LDC5
5TH UNITED NATIONS
CONFERENCE ON THE
LEAST DEVELOPED COUNTRIES

High-level Thematic Round Table 2

Leveraging the power of science, technology and innovation for the Sustainable Development of LDCs

March 6, 2023
Doha time: 09:00 - 12:00

Thematic Roundtables Hall

Concept Note

#LDC5

Science, Technology and Innovation (STI) is a key driver and enabler for ensuring economic growth, enhancing well-being, addressing adverse impacts of climate change, and preserving biodiversity. STI is also an important means of implementation for achieving the 2030 Agenda and its Sustainable Development Goals (for example the establishment of the UN Technology Bank [1]).

The central role that STI and digitalization plays in society was made more evident at the height of the COVID-19 pandemic. It was central for, inter alia: prevention and treatment of the health crisis, including the development of novel vaccines; providing new and innovative ways of learning, working and communicating; and, enabling accelerated growth of e-Commerce and digital finance.

However, LDCs are often unable to benefit from the economic and social benefits related to technological development. One of the causes for this is structural limitations. There are marked gaps between LDCs and other countries in the area of STI. Low levels of investment in research and development, limited supply of skilled labour, low capacity for technological absorption, inadequate knowledge and understanding on intellectual property, know-how and technology transfer, all play a role in the poor state of STI in LDCs. Other structural challenges, such as access to electricity, exacerbates this digital divide[2].

Background

It is challenging to gauge the extent to which STI is advancing in LDCs due to the scarcity of data. Significant lag in major indicators relating to STI is evident among those LDCs, which have data availability. For example, there is very limited funding towards research and development, a major challenge to spur innovation and reap the benefits of STI in LDCs.

The ratio of research and development expenditure, as a share of GDP, was a meagre 0.8 percent or less between 2011 and 2020 in those LDCs with available data. In comparison, some more advanced economies were allocating approximately 3 percent of their much larger GDP towards research and development. This implies the burgeoning gap of investment in LDCs for R&D. In turn, the LDCs are far behind in terms of their competitiveness, and adaptive capacity for harnessing full benefits of STI, especially the state-of-the-art technologies.

Additionally, in LDCs, a large segment of the people do not have access to the internet, which is a key impediment for advancing STI and enabling them to fully compete in the digital era. While three quarters of people in the LDCs are covered by a mobile broadband network, only about 36 per cent are using it. In contrast, internet use is 93 per cent in high-income countries[3]. Factors contributing to the large gap between LDCs and more advanced economies in terms of access and utilization of internet include: the high price of services and devices; a lack of awareness of the Internet and its benefits; lack of digital skills; and, a lack of relevant local content.

---

[1] SDG 17.8 states "Fully operationalize the technology bank and science, technology and innovation capacity-building mechanism for least developed countries by 2017 and enhance the use of enabling technology, in particular information and communications technology"

[2] About 47% (nearly half a billion people) of those living in LDCs do not have access to electricity.

[3] State of Broadband Report 2022: Geneva: International Telecommunication Union and United Nations Educational, Scientific and Cultural Organization, 2022. See also https://www.itu.int/en/myitu/Publications/2021/09/17/11/46/Connectivity-in-the-Least-Developed-Countries-Status-report-2021

Technological change, especially in LDCs, is not only about innovating at the frontier, but also about adapting existing products and processes to achieve higher levels of productivity as applicable to their local contexts. Connecting local technological needs to international technological opportunities is a particular challenge for many developing countries, especially LDCs.

Citizens of LDCs, comprising both residents and non-residents, filed only 1,357 patents in 2020, compared with 875 in 2011[4]. As a share of global figures, that number is almost zero. Even after patenting, it can be challenging in many LDCs to scale their efforts due to lack of funding.

Furthermore, as new technologies require skilled workers, another important indicator for ease of STI enhancement is availability of relevant skills. Digital revolution and other technological changes during the advent of the 4th Industrial revolution, which has increased the use of artificial intelligence (AI), automation, new materials and biotech, big data, etc., may offer the prospect of solutions and opportunities for LDCs to achieve sustainable development. However, they also create concerns about their impact on employment, especially for low-skilled workers, and competitiveness, which could make attraction of investment to LDCs even more difficult.

It is expected that with the advent of digitalization, the productivity of higher-skill workers, especially those engaged in abstract thinking, or with creative and problem-solving skills, has increased, while the relative demand for lower-skill workers has not. Highly skilled workers are scarce in LDCs. Without intervention, digitalization will continue to be slow in LDCs and the countries could be further marginalized as production in emerging and more advanced economies is likely to become more attractive.

Many LDCs face challenges in creating opportunities for work that is productive and, among others, delivers a fair income, security in the workplace and social protection for families. In addition, many workers are informally employed, making it more challenging to achieve decent work. The number of youth aged 15 to 24 years is projected to grow from 207 million in 2019 to 336 million in 2050, in LDCs[5]. COVID-19 disproportionately affected those informal, low-skilled and low-productive urban employment, including retailing, transportation, construction, restaurants, personal services and domestic workers. ILO estimates suggest, for instance, that earnings for informal workers in the first month of the crisis might have declined by over 80% in low-income countries, many of which are LDCs.

The digital economy opens the door for LDCs to reap the benefits of integration. But it will not do so on its own – digitalization by itself does not level the playing field, and can just as easily further widen development divides. It has to be properly enabled. In order to create adequate incentives for private sector technological innovations that drive economic growth, governments need to create an effective and targeted regulatory environment that promotes innovation. Moreover, governments can support faster diffusion of digital technologies through the development of e-services and the modernization of their procurement policies, which will help develop the appropriate level of demand for the use of these technologies.

The digital economy has to become a mainstream concern across all policy making. When the digital economy is seen as just the concern of ICT regulators or a single line ministry, its ability to contribute to structural transformation is unlikely to be realized. All line ministries should therefore think about digitalization and how it affects their portfolios.

[4] WDI, World Bank

[5] https://www.un.org/development/desa/youth/wp-content/uploads/sites/21/2019/08/WYP2019_10-Key-Messages_GZ_8AUG19.pdf

The Doha Programme of Action (DPoA)[6] acknowledges the critical importance that STI, including inclusive and enabling innovation ecosystems, environmentally sound technologies and ICT can have in the pursuit of achieving the Sustainable Development Goals (SDGs). The DPoA highlights the following key action areas on STI: access to modern technologies for sustainable development and building human capital, infrastructure and institutions to reap the benefits of the fourth industrial revolution; STI for development and recovery from the COVID-19 pandemic and building resilience against emerging challenges; and, Promoting private sector engagement, digitalization and broadband connectivity. Each of these key action areas has accompanying measurable targets that should be met during the implementation period of the DPoA. It also commits to ensure further support the UN Technology Bank in strengthening the STI capacity of LDCs for structural transformation and productive capacity development.

Enabling and sustaining catch-up growth will require development partners and LDCs themselves to invest in elements that promote STI, and ensure technology transfer that goes beyond the simple endowment of free technology, but also helps LDCs build deeper-level technological capabilities. There is need to significantly increase the level of expenditure on research and development and related innovation capabilities, including relevant skilling, in the LDCs.

Guiding Questions: Speakers, panellists and participants when intervening should be guided by the following questions:

1. Recognizing the limited fiscal space in LDCs, what should LDCs and their development partners do to advance STI?
2. How to ensure technology transfer that helps LDCs build deeper-level technological capabilities?
3. How to ensure coordination across line ministries in LDCs to build digital economies in a more systematic manner?
4. How to promote the development of government e-services and public procurement policies geared towards faster and more intensive use of digital tools?
5. What measures can be taken to further strengthen the UN Technology Bank to support the LDCs reaping the maximum benefits of STI?

[6] https://digitallibrary.un.org/record/3959499?ln=en