



SouthViews

No. 216, 4 May 2021

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An Introduction to the UN Technology Bank for the Least Developed Countries

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Adoption, adaptation and diffusion of technology offer Least Developed Countries (LDCs) substantial potential to increase economic productivity and development and to narrow the technological gap with developed countries. It is in recognition of the need for sustained and sustainable mechanisms to enable the transfer of technologies between countries that the United Nations (UN) Technology Bank for the Least Developed Countries was born.

Advances in science and technology have the potential to radically transform societies and to contribute to social and economic development. Whereas such advancements can be nationally incubated and grown, they can equally be achieved – often more rapidly – through the adoption and adaptation of extrinsic technologies to national realities. Afforded through technology transfer. Adoption, adaptation and diffusion of technology offer Least Developed Countries (LDCs) substantial potential to increase economic productivity and development and to narrow the technological gap with developed countries.

It is in recognition of the need for sustained and sustainable mechanisms to enable the transfer of technologies between countries that the United Nations (UN) Technology Bank for the Least Developed Countries was born, in the context of the Programme of Action for the Least Developed Countries for the Decade 2011-2020.

On 23 December 2016, the United Nations General Assembly officially established the Technology Bank for Least Developed Countries as a new UN entity, and tasked it with the strategic objective of supporting the 47 Least Developed Countries strengthen their Science, Technology and Innovation (STI) capacities. The establishment of the Technology Bank marked the first successful achievement of a Sustainable Development Goal (SDG) target, Target 17.8, which called for the full operationalization of the Technology Bank for LDCs. The mandate of the UN Bank is also closely aligned with three other SDG 17 targets: enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge sharing on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanism (SDG Target 17.6); promote the development, transfer, dissemination and diffusion of environmentally sound

technologies to developing countries on favourable terms, including on concessional and preferential terms, as mutually agreed (SDG Target **17.7**); and enhance international support for implementing effective and targeted capacity-building in developing countries to support national plans to implement all the sustainable development goals, including through North-South, South-South and triangular cooperation (SDG Target **17.9**).

All of these targets depend on the enhancement of the use of enabling technology, and the maximization of the deployment of information and communications technology (ICT) to the achievement of the global development ambitions of all countries. Enabling technologies are such inventions or innovations that can be applied to drive radical change in the capabilities of a user or culture. Characterized by rapid development of subsequent derivative technologies, they include artificial intelligence and the internet of things, and drive transformative reorganization of economic structures. Harnessed effectively, enabling technologies have the potential to assist economies in creating new efficiencies, boosting productivity, and enhancing international trade.

Successful international technology transfer presupposes some level of local absorptive capacity, and an enabling environment in the political, legal, and regulatory conditions that surround the requisite technologies. The Tech Bank consequently develops and executes activities and programmes with the countries to foster their capacity to develop their national and regional innovation ecosystems, through helping countries assess their technology gaps and needs, supporting efforts to engage with and afford effective technology transfer of extrinsic technologies, and providing strategic and practical guidance to generate home-grown research and innovation through for example strengthening of academies of science, support for innovation hubs and research institutions.

In addition the Bank supports the development of the private sector as a key mode of rapid translation of technology to tangible goods and services that drive economic development and societal transformation. At the global level, the UN Tech Bank strives to act as a repository of transformative technologies relevant to all LDCs across a number of sectors, including agriculture, food security, health, environment and climate change.

LDCs are confronted with three critical gaps in their efforts to strengthen their STI infrastructure. The first is a technology gap; most (but not all) LDCs have limited ownership of technologies to attend to pressing technical problems, and limited capacity to assess and adopt technologies from elsewhere. This is compounded by the protection of many technologies by patents, trade secrets or other forms of intellectual property (IP) that constitute a barrier to uptake. The second gap is an information gap. Before a technical solution is provided, the specific reasons behind the problem must be identified, which is often only possible after a thorough and costly scientific analysis and examination of the situation. Thus, the potential recipients of technologies often lack knowledge about the technical specificities of the problem that would allow them to adequately express their needs, and to choose the right technological solution. Finally, LDCs are faced with a purchasing power gap, lacking the financial ability to undertake research into areas where there are technology gaps, or to close their information gaps through purchase of information or retention of expertise to help them. These gaps hinder the transfer of technology, and are compounded by gaps between IP systems and surrounding legal, regulatory and administrative systems that hinder effective use of IP even once it is available for uptake.

In order for LDCs to benefit from technology transfer, it will not be enough to borrow from other contexts. Technologies are transferred to LDC economies for cultivation of indigenous technological capability and in commercial contexts, for establishment of competitive advantage.

With the assistance of the UN Tech Bank, LDCs have a mechanism to effectively take up, adapt and integrate new technologies of external origin, where necessary and desired, using these to complement existing technologies in their territories.

In its first three-year Strategic Action Plan, the UN Tech Bank has centered its efforts around helping LDCs assess their technology needs, and their absorptive capacities for these needs, supporting knowledge transfer and capacity strengthening to address these needs, and fostering innovations already under incubation in Innovation Hubs of LDCs. In line with the One UN drive, and to contribute to the effective achievement of the SDGs, the Tech Bank cooperates closely with other UN agencies to support countries, capitalizing on the respective mandates, expertise and capacities of these agencies, to jointly and rapidly respond to LDCs' needs, eliminating redundancy.

The Technology Access Partnership: a practical example

The Technology Access Partnership in May 2020, a joint UN agency response to the COVID-19 crisis, is a demonstration of the potential of technology transfer and subsequent scaling up of local production to contribute to equitable access to personal protective equipment (PPE), respiratory devices and diagnostics to manage the pandemic in developing countries.

The Technology Access Partnership is hosted by the UN Technology Bank for the Least Developed Countries, and executed in partnership with the UN Development Programme (UNDP), the UN Conference on Trade and Development (UNCTAD), the World Health Organization (WHO) and the Commonwealth Secretariat. The Technology Access Partnership draws on the expertise resident in these and other agencies of the UN Family to provide guidance and technical support to rapidly scale up the manufacture of personal protective equipment, medical devices (including ventilators and oxygen concentrators) and diagnostics for COVID-19.

In reducing dependencies of the most vulnerable countries and people on external sources for supply of goods, and reducing the constraints in movement of goods and services that have accompanied the pandemic, the Technology Access Partnership aims to achieve equitable access for all, and resilience of the most vulnerable countries in the face of future pandemics.

The Tech Access Partnership also aims to serve as a model approach, elements of which can be adopted and replicated elsewhere. The Technology Access Partnership aims to respond to expressed technology requests from all developing countries, which it receives through a dedicated platform. It also actively encourages the depositing of relevant technology innovations from developing countries on its matchmaking platform, in order to facilitate South-South transfer of technology.

Matches are made between technology seekers and technology holders that enable effective technology transfer, through a process of mapping the manufacturing and production capacities of receiving entities, vetting of the partners and technologies, and provision of written guidance on the policy, legal and regulatory landscapes in the countries of origin and reception of the technology in question. In so doing, the Tech Access Partnership provides the opportunity to demonstrate the practical application of the recommendations made at the intergovernmental level to improve the science, technology and innovation infrastructure of the LDCs, to protect public health, and to respond to public health emergencies of international concern. Some of the pertinent recommendations are to be found in e.g. the Agreement on Trade-Related Aspects of

Intellectual Property Rights (TRIPS)¹, and the WHO Global Strategy and Plan of Action on Public Health, Innovation and Intellectual Property Rights.

The broader policy context remains an important external factor, with impact on the potential for the Tech Access Partnership to support developing countries. The LDCs have asked for the support of the UN Technology Bank for their request to the WTO TRIPS Council to extend the transition period under Article 66.1 of the TRIPS Agreement, in order to afford them the vitally necessary policy space and flexibility to address their development challenges and to create a viable technological base for meeting these challenges, which have been exacerbated by the COVID-19 pandemic. The practical support provided to the LDCs through the Tech Access Partnership constitutes an element of these efforts. It is also crucial to their achieving the SDGs of eradicating widespread poverty (SDG 1), removing daunting industrial, innovation and structural challenges (SDG 9) and unleashing sustained growth through decent work and economic growth (SDG 8).

Programmatic challenges have arisen in the implementation of the Tech Access Partnership. Precisely because they are resource-constrained, the LDCs do not have the capacity to continuously scan the landscape for initiatives intended to support their science, technology and innovation aspirations. Similarly, a number of countries do not have the resources to map their national landscapes for gaps in the availability of technologies, while at the same time attempting to respond to an immediate and urgent pandemic crisis. An early observation of the Tech Access Partnership is that where it is available, developing countries have sought to use donations to respond to their immediate needs. While this has public health impact in the short term, it removes the incentives for commercial actors to enter into the local manufacture and production of relevant health technologies, which in turn limits the capacity of agencies to procure by purchasing from local producers, even if that is their intention.

This can have implications for other policy aspirations. As an example, The Africa Centres for Disease Control and Prevention (CDC) has created an initiative to prioritize purchasing of COVID-19 relevant technologies from manufacturers on the continent. However, if the latter do not have a sustainable business case, and this is further complicated by the disruption of sustainable solutions caused by donation programmes, there will be a lasting deleterious impact on the construction of a resilient health infrastructure on the continent. This runs counter to achieving the SDGs, especially SDG 9 to build resilient infrastructure, promote sustainable industrialization and foster innovation.

Finally, a fundamental constraint faced by the Tech Access Partnership is the limited resources available to the UN Technology Bank to host and implement initiatives such as the Tech Access Partnership, despite repeated requests from the LDCs. Nevertheless, the Tech Access Partnership is committed to continuous dialogue with policy and development partners, and to practical support for technology transfer to developing countries to reduce their vulnerability and sustainably improve the resilience of their health infrastructure and the health of their peoples.

The challenges faced by the UN Tech Bank are not insurmountable. Through its mandates, activities and partnerships, it harbors great potential for the achievement of a number of the SDGs, and welcomes engagement with all actors to do so.

¹ E.g. TRIPS Article 61, Article 73b, the Doha Declaration on TRIPS and Public Health.

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