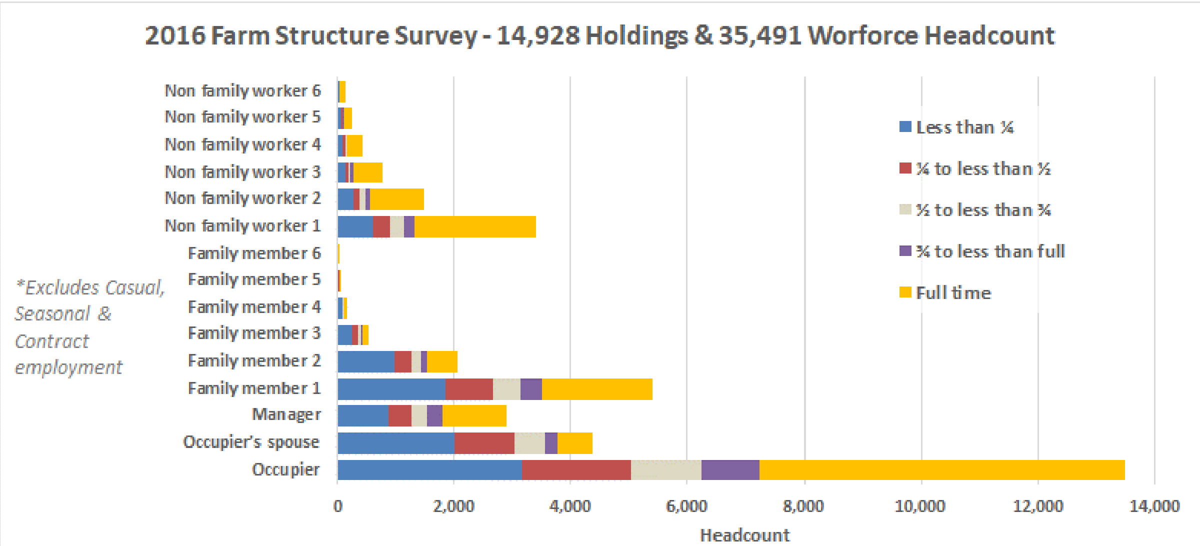
Annex 1: Estimates of regular agricultural workforce FTEs

Table 8 and Figure 13 show the headcount of the regular agricultural workforce by the amount of time engaged in agricultural work on 14,928 respondent's agricultural holdings that returned the 2016 EU Farm Structure Survey to the Scottish Government.

Table 8 EU Farm Structure Survey (2016) regular workforce headcount by amount of time working in agriculture (14,928 holdings)

Workforce Role	Less than ¼	¼ to less than ½	½ to less than ¾	¾ to less than full	Full time	Total
Occupier	3,165	1,867	1,205	1,011	6,234	13482
Occupier's spouse	2,002	1,035	521	211	616	4385
Manager	889	384	274	261	1,104	2912
Family member 1	1,856	812	481	359	1,894	5402
Family member 2	970	309	161	83	540	2063
Family member 3	257	105	45	12	112	531
Family member 4	81	20	12	13	39	165
Family member 5	20	8		6	11	45
Family member 6	12	1	1	2	7	23
Non family worker 1	606	298	238	182	2,079	3403
Non family worker 2	274	96	105	86	920	1481
Non family worker 3	133	51	46	37	493	760
Non family worker 4	90	42	25	22	253	432
Non family worker 5	57	27	7	16	149	256
Non family worker 6	29	5	9	6	102	151
Total Workforce	**10,441**	**5,060**	**3,130**	**2,307**	**14,553**	**35,491**

Figure 13 EU Farm Structure Survey (2016) regular workforce headcount by amount of time working in agriculture

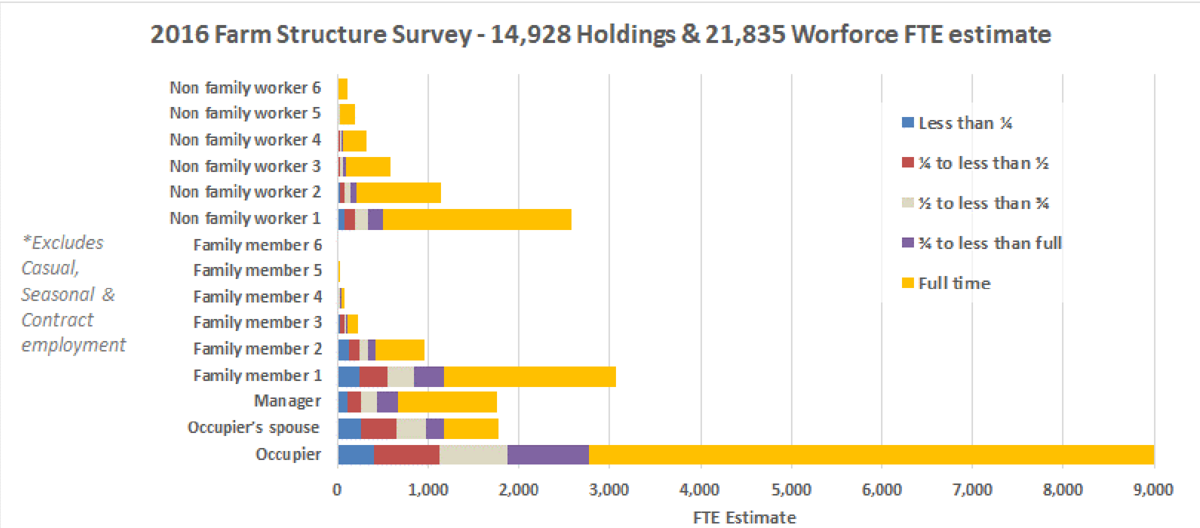


To provide estimates of FTEs in the sample the headcount in each 'effort' category was adjusted using the mid-point of the range (i.e. 13% for 'Less than ¼'; 38% for '¼ to less than ½'; 63% for '½ to less than ¾'; and 88% for '¾ to less than full'). It is worth noting that no adjustments are made for overtime and extended working hours that are normal amongst the agricultural workforce.

Table 9 Estimated FTEs engaged in agriculture from EU Farm Structure Survey (2016) (14,928 holdings)

Workforce Role	Less than ¼	¼ to less than ½	½ to less than ¾	¾ to less than full	Full time	Total
Occupier	411	709	759	890	6,234	9,004
Occupier's spouse	260	393	328	186	616	1,783
Manager	116	146	173	230	1,104	1,768
Family member 1	241	309	303	316	1,894	3,063
Family member 2	126	117	101	73	540	958
Family member 3	33	40	28	11	112	224
Family member 4	11	8	8	11	39	76
Family member 5	3	3	0	5	11	22
Family member 6	2	0	1	2	7	11
Non family worker 1	79	113	150	160	2,079	2,581
Non family worker 2	36	36	66	76	920	1,134
Non family worker 3	17	19	29	33	493	591
Non family worker 4	12	16	16	19	253	316
Non family worker 5	57	27	7	16	149	256
Non family worker 6	29	5	9	6	102	151
Total Workforce	**10,441**	**5,060**	**3,130**	**2,307**	**14,553**	**35,491**

Figure 14 Estimated FTEs engaged in agriculture from EU Farm Structure Survey (2016) (14,928 holdings)



Annex 2 List of 'Scottish' entries from eAmbrosia

Table 10 List of Scottish entries on eAmbrosia: the legal register for names of agricultural products and foodstuffs, wine and spirit drinks.

Name	File number	Product category	Date
Ayrshire New Potatoes / Ayrshire Earlies	PGI-GB-02286	Class 1.6. Fruit, vegetables and cereals fresh or processed	10/07/2019
Traditional Ayrshire Dunlop	PGI-GB-0889	Class 1.3. Cheeses	14/04/2015
Orkney Scottish Island Cheddar	PGI-GB-0908	Class 1.3. Cheeses	22/11/2013
Stornoway Black Pudding	PGI-GB-0876	Class 1.2. Meat products (cooked, salted, smoked, etc.)	09/05/2013
Scottish Wild Salmon	PGI-GB-0863	Class 1.7. Fresh fish, molluscs, and crustaceans and products derived therefrom	11/12/2012
Native Shetland Wool	PDO-GB-0737	Class 2.15. Wool	08/11/2011
Scottish Farmed Salmon	PGI-GB-0141	Class 1.7. Fresh fish, molluscs, and crustaceans and products derived therefrom	12/08/2004
Arbroath Smokies	PGI-GB-0227	Class 1.7. Fresh fish, molluscs, and crustaceans and products derived therefrom	02/03/2004
Teviotdale Cheese	PGI-GB-0285	Class 1.3. Cheeses	21/01/1998
Bonchester cheese	PDO-GB-0284	Class 1.3. Cheeses	21/06/1996
Shetland Lamb	PDO-GB-0276	Class 1.1 Fresh meat (and offal)	21/06/1996
Scotch Lamb	PGI-GB-0275	Class 1.1 Fresh meat (and offal)	21/06/1996
Scotch Beef	PGI-GB-0274	Class 1.1 Fresh meat (and offal)	21/06/1996
Orkney lamb	PDO-GB-0273	Class 1.1 Fresh meat (and offal)	21/06/1996
Orkney beef	PDO-GB-0272	Class 1.1 Fresh meat (and offal)	21/06/1996
Scotch Whisky	PGI-GB-01854	2. Whisky or whiskey	12/06/1989

Annex 3. Examples of cooperation and support structures

There are a variety of support structures in place to help 'local' producers and groups in Scotland to improve their businesses. Some of the following groups are formal in nature however some informal networks have also been included.

The Scotland Food and Drink Partnership

The Scotland Food and Drink Partnership is a unique collaboration which does not exist in any other country where it is a collaboration between trade bodies, Scottish Government and its agencies. Partner organisations within this group each bring skills and expertise to support the industry and help it to grow. Partners are committed to working together with the shared ambition to grow the reputation and value of the industry.

Regional Food Groups

There are 19 regional food groups operating throughout Scotland and they bring together a wide variety of stakeholders interested in the local food and drink sector. They include producers, hospitality and tourism businesses, independent retailers and markets. Each group works "in its own way but they are all looking to put local food, drink and businesses on the map drive growth" through a range of activities. These groups have been coordinated by Scotland Food and Drink experts (since 2020) and receive Scottish Government support – although many of the groups have been operational for many years.

Regional Food Tourism Ambassadors

A network of 23 regional food tourism ambassadors has been established in line with the Food Tourism Scotland Strategy. These ambassadors are to raise the profile of Scotland as a food tourism destination, and will support the food, hospitality and tourism sectors recover post-Covid pandemic, help shape regional food experiences and be the face of the campaigns and support businesses.

Farmers' Markets and food festivals

Farmers' markets and food festivals not only allow a meeting place for 'local' producers to sell their products they provide an opportunity for producers to network, collectively market their products and learn from each other. Some of the farmers' markets are run by the regional food groups or they are heavily involved which encourages further community development, as well as the knowledge and skills exchange.

Community Food Partnerships/hubs

Community food initiatives are collaborating to create networks where they can share information, provide support and link with funders and decision-makers. These local networks are located throughout Scotland and many of these areas have established Sustainable Food Places, these are networks that take action across food systems. Many of these provide support for people to grow their own food or provide community allotments where food can be grown by the community for the community. A list of community food networks can be found on the community food and health (Scotland) website.

Regional Food Fund

A fund established aby the Scottish Government and delivered by Scotland Food and Drink. The fund provided grants of up to £5,000 for projects that promoted food and drink development aligned to the Food Tourism Scotland Action Plan and Scotland Food & Drink Partnership's Recovery Plan. A large number of innovative projects were supported from 2018-2022.

Funding Sources specifically aimed at 'local' food

A list of the current funding sources specifically aimed at 'local' food is listed in Table 11 below.

Table 11. List of 'local' food funds

Name	Information	Source	Link
Small Producers Pilot Scheme	Announced March 2023 therefore full details not available	Scottish Government	https://www.gov.scot/news/supporting-scotlands-small-producers/
Regional food Fund	Grants of up to £5,000 to support projects and incentives that promote the development of food and drink across Scotland	Scottish Government	https://foodanddrink.scot/regional-food-growth/regional-food-fund
Farm advisory service	Funding available for producers of food to upskill	Scottish Government	https://www.fas.scot/
Innovation Vouchers	Encourage partnership with SMEs and University or Further Education colleges to support innovation.	Scottish Funding Council	https://interface-online.org.uk/
Small Producers Pilot Fund	Improve access to training, skills, further processing, and food supply chains for small farms and small holders	Scottish Government	https://www.gov.scot/news/supporting-scotlands-small-producers/

Other funding sources that could be accessed to support 'local' food production and distribution are detailed on the Nourish Scotland website and community food and health website, these include regional enterprise groups, community councils, third sector interfaces, development trusts and sector-specific bodies.

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Novel Insights into Scotland's Rural and Island Economies
https://www.nisrie.scot/

Data, charts, maps (including interactive maps) and reports are available through our Rural Exchange website:
https://www.ruralexchange.scot/

The 5-year NISRIE project is funded through the Rural Economy topic, within the Rural Futures Theme of the **Scottish Government's 2022-2027 Strategic Research Programme** on environment, natural resources and agriculture that is managed by the **Rural and Environment Science and Analytical Services Division.**

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