Farming for 1.5°

Independent inquiry on farming and climate change in Scotland

Response to the UKCCC

The Farming for 1.5°C Inquiry is an independent group of academics, environmental NGOs and farmers seeking consensus on how Scottish farming can positively contribute to limiting global warming to 1.5°C. The panel has been taking evidence on the issues around climate change and agriculture since June 2019 and hopes to produce a final report in the autumn of 2020. In the meantime, the panel has contributed to a range of pertinent discussions. This includes giving evidence to the RECC committee in the Scottish Parliament on the Agriculture (Retained EU Law and Data) (Scotland) Bill, presenting to the Scottish Government's Beef Climate Group, responding to the Just Transition Commission's consultations, the Scottish Land Commission consultation on Rural Land-use Partnerships and more.

The panel members have read the UK Climate Change Committee's reports and are very grateful to Ewa Kmietowicz and Indira Thillainathan for meeting with us back in March. Following that meeting and the reports we would like to make the following observations.

Foremost, there are a number of areas where we do agree. Scottish agriculture and land management certainly does have an important role to play in reducing greenhouse gas (GHG) emissions and sequestering carbon to combat rising temperatures.

We recognise that livestock numbers in Scotland have been reducing over time due to changes in financial support and changes in dietary preferences. We have experience that further reductions in total numbers could happen through increased productivity per animal. Better herd management by all livestock farmers with herd health plans, adopting balanced breeding goals including improved genetics, and better fertility testing can all contribute to a reduced national herd. On their own these measures would avoid the associated economic hardships of simply cutting numbers. Further reductions in methane emissions can come about with feed additives in the medium term and breeding for lower methane emissions in the longer term. However, for these measures to work, there cannot be an assumption that the market will fix it as it has not done so to date. Some of the existing inefficiencies are due to the historical distribution of CAP payments. It is therefore vital that any new policies support efficient livestock management and do not rely on voluntary measures alone.

We agree that reducing agricultural production in the UK without a change in dietary preferences would create carbon leakage, as the UK would import the same products. In fact, importing products like beef and dairy could increase global emissions since Scotland has lower emission factors than in other parts of the world. Better communication of this is necessary, possibly through carbon labelling. The panel is also aware that the EU Commission is discussing a carbon border tax as part of the European Green Deal and may be worth investigating in more detail.

There are a number of areas that the panel would like to focus the Committee's attention as your recommendations are informing actual policy at the UK and Scottish government level.

We understand that UK Governments may need to leverage private financing to be able to properly finance the 'shopping list' of solutions, but we urge that this is done in a way that is beneficial to local communities and to biodiversity over the long term.

The panel is concerned that in general there is not adequate redress to the communities involved. It is true that climate change will be difficult for all communities but the lack of attention to the rural communities involved is further reducing their adaptability and resilience to the changes already being faced.

We have particular concern regarding the push for large scale block monoculture tree planting. These include:

1. Very poor references to biodiversity, this form of block planting does not support diverse interconnected ecosystems.
2. From a societal point of view, if this involves the sale and purchase of land out of local communities to pension funds or investment companies it further restricts future use of the wood to large sawmills and/or direct to heat generation as smaller, potentially more local, sawmills would not be able to deal with the Sitka Spruce. It also removes a local responsibility for how the plantation is managed.
3. Relying on market options to drive tree planting forgets the people, habitats and communities connected to the land those trees will be planted on.
4. The single species approach has sustainability risks from both disease and pests.
5. The single species approach in singular age blocks presents environmental stress points; clear fell releasing significant soil carbon and in some regions the potential of soil erosion and increased flood risk.
6. Monocultures of coniferous trees will also be at high risk from wildfires which are expected to be an increasing feature in the UK linked to predicted extreme climate events.

We believe the lack of discussion of the potential of agroforestry in Scotland is an oversight. Further, most of the agroforestry product discussion regarded its use as fuel stock from short rotation coppice and miscanthus. However, there is a plethora of alternative products and/or habitats such as fruit, nuts, seeds, medicinal products, tree forage, biochar, construction, fencing, craft-work and more. Supporting the development of these would reduce the dependence on carbon capture and storage, increase the transition to a diverse and 'Green' economy and contribute to carbon sequestration.

We feel there should be more recognition of the value of soil carbon restoration outside deep peatlands. We understand that this is a complex area for assessment and advice. Yet the many advantages of improving soil health generally across all land-use, including better resilience to the stresses and shocks of climate change and the potential in some soils for carbon storage, is an ideal basis for long term sustainable land-use.

There is no mention of land use frameworks and the missed connected opportunities. Scotland has tested pilot schemes in Aberdeenshire and the Borders that have shown huge potential in a policy formulation and decision system based on local issues and solutions and the panel see this as an important tool in sustainable GHG emission reductions and sequestration. We are looking forward to the outcomes of the Scottish Land Commission's current work on establishing Rural Land Use Partnerships across Scotland.

The push to increase monogastric system production should factor in a whole system approach. This includes protein efficiency, sourcing and sustainability of protein inputs, nutrient density and quality of outputs, as well as the waste from these units.

There is no mention of deer. The high populations of deer in Scotland are a prime issue for Scottish tree planting and natural regeneration success rates. Thus, it is intrinsic to the success of a tree centered policy to integrate deer management into the conversation.

The panel is concerned that sequestration is looked at very short term. We would recommend that sequestration values are accounted over a prolonged period [100 years] in line with GWP 100. Within a 100-year period land use systems' sequestration performance may progress through several cycles; total values should reflect the average performance. Further, if the sequestration value of any system is linked to renewable energy production and carbon capture and storage, this should be clearly indicated. The technical specification and viability of carbon capture and storage should be outlined.

To ensure a Just Transition, if the emissions from renewable energy productions are assumed to be subject to carbon capture of exhaust gases, has similar technology been factored into the exhaust gases from livestock housing?

There is no reference to scrubland, other than the assumption trees can be planted on it, whereas it may have important sequestration potential. We would urge further investigation into this before huge amounts of carbon are released with the planting of thousands of trees.

We question if the different soil types are taken into consideration? Scotland's soils have a very varied potential for carbon sequestration which needs to be taken into account when creating any long-term policies so as to ensure maximum success.

So much of the attention in the agriculture climate change debate is about livestock. However, the potential for increasing vegetable consumption and thus Scottish vegetable production by the horticulture industry is huge but further research needs to go into working out how to stimulate the investment needed in Zero Carbon greenhouses and supply chains.

Panel members are concerned of the potential for double counting. The carbon dioxide is either being captured to reduce warming or it is been off-set to keep us on the same track - it cannot do both at the same time. For the proportion used for offsetting, we would recommend the UK CCC defines clear targets and the eligibility of various sectors, taking into account how the impacts on rural communities, biodiversity and landscapes will be protected to ensure a Just Transition. We would further recommend that processes of land allocation and the governance of off-setting contracts should be subject to local oversight and fit with local land use strategies and biodiversity plans.

Systems should be assessed on a range of outputs; production efficiency/carbon efficiency, sequestration, biodiversity, landscape and sustainability. A one-dimensional assessment based on output per hectare fails to capture true carbon efficiency and ignores wider public goods. A systems-based approach would also capture important non GHG emissions such as ammonia.

The UK and Scotland are undergoing momentous change at the moment due to Brexit. This is particularly true regarding agricultural support with opportunities to support low carbon systems that are still fit for purpose to deal with situations like the one we currently face with Covid-19.

The realities of stimulating and sustaining low carbon systems of food production will require investment and ongoing cost burdens. The support systems to sustain production should be defined.

The impact of dietary change on ruminant populations is factored into the UKCCC model for 2045-50. We offer the following questions to be considered:

1. Will the reduction in ruminant numbers be managed? If so,
2. How will reductions be allocated on a species, and sector basis?
3. Will holding profiles impact on the reduction target for individual producers i.e. soil type, herd/flock size, herd/flock efficiency?
4. What compensation will be paid as outputs fall and fixed costs rise?
5. Is a quota approach or an out-goers scheme likely to be the preferred approach?
6. How will pig and poultry producers be protected from ruminant producers shifting into mono-gastric production systems?

We are grateful for this opportunity to provide our thoughts on your work and are happy to work with your Committee in finding sustainable solutions to the Climate and Nature emergencies.

List of Panel Members

Co-chairs

Mike Robinson

Mike is the Chief Executive of the Royal Scottish Geographical Society (RSGS) based in Perth. He has worked in the Scottish charity and environment sector for the last 25 years, initially with RSPB as Head of Marketing, and later with the Royal Botanic Gardens in Edinburgh as Director of Development.

In a voluntary capacity Mike has held more than forty board/advisory roles, mostly for environment and human rights bodies, including as previous Chair of Stop Climate Chaos Scotland (SCCS). He also chaired the Scottish parliament's short life working group on annual targets, sits on the advisory groups for Air Passenger Duty & Scotrail, and the board of Transform Scotland. He is a member of the Arctic Strategy Forum & Perth City Development Board & is heavily involved in promoting climate change solutions. He holds two Honorary Fellowships (Scottish Environment Link and RCGS) and several awards for his services to the environment.

Nigel Miller

Nigel is a graduate of the Royal Dick School of Veterinary Studies. He worked in the Highlands in a mixed farm animal practice before returning home to the family farm partnership in the Scottish Borders.

The present-day farming operation in Galawater carries 170 breeding cows and 800 breeding ewes; with a limited area of winter and spring barley. Two sons are now part of the partnership and through their work the business has diversified into wood processing.

Nigel is a past chair of FWAG Scotland and the NFUS Livestock Committee, and held the position of NFU Scotland President over the period of the last CAP Reform. Since the years spent with NFUS he has been a Board Member of SRUC and SAC Commercial and today is a Board Member of the Moredun Research Institute and Chair of Livestock Health Scotland.

Panel members

Andrew Barbour

Andrew runs a livestock enterprise with his wife and family in Highland Perthshire. As well as managing livestock, he has experience in forestry, deer management and aquaculture. He was recently Acting chair of the Deer Working Group, which was set up to report to Government on the steps to be taken to achieve sustainable deer management in Scotland.

Dave Reay

Dave is Executive Director at the Edinburgh Centre for Carbon Innovation, Professor of Carbon Management at the University of Edinburgh and Director of Policy at ClimateXChange. Dave has authored over 100 articles on climate change, including 5 books including Climate-Smart Food and is also an advisor for the Scottish Government on rural policy and climate change. His latest project involves managing his farm on the West Coast of Scotland to sequester a lifetime's carbon emissions.

Deborah J. Long

Deborah is Chief Officer at Scottish Environment LINK, the umbrella organisation for Scotland's environmental charities. LINK aims to conserve, protect and restore wildlife and nature; to enable access to nature and landscapes, and to defend environmental rights. Prior to this, for 14 years she was director of Plantlife in Scotland, a small NGO conserving native plants, fungi and habitats. She also ran a Europe-wide project on sustainable food growing.

As a palaeo-ecologist, her outlook is based in a detailed understanding of ecological relationships that have developed over millennia and are deeply influenced by human activities. With 16 years of experience in ecosystem and habitat conservation, with a focus on ecosystem health and functioning as well as 16 years of experience in policy making in the environment sector, she hopes to be able to contribute to the panel by providing perspectives based on long-term temporal and large-scale spatial scales.

Geoff Simm

Professor Simm is Director of the Global Academy of Agriculture and Food Security at the University of Edinburgh. This is one of five Global Academies that aim to galvanize interdisciplinary teaching, research and translation on key global challenges.

The agri-food academy provides a suite of BSc and MSc programmes to equip graduates to contribute to global food and nutritional security and wider Sustainable Development Goals. Geoff's research is in sustainable farm animal breeding and sustainable agri-food systems. He is a Fellow of the Royal Agricultural Societies and a Fellow of the Royal Society of Biology.

John Smith

John and his wife Ruth run Drumalea Farm in Campbelltown on the Kintyre peninsula where they farm 840 acres of productive grassland and some wholecrop to support a dairy herd and followers along with some cattle being reared for beef.

John has recently stepped down as chair of the NFUS milk committee, where the priorities were addressing mandatory written contracts, presenting the dairy industry as part of the solution in the climate change debate, and promoting the real health benefits of dairy as part of a healthy lifestyle.

Philip Sleigh

Philip farms, in partnership with his wife Gill, in the North East of Scotland, 350 acres of crops, and run a 450 sow unit, all progeny finished on farm.

He is a past board member of NFUS, and at present sits on the board of Scottish Pig Producers, and on the board of QMS.

Robert Fleming

Robert farms at Castle Sinniness and associated farms near Glenluce in South-West Scotland. The farming enterprise comprises 240 ha of grassland on the coast, stocked with suckler cows, 500-800 growing cattle, 300 finishing cattle and Roussin sheep. Robert utilises a paddock grazing system, with the focus on home grown forage. Robert sits on the Simplification Taskforce for Scottish Government for CAP reform. He was a former member of the Scottish Cattle Industry Group (SCIG) for QMS, was the host farmer for Agrii's first Forage iFarm and is a 2015 Nuffield Scholar. The title of his Nuffield study was 'Efficiency Gains Through Improved Beef Genetics'. Robert is married to Claire and has two young children.

Russell Brown

Russell farms in partnership with his wife Hilary and their two sons Robbie and Stephen. They farm mainly in NE Fife but have a farm in Perthshire. Since 1997 they have slowly expanded and now farm over 1000 ha of arable land which is a mixture of owned (380ha) and the rest contract farm arrangements with a number of local land owners. They grow 440 ha winter wheat, 60 ha rye for AD plant, 110 ha spring barley, 160 ha winter and spring oats, 150 ha potatoes as well as calabrese, vining peas and energy beet.

Russell has been the Chairman of NFUS potato working group. At present he is the Chairman of the Scottish Potato Co-op, a group of 16 potato growers marketing 70,000 tonnes of fresh potatoes.

Sarah Skerratt

Sarah is the Director of Programmes at the Royal Society of Edinburgh. Previously she was Professor of Rural Society and Policy Director of Policy Engagement at Scotland's Rural College (SRUC). For 30+ years, Sarah has researched rural community resilience, empowerment and disempowerment; poverty; leadership; and broadband. She has recently focused on rural mental health, working with the national charity Support in Mind Scotland.

Through her research, Sarah aims to enhance rural and national policy, and make a difference in rural communities. She works with the Scottish Government on numerous task forces, Scottish Parliament, universities, private, public and third sectors, communities and development agencies in Scotland as well as internationally. Sarah recently completed a two-year secondment with Audit Scotland, bringing a "rural lens" to their work, and is now retained as their rural adviser, having established their Islands Forum in 2017.

In 2018, she completed the "Recharging Rural" research for the Prince's Countryside Fund, gathering evidence across rural UK as to what makes rural communities sustainable to 2030 and beyond. In 2017, Sarah was appointed as a Fellow of the Royal Society of Arts (RSA) in recognition of her work in rural poverty and rural policy. In 2018, she was appointed as the new Scientific Director of the Scottish Consortium of Rural Research (SCRR).

Sheila George

After completing a PhD on disease dynamics of bovine TB, Sheila moved to the public sector in Ireland, developing sustainability and natural capital policy. For the last seven years she has worked in the NGO sector on landscape-scale conservation delivery, nature-based solutions, land use and environment policy. She recently moved to WWF Scotland as Food and Environment Policy Manager.

Steven Thomson

Steven is a Senior Agricultural Economist with over 25 years of experience in agricultural and rural policy analysis and has been involved in assessing agricultural change, particularly in reference to the Common Agricultural Policy (CAP), for a number of years.

Steven's ongoing work is heavily focused on considering how the UK's withdrawal from the EU will impact on Scottish agriculture and wider rural society. He has taken a proactive role in assessing the challenges and opportunities that Brexit may bring – delivering stakeholder seminars, farmer-focused events, and research on the topic.

In 2018 Steven lead an extensive review of the use of non-UK seasonal labour in the Scottish farming sector - providing the first quantification of the extent of use of seasonal overseas workers to the Scottish Government. Other recent and ongoing work for the Scottish Government includes the Socio-Economic and Biodiversity impacts of grouse and a three year investigation of the wider Rural Business base including linkages to the land-based sector.

Steven supported Brian Pack's independent review of red-tape in farming and rural land management in Scotland. He has been involved in projects relating to land reform, including research into the diversity of land ownership, agricultural tenure and seasonal grazing lets, the economic impact of Scottish Estates and the sustainable management of wild deer in Scotland.

Pete Ritchie

Pete Ritchie is Executive Director of Nourish Scotland, which he co-founded in 2013. He also runs Whitmuir Organics with his wife and business partner Heather Anderson, and is a trustee of the Food Ethics Council. Pete is a first-generation farmer and was previously founder and director of Scottish Human Services.

Secretariat

Keesje Avis is clerk of the Farming for 1.5°C Inquiry, employed by Nourish Scotland.

Ruth Taylor is the Climate Change Policy Officer NFU Scotland.