History of the networking activity
WP1 – Lucia Perugini

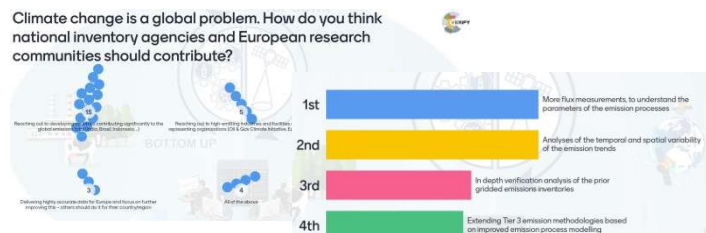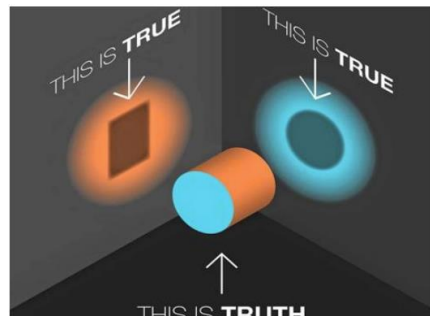May 10th, 2022
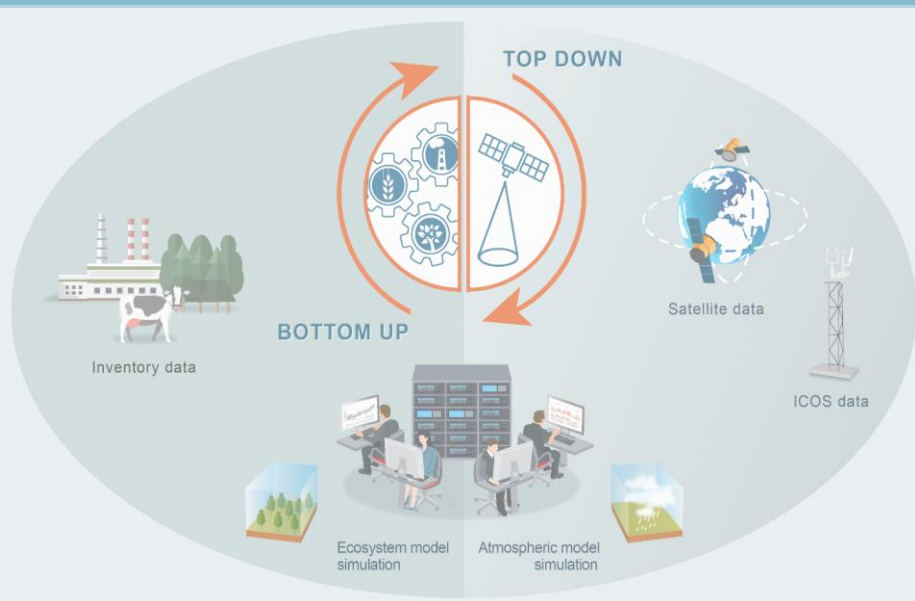
Networking meeting

Lead: RIVM - Paul Ruyssenaars

Objective: interaction between national inventory agencies and the scientific community

CONCLUSIONS
SECOND NETWORKING MEETING
NOV 2020

- The **bottom-up** mean agrees generally well with the UNFCCC estimates, but show larger (climate) variability (i.e. ORCHIDEE) →More disaggregated data are important to understand the agreement is for good reason or by chance, and also to understand better the drivers.

- The **top-down ensemble estimates show large variability and uncertainty**

- For CO2 and LULUCF sector, there is the need to reduce the gap between inventories and models by **defining common definitions** in land use reporting

- **The uncertainty is a fundamental parameter**. It is essential to correctly compare emission/removal estimates. TD good for identifying unknown uncentainties?

- **The spatial resolution** of current top-down models could be a limiting factor for the application of these instruments for verification purposes

- **Categories and sectors** need to be identified

- **Dissemination** of new tools is important (low awareness of availability of new tools)

AGENDA 3° NETWORKING MEETING

13H20 - 15H30 First session: what has been achieved, how useful are the tools?

- DG - RTD view on GHG verification : Zoltan Rakonczay (10' TBC)
- Introduction: History of the networking activity (Lucia; 5')
- Introduction to the synthesis plots (Matthew; 5-7')
- Feedback from all Inventory Agencies (CITEPA, EPA, IE, ISPRA, NIBIO, UBA, RIVM, EAA) on observation-based flux estimate

15H30 - 16H00

16H00 - 17H45 Second session: how to bring the verification work to another, more sustained/operational level?

- Community Inversion Framework : a potential tool to be used by inventory agencies (Antoine Berchet, 10')
- Following activities within CoCO2 (Richard Engelen; 20')
- Example from UK Inventory Agency (Peter Brown ?; 15')
- DG-CLIMA: future view on GHG vérification (Xavier Seront; 10')
- Overall discussion - supported by general questions (Mentimeter)

INVENTORY AGENCIES PRESENTATIONS

Country name	Representative	Talk at the GA	Remarks
Austria	Bradley Matthews	presentation	live
France	Colas Robert/ JP Chang	presentation	live
Italy	Angela Fiore	presentation	live
Germany	Christian Mielke	presentation	zoom
Netherlands	Margreet van Zanten	presentation	zoom
Ireland	Katherine Dooley	presentation	zoom

Thank you for your attention.

OVERALL CONCLUSIONS

	GHG NATIONAL INVENTORIES	TD-MODELS
Temporal scale	Low resolution: Yearly, until t-2 (t-1)	High resolution: Monthly, hourly
Spatial scale	Low resolution: Territorial, country specific (per Member State)	High resolution of spatially disaggregated data, applicable for - regional/global coverage without political border - local scale for verification of e.g. large point sources
Activity link	Fine granularity: Disaggregated by source, subsector, human activity specific	Course granularity: Larger groups of activities for which spatial and temporal data are available, of interest for near real time emission assessment
Challenges	Direct/indirect emissions, uncertainties, increased complexity	Modeling of processes, biofuel/biomass, Carbon Capture and Storage.

Q&A
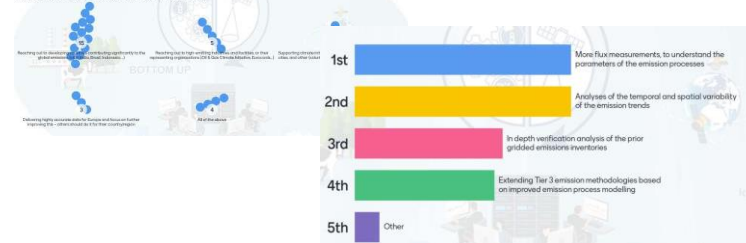
For which emissions sources would new atmospheric and/or flux measurements significantly help revising the emission factors most?

The most important sectors were judged to be **crop production**, then **livestock**, and **then waste**.

Which task would you tackle first for further improvement?

- First the **spatial distribution**,
- **top down evaluation** with inverse modeling seasonal distribution

What are the challenges for improving CH4/N2O Inventories?

- Measurements are considered to be most crucial for improving implied emission factors and for assessing the spatial and seasonal distribution of the emissions.

Where do you see the largest assets of top down inventories using observations and inverse modeling?

This is most useful for reducing the uncertainties and for increasing our understanding of the emission processes into the atmosphere.