



# Opportunities for policy planning and implementation presented by the revised LULUCF Regulation

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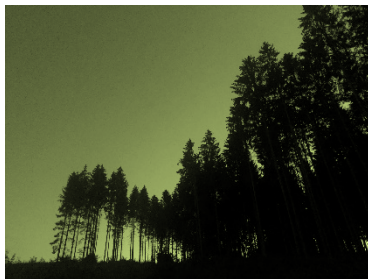
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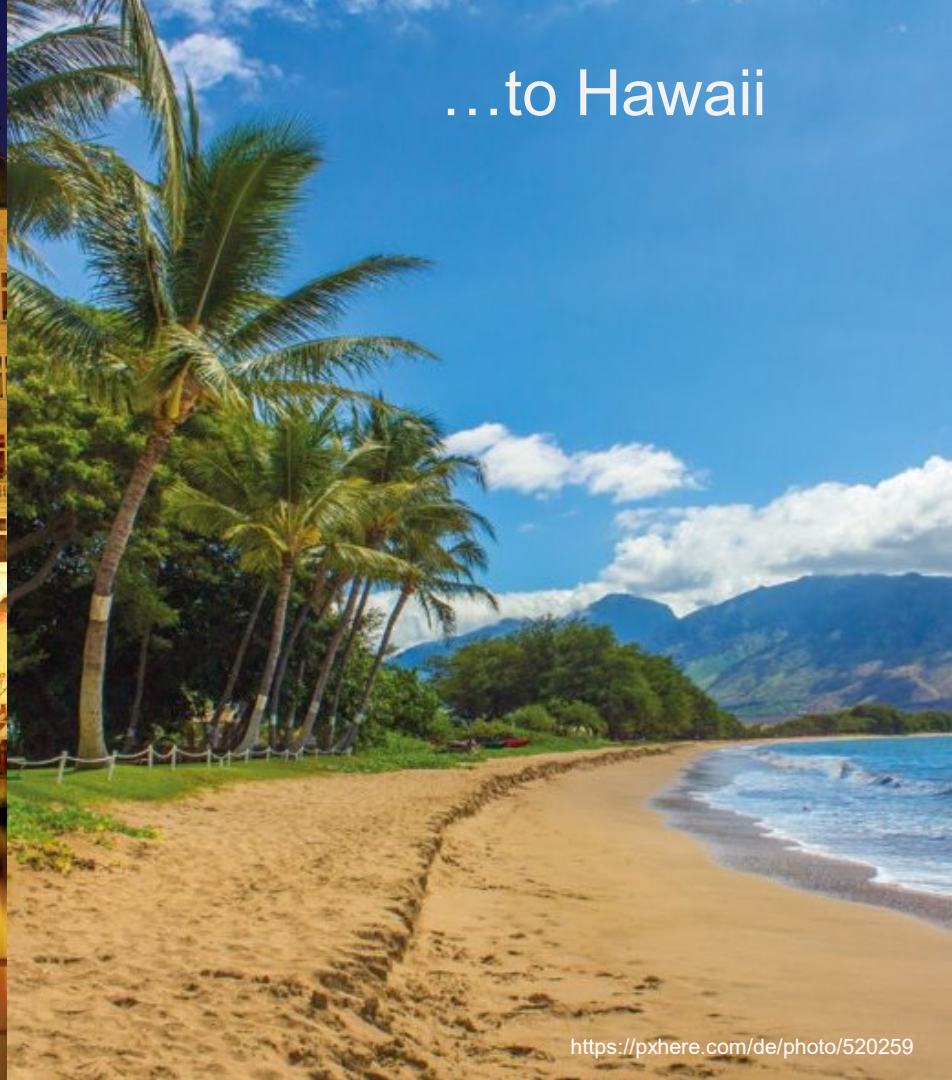
Workshop, virtual/Copenhagen, December 18-19, 2023



From Copenhagen...



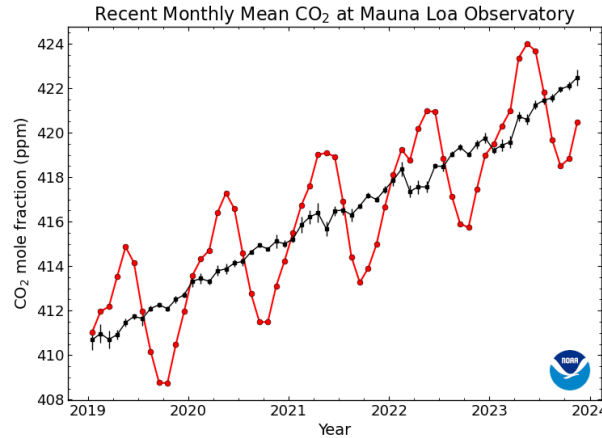
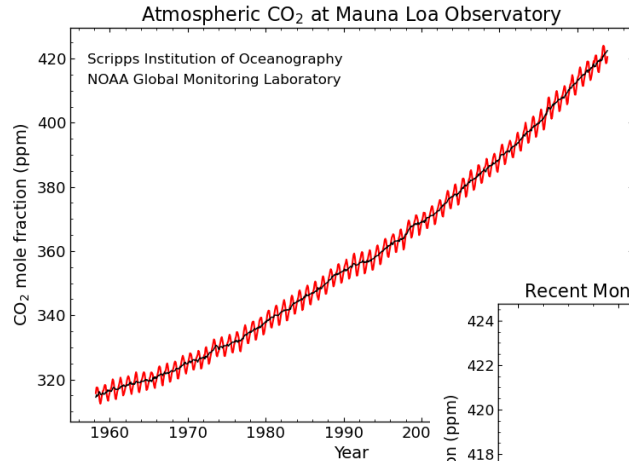
...to Hawaii



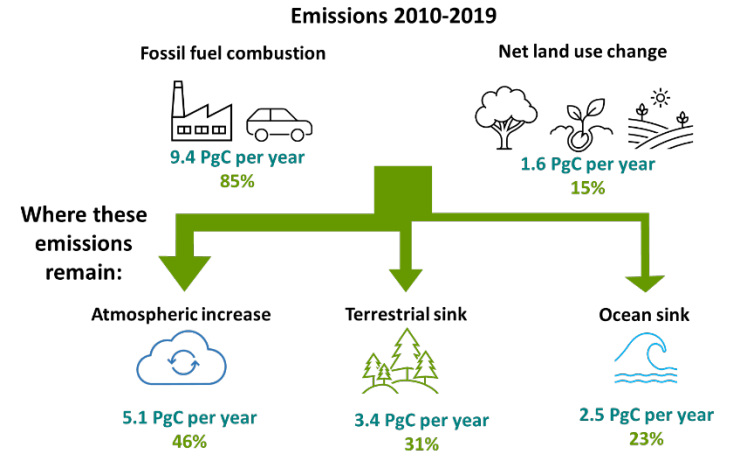
# Monitoring of natural carbon sinks

## The global perspective

- The land sector is crucial for tackling the climate crisis
- Policy makers needs a good understanding of the land sector and its mitigation potential for effective measures



Red line = monthly mean CO<sub>2</sub> concentration  
Black line = moving average over seven cycles  
Source: <https://gml.noaa.gov/ccgg/trends/>



# The LULUCF Handbook: a team effort!



## Authors:

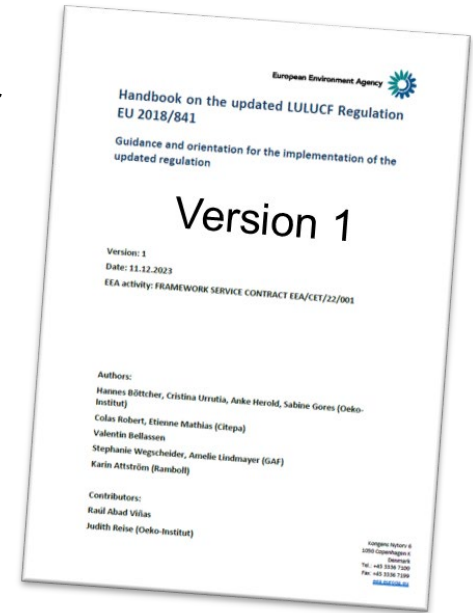
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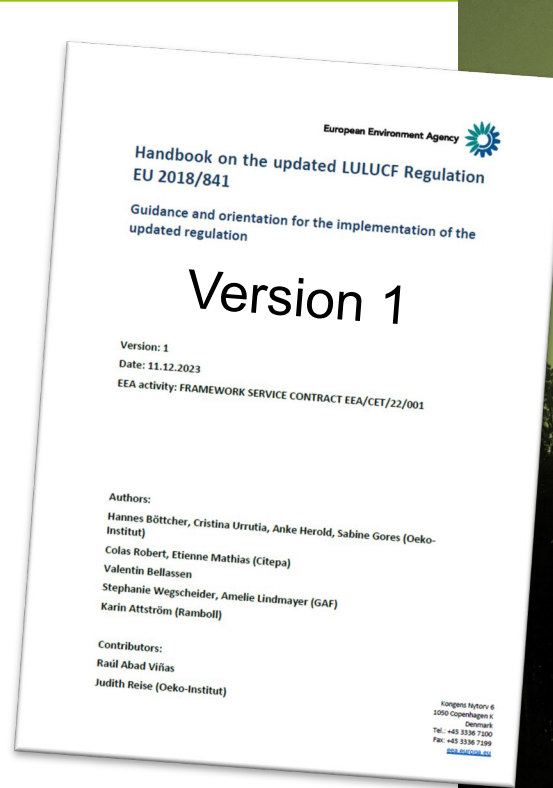
# Handbook structure and structure of presentation

## Explain

1. Why this Handbook?
2. Understanding LULUCF
3. The wider policy context
4. Targets and budgets for the LULUCF sector

## Guide

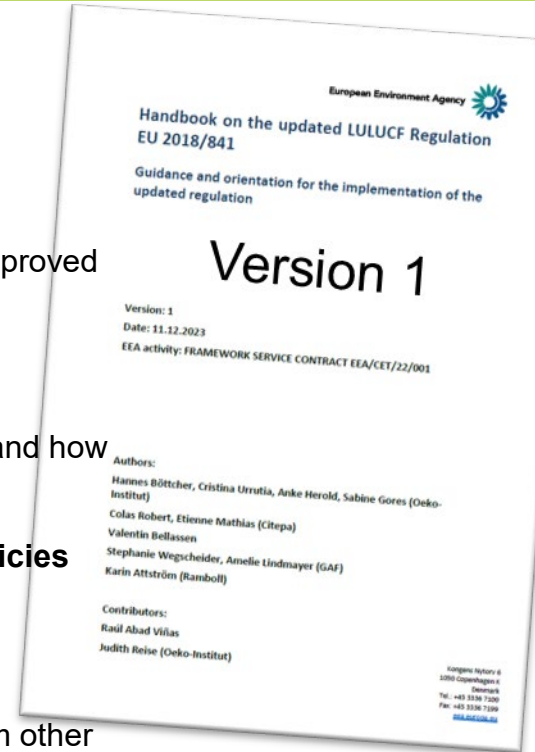
5. Guidance for improving monitoring and reporting for effective policies
6. Opportunities for overcoming institutional and financial barriers to improved monitoring
7. Conclusion



# 1. Why this Handbook?

## And for whom was it created?

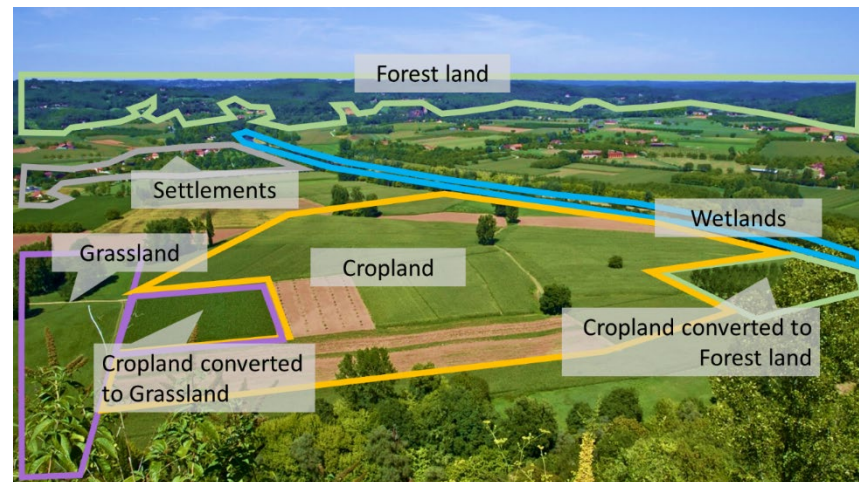
- Why was this Handbook created? It aims to...
  - ...help **stakeholders to become familiar** with the LULUCF Regulation, its opportunities, and implications for their line of work
  - ...disseminate knowledge on how GHG monitoring in the land sector can be improved to **reflect policies and measures** and help guide **effective implementation**
- For whom was the Handbook created? For those who...
  - ...want to **get a better understanding** of the land sector, its accounting rules and how it is integrated in the overall EU climate policy framework
  - ...want to **understand how agriculture policies under the CAP or forest policies** contribute to the achievement of targets under the LULUCF Regulation
  - ...want to check what they need to **implement**
  - ...want to **collect ideas** how data sources, research activities or examples from other countries can improve their own implementation of the Regulation



## 2. Understanding LULUCF

### Why is it important?

- LULUCF Regulation sets contribution of the land sector to achieving **EU climate targets**
- GHG inventories will be the main tool for tracking progress towards target
- **THREE** GHG
  - CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O
- **SEVEN** carbon pools
  - living biomass
  - litter, dead wood, dead organic matter
  - mineral soils, organic soils
  - HWP
- **TEN** land reporting categories



Examples of land reporting categories and sub-categories

## 2. Understanding LULUCF

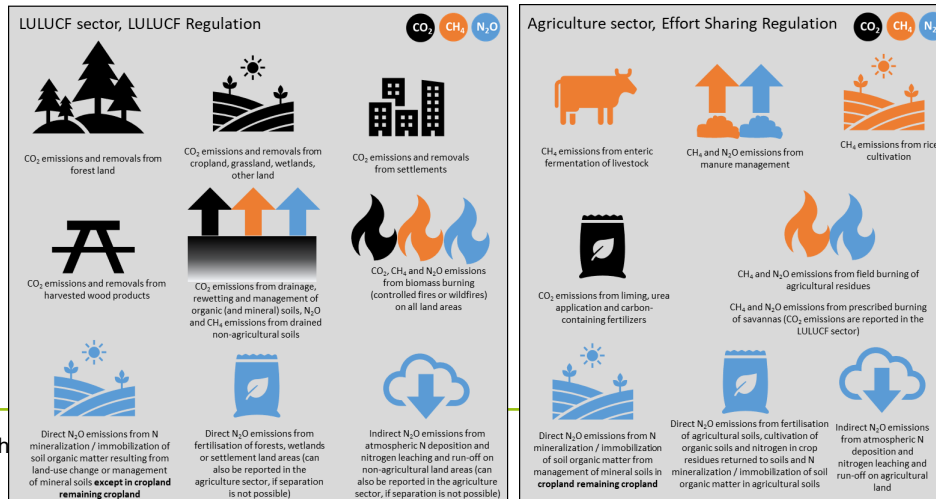
### What is the difference between LULUCF and agriculture?

#### LULUCF → LULUCF Regulation

- CO<sub>2</sub> emissions and removals from biomass, soils or harvested wood products +
- specific land-use related sources of methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O)

#### Agriculture → Effort Sharing Regulation (ESR)

- non-CO<sub>2</sub> emissions from fertiliser application
- livestock farming, including enteric fermentation, manure management
- primarily methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O)



#### Energy → ESR, ETS2

- Emissions from **fuel combustion** from agriculture machinery or transport in forestry or on farms

## 2. Understanding LULUCF

### What are important features of the land sector and how are they addressed?

#### The land sector...

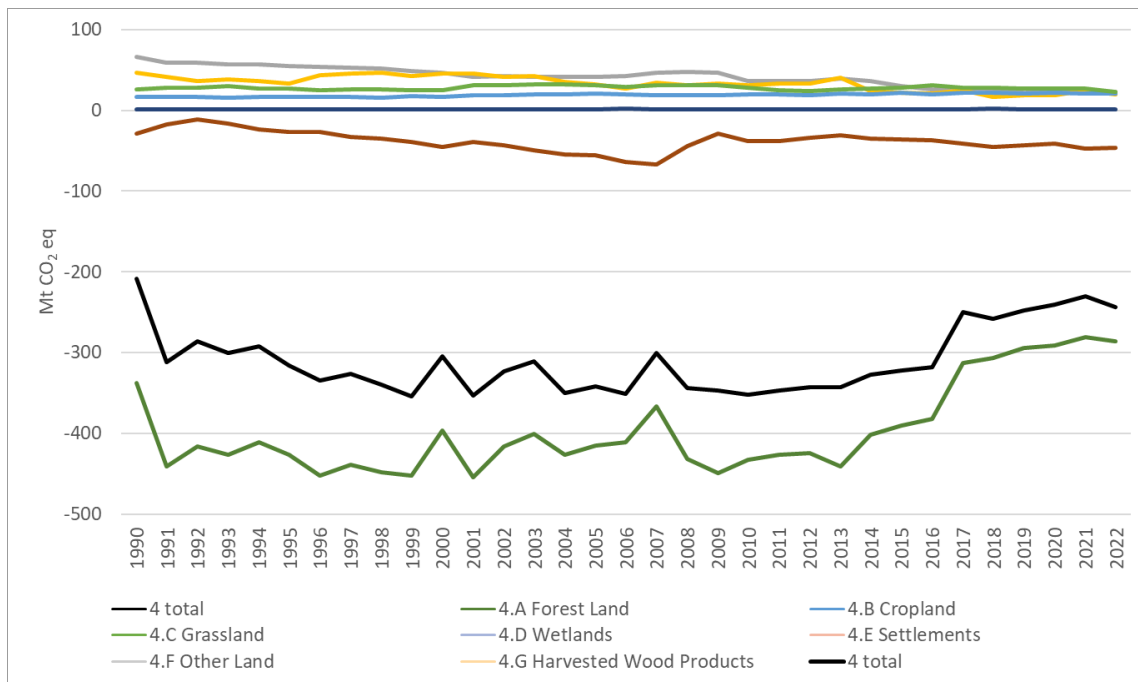
- ...can lead to emissions and removals of CO<sub>2</sub>
- ...consists of distributed sources and sinks
- ...is subject to natural and anthropogenic effects
- ...faces sudden and large emissions can occur due natural impacts
- ...incorporates cyclic trends and legacy effects
- ...pools ultimately face saturation
- ...emissions and removals are associated with large natural and statistical uncertainty

#### Therefore, the LULUCF Regulation...

- ...requires GHG emissions to be reported with a positive, removals with a negative sign
- ...requires methods that consider national circumstances and use geographically-explicit information
- ...considers only managed land for accounting
- ...requires to report emission but provides mechanisms for dealing with events that beyond control of humans
- ...has specific rules for forests for the first period
- ...requires the reporting of the development of influencing factors (e.g. forest age structure)
- ...requires the use of advanced methodologies to increase accuracy and consistency

## 2. Understanding LULUCF

What are the key components of GHG emissions and removals from LULUCF?

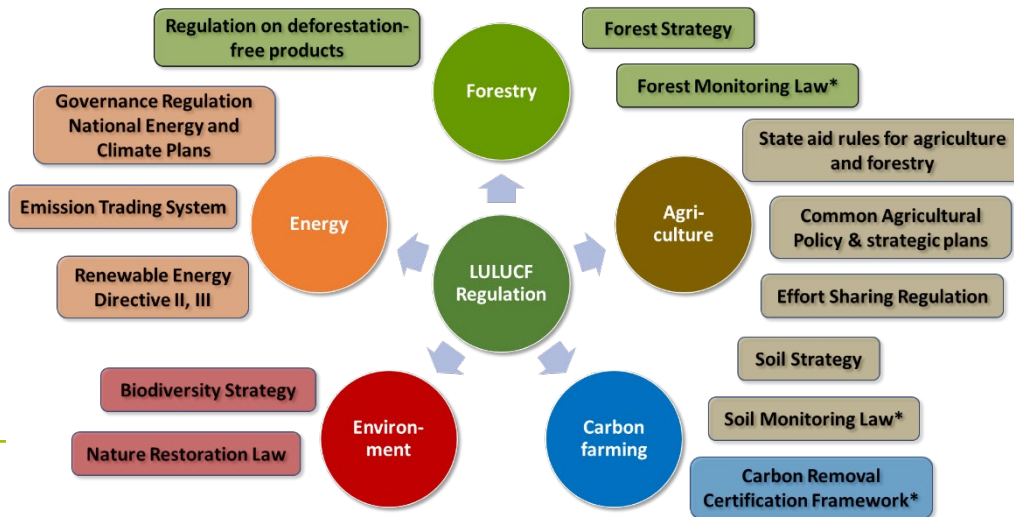


- LULUCF net sink dominated by Forest category
- About 15% of forest sink “eaten up” by emissions (cropland, grassland, land use change)
- Downward trend of net sink since 2013
- Proxy data: trend reverted in 2022?

# 3. The wider policy context

## The EU climate policy framework and linkages to other EU policies

<b>EU Climate Law</b> all sectors, at least -55% in 2030 compared to 1990		
<b>Emission Trading System</b> Energy sector -61% in 2030 compared to 2005	<b>Emission Trading System 2</b> Transport, Buildings -43% in 2030 compared to 2005	<b>Effort Sharing Regulation</b> Agriculture non-CO <sub>2</sub> , Waste, etc. -40% in 2030 compared to 2005
<b>LULUCF Regulation</b> Land use, Land use change and Forestry -310 Mt CO <sub>2</sub> in 2030 and budget		



- Handbook provides description of how LULUCF Regulation works together with other EU policies
  - Brief description of policy
  - Description of synergies with LULUCF

For example:

CAP strategic plans: how do green interventions contribute to long-term national targets, e.g.:

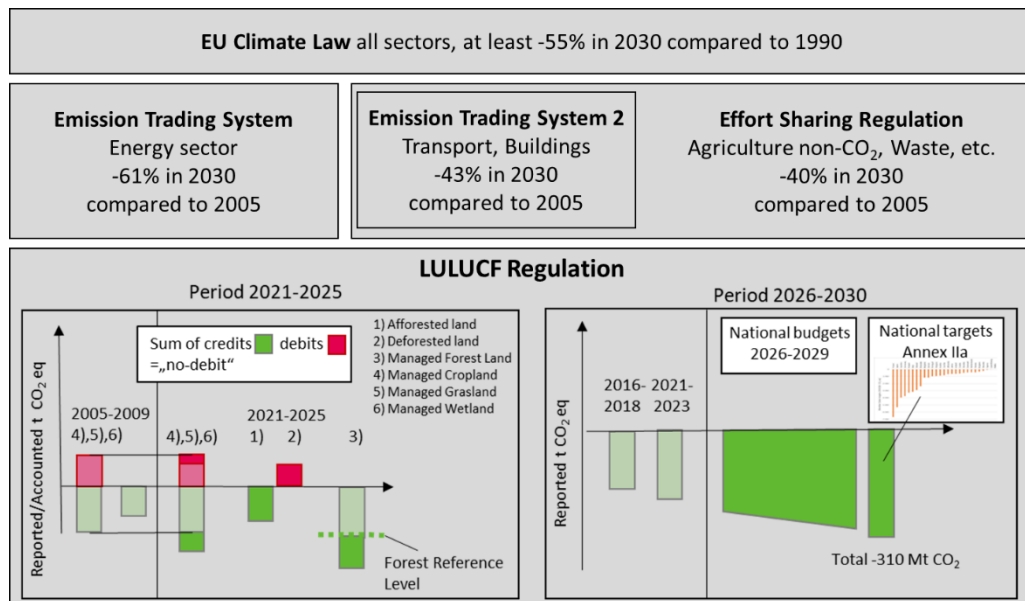
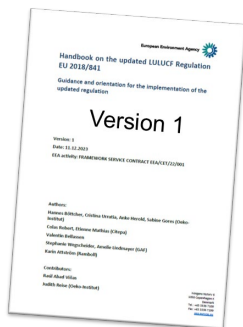
Ecoschemes to incentivise paludiculture on drained peatlands

# 4. Targets and budgets for LULUCF sector

## What the Handbook includes

- Coverage and reporting categories
- National target and budget setting
  - From the Union target to national targets
  - National budgets
- Flexibilities
- Compliance
- Methodological requirements

For details see:



# 5. Guidance for improving monitoring and reporting

## Improving monitoring and reporting for effective policies

**Why** is improving the quality of monitoring and reporting needed?

Because it is:

- a pre-requisite to the reporting-based targets it sets
- a necessity for the integration with other policies
- an essential tool to support informed decision-making by policymakers

**How** can the quality of monitoring and reporting be increased?

- Enhanced calculation methods, with higher **Tiers**
- Higher spatial resolution of calculation, with a geographically-explicit approach
- Improved use of high quality and resolution datasets (incl. increased interoperability)




























**What** are the benefits?

- Increased accuracy
- Increased completeness
- Increased consistency
- Increased access
- Increased comparability
- Increased transparency

# 5. Guidance for improving monitoring and reporting

## Example of Tier level

- What does LULUCF Regulation say?
  - Reporting in 2028 at least at level of Tier 2 for all categories
  - Reporting in 2030 at the level of Tier 3 for most forest land, grassland, and wetlands (e.g.: land areas with high carbon stocks, under protection, restoration, etc.)
- How can it be done?
  - see case studies and examples provided by Handbook
- What are the benefits?
  - Tier 2: estimate the impact of many practices (in particular in carbon farming, e.g.: improved forest management, crop rotations)
  - Tier 3: distinguish impact of legacy and natural effects, re-use methods for projections

	Biomass	Dead organic matter	Soil organic matter
<b>Forestland remaining forestland</b> 	T1:  + D T2:  or  + CS T3:  or 	T1: 0 T2:  or  + CS T3:  or 	T1: 0 T2:  + CS T3:  or 
<b>Cropland remaining cropland</b> 	T1:  + D T2:  or  + CS T3:  or 	T1: 0 T2:  or  + CS T3:  or 	T1:  + D T2:  + CS T3:  or 

Legend:

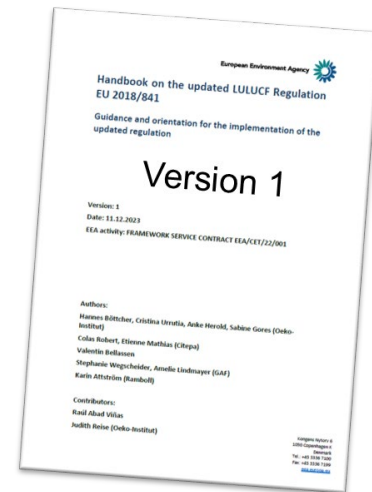
-  Gain-loss method
-  Stock-difference method
-  Model-based method
-  Measurement-based method

T1: Tier 1  
 T2: Tier 2  
 T3: Tier 3  
 D: with default parameters  
 CS: with country-specific parameters  
 0: Carbon stock changes are assumed to be zero

# 5. Guidance - Overview of case studies

## Providing “Good examples”

- **Tier 2** for estimating **soil organic carbon** in Hungary
- Combination of data and a simple model **to increase time resolution** in the French inventory
- A verified and timely **Tier 3 model** serving multiple purposes beyond the inventory in Canada
- The **dynamic vector map** of Portugal
- The combination of **multiple geographically-explicit data** on a grid for France
- List of **geographically explicit datasets** used by Denmark
- **National portal** in Italy
- Using **data collected under the CAP** to improve knowledge on management of peat soils
- Life **project** MediNet



More to be collected also at this workshop

# 6. Opportunities

## for overcoming institutional and financial barriers

### **Diversity** of stakeholders and institutional setting

- National government (inventory submission, climate policy)
- National inventory agency
- Statistical agencies (socio-economic and land-use data)
- Scientific and research institutions (development of methodologies, tools, etc.)
- Financial institutions (projects, improved monitoring etc.)

### **Challenges** due to institutional barriers

- Differences in mandates and priorities
- Limited data access
- Lack of communication
- Issues with quality assurance
- Increased costs
- Lack of capacities

### **Opportunities** for country initiatives

- Clear roles and responsibilities
- Mechanisms for resolving disputes
- Promoting transparency
- Cooperation with international organizations and neighbouring countries
- Re-use of inventory results with involvement of data providers and scientists

# 7. Conclusion

## Creating positive feedback loops

- Achieving LULUCF targets will require design, implementation and evaluation of efficient and integrated policies
- Enhanced reporting will support policy making and serve to assess compliance with targets
- Using best available methods will empower Member States to understand developments in the land sector
- Enhancing monitoring also requires collaboration, from data providers to policy makers
- Aim: create a reinforcing positive feedback loop
  - enhanced reporting supports climate mitigation actions and policies
  - implementation of policies generates additional data and mobilises resources to improve GHG reporting

# Role of the Workshop

## Exchange on how-tos, benefits and synergies

- Session 1: Synergies and opportunities for agriculture and forest policy planning and implementation
- Session 2: Enabling forest and agriculture policy design with improved geographically explicit data
- Session 3: Enhanced monitoring of areas subject to protection and high biodiversity value

Thank you!