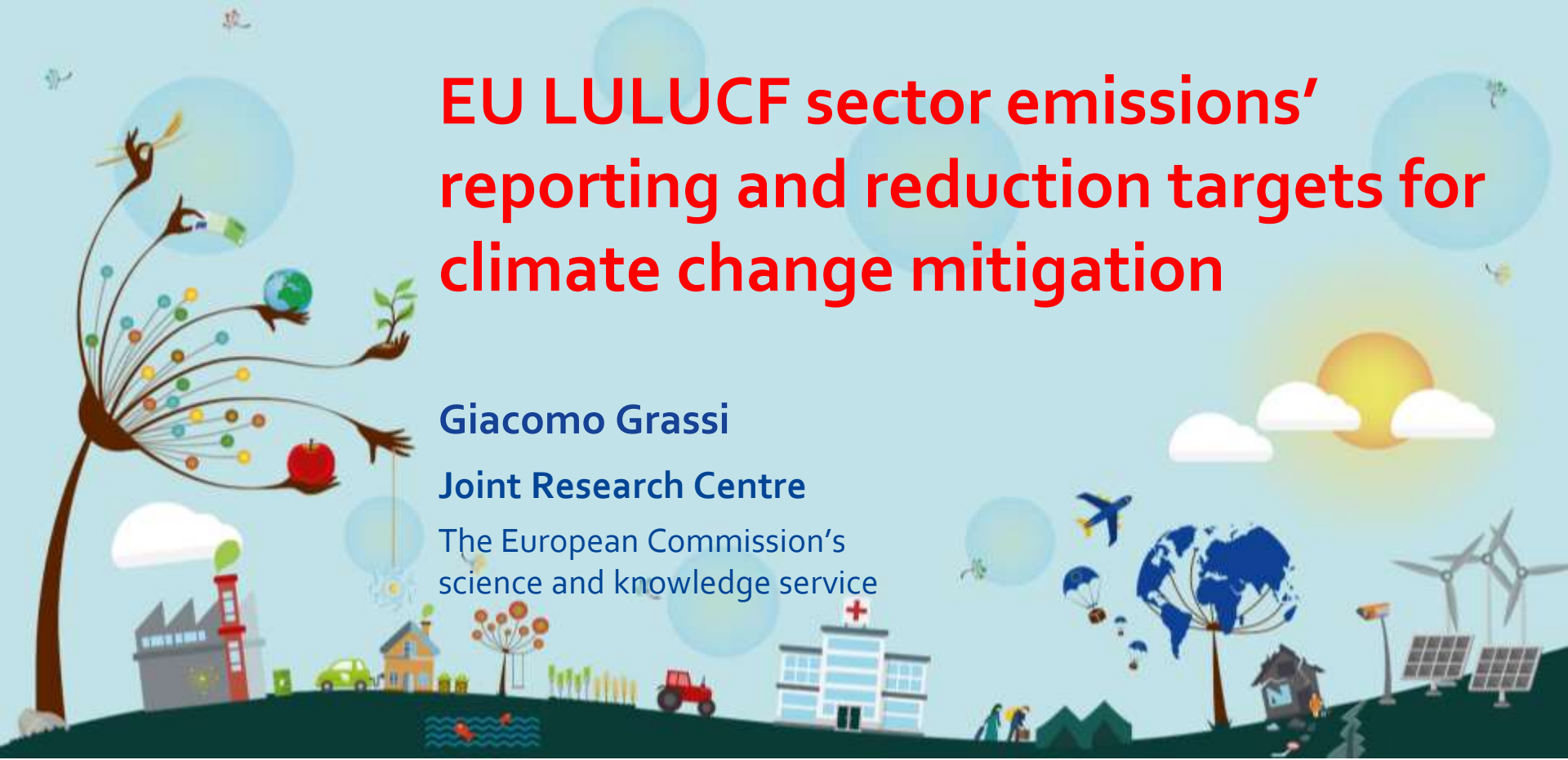
EU LULUCF sector emissions' reporting and reduction targets for climate change mitigation



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Joint Research Centre

The European Commission's science and knowledge service

LIFE REstore International Conference, June 2019

European Commission

OUTLINE

1. Introduction: the challenge of including LULUCF in climate policies
2. LULUCF GHG emissions and removals in the EU
3. The new EU LULUCF Regulation
4. Conclusions

Introduction:
the challenge of including LULUCF in climate policies

The global carbon budget

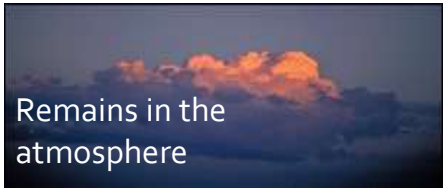
(average 2007-2016 from Global Carbon Project 2017)

34.4 $GtCO_2/y$ **88%**

+

4.8 $GtCO_2/y$ **12%**

17.2 $GtCO_2/y$ **46%**



11.0 $GtCO_2/y$ **30%**

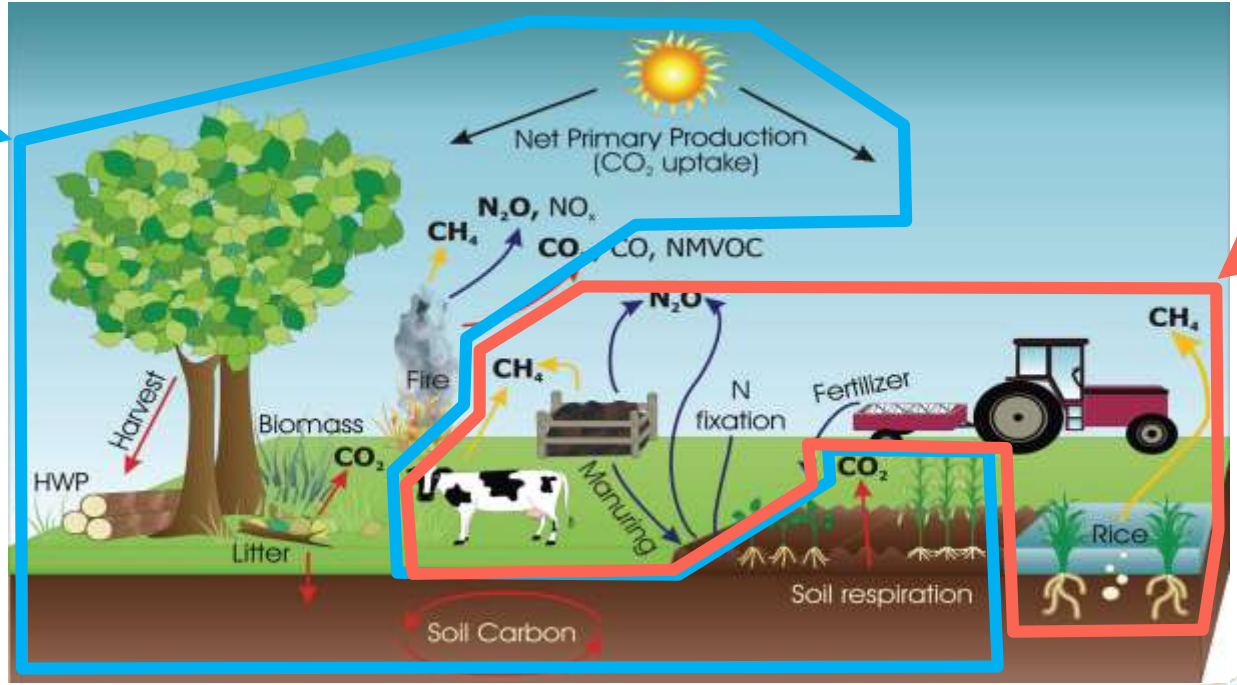
24% 8.8 $GtCO_2/y$

Land use sector: part of the **problem** and part of the **solution**

How land emissions are included in GHG reporting frameworks ?

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

AGRICULTURE: *non-*CO_2 (CH_4, N_2O)



Partly human induced (linked to global natural carbon cycle)

Uncertainties?
Additionality?

All human-induced

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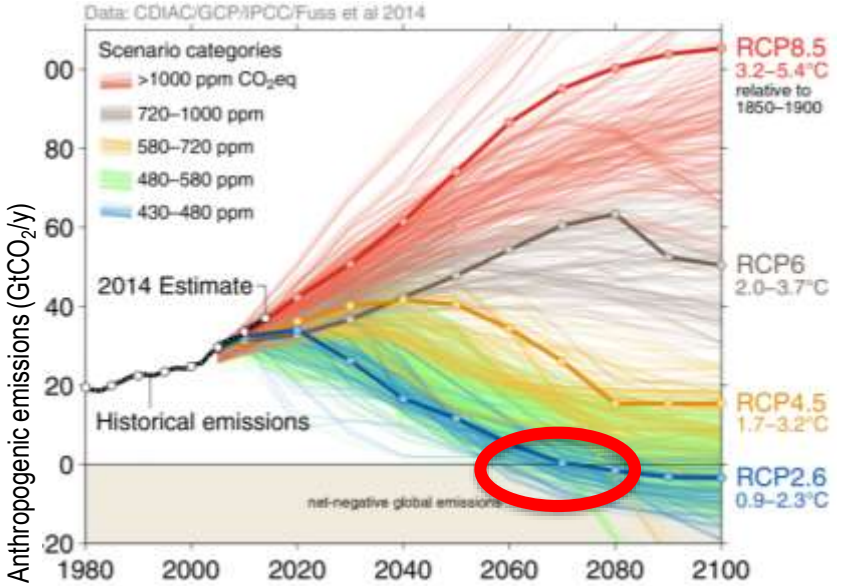
Despite a large mitigation potential, till recently the land use sector has been often seen as a secondary mitigation option by climate policy

The Paris Agreement: a game changer for land use mitigation

- According to countries' pledges, LULUCF expected to provide 25% of planned global emission reductions by 2030
- Art 5: countries asked **reduce deforestation** and **conserve/enhance sinks**

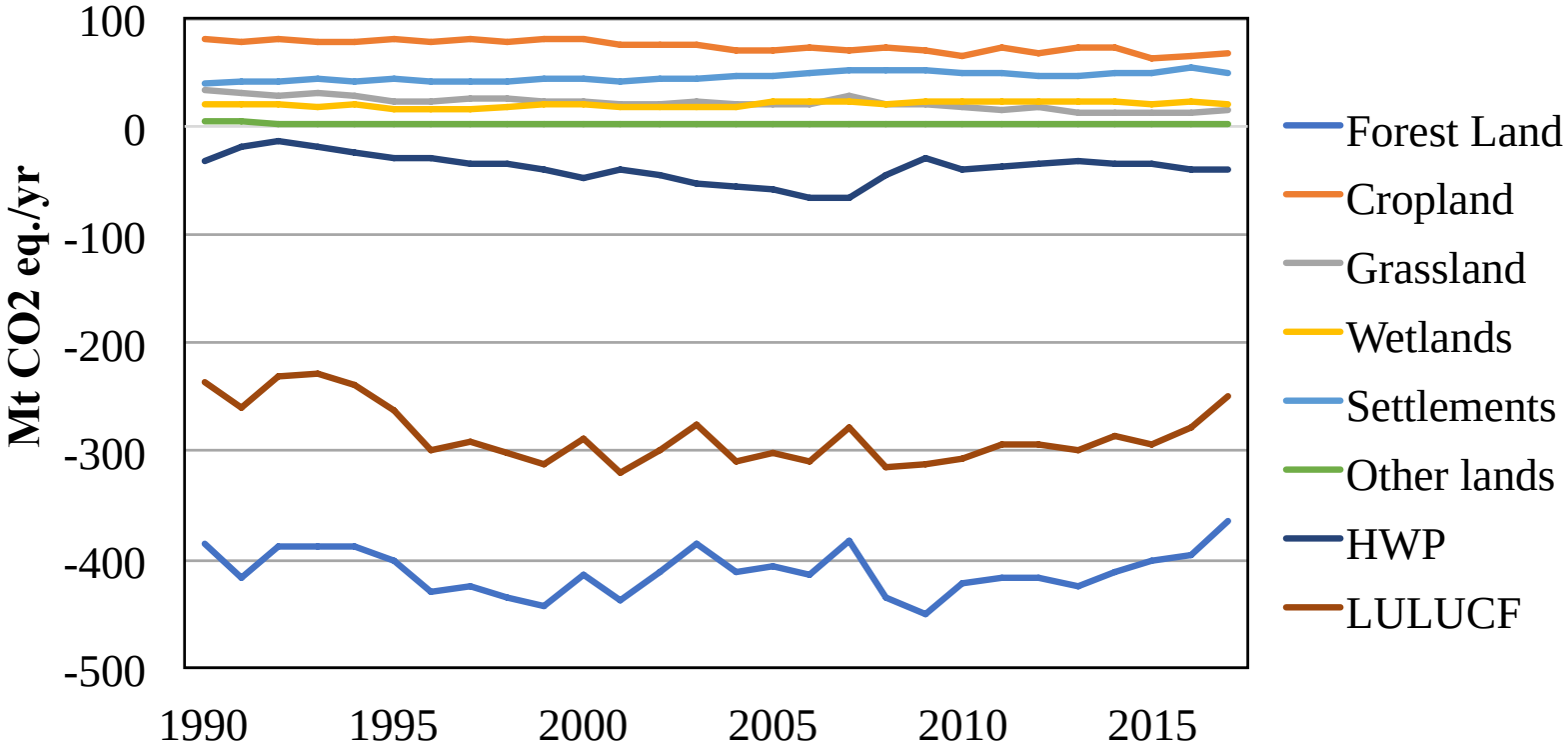
- The PA's requires a ***balance*** between GHG **anthropogenic emissions and <u>removals</u>** in the 2nd half of the century

At present, **LULUCF includes the most important CO_2 sinks that humans can manage**



LULUCF GHG emissions and removals in the EU

Emissions (+) and removals (-) trends in the EU



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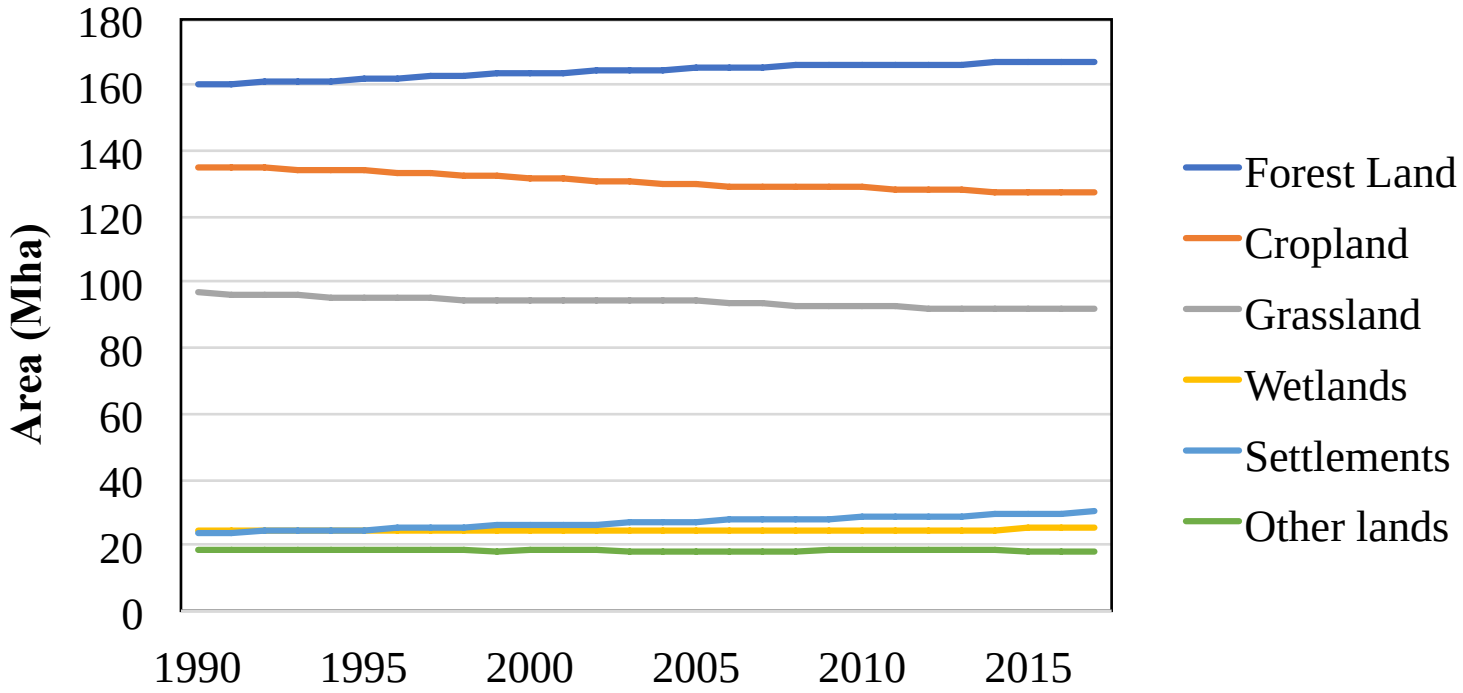
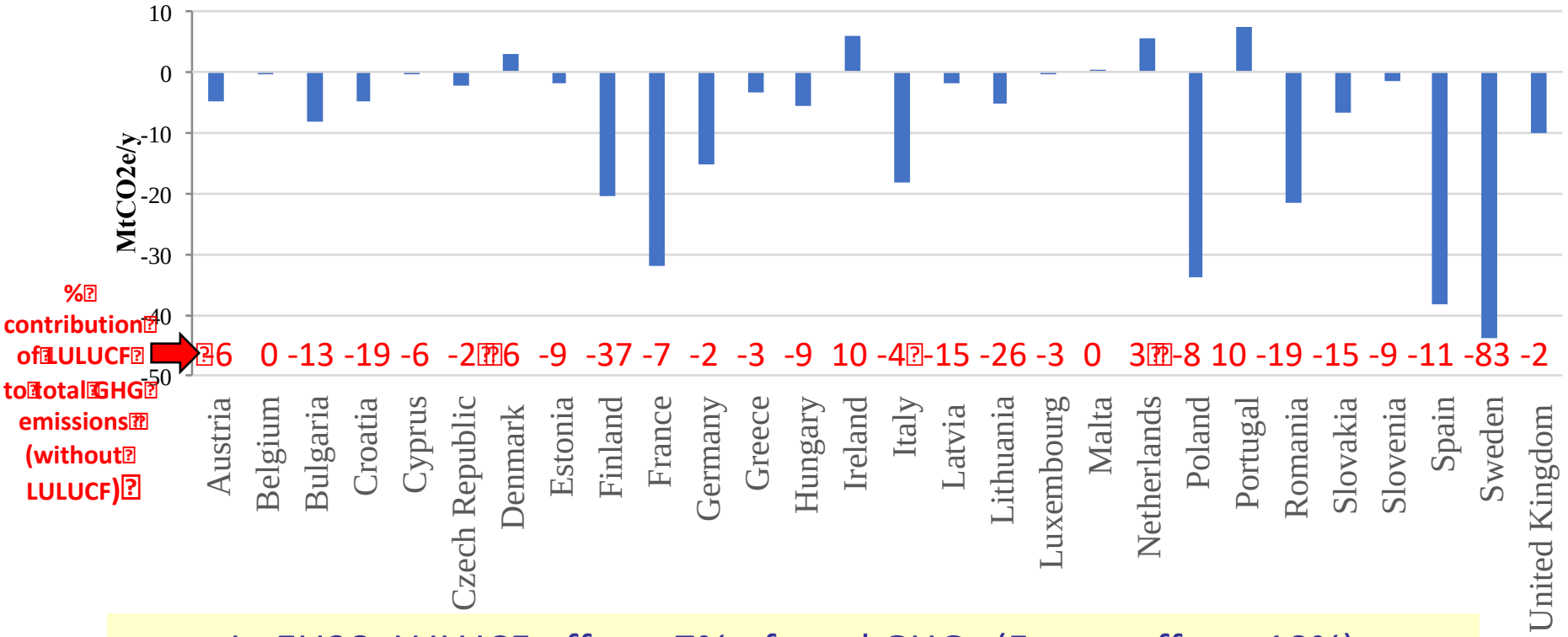
Area trends in the EU



The total reported area in 2017 by EU is about 450 Mha

Emissions/removals from LULUCF in EU countries



In EU28, LULUCF offsets 7% of total GHGs (Forest offsets 10%)

The LULUCF “hotspots”

Land use changes represent 9% of EU area but account for > 29% of absolute emissions/removals of respective subcategories

In 2017, the sink from conversions to FL (-42 MtCO2yr) and GL (-22 MtCO2/yr) compensated by emissions from conversions to CL (46 MtCO2/yr) and SL (45 MtCO2/yr).

Area of **organic soils** (18 Mha: 12 in FL, 2 in CL, 4 in GL) represents about 5% of the total area of FL + CL + GL in the EU, but their emissions (92 MtCO2/y: 13 in FL, 33 in CL and 46 in GL) account for 33% of net total LULUCF removals.

Biomass burning: about 2-13 MtCO2e/yr depending on the year (but for 2017, 20.5 MtCO2e/yr)

Completeness of reporting of land uses (UNFCCC)

Land Use	Subcategory	Carbon pool		
		Living biomass	Dead organic matter	SOC mineral
Forest Land	FL-FL	97%	36%	34%
	L-FL	97%	72%	90%
Cropland	CL-CL	93%	10%	79%
	L-CL	90%	55%	90%
Grassland	GL-GL	52%	14%	52%
	L-GL	52%	14%	52%
Wetlands	WL-WL	14%	7%	7%
	L-WL	52%	45%	45%

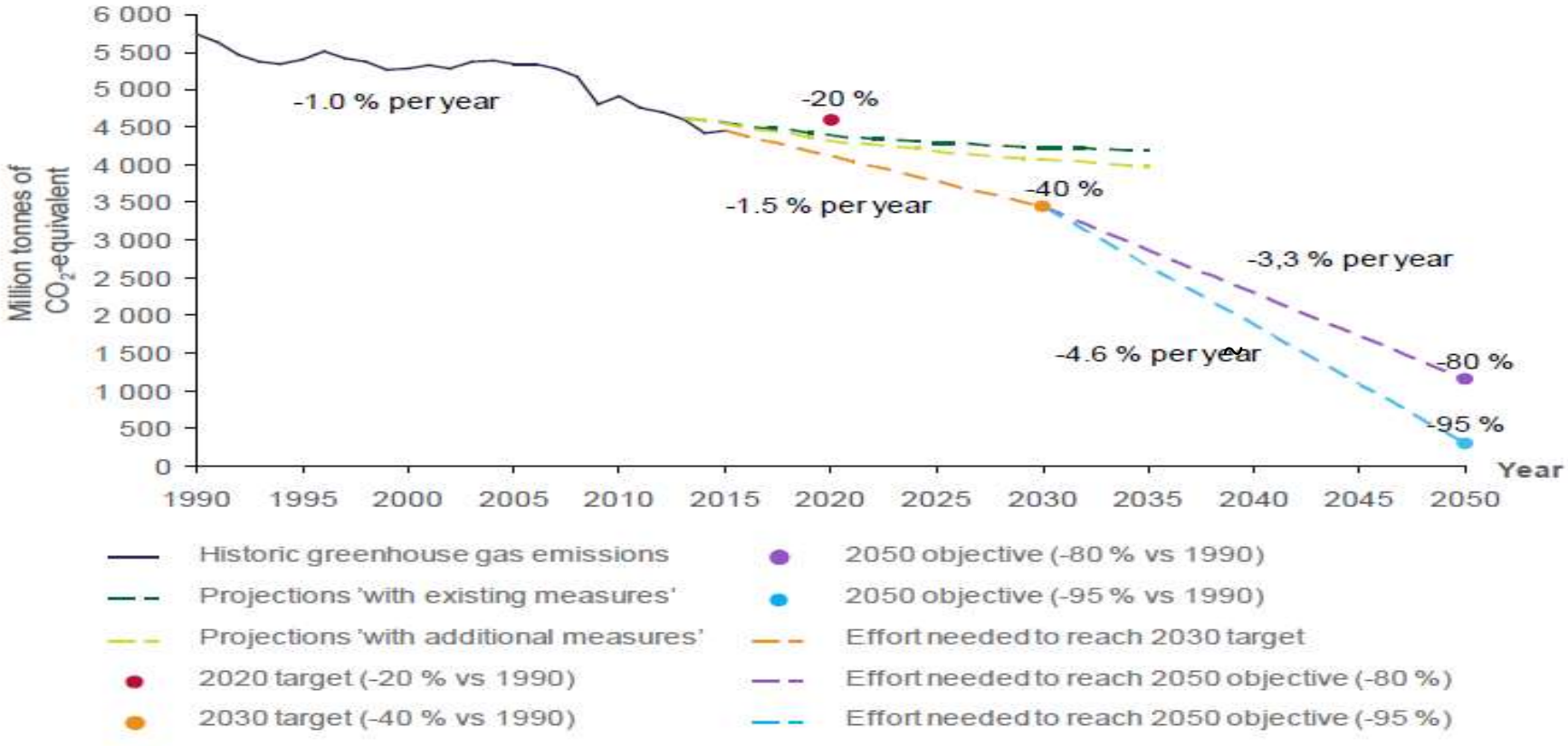
= estimate not mandatory under tier 1

Completeness: FL > CL > GL > WL

Completeness of land use conversions > land use remaining the same

The new EU LULUCF Regulation

EU greenhouse gas emissions



Source: EEA – Trends and projections in Europe 2016

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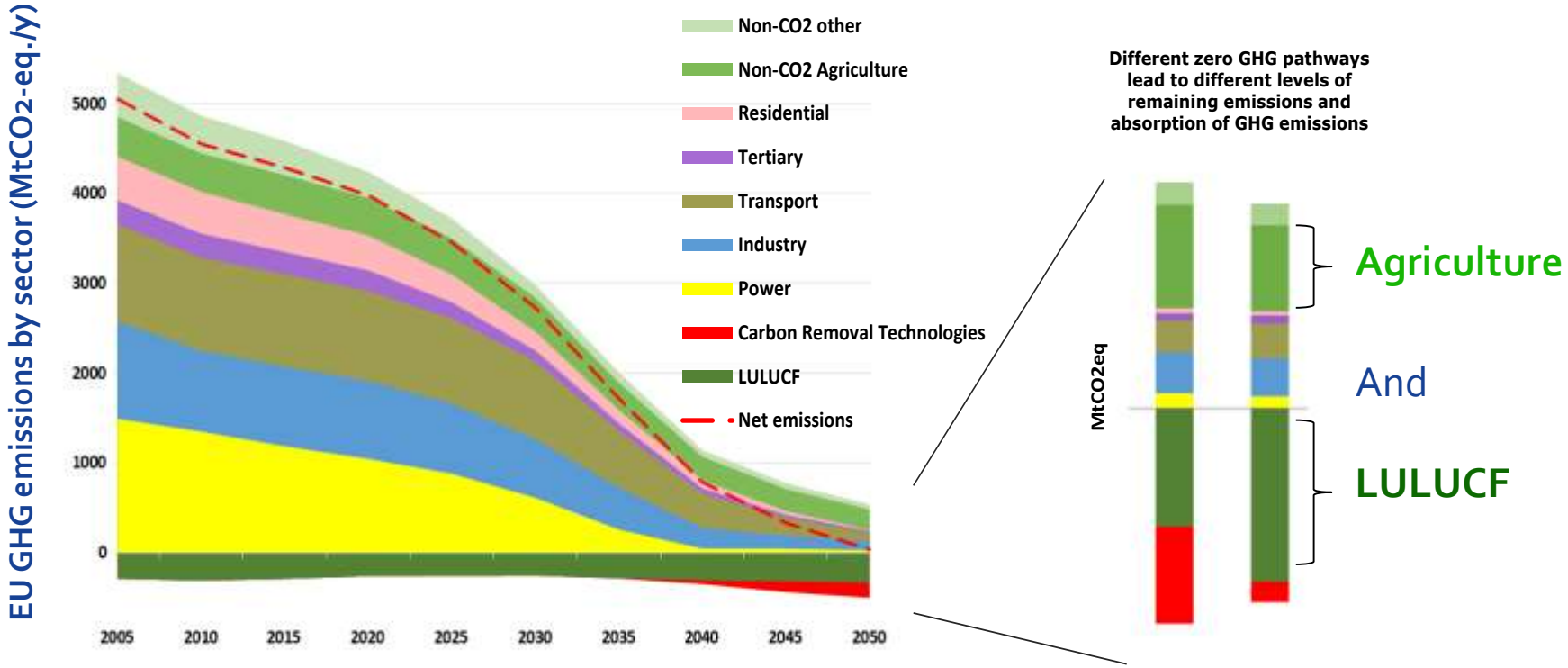
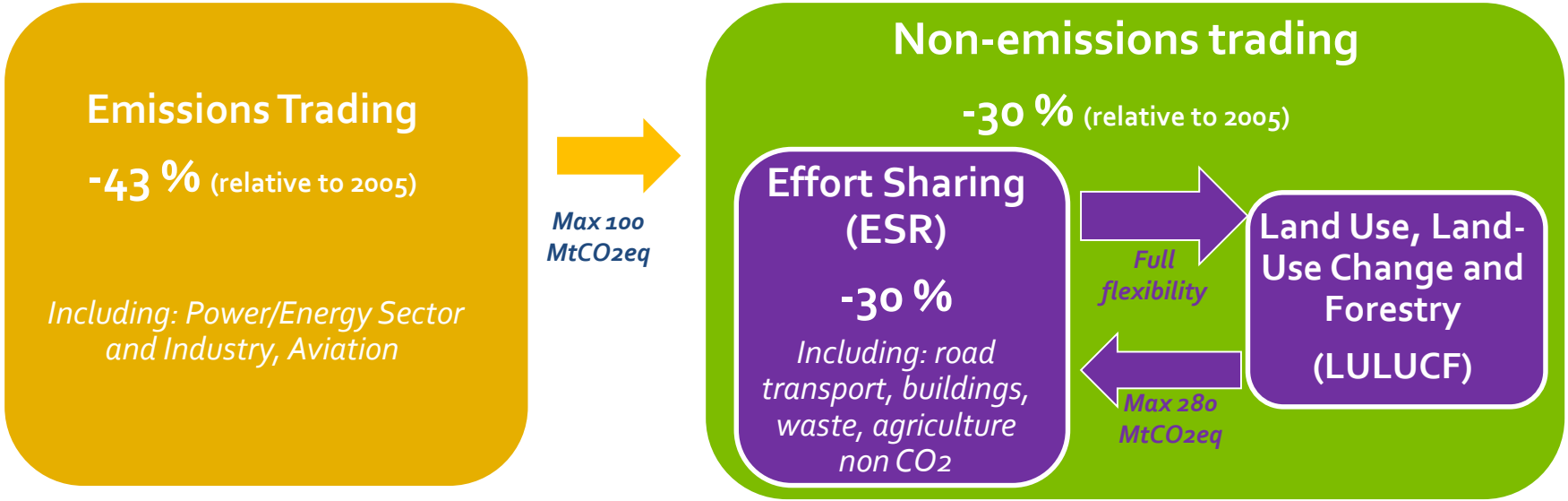
Role of LULUCF in the EU long-term GHG strategy



LULUCF in the EU 2030 climate policy (-40% emissions in 2030 vs. 1990)



The **Regulation 2018/841** brings LULUCF as a separate pillar in the EU climate framework:

- **LULUCF accounting rules to reflect the impact of additional mitigation actions**
- **No-debit rule** once accounting rules are applied
- **Flexibilities**: within LULUCF, from/toward the ESR, among MS

Key elements of the LULUCF Regulation

- **Specific LULUCF accounting rules (continuity / changes):**

  Agricultural lands (**cropland** and **grassland**) accounted with "**net-net**" (difference in net emissions relative to a base year/period), relative 2005-2009.

  Wetlands will be accounted from 2026 onward (relative to 2005-2009)

  Forest conversions **(afforested land and deforested land)** accounted with "**gross-net**". Land converted to forest may stay in this category for 20 or 30 years

  Existing forests (**managed forest land**) accounted with "**Forest reference levels**" projected assuming the continuation of forest management practice documented for 2000-2009, taking age-related dynamics into account

- **Simplification**: accounting will be based on land use categories only

- **Two compliance periods** (2021-2025, 2026-2030)

Improve the quality of GHG inventories

Use of IPCC Guidelines

UNFCCC reporting principles (transparency, accuracy, completeness, consistency and comparability)

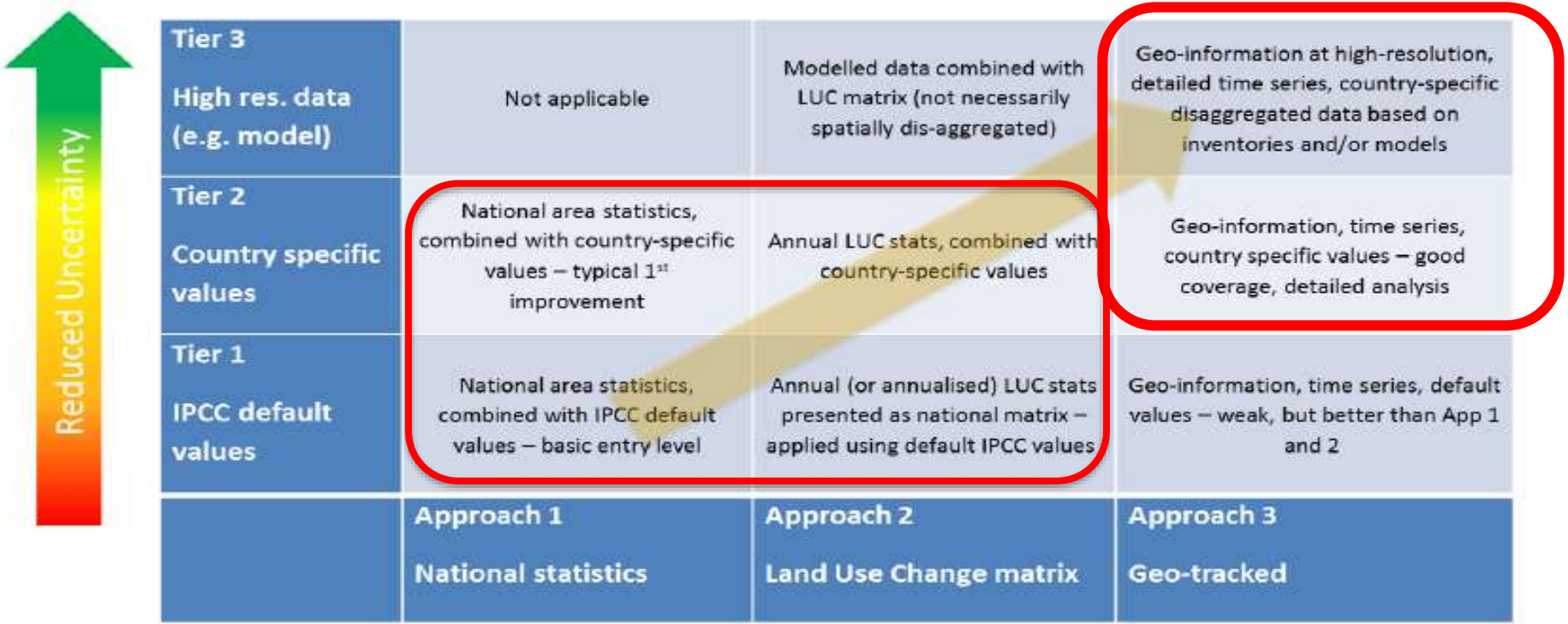
Use "best available methods and data" , including

- Be geographically explicit (Reg 2018/841 Art 18(4))
- Re-use existing datasets, INSPIRE (Recital 32)
- Provide synergies with other policies (e.g. CAP/IACS/LPIS)
- May use Copernicus, remotely sensed data, etc. (Recital 32)

Greater completeness: forest, cropland, grassland, wetland

To: / From:	Forest Land FL	Cropland CL	Grassland GL	Wetlands WL	Settlements SL	Other land OL
Forest Land FL	**FL-FL**	FL-CL	FL-GL	FL-WL	FL-SL	FL-OL
Cropland CL	CL-FL	CL-CL	CL-GL	CL-WL	CL-SL	CL-OL
Grassland GL	GL-FL	GL-CL	**GL-GL**	GL-WL	GL-SL	GL-OL
Wetlands WL	WL-FL	WL-CL	WL-GL	**WL-WL**	WL-SL	WL-OL
Settlements SL	SL-FL	SL-CL	SL-GL	SL-WL	**SL-SL**	SL-OL
Other land OL	OL-FL	OL-CL	OL-GL	OL-WL	OL-SL	**OL-OL**

Gradually move to higher Tiers and Approaches



Conclusions

Paris goals can't be met without LULUCF mitigation

However, some steps are still necessary, including **ensuring better LULUCF GHG estimates and a more credible accounting of mitigation actions**

The EU LULUCF Regulation **aim to start filling this gap**

Thank you !