



Policy Requirements in EU for MRV LULUCF, Carbon Farming and GHG inventories

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European Environment Agency - What we do

The EEA is an agency of the European Union that delivers knowledge and data to support Europe's environment and climate goals.

On LULUCF (among others):

- Compilation of EU annual greenhouse gas emission inventory
- EU QA/QC of MS GHG inventories
- facilitate improved and annual geographic tracking of carbon pools by Member States and
- Support the Commission in the setup and implementation of carbon farming certification in the EU



EEA coordinates Copernicus' Land Monitoring Service (CLMS) and In-Situ Component.

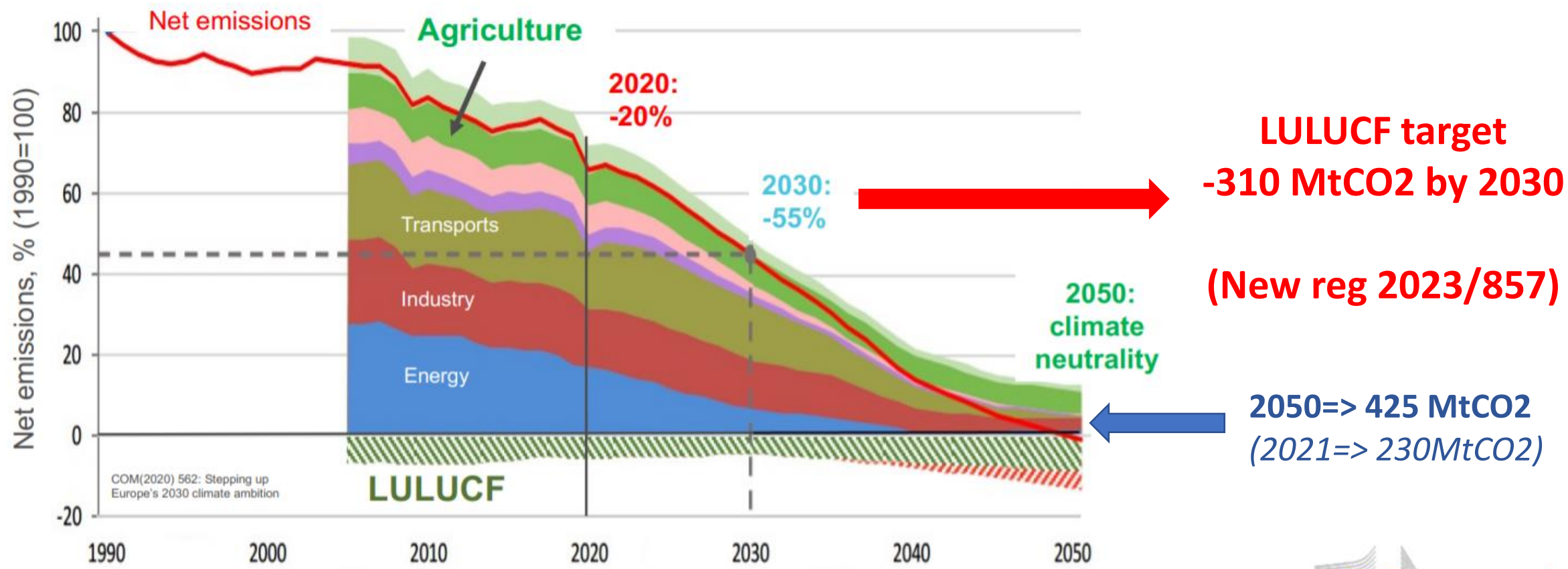


European Environment Agency



EU pathway towards climate neutrality: increasing importance of LULUCF sector

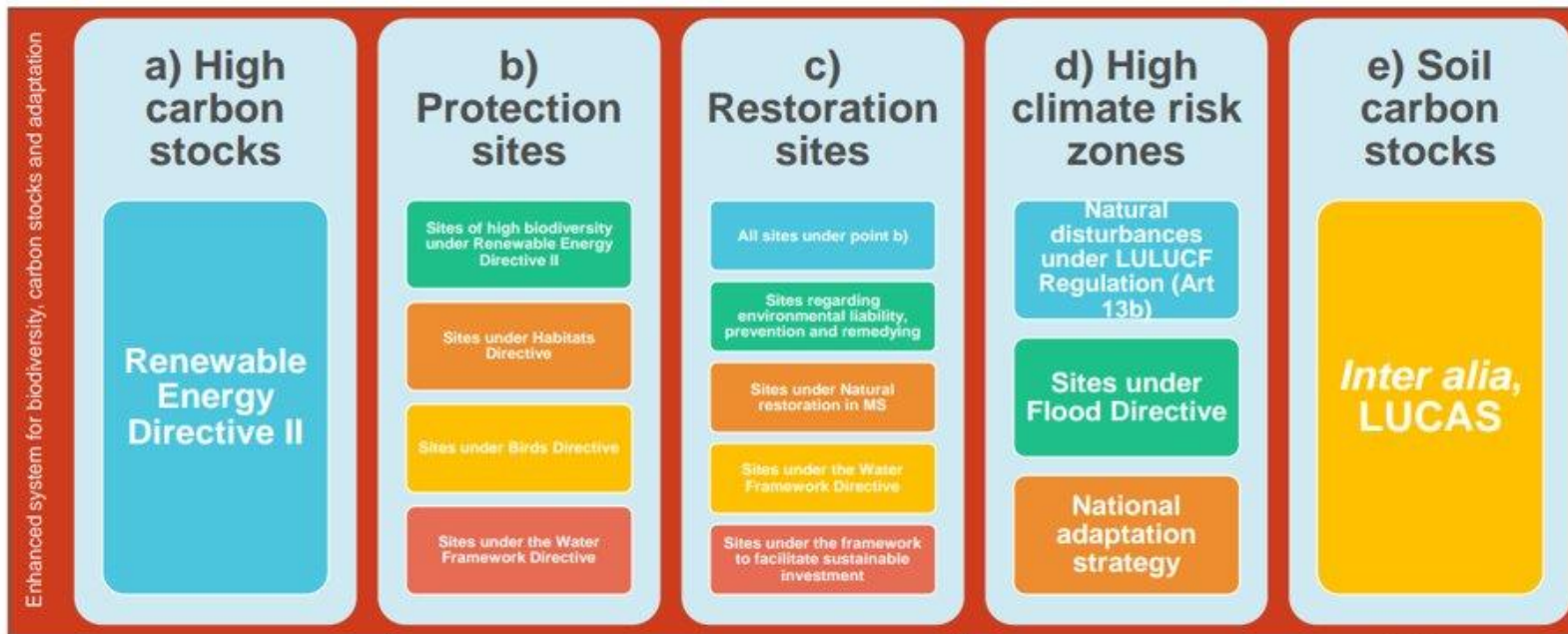
The Paris Agreement's goal of <math><2^{\circ}\text{C}</math> global temperature requires a *balance* between anthropogenic GHG emissions and **CO2 removals** → well reflected in EU climate target



LULUCF regulation MRV requirements

“The **greenhouse gas inventory** shall enable the exchange and integration of data between the **electronic databases** and the **geographic information systems**, in order to facilitate their comparability and public accessibility.”

Enhanced LULUCF monitoring system



Biodiversity Strategy, Nature Restoration Law

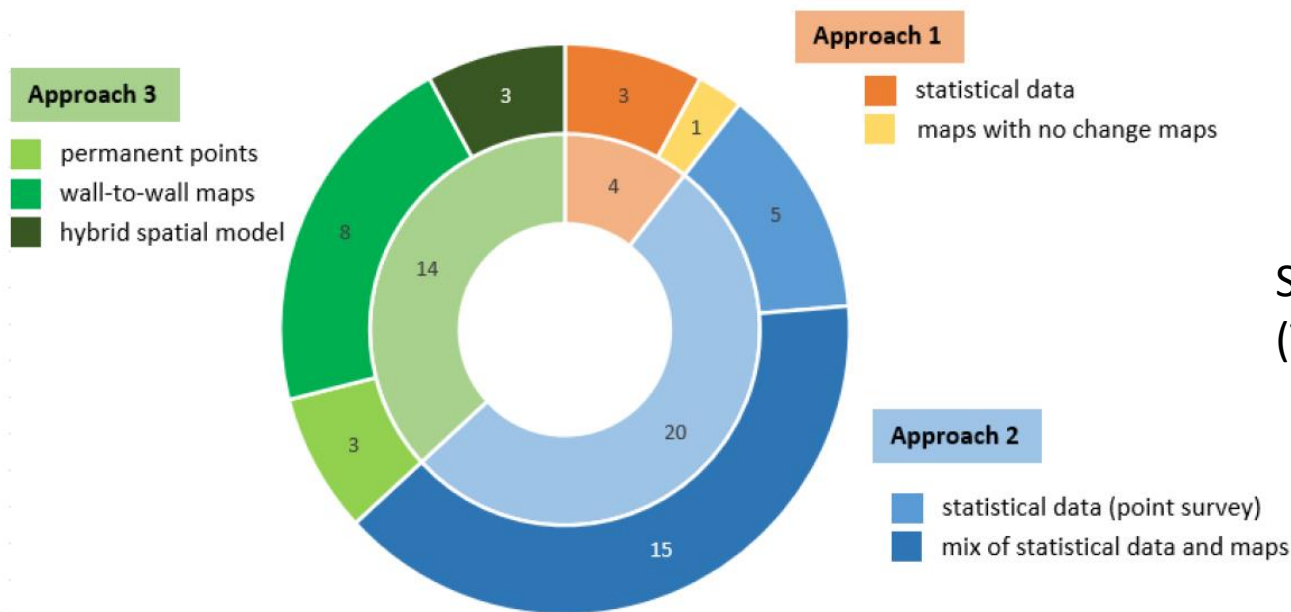


- **Geographically-explicit land use conversion data** (Approach 3 IPCC 2006 GL)
- Improve **accuracy of estimation** (from Tier 1 to Tier 2 in 2028)
- Linkages with other relevant **policy frameworks**

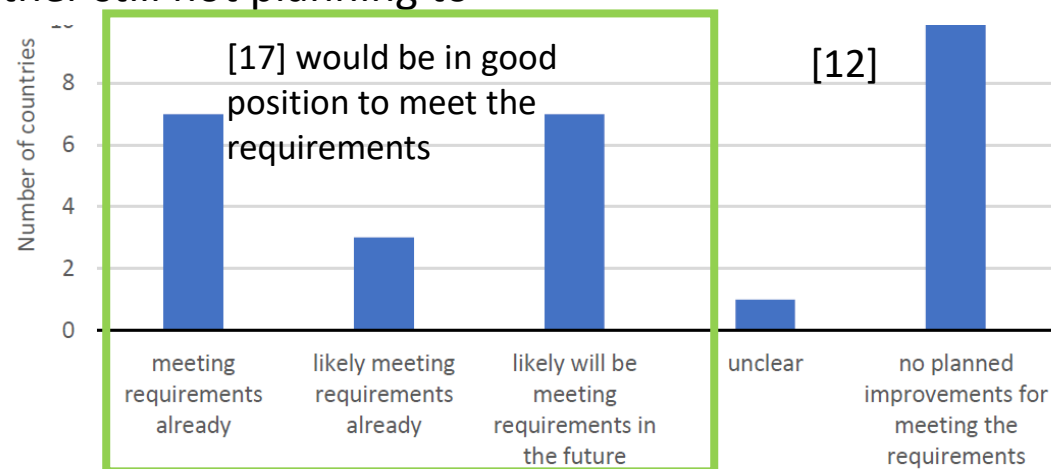


Are we there yet?

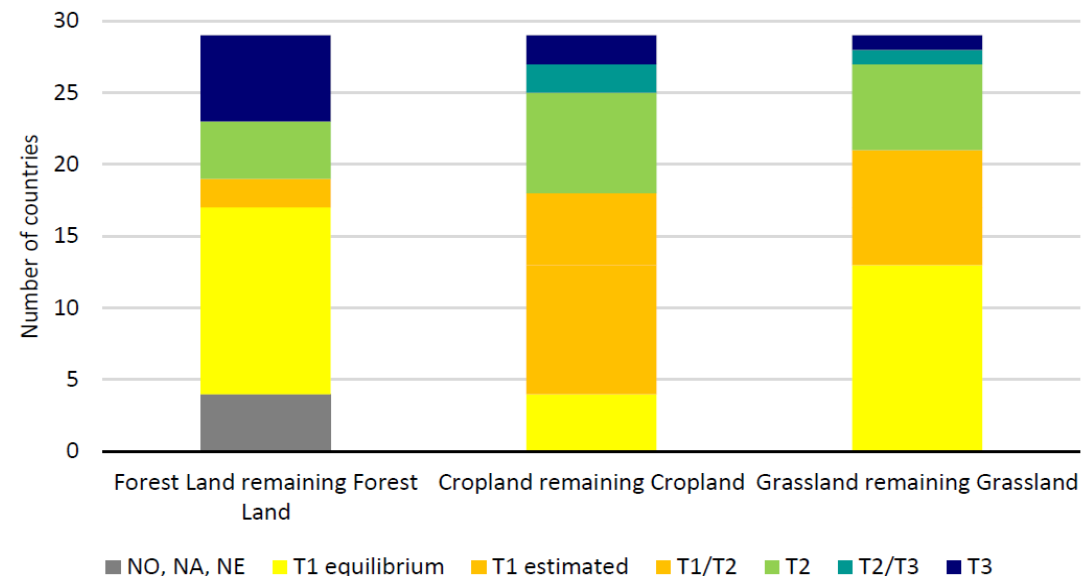
Heterogeneous situation among countries and the need to provide further assistance, sharing best practices



Many MS already use geographically explicit tracking of LUC, other still not planning to

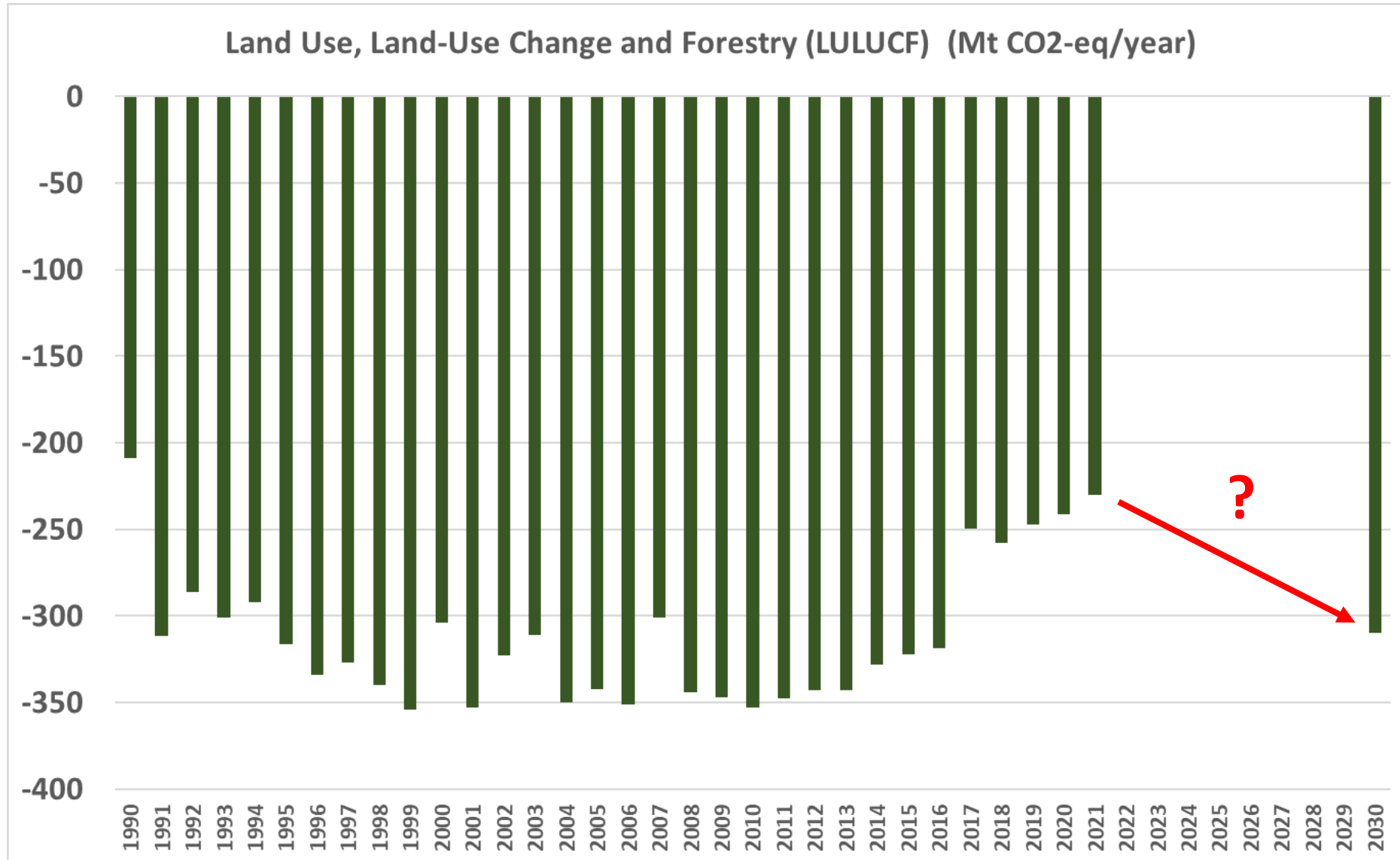


Soil Organic Carbon is estimated using low levels of accuracy (T1)



(EEA data based on 2022 NIR)

Are we there yet?



In 2021 LULUCF removes 230 MtCO₂eq. → **6.5% of EU emissions** (EEA 2023)

Decreasing sink → due to harvest, increase of impact of disturbances (Fires, pest, diseases), aging.

Carbon farming

Proposal for a

REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

establishing a Union certification framework for carbon removals

{SEC(2022) 423 final} - {SWD(2022) 377 final} - {SWD(2022) 378 final}

Green business model that rewards the actors of the land sector to take up improved land management practices resulting in the increase of carbon sequestration in living biomass, dead organic matter and soils by enhancing carbon capture and/or reducing the release of carbon to the atmosphere.



Possible use of the EO in the Carbon farming

1 Transparency

Refers to clear and sufficient documentation on data sources, adopted methodologies and associated assumptions

2 Completeness

GHG inventory should include all gasses emitted/removed by all sources/sinks under the national jurisdiction for all the years of the time-series

3 Consistency

Data selection and methodological choices adopted for all the years of the time-series must be consistent

4 Comparability

Refers to the application of methodologies and formats that allow simple and credible emission and removal estimates comparison among Parties' GHG inventories

5 Accuracy

All emissions/removals, shall systematically neither over- nor underestimate the true value, and uncertainties as reduced as far as practicable

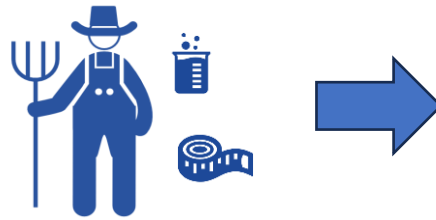
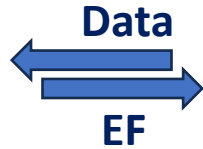
- Monitoring of land cover features and their biophysical parameters
- Verification tool by third party
- Support in the definition of standardized baseline (e.g. stratification, attribution of EF to specific landscape categories etc.)
- The spatial explicit data represent the link to the GHG Inventory



Links between carbon farming and GHG inventories

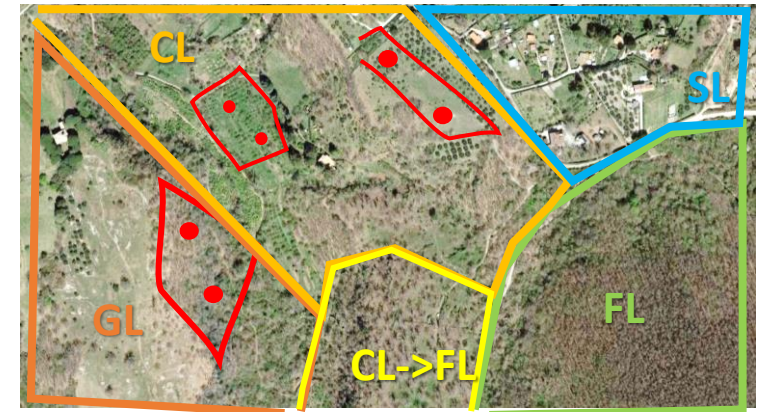
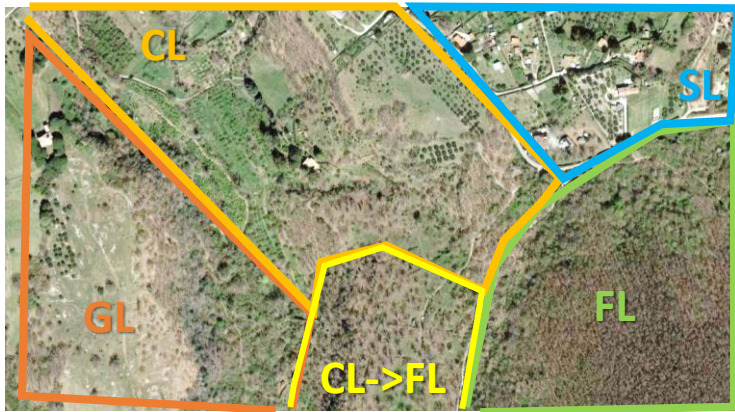


GHG inventories
Geographic explicit Land
conversion tracking



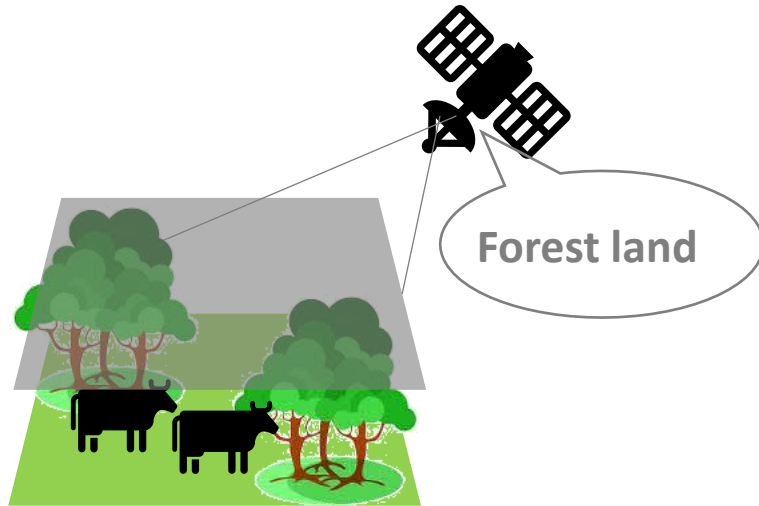
Carbon farming monitoring
data

*Exchange and integration of data
between the **GHG inventory** and **site
measurements coming from CF
MRV processes***



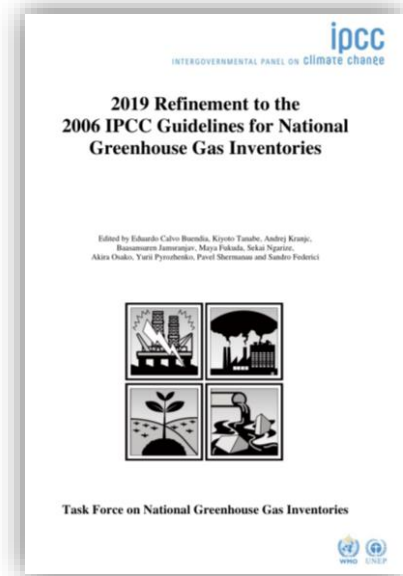
Opportunity for improving inventories with measured data

Requirements and issues for LULUCF MRV



Grazing land/Grassland

- **Minimum mapping unit** linked with forest definition in GHGI
- **Different forest definitions** (minum area, tree high, %crown cover)
- **Land cover vs land use**



- EO products need a long-term perspective → **Focus on having a regularly updated product is more important than having one off "perfect" map**
- **Time series consistency (from 1990!)** → **link with previous products**
- **Uncertainty** of data provided is a fundamental requirement (IPCC GL)
- **Transparent methods** applied in data acquisition and processing (Vol 1 IPCC GL)



Thank you
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