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Session 1: Catalyzing South-South and triangular cooperation in science, technology and innovation (STI) to spur structural economic transformation and facilitate digital leapfrogging in landlocked developing countries (LLDCs)

Science, technology, and innovation (STI) have significant potential to drive structural transformation and help LLDCs achieve the SDGs. However, LLDCs are not able to leverage the full benefits of STI due to stark gaps in critical infrastructure, including energy infrastructure and ICT connectivity, and a lack of enabling policies, enforcement mechanisms, institutional capacity and digital skills. During the implementation of the Vienna Programme of Action (VPoA), research and development (R&D) expenditure in LLDCs stagnated at 0.2% of GDP, significantly below the global average of 1.8%. Moreover, annual patent applications by LLDC residents dropped sharply from 2,764 in 2014 to 929 by 2021.

LLDCs need to integrate the application of STI both at the policy and operational levels. To achieve equitable, inclusive, and sustainable growth, LLDCs need to adopt STI strategies as integral part of national sustainable development strategies. More resources are needed to bolster R&D, with a focus on fostering local innovations and solutions. Additionally, substantial investments are required in STEM and tertiary education, particularly for women and girls, to develop the human capital necessary for driving innovation.

The Fourth Industrial Revolution has unlocked new opportunities for Governments and businesses to leverage emerging technologies such as artificial intelligence (AI), robotics etc. To fully capitalize on these opportunities, LLDCs need stronger partnerships that facilitate access to these technologies, including through the promotion of open science, affordable and open-source technologies, and R&D initiatives. South-South and triangular cooperation can offer the LLDCs pathways to integrate these technologies into key sectors such as manufacturing, agriculture and services, accelerating their structural transformation.

It is imperative for LLDCs to build a broad coalition of partnerships spanning the North, the South, governments, the private sector and global and regional development entities, including the UN system, to mobilize investments in STI infrastructure, enhance innovative capacity, and advance technological upgrading and improvements. LLDCs are also in urgent need of dedicated capacity building support from partners to improve their STI ecosystems and enhance their ability to adopt and assimilate frontier technologies, including by strengthening local technological capacity.

LLDCs are particularly vulnerable to the adverse impacts of climate change, which exacerbates their development challenges. As such, they have called for scaling up capacity-building efforts, as well as the development, deployment, and dissemination of technologies to address climate change and enhance resilience. This requires concerted efforts from all partners to promote innovation and increase the use of adaptive technologies in LLDCs, including adoption of clean technologies. Expanding South-South and triangular cooperation will be key to building the necessary adaptive

and mitigation capacities.

The surge of digitalization has also brought renewed emphasis on access to modern and digital technologies, which is the key driver of industrialization, structural transformation and sustainable development. The COVID-19 pandemic further accelerated digital transformation of the global economy particularly in e-governance and e-commerce. This underscores the pressing needs for the LLDCs to develop the capacity to apply digital technologies and fast-track their sustainable development.

However, the benefits of digital technologies have not been evenly spread within and across LLDCs. During the implementation period of the VPoA, LLDCs faced high broadband connectivity costs, and in 2021, only 32.3 % of their populations had internet access, compared to the world average of 66 %. 16 % of LLDC populations cannot use the internet because they are not covered by a broadband signal with limited or little data available on the STI and ICT sectors. Even where access exists, digital skills often insufficient to meaningfully transform digital technologies into opportunities for value addition, job creation and improved livelihoods.

Digital technologies are also changing how traditional trade is handled. Significant trade cost reductions could be achieved by implementing digital trade facilitation measures, both within and beyond the Trade Facilitation Agreement. However, LLDCs lack the necessary digital foundations to fully seize these digital opportunities.

To bridge the digital divide, including the gender digital divide, and connect even the most remote communities, LLDCs need substantial investments in digital, human and institutional capacity building, , from all sources, , to improve the digital transit and transport infrastructure and expand connectivity, and increase participation of LLDCs in digital economy, aligned with the commitments in the new Programme of Action (PoA). Stronger partnerships are needed to enhance LLDCs' ability to leverage digital technologies, including the inclusive and positive contribution of artificial intelligence (AI). Through South-South and triangular cooperation, LLDCs can promote peer-to-peer learning and share experiences in developing conducive national digital strategies and regulatory frameworks. LLDCs and development partners can pool resources including innovative financing solutions and technological know-how to improve digital literacy and skills in LLDCs and expand meaningful digital connectivity of LLDCs.

Questions:

- How South-South and triangular cooperation can support LLDCs in accessing technology and know-how to improve their scientific and innovative capacities for structural transformation and preparedness to external shocks?
- How can national level policies in LLDCs be shaped to establish effective foundations for digitalization and accelerate structural transformation?

- How can South-South and triangular cooperation be leveraged to enhance STEM education in LLDCs, with a particular focus on bridging digital divides, including the gender digital divide?
- What does it take for regional and subregional platforms and initiatives under South-South and triangular cooperation to foster the ecosystems for STI adoption and digitalization in LLDCs?