SEFARI GATEWAY • IMPACT IN PROGRESS

Beyond calories

The Nutrient Value Fellowship

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An impact assessment on a fellowship that has shifted thinking but not yet reshaped policy.

Acknowledgements. This piece would not have been possible without the generosity of those who agreed to be interviewed. The author warmly thanks **Dr Benjamin McCormick** of the Rowett Institute, University of Aberdeen, for his time, candour and willingness to think aloud about what the Nutrient Value Fellowship has achieved. Thanks are also due to the **Scottish Government policy contact** who shared their perspective on what the fellowship has begun to change in the way Scotland thinks about food security, and the discussions still in motion under the Agricultural and Rural Communities (Scotland) Act 2024 and the Food Security Statement. The author is grateful to **Professor Charles Bestwick**, Director at SEFARI Gateway, for his leadership of Gateway across the 2022–2027 programme and for his support throughout the development of this piece. Thanks also to colleagues across the SEFARI Gateway team, past and present, who supported the Nutrient Value Fellowship from commissioning through to closing reflection, and to the wider SEFARI institutes whose long-term work on food, agriculture and nutrition makes pieces like this one

Abbreviations

Abbreviation	***Stands for***
ENRA	*Environment, Natural Resources and Agriculture*
RESAS	*Rural and Environment Science and Analytical Services*
SDG	*Sustainable Development Goal*
SEFARI	*Scottish Environment, Food and Agriculture Research Institutes*
SG	*Scottish Government*
SRP	*Strategic Research Programme*
UN	*United Nations*

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Beyond calories

This impact case study draws on two structured interviews carried out by SEFARI Gateway after the fellowship completed: one with the fellow, and one with the policy contact at the Scottish Government who requested the work.

The Nutrient Value Fellowship

Most accounts of Scottish food security are written in calories. Tonnes of barley, kilogrammes of beef, hectares of arable land. The numbers are familiar, the framing is settled, and the policy machinery that responds to them is decades old. The Nutrient Value Fellowship asked a different question: what if we counted what those calories actually contain?

The shift sounds technical. It is not. Counting nutrients rather than calories changes what counts as productive land, which crops are worth investing in, and how Scotland measures its own food security against the diet its population actually needs. It is the kind of paradigm shift that does not happen all at once, and that has begun to happen here.

The Scottish Government commissioned the fellowship to develop methodologies for assessing the nutrient value of Scottish agricultural produce, and to generate practical recommendations for policy. SEFARI Gateway provided financial and advisory support, and helped keep the work aligned with policy needs as it developed. Dr Benjamin McCormick of the Rowett Institute, University of Aberdeen, took on the work, building on agreed assumptions about the available evidence base and engaging closely with the policy teams whose decisions the findings could inform.

The gap between what is and what could be

Both interviewees emphasised the same point in different words. There is a measurable gap between the nutrients Scottish agriculture currently supplies and what could be produced if nutrient density were optimised. That gap is not a failure of farming. It is a consequence of the metrics we have used, and the policies that have been built on them.

Closing the gap begins with specific data. Farm-level information on nutrient production is fragmented, particularly on what happens after the farm gate: which crops go into animal feed, which reach human consumption, and in what form. Marine nutrient contributions remain under-explored, despite their importance to Scotland's overall nutrient picture. The fellowship surfaced these gaps and proposed a way to begin closing them. A prototype nutrient-tracking dashboard was developed that could visualise nutrient balances across agricultural and marine outputs over time, and connect to existing agricultural monitoring frameworks already used by policymakers.

Farmers, civil society and food businesses each have a stake in how this evolves. Bringing them into the conversation early, rather than late, is how the recommendations move from paper to practice.

The pathways to long-term impact

The pyramid below sets out the project's impact pathway, from the brief (McCormick, 2025) and the funding at the base, through activities and outputs, to outcomes, mid-term impact, and the long-term shifts in policy and practice at the apex. Each content box is colour-coded by the type of impact it represents, so that the structure of the pathway and the kinds of impact it generates can be read at the same time. The fellowship has delivered the lower tiers and is generating mid-term impact; the long-term impact, aligned with three of the United Nations Sustainable Development Goals (SDG) and specifically SDG 2 'Zero Hunger', SDG 3 'Good Health and Well-being' and SDG 12 'Responsible Consumption and Production', sits at the top and is still not achieved.

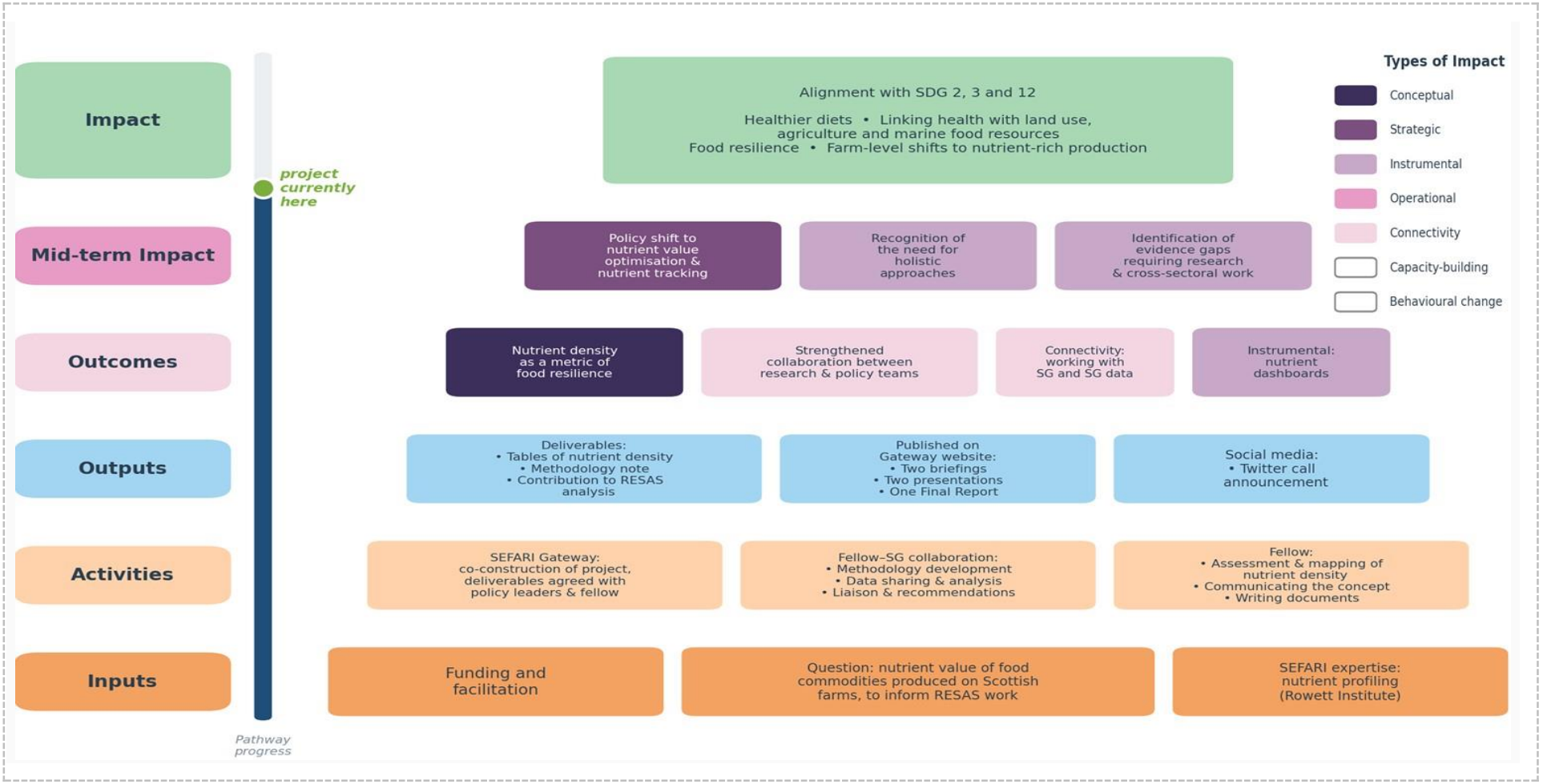

Figure 1. *Impact pathway pyramid for the Nutrient Value Fellowship, with content boxes colour-coded by the type of impact each represents (see legend, right). The fellowship has delivered Inputs, Activities, Outputs and Outcomes; mid-term impact is in motion. Long-term impact, aligned with SDGs 2, 3 and 12, sits ahead.*

Where impact has landed, and where it has not

The radar chart below shows how the fellowship's impact reads at this stage across six categories. The scale runs from 0 (no progress) to 5 (embedded in policy, practice or systems), with intermediate levels anchored to observable signals: activity initiated, visible early effects, established change in stakeholders' thinking. The shape is asymmetric, and the asymmetry reflects how real-world change unfolds.

Figure 2. *Anticipated impact of the Nutrient Value Fellowship across six categories, scored 0 to 5 on the basis of interview evidence and project documentation. Dot colours indicate the level of progress reached on each axis: green for established or embedded impact (scores 4–5), amber for impact in motion (scores 2–3), grey for impact not yet started (scores 0–1). Behavioural change is not shown, as it was not a planned outcome. Note: Figures 1 and 2 use different colour systems by design — the pyramid colours indicate type of impact, the radar colours indicate level of progress.*

The conceptual shift is the strongest result. The framing of food security has begun to move from caloric density to nutrient density in the conversations the fellowship was designed to influence, and that shift is the longest-lasting kind of impact a project of this size can hope for. Connectivity is the next strongest. The fellowship built durable links between SEFARI scientists, the Scottish Government and the agricultural research community — links that have already opened opportunities for follow-on work. Capacity has been built on both sides: the policy teams now have methods and concepts they did not have before, and the fellow gained a working understanding of the language and processes of the science–policy interface.

Strategic and instrumental impact — the kind that reshapes specific policies or decisions — sits lower on the chart. The findings are expected to inform discussions under the Agricultural and Rural Communities (Scotland) Act 2024 and to shape Scotland's Food Security Statement, but those discussions are still in motion. Operational impact is lower still: the dashboard remains a prototype concept. None of this is a failure. It reflects where in the impact pathway a project of this scale sits at the point of completion.

The work the fellowship has begun

The most useful next steps emerged clearly from the interviews. Bringing marine nutrient data into agricultural assessments, to give a fuller picture of Scotland's nutrient capacity. Piloting the proposed nutrient-tracking dashboard so that nutrient flows can be monitored across agricultural and marine sectors over time. Engaging policymakers to take the recommendations forward in future iterations of the Food Security Statement and in agricultural strategy. Building collaboration with farmers, civil society and food businesses to explore practical applications. And publishing in peer-reviewed journals to extend the reach of the methods developed during the fellowship.

A paradigm shift, by definition, is not the work of a single project. It is the work of a sequence of projects that converge on a new way of seeing. The Nutrient Value Fellowship is one of those, and a productive one. What it has done is shift the question Scotland is asking about its own food system. What happens next depends on whether the questions it has opened are answered, and by whom.

References

McCormick, B.J.J. (n.d.) *Estimating the nutrient value of agricultural products – Outline Briefing*. SEFARI. Available at: https://sefari.scot/document/estimating-the-nutrient-value-of-agricultural-products-outline-briefing-benjamin-jj, (Accessed: 7 March 2025)