



BOG3 Report – List of data gaps and List of SLCF categories

Third IPCC Expert Meeting on Short-Lived Climate Forcers (SLCFs)

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INTERGOVERNMENTAL PANEL ON climate change



Discussion

BOG3 experts are expected to:

1. *Refine the list of data gaps and, where needed, to refine the list of SLCF categories*
2. *Prioritize the gaps for future research according to the significance of the sources, for which methods gaps and/or data gaps are identified*
3. *Review the list of allocation issues (cross-sectoral/cross-category), where a further work or clarification is needed and to refine the list, if needed*

Discussion

BOG considered the list of data gaps and discussed the following:

- Tier methodology needs to be considered. Sometimes Tier 1 is not sufficient, more variables for SLCFs than for GHGs
- Uncertainty in SLCFs is high, more regional or technology specific EFs need to be developed
- In developing countries, the small industries contribute large amount of SLCFs. It needs higher tiers and EFs to quantify emissions
- Dust is a large source of uncertainty. Need to consider BC/OC content of the dust in various sources
- Gaps on VOCs and speciation from manure, size/magnitude of the source is uncertain due to data paucity, same for VOCs from pesticides
- Burning. Wildfires, burning of crops and manure – allocation issue, focus on anthropogenic emissions. Biological treatment of Waste – N in feedstock (NH₃) or manure is a source of data gaps and allocation issue

Discussion

Discussion of priorities in the list of data gaps (1):

Potentially Large Sources w/ Limited Data

- *Small scale stationary combustion sources (e.g., small industries, cookstoves, etc.) are not well represented in existing SLCF methodologies and there is a lack of information on AD and EFs.*
- *Transport off-road combustion: The emissions of SLCFs are highly dependent on the type of equipment and technology and guidance on the collection and/or estimation of AD is required as this may constitute the main challenge in estimating these emissions.*

New Sources

- *There is limited data SLCF emissions from existing non-traditional fuels (e.g., quality, type, and moisture content of solid fuels may have a large effect on emission factors). There could also be more use of non-traditional fuels in the future (e.g., biomass, waste, hydrogen) that warrant further research.*

Discussion

Discussion of priorities in the list of data gaps (2):

Missing data

- *Availability of BC and OC EFs across all sectors and regions*
- *Solvents AD (various sources of emissions, activity data is difficult to collect)*
- *Differentiation of technologies and EFs in all sectors*

Allocation/uncertainties

- *Burning in AFOLU, waste in general – high uncertainties and challenges in allocation to the correct source as a result of complex and poorly documented transfers between waste, agriculture and uses of feedstocks for energy.*
- *Manure management – emissions factors are uncertain and data collection is challenging VOCs and speciation from manure, size/magnitude of the source is uncertain due to data paucity (Also VOCs from pesticides)*

Discussion

Discussion of the list of categories.

The list of categories is reviewed by experts and considered to reflect the current status of SLCF sources and species, future authors will analyse literature for a particular category and SLCF species in terms of evaluating methods and available EFs.

Other considerations:

- *Memo item – bunker fuels, not specifically in list of categories*
- *Future transitions: electric vehicles, biofuels, hydrogen, waste*
- *Shale gas and coal fires*

Discussion

Discussion of the list of allocation issues (1):

- *Do we need a different allocation for SLCFs? How to measure and allocate SLCFs on a stack which may include process and energy emissions? The type of measurement approach used to develop emission factors should be considered in the allocation approach.*
- *Control technologies allocation which can include process and energy emissions. If T1 factors are developed for industries that have combustion (energy) and process (IPPU) emissions in terms of product output, it will be important to understand allocation and double counting issues, e.g., if all reported under IPPU the need to subtract some emissions from energy.*
- *Can we use Decision tree type approach for allocation?*
- *Temporal variability needs to be considered*
- *Ammonia production and Iron and Steel production are important categories in terms of allocation issues*

Discussion

Discussion of the list of allocation issues (2):

- *Recycling of waste to produce products – nature of emissions and allocation*
- *Dust sources of emissions (which include BC/OC), accounting, mitigation technologies*
- *Pellet production*
- *Energy balance may not capture all small sources of different fuels/wastes/bio-sources. There are issues concerning the reconciliation of AD with the energy balance.*
- *Informal combustion in Energy and Waste may be challenging to monitor*
- *The allocation of the emissions in the production of biogas will be challenging to monitor due to the lack of tracking of the movement and quantities of feedstocks*
- *Waste, Manure AFOLU, Energy sector - circular nature needs to be considered, good description needed to identify pathways for waste and agricultural products, international movement (cross border, e.g. Drax importing woodchips from Canada/US). Avoiding of double counting.*

















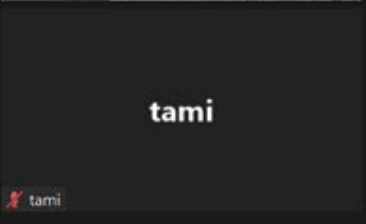

Conclusions

- There are differences between GHG Inventory and SLCF Inventory, especially in terms of activity data collection/availability and time dependency of SLCF emissions.
- Sources of SLCF emissions are inherently variable and consideration of regional and in some cases climatic factors will be important in developing representative emission factors and methodologies.
- Higher tiers, or more granular development of Tier 1 emission factors might therefore be needed to capture SLCF emissions accurately for some sources across all regions of the globe
- Capacities of small/developing countries need to be considered where information and country specific data is maybe not available to accurately estimate SCLF emissions or developing EI
- Sharing of information is important on types of emissions sources and on relevance of EFs that are developed.



Thank you!

BOG3

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