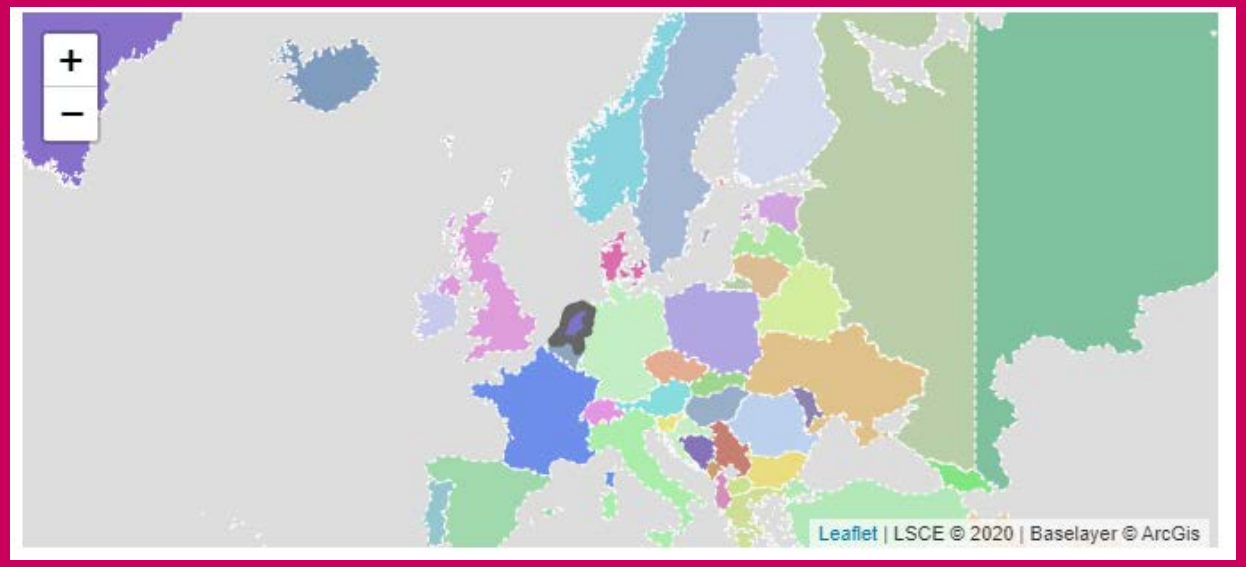
Rijksinstituut voor Volksgezondheid
en Milieu
*Ministerie van Volksgezondheid,
Welzijn en Sport*

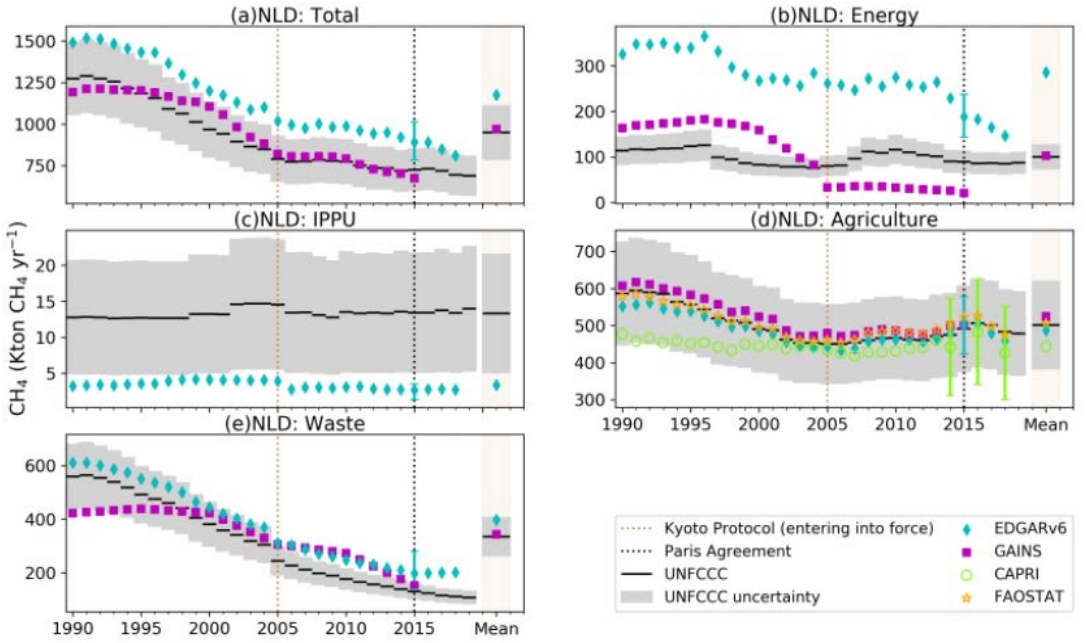


VERIFY third network meeting 10th of May 2022 The Netherlands

Loes van der Net and
Margreet van Zanten
RIVM, Netherlands

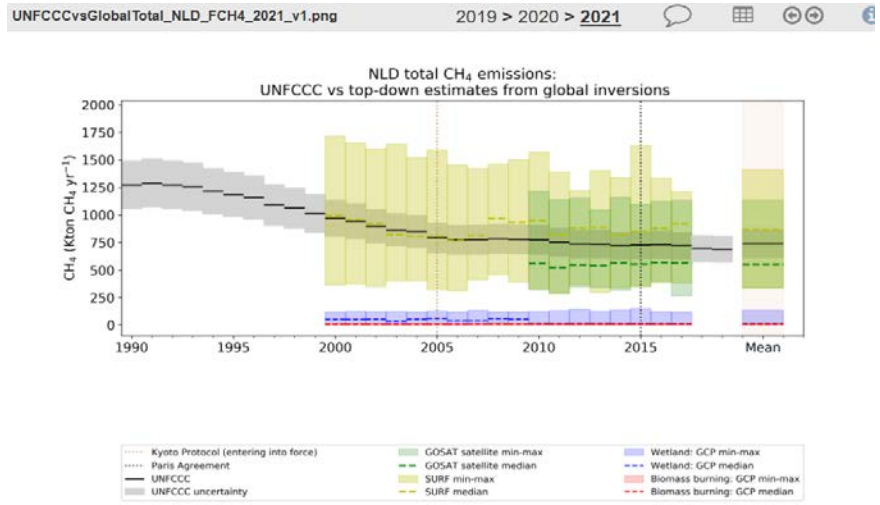
1. What is the overall impression comparing VERIFY results and your inventory data?

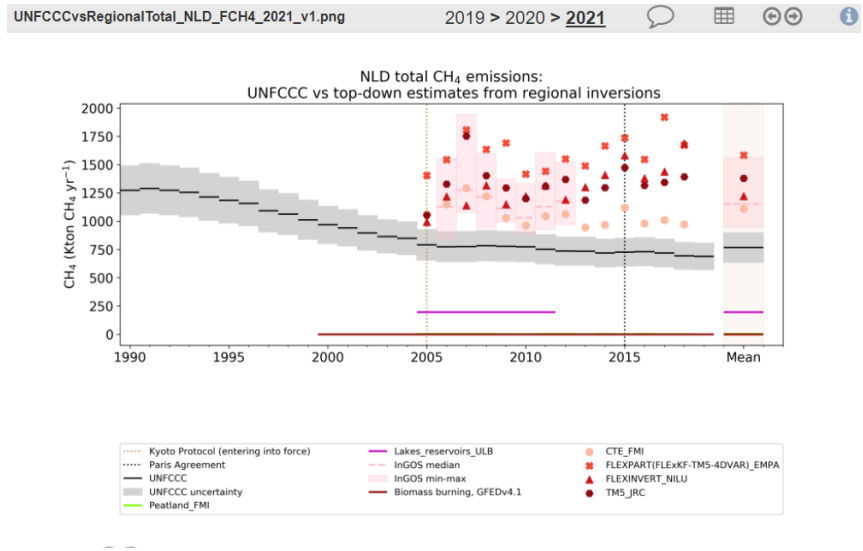
- <u>CH_4 – BUPAnth sectors</u>
- Energy sector: GAINS inventory shows higher emissions up to 2005 and lower emission from 2005 onwards. The Edgarv6 inventory shows up to a factor 3 higher emissions compared to UNFCCC data.
- IPPU: the Edgarv6 inventory shows up to factor 3 lower emissions compared to the UNFCCC data.
- Agricultural sector: Trends well in line with UNFCCC data.



1. What is the overall impression comparing VERIFY results and your inventory data?

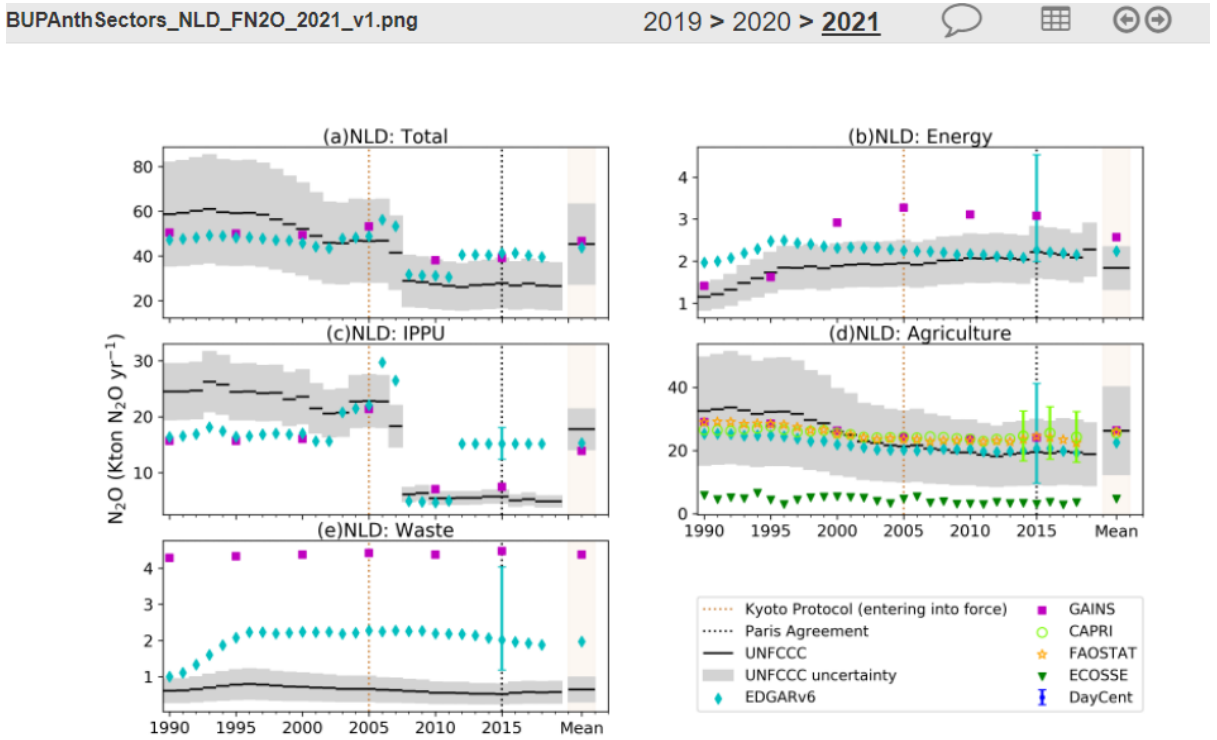
- CH_4 – inversion models
- Surprisingly, the global inversion is more in line with the UNFCCC data compared to the regional inversions.
- Wetland is not incorporated in the UNFCCC data, so the data cannot be directly compared.
- Adding the natural emissions to the UNFCCC numbers would still show an underestimation of UNFCCC data.
- Different trends over time are shown for the different regional inversion models.





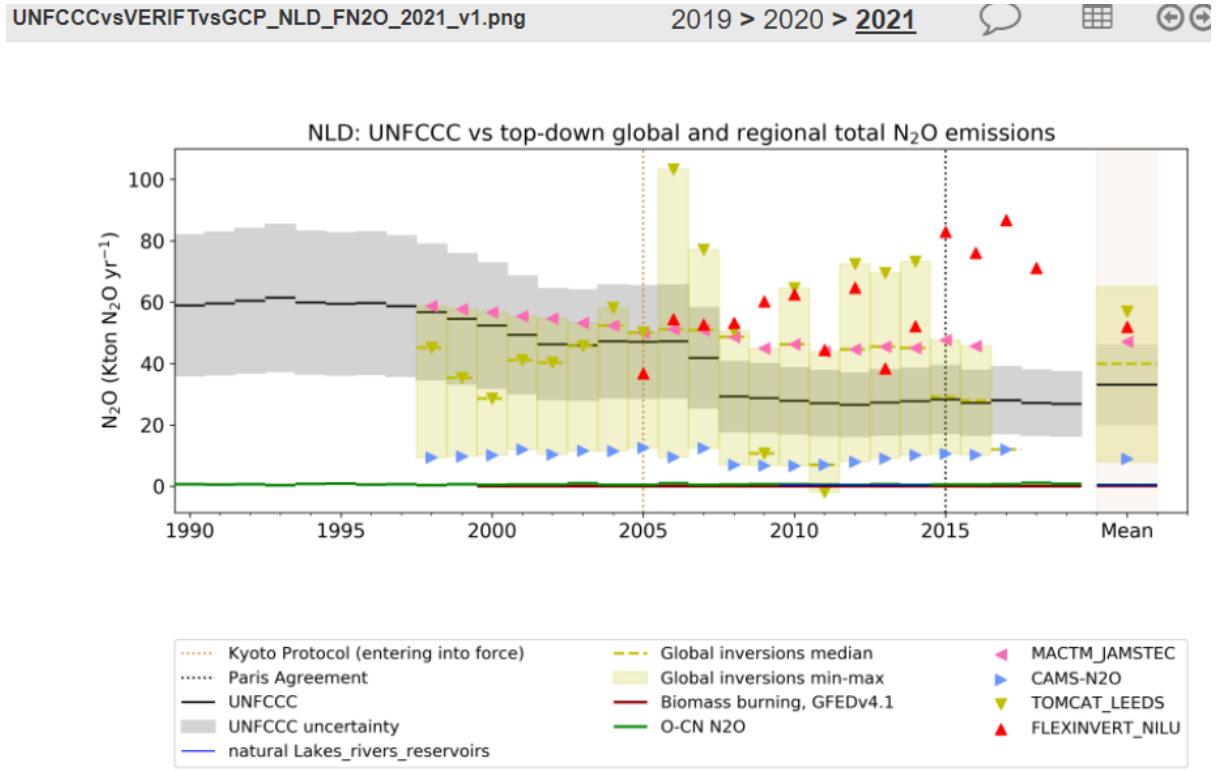
1. What is the overall impression comparing VERIFY results and your inventory data?

- N_2O – BUPAnth sectors
- IPPU: Trend drop in 2007/8 is present in both the Edgarv6, GAINS inventory and UNFCCC data. However, the increase in emissions in 2012 (Edgarv6) is not present in the UNFCCC data.
- Waste: A factor 4 (Edgarv6) to 8 (GAINS) higher emissions compared to the UNFCCC data.
- Agriculture: Trends of the several emission inventories are well in line with the UNFCCC data. ECOSSE inventory shows significantly lower emissions.



1. What is the overall impression comparing VERIFY results and your inventory data?

- N_2O – UNFCCC vs GCP
- For most years, the global inversion min-max correspond to the highest or lowest emission number according to the different models. However, for the years 2008, and 2015 onwards, the red FLEXINVERT_NILU lies above this max.
- The decrease of the UNFCCC emissions in 2007 and 2008 is represented in some models (e.g. CAMS-N2O decrease in 2008), but not in all models.
- Outliers, such as TOMCAT_LEEDS in 2005 are not presented in the UNFCCC data.



2. To what extent do you consider the results consistent and comparable with the inventory data?

- Dependent on:
  - Component
  - Sector
  - Model
- At a first glance, the mean flux and trends seem to match the UNFCCC inventory data in most cases. However, interannual variations and single emission results from the several inventories/models sometimes deviate a lot.
- More knowledge about the used inventories/methods is required to judge the deviations and draw more valuable conclusions.

3. To what extent **current** data provided can potentially support the GHG inventory reporting?

- (+) Deviating results could initiate further research by inventory experts and possibly improve the UNFCCC data in the future.
- (-) Adding deviating inversed modelling results to the inventory reporting could confuse reviewers and/or readers and perhaps lead to many (review)questions.
  - Agreements with other countries to follow the same (future) guidelines on this topic could create clarity and uniformity.

Thank you