

Briefing for Members' business debate, 20 February:

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## Tackling Climate Change, the Role of Scottish Agriculture



- In November 2019, the Committee on Climate Change [highlighted](#) agriculture is “a critical part of Scotland’s ability to achieve net-zero, yet emissions from agriculture have fallen by just 2% since 2008.”<sup>i</sup>
- Declines in GHG emissions are associated with reduced production rather than increased efficiency. Agricultural systems continue to contribute a quarter of Scotland’s emissions.
- Experts have shown that “Natural and semi-natural ecosystems are likely to be the best starting place for immediate adaptation and mitigation solutions” to climate breakdown.
- Regional Land Use Plans, the Land Use Strategy, and post-Brexit rural support should be coherent and based on the principle of public money for public goods – with carbon storage a substantial part of the social value of functioning ecosystems and sustainable agriculture.
- Nature-based solutions, including natural climate solutions, have a substantial role to play in ensuring agricultural systems are fit for mitigating and adapting to climate breakdown. They will be a key feature of talks at the UN Convention on Biological Diversity this year.
- Positive steps taken by farmers risk being counted as advances in other land uses under the carbon inventory, such as forestry. Farmers and crofters need greater recognition, reward, and incentive for these steps, and other public goods.

Scotland must reach net-zero emissions by 2045 at the latest, with 75% reductions by 2030, versus 1990 levels. Three-quarters of greenhouse gas pollution must be solved this decade. More than targets, we require coordinated action across every sector, with agriculture and related land uses contributing their fair share. We need a Just Transition to ensure farmers and crofters are rewarded for the good work they do, whilst ensuring our food system transitions to a sustainable, nature-rich model to meet present and future needs. The UK Committee on Climate Change has pointed out that “it is possible to reduce land-based emissions of greenhouse gases while contributing to other strategic priorities for land such as food production, climate change adaptation and biodiversity” while it makes clear that “changes must start now”.

The [most recent report](#) by the Intergovernmental Panel on Climate Change (IPCC) warns that ‘transitions in global and regional land use are found in all pathways limiting global warming to 1.5°C with no or limited overshoot’.<sup>ii</sup> The report also highlights the importance of non-CO<sub>2</sub> emissions reductions - limiting global warming to 1.5°C will require a 35% reduction of methane by 2050, relative to 2010, and significant reductions in nitrous oxide and black carbon. Agriculture and related land use accounts for 68% of methane and 79% of nitrous oxide emissions in Scotland.

While Scotland’s agricultural greenhouse gas emissions have declined since the 1990s, these declines [‘are associated with reduced production rather than increased efficiency’](#), and agricultural systems continue to contribute a quarter of Scotland’s emissions – the second largest contributor nationally.<sup>iii</sup> Soil emissions contribute 27% of agricultural emissions which has not changed in five years, while emissions from machinery have increased by 5%. It is undoubtedly a challenging time for Scotland’s farmers, with post-EU

funding mechanisms still to be set out and growing recognition that transition to widespread sustainable farming practices must begin quickly.

Whilst the atmospheric lifetime of methane is around 10 years, during that time it has a substantially higher radiative potential than CO<sub>2</sub>, with a global warming potential over 20 years around 80 times that of CO<sub>2</sub>. Methane emissions contribute around a quarter of human-caused warming and have spiked in recent years. Reducing methane emissions will have a positive and immediate impact in reducing global warming given this short atmospheric lifetime.

The UK Committee on Climate Change said in its recent [progress report](#) to the Scottish Parliament that Scotland must take “decisive action to strengthen climate change policy in all parts of the economy” and that decisions taken over the next 12 months “are likely to determine the direction of the next 25 years”.<sup>iv</sup> It is imperative this work, including RLUPs, is ambitious, complementary, and coordinated to deliver the scale of natural climate solutions and land use changes required to meet the biodiversity and climate crises, whilst pursuing radical decarbonising of the economy across every sector.

Scottish agriculture is on the frontline of climate change impacts, but our land can also play a significant role in combating the crisis by increasing natural carbon sinks, such as wetlands and peatlands, and improving sustainable farming methods. These nature-based solutions are a necessary part of a broad package of methods to reduce emissions in agriculture. The technical working group for the Convention on Biological Diversity, for which Edinburgh will soon host a thematic workshop in April 2020, has suggested 37% of the mitigation necessary this decade can be achieved by restoring nature ‘with likely co-benefits for biodiversity’.<sup>v</sup> Meanwhile, [experts have shown](#) that “natural and seminatural ecosystems are likely to be the best starting place for immediate adaptation and mitigation solutions”.<sup>vi</sup> These cost-effective solutions should be integrated across agricultural systems, with farmers and crofters incentivised for contributing these essential public goods, which have co-benefits for food production.

However, it is important to note that nature-based solutions are not alone sufficient - decarbonising every sector remains more important than ever. The CCC similarly concludes that “land-based solutions [should not be] allowed to reduce effort elsewhere in the economy”. The need to avoid double-counting mitigation, for instance counting agroforestry in the overall forestry inventory as well as at the farm level, is essential to avoid exaggerating land-based mitigation. At the same time, positive steps taken by farmers risk being counted as advances in other land uses, such as forestry. Farmers and crofters need greater recognition, reward, and incentive for these steps.

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## References

<sup>i</sup> <https://www.theccc.org.uk/wp-content/uploads/2019/12/Reducing-emissions-in-Scotland-2019-Progress-Report-to-Parliament-CCC.pdf>

<sup>ii</sup> [http://report.ipcc.ch/sr15/pdf/sr15\\_spm\\_final.pdf](http://report.ipcc.ch/sr15/pdf/sr15_spm_final.pdf)

<sup>iii</sup> <https://www.gov.scot/Resource/0052/00523863.pdf>

<sup>iv</sup> <https://www.theccc.org.uk/2019/12/17/new-ambitious-actions-needed-for-a-net-zero-scotland/>

<sup>v</sup> <https://www.cbd.int/doc/c/e215/de56/af0aed70a7410e0fbffbe686/sbstta-23-09-en.pdf> p.24

<sup>vi</sup> <https://science.sciencemag.org/content/366/6471/eaaw9256>