Role of observations in support of national reporting.

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Objectives:

This World Café station (table) provides an opportunity to actively engage with stakeholders on progress, needs and opportunities around the themes introduced at Earth Information Day 2023, specifically as they relate to the role of observations in support of national reporting. The table discussion seeks to contribute to the following expected outcomes:

- Raise awareness with all interested stakeholders on what is being done in this area.
- Allow for stakeholders (delegates and NPS) to express their ideas, concerns, and needs.
- Build on engagement with stakeholders through four rounds of discussions.
- Result in several key recommendations to improve access, understandability, and uptake of information from systematic observation by decision-makers and organizations in support of climate actions.

Scenario

National reporting of greenhouse gas emissions follows well-defined procedures following specific IPCC guidelines. All Parties, under the UNFCCC reporting requirements, are requested to improve over time their estimates of emissions by sources and removals by sinks, in line with the 2006 IPCC Guidelines for GHG inventories and the TACCC principles. Generally, an ideal condition for verification is the use of fully independent data as a basis for comparison. Measurements of atmospheric concentrations in principle meet this requirement, as they reflect the impact of emissions on the atmosphere. Recent scientific advances allow using such observational data as a basis for emission estimation using so-called inverse modelling approaches. The most advanced of these approaches are integrating observations of atmospheric greenhouse gas and co-emitted gases, observations of the land and marine biospheres, and Earth system models to estimate anthropogenic and natural fluxes of at high temporal and spatial resolution. The scale of such models can be designed around local, regional, or global boundaries and can provide information on either levels or trends in emissions. A growing number of countries are currently using atmospheric measurements to provide useful quality assurance of the national GHG emission estimates. While this use of observations will not be able to independently separate the contribution of all relevant sectors to the total emissions, they can be used to monitor anthropogenic emissions as well as natural fluxes, both being responsible for the observed trends in atmospheric greenhouse gas concentrations.

Questions for scene-setting:

1. How important is the use of independent data to evaluate reported emissions and their trends as part of the Enhanced Transparency Framework?
2. To what extent can observations play this role?
3. What is needed to improve the use of observations in national reporting practices?