

Cross-Party Group on Rural Policy

6th June, 2023 18:00-19:30 (Hybrid)

Nature-based solutions in agriculture: addressing multiple policy targets

Minutes

Present

MSPs

Emma Harper MSP

Finlay Carson MSP

Speakers

Hans Jensema	Biocel Agri
Gemma Miller	SRUC
Rebekah Strong	Scottish Wildlife Trust

Non-MSP Attendees

Abi Williams	Food Ethics Council
Adam Forrest	Scotland Food and Drink
Alexa Green	SRUC
Alistair Hamilton	SRUC
Ana Vuin	SRUC
Andrew Heald	CONFOR
Ann Packard	Chair, RSA Fellows Scotland and MCICH Network
Anna Giela	Scottish Government (RESAS)
Anna Sellars	SAC Consulting
Aylwin Pillai	Kinclune Estate and Organic Farm
Barbara Kelly	
Beth Bridge	SRUC
Catriona Mallows	Scottish Rural Action
Charlotte Maddix	The Scottish Rewilding Alliance
Christine Beaton	SAC Consulting
Craig Davidson	SRUC
David Nicholson	Musician
Davy McCracken	SRUC
Denise Walton	Nature Friendly Farming Network (NFFN)/Peelham Farm
Douglas Scott	
Fiona Mackay	SRUC
Gill Lawrie	
Harriet Donald	Loch Lomond & The Trossachs National Park

Heather Stuart	SAC Consulting
Ian McCall	Paths for All
Ian Muirhead	Agricultural Industries Confederation (AIC)
Imogen Webb	
James Banks	SRUC
James Glendinning	SRUC
Jim Hume	Change Mental Health
Katy Ewing	Southern Uplands Partnership
Kirsten Gow	University of Aberdeen
Lindsay Wood	A Heart for Duns Development Trust
Lorna Pate	SRUC
Luisa Riascos	SAC Consulting
Milena Adrio	SRUC
Murray Allan	Highlands and Islands Enterprise
Nick Cooke	Scottish Pilgrim Routes Forum
Nicola Strachan	3x1 Group
Phil Knott	
Rachel Norman	Stirling University
Sara Bradley	UHI
Sarah Jones	Lancaster University
Sarah Cowie	NFUS
Theona Morrison	Scottish Rural Action
Vanessa Halhead	Scottish Rural Action
Vicky McDowell	SAC Consulting
Wendy Barrie	Scottish Food Guide

Apologies

MSP Apologies

Edward Mountain MSP
Rhoda Grant MSP

Non-MSP Apologies

David Gass	Rural Matters
David Henderson-Howat	Care Farming Scotland
Jane Atterton	SRUC
John Mitchell	
Prof Sarah Skerratt	Royal Society Edinburgh

Agenda item 1

Welcome, introduction, and apologies

Emma Harper MSP welcomed everyone to the meeting.

She noted the MSPs in attendance and MSP apologies received.

It was noted that all participants had been emailed the agenda and the list of attendees and that the Rural Policy Centre (RPC) as Secretariat has a note of all apologies received and would list them in the meeting minutes as usual. It was mentioned that the meeting would be recorded. No objections were raised.

It was reiterated that speakers' presentations would be uploaded to the CPG webpage within the RPC website as soon as possible after the meeting along with the unapproved minutes. Due to issues with the recording, the Secretariat decided not to upload the recorded meeting, however the speakers' presentations and notes will be shared along with a detailed account of the minutes.

Group members were encouraged to send the RPC an email if amendments were required in the minutes. The minutes will be formally approved at the next meeting in September. It was noted that the Secretariat will include any action points, links etc. in the meeting minutes.

Agenda item 2

Approval of minutes and recap of action items

Emma Harper MSP noted that the Secretariat uploaded the recordings of the presentations from the March meeting to the Group's web pages along with the meeting minutes so those are available to access if anyone would like to watch again or to circulate to others who you think would be interested in seeing them.

Emma Harper MSP motioned to approve minutes of the previous meeting. Minutes were approved by Fiona Mackay and seconded by Douglas Scott.

Agenda item 3

Presentations and discussion

- **Hans Jensema** from Biocel Agri: nature-based products
 - Hans mentioned that products can be added to farming systems to achieve societal goals like: reducing greenhouse gas production, improving animal productivity and welfare, and enhancing soil quality.
 - He noted different types of nature-based products promoted by their company including: Probiotics, silage treatments, slurry treatments, soil

microbes, essential oils, prebiotics, yeast, marine calcium, and humic acid.

- He explained that silage treatments help preserve and optimise energy and protein levels in silage and thereby reduce waste
- He explained that slurry treatments break up slurry, making it more liquid and easier to apply, reducing the need for mixing and fertiliser
- He noted a list of benefits from nature-based products including that enhancing soil microbes is important for improving soil health and productivity. Probiotics and prebiotics are beneficial for animals, promoting gut health and productivity. Yeast can enhance rumen health in cows and reduce methane production. Essential oils have antibacterial properties and are increasingly available and common. Marine calcium can improve nitrogen availability in soil. Humic acid helps reduce leaching of nitrogen from soil, improving nutrient retention.
- **Gemma Miller**, a researcher from SRUC's Beef and Sheep Research Centre: research on these products, particularly relating to methane reduction from livestock
 - Gemma introduced herself as a researcher at the SRUC Beef and Sheep Research Centre, responsible for managing a methane measurement facility near Edinburgh.
 - The focus of Gemma's research is on reducing methane emissions from livestock, specifically beef and dairy cattle.
 - Methane released from ruminants has a significant impact, as every tonne of methane emitted is equivalent to around 27.2 tonnes of carbon dioxide remaining in the atmosphere for 12 years.
 - To mitigate this impact, 28.2 tonnes of carbon dioxide need to be drawn down into plants and soils.
 - Gemma discussed three products for methane reduction: Mootral and Agolin (essential oils-based), and FutureFeed (seaweed-based).
 - Different products act in different ways to reduce methane production, allowing for potential synergistic effects when used together or at different stages of an animal's life.
 - Consumer research indicates a preference for plant-based additives over chemical additives due to safety and understanding.
 - The evidence base for the efficacy of plant-based additives is limited, with fewer studies available for some products.
 - Seaweed-based additives, like FutureFeed (Asparagopsis), show high potential for methane reduction, but further research is needed to build a substantial body of evidence.
 - Essential oils-based products, such as Mootral and Agolin, have fewer health and welfare concerns compared to seaweed-based products.
 - Practical considerations include regulatory barriers, palatability, and volatility of additives.

- Mootral and Agolin are currently available in the market, with Mootral having a carbon credit project in the UK. FutureFeed is undergoing approvals.
- **Rebekah Strong:** policy relevance and implications of nature-based solutions in Scottish agriculture and in a wider context.
 - Rebekah emphasized that farmers are on the frontline of climate change impacts, which are increasing in Scotland.
 - Extreme flooding events are expected to increase from one in 20 years to one in every three years by 2040, rendering a considerable amount of agricultural land unusable.
 - Flooding events lead to ruined crops, drowned livestock, and destroyed farm buildings and equipment.
 - Drought is also predicted to become more frequent as temperatures rise and precipitation decreases.
 - Nature-based solutions that target water retention and infiltration can reduce the impacts of climate change and allow farm businesses to adapt.
 - Rebekah defined nature-based solutions as utilising tools that nature already provides to address challenges like overexploitation and climate change. Nature-based solutions reduce the risk of climate change impacts, improve sustainability, and save costs.
 - Rebekah explained how nature-based solutions work by providing an example of addressing flooding through wetland restoration, which changes ecosystem structure and function to avoid flooding and erosion.
 - The long-term goal is to demonstrate that nature-based solutions can effectively address societal challenges and inspire further action.
 - Many farmers are already implementing nature-based solutions as part of nature-friendly farming practices.
 - Rebekah highlighted the need to consider nature-based options before exploring other alternatives, using the example of a tree providing multiple benefits compared to an expensive parasol.
 - Policy support and payment schemes that encourage investment in nature-based solutions are crucial for widespread adoption.
 - The Scottish Wildlife Trust is working on integrating nature-based solutions into future payment schemes and aims to share their findings by the end of July or early August.
 - Rebekah suggested that the Nature Conservation (Scotland) Act should include statutory nature targets to drive sustainable farming and support high-quality food production with high nature value.
 - Connectivity between green spaces and high nature value areas is essential as they ensure the resilience of natural spaces, and nature-based solutions can help achieve this through niche networks and regional land use partnerships.
 - Nature-based solutions also contribute to achieving net-zero carbon goals.

- Robust and flexible support is needed to help farmers implement nature-based solutions and protect, manage, and restore natural spaces.
- In conclusion, Rebekah emphasised that nature-based solutions are crucial for sustainable food production, offering multiple benefits at different scales and outcomes.

Agenda item 4

Discussion

Key issues raised in the discussion included:

- ***Question on the Role of Rhizobia Bacteria and Nitrogen Capture in Soil:*** Denise Walton, Scottish Chair of the Nature Friendly Farming Network (NFFN), expressed her viewpoints and asked for comments from Hans. She emphasised that their group of farmers across the UK, including Scotland, work with nature as an ally based on agroecological principles. Denise highlighted the significance of soil as the most important terrestrial ecosystem for farmers. She found it ironic that farmers using nitrates for top dressing suppress the natural relationship between rhizobia bacteria and the capturing of nitrogen from the atmosphere. Rhizobia bacteria can capture around 2 to 300 kilos per hectare per year of nitrogen, benefiting farmers through the use of clover and saving them money. Denise asked for Hans's thoughts on encouraging rhizobia in soils and promoting nitrogen capture, particularly when associated with clover. In the response, Hans acknowledged the challenge of people reverting to their old practices despite discussions on new approaches. He emphasised the need for a joined-up approach and continuous education to reinforce the message and share knowledge. Hans suggested that discussion groups among farmers and guest speakers discussing relevant topics can play a vital role in sharing information. Gemma agreed with the points made, emphasising the need for better understanding and promoting the use of nature-based solutions.
- ***Question on the Difference Between Outdoor-raised and Shed-raised Animals and Scotland's Agricultural Practices:*** Theona, a crofter from the Western Isles and Chair of Scottish Rural Action, posed a question regarding the research conducted on the difference between outdoor-raised animals and shed-raised animals. She highlighted the sustainable model in crofting and the islands, where seaweed gathered from the shore is used to grow crops that feed the predominantly outdoor-raised animals. Theona suggested that although the volume may not be significant, the intensive production of sheep, for example, raises the question of whether Scotland produces too much. She mentioned the high percentage of arable land dedicated to distilling and animal feed for shed-raised animals, enabling the sale of cheap burgers. Theona suggested that redirecting some land towards sustainable agricultural production could address the rising food costs and ensure Scotland's ability to feed its own population, considering its rural nature. She

questioned why Scotland is among the 30% of nations heavily reliant on supermarkets while emphasising that 70% of the world's population is fed by farms with two hectares or less. Hans highlighted the positive outcomes observed in crop growth when utilising local resources like seaweed. He expressed his desire to see more outdoor-raised animals for food production. He acknowledged that the prevalence of indoor farming is driven by the focus on achieving a lower food feed conversion ratio, driven by the supermarkets' pursuit of cheap products. Hans, who has knowledge of the pig industry and experience with outdoor and indoor farming, disagreed with the emphasis on cheapness. He believed there should be a shift towards outdoor farming methods to create a circular production system where the waste produced can be fed back into the soil. Hans acknowledges that his views might not always be well-received, but he remains committed to advocating for these practices within the industry.

- ***Observation on the Importance of Integrating Environmental Measures in Agricultural and Natural Environment Bills:*** Davy shared an observation regarding the significance of integrating environmental measures within the Agriculture and Natural Environment Bills. He highlighted the implementation of biodiversity-rich areas on his farm at Kirkton & Auchtertyre, where water margins have been fenced off to allow natural vegetation to thrive. This practice has created a habitat that supports various species, including insects, bats, and waterfowl, while also protecting water courses. Davy emphasised the need for careful consideration and proper alignment of initiatives during the formulation of these Bills to ensure effective integration and maximise their environmental impact. Emma Harper MSP raised a question about the current state of policy development in Scotland, particularly concerning the 85% of Scotland classified as 'Less Favoured Area'. She expressed interest in understanding the importance of these areas and their relevance to policy development. As someone who grew up on a farm and has a connection to the agricultural industry, Emma highlighted the significance of rural areas in southern Scotland, specifically mentioning the abundant milk production in Dumfries and Galloway. Rebekah acknowledged that Davy's point regarding pre-discussions is crucial in policy development. She highlighted ongoing discussions surrounding the Agriculture Bill and the need to strike the right balance in payment schemes and activities required to qualify for payments. Rebekah also emphasised the importance of education and peer-to-peer discussions among farmers to disseminate information and address any misconceptions or concerns. She suggested that small changes, such as incorporating agroforestry or fencing off unproductive sections, can make a significant difference without drastically altering established farming practices. Rebekah emphasised the need to mainstream these messages across policies like the Natural Environment Bill and the Agriculture Bill and ensure that everyone is involved and understands their responsibilities. Hans emphasised the importance of promoting on-farm production to reduce external inputs and increase self-sufficiency. He mentioned utilising resources like slurry and silage to enhance grass growth and improve the nutritional

value of feed. He explained that by producing what is needed for livestock on the farm itself, there is less reliance on imported proteins and fewer food miles associated with transport. Hans believes that encouraging on-farm production can benefit farmers, the environment, and overall sustainability. He acknowledged the comment about focusing on nature-based solutions and clarifies that his perspective was more centred on maximising the farm's productivity and optimising resources for the animals.

- ***Comment on Promoting Balanced Debate and Recognising Existing Sustainable Systems in Agricultural Policy Development:*** Ian Muirhead, representing the Agricultural Industries Confederation, emphasised the need for a balanced debate in developing agricultural policies. He mentioned the importance of rigorously testing policy proposals through the Scottish Government's Food Security Unit. Ian also highlighted the diversity of agricultural systems in Scotland, ranging from productive intensive systems to extensive upland beef and sheep farming. He asserted that many of these systems are already sustainable compared to global competitors and emphasised the presence of successful circular systems. Ian specifically mentioned Scottish whisky production and the use of dung to improve soil health, highlighting that there are existing examples of effective systems that can be further improved. He encouraged the need to recognise and build on the positive work already being done in Scottish agriculture.
- ***Question on Barriers and Challenges in Encouraging Farmers to Reduce Methane Emissions:*** Craig Davidson from SRUC raised the question of why farmers and producers are not actively adopting measures to reduce methane emissions. He suggested possible reasons such as lack of prioritisation, limited understanding of the severity of the issue, cost considerations, and the perception that immediate benefits may not outweigh the costs. Craig asked for insights into the barriers and challenges hindering progress in this area. Hans acknowledged Craig's question and reflected on his own experience growing up on a dairy farm and managing a farm in Texas. He emphasised that farmers are skilled managers who have numerous responsibilities to juggle, and while they are willing to address environmental concerns, they often face challenges related to cash flow and short-term survival. Hans highlighted the financial pressures farmers endure, including periods of economic downturn and fluctuating prices, which require immediate cost-cutting measures to stay afloat. He suggested that long-term sustainability efforts may be hindered without adequate support from the government or other organisations. Hans emphasised that it is not a lack of willingness on the part of farmers to listen, but rather the industry's demanding nature that affects their ability to prioritise long-term environmental goals.
- ***Observation on the need for ongoing research and the notion of simplifying agricultural practices:*** Bosse Dahlgren, a Swedish farmer, shared his experience and observations from the farming sector throughout the years. He emphasised the importance of research and highlighted the negative impacts of heavy machinery on soil compaction and biodiversity. Bosse expressed his concern about the decline in the economy and

biodiversity since World War II. He mentioned the suppression of research findings on glyphosate's cancerous nature and emphasised the need for investigating different cattle breeds and their digestion systems. Bosse pointed out that the complexity of agricultural practices should not be oversimplified, urging for continued research and understanding rather than relying on simplified solutions.

- ***Comment on Promoting Youth Engagement and Holistic Approaches in Agriculture:*** Theona highlighted the growing interest of young people in climate and agriculture, as they are concerned about the future. She emphasised the importance of valuing traditional skills and promoting place-based approaches, mentioning initiatives like the crofting course in the Western Isles. Theona shared examples of young farmers, like Cole Gordon, who have shifted towards more sustainable and holistic practices, moving away from monoculture and embracing breeds that work better with the land. She emphasised the complexity of agricultural decisions, citing the need to consider factors like carbon footprint and biodiversity. Theona called for investment in young people who are passionate about doing agriculture the right way and emphasised the collective goal of getting it right. Hans shared his observations about the move towards traditional breeds in places like Shetland. He highlighted the importance of using different breeds that are well-suited to specific environments, such as the Shetland sheep that are adept at lambing outside. He mentioned the enthusiasm and involvement of younger generations in Shetland and suggested that tailoring farming practices to suit the local system and environment leads to growth and success. Hans emphasised the value of having a unique story to tell consumers, which can be achieved by embracing the strengths of the local farming system.
- ***Comment on the Importance of Involving Processors and Retailers in Agricultural Transformation:*** Abi Williams from the Food Ethics Council agreed with Hans and emphasised that farmers possess the will and knowledge to transition to more sustainable and agroecological practices. However, she highlighted the crucial role of processors and retailers in driving change within the food system. Abi's work focuses on dairy farmers, and she has found that many farmers are eager to make the shift but face barriers due to the lack of support and willingness from other actors in the food chain. She stressed the need to bring everyone in the food system together, including processors and retailers, as changing the agricultural industry requires collaboration and alignment throughout the entire supply chain. Abi called for collective responsibility and urged processors and retailers to adapt their practices and support farmers in their journey towards sustainable agriculture.
- ***Comment on the Understanding the Challenges Faced by Farmers in Embracing Change:*** Denise addressed the comments around resistance to change in the farming industry by highlighting the historical context of mandated production and subsidisation since the 1940s, which focused on maximising yields at any cost. Society's shift in expectations has created a sense of demonisation among farmers, making them resistant to change.

Denise emphasised the need to address this mindset and acknowledged the significant challenges faced by farmers, including high levels of debt and mental health issues, which can affect their capacity to respond to the demand for transformation. She shared her own experience of successful organic and pasture-based farming, demonstrating that change is possible. However, she emphasised the importance of approaching these challenges with empathy and understanding. Davy acknowledged that many farmers are open to change but highlighted a common misconception that nature-based solutions only benefit wider society and not the farms themselves. He emphasised the need for farmers to understand that implementing such solutions can actually enhance the long-term viability and resilience of their farms. Davy shared his personal experience in a rain-prone area and emphasised the importance of nature-based solutions in building robustness and resilience in farming systems, especially in the face of climate change. He suggested bridging the gap between the perceived benefits for society and the tangible benefits for individual farmers, regardless of the direction of agricultural policy. Davy stressed the urgency of addressing climate change and highlighted how nature-based solutions can help mitigate its impacts.

Action Items:

Emma Harper MSP suggested several action points based on the discussions.

- The first action item was to encourage participants to write to their Members of the Scottish Parliament (MSPs) and request them to engage with farmers at cattle shows and other relevant events. She emphasised the importance of involving not only MSPs on the Scottish Parliament's Rural Affairs, Islands and Natural Economy Committee, but also processors, butchers, retailers, and other stakeholders in the food system.
- Emma Harper MSP highlighted the need for broader conversations around food beyond just food miles, emphasising the significance of feed miles as well. She suggested creating a hashtag based on the comment "anyone who eats is involved in agriculture" to raise awareness.
- Finally, Emma Harper MSP mentioned attending cattle shows in different regions as another action item to connect with farmers.

Emma Harper MSP closed the discussion and thanked the presenters and all contributors for an interesting discussion.

Agenda item 5

AOB

Emma Harper MSP noted that our first CPG meeting of the 2023-24 parliamentary year will be held on either 12 or 26 September – more information on the topics we will cover will be available shortly. This will also be a hybrid meeting.

Agenda item 6

Next meeting: September 2023 (Date TBD)