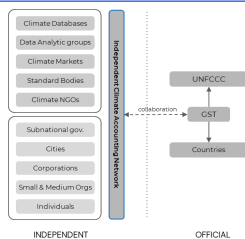


Integrating Non-State Actors and digital technologies to enhance the transparency of the Global Stocktake

Integrating non-state actors into the Global Stocktake

The first Global Stocktake (GST) takes place in 2023 and is slated to occur every five years. Yet, despite its crucial importance, the current climate data accounting underlying the GST is fragmented and largely insufficient. Many countries still rely on manual processes to assemble and standardize their inventories, leading to lengthy and costly procedures. Despite their recognized importance, the current GST design does not provide information on the participation of subnational governments and companies (collectively referred to as non-state actors or NSAs). Currently, almost 30,000 NSAs are engaging in climate action, as reported by the UNFCCC Global Climate Action Portal (GCAP), making this group an essential category of actors to drive global climate ambition.



Creating digital interoperability

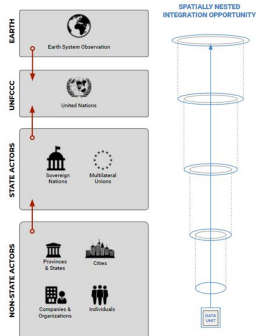
To develop timely and complete accounting of NSA climate pledges and progress to support and provide inputs to the GST, digital data collection tools and infrastructure could vastly improve the status quo. Here, specifically, 'nested accounting' and 'federated data commons' can play an important role. Given that the Paris Agreement does not have a specific mechanism for NSAs to directly report, an independent accounting and data aggregation process leveraging emerging digital and data practices, operating in parallel to the GST, would allow for NSAs to voluntarily participate in similar accountability mechanisms and goals.

Since NSA data on emissions inventories and climate actions is heterogeneous and scattered across a variety of platforms and domains, it is necessary to create 'interoperability,' defined as the open exchange of data between different data systems, types, and standards to integrate the influx of new datasets and sources while maintaining traceability and trackability (NASEM 2022). In particular, the advent of earth observation and sensor data opens new data streams that will need to be integrated with legacy data, often in the form of self-reported information.

Nested climate accounting

Digital technologies (such as decentralized distributed ledgers for data storage and earth observation or sensor data) would create alternative accounting infrastructure leveraging multiple data sources and enhancing trust and transparency through decentralized data governance. Combined with artificial intelligence and machine learning, data analysis and verification would be automated to reduce the analytical burden and improve efficiency. Nested accounting is now included in article 6.4 Supervisory Body.

The combination of these digital technologies enables data integration across the various governance levels through 'nested accounting.' In nested accounting, emissions are accounted for at one level of analysis (e.g. the local level for a specific project or facility) and then factored into higher levels, such as the municipality, region, country into national and international processes like the Global Stocktake (Schletz et al., 2022).



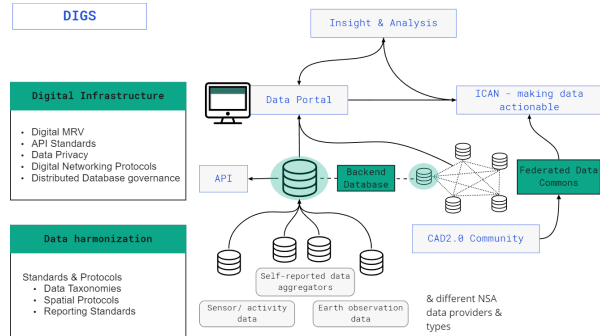
Resources

- CAD2.0 wiki page: wiki.climatedata.network/
- Climate Datathon website: www.climatedatathon.org
- DIGS Litepaper: tinyurl.com/digs-litepaper
- Nature comment: www.nature.com/articles/d41586-022-03123-7
- NASEM 2022: nap.nationalacademies.org/catalog/26641/greenhouse-gas-emissions-information-for-decision-making-a-framework-going
- Schletz et al., 2022: <https://www.frontiersin.org/articles/10.3389/fblob.2021.789953/full>

Contact: angel.hsu@unc.edu | martin@openearth.org
datadrivenlab.org | openearth.org

Federated data commons developed by our DIGS initiative

Our Digitally-Enabled Independent Global Stocktake (DIGS) initiative aims to develop an alternative accounting infrastructure and a network of organizations to implement it (see our [recent publication](#) for more information). The DIGS federation is developing a proof of concept of 'federated data commons' to connect existing datasets and make them interoperable.

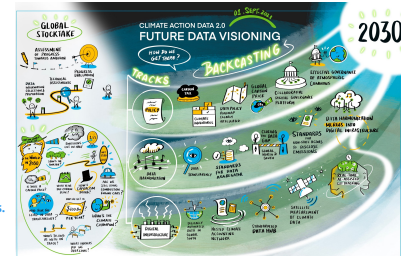


In this way, DIGS connects existing datasets and creates interoperability through digital infrastructure, yielding a system greater than the sum of its parts. In this way, we contribute to the challenge of how to account for, manage and verify the rapid growth of NSA actions over the last decade.

The Climate Action Data 2.0 community

Climate Action Data 2.0 (CAD2.0) is an umbrella community of over 80 climate data providers and technology experts organized around three workstreams: **data harmonization, digital infrastructure, and policy use-cases**. The working group co-convened by Camda collectively pursues the following:

- Collaborate across key organizations working in existing data disclosure platforms and exploring blockchain, satellite imagery, AI, and other emerging technologies in the climate action data and analysis space.
- Co-define strategic objectives and milestones with workstream participants that may include supporting key products or moments within the UNFCCC process, such as the Global Climate Action portal (NAZCA), Global Stocktake, COP, and/or efforts led by other organizations.
- Produce reports communicating initial findings and developments of CAD2.0 to key actors under the UNFCCC process.



CAD2.0 hosts monthly meetings that produce concrete outputs through remote digital collaboration. The goal is to both prevent fragmentation in climate data efforts and align towards a cohesive exercise that brings accountability to non-state actor pledges and contributes to the Paris GST.

The COP27 Global Stocktake Climate Datathon

The GST Climate Datathon was a stocktaking exercise developing and using open data and tools to support the GST ahead of COP27. The outcomes were aimed at making data sets interoperable, providing aggregated insights, support tools, and visualizations. Two category winners presented their findings at the COP27 Presidency's 'Science and Information Day'.

The goal of the datathon was to enhance the quality of data (where needed), enable aggregated data insights, further understand collective progress, identify ways to bridge remaining gaps, and visualize potential opportunities.

