

VERIFY Second Networking Meeting Land based CO₂

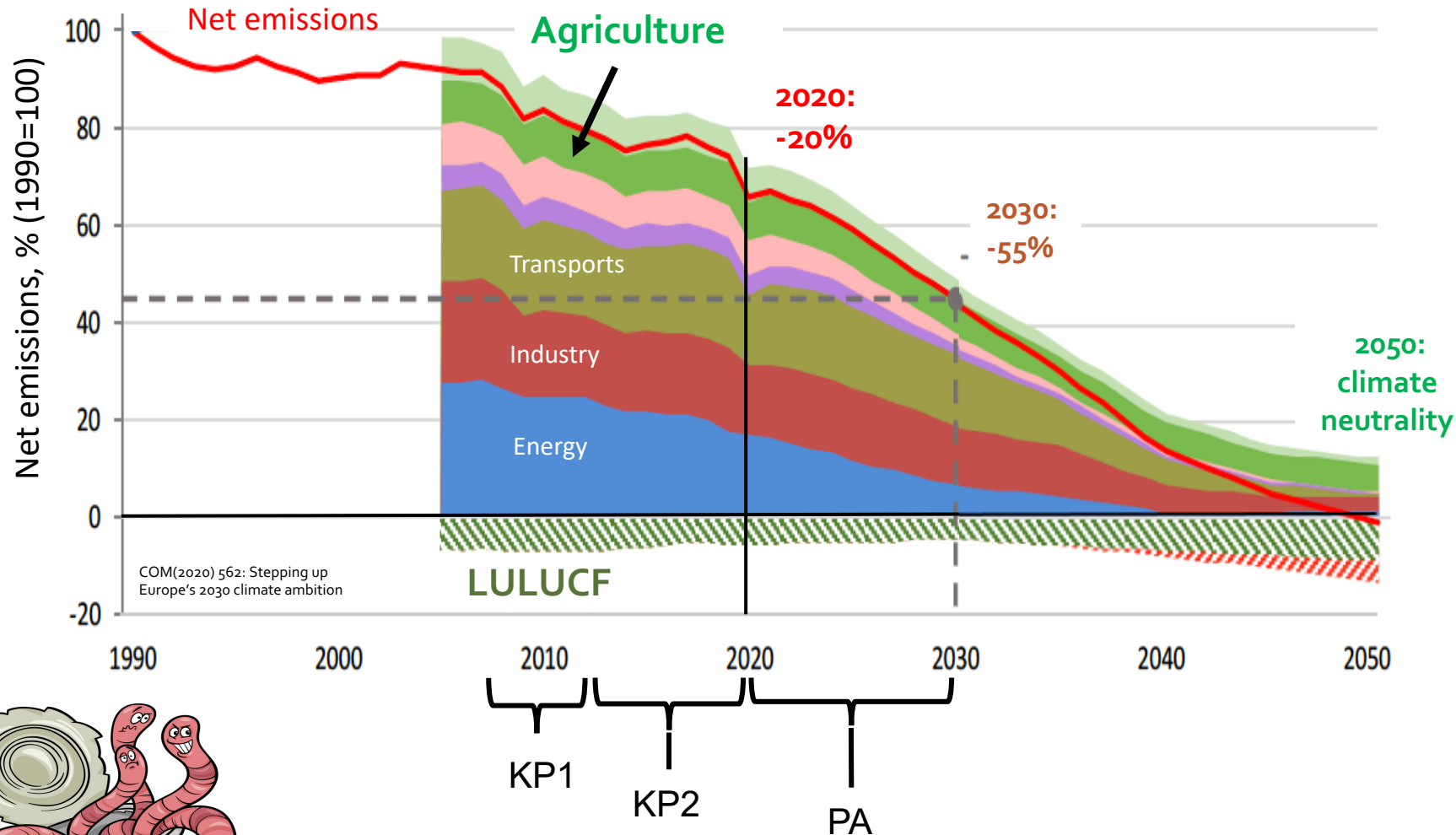
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Joint Research Centre

The European Commission's
science and knowledge service

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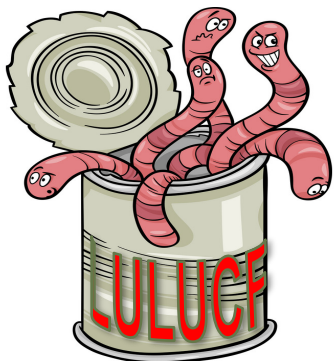
LULUCF in the EU climate targets: a long and winding road



COM(2020) 562: "to track progress towards climate neutrality the full net LULUCF sink needs to be included".

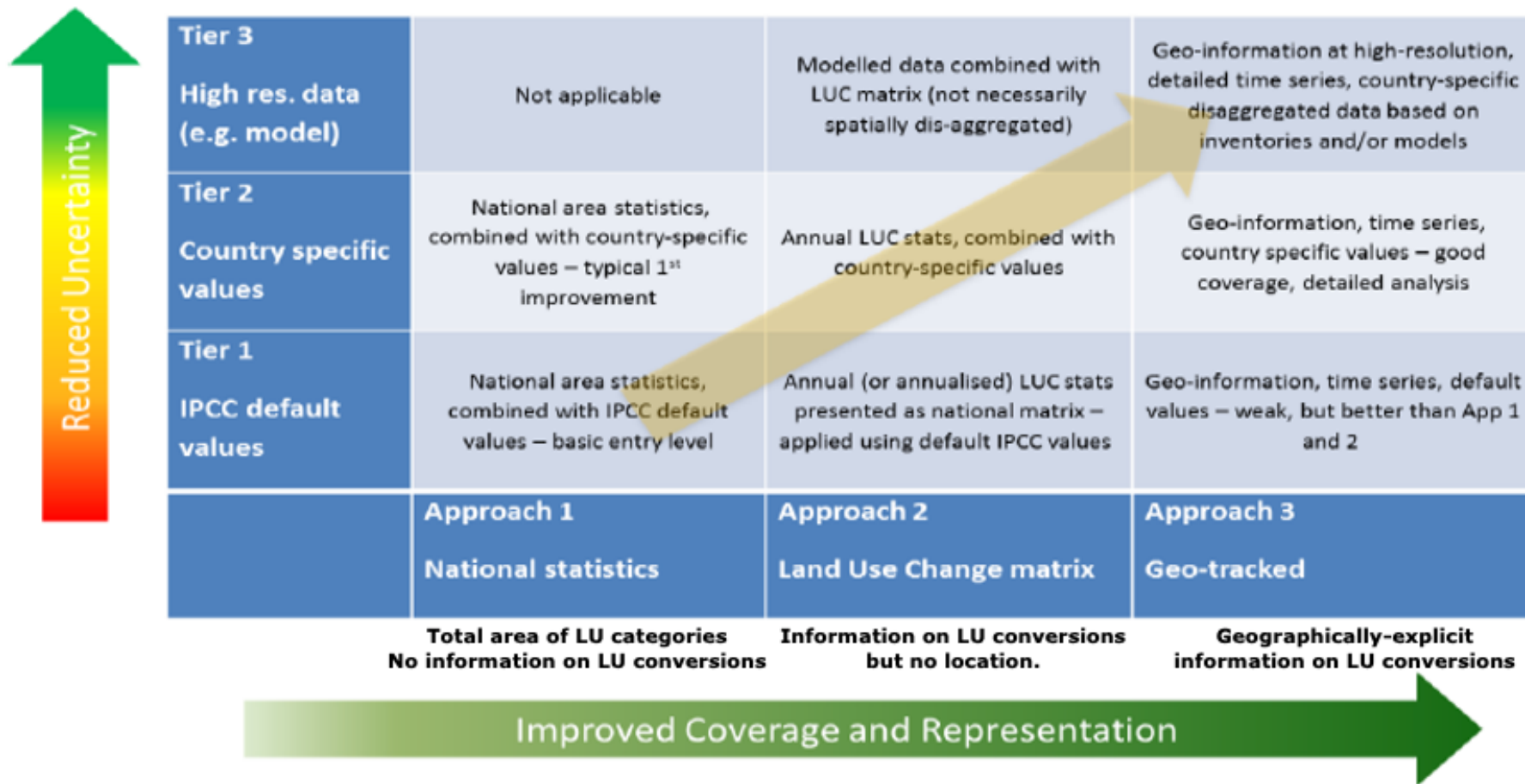


- Further increase confidence in numbers
- Stop & reverse the current decline of LULUCF sink



Reporting	*	**	***
Accounting	*	**	***

→ The progressive inclusion of LULUCF in the climate targets follows the confidence on its numbers



Aims of Verify on Land-based CO₂:

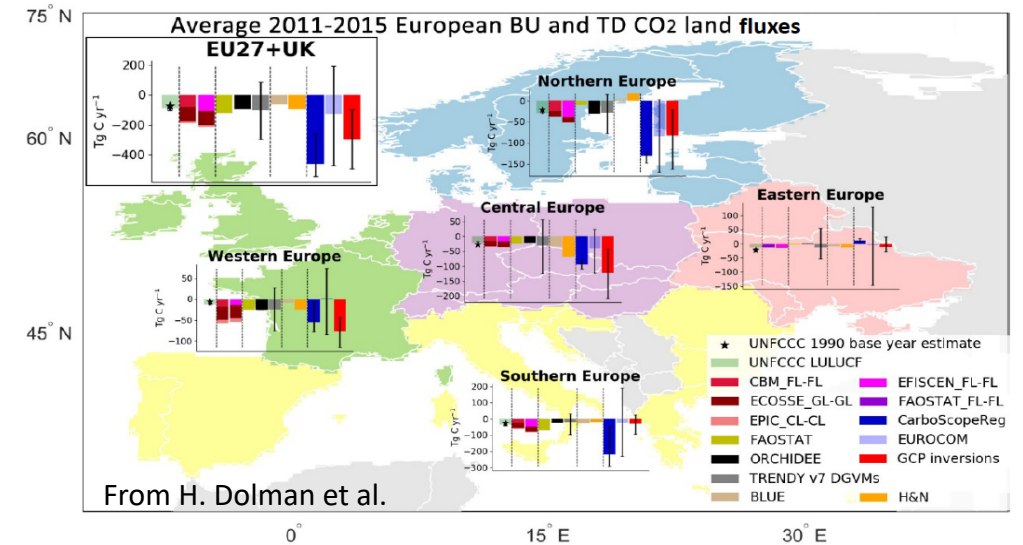
- Pre-operational system of data- and process-driven approach to CO₂ budgets
- Reduce uncertainties with multi-data model fusion strategies
- (Help identifying drivers of CO₂ fluxes)

Where are we?

- Good steps in bridging models and GHGI compilers, and in combining empirical/process based approaches (e.g. Orchidee)
- BU results promising (but closer look to details: land uses, AD and EF: more disaggregated analysis)
- Great potential from EO
- TD show large variability and uncertainty: can this help to unravel unknown uncertainties?



OVERALL CO₂ LAND LULUCF FLUXES



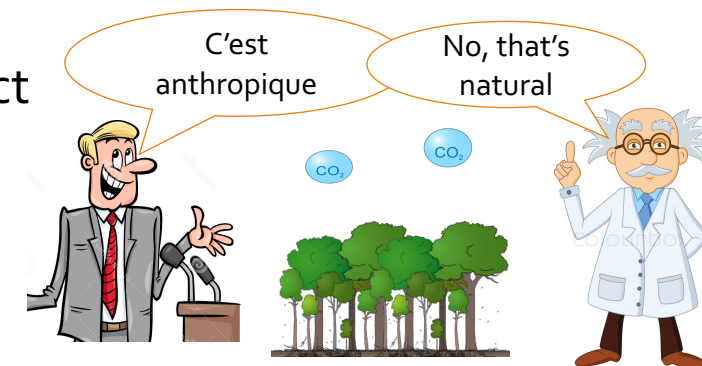
Where models and EO may help most

Independent verification, greater spatial and temporal resolution of AD (eg. forest cover change) and EFs (eg. biomass maps) and natural disturbances (!), completeness (soils?), understand better the drivers, hotspots

Next challenges

System boundaries and definitions: what process are included (direct vs indirect effects), managed land, etc.. To find common grounds:

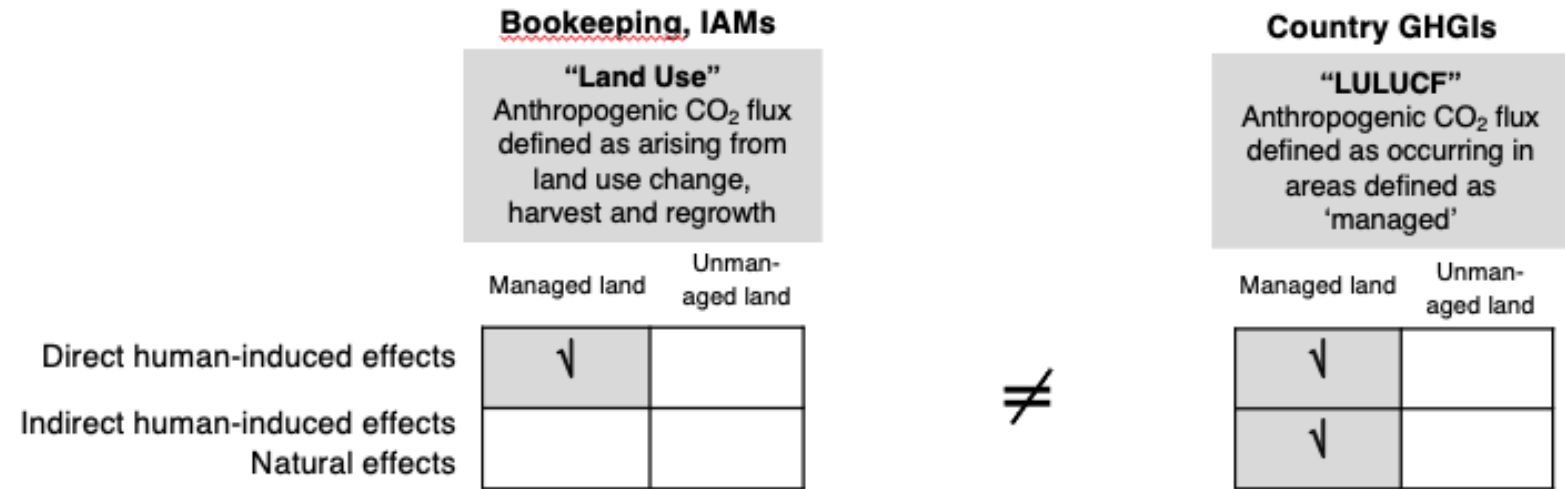
- Greater transparency by countries (what process is included, maps);
- Flexibility / modularity by models → "Rosetta stone" solutions



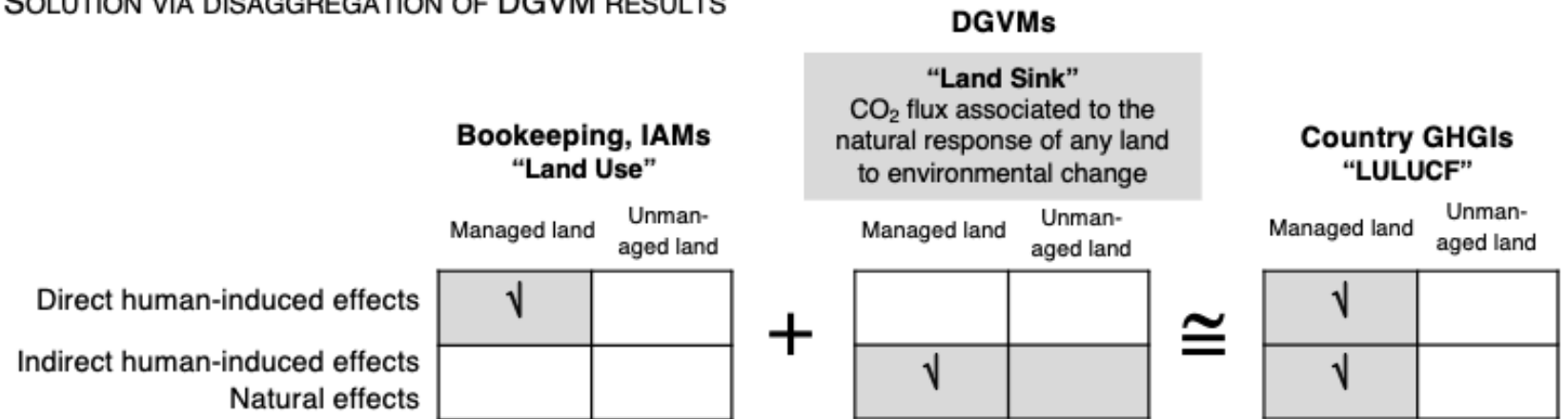
Rosetta-stone solutions, e.g.: indirect effects



a 'ANTHROPOGENIC CO₂ FLUX' CONCEPTUAL INCONSISTENCY PROBLEM



b SOLUTION VIA DISAGGREGATION OF DGVM RESULTS



= Fluxes corresponding to the text in the grey box

√ = Considered in the comparison

(Grassi et al. submitted)

Thanks!