

The Spark

SEFARI Gateway's Newsletter

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Welcome to the December / January 2025 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.

One of the major benefits of the ENRA-funded Strategic Research Programme is the funding it helps to leverage into the Scottish economy. In this edition, we report on the £1.7 million grant from The Gates Foundation to the Moredun Institute and the Rowett's hemp research which has leveraged grants from BBSRC.



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 with your suggestions.

ENRA funding helps leverage £1.7 million grant from the Gates Foundation



ENRA-funded science in the current, and previous, strategic research programmes has allowed scientists to perform world-leading research in the development of vaccines to control parasitic worms in livestock. This investment has recently allowed them to leverage a £1.7 million grant from the Bill & Melinda Gates Foundation to develop a vaccine against a life-threatening parasite of sheep and goats.

This parasite, named the barber's pole worm, is the most economically-important parasitic nematode of sheep and goats worldwide and is a major challenge for resource-poor livestock keepers. Climate change has also led to an increased number of cases in temperate regions, including Scotland, due to warmer and wetter conditions. The main clinical signs of disease relate to the parasite's blood-feeding behaviour, leading to anaemia, weakness and death.

ENRA-funded scientists and their collaborators at the Pirbright Institute will [develop a new, inexpensive vaccine](#) using emerging monoclonal antibody technology. (pictured, Professor Tom McNeilly, Scientific Director of the Moredun Research Institute and Principal Investigator on the project)



ENRA Hemp Research on a roll – and in a roll too!

It's not every day that broadcaster Naga Munchetty introduces research from the SRP but that's what happened to the Rowett Institute's hemp research recently when both BBC Breakfast and BBC Scotland reported on how the ENRA science had found the crop could help the health of both people and planet. Now that the SRP has established the nutrition and climate credentials, the team is pressing on with developing the supply chain and market for hemp, creating food products for people and livestock. Following the launch of Scotland's first extra virgin hemp oil in 2022, an exciting collaboration with Duncan Farms is showing promising results with raised omega 3 in eggs from chickens fed with hemp. Meanwhile, the bakers at Murdoch Allan are busy testing prototypes of healthier rolls by adding hemp flour. Both projects are examples of the SRP helping to leverage funding from outside of Scotland.

But if we also look at two major external developments then the signs for hemp are very encouraging. One of the most significant developments in April 2024 was the Home Office easing the onerous licence application process for farmers. Now farmers can grow hemp anywhere on their farm instead of avoiding areas visible to the public, while licences now last six years instead of three. Meanwhile, the UK Government is considering an import ban on products which contain soya beans grown on land cleared through illegal deforestation, creating a gap that hemp could fill.

For more details, see here: [Hemp and hydrogen among innovative science shared with Deputy First Minister | News | The University of Aberdeen](#)



Tackling Persistent Organic Pollutants including Forever Chemicals

Persistent organic pollutants (POPs), including those referred to as 'forever chemicals', are detrimental to human and environmental health. They can be found within various day-to-day products including electrical equipment, furniture and construction materials. When such products reach their end of life and enter waste streams, their POPs content means that most are destined for incineration, contributing to GHG emissions.

To help tackle this issue and address the lack of data in Scotland, SEFARI Gateway has created a Specialist Advisory Group (SAG) to review existing and emerging technologies that separate and treat such waste so that it moves up the waste hierarchy and can be recycled. The review will include the benefits and limitations, technological readiness and international experience. Analysis of data from England and Wales and the Return on Investment (ROI) to find the largest waste streams will be the focus of the review. Findings will be presented at a workshop, and discussions will focus on opportunities for implementation within Scotland. (pictured below, Dr Eulyng Pagaling from the James Hutton Institute is Chair of the Specialist Advisory Group on POPs)

For more details, see here: [Specialist Advisory Group: Call for experts to work with Scottish Government - RESAS in addressing the issues and challenges to the circular economy as posed by Persistent Organic Pollutants \(POPs\) | SEFARI](#)



Eat Local Fish: Nutrients “Lost” to Exports Could Help Health And Climate

In the understandably heated debate around reducing meat consumption to lower emissions, the role that Scottish seafood could play is often overlooked. ENRA funded research has reported in the prestigious journal, Nature Food, that eating more local Scottish seafood provides essential nutrients at a much lower emissions rate than other animal-based protein sources. Media coverage of the report appeared on BBC Radio Scotland, BBC Shetland and Orkney with a piece in The Herald, crediting the SRP. The research reported on the following:

- Unique study maps seafood supply and consumption by species
- UK's oily fish mostly exported despite health and climate benefits
- New push needed to persuade shoppers to buy local produce

Scientists at the Rowett Institute who have calculated the UK's “lost” nutrients from fish exports for the first time are calling for a big push to get more people eating local seafood.

Research found oily fish, such as herring and mackerel, caught and

farmed in UK waters could provide 73% of the daily recommended intake of Omega-3 and 46% of Vitamin B12.

But the study showed most of this salmon, herring and mackerel is sold abroad, while the majority of the fish eaten here is imported prawn, cod, salmon and tuna.

Persuading people to eat more local seafood therefore offers a significant opportunity both to meet climate targets and improve public health, the team concludes.

At present, the figures show, consumption of fish is less than half what is recommended by UK authorities despite the proven health benefits, not least in reducing heart disease.

The work is part of the Scottish Government's strategic research program and used a unique database created for the project which linked more than a decade's worth of data on seafood production, trade, purchases and consumption – right down to individual species level. (pictured, Professor Baukje de Roos who led the seafood research)

For more details, see here: [Seafood supply mapping reveals production and consumption mismatches and large dietary nutrient losses through exports in the United Kingdom | Nature Food](#)

