

# The Spark

## SEFARI Gateway's Newsletter

Sept 2024



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Welcome to the September 2024 edition of The Spark, your monthly update from [SEFARI Gateway](#) (Centre of Expertise for Knowledge Exchange & Innovation) on the latest research developments from the [Scottish Government's Environment, Natural Resources and Agriculture \(ENRA\)](#) strategic research programme. The ENRA Research Portfolio provides evidence for policy and practice across environment, climate change, biodiversity, land use, agriculture, food, and rural community agendas.

Scotland is playing a central role in developing environmental solutions to the global climate and nature crises, and the Scottish Government response is based on the strongest possible scientific evidence. The Environment, Natural Resources and Agriculture research programme is key to achieving this.



We'd love to hear from you and receive your feedback on how we can improve our newsletter. Please contact us at [info@sefari.scot](mailto:info@sefari.scot) with your suggestions.

Land use, land reform and food security are high on the Scottish Government's agenda. In this September issue we look at two pieces of timely, ENRA-funded research by SEFARI scientists on these topics.

Discussions and policy on land use need to be informed by Scotland's nutrient density and a SEFARI Gateway fellowship delivered a detailed analysis to address this. Secondly, researchers are also delving into Scotland's food security by looking at our food balance sheet, which products we need to import, and which ones we are self-sufficient in.



### Land Use and reform needs to consider Scotland's Nutrient Density



Here, Ben McCormick of the Rowett Institute looks at [Scotland's nutrient density](#).

Increasing demands for land to meet Net Zero targets potentially could remove land from food production, with knock-on effects to the supply of nutrients for human consumption. Agricultural data on production of commodities to the farm gate were mapped to nutrient data to estimate the potential supply of nutrients from land currently used for agriculture. There is a mismatch between the theoretical contribution

of commodities to the supply of nutrients and how much commodities do contribute because of how much of each commodity is produced and how they are used (e.g. for human food, livestock feed and alcohol). For example, dairy and potatoes contribute most to the nutrient supply because lots are produced, whereas cereals contribute less than might be anticipated because little is used for human consumption despite considerable production.



## Scotland's Food Balance Sheet; self-sufficiency and food security



Following recent threats to Scotland's food supply, particularly the war in Ukraine, food security is increasingly prominent on the policy agenda. ENRA funded [research](#) led by Shashika Rathnayaka (pictured below) and Baukje de Roos from the Rowett Institute, along with Cesar Revoredo Giha from SRUC, estimated the food balance sheets of Scotland, and assessed the self-sufficiency of major food commodities for the first time as part of the Strategic Research Programme. This provides

critical insights into Scotland's diverse and adaptable food system, revealing varying levels of self-sufficiency across key commodities. While Scotland is largely self-sufficient in cereals, potatoes, lamb, beef, dairy, and eggs—indicating a strong capacity to meet domestic demand—there are vulnerabilities in the supply of poultry and pork, where self-sufficiency is lower.

Shashika said: "By analyzing production, consumption, trade, and self-sufficiency, we have gained a comprehensive understanding of how these elements interconnect within Scotland's food system. This knowledge is essential for informed dietary planning, developing food security strategies, and targeting support for local agriculture. The food balance sheets we have developed will help in forecasting future food production and consumption scenarios, optimizing nutritional outcomes, and minimizing environmental impacts. This also enhances our ability to assess the extent of food localisation in Scotland."

## Sustaining rural communities; successful interventions report



SRUC researcher Dr Jane Atterton has reviewed evidence on the success factors and impacts of past and current interventions to support the sustainability of rural communities in Scotland and beyond. While the interventions were all different, some common success factors were identified including a genuine commitment to

hearing all voices and empowering communities, flexibility of delivery to enable tailoring to local circumstances, transparency of local governance and decision-making, support for animators (or facilitators) to work with communities to build capacity, multiannual funding, and mechanisms for sharing best practice.

In terms of evaluating these interventions, evidence shows the importance of recognising that impacts may only be visible in the long-term, that different types of evidence are required, and that evaluation should be built in from the outset. This work provides an important evidence base to inform the shape of future rural community interventions.

The report can be downloaded via SRUC's Rural Exchange here: [Evaluating rural development interventions in Scotland since 1945 \(ruralexchange.scot\)](#)

## Scotland's Changing Attitudes to Sustainable Diets

Scottish attitudes to sustainable diets are a significant influence in the country's drive to net zero. Behavioural research from the Rowett Institute conducted focus groups with adults and young people in Scotland to find out what people think about sustainable diets. Interestingly, people believe that transport accounts for most of the emissions when this is not the case.

For adults, awareness of sustainable diets has increased in the last decade, but significant gaps remain. People in affluent urban areas demonstrate better awareness of food's environmental impact compared to rural or less affluent areas. Reducing meat consumption is seen as beneficial, but barriers such as taste, cost, and scepticism about the health impacts of meat alternatives persist. Although more people express willingness to change, entrenched cultural and economic factors still hinder widespread adoption.

Young people's understanding of sustainable diets is limited, often focusing on packaging and food miles. Meat reduction is recognized as important but less prioritized than other environmental actions. Economic and social factors, including the cost of alternatives and the central role of meat in social settings, are perceived as barriers to change.

Short reports on both pieces of work can be found here:

[http://aura.abdn.ac.uk/bitstream/2164/24311/1/McBey\\_etal\\_Have\\_public\\_attitudes\\_VOR.pdf](http://aura.abdn.ac.uk/bitstream/2164/24311/1/McBey_etal_Have_public_attitudes_VOR.pdf)

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