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ON SCIENCE AND TECHNOLOGY FOR DEVELOPMENT (CSTD)**

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**Contribution by China**

to the CSTD 2023-2024 priority themes on “Data for Development” and “Global cooperation in science, technology and innovation for development”

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## THEME 1: Data for Development

### 1, What are the major contributions and risks for data in relation to the achievement of the 2030 Agenda for Sustainable Development?

#### **Major Contributions of Data:**

**Informed Decision-Making:** Data plays a critical role in informing evidence-based decision-making at all levels – from local communities to national and global policymakers. For example, China's National Bureau of Statistics gathers extensive data on economic, social, and environmental indicators, enabling the government to formulate targeted policies.

**Monitoring and Accountability:** Data is essential for tracking progress toward the Sustainable Development Goals (SDGs). It allows countries to measure and evaluate their achievements, identify gaps, and adjust strategies accordingly. China's progress on environmental indicators, such as air quality and carbon emissions, is closely monitored and reported to ensure compliance with environmental goals. China's rapid digitalization and data infrastructure expansion contribute to the availability of statistical data to track indicators.

- **Targeted Interventions:** Data-driven insights enable targeted interventions by identifying specific areas, populations, or issues that require immediate attention. China contributes extensive datasets to diverse UN programs through its national statistical offices, aiding global Sustainable Development Goal (SDG) modeling and forecasting efforts. Notably, China shares demographic and economic data, enabling the UN to grasp poverty trends.
- **Innovation and Technology:** Data serves as a foundation for innovation and technological advancements. For instance, China's advancements in e-commerce and digital payment systems have contributed to financial inclusion and poverty reduction, aligning with the SDGs.

#### **Risks and Challenges of Data:**

- **Data Quality and Reliability:** Inaccurate or incomplete data can lead to flawed decision-making and policy formulation.
- **Data Bias and Inequality:** Biases present in data collection methods, algorithms, and analysis can lead to disparities and unequal representation.
- **Digital Divide:** Uneven access to technology and digital infrastructure can create a digital divide, limiting the ability of some populations to benefit from data-driven initiatives.
- **Data Privacy and Security:** As the volume of data collected and shared increases, concerns about privacy and security arise. Inadequate safeguards may lead to breaches, unauthorized access, and misuse of personal information, undermining trust in data systems.

In addressing these contributions and risks, member countries can work together to establish robust data governance frameworks, strengthen data infrastructure, enhance data literacy, and promote international collaboration to harness the full potential of data for achieving the 2030 Agenda for Sustainable Development.

2, [How can developing countries benefit from the data revolution while considering risks?](#)

- **Strengthen Data Infrastructure.** Invest in data collection, management, and storage systems to ensure reliable and accessible data. China has invested heavily in its National Information Infrastructure to ensure autonomous data collection, transmission and analysis capabilities.
- **Support Open Data Initiatives.** Establish policies that promote open data sharing while respecting privacy and security concerns. Open data can stimulate innovation, research, and collaboration by providing a valuable resource for developers and researchers.
- **Collaborate on Data Sharing.** Engage in regional and international collaborations to share best practices, data standards, and technologies. Shared data can contribute to cross-border solutions and initiatives addressing common challenges. China has implemented open government data policies encouraging public agencies to release non-sensitive datasets. For example, weather and pollution data is publicly available for citizens and startups.
- **Promote Data Literacy.** Offer training and capacity-building programs to enhance data literacy skills among government officials, researchers, and the public. Encourage educational institutions to incorporate data-related skills into curricula.
- **Embrace Data for Policy Making.** Integrate data into policy-making processes, ensuring evidence-based decisions that align with development goals. Governments can utilize data to target resources more efficiently and assess policy effectiveness.
- **Localize Data Solutions.** Tailor data-driven solutions to local contexts and priorities, addressing specific development challenges. China's "Smart Cities" initiative uses data to optimize urban planning, traffic management, and energy consumption, resulting in improved quality of life for citizens.

3, [What national and international policies and support measures can help address the challenges of the developing countries in the area of data relevant for sustainable development, including scientific and research purposes, data quality, data capabilities and data governance, while taking into account the multiple dimensions of data?](#)

(1) National Policies and Measures in China:

- **Data Infrastructure Investment:** China's "Digital Silk Road" initiative, as part of the Belt and Road Initiative, includes investments in digital infrastructure projects in partner countries.
- **Capacity Building:** China's Ministry of Education has established programs to train data scientists and promote data-related education. Universities and institutions offer courses in data science, contributing

to a skilled workforce in data analytics.

- **Open Data Initiatives:** China's National Bureau of Statistics has launched a platform for sharing official government data with the public. This initiative promotes transparency, accountability, and data-driven decision-making.
- **Data Privacy and Protection Laws:** China has implemented the Cybersecurity Law, which outlines regulations for data protection and cybersecurity. This law helps ensure that personal data is handled responsibly and securely.

## (2) International Collaboration and Support

- **Technical Assistance and Capacity Building:** International organizations and developed countries can provide technical expertise and assistance to help developing nations build and strengthen their data capabilities. China actively participates in South-South cooperation, sharing its experiences and expertise with other developing countries in areas like e-commerce and digital infrastructure.
- **Funding and Grants:** China's South-South Cooperation Assistance Fund supports development projects in other developing countries, including those related to data infrastructure and capacity building for sustainable development.
- **Global Data Standards:** China has been involved in global discussions on data governance and standards that promote data interoperability and protection.
- **Knowledge Exchange Platforms:** China participates in forums like the Global Partnership for Sustainable Development Data, sharing experiences and strategies with other countries to address data challenges.

## (3) Support for Scientific and Research Purposes in China

- **Research Funding:** China's National Natural Science Foundation provides research grants for projects that involve data-driven research to address sustainability challenges, such as environmental conservation and urban planning.
- **Collaborative Research Networks:** China collaborates with other countries through joint research initiatives, which promotes collaborative data-driven research on various sustainable development issues.
- **Data Sharing Platforms:** China hosts the China National Knowledge Infrastructure (CNKI), an online platform that offers research articles

and datasets, promoting data sharing and collaboration among researchers.

- By leveraging these policies and examples, developing countries can adopt a holistic approach to address data challenges, drawing inspiration from China's experiences and collaborations to promote sustainable development through data utilization.

4, In your country's view, what role could CSTD play in respect of data for development, including in the context of the Global Digital Compact?

The role of the United Nations Commission on Science and Technology for Development (CSTD) is crucial in the context of data for development, including within the framework of the Global Digital Compact.

- **Policy Advocacy and Guidance.** The CSTD could serve as a platform to advocate for policies that promote responsible and inclusive data usage for development. The commission could guide developing and implementing data-related policies that align with the principles of the Global Digital Compact, fostering sustainable and equitable development.
- **Knowledge Sharing and Capacity Building.** The CSTD is a hub for knowledge sharing and capacity building. The commission could facilitate the exchange of best practices, experiences, and lessons learned in data-related initiatives among member countries.
- **Data Innovation and Research.** China envisions the CSTD as a promoter of data-driven innovation and research. The commission could encourage the development of research initiatives, funding opportunities, and innovation hubs that focus on utilizing data to address development challenges, while fostering sustainable economic growth.
- **Monitoring and Accountability.** China sees the CSTD playing a role in monitoring and evaluating the progress of data-related initiatives within the context of the Global Digital Compact. The commission could provide a platform for reporting on achievements, challenges, and gaps, helping to hold countries accountable for their commitments.
- **Facilitator of Global Digital Compact Implementation.** China believes that the CSTD could serve as a facilitator of the Global Digital Compact's implementation. The commission could coordinate efforts to ensure that the principles and objectives of the Compact are integrated into national policies and strategies across member countries.

In summary, from China's perspective, the United Nations Commission on Science and Technology for Development (CSTD) has the potential to play a pivotal role in advancing data for development, especially within the context of the Global Digital Compact.

## THEME 2: Global cooperation in science, technology and innovation for development

### 1, What STI cooperative mechanism at global or regional levels has your country joined in?

- Asia-Pacific Economic Cooperation (APEC): China is a member of APEC, a forum that promotes economic cooperation in the Asia-Pacific region. APEC discussions often touch on issues related to science, technology, and innovation for economic development.
- BRICS Cooperation in Science, Technology, and Innovation: China is a member of BRICS (Brazil, Russia, India, China, and South Africa), and the BRICS nations have engaged in joint initiatives and collaborations in the field of science, technology, and innovation.
- "Asia-Pacific Network for Global Change Research" (APN): APN is an intergovernmental network that supports research and capacity-building in the Asia-Pacific region to address global environmental change issues. It promotes collaboration and the sharing of knowledge and resources among countries in the region to address challenges related to climate change, biodiversity loss, sustainable development, and other global change issues.
- The Carbon Sequestration Leadership Forum (CSLF): CSLF is a Ministerial-level international climate change initiative that is focused on the development of improved cost-effective technologies for the separation and capture of carbon dioxide (CCS) for its transport and long-term safe storage.
- United Nations 2030 Agenda for Sustainable Development - China is a signatory and participates in achieving the UN's Sustainable Development Goals, which include targets related to STI.

### 2, To what extent the existing cooperation programmes are aligned with the development priorities of participating developing countries?

- APEC (Asia-Pacific Economic Cooperation): APEC discussions on science, technology, and innovation aim to foster economic growth and development in the region.
- BRICS Cooperation in Science, Technology, and Innovation: The BRICS nations collaborate on joint initiatives in science, technology, and innovation- priorities for many developing partner countries.
- Asia-Pacific Network for Global Change Research (APN): APN's focus on environmental change aligns with the development priorities of participating countries by addressing challenges related to climate change, biodiversity loss, and sustainable development. The initiatives can contribute to environmental protection and resilience.
- Carbon Sequestration Leadership Forum (CSLF): The CSLF's emphasis on carbon capture and storage technologies aligns with the development priorities of participating countries by addressing climate change mitigation goals. Successful technology development can contribute to emissions reduction and sustainable development.

- United Nations 2030 Agenda for Sustainable Development: China's commitment to the UN's Sustainable Development Goals (SDGs) reflects alignment with global development priorities. Engagement in initiatives related to STI can contribute to various SDGs, including those related to innovation, infrastructure, climate action, and more.
- 3, What are the main outcomes of such mechanism (s)? and what are the impacts of the resultant cooperation on your country? Pls. include the gender dimension.

**APEC Policy Partnership on Science, Technology, and Innovation (PPSTI):**

Main Outcomes: The Public-Private Partnership on Science, Technology and Innovation (PPSTI) under the Asia-Pacific Economic Cooperation (APEC) framework promotes the development of innovative technologies and R&D through developing common approaches to science, technology and innovation policies among APEC member economies, encouraging innovation capacity building in economies, including absorptive capacity, through developing human resources, scientific research and infrastructure; promoting the establishment of seed and venture capital funds, technology business incubators and accelerators through advocating successful cases and practices; encouraging the formation of an environment conducive to cross-border investment in emerging technologies; developing platforms or networks conducive to science, technology and innovation cooperation; and pushing forward the implementation of cooperation projects and plans related to technology formation, dissemination and commercialization. It has made important contributions in these aspects. Shared policies and approaches in science, technology, and innovation among APEC member economies, collaborative projects, and knowledge exchange.

Impacts on China: Enhanced cooperation can foster STI cooperation, which in turn promote economic growth and the well being of the people of the partner countries. Ensuring gender inclusivity in technology-related initiatives can lead to increased opportunities for women in STEM fields and entrepreneurship.

**BRICS Cooperation in Science, Technology, and Innovation:**

Main Outcomes: Joint research, technology transfer, and collaboration in various scientific fields among BRICS nations.

Impacts on China: Collaboration can result in technology advancements, driving economic development and innovation. Gender-inclusive policies can encourage women's participation in joint research and ensure their equal access to opportunities.

**Asia-Pacific Network for Global Change Research (APN):**

Main Outcomes: Research and capacity-building initiatives related to global environmental change issues.

Impacts on China: Participation can lead to improved understanding and mitigation of environmental challenges. Addressing gender disparities in

environmental decision-making can lead to more effective and equitable solutions.

#### **Carbon Sequestration Leadership Forum (CSLF):**

Main Outcomes: Advancements in carbon capture and storage technologies to mitigate climate change.

Impacts on China: Technological advancements can support China's efforts to combat climate change and reduce carbon emissions. Gender-responsive approaches can ensure women's involvement in climate-related research and implementation.

#### **United Nations 2030 Agenda for Sustainable Development:**

Main Outcomes: International commitment to achieving the Sustainable Development Goals, which include targets related to STI.

Impacts on China: By implementing the SDGs, China not only focuses on development priorities, but also forges partnerships with other countries to tackle the common challenges and a shared future.

#### 4, [What are the main difficulties member countries have encountered or are facing when implementing the cooperation mechanisms?](#)

Implementing cooperation mechanisms, especially at the international level, can pose various challenges and difficulties for member countries. Some common difficulties that member countries may encounter when implementing these mechanisms include:

- **Different Priorities and Agendas:** Member countries often have diverse development priorities and agendas. Aligning these priorities within the framework of cooperation mechanisms can be challenging, as each country may have its own specific goals and interests.
- **Political and Geopolitical Factors:** Political differences and geopolitical tensions among member countries can impede collaboration. Disagreements and conflicts can hinder the smooth implementation of cooperative initiatives.
- **Resource Constraints:** Limited financial, technical, and human resources can hinder effective implementation. Some member countries might struggle to allocate sufficient resources to participate actively in cooperation initiatives.
- **Capacity and Expertise Gaps:** Disparities in technological capabilities and expertise among member countries can lead to unequal contributions and participation. Countries with less developed technological capacity might struggle to fully engage in research and innovation projects.



- **Data Sharing and Intellectual Property Concerns:** Sharing sensitive data and intellectual property can raise concerns among member countries. Finding a balance between collaboration and protecting national interests can be complex.
- **Financial Sustainability:** Funding and financial sustainability can be challenging, especially for long-term projects. Dependence on external funding sources can lead to uncertainty.
- **Technical and Regulatory Harmonization:** Achieving technical and regulatory harmonization across member countries can be complex, particularly in sectors like technology and innovation.

5, In respect of achieving the objectives and goals, what are the factors contributing to the success or failure of the cooperation mechanism(s) that your country has joined in?

The success of cooperation mechanisms that China has joined can be influenced by various factors. The following factors contribute to the success of these mechanisms:

**Clear Objectives and Alignment:** Mechanisms with well-defined and mutually agreed-upon objectives that align with the participating countries' development priorities are more likely to succeed. Clear goals provide a common focus and direction for collaboration.

**Strong Leadership and Commitment:** Active and committed leadership from member countries, along with sustained political will, fosters an environment conducive to effective cooperation. High-level support ensures that resources and efforts are dedicated to achieving the mechanism's goals.

**Open Communication:** Effective communication channels among member countries, including regular meetings, sharing of progress, and transparent decision-making processes, contribute to successful cooperation. An open dialogue helps manage expectations and resolve challenges.

**Capacity Building and Technology Transfer:** Cooperation mechanisms that facilitate capacity building and technology transfer among member countries enhance their abilities to contribute effectively. Sharing knowledge and expertise can lead to meaningful outcomes.

**Flexibility and Adaptability:** Mechanisms that can adapt to changing circumstances, emerging challenges, and new opportunities are more likely to succeed. Flexibility allows adjustments to strategies and activities as needed.

**Multi-Stakeholder Engagement:** Involving a diverse range of stakeholders, including government agencies, academia, industry, and civil society, increases the mechanism's effectiveness and brings in different perspectives.

**Regular Monitoring and Evaluation:** Implementing mechanisms with robust

monitoring and evaluation mechanisms enables member countries to track progress, identify areas needing improvement, and make data-driven decisions.

- 6, In your country's view, what role could CSTD play in coordinating and impacting directionality to international STI collaboration and technology sharing?  
Serve as a platform to promote consensus and partnerships around global STI priorities like SDGs through an inclusive multi-stakeholder process.

**Policy Coordination:** The CSTD can provide a platform for member states, including China, to coordinate their STI policies, strategies, and initiatives. It can facilitate discussions on best practices, lessons learned, and innovative approaches to address common challenges and leverage opportunities. The CSTD can provide policy recommendations and guidelines to member states, including China, on STI-related issues. These recommendations can help guide national policies that align with international development objectives.

**Identifying Priorities:** The CSTD can help identify global STI priorities that align with sustainable development goals. China can actively participate in discussions to ensure that the identified priorities resonate with its national development plans.

**Capacity Building:** The CSTD can support capacity-building efforts, especially in developing countries, to enhance their STI capabilities. China can contribute by sharing expertise and providing technical assistance to support STI development in less advanced economies.

**Knowledge Sharing:** The CSTD can facilitate the exchange of knowledge, experiences, and successful models of STI development among countries. China can share its own experiences and expertise in areas such as technology transfer, innovation ecosystems, and research collaboration.

**Promoting Collaboration:** The CSTD can encourage international collaboration by fostering partnerships among member states, international organizations, academia, industry, and civil society. China can collaborate with other countries to jointly address global challenges through joint research and technological innovation.

**Technology Transfer:** The CSTD can facilitate the transfer of appropriate technologies between the developed and developing countries. China, as a technology leader, can play a role in this regard, thereby contributing to global development.

**Monitoring and Evaluation:** The CSTD can monitor the progress and impact of international STI collaboration and technology-sharing efforts, ensuring that they lead to meaningful outcomes and sustainable development.

