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Citation for published version:

Bruce, A, Bruce, DM, Fletcher, I & Lamprinopoulou, C 2021, Producing food in a fragile food system – a case study on Isle of Skye, Scotland. in H Schübel & I Wallimann-Helmer (eds), *Justice and food security in a changing climate*. Wageningen Academic Publishers, pp. 140-145, EurSafe 2021, Fribourg, Switzerland, 24/06/21. https://doi.org/10.3920/978-90-8686-915-2_19

Digital Object Identifier (DOI):

[10.3920/978-90-8686-915-2_19](https://doi.org/10.3920/978-90-8686-915-2_19)

Link:

[Link to publication record in Edinburgh Research Explorer](#)

Document Version:

Publisher's PDF, also known as Version of record

Published In:

Justice and food security in a changing climate

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19. Producing food in a fragile food system – a case study on Isle of Skye, Scotland

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Abstract

The current food system, emphasising efficient food supplies to urban centres, works at the expense of providing food security to remote rural communities. We draw on a case study of a remote, rural location in Scotland (the Isle of Skye) to demonstrate that systemic factors in the food system disadvantage both the provision of food locally, and the contribution that agricultural activity in the rural area can make to wider markets. Skye's agriculture consists mostly of sheep and beef cattle production, the soil and climate being poorly suited to other types of activities. The production systems in turn contribute to maintaining landscapes and high nature value biodiversity. However, pathways to consumers, which require continual supplies of consistent product, fail to reward these producers. On the other hand, citizens in these remote, rural areas, mainly purchase food from supermarket chains, allied to global supply chains. Because they are at the extreme end of supply chains, they are vulnerable to perturbations in the system. Where local food is available, it tends to be an expensive, premium product, often aimed at tourists. Producing food in a fragile food system does not easily secure food security for locals in food production areas.

Keywords: food security, beef, lamb, retailers, butchers, shopping

Introduction

The security and resilience of our food systems to external events has been an issue for some time, put into even stronger focus by the Covid-19 pandemic. Considerable attention has been paid to urban food security (e.g. Milan Urban Food Policy Pact), but the impact that current food production systems have on food resilience in remote, rural areas has been less studied. Securing adequate nutrition (food security) and food production that gives priority to local consumption (food sovereignty) are concepts that have been widely debated (Murdock and Noll, 2015). This paper argues that the current food system, emphasising efficient food supplies to urban centres (satisfying food security), works at the expense of providing food for local consumption (food sovereignty) to remote rural communities. We take the example of the Isle of Skye, in the Scottish Highlands, as a case study.

Paradoxically, while beef and lamb is produced on the island, residents rely heavily on supermarket-based supply chains to buy their food. Such remote locations are at the extremities of supply chains, which are prone to failure, for example in shortages of milk and vegetables experienced even before Covid 19. Whereas one might expect that a rural area would be food secure by definition, the evidence suggests that the current organisation of food production and supply can leave such areas as being to some degree food insecure.

After describing the context and the research method, this paper examines two aspects; the production of food in the area, and the provision of food in the area, highlighting a mis-match between the two.

Context

The Isle of Skye is located off the North West coast of mainland Scotland with a population of only 12,000 but with a very large influx of tourists. For example in 2019 the island hosted an additional 650,000 visitors (Moffat Report, 2020). Figure 1 provides a map of the island in its UK context. Although linked to the mainland by a bridge, it is geographically remote, with a three hour drive to the nearest large town. However, it is well served by public transport and road infrastructure. It also forms the primary supply route serving the Outer Hebrides.

Most farming in Skye is done as crofting. Crofting is a scheme originally introduced into the northwest Highlands of Scotland in the late 19th century, to protect the rights of tenant subsistence farmers from the then frequent abuses and evictions by land-owners. Crofters are tenants (in some cases now owners) of small farms (typically around 5 ha¹) with the right to pass on the croft in perpetuity to their family or a person of their choice. Originally intended for the subsistence for their own families, most crofters farm part-time and gain other income by a wide range of additional employment. Many croft as a way of life, rather than for economic reasons; but for some it is their main economic enterprise, often made possible by joining several crofts together. The crofters maintain land areas which are both of very high nature value and are also integral to the landscape and culture of Skye which attracts and pleases so many visitors.

The area has traditionally kept beef cattle and sheep, which are best suited to Skye's maritime climate and environment, often on poor soils and in challenging topography. Traditionally a few cereal crops and potatoes were grown, mostly for own consumption, but little is grown today. More recently, sheep have become more prominent, although their number has also declined over recent years. Few crofts are

¹ <https://www.crofting.scotland.gov.uk/crofting>.

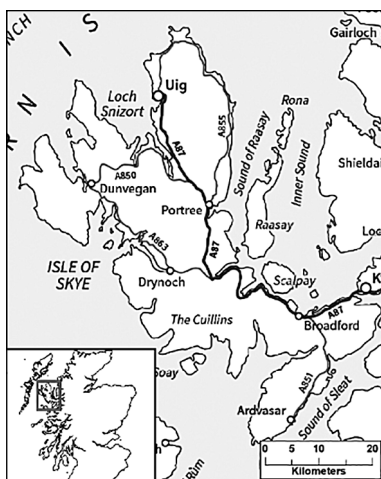


Figure 1. Isle of Skye.

MiniScale® [TIFF geospatial data], Scale 1:1,000,000, Tiles: GB, Updated: 18 November 2019, Ordnance Survey (GB), Using: EDINA Digimap Ordnance Survey Service, <https://digimap.edina.ac.uk>, Downloaded: 2021-02-16 14:48:45.741. GB Overview [TIFF geospatial data], Scale 1:5,000,000, Tiles: GB, Updated: 19 August 2013, Ordnance Survey (GB), Using: EDINA Digimap Ordnance Survey Service, <https://digimap.edina.ac.uk>. © Crown Copyright and Database Right, OS Licence number 100025252, 2021. Ordnance Survey (Digimap Licence) © SRUC 2021

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able to rear many animals to slaughter weight, and so the animals are sold in the autumn as 'stores' for continued rearing in more favourable, lowland conditions. With the lack of an abattoir on the island, even lamb and beef originally reared on Skye will have come from a mainland abattoir three hours drive away. Despite having cattle, there is no dairy on the island, so all milk has to be imported. The production of vegetables and fruit on Skye is challenging due to the poor soils, and wet, salty climate due to prevailing strong winds off the sea. Production is mostly only practical if protected by expensive plastic tunnels.

Method

As part of wider concerns about the resilience of food systems, the challenges to farming practices based largely in upland livestock production are being researched. In a project examining resilience in upland and island beef and sheep production in Scotland and Northern England, we undertook individual face-to-face interviews with 16 people in the Isle of Skye, consisting of 8 crofters, and 8 associated with agriculture more broadly, several of whom were also part-time crofters. The interviews explored issues around the resilience of the crofting activities. We also undertook 12 face-to-face or telephone interviews with people involved in the wider meat chain in the UK, outside Skye. These included representatives of 4 supermarkets, 2 butchers, 1 intermediate processor and 5 people in associated roles.

To inform our understanding of food provisioning in Skye, we conducted an additional 18 interviews amongst food shoppers on the island, posing questions on four key topics: where interviewees got their food from; their purchase of locally produced foods; whether they experienced problems in shopping for food; and their opinions on how food shopping had changed in the area or might change in the future. The most successful method of recruitment for shoppers was standing outside the shop (with the permission of the manager/proprietor) and approaching customers to ask if they would be willing to be interviewed by phone at a convenient time for them in the next few days. We also undertook a shopping basket exercise, examining prices for a limited number of basic products, such as eggs and potatoes, from a range of outlets. All interviews were conducted during 2019, before the Covid-19 outbreak and at a time when Brexit negotiations were ongoing.

Food production in the Isle of Skye

As noted earlier, the primary food produced from Skye is beef and lamb meat. The current UK meat chain is very complex, and has a number of different routes to the consumer. Most pertinent for this research is the supply of meat through supermarkets and butchers.

Our meat chain interviewees (including both supermarkets and butchers) strongly emphasised the need for consistency in supply: in volume, size, shape, fatness and eating quality. According to them, their customers demand a good quality eating experience and expect to be able to get a broadly similar product whenever they want it, as indicated by the quote:

I want consistency, and I get that consistency when it's being picked out of 100 cattle, I can't get that consistency out of fifteen. (interview with butcher)

Supermarket retailers similarly referred to the need for consistency. In the UK as a whole, only 50-55% of the carcasses are reported as falling within their desired specification. This is a challenge when the 'product' is biological, coming from different animals, dependent on weather and other unpredictable factors, and seasonal in its basis (e.g. sheep only lamb in the spring). Because farms in Skye are small and a range of different breeds and breed-crosses are kept, it is challenging for them to provide the volumes of meat of the consistency which retailers and butchers say that they require. Thus, the food supplied from the island is somewhat problematic even for local retailers.

In such a context, crofters seeking to sell store animals into mainstream markets find that prices for larger, meatier animals from continental breeds (such as Simmental, Limousin or Charolais) gain much better prices than smaller, slower growing native breeds, such as Highland and Aberdeen Angus. There is therefore an economic incentive to use continental breeds rather than native ones. Against this, the native breeds are generally found to be more suited to the local environments in an area such as the Isle of Skye, and to require less external inputs such as high protein or cereal feeds. There is thus a mismatch between the centralised demands of the retail markets, and the products that are best suited for Skye.

Yet the meat from the island has the characteristics that many modern consumers consider ethical, such as being produced under more natural conditions, pasture fed and free-range. However, the infrastructure for local sales is lacking. As observed, the absence of an abattoir on the island means that animals must be transported 100 miles for slaughter, and the meat returned the hundred miles back in order to be sold locally. The small volumes produced in Skye are also insufficient to attract special branding as 'Skye meat' unless a number of farmers can work together and commit to produce to a common production protocol. Additional challenges with branded meat include the need to be able to gain a sufficient income from all parts of the carcass, not just the high-value cuts. An alternative, which came to the fore during Covid-19 outbreak, is selling on-line, but the costs to the farmer of distributing their own meat in this way are very high. A small number of crofters are able to supply mainly high-end restaurants, but these outlets are inevitably limited. So although local, high quality meat is produced on Skye, the rest of the food chain is not set up to enable it to be provided where it is wanted.

Food provision in the Isle of Skye

Many farmers may consume their own meat, and there is considerable backyard egg production and some vegetable production mostly for personal use. Nonetheless, there was a very limited amount of local food available on Skye and much of that seems to be aimed at the sizeable tourist market. 'Locally' produced foods included chocolate and chutney made on the island, based around imported raw materials. Some venison from a local estate was available and lots of 'backyard' eggs but little in the way of beef and lamb, fruit and vegetables or even fish or the shellfish caught by local fishermen which are largely sold to foreign outlets. The Co-op supermarket in Portree, which might be expected to have the greatest demand from tourists, had prominent displays of smoked salmon and venison skirlie (an oatmeal based mixture) all produced in the Highlands, but not on Skye itself. Most food produced locally, such as fish and shellfish, appears to be luxury production for the hotel and catering trade. Everyday consumption is dominated by food brought onto the island. Interviewees acknowledged the importance of income generated by tourism but several expressed frustration at the strain increased numbers put on supply chains and the higher prices of goods and services targeted at tourists. Interviewees identified periods of milk shortages. Short-term disruptions to fruit and vegetable supplies were observed during the interview period, sometimes due to inclement weather preventing supermarket deliveries, but also other failures within the delivery process (e.g. failure of refrigeration during transport).

Supermarket chains dominate food retailing in the UK: Tesco, Sainsbury's, Asda and Morrison's account for 70% of all food purchases². This finding was echoed by our interviews in Skye, where the predominant source of food was either the one supermarket chain on the island (not one of the big four listed above), a limited number of local general stores, or from limited direct supermarket deliveries to the island. Despite the importance of smaller outlets, supermarkets form a key part of food provision in Skye. In common with the findings of Marshall *et al.* (2018), our consumers interviewees often had to travel long distances, both within the island to access the single supermarket, or to the mainland in order to

² <https://www.kantarworldpanel.com/en/grocery-market-share/great-britain>.

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shop for food in other supermarkets. This meant planning their trips carefully to fit in with their other commitments.

Our shopping basket exercise data has to be treated with caution as there is a great deal of variability in what is included in each product. However, this exercise was repeated in four case study areas (Skye, Orkney, Scottish Borders and Yorkshire Dales), and what was clear was that the highest prices were demanded for local products, for example beef mince cost between £5.78/kg and £10.99/kg, but a local product was priced at £11.23. Six eggs could be purchased for £0.90 to £1.65 but locally produced eggs could cost up to £2.50. Outside Skye, Cheddar cheese could be purchased for £8.54/kg to £9.20/kg but locally produced could be purchased for £12.50/kg, and even plant products, such as oats, became more expensive when produced locally, with standard prices ranging from £1.40/kg to £2.00/kg, and local oats coming in at £2.89/kg. These four diverse regions each had different local products which might have been expected to be cheapest, but turned out to come with a premium price compared with products brought in from outside. Thus, the purchase of locally produced food is somewhat problematic.

Discussion

Current ethical values in the livestock food system put stress on such qualities as local production, knowing the sources, a 'circular' economy, pasture-fed largely outdoor animals which have as natural a life as possible, breeds well adapted to the natural environment, high animal welfare standards, low environmental impacts and reduced net carbon emissions. The current food system has led to a paradoxical situation for the remote rural area of the Isle of Skye, that produces food which should score highly according to many of these criteria, nonetheless finds itself unable to market a range of affordable, locally-produced food products for its local community. Furthermore, the wider food system does not recognise and reward the products from Skye for their ethical value.

In the way the food supply system is currently set up, the produce from these areas can only be sold as premium as added-value and branded products, such as from a specific breed or 'primarily grass-fed' identity, which can only be gained by selling to high-end hotels or similar outlets. Offering these animals to the commodity market, as mainly happens now through sale of store animals, leaves them uncompetitive in comparison to production from more geographically and climatically favoured areas.

In the UK context, the main way a farmer can contribute to the global economy is if they can produce something that cannot be produced cheaper somewhere else. This tends to favour certain types of agriculture. Farms in areas of physical disadvantage (such as geology, weather, farm size or ownership, or lack of infrastructure) are at a disadvantage, and yet what they produce has value to ethical consumers. The product of the local producers is not given its true value in the current, mainstream food system. What the food system values, is not sufficiently weighted to the values embodied in a local product. However, this outcome is not a knowing, unethical act of particular actors so much as the unintended, unethical consequences of how the system has developed over multiple decisions and interactions. There can be individuals who make decisions in it; individuals, or corporate and policy decision-makers, that can be seen as contributing to the ethical problem, but none of them have sole responsibility for the system.

The food system of mainly centrally supplied supermarkets does provide consumers in remote areas access to a range of foods that would not be available locally. However, locations like Skye are at the end of a long supply chain and to that extent are vulnerable to unexpected perturbations in the chain. Local shops provide particular services to communities that extend beyond food supply, including provision of social services such as bank ATMs. During covid-19, the local village stores on Skye provided an

outstanding service in food provision to their localities communities and were able to be very flexible and innovative in sourcing food.

One of the question this food system raises is why consistency of product has apparently become so important? This perhaps reflects on an unintended consequence of a reliable supply of varied foodstuffs available on the shelf on any day, in that is that food becomes viewed as a commodity, like electricity or water, that is available on-tap immediately when required. Just as the centralised services for electricity have increasingly become questioned, and more distributed electricity supplies are being considered, so perhaps the need to have the same, consistent, year-round supplies of foods can be questioned.

One should be careful not extrapolating too far from a single case study. The specific case of Skye has a particular history and a specific modern context of extraordinary levels of tourism. The historical context is still influential to much of the local population. Yet the paradox and challenges identified in Skye in this study have proven to be reflected in the other three areas of the wider study, notwithstanding their different histories, geographies and contexts.

The current ethical emphasis of modern food production systems on the efficient and cheap delivery of food to cities, is thus at the expense of providing food security to remote rural communities, often where food is produced, leaving neither consumers nor producers in a satisfactory and secure food situation.

Conclusions

It would be easy to imagine that a rural area is in a position to eat the food it produces, but a more detailed examination of this case study demonstrates that this is not necessarily the case. Furthermore, the ethically, high quality meat produced in Skye does not fit the industrial paradigm that requires consistent, year round supplies of meat that is substantially the same all the time. It seems that food security for rural populations, via supermarket chains or even butchers, have systematic barriers to products from small farms in remote areas. Infrastructural barriers to local production, such as lack of abattoirs and dairies, further exacerbate this conundrum. Policy incentives to move from a centralised food system to a distributed system, by supporting provision of infrastructure, would not only provide a more resilient food system but also limit the systematic barriers to production in remote areas.

Acknowledgements

This work was funded by the Global Food Security's 'Resilience of the UK Food System Programme' with support from BBSRC, ESRC, NERC and Scottish Government: project BB/R005796/1.

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