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ON SCIENCE AND TECHNOLOGY FOR DEVELOPMENT (CSTD)**

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Contribution by ESCAP

to the CSTD 2024-2025 priority theme on “Diversifying economies in a world of  
accelerated digitalization”

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## **PRIORITY THEME 1:** Diversifying economies in a world of accelerated digitalization

### **United Nations Commission on Science and Technology for Development (CSTD)**

To whom it may concern

The [27th CSTD annual session](#) selected “Diversifying economies in a world of accelerated digitalization” as one of the priority themes for its 28<sup>th</sup> session (2024-25 period). This theme directly addresses SDG 9 “Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation” at the 2030 Agenda.

Although the contribution of science, technology and innovation (STI) to the achievement of other sustainable development goals (SDGs) is discussed in every session of the CSTD, its role in upgrading and diversifying industrial capabilities and the linkages with industrial policies have not been specifically addressed for several years in the Commission. Economic diversification, including through the upgrading of industrial capabilities, is an essential component of economic development and a key area of SDG 9, which aims at enhancing scientific research and accelerating technological upgrade of industries through innovation, particularly in developing countries.

Under this priority theme the Commission could discuss challenges and opportunities brought about the rise of new digital technologies, as Artificial Intelligence, for industrial and innovation policies aiming at increasing productive capacities and diversifying the industrial structure toward higher value productions to benefit all while preserving cultural identity, including indigenous knowledge. The accelerating pace at which frontier technologies emerge and develop makes policymakers struggle to navigate and design responsive policies. Under this theme, the Commission can examine the challenges and opportunities specific to countries at different level of development, and what can least developed countries do to face the disproportionate challenges they face; work to identify best practices and inform inclusive policies for innovation and economic diversification; discuss how to leverage international cooperation to guarantee that uneven technological capabilities will not worsen inequality.

The CSTD secretariat is in the process of drafting an issues paper on the theme to be presented at the CSTD inter-sessional panel meeting to be held in the second half of October 2024 in Geneva. In this context, we would like to solicit inputs from international organizations, UN entities and agencies, and regional commissions on this theme. We would be grateful if you could kindly answer the following questions based on your organization’s work at the global, regional, and/or national levels:

1. What are the specific challenges developing countries face to develop or adapt frontier technologies and AI?

[Developing countries in the Asia-Pacific region face challenges in improving connectivity infrastructures, leveraging emerging technology applications for sustainable development, reducing the carbon footprint of data centres and nurturing a skilled workforce in AI and data science.](#)

[Many countries also still lack strong statistical systems which provide the underlying information for many AI solutions. National statistical offices need to have robust data governance arrangements to support data integration across government, while ensuring data privacy is safeguarded. NSOs generally lack the capacity to implement bespoke trainings that build new knowledge and processes driven by new technologies.](#)

2. Can you provide successful examples of adoption or development of AI and other frontier technologies you contributed to?

Through ESCAP's Asia-Pacific Information Superhighway (APIS) initiative, progress has been made in enhancing digital connectivity across the region. This includes the establishment of a subregional Internet Exchange Points (IXPs) in the Pacific to improve Internet affordability and resilience.

Furthermore, under a project entitled "Frontier Technology Policy Experimentation and Regulatory Sandboxes in Asia and the Pacific", and jointly implemented by ESCAP and DESA, a CBDC initiative guided by regulatory sandbox frameworks have shown promising results in financial technology by facilitating experimental learning and adaptation in a live but controlled environment.

Trade provides an important means to diversify economies. ESCAP has developed an AI-enhanced Trade Intelligence and Negotiation Adviser (TINA). TINA fills the capacity gap in trade negotiations faced by developing countries, enabling them to develop evidence-based negotiating positions quickly and effectively, emulating analytical work and results previously only available to countries with large amounts of resources and expertise (see [tina.trade](#) and [legal.tina.trade](#)). TINA has attracted increasing attention from the trade policy community and its coverage has expanded from a regional (Asia-Pacific) to a global coverage, thanks to collaboration with the Economic Commission for Africa (ECA) in particular.

One of ESCAP's prominent successful examples of adopting frontier technologies is the development of SatGPT, which is an advanced spatial decision support system that leverages Large Language Models (LLMs) to enhance flood mapping capabilities using Google Earth Engine (GEE). Some of the key aspects and impacts of SATGPT have been the following:

**Innovative Features of SATGPT:**

- a) SATGPT automates the generation of GEE code to create flood maps. Users simply input a prompt with the flood duration and location, and SATGPT generates the necessary code to extract data from historical databases or perform unsupervised classification for flood detection.
- b) The tool presents flood maps in a user-friendly interface with options for 3D visualization, enabling detailed analysis of flooded areas and building footprints.
- c) By integrating with GEE, SatGPT provides real-time data processing capabilities, making it an invaluable tool for disaster management.

**Performance and Application:**

SATGPT has been successfully tested in mapping historical floods in various regions across Asia and the Pacific. For instance, it was able to map the 2008 Indian floods and the 2020 China floods within an average time of 6.73 seconds from prompt to map.

- The system can handle ambiguous prompts through the GeoPrompt Engineering method, demonstrating its robustness and reliability in real-world applications.

**Capacity Building:**

- To promote wider adoption, an online self-paced learning course titled "Introduction to Geospatial Data Analysis with ChatGPT and Google Earth Engine" was developed and launched at the UNU-INWEH Water Learning Center. This course has attracted over 3,000 participants from 110 countries, illustrating the global interest and relevance of SATGPT.

**Impact on Disaster Management:**

- SATGPT aligns with the Asia-Pacific Plan of Action on Space Applications for Sustainable Development (2018–2030), emphasizing the role of space-based technologies in disaster risk reduction. By democratizing access to flood information and enhancing the speed and accuracy of flood mapping, SATGPT empowers policymakers, disaster response teams, and community leaders to make informed decisions.
- The system's ability to integrate natural language processing with EO data analysis sets a new paradigm in using AI for environmental monitoring and disaster response.

In conclusion, SATGPT exemplifies how the integration of AI and geospatial technologies can promote innovative approaches to flood mapping, coupled with comprehensive capacity-building efforts.

3. Can you provide examples of inclusive policies for innovation and economic diversification specifically tailored to diffusion of digital technologies and AI?

The APIS action plan promotes digital technology and applications across all sectors by leveraging regional cooperation and multi-stakeholder partnerships. This includes fostering digital government and digital economy services, which are integral to inclusive economic diversification.

APIS also promotes the sharing of good practices and technologies including good policies. The establishment of a Pacific IXP referred to above is a prime example of how ESCAP has supported more affordable and higher quality internet connectivity for its most digitally disconnected subregion – the Pacific SIDS

4. Do you have examples policy instruments to favour the diffusion of frontier technologies in the economy targeting specific sectors?

The Asia-Pacific Information Superhighway (APIS) initiative promotes the sharing of good policy practices in bringing benefits of frontier technologies to all, while mitigating the challenges and potential threats. In particular, the focus has been on finding digital solutions for actions in three pillars such as connectivity infrastructure, digital technology and applications and digital data management.

5. Are you engaged in putting in place mechanisms to strengthen industrial capabilities through partnerships among different stakeholders (e.g., university-industry, or private-public)?

The APIS framework actively supports the strengthening of industrial capabilities through robust multi-stakeholder partnerships, including public-private partnerships, intergovernmental collaborations, and academia-industry linkages. These partnerships are crucial for fostering an environment of innovation and practical technology implementation across the region.

6. How can international cooperation support the uptake of new technologies and the development of technological capabilities and ensure that industrial policies will benefit all and do not worsen inequality?

International cooperation enhances the sharing of knowledge products, good practices and technologies through The Asia-Pacific Information Superhighway (APIS) platform.

ESCAP's Asia-Pacific Ministerial Conference on Digital Inclusion and Transformation, co-organized with and hosted by the Ministry of Digital Development, Innovation, and Aerospace Industry of the Government of Kazakhstan from 3-5 September 2024, is expected to impart momentum to the implementation of the APIS Action Plan 2022-2026, based on a Ministerial vision for strengthened regional digital cooperation.

7. What can do the UN CSTD to support an economic transformation that enhances the productive capabilities of countries and foster an inclusive digital transformation?

CSTD can advocate for integrated policy frameworks and connect region-based digital platforms on a global level. The APIS Action Plan 2022-2026 emphasizes the role of digital connectivity, technologies, and digital data in economic transformation. CSTD can support these initiatives by promoting policies that foster digital cooperation and integration across the region, aligning with global digital agendas and regional digital connectivity initiatives. Towards this end, the ESCAP, ITU, and UNCTAD secretariats will co-host a side event "WSIS+20 Regional Review" at the Asia-Pacific Ministerial Conference on Digital Inclusion and Transformation in Astana on 4 September 2024.

CSTD can also identify and promote adoption and participation in UN instruments that have been specifically developed to support inclusive digital transformation, such as the UN treaty called "the Framework Agreement on Facilitation of Cross-Border Paperless Trade in Asia and the Pacific – the treaty entered into force in 2021 and aims to accelerate trade digitalization through intergovernmental cooperation.

Please indicate contact person(s) responsible for projects/policies and international collaboration in this context in case we need clarification on the inputs.

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Please send your responses and any further inputs on the theme to the CSTD secretariat ([stdev@unctad.org](mailto:stdev@unctad.org)) by **24 July 2024**. We look forward to receiving your valuable inputs.

Sincere regards,  
CSTD secretariat