



Contribution ID: 91

Type: **Session**

Open science actions toward achieving the SDGs: an infrastructure dialogue with the Global South

Wednesday, October 15, 2025 2:00 PM (1h 30m)

The UN 2030 Agenda has become a cornerstone of global scientific and policy efforts, calling for urgent, collective action to address poverty, inequality, environmental degradation, climate change, and other systemic challenges. The Global South is at the frontline of the risks and the opportunities inherent in the SDG framework. These regions face the most acute development challenges while also being home to a wealth of untapped knowledge systems, scientific talent, and emerging infrastructures.

This workshop addresses this question by fostering a critical dialogue on how trusted, cross-national, and cross-regional e-infrastructures can drive SDG-oriented science and innovation. The session responds directly to the IDW 2025 theme ‘Trusted Research Data Driving Transformation’ by focusing on the enabling role of open science infrastructures in supporting development goals. It also supports the implementation of the UNESCO Recommendation on Open Science. It aligns with priorities articulated in the UN Pact for the Future, emphasizing the use of digital infrastructure to accelerate global cooperation in scientific knowledge sharing.

The GOSC initiative is an international effort to build interconnected, interoperable science clouds. These infrastructures aim to provide reliable, open, and secure access to essential research tools and data, particularly by strengthening scientific collaboration between the Global South and the broader international research community. GOSC is supported by its CSTCloud, AAI, and CSTNet backbone, which enable secure, federated, and policy-compliant access across institutions and borders.

The session is grounded in practical engagement with global partners, translating policy into research infrastructure development. High-level GOSC dialogues with African Academy of Sciences leadership in early 2025 and others have helped align science policies and address regional capacity needs. GOSC has also advanced data governance and AI readiness through a series of workshops on open data methods and metrics in 2024, a workshop on data quality, and a follow-up FSCI Satellite Workshop in 2024. Participation in the international and regional Internet community dialogues underscored GOSC’s role in global Internet governance and cross-border data sharing. Regionally, GOSC co-hosted a disaster management training workshop in Mongolia and led a session at the 2024 FBAS Forum in Africa to assess infrastructure needs and federated governance. At the 2024 EGI Conference, GOSC strengthened collaboration with European partners around shared infrastructure architecture. These research and practice initiatives are brought together in this session.

This session will consist of a 90-minute interactive workshop featuring short thematic presentations, followed by a moderated panel discussion with active audience engagement.

Session co-chairs

Prof. Jianhui Li (Principal Investigator, CAS GOSC Initiative, onsite)

Dr. Tshiamo Motshegwa (Coordinator, African Open Science Platform (AOSP), onsite).

Mr. Francis P. Crawley (Chair, CODATA IDPC, onsite)

Simon Hodson (Executive Director, CODATA, onsite)

Dr. Lili Zhang (Coordinator, GOSC IPO, onsite)

Agenda

Opening Remarks and Framing the Dialogue (5 minutes)☒: The session chairs will introduce the goals of the workshop and how it fits into IDW 2025 and SciDataCon priorities.

Thematic Presentations (6-7 speakers: approx. 8 minutes each)☒: Each presentation presents concrete experiences, infrastructure models, and challenges related to open science for the SDGs in the Global South.

Confirmed and invited speakers include:

Prof. Lise Korsten (African Academy of Sciences, TBD)☒, Open science and data governance for sustainable

development in Africa - Drawing on agricultural and environmental sciences, this talk will reflect on regional infrastructure and policy needs in Africa.

Dr. Tshiamo Motshegwa (University of Botswana & AOSP) - Linking national and regional science clouds for SDG impact - Presentation on how the AOSP is creating a federated and policy-aware research environment in Africa.

Dr. Rania Elsayed Ibrahim (National Authority for Remote Sensing & Space Sciences, Egypt, online, confirmed) - Remote sensing and open data for urban resilience - Use cases in Earth observation for disaster risk reduction and climate-resilient urban planning.

Francis Agamah (H3Africa & DS-I Africa, online, confirmed) - Open data systems for health and genomic research in Africa - Focus on bioinformatics, health data systems, and infrastructure for local, regional, and national contributions to global science.

Prof Muliaro Wafula (JKUAT and AOSP EA Node, onsite, confirmed), Open Science workbench for SDGs data visualization powered by agentic AI

Dr. Lili Zhang and Jianhui Li (CNIC, CAS & GOSC IPO, Nanjing U, confirmed, onsite), Building shared infrastructure for SDG research with the Global South - Insights from CSTCloud development and GOSC coordination in enabling platform interoperability and trusted access.

Dr. Huajin Wang and Dr. Zhihong Shen (CNIC, CAS, confirmed, onsite), RDCN and CoNet: cross-domain data toolkits for open collaboration - The Research Data Collaboration Network (RDCN) is a novel reference architecture designed to facilitate seamless, end-to-end collaborative analysis. RDCN provides a scalable and secure framework to unlock the full potential of distributed research data. CoNet is a production-level implementation of the Research Data Collaboration Network (RDCN) architecture, deployed across the Chinese Academy of Sciences (CAS) data center system to enable complex, cross-domain scientific analysis. Introduction to these toolkits will provide an example of data curation for Open Science.

Panel discussion and open dialogue (30 minutes) - Moderated by Francis P. Crawley, this portion will invite interaction between speakers and the audience. Key questions will include:

What are the immediate infrastructure needs to support SDG-related research in the Global South?

How can we ensure ethical, equitable, and sovereign data access?

How can AI and advanced analytics be responsibly integrated into SDG science platforms?

Closing remarks and session summary (5 minutes) - Key takeaways, recommendations, and pathways for collaboration beyond IDW 2025.

Outcomes

- A synthesis of infrastructure needs and opportunities for the Global South
- Practical models for federated access and responsible data governance
- Recommendations for integrating open science infrastructures into national and regional SDG strategies
- Opportunities for future collaboration within the GOSC and broader CODATA communities

This session focuses on infrastructure coordination through research and practice and highlights pathways to making open science a technical and policy enabler for addressing urgent global challenges.

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Track Classification: SciDataCon2025 Specific Themes: The Transformative Role of Data in Sustainable Development Goals and Disaster Resilience