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ON SCIENCE AND TECHNOLOGY FOR DEVELOPMENT (CSTD)**

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Contribution by ITU

**to the CSTD 2026-2027 priority theme on
“Data Governance for Development: From Asymmetry to Equitable Stewardship”**

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ITU Contribution to the CSTD Intersessional Panel on Data Governance for Development

Building Trusted, Inclusive and Interoperable Data Governance for Sustainable Development

1. What key challenges do countries face in building and leveraging data capacities, including infrastructure, ownership and stewardship, free and trusted cross-border data flows, interoperability and benefit-sharing?

(Please provide examples and, where possible, quantitative evidence or indicators of these challenges and their impacts).

There are many types of data (quantitative, qualitative, numerical, text, audio, visual, [geospatial data](#) etc.). There are data relating to different sectors of economic activity (economic, health data, education data, financial data, business data).

In terms of positive opportunities, data can be shared to enable collaboration – for example, in developing vaccines and novel treatments for viruses, based on analyzed genomes (as happened with COVID-2019) or for mapping responses to natural disasters and coordinating relief efforts.

However, challenges may arise when:

- **The value of data as a national public good** (e.g. air quality data) or international public good (e.g. IPCC data on the climate) is seized by opportunistic or innovative stakeholders, individuals or businesses to realize private gains.
- **The time-value of data:** Advance awareness and foreknowledge of data can be used to 'short' markets for private profit and gain. The timeliness, accuracy and quality of data are increasingly important.
- **Sensitive data** legally or morally belonging to certain people or countries are recorded, accessed or used by others. For example, a positive cancer status may be used to sell unproven treatments to vulnerable & desperate patients. For example, knowledge about untapped oil reserves or mineral deposits (observable and derived from space-based observation) might be used to an unfair advantage in negotiating access rights to oilfields or mineral mines -
www.itu.int/en/mediacentre/backgrounders/Pages/geospatial.aspx
- **New and novel issues are arising in the AI era.** E.g. issues of 'data pollution', the cultural relevance of training data, model drift over time in relation to synthetic data or

With regards to the areas specified above:

Digital infrastructure – there is a global race to build data centres and optical fibre networks connecting them. [According to an Investing.com report \(20/9\)](#), spending on AI infrastructure is predicted to reach US\$998 billion in 2026, nearly double the US\$506 billion realized in 2025. This investment pace is expected to continue, reaching US\$1.447 trillion in capital expenditure (capex) by 2027, next year¹.

¹ [IDNFinancials — Global AI Capex Projected to Reach US\\$1.4 Trillion](#)

Depending on the definition used and the type, size and scale of 'data centre', there are some ten thousand data centres in the world today (estimates vary between 8,800 according to ABI Research and 11,426 according to Data Center Maps² for May 2026 alone). However, policy-makers are on a steep learning curve about data centres, requiring specialist knowledge about cloud computing. Furthermore, their environmental impact is considerable, in terms of land requirements, power consumption, water consumption, greenhouse gas emissions and direct thermal heat release. Many data centres are being built in areas that are already under significant water stress. According to the reporting agency, the 'Rest of the World', data centres are already been built in 21 countries that are allegedly too hot" (defined as already consistently above 27 degrees ambient temperature³), cited as a threshold beyond which cooling is possible, but more difficult.

ITU has developed its Digital Infrastructure Catalyzer to assess infrastructure gaps and help promote concerted action to bridge infrastructure gaps.

Lack of awareness among policy-makers – there are several different definitions of digital or data sovereignty, data ownership and data stewardship. There is relatively low awareness about the concepts of data sovereignty and data residency, and the differences between both.

Lack of knowledge about the trade-offs involved. Major gaps exist in knowledge and capabilities to handle data, and is a lack of awareness about methods for the valuation of data flows. A vast and largely invisible trade in data has sprung up in cross-border data flows (the State of Broadband Report 2024: Our Digital World, Broadband Commission for Digital Development, 2024). Revenue in the Cloud Computing market is projected to reach US\$1.11tn in 2026 (Statista). Depending on the estimates, total global ad revenue grew to a broadly equivalent amount of US\$1.14 trillion in 2025, according to the advertising agency, WPP Media⁴. Advertising data and the data brokerage market are therefore additional parts of a much larger overall trade in data and data services.

Free and trusted CBDFs – given that many data flows take place within data centres (OECD, 2022), there is a considerable lack of visibility into CBDFs. Further, given that 75% of all cables may now be owned by the large technology companies⁵, there may be lack of visibility, monitoring and measurement of CBDFs.

Outdated institutional frameworks. Many countries have National Data Protection Agencies, primarily focused on the protection of personal or sensitive data. However, the expanding scope of data governance increasingly raises broader questions relating to data stewardship, access, security, economic value and public interest. Countries may therefore need to consider whether existing institutional arrangements and mandates adequately address these broader dimensions of data governance.

² www.datacentermap.com/

³ "We Mapped the World's Hottest Data Centres", Rest of World Reporting Global, Hazel Gandhi & Rina Chandran, 10 Dec 2025, at: <https://restofworld.org/2025/data-center-heat-map/>

⁴ www.marketingbrew.com/stories/2025/12/09/total-global-ad-revenue-grew-nearly-9-in-2025-wpp-media

⁵ <https://resources.telegeography.com/the-economics-of-submarine-cables>

Gaps in the scope of policy preparedness. In 2020, Foreign Policy estimated that 160 countries had a law or laws that reference data privacy, and 102 countries and territories had specific laws dedicated primarily to data privacy⁶. Data governance strategies can be relatively amorphous and cover many different areas from:

- National security and critical infrastructure (including national infrastructure and military assets);
- National data governance – encompassing national and local authorities, national platforms, civil service etc.
- sensitive data protection (e.g. population's health, medical and genetic information);
- personal data protection (age, voting inclination, biometric data, income, wealth and fiscal data),
- the protection of valuable data: location & status of nuclear power stations; population movements.
- Extrapolation of data: genetic information from certain individuals can be used to track relatives.

Related data points can be 'triangulated' to fill in missing data.

- Data anonymization. Techniques are not always fully trustworthy and data can be de-anonymized.
- The use and lifetime of data: Data can be used again and again. Retention periods, reusability and data lifetime should be included.

Knowledge gaps between the public and private sectors. Private sector knowledge may exceed government or policymakers' knowledge about technical issues including cybersecurity, encryption techniques or encryption keys. Under what the OECD calls the 'pacing problem', public sector bodies and policy-makers usually have to try to catch up and keep up with the pace of private sector innovation.

2. How do inequalities affect the way data is generated, collected, governed and used for development? In particular, how do biases in data collection and use, such as gender data gap, affect policy-making, service delivery and development outcomes?

(Please provide examples, evidence and any measures being taken to address these disparities).

Gender data gaps can affect the way economic and social activity is measured and reflected in public policy. Certain forms of unpaid and informal labour, including childcare and care for elderly relatives, have historically been less visible in formal economic statistics. Where particular groups, activities or experiences are insufficiently represented in data, this can affect the evidence available for policymaking, resource allocation and the design and delivery of public services.

In the 1980s, a new branch of economics, '*household economics*', developed to explain the allocation of resources, both by households and within households. Government policies still routinely prioritize formal, paid work over the less formalized work of caring for young children or elderly relatives. Indeed, some of this is barely recognized as 'work' at all in some cultures – more just 'what women do'. Modern economic valuation techniques are increasingly seeking to recognize and value women's labour.

⁶ <https://foreignpolicy.com/2020/05/13/data-governance-privacy-internet-regulation-localization-global-technology-power-map/>

More broadly, inequalities in connectivity, digital skills and institutional capacities can also influence the way data is generated, collected and used. Populations with limited access to connectivity and digital services may be less represented in digital datasets, while countries and institutions with limited statistical, technical or analytical capacities may be less able to derive value from available data. Such disparities can affect the representativeness of datasets and, consequently, evidence-based policymaking, service delivery and development outcomes.

3. Based on your organization's work, what national strategies, regulatory frameworks or policy instruments have been effective in promoting equitable and interoperable data governance? What are the lessons learned? (Please describe any specific challenges, failures or successes encountered during implementation)

ITU's work relevant to data governance is situated within its broader mandate and activities relating to ICTs, digital transformation, regulation, technical standards, statistics and capacity development. ITU's statistical database reveals that, by mid-2025:

- 84 countries had national AI strategies or policies in place.
- 125 countries had national Digital Transformation strategies in place.
- In October 2024, ITU published its "Navigating Data Governance: A Guiding Tool for Regulators" to analyze the issues in data governance and provide case studies and possible solutions for consideration by policy-makers - <https://digitalregulation.org/navigating-data-governance-a-guiding-tool-for-regulators/>

Lessons learned from ITU's broader work in ICT governance:

- The importance of broad consultation among stakeholders.
- The difficulty of staying abreast of industry and private sector innovation, including in data governance and in AI.
- The extremely rapid pace of change – AI datasets are doubling every 6-7 months (EpochAI), while token volumes are increasing very rapidly, at the national scale (for China, where data are available from the National Data Administration) and at the global scale (OpenRouter).
- Capacity development and institutional readiness are critical for effective implementation.
- Governments and regulators increasingly require competencies extending beyond traditional telecommunications regulation to broader digital ecosystems, including cloud computing, digital platforms, artificial intelligence, cybersecurity and cross-border data governance.

4. Can you share examples of initiatives that have helped reduce asymmetries and promote more equitable data stewardship in development sectors such as public services, education, health and agriculture? (Please provide examples, lessons learned and remaining challenges where possible) .

Although ITU does not work on data governance as such, the [WSIS Stocktaking](#) and its integral part the [WSIS Prizes](#), maintained by ITU since 2004, provides a global repository of ICT and digital development projects and initiatives implemented by governments, international organizations, the private sector,

civil society, academia and other stakeholders. It facilitates the sharing of information and good practices across development sectors, including public services, education, health and agriculture.

By documenting and disseminating practical experiences from different countries and stakeholders, the WSIS Stocktaking can help reduce information asymmetries, support knowledge sharing and enable policymakers and practitioners to identify approaches that may be adapted or replicated in different national and development contexts.

5. What mechanisms or institutional arrangements have proven useful in fostering collaboration on data governance for development among different stakeholders (e.g., university-industry, private-public, or multi-stakeholder initiatives)?

A relevant example is the World Summit on the Information Society (WSIS) process, which provides an established multistakeholder framework for cooperation among governments, international organizations, the private sector, civil society, academia and the technical community on issues related to digital development.

The [WSIS Forum](#) provides a global multistakeholder platform where these stakeholders exchange experiences, discuss emerging policy challenges, share good practices and identify opportunities for collaboration. This experience demonstrates the value of inclusive multistakeholder mechanisms that bring together different perspectives and areas of expertise, particularly as digital policy issues increasingly cut across sectors and institutional mandates.

6. What major bilateral, regional, or international partnerships have helped advance equitable and interoperable data governance? (Please describe the benefits of participating in these partnerships, as well as any challenges related to coordination, capacity, trust, interoperability or benefit-sharing).

The Broadband Commission for Sustainable Development undertook a research programme in 2024/2025, and published its Toolkit, “[Navigating Data in the Digital Age](#)” in July 2025: <https://www.broadbandcommission.org/publication/the-data-governance-toolkit/> The Toolkit aims to empower policymakers, regulators and data practitioners to navigate the complexities of data governance in the digital era as a capacity building resource.

Another relevant example is the [United Nations Group on the Information Society \(UNGIS\)](#), which serves as an inter-agency mechanism for coordinating substantive and policy issues related to the implementation of the outcomes of the World Summit on the Information Society (WSIS) across the UN system. UNGIS brings together UN entities working across different areas of digital development and supports coordination, information exchange and policy coherence.

Such inter-agency cooperation is particularly relevant as data and digital transformation increasingly intersect with development, health, education, trade, agriculture, climate action and emerging technologies. Experience from UNGIS demonstrates the importance of coordination across institutional mandates to promote coherence, avoid duplication and support more integrated implementation.

7. How can international cooperation strengthen equitable and interoperable data governance to ensure that data contributes to shared prosperity and sustainable development? In what ways can the UN CSTD contribute to this effort?

The UN CSTD could work on addressing **awareness gaps among policy-makers** – in offering clarity vis a vis different definitions of digital or data sovereignty, data ownership, data stewardship and data residency, and the distinctions between them all.

Given the strengths of UNCTAD in economic analysis and statistics, the UN CSTD could offer some examples or case studies of the value of data as a public good.