

# Introduction and background for Session 3: Annual estimates - the challenge to report emissions when they occur

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Report annual emissions and removals when they occur under LULUCF regulation

EU **2030 target** – absolute annual removals/emissions (compliance check in 2032)

**2026-2029 MS budgets** to be defined by 2025 – based on the linear trajectory from 2022 (averaged over 2021 - 2023) and 2030 target (compliance check in 2032)

## Timely informing policy makers

GHG inventory estimates for the **mitigation impact**

Minimize the impact of **recalculations/resubmissions**

Approximated greenhouse gas inventories for the **year X-1** (Near-real time estimates)

## New data availability and methods

RS, generative AI

# 1 INTRODUCTION TO THE 2006 IPCC GUIDELINES

## 1.1 CONCEPTS

.... **time series reflect actual changes in emissions**

Key concept: ***Inventory year and time series*** - National inventories contain *estimates for the calendar year during which the emissions to (or removals from) the atmosphere occur.*

## 1.4 INVENTORY QUALITY

Indicators of ***inventory quality***. Consistency:

.... differences between years reflect real differences in emissions....

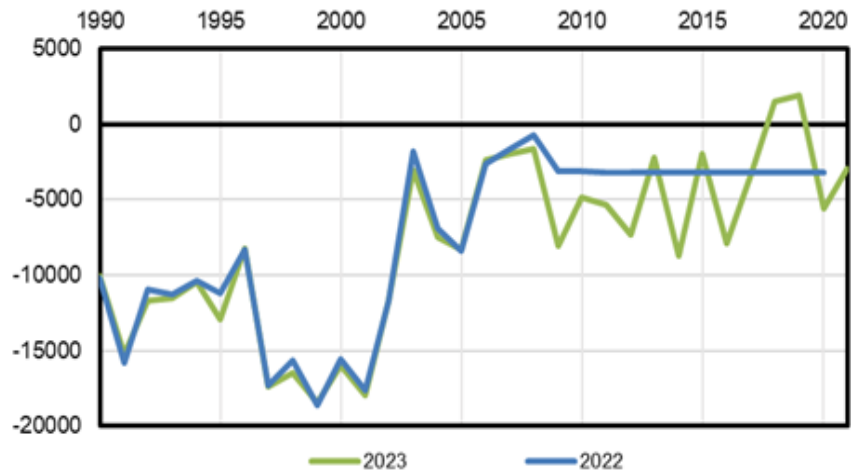
..... annual fluctuations .... not be subject to changes resulting from methodological differences

# Periodic measurements vs. annual estimates vs. annual reporting

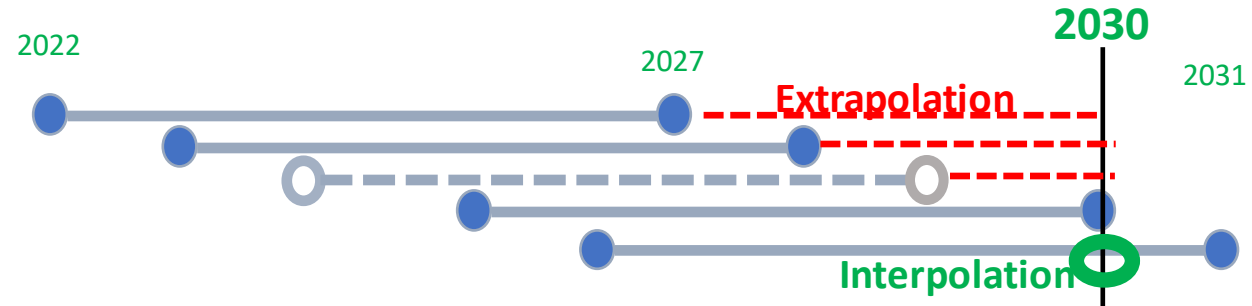
NFI measurement scheme	C stock change method in Living Biomass	Member states applying (excl. MT,CY)
Stand-wise for forest management planning	G-L	5
	S-D	3
Statistical sampling grid	G-L	9
	S-D	8



Traditionally, forest indicators are updated annually, but based on measurements every 5-10 years



Generic measurement routine in forest inventories



# What and how to *annualize* relevant data?

- ***What*** to annualize:
  - Increment/growth
  - Fellings/removals/natural disturbances
  - Standing stocks
  - DW, litter, SOC (mineral and organic)
  - HWP loss
  - Land use change
  - Total emissions/removals
- ***How*** to generate annual estimates:
  - Ring cores, Remote sensing data, Modeling, proxy
  - LUC can be tracked by ground-based inventories, land use statistics or maps
  - .....
- To ***what aggregation level*** annualization to be applied, e.g. plot or national

# Topics for the breakout groups

- What about the **terminology**: annualization/timeliness/interannual variability?
- What annualization **methods do you have experience with**? Among the available methods for annualization (e.g. direct measurements, ancillary data) which one you suggest/implement and why?
- **Approximated inventory (Y-1)** provides a possible training for the annualization methods. Which methods have been used? Were the estimates confirmed afterwards?
- **Transparency** on the annualization methods: is it described sufficiently in your GHG inventory?
- What data or methodological improvements, **how JRC can help**?

# Breakout groups

- **Online participants:**

- Group 1 (Webex link #2): Surnames starting A-K
- Group 2 (Webex link #3): Surnames starting L-Z

**Group A –**  
**Viorel, Gonzalo, Carmen**  
*Plenary room*

Marius Balcius  
Emil Cienciala  
Fulvio Di Fulvio  
Steen Gyldenkærne  
Peter Iversen  
Mélanie Juillard  
Merlin Mayer  
Nathalie Morin  
Jana Niebur  
Nele Rogiers  
Sampo Soimakallio  
Wolfgang Stümer  
Murali Thoppil  
Lærke Worm Callisen

**Group B –**  
**Giacomo, Mattias, Raul**  
*Module A*

Ana Aza  
Hannes Böttcher  
Aldis Butlers  
Eva Gunnarsdottir  
Petr Havlik  
Malin Kanth  
Matic Kozina  
Gal Kušar  
Aleksi Lehtonen  
Ieva Licite  
Christian Wilhelm Mohr  
Hans Petersson  
Leone Tinganelli

**Group C –**  
**Simone, Bostjan**  
*Room behind stairs*

Natalie Bakker  
Xavier Fripiat  
Mykola Gusti  
Jurij Krajcic  
Tobias Langanke  
Robert Matthews  
Tim Mirgain  
Csilla Óvári  
Guido Pellis  
Lucia Perugini  
Raul Radu  
Sven van Baren  
Guillaume Vandekerckhove  
Despoina Vlachaki