



NEU Scotland

**Crop residues:
A policy and practice perspective**



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Policy: manifesto pledges

- Transform support for farming and food production so that by 2025 half of all funding for farmers and crofters comes with “green strings”
- ...conditional support with targets for biodiversity gain and a drive towards low carbon approaches
- Create a national protein strategy which will enable sustainable production of livestock and more plant-based proteins to be cultivated in Scotland

Evidence for the Farmer-Led Arable Climate Change Group

Briefing

This report highlights evidence on Scotland's arable sectors for the Arable farmer-led climate change group, covering the context and structure of the industry, greenhouse gas emissions, biodiversity, performance and productivity.

Evidence for policymakers

- Highlights evidence on Scottish arable sector and its contribution to GHG emissions

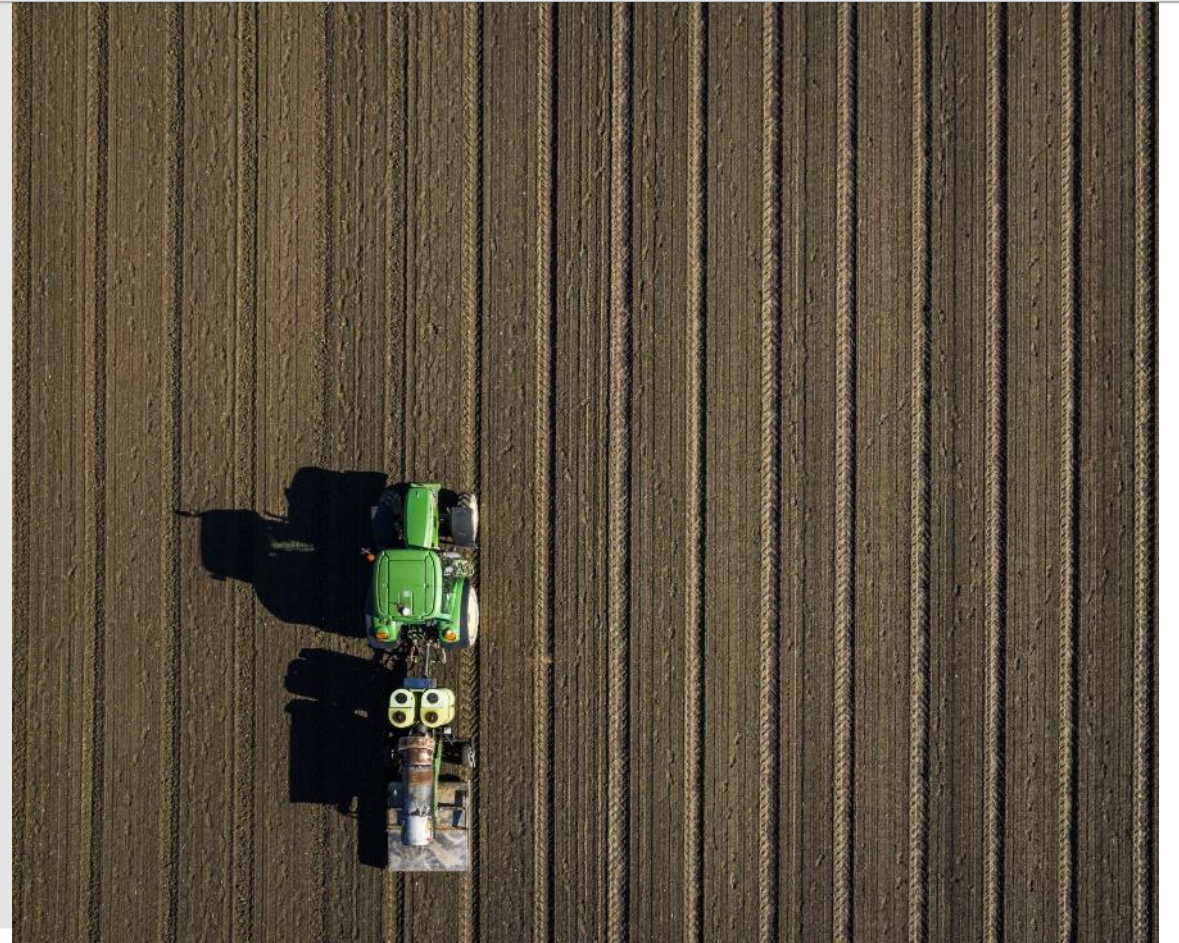
- 21% of total agricultural emissions are from arable

- Soil management (N_2O)
- Vehicles (CO_2)

- These measures are not sufficient to meet agriculture's envelopes by 2032 (falling short by around half)

Mitigation measures (residue related)

- Grain legume rotations
- Intercropping
- Crop rotation
- Retention of winter stubbles
- Stubbles followed by green manure
- Reduced tillage
- Manure and slurry
- Nitrification and urease inhibitors



Balancing N₂O, soil C, and CO₂?



- Reducing fertiliser requirements by increasing residual soil nitrogen
- Increasing soil organic carbon
- Increasing soil emissions?
- Reducing soil erosion and compaction
- Reducing emissions from the soil?
- Reducing fuel consumption

Practice: changes on the ground?

- Grain legumes
- Green manures
- Reduced tillage
- Winter soil cover
 - Farmers don't want to retain moisture if they have heavy soil and a wet climate!

Measure	<i>Individual</i>	<i>Social</i>	<i>Material</i>
Grain legume rotations	Knowledge and skills: agronomy and varieties	<u>Media, farmer bodies, knowledge exchange and innovation programmes</u>	Processing capacity, market and supply chain development, machinery, protein payments?
Retention of winter stubbles / winter soil cover	Knowledge and skills: establishing winter cover		Conditionality for support payments, cross-compliance
Intercropping	Knowledge and skills: agronomy, livestock nutrition		Grain separation post-harvest equipment, conditionality?
Stubbles followed by green manure	Knowledge and skills: most appropriate mixes and how to establish them		Agri-environment support payments
Reduced tillage	Knowledge, skills, and experience: agronomy		Equipment
Manure and slurry	Knowledge and skills: soil nutrient management		Equipment

Lastly: what else?

- Chopping straw and nutrient budgeting
 - Reductions in P and K, but immobilising N and so probably increasing spring N applications
- Carrots
 - >50 t/ha of cereal straw is used to protect carrots from frost in Scotland, and carrot lifting damages soil
- Bulky organic manure application
 - Digestate, compost, livestock manures



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