

# Results of the 2024 QAQC initial checks for LULUCF and updates from the EEA



# Outline

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- **EEA team group's presentation**
- **Implementation of the LULUCF Regulation**
  - Outcomes of the QAQC check 2024.
  - EU Regulation 2018/841 - Art 5(4) & Art 18(4).
  - EU Regulation 2023/839 - Art 37 (4a) of the Governance Regulation.
  - Specific challenging areas of the LULUCF reporting.
- **GHG inventory reporting in 2024 and 2025.**
- **GHGI improvements support.**





# CET3 group at EEA+ Who we are and what we do



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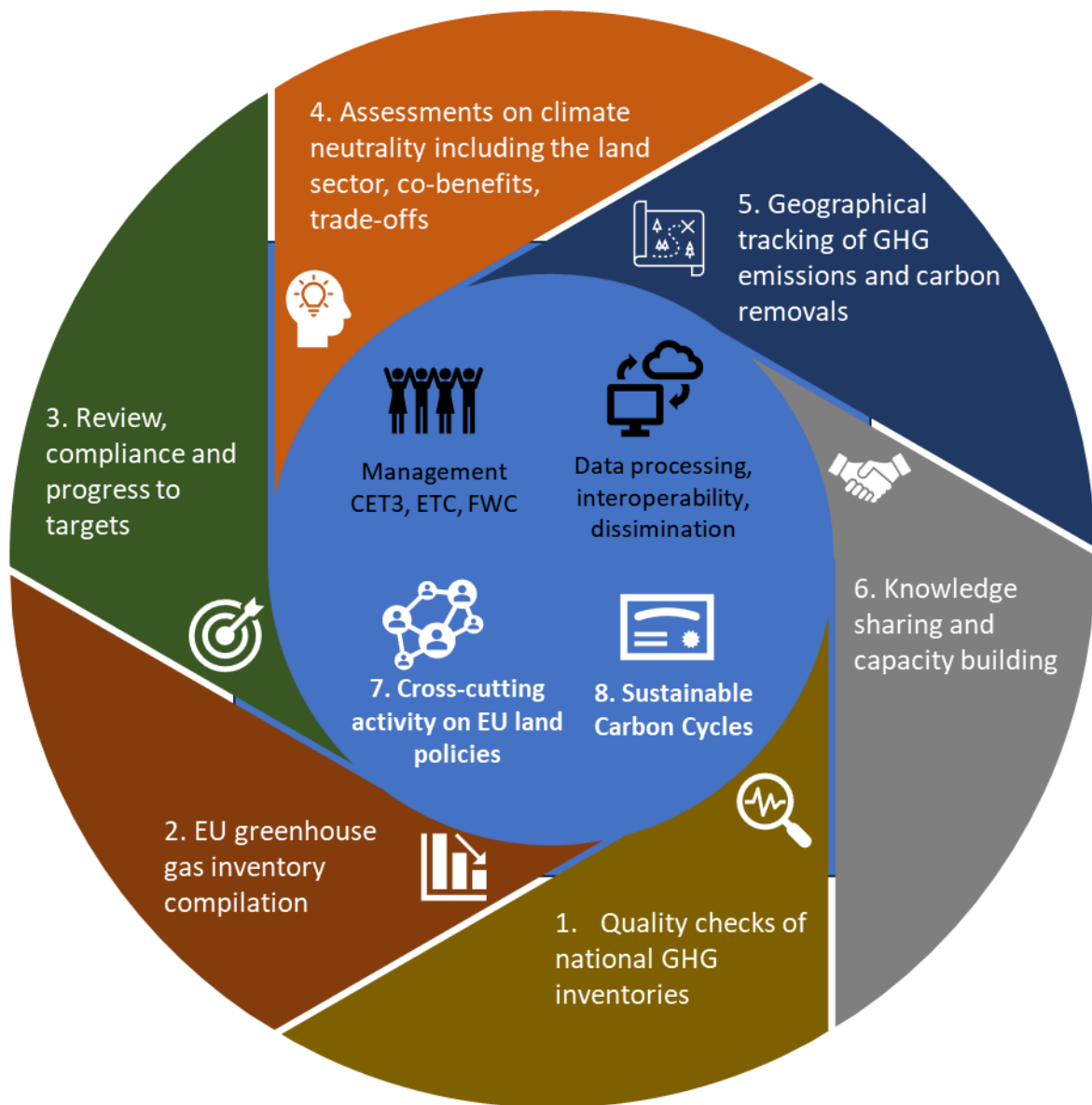


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GEO thematic coordinator

**We are building the team and aim to help you**

# EEA supporting the implementation of the LULUCF regulation



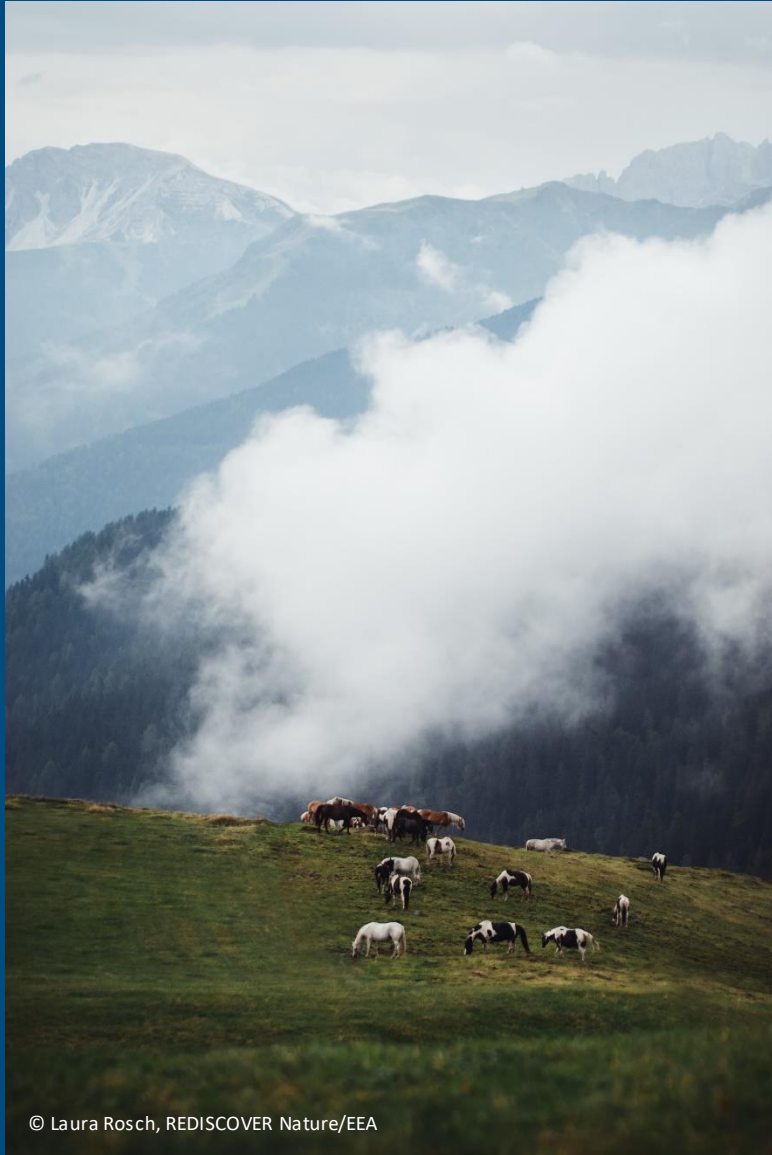
**Quality checks** of MS GHG inventories and compilation of the EU GHG inventory

Support implementing LULUCF regulation by **comprehensive reviews, compliance check** and **progress to targets**

**Knowledge sharing and capacity building** with Member States for improved and annual geographic tracking of greenhouse gas emissions and carbon removals by

**Support MS with the gradual improvement of GHG inventories** through methodological guidance, facilitating access to inventory activity data and emissions factors, expert training and facilitating good practice exchanges between inventory compilers.

# Implementation of the LULUCF Regulation



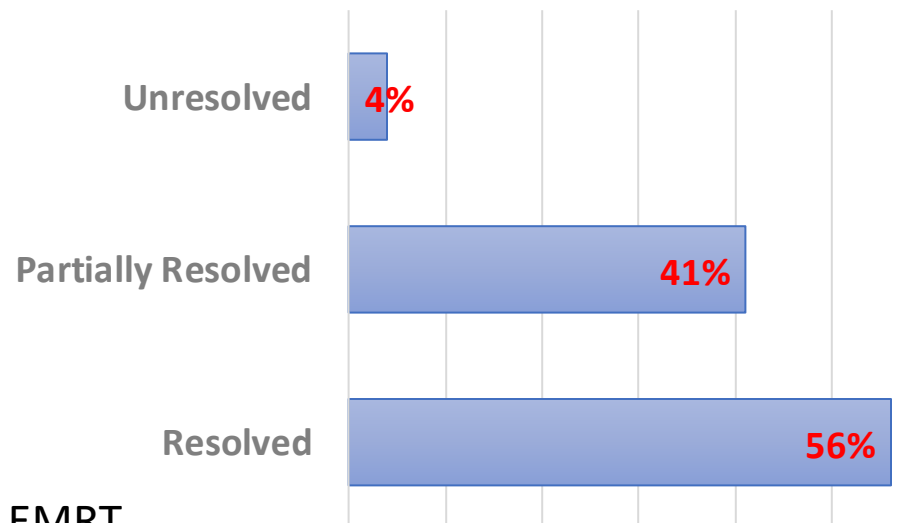
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# 2024 Initial checks for LULUCF

2024 – The second year for :

- Initial checks for LULUCF implemented by the EEA
- Reporting GHGI under Regulation (EU) 2018-841 (and first year for Regulation (EU) 2023/839).
- For Convention reporting only (N.B.: one MS includes Ch. 11 on KP-LULUCF).

Total N of observations 200

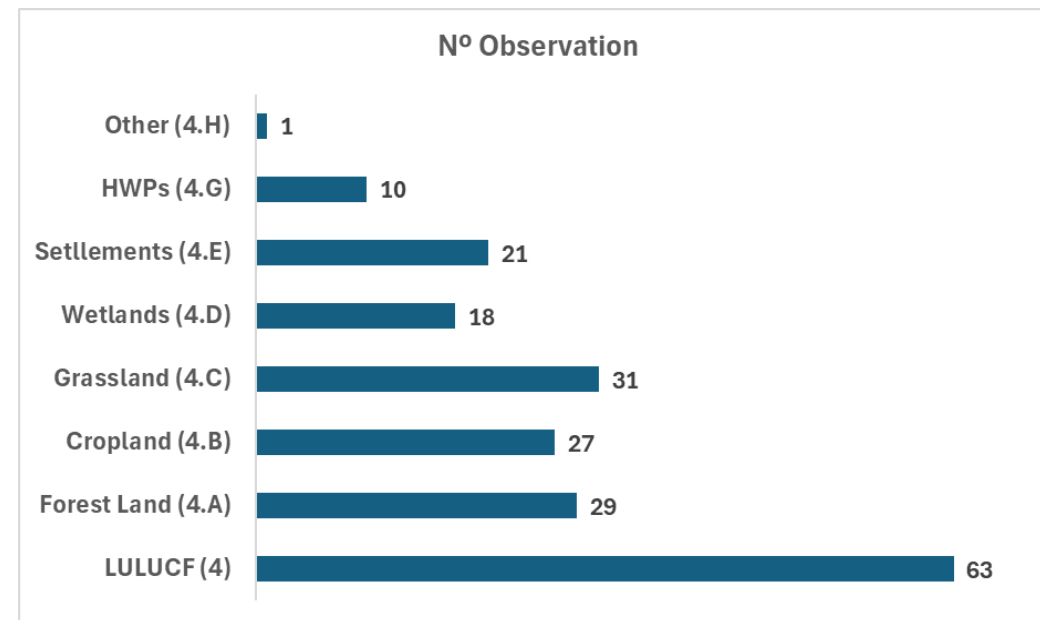


Missing answers from Portugal in the EMRT



# LULUCF – EMRT 200 Observations

- Blank cells (22);
- Reporting zero (17);
- Identical values (11);
- Area inconsistencies (14);
- Trends, spikes in time series, outliers in IEF (23);
- Recalculations (27) ;
- Biomass Burning (17);
- Issues relates with non-CO2 emissions (22);
- Other cross-cutting issues (25);
- Potential compliance issue with Regulation (EU) 2018/841 (24)
- **[Plus 8 observations raised on Art 37 (4a) ]**





# REGULATION (EU) 2018/841 - Article 5(4)

**Article 5(4).** *Member States shall include in their accounts for each land accounting category any change in the carbon stock of the carbon pools listed in Section B of Annex I. Member States may choose not to include in their accounts changes in carbon stocks of carbon pools provided that the carbon pool is not a source. However, that option not to include changes in carbon stocks in the accounts shall not apply in relation to the carbon pools of **above-ground biomass, dead wood and harvested wood products**, in the land accounting category of managed forest land.*

*Initial checks ARE NOT a compliance check, but we raise the observation that there could be a compliance issue if one of these three pools are not reported for forest land remaining forest land. First compliance review is in 2027.*

- Eight observations
- All Member States report the living biomass pool
- All but one MS report HWP
- Most MS report dead wood. Some MS report IE, some report NA and in some cases, we were not sure where it is reported  
Our interpretation: This obligation applies for the full time series – because we need time series consistency including for the base year (1990)

# REGULATION (EU) 2018/841 - Article 18(4)

**Article 18(4)** For emissions and removals for a carbon pool that accounts for at **least 25-30 % of emissions or removals in a source or sink category which is prioritized** within a Member State's national inventory system because its estimate has a significant influence on a country's total inventory of greenhouse gases in terms of the absolute level of emissions and removals, the trend in emissions and removals, or the uncertainty in emissions and removals in the land-use categories, **at least Tier 2 methodology** in accordance with the 2006 IPCC Guidelines for National Greenhouse Gas Inventories.

*Initial checks ARE NOT a compliance check, but we raise the observation that there could be a compliance issue if one of these three pools are not reported for forest land remaining forest land. First compliance review is in 2027.*

- 16 observations
- We only raised an observation for the “remaining” categories they were identified as Key Category in table 7, for the pools that numerical contribute with at least 25% of the total for the category and the pool is estimating using a Tier 1 approach.

# REGULATION (EU) 2018/1999 – Article 37 (4a)

When the LULUCF sector average for the years 2016-2018 reported in 2020 is recalculated in any year starting from 2024, and the difference is greater than 500 ktCO<sub>2</sub>e, then we raise an observation in the EMRT for the Member State to provide a detailed explanation and we draft a report to allow the Commission to verify:

- (a) the transparency, accuracy, consistency, comparability and completeness of information submitted; and
- (b) that LULUCF reporting is carried out in a manner which is consistent with UNFCCC guidance documentation or Union rules.

The Commission shall make the results of that verification publicly available.

Eight Member States made such a recalculation in 2024. A draft report will be shared with Member States for comments. Final report to be completed by the end of June.

TableNr	Code	Category	Pool	Unit	Average_2020	Average_2024	Difference	Percentage	Cumulative percentage
Table4A	4A.1	Forest land remaining forest land	Biomass Net	kt CO <sub>2</sub> e	1.531,01	2.177,64	646,64	52,0%	52,0%
Table4B	4B.1	Cropland remaining cropland	Biomass Net	kt CO <sub>2</sub> e	-268,40	2,94	271,34	21,8%	73,9%
Table4A	4A.2.2	Grassland converted to forest land	Min Soil	kt CO <sub>2</sub> e	-83,75	-30,38	53,37	4,3%	78,2%
Table4E	4E.2.3	Grassland converted to settlements	Min Soil	kt CO <sub>2</sub> e	86,70	139,00	52,30	4,2%	82,4%
Table4C	4C.2.1	Forest land converted to grassland	Biomass Net	kt CO <sub>2</sub> e	60,36	100,20	39,84	3,2%	85,6%
Table4B	4B.2.2	Grassland converted to cropland	Biomass Net	kt CO <sub>2</sub> e	-43,38	-6,47	36,91	3,0%	88,5%
Table4E	4E.2.1	Forest land converted to settlements	Min Soil	kt CO <sub>2</sub> e	50,44	73,79	23,35	1,9%	90,4%
Table4E	4E.2.2	Cropland converted to settlements	Min Soil	kt CO <sub>2</sub> e	50,56	71,13	20,57	1,7%	92,1%
Table4E	4E.1	Settlements remaining settlements	Biomass Net	kt CO <sub>2</sub> e	-110,11	-90,10	20,01	1,6%	93,7%

# Specific challenging areas of the LULUCF reporting

**Reporting of N<sub>2</sub>O from forest soils** due to naturally emitted N<sub>2</sub>O, because there is always a decay of organic material in the soil – Not related to soil management (changes) or land use changes – how to deal with this in the inventory?

**Below-ground dead wood.** How to estimate emissions from the decay of stumps and roots? Increased harvesting generates more below-ground dead wood. Instantaneous oxidation would overestimate emissions. We found only one study on this decay, indicating a decay process over several decays

Estimating **emissions from forest fires?** Dead wood is an issue.

**Conversion of land to settlement** – It makes a difference whether the new settlement land use is asphalt or grass, countries should make separate calculations

Conservativeness is not a valid reason for not reporting (it was KP)



# GHG inventory reporting in 2024 and 2025



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# 2024 GHG inventory reporting: First half 2024 (EU Governance)

- Reporting under the EU Governance Regulation
- No changes compared to 2023 reporting
- Draft MS' submissions by 15 January, QA/QC implementation, and final MS' submissions by 15 March
- No submissions from MS or EU to UNFCCC by 15 April (CP.27 Decision)
- EEA updated its GHG viewers/databases with 1990-2022 emissions reported under the EU Governance & published on its website on 15 April

# 2024 GHG inventory reporting: Second half 2024 (Paris Agreement)

- **MS agreed the process at WG1 12/10/2023 – conditional to the delivery and proper functioning of the UNFCCC new electronic tool by June 2024**
- **Process and timelines:**
  - MS submit (final) GHG inventories to EEA by 15/09, including: JSON/CRTs, Annex on methods (SharePoint) & Annex on uncertainty
  - EEA implements QA/QC focusing on completeness & recalculations (summary\_2)
  - No (or minimal) changes expected compared to 15/03 inventory
  - EU inventory report (CRTs + NID) to be finalized by 15 November
  - MS & EU submit to UNFCCC identical inventories (CRTs) by 31/12/24

# COMPREHENSIVE REVIEW 2025

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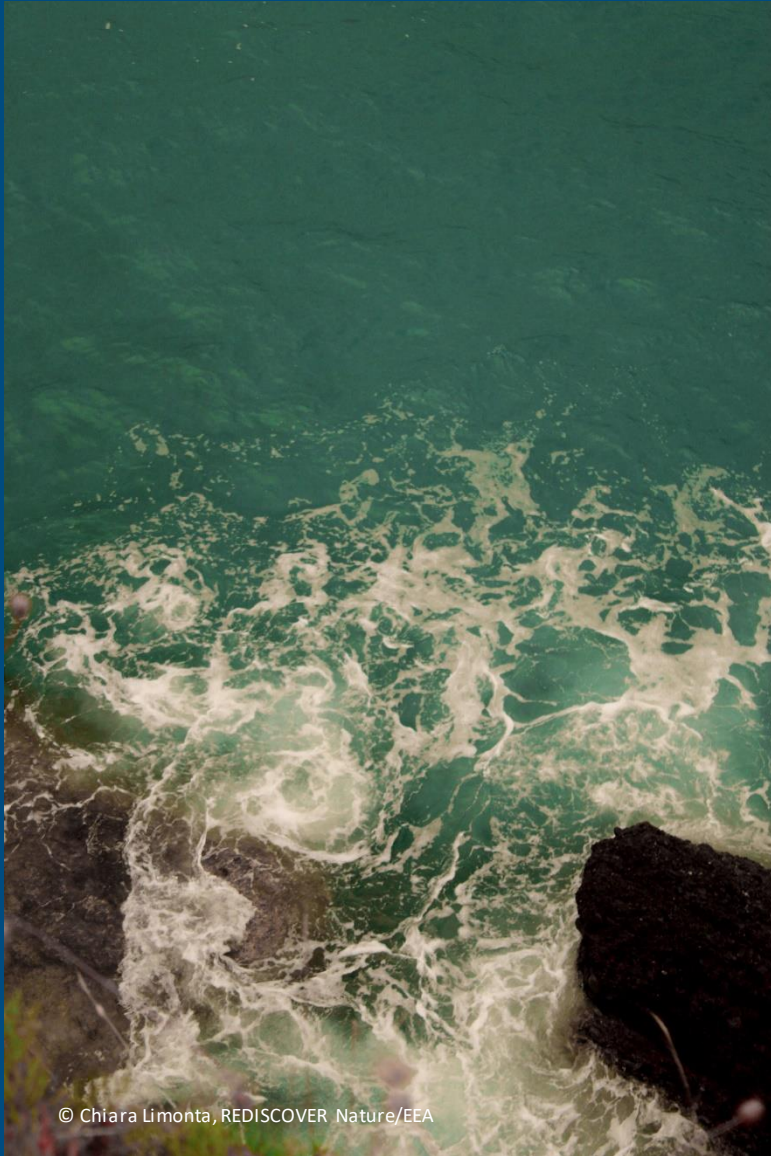
There will be a comprehensive review of the 2025 inventory submission. This has been introduced to ensure robust inventories for the setting of the trajectory for the 2026-2029 budget.

EEA will do the initial check and an Expert Review Team will then do the comprehensive review following Governance regulation article 38 (The review will happen in parallel with the ESR review)

EEA will provide further information on the process later this year



# GHGI improvements support



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# Dissemination activities

CLIMATE AND ENERGY IN THE EU

**Handbook on the updated LULUCF Regulation EU 2018/841 - Guidance and orientation for the implementation of the updated regulation - Version 2**

## Authors:

**Hannes Böttcher, Cristina Urrutia, Anke Herold, Sabine Gores (Oeko-Institut); Colas Robert, Etienne Mathias (Citepa); Valentin Bellassen; Stephanie Wegscheider, Amelie Lindmayer (GAF); Karin Attström (Ramboll)**

## The handbook aims to:

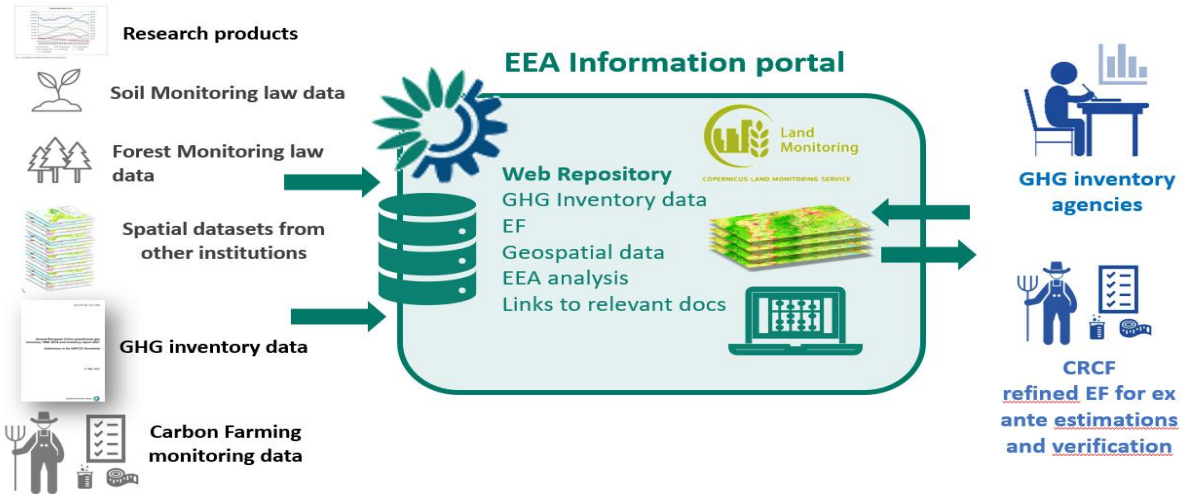
- Explain all elements of the LULUCF Regulation
- Enable an increase in the quality of GHG E/R in the LULUCF sector
- Disseminate knowledge and experience

Link: [Climate and Energy Portal](#)

European Environment Agency



# On line information portal and capacity building



## Capacity building/peer to peer learning

- 1:1 Bilateral meetings
- Hosting country visits
- Webinars – small scale workshops

The **EEA Portal** is an online knowledge hub to facilitate the access of relevant data to **improve the MS GHG inventories**

### Data types

- **Inventory related data** such as estimation methodologies and emission factors
- **Geospatial data coming from different sources (links and metadata info):** e.g. Copernicus; EEA CCI biomass data
- **Links to relevant scientific project/reports**

### Next steps

Survey on portal and CB activities	July
Online engagement meeting with inventory compliers on the portal	Sept



# CLC+ LULUCF instance – reminder concept

- Development of **geospatial datasets and system (CLC+)** that can support the LULUCF needs. **Main support is with the “LULUCF instance”**
  - Provide EEA with (country) **independent activity data proxies** (workflow to be tested Q3/2024)
  - **Support countries** with their own spatially explicit monitoring/reporting **(training options open)**

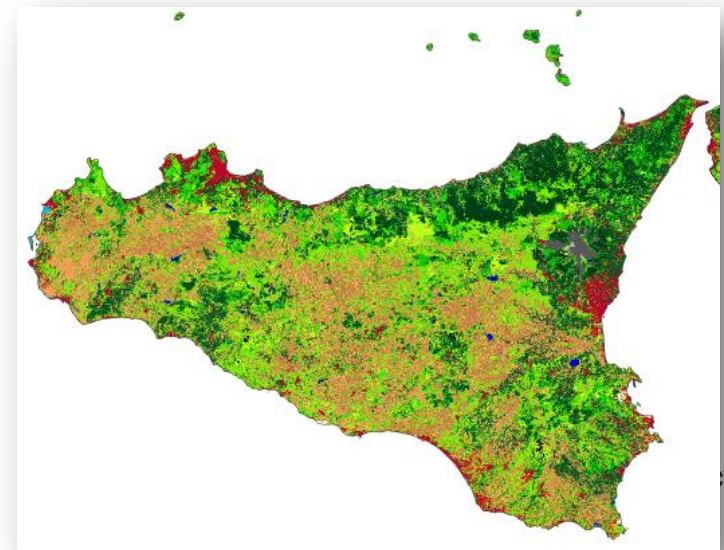
## Concept:

- Use a **flexible database solution (CLC+ Core)** to:
  - **Input datasets:** any European-wide or national dataset possible
  - **Harmonize** existing (dissimilar) LC/LU input data by using a common nomenclature (EAGLE)
  - **Combine datasets** by developing extraction rules in the system (based on the EAGLE elements)



## Output: LULUCF Instance

- Spatial coverage: EU-27
- Temporal coverage: 2018 & 2021 (from 2021 on yearly update)
- Raster with 100m grid
- 6 main LULUCF categories & 26 sub-classes



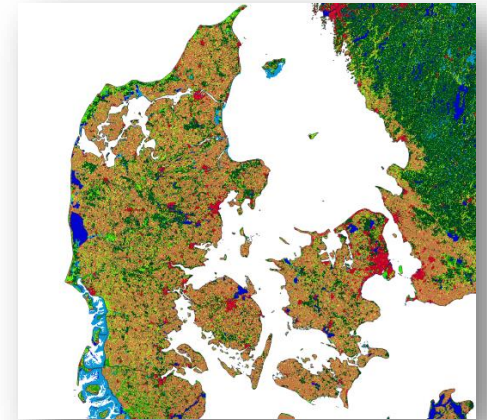
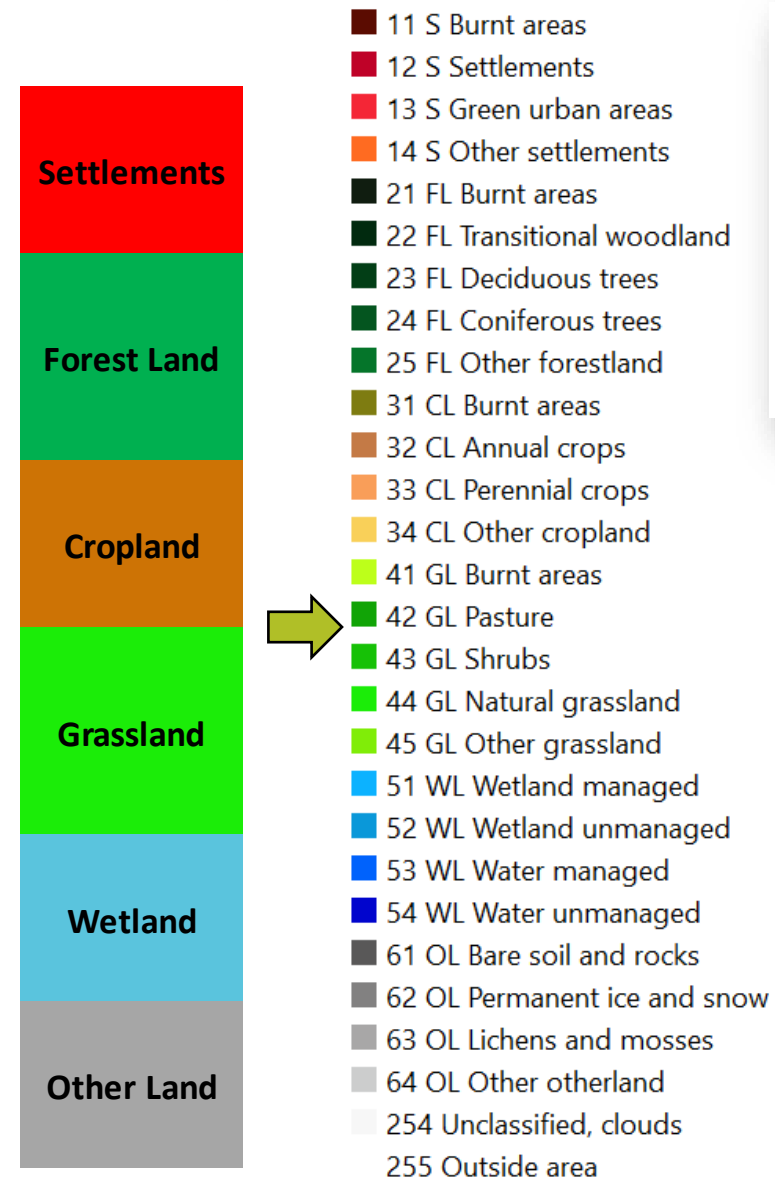


# LULUCF instance 2021 status – beta version can be shared June 2024

## Input datasets for LULUCF 2021:

Product Category	Product Name	Reference year	Data format
<b>CLMS HRL-VLCC</b>			
Forest	Tree Cover Density	2021	Raster
Forest	Dominant Leaf Type	2021	Raster
Cropland	Crop Type	2021	Raster
Grassland	Grassland	2021	Raster
Herbaceous	Herbaceous	2021	Raster
Water and Wetness	Water and Wetness	2018	Raster
<b>CLMS HRL-NVLCC</b>			
Imperviousness	Degree of Imperviousness	2021	Raster
<b>CLMS CLC / CLC+ Backbone</b>			
CLC+ Backbone	CLC+ Backbone	2021	Raster
CLC	Corine Land Cover	2018	Raster/Vector
<b>CLMS Local Components</b>			
Urban Atlas	Urban Atlas LC/LU	2018	Vector
Riparian Zones	Riparian Zones LC/LU	2018	Vector
Natura 2000	Natura 2000 LC/LU	2018	Vector
Coastal Zones	Coastal Zones LC/LU	2018	Vector
<b>Other products</b>			
Burned Areas	EFFIS	2021	Raster

## LULUCF categories & sub-classes:



- **2021** final version: June 2024
- **2022** final version Q4/2024
- **2023** final version: Q1/2025

Will be shared with LULUCF compilers and together with info on training options



Thank you



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