European Commission

IACS data: making it work for climate policy

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Climate Action

Paris Agreement – Ambition

Global goals

★ Mitigation (reducing emissions)

- Well below +2deg C, and efforts to limit increase to +1.5deg C
- Balance between emissions and removals of greenhouse gases by the 2nd ½ of this century

★ Adaptation

- Enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change

PARIS2015
UN CLIMATE CHANGE CONFERENCE
COP21·CMP11

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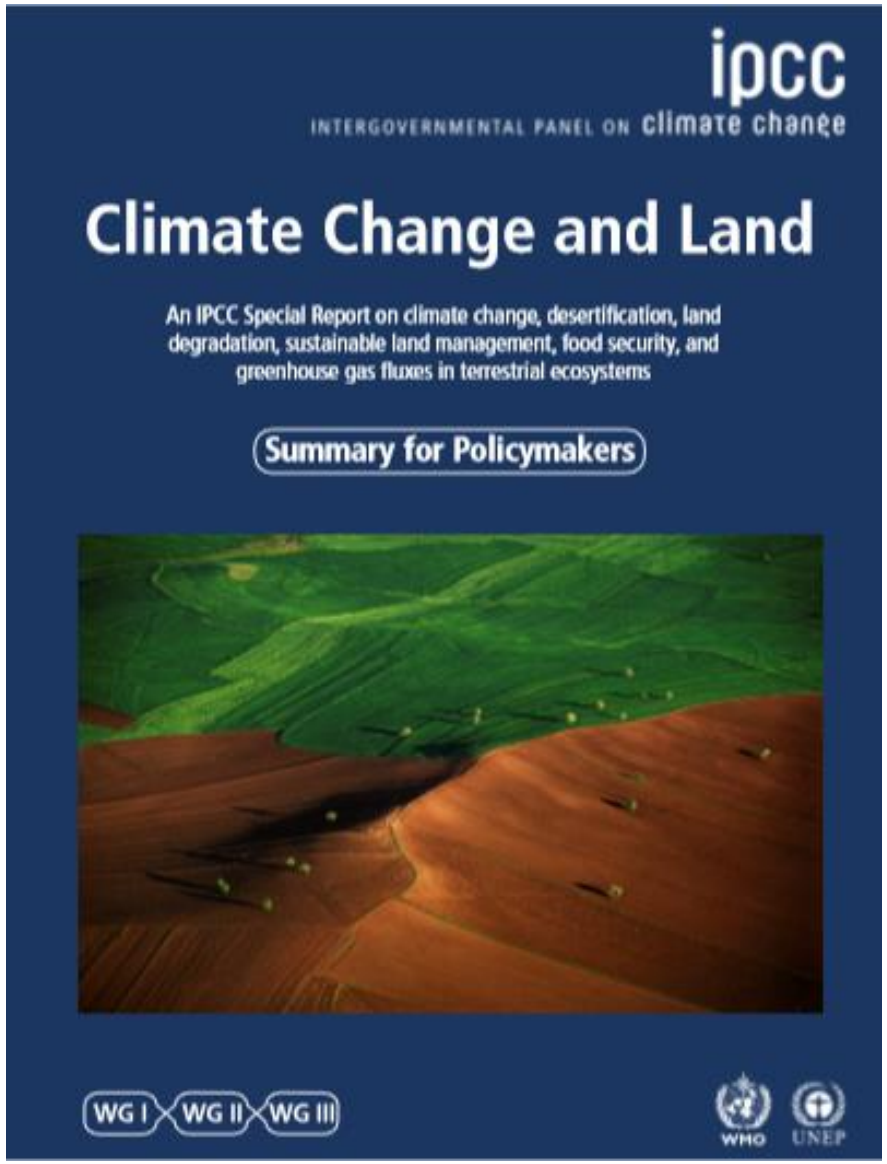
Land use – a key factor in climate change



CORRIERE DELLA SERA

IL RAPPORTO

Allarme Onu, il riscaldamento globale aumenterà fame e migrazioni

Il nuovo studio suggerisce anche di diminuire il consumo di carne e latticini. Coldiretti: danni per 14 miliardi all'agricoltura italiana nell'ultimo decennio

Le Monde

Un rapport spécial du GIEC : l'humanité épuise les terres

Les experts de l'ONU avertissent sur la surexploitation des ressources, qui menace la sécurité alimentaire, appauvrit la biodiversité et amplifie les émissions.

Par Pierre Le Hir · Publié le 08 août 2019 à 10h00 - Mis à jour le 09 août 2019 à 16h21

The Guardian

Climate crisis reducing land's ability to sustain humanity, says IPCC

UN report finds ecosystems never before under such threat and restoration is urgent

- How climate's impact on land threatens civilisation - and how to fix it

The New York Times

Climate Change Threatens the World's Food Supply, United Nations Warns

https://www.ipcc.ch/srccl-report-download-page/

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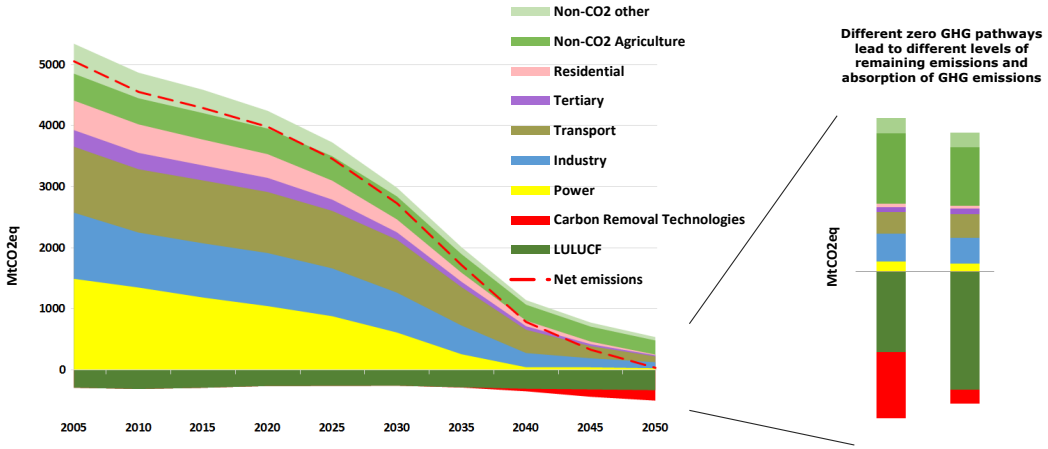
Our Vision* for a Clean Planet by 2050

- ★ Commission vision for EU long-term strategy: **climate-neutral EU by 2050** (net zero GHG emissions)
- ★ **Substantial transformations**: energy system, buildings, transport, industry, **agriculture**
- ★ A number of pathways – **challenging but feasible** from technological, economic, environmental and social perspective



Commission Communication on the proposed "Long Term Strategy", 2018 https://europa.eu/!uJ83HG

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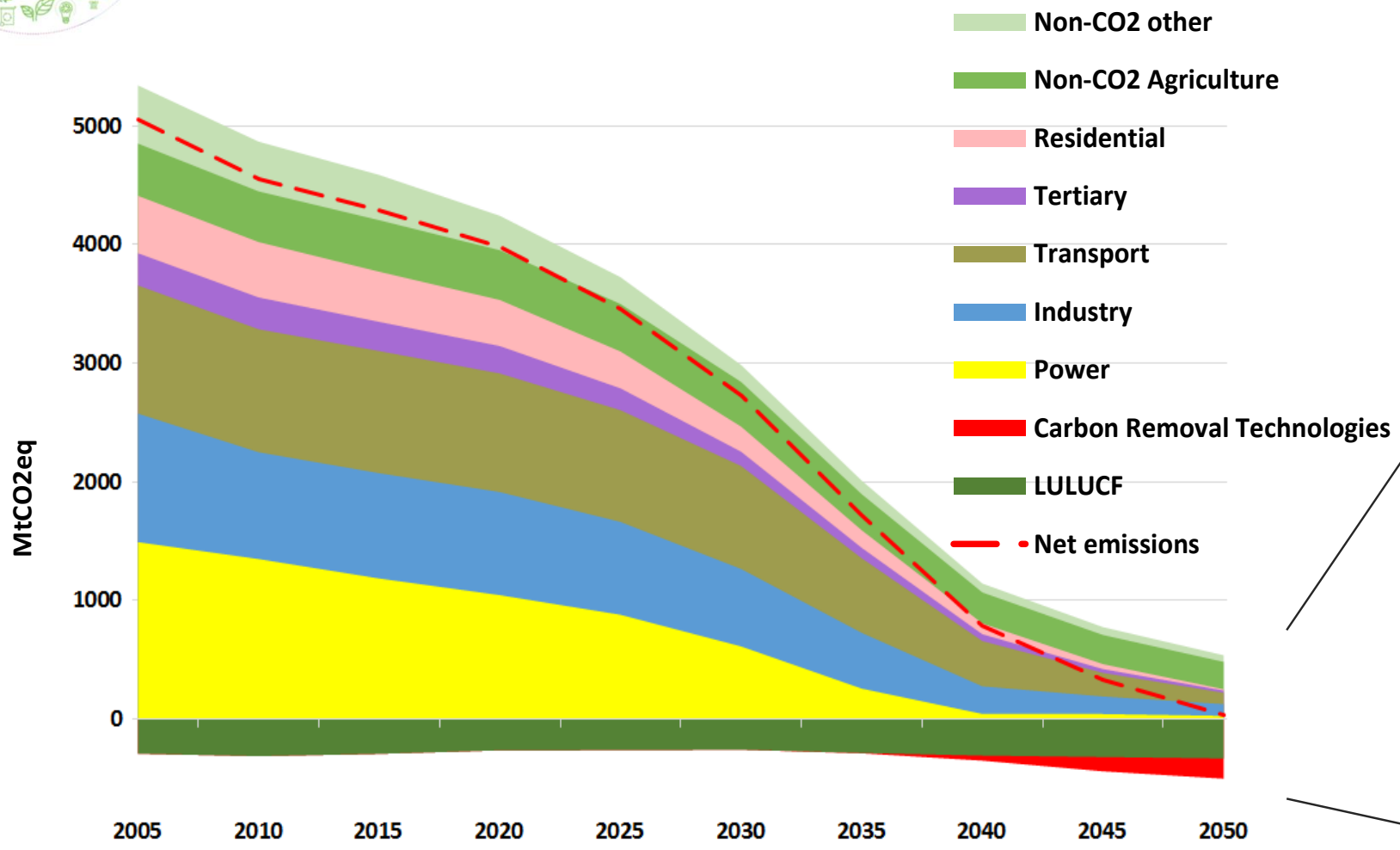
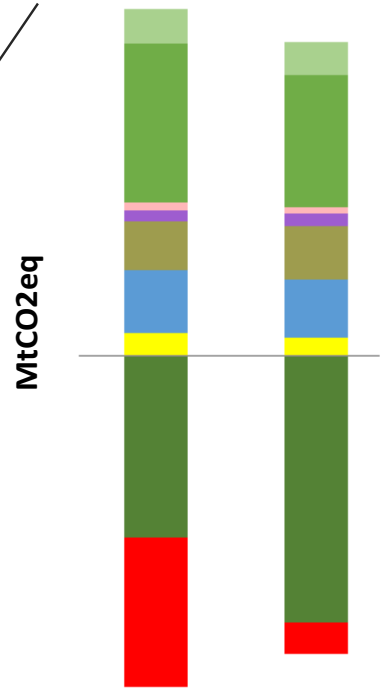
Vision 2050: A climate-neutral EU



Different zero GHG pathways lead to different levels of remaining emissions and absorption of GHG emissions



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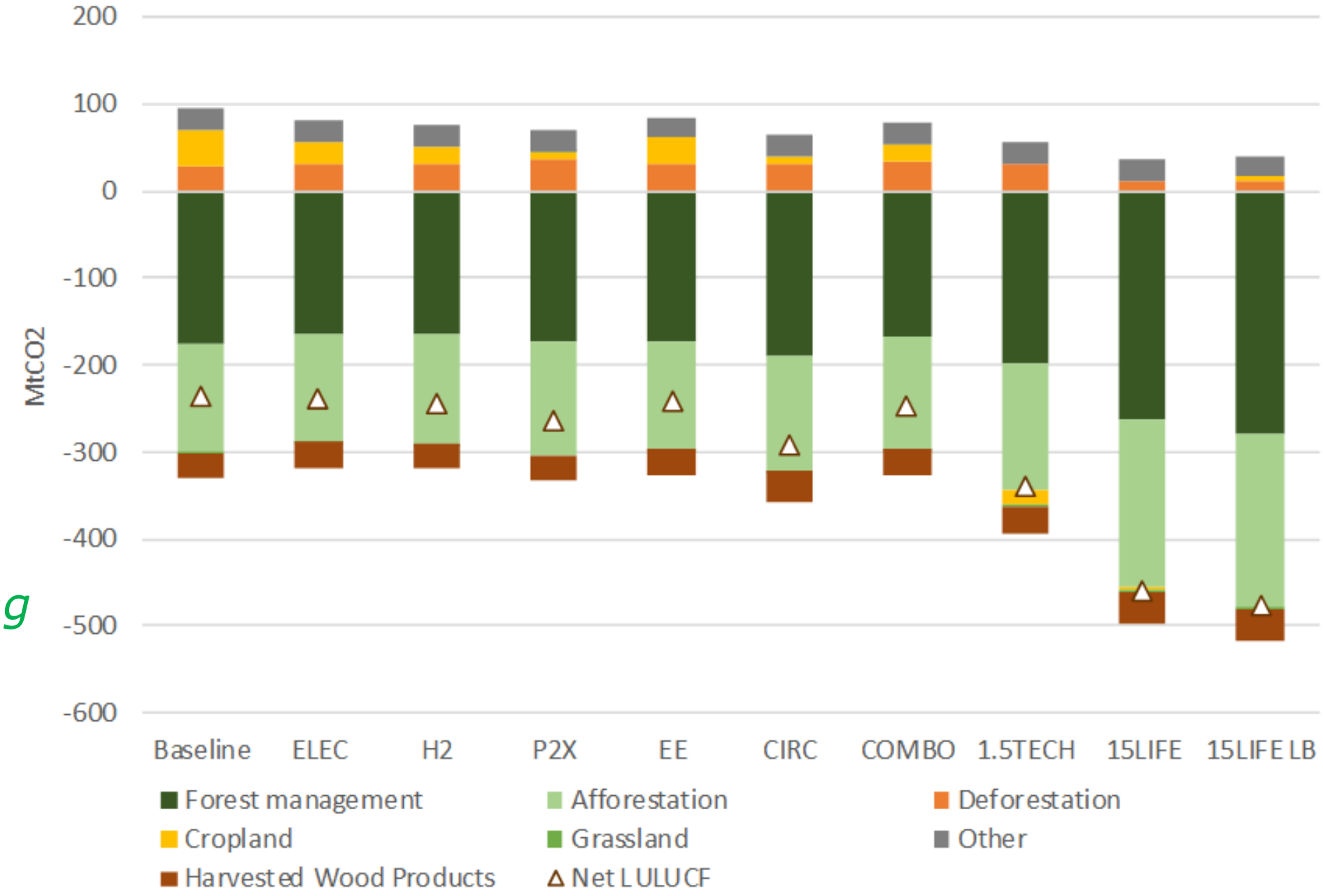
Land Use, Land Use Change and Forestry

- LULUCF includes all impacts on GHG of human management of vegetation and soils
  - cropland, grassland, forests, wetlands
- Both emissions and removals
- LULUCF today is approx. 11% removal of the EU's total GHG budget
- The forest sink, however, is projected to decline in some Member States and the EU
- Additional effort can maintain these removals

Sink – absorbing CO_2 in forestry, soils



Source: Long Term Strategy, EC 2018
https://europa.eu/!JX39VJ

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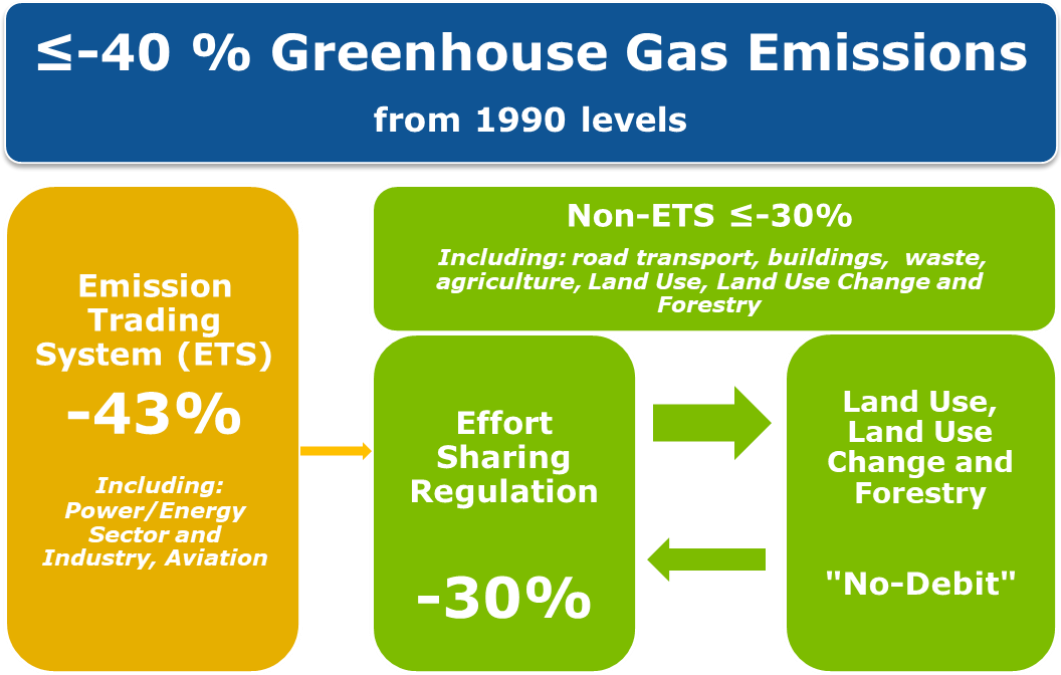
The LULUCF Regulation (EU)2018/841

1. Brings a LULUCF target into EU climate policy for the first time – Why?



- Importance of natural carbon sinks for reaching carbon neutrality
- "No-debit rule" = a threshold to create carbon credits, ensures that only *additional* action provides "credits" to meet reduction target
- LULUCF credits can be used to meet reduction targets in other sectors (to a certain extent)

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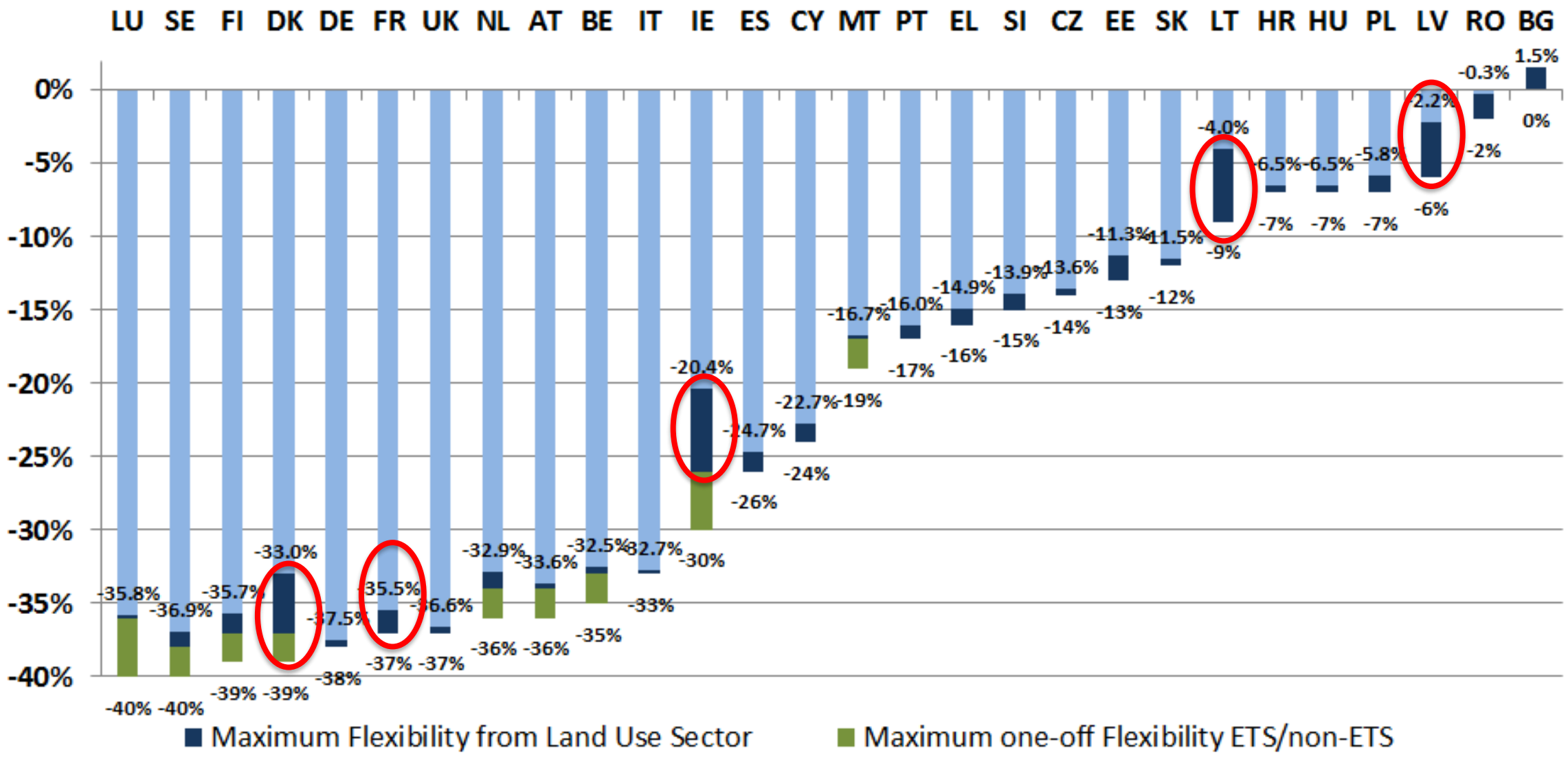
2030 targets (non-ETS) and flexibilities under current 2030 legislation



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Land use – contribution to climate policies

ADAPT to climate change	REDUCE GHG emissions	ENHANCE carbon removals	PROMOTE the bioeconomy
Water retention	Precision farming	Afforestation	Bio-feedstocks for industry and power sectors
Choice of resilient crops	Breeding	Limit deforestation	Advanced biofuels
Enhance soil quality	Nitrification inhibitors	Enhance forest carbon sink	Substituting building materials
Agro-forestry	Anaerobic digestors	Sustainable soil management	
	Energy efficiency	Wetland management	

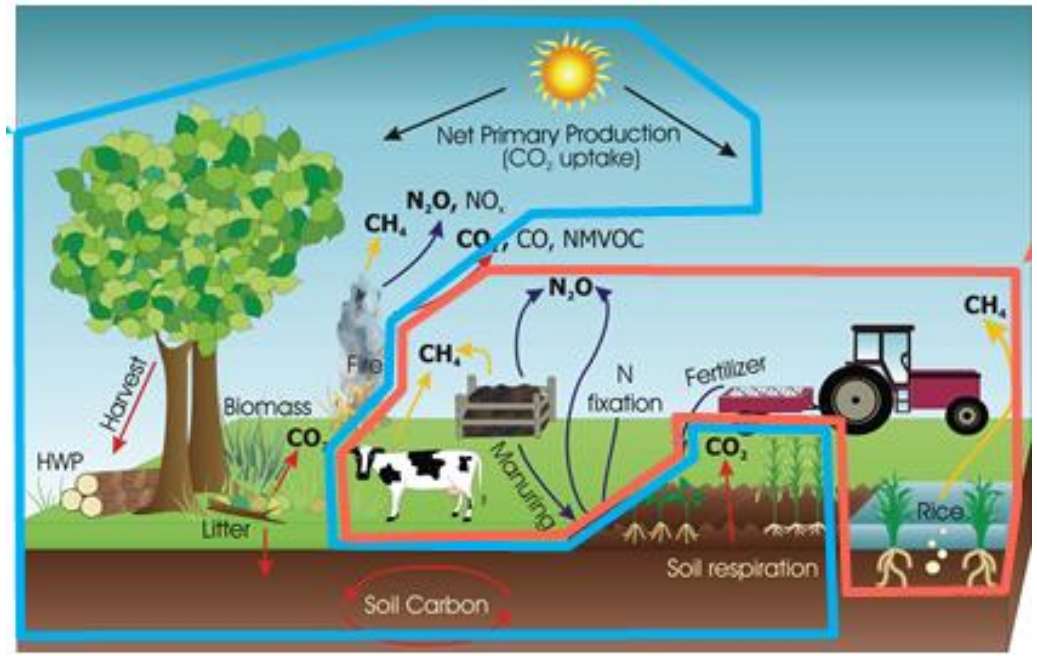
EU Adaptation Strategy	Effort Sharing	Land Use, Land Use Change and Forestry	Emission Trading (substitution effect)

EU Governance Regulation 2018/1999

EU 2030 Climate framework

The LULUCF Regulation (EU)2018/841

2. Establishes rules to measure the changes in annual carbon emissions and removals – Why?



- Unlike non-CO2 agricultural emissions (from livestock, fertiliser use, etc), which are entirely human induced, CO2 emissions and removals from land use are partly linked to the natural carbon cycle
- Need for accounting rules to identify the human-induced emissions / removals (like other sectors) & incentivize additional action
- Accounting rule = change vs a baseline, to cancel out the effect of natural cycle

The LULUCF Regulation (EU)2018/841

Establishes rules to measure the changes in annual carbon emissions and removals – Why?

Land Use, Land Use Change and Forestry (LULUCF): *CO_2*

AGRICULTURE *non-CO_2* (CH_4, N_2O) in the ESR

***Partly* human induced (linked to global natural carbon cycle)**

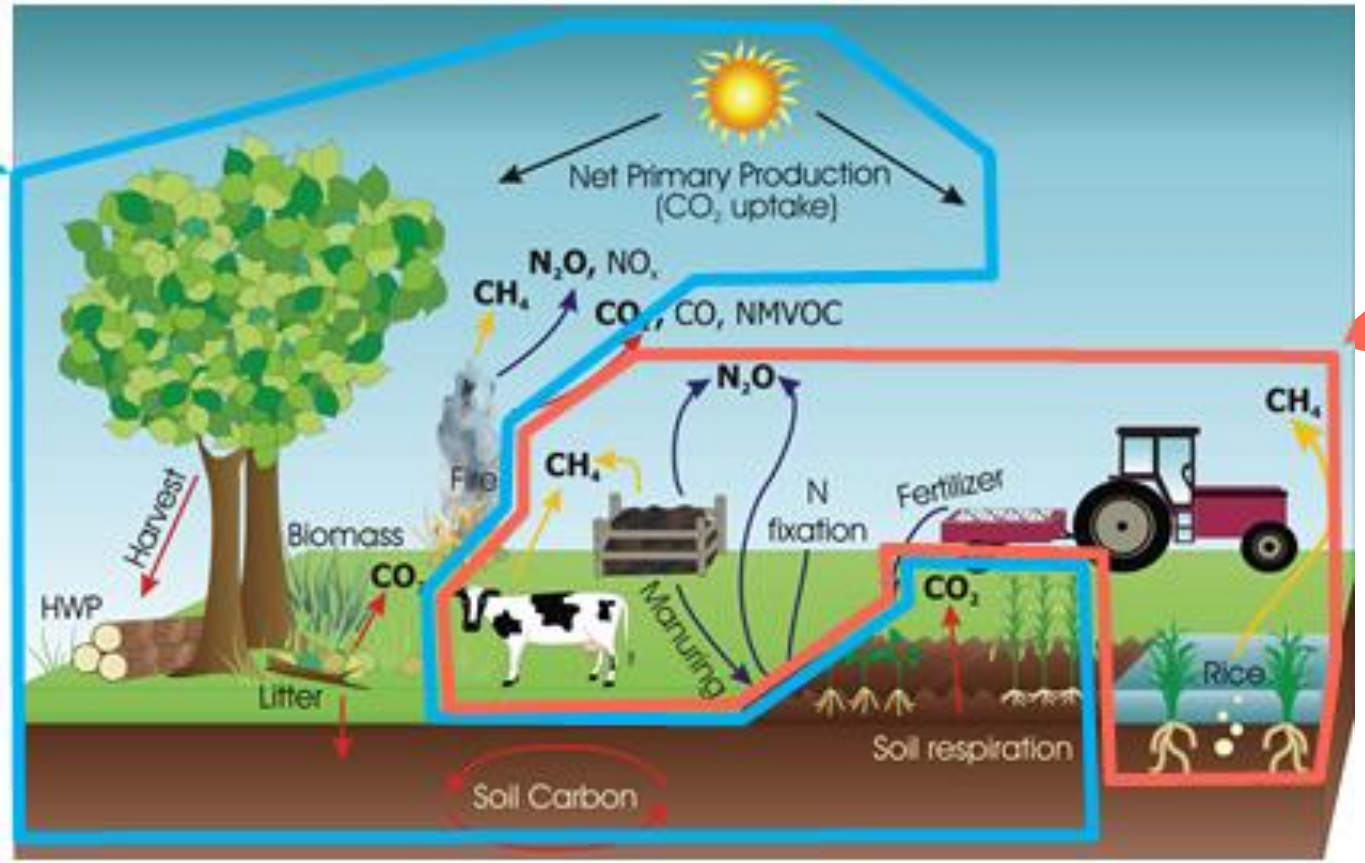


Figure source: IPCC 2006. Data: EEA 2019 (2017 GHG inventory)

The LULUCF Regulation (EU)2018/841

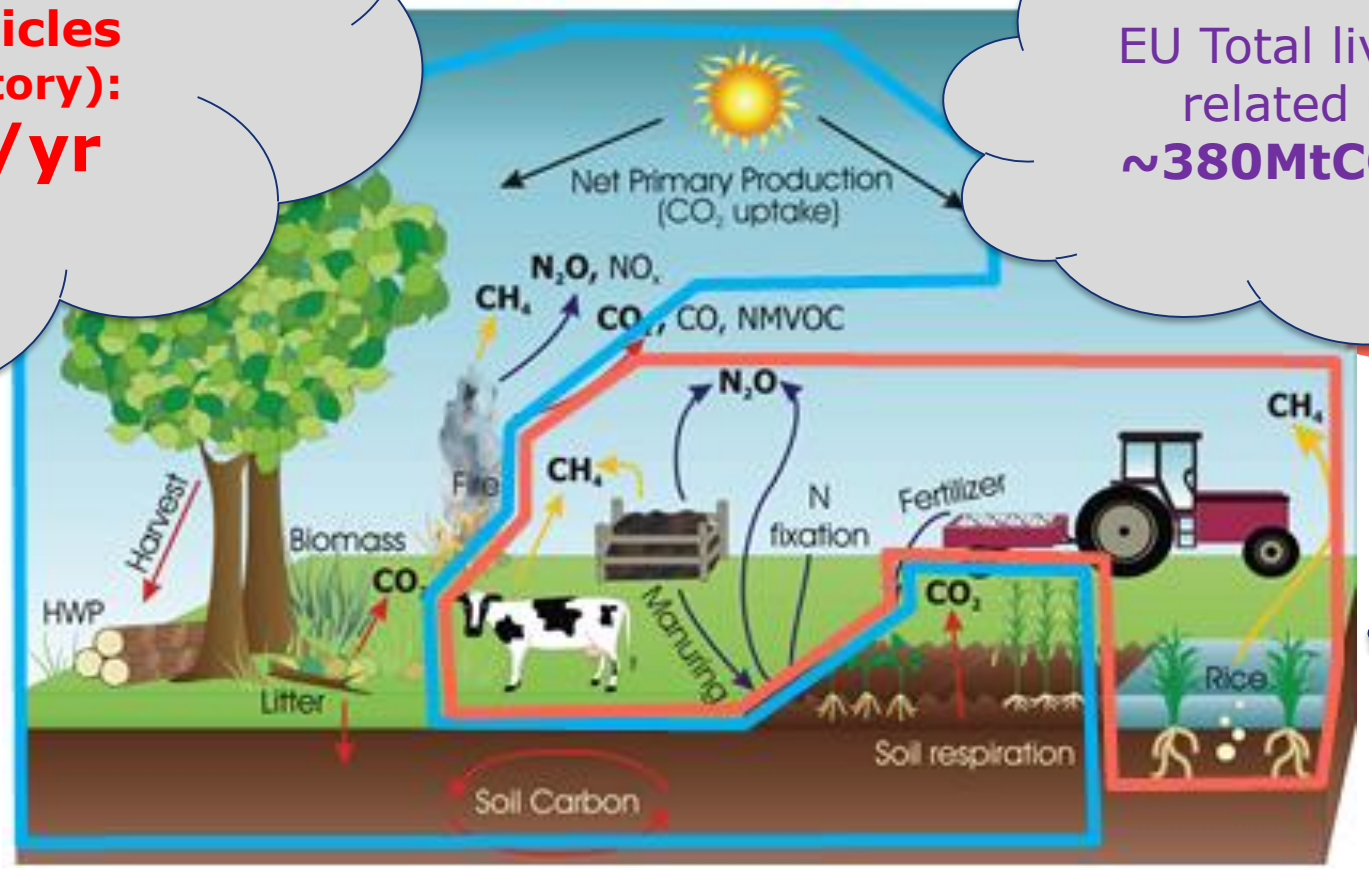
Establishes rules to measure the changes in annual carbon emissions and removals – Why?

AGRICULTURE *non-CO_2* (CH_4, N_2O) in the ESR

EU CO2 emissions for cars + light vehicles (2017 GHG inventory): 543MtCO_{2e}/yr

global natural carbon cycle)

EU Total livestock related GHG **~380MtCO_{2e}/yr**



CO_2: Grassland + Cropland related to livestock ~40MtCO_2/yr

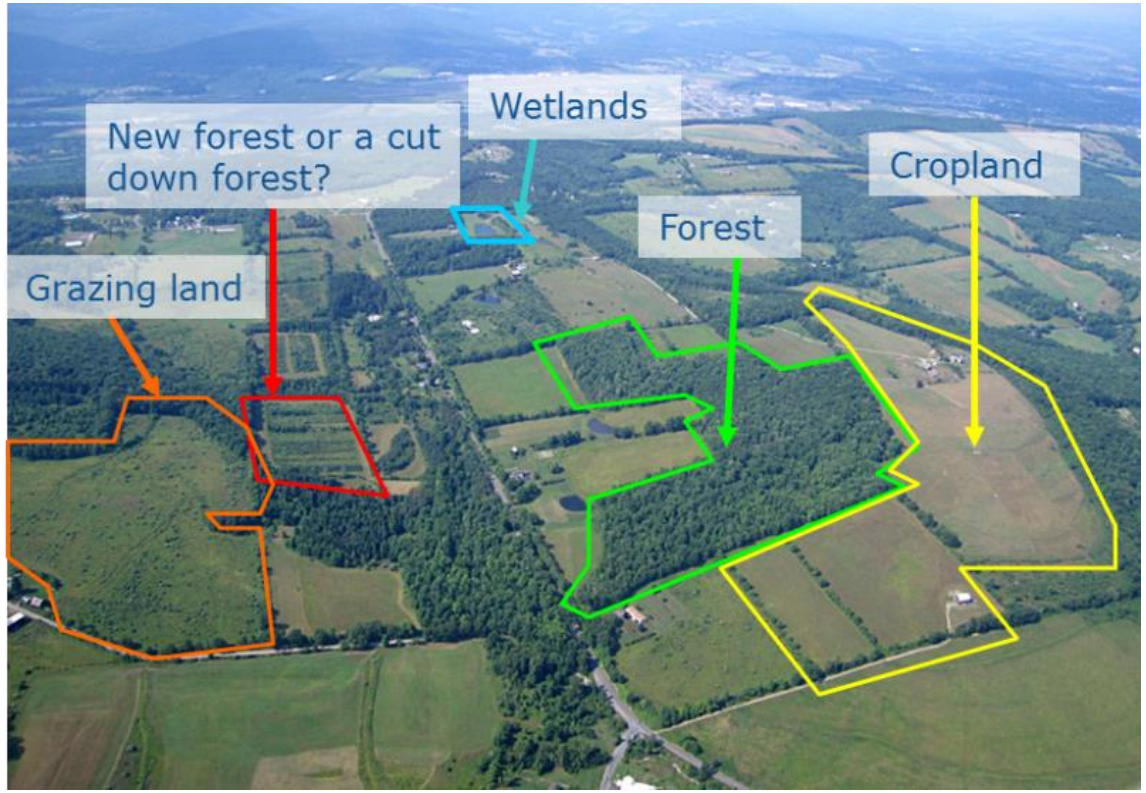
CH_4 : 259MtCO_{2e}/yr

N_2O: 164MtCO_{2e}/yr

Figure source: IPCC 2006. Data: EEA 2019 (2017 GHG inventory)

The LULUCF Regulation (EU)2018/841

3. Requires an improvement in the accuracy of the LULUCF inventories – Why?



- Need a level of accuracy comparable with other sectors: no accuracy, no flexibility!
- Reduced uncertainty = ability to better design policies in a more cost-effective way
- Spatially-explicit + better data = inventories become more apt to pick up farmers' and foresters' climate action on the ground
- Investment in climate-friendly agricultural / forestry policies should "pay off" in terms of achieving climate reduction targets

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REGULATION (EU) 2018/1999 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

of 11 December 2018

on the Governance of the Energy Union and Climate Action, amending Regulations (EC) No 663/2009 and (EC) No 715/2009 of the European Parliament and of the Council, Directives 94/22/EC, 98/70/EC, 2009/31/EC, 2009/73/EC, 2010/31/EU, 2012/27/EU and 2013/30/EU of the European Parliament and of the Council, Council Directives 2009/119/EC and (EU) 2015/652 and repealing Regulation (EU) No 525/2013 of the European Parliament and of the Council

(Text with EEA relevance)

- *Sets out national GHG inventory reporting*
  - **Implemented acts under development; based upon existing framework (Arts. 26, 37, plus annexes)**
- *Provides framework for policy development*
  - **National Energy and Climate Plan (revision due by end 2019)**
  - **Long Term Strategy (Art. 15, 1/1/2019)**
  - **National policies and measures, projections (Art. 39)**
  - **Links to sector policies => CAP Strategic plan (2021?)**

http://data.europa.eu/eli/reg/2018/1999/oj

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The greenhouse gas inventory:
see Regulations 2018/841 & 2018/1999

- ***Paris Agreement**: The inventory should be designed to apply the basic principles of transparency, accuracy, completeness, consistency and comparability*
  - **Methods and approaches from the 2006 IPCC Guidelines for National Greenhouse Gas Inventories for land**
  - **The GHG inventory should be comparable in its use of definitions, categories and subcategories with national processes**
- *Regulation "**nudge**": The GHG inventory should use "best available methods and data" and*
  - **Land cover categories and land use conversions**
  - **Be geographically explicit (Reg 2018/1999 Annex V)**
  - **Re-use existing datasets, INSPIRE (Recital 32)**
  - **Provide synergies with other policies (e.g. CAP/IACS/LPIS, biodiversity, forest policy)**
  - **May use Copernicus, remotely sensed data, etc. (Recital 32)**

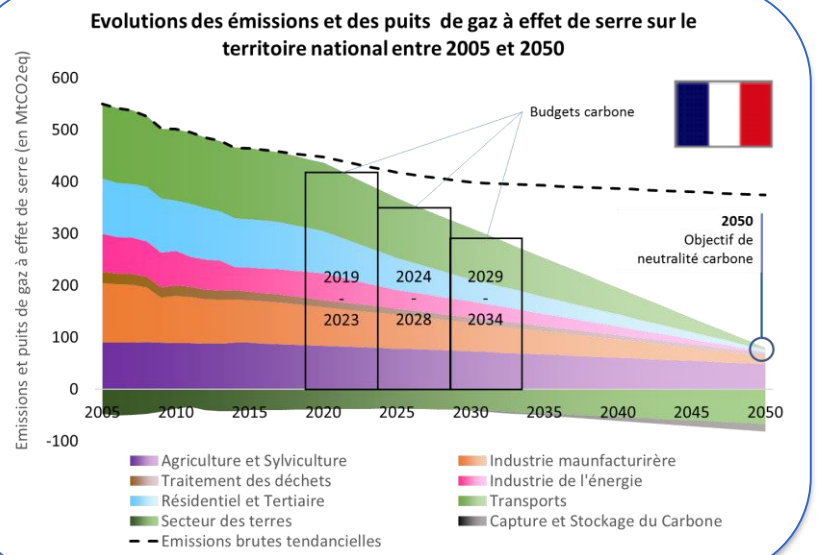
https://www.eea.europa.eu/data-and-maps/data/data-viewers/greenhouse-gases-viewer

Plans in Member States (draft NECP submissions)

The climate and air proposal "Together for a greener future"

An efficient and modern agricultural sector

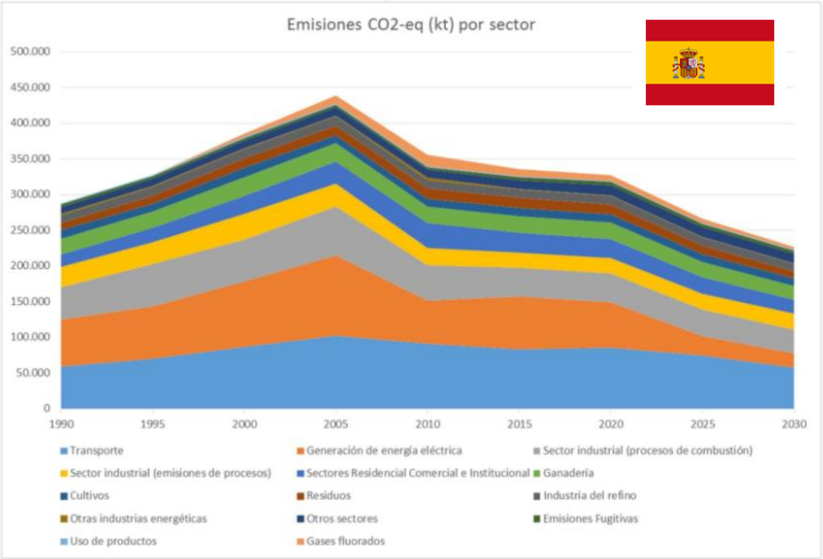
C20) Less ammonia in the air.
C21) Improvement of biogas plants.
C22) Air- and climate-friendly technology in pig farms.
C23) Stronger research efforts in agriculture.
C24) Promotion of precision agriculture.
C25) Land distribution fund focused on environment, climate and nature.
C26) Partnership with the agricultural sector.



Policy for GHG emission reduction in agriculture:

- Precise mineral fertilizer use
- Direct application of organic fertilizers in soil
- Liquid manure separation
- Feed Dosage Planning
- Improving nutritional quality
- Maintenance of melioration systems
- Fertilizer Planning
- Promotion of biogas production
- Nitrogen removal
- Reconstruction and restoration of land amelioration systems in arable land
- Improving the sustainability and ecological value of forest ecosystems
- Restoring forest stands destroyed by natural disasters
- Creation of new orchards
- Reconstruction and restoration of land amelioration systems in arable land
- Pasture in winter sowing
- Introduction of leguminous crops in conventional crop rotation …

Figura 1.1. Emisiones CO_2 equivalente por sector. Histórico y proyección a 2030 (kt)



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Summary

The climate regulation framework for 2021-2030:

- **Connects land use (CO2) with other policy sectors**
  - notably agriculture, CH4 (main component) and N20 gases
- **Agriculture GHG emissions are a very significant component**
  - In 2017, around 11% of total EU GHG emissions
  - *e.g.* livestock emissions about ¾ **of that of cars and light vehicles**
  - Will become more significant => 2050
- **EU reporting and accounting rules provide a standard and comparable framework (and are internationally agreed)**
- **The framework encourages additional initiatives to meet reduction target, through policy support such as CAP**

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