What contribution can agriculture make to climate action

Stop Climate Chaos

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21st May 2020

One Future

Align agriculture and land-use with our climate and biodiversity obligations

Support rural livelihoods and reduce agricultural pollution and emissions

- Develop an agriculture policy that is in line with our climate, biodiversity and water quality obligations; improves national food security and supports farmers in a just transition away from intensive livestock production.
- Support reform of the EU's Common Agricultural Policy to ensure it supports public money for public goods including High Nature Value farming and a just transition for farmers and rural communities.
- Place limits on nitrogen fertiliser and pesticides import and usage.

Reconnect, restore and protect nature

- Establish, in mid 2020, the Citizens' Assembly on biodiversity loss mandated by the Dáil's declaration of a climate and biodiversity emergency on 9 May 2019.
- Reverse the budget cuts suffered by the National Parks and Wildlife Service, allocating at least €100 million in Budget 2021 to protect habitats for people and wildlife.
- Develop a continuous cover forestry policy with the right trees in the right place under the right management, focusing on native tree species underpinned by ecological assessment of land to be planted.
- Ensure that 30% of land and sea is managed for biodiversity and achieve favourable conservation status for 50% of habitats and species by 2030.

The Paris Agreement

- Each party shall submit a nationally determined contribution
- Art 4(3) - "[e]ach Party's successive nationally determined contribution will represent a progression beyond the Party's then current nationally determined contribution, and reflect its highest possible ambition, reflecting its common but differentiated responsibilities and respective capabilities, in light of different national circumstances'.

Article 2

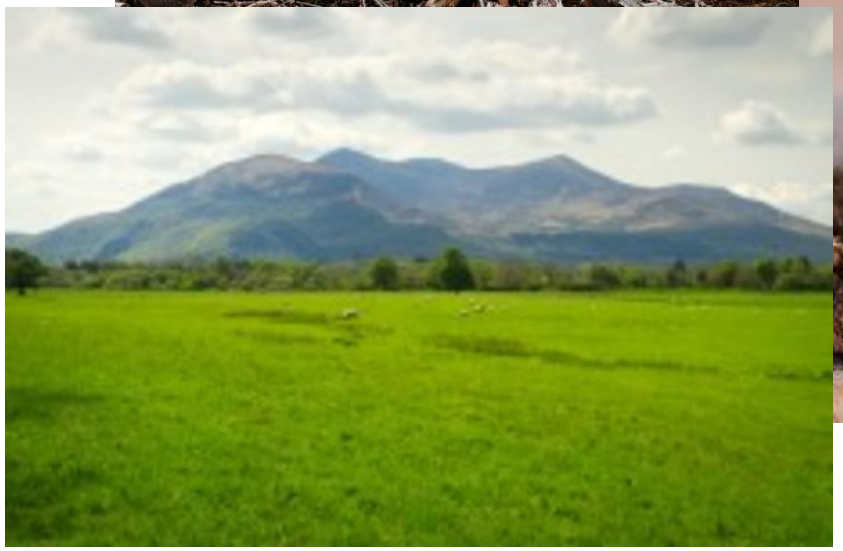
1. This Agreement, in enhancing the implementation of the Convention, including its objective, aims to strengthen the global response to the threat of climate change, in the context of sustainable development and efforts to eradicate poverty, including by:

(a) Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change;

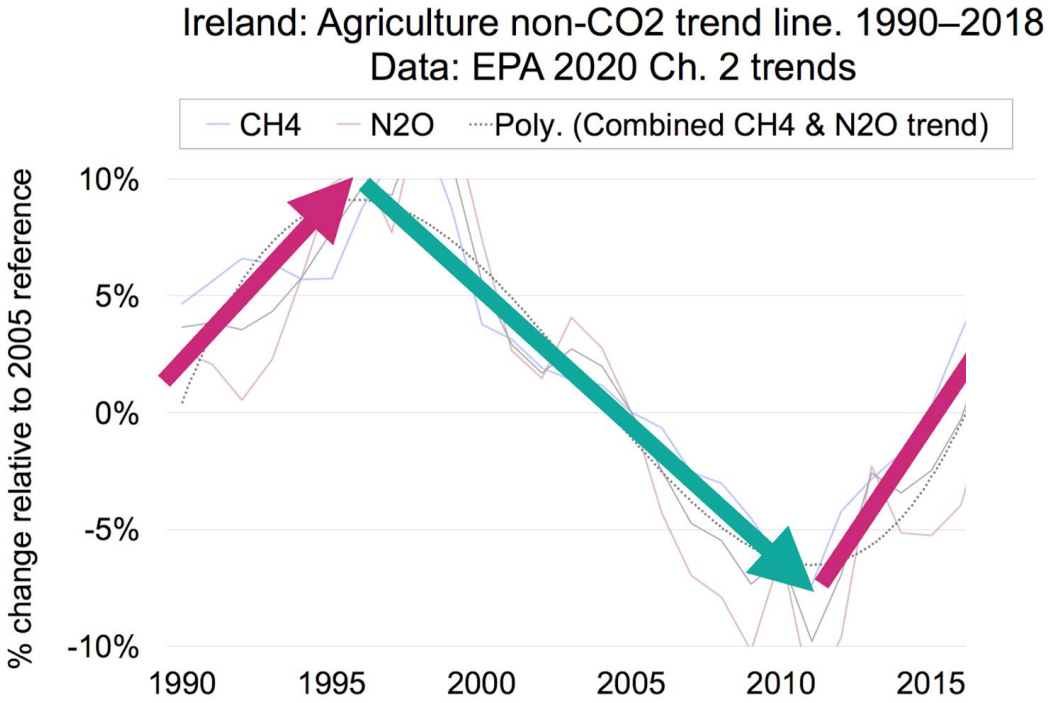
2. This Agreement will be implemented to reflect equity and the principle of common but differentiated responsibilities and respective capabilities, in the light of different national circumstances.

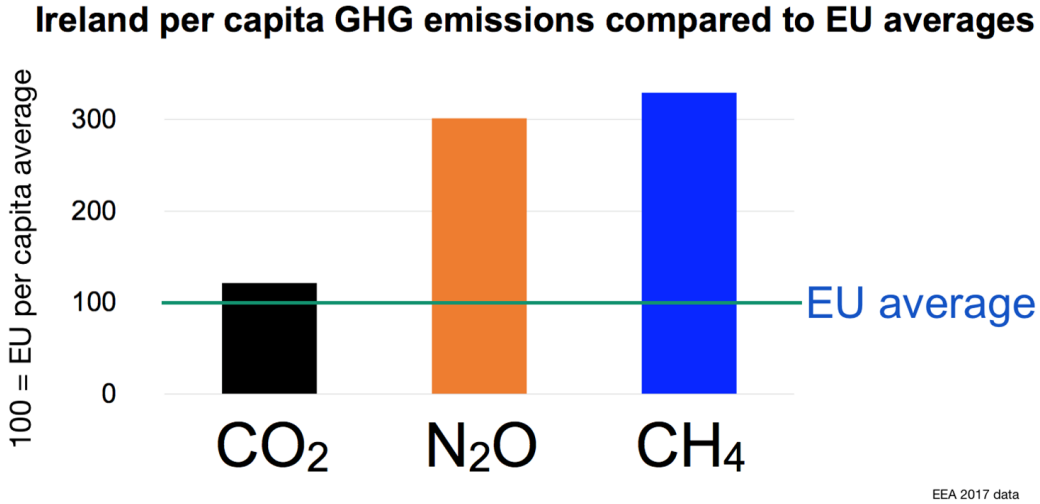
Emissions from land-use

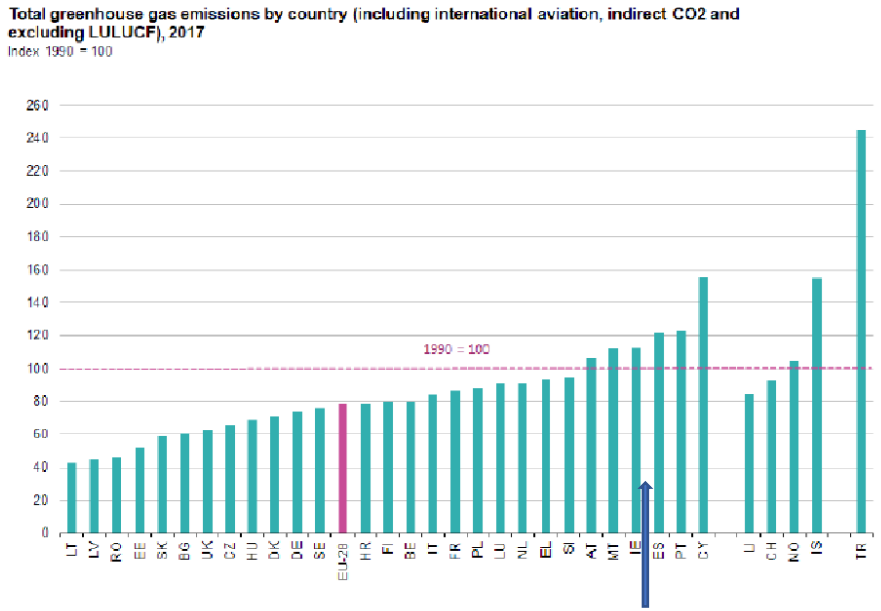
- Peatlands
- Loss of soil carbon via farming practices
- Nitrous Oxides – fertilisers
- Methane – ruminants (livestock
- Deforestation
- [Permafrost]
- [Methane hydrates]
- [Degraded forestry]



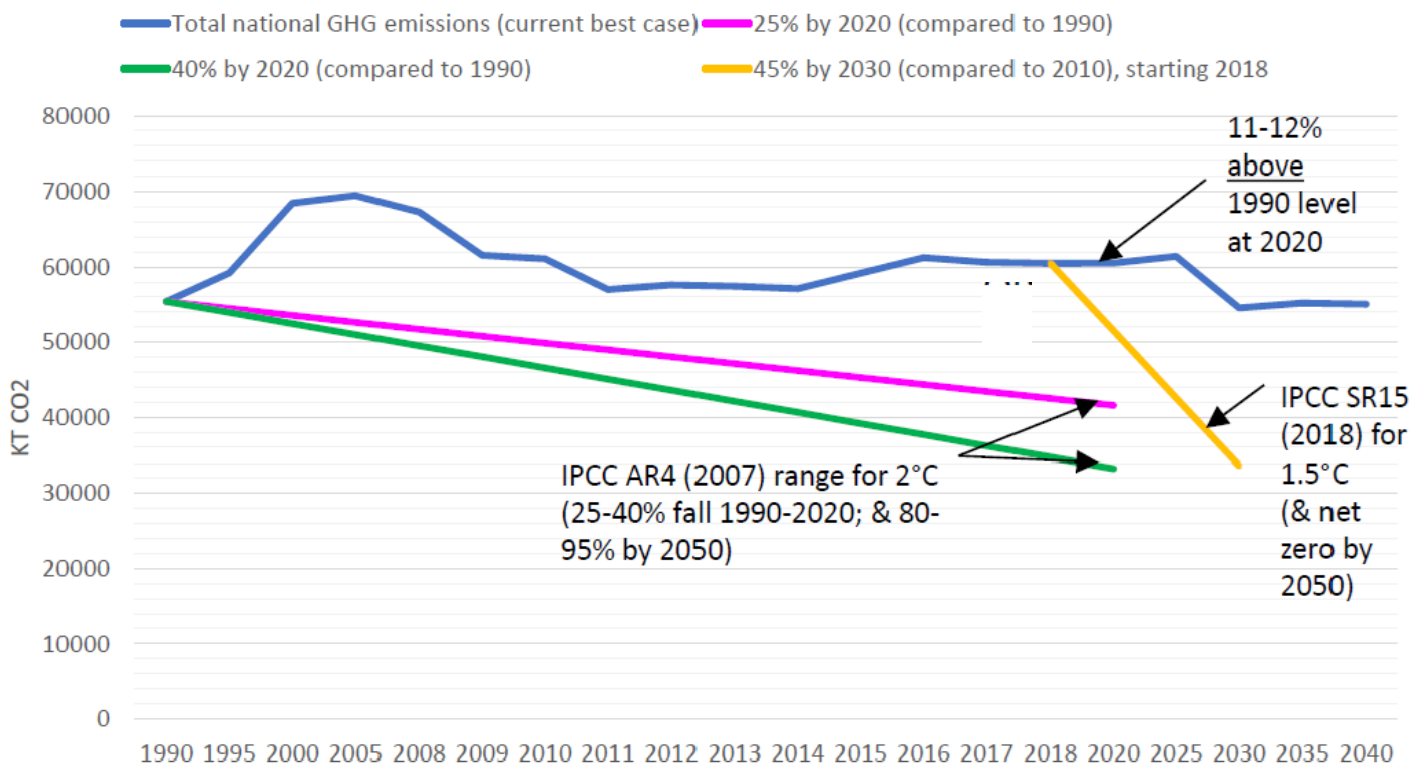
Trends: Ireland and EU







Ireland's "disturbing" GHG emissions vs. what's needed per IPCC & Ireland

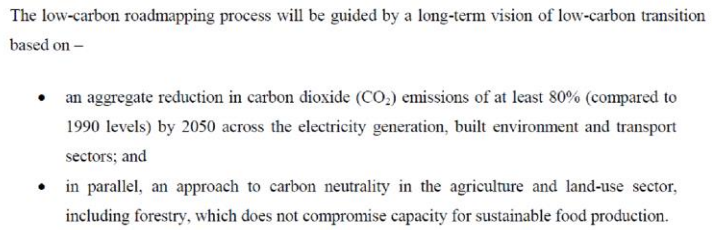


Latest EPA figures: 1990-2018 (provisional), 2020-2040 (projected WAM)

Source: Dr. Andrew Jackson, School of Law, UCD.

National policy

- NPP



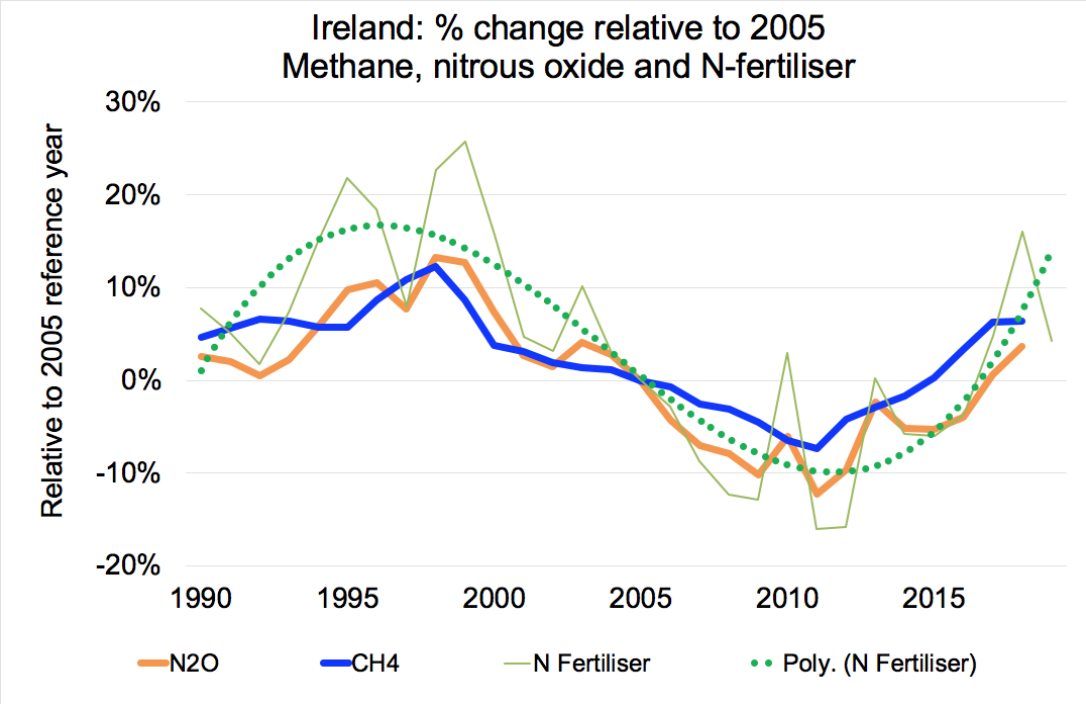
The low-carbon roadmapping process will be guided by a long-term vision of low-carbon transition based on –

- an aggregate reduction in carbon dioxide (CO_2) emissions of at least 80% (compared to 1990 levels) by 2050 across the electricity generation, built environment and transport sectors; and
- in parallel, an approach to carbon neutrality in the agriculture and land-use sector, including forestry, which does not compromise capacity for sustainable food production.

- Climate Act 2015
- NMP 2017
- Food Harvest 2020, FoodWise 2025
- JOCCA 2019
- Climate Action Plan 2019

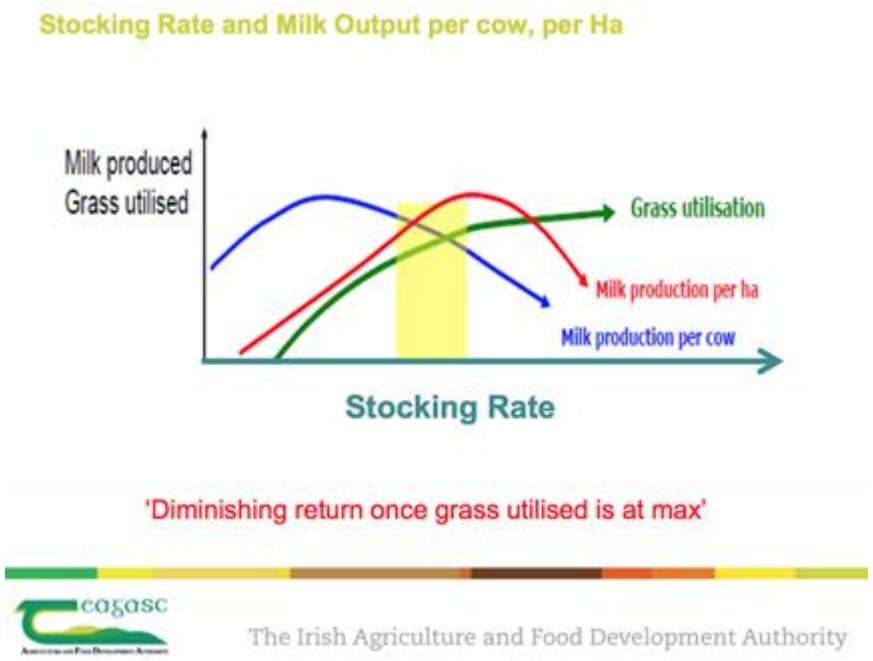
- We have net emissions - most countries have net removals
- Ireland's agricultural production is primarily oriented toward producing animal derived foods for export, as is promoted by Bord Bia.
- Ireland's agreed EU 2030 non-ETS target aims to cut the aggregate CO_2-eq emissions combining agriculture, transport, building heating and waste by 30% compared to the total in 2005. This is likely to increase under EU GD.
- We are also able to avail of flexibilities of up to 45 CO_2-eq emissions
- But emissions from the agriculture sector are increasing, not decreasing

Let's talk about methane



- There is no "best" GHG equivalence metric to measure methane emissions in terms of society-wide mitigation targets involving all GHGs. "All choices of metric contain implicit value-related judgements such as type of effect considered and weighting of effects over time" IPCC AR5 WG1 Ch. 8 p.663.
- GWP100 or GWP*?
- GWP100 does not correctly reflect the climate response due to changes in short-lived pollutants such as methane emissions
- GWP* is a new formula to enable calculation of CO_2-we (warming-equivalent) annual emissions directly from a national GWP100 CO_2-eq time series values in a way that accurately approximates the climate system response.
- GWP100 incorrectly indicates that it causes a cumulative warming impact like CO_2. GWP100 also fails to show the large near-term "flow" effect of *changes* in annual methane emissions and it overstates the small (though important) long-term "stock" effect of an emission of methane.

What is driving up emissions?



- Removal of milk quota
- Nitrogen
- Growth of agri-food export industry and related marketing and policy supports
- EPA, 2019: 'Agriculture emissions are projected to continue to grow steadily over the period which is mainly a result of an increase in animal numbers particularly for the dairy herd.'

What about hedgerows and soils?

- Hedgerow and carbon stocks have only been roughly estimated,
- Are already included in EPA reporting
- Subject to very large uncertainty.
- Soils store a large amount of carbon but it is very difficult to measure local changes in carbon stock.
- Due to farming practices on organic (peaty) soils, grasslands emit about 6MtCO2 pa
- The cost of accurate, ongoing measurement of soil carbon sequestration could be very large and would likely remain highly uncertain.
- Ethical issues with offsetting

Myth-busting #1

Isn't permanent pasture for extensive livestock farming better than transferring that land for cultivation and rotating crops when it comes to land degradation?

- We need to decide our real policy aims are first, for example:
- maximising net nourishment per hectare at lowest environmental impact
- Preventing climate disaster – near term emissions reductions
- Meeting our obligations under the Paris Agreement
- Meeting our binding EU commitments not just climate commitments but water framework directive, habitats and birds directive

Myth-busting #2

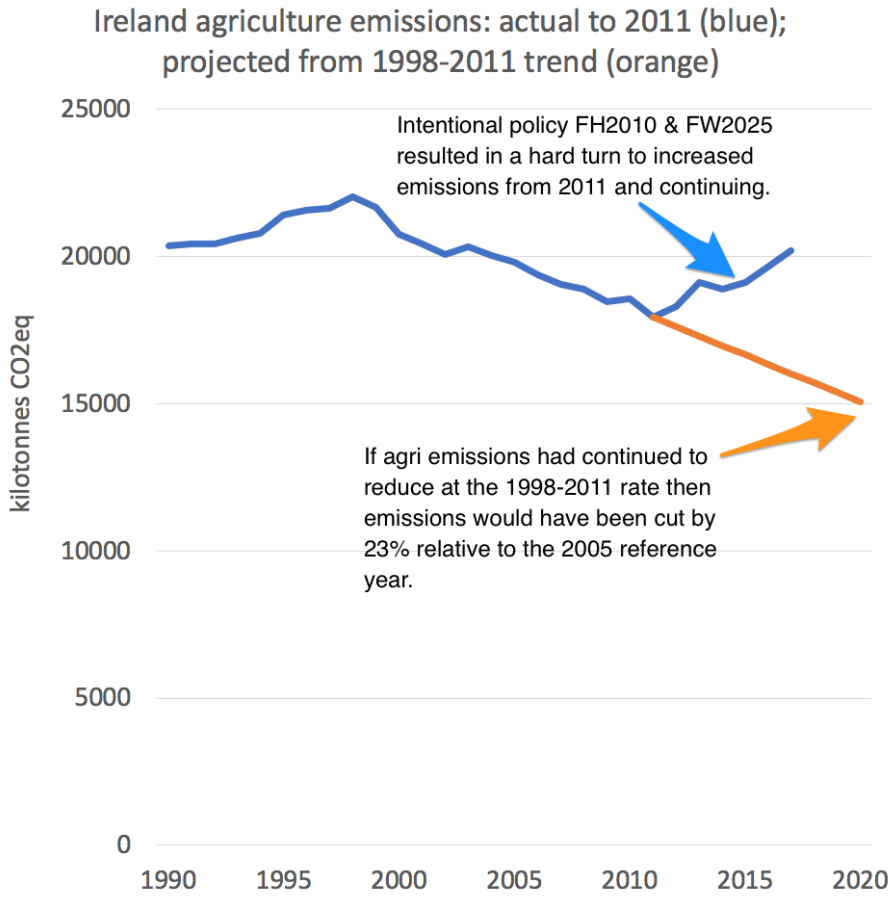
If we don't produce the beef it will be produced less efficiently elsewhere instead…

- Carbon leakage occurs because of globalisation and trade
- Delaware effect… and the California effect
- Prices should reflect the ecological cost
- Trade agreements must include environmental standards & protections (Mercosur)
- … but we must reduce our consumption of animal products regardless

Myth-busting #3

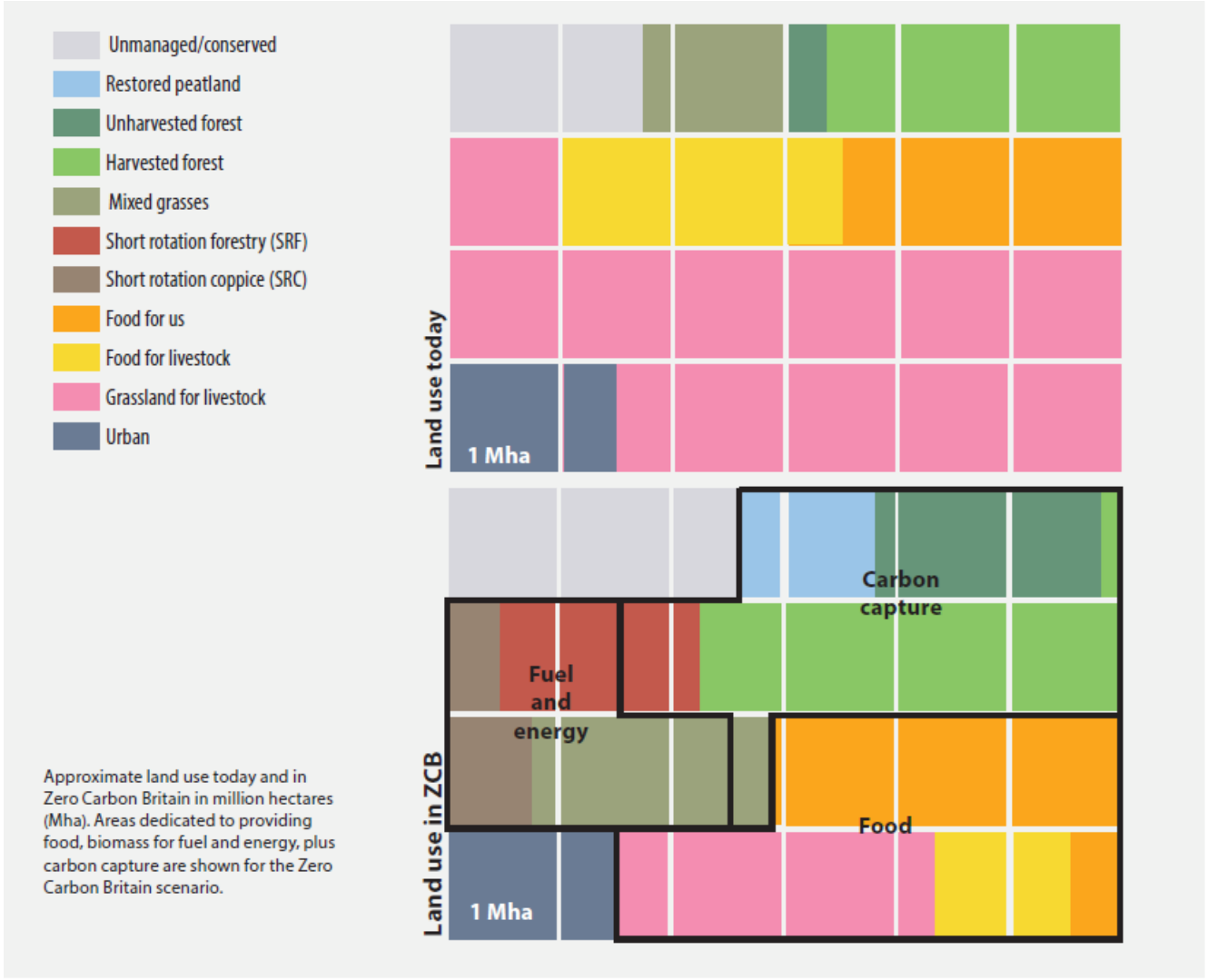
We're the most carbon-efficient producers in the world…

- dairy expansion is the primary driver for emissions increases
- end of the milk quota
- Nitrogen fertiliser imports rose by 38% from 2011 to 2018 (from 296,000 tonnes to 408,000 tonnes) and milk production has simply gone up in line with fertiliser use.



Solutions?

- We need to reshape food system and reduce emissions from fertilisers, manure storage and livestock.
- Improvements in fertiliser use, in manure handling efficiencies and in animal productivity through breeding for example.
- Changing diets, eg eating less meat and reducing food waste would contribute to additional reductions.
- Ireland could become more self-reliant in food, reducing imports and so reducing the impacts of food production for our consumption elsewhere in the world.
- land currently used for grazing livestock could be repurposed, freeing up space for a range of other uses, which could also offer new income streams to farmers.



Approximate land use today and in Zero Carbon Britain in million hectares (Mha). Areas dedicated to providing food, biomass for fuel and energy, plus carbon capture are shown for the Zero Carbon Britain scenario.

Zero Carbon Britain: Rising to the Climate Emergency CAT, 2020.
https://www.cat.org.uk/new-report-zero-carbon-britain-rising-to-the-climate-emergency/

Thank you!

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