

RUBY COUNTRY
NET-ZERO FARMING
FORUM

Setting the scene on net
zero

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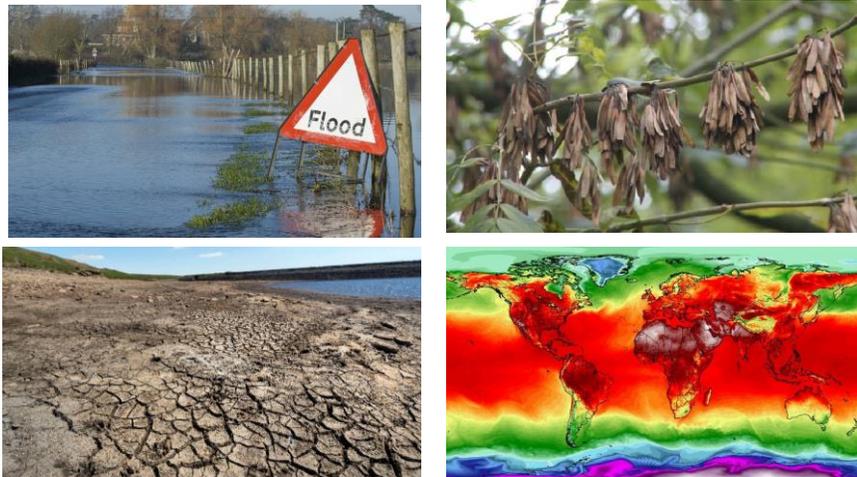
RUBY COUNTRY NET-ZERO FARMING FORUM

Setting the scene on net zero

- Why is it important?
- What do we mean by net zero?
- Farming's contribution to greenhouse gas emissions
- Achieving net zero
- The Ruby Country Farming Forum



Why is it important?



Signatories of 2016 Paris Agreement agreed to take action to limit global warming to below 2°C (preferably to 1.5 °C) compared to pre-industrial levels.

Global greenhouse gas emissions and warming scenarios

- Each pathway comes with uncertainty, marked by the shading from low to high emissions under each scenario.
- Warming refers to the expected global temperature rise by 2100, relative to pre-industrial temperatures.



Annual global greenhouse gas emissions
in gigatonnes of carbon dioxide-equivalents

150 Gt

100 Gt

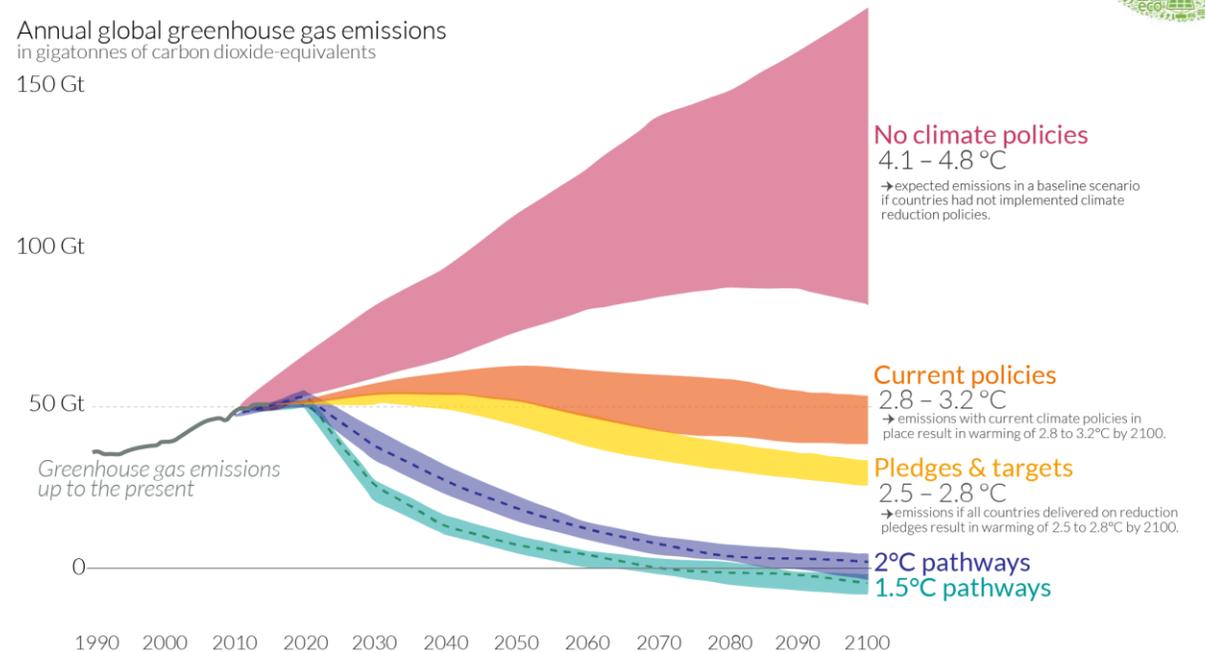
50 Gt

Greenhouse gas emissions
up to the present

1990 2000 2010 2020 2030 2040 2050 2060 2070 2080 2090 2100

Data source: Climate Action Tracker (based on national policies and pledges as of December 2019).
OurWorldinData.org - Research and data to make progress against the world's largest problems.

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Why is it important?

- UK Government has committed to achieving net zero carbon emissions by 2050
- In response, NFU have committed to 2040 target outlined in their “Achieving Net Zero” report
- Environment Bill sets out long-term, legally-binding environmental targets to deliver vision outlined in the 25 Year Environment Plan and reach net zero by 2050
- New Agriculture Bill sees phasing out BPS and move to payment for ‘public goods’
- Local Authorities have declared climate emergencies



 HM Government

A Green Future: Our 25 Year Plan to
Improve the Environment



Transform to Net Zero

Nike, Starbucks, Unilever, BSR, wipro, EDF Environmental Defense Fund, Avon, Natura & Co, Mercedes-Benz, MAERSK, Microsoft, Danone

DELIVERING ON NET ZERO
 Scottish Agriculture

WE WANT TO REDUCE ALL TRANSPORT-RELATED EMISSIONS TO NET ZERO BY 2050

MISSION 2050 ZERO EMISSIONS GO GREEN

Net Zero

The UK's contribution to stopping global warming

Committee on Climate Change
May 2019

Sainsbury's NET ZERO BY 2040

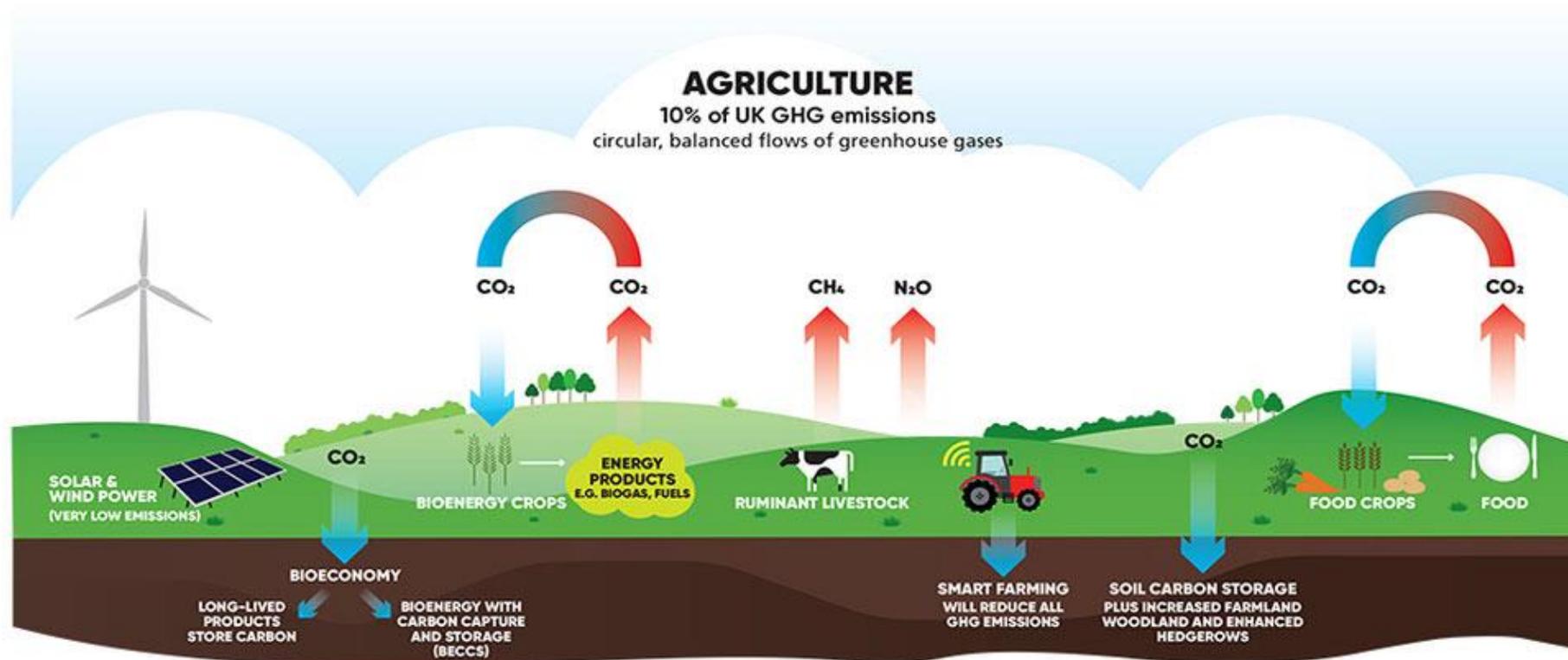
£1 billion

Land use: Policies for a Net Zero UK
 Committee on Climate Change
 January 2020

Volkswagen way to

ZERO

What do we mean by net zero?

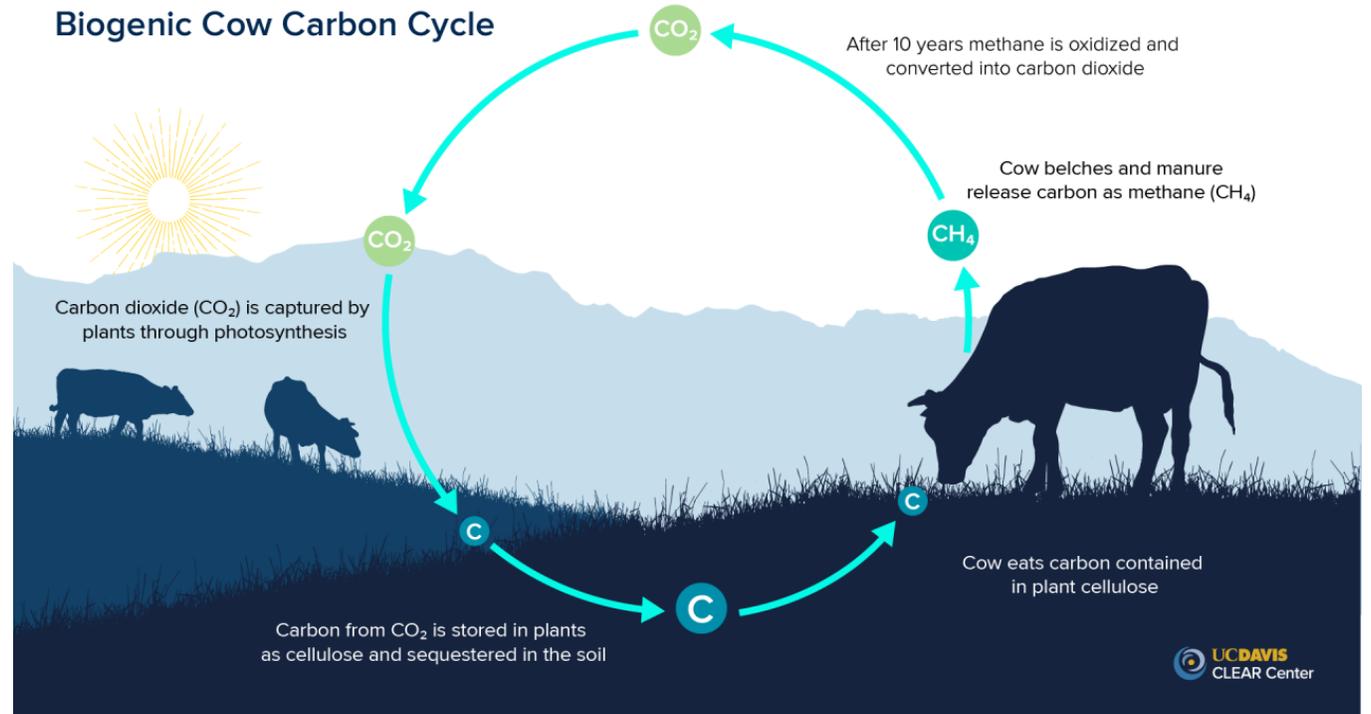
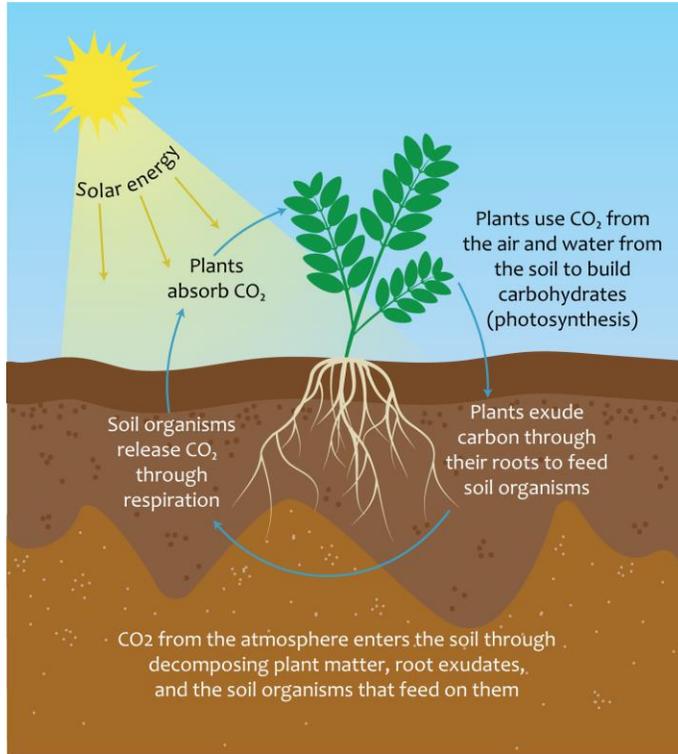


Understanding the terminology

Greenhouse Gas Emissions - The release of heat trapping gases whose molecules reduce the rate that solar heat energy in the Earth's atmosphere is lost back into space as infrared radiation.

Global warming potential - Describes how much impact a gas will have on atmospheric warming over a period of 100 years* compared to carbon dioxide.

CO₂ equivalent - CO₂e provides a common unit for expressing the GWP of different GHGs. CO₂ has a global warming value of 1, methane has a GWP 28 times the impact of CO₂, whilst nitrous oxide has a GWP 298 that of CO₂



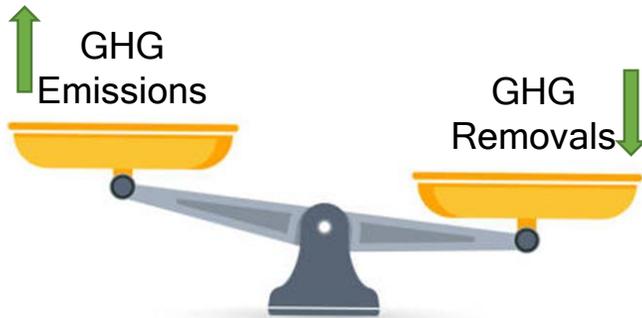
Carbon sequestration - The long-term removal of carbon dioxide from the atmosphere and storage in vegetation such as grasslands or forests, as well as in soils and oceans.

Carbon store/stocks - The carbon which is locked in vegetation and soils

Carbon balance – The proportion of GHG emissions to GHG removals/sequestration

What do we mean by net zero?

A situation where man-made emissions of greenhouse gas to the atmosphere are balanced by removals over a specified period



Carbon Source

GHG emissions are larger than GHG removal



Carbon Sink

GHG emissions smaller than GHG removal



Carbon Neutral

Balance between GHG emissions and GHG removal in annual production cycle

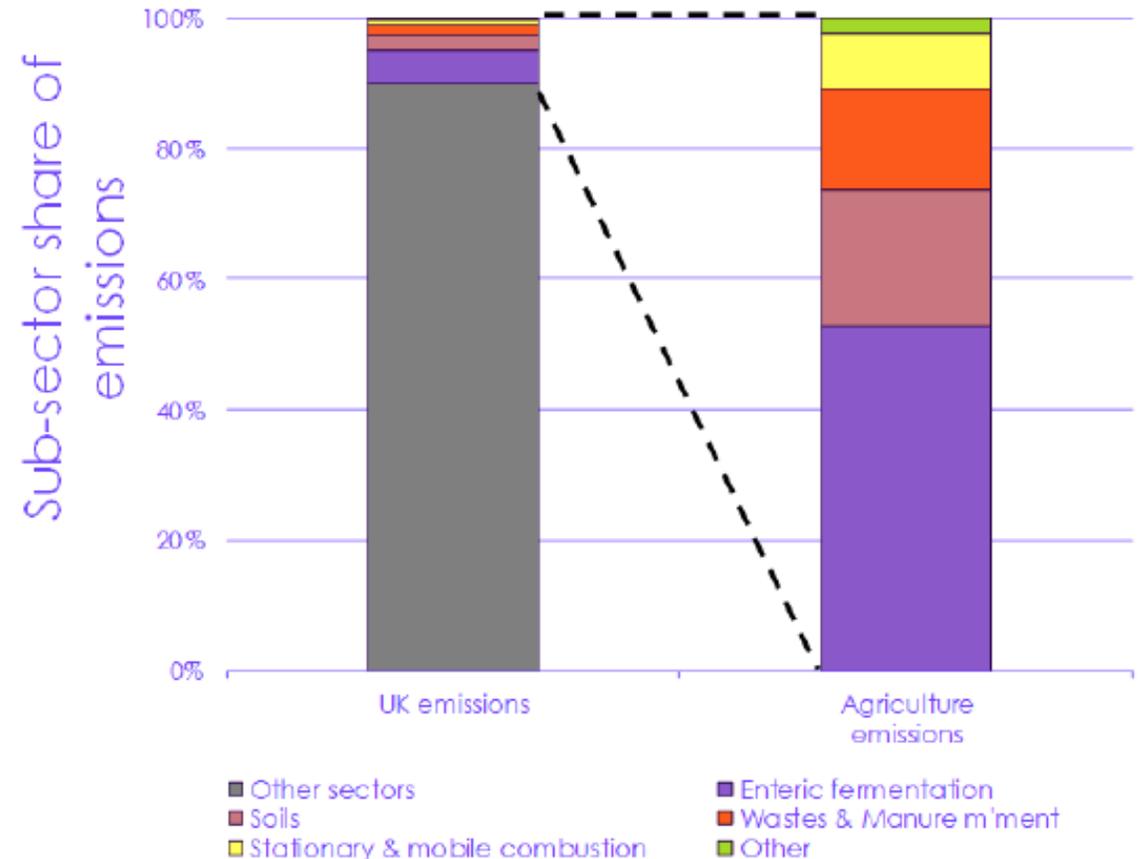
Farming's contribution to GHG emissions



Others include Public, Industrial Processes and the Land Use, Land Use Change and Forestry (LULUCF) sectors. The percentages may not sum to 100% due to rounding.

Compared to total emissions from all sectors, agriculture is the source of:

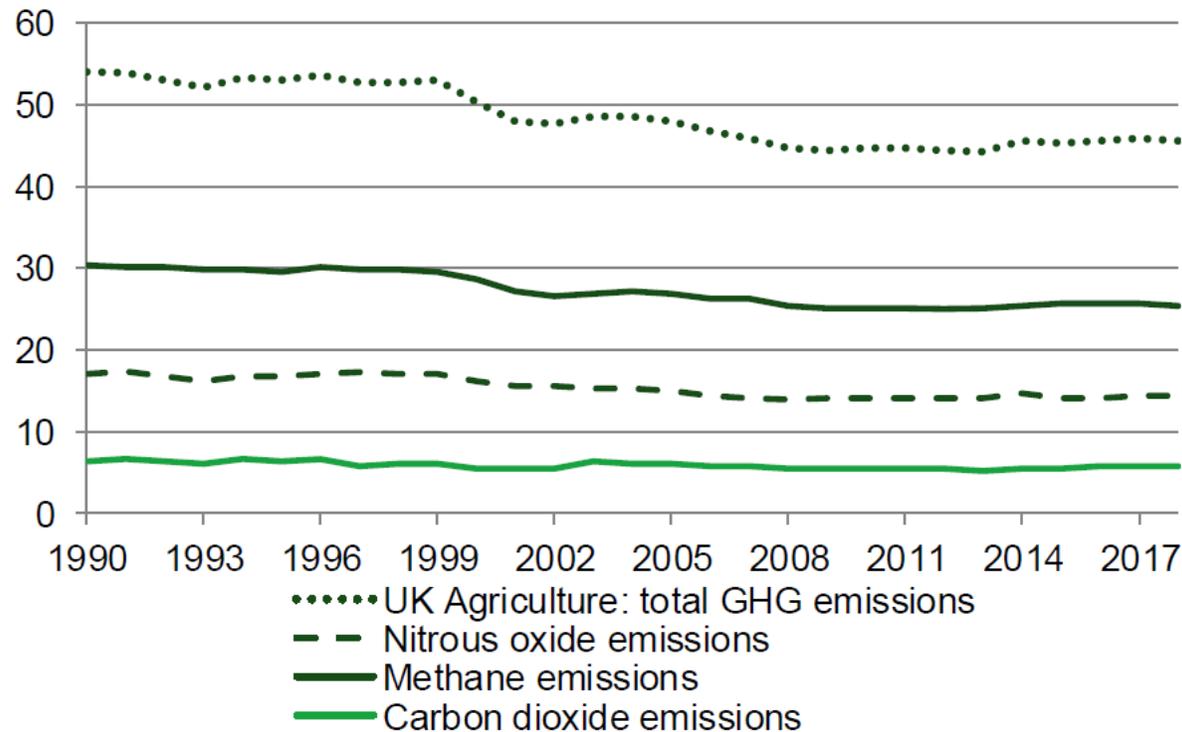
- 10% of total GHG emissions in the UK
- 70% of total nitrous oxide emissions,
- 49% of total methane emissions,
- 1.6% of total carbon dioxide emissions



Source: BEIS (2020) Provisional UK greenhouse gas emissions national statistics 2019; CCC analysis.

Farming's contribution to GHG emissions

Million tonnes carbon dioxide equivalent



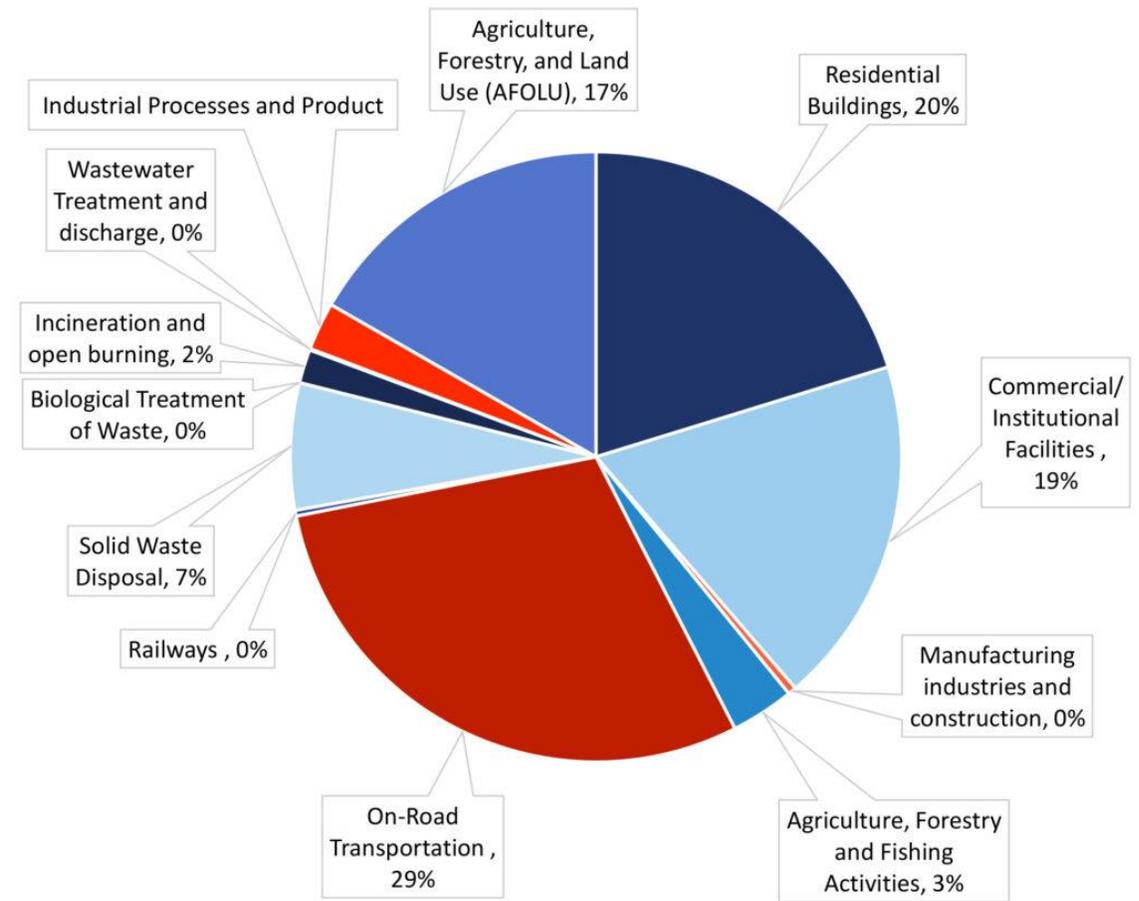
DRIVER - reductions in the numbers of cattle and sheep in the UK.

DRIVER - substantial reductions in the overall application rate for nitrogen fertilisers, particularly to grassland, arable application rates have remained relatively stable

Source: Department for Business, Energy & Industrial Strategy

Achieving net zero in Devon

- The South West's farmed environment is of key economic, social and cultural significance beyond the national average.
- In Devon, over 70% of land is farmed, with nearly 80% of this put down to grassland.
- Agriculture accounts for roughly 17% GHG emissions in Devon, with this number higher again in northwest Devon.



Achieving net zero



Climate
Change
Committee

The UK's independent adviser on
tackling climate change



A 64% reduction in agricultural GHG emissions



Low carbon farming can reduce emissions by 19% by 2035



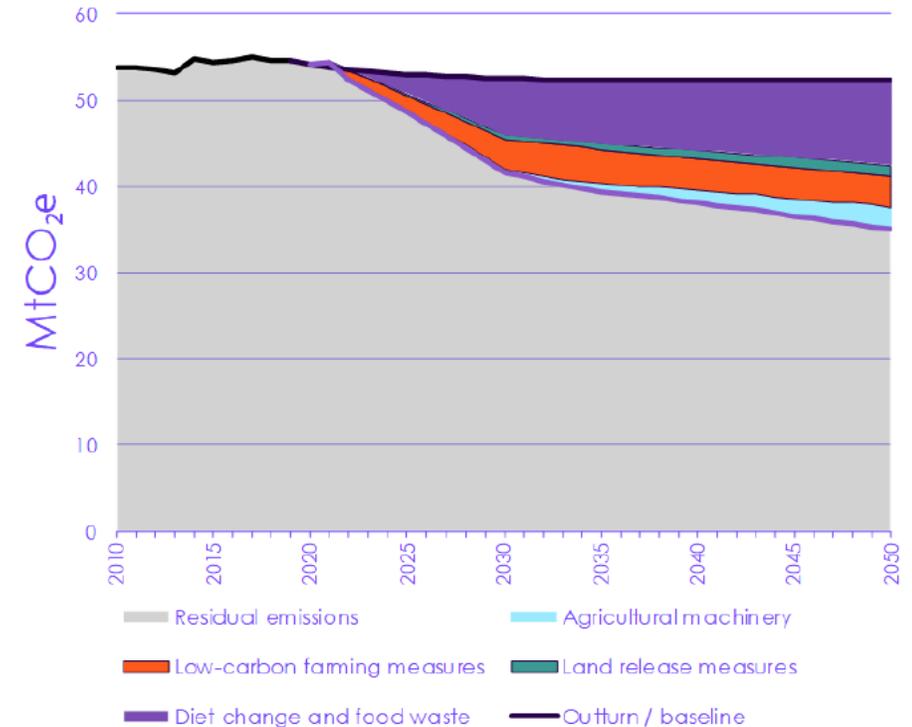
Additional measures to release land, sequester and store carbon



A 35% reduction in meat consumption

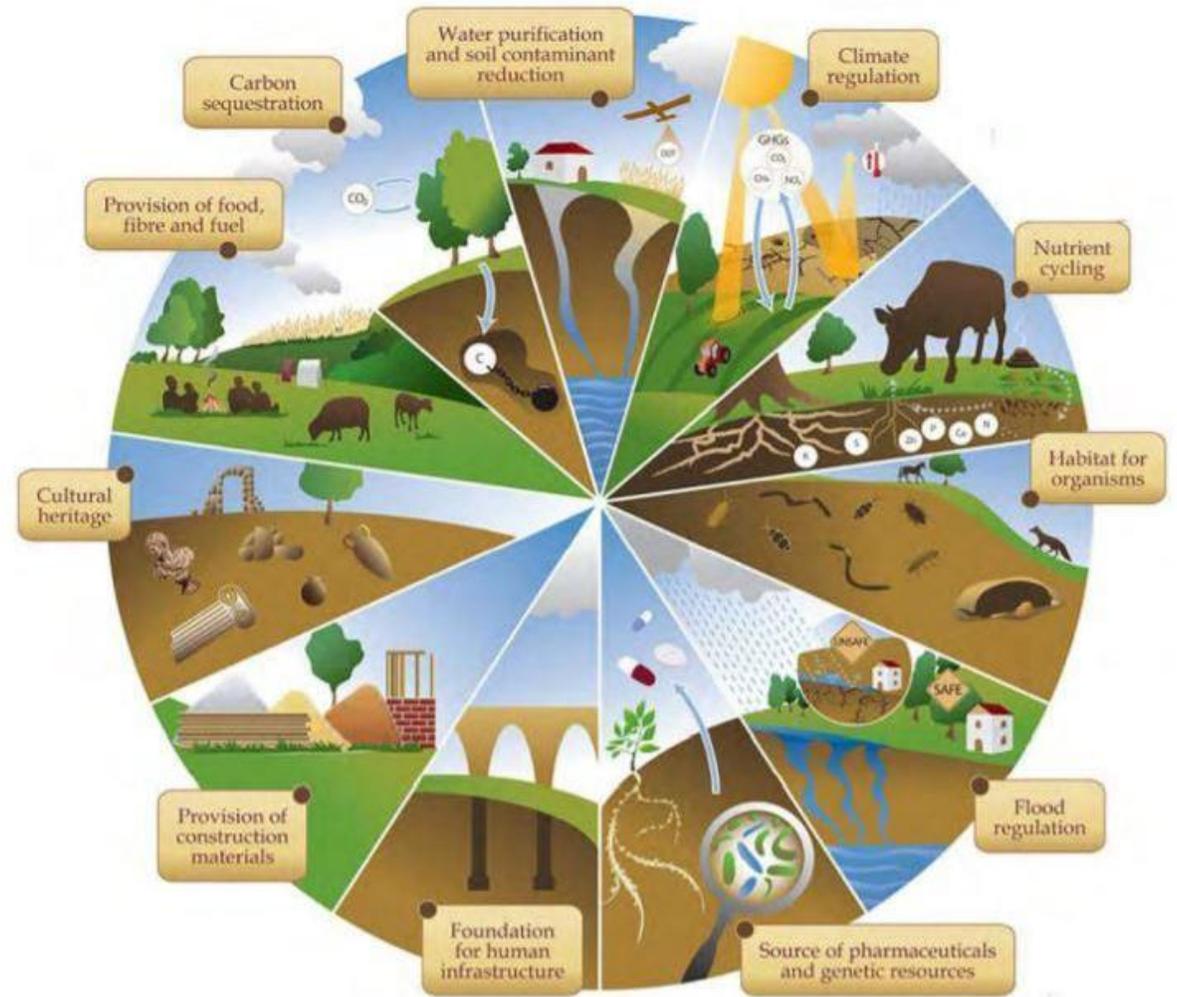


Increase woodland from 13% to 18% land cover



Source: BEIS (2020) Provisional UK greenhouse gas emissions national statistics 2019; SRUC (2020); CCC analysis.

Land is important for more than just carbon sequestration...



ecosystem services from land use - CCC rep



Net Zero & the Ruby Country

The Challenge

- High reliance on the livestock sector
- Limited alternative industry
- Ruby Country stands to be disproportionately impacted by changes to the ruminant sector.

Net Zero and the Ruby Country

The Opportunity

- Great potential to deliver against Net Zero
- Utilise the agricultural heritage and identity of the area to promote your products



RUBY COUNTRY NET-ZERO FARMING FORUM

How can Ruby Country beef farming best transition to net-zero GHG emissions by 2050?



RUBY COUNTRY

NET-ZERO FARMING FORUM

- A range of speakers with expertise aligned to topic of net zero
- Rothamsted North Wyke – undertakes farm systems scale research into the impact of beef and sheep production on the environment.
- Much of this focusses on gaining a better understanding the processes which underpin agricultural systems
- Use this knowledge to inform optimisation on systems to reduce losses, whilst maintaining or increasing production “sustainable intensification”
- But we need your input....



RUBY COUNTRY NET-ZERO FARMING FORUM

Workshop 1 - introductory session:
introduction to net zero, policy and
economic context

Tue. 20 Apr.

Workshop 3 – GHG mitigation: Land and
manure management

Tue. 4 May

Workshop 5 – Carbon capture: Hedgerows
and trees in the farmed environment

Tue. 18 May

Tue. 27 Apr.

Workshop 2 – Mitigating methane
emissions: Animal management, grazing
and feed.

Tue. 11 May

Workshop 4 – Carbon capture in grassland
soils

Tue. 25 May

Workshop 6 - Final deliberation and
recommendations for future actions

RUBY COUNTRY NET-ZERO FARMING FORUM

- We are here to listen and learn – we don't have all of the answers!
- Still very active area of research which means we are lacking agreed consensus in some areas as new data and research becomes available.
- Forum members recruited for your expertise and experience – this is an opportunity to share knowledge and experiences, identify where there may be barriers or opportunities, where additional support or knowledge may be required.
- Hope that this can aid collaboration around this topic within the Ruby Country.
- Outputs can feed into future research and policy....

Further reading and resources

- AHDB - [Carbon: a glossary of terms](#)
- CIEL report - [Net Zero Carbon and UK livestock](#)
- Committee on Climate Change 6th Carbon Budget – [Sector summary: Agriculture - land use, land use change, forestry](#)
- Defra - [Agricultural Statistics and Climate Change, 10th edition](#)