Technology Needs Assessments

The world's 44 least developed countries face common challenges such as economic vulnerability, human capacity constraints, infrastructure gaps and limited access to technology. Yet they also hold immense potential with a majority of the population being young and abundant natural resources.

Technology Needs Assessments are systematic analyses of core social and economic sectors that are used to identify and prioritize the technologies needed for development.

Purpose: These assessments are critical for fast-tracking urgent development needs and priorities through investment in science, technology and innovation in LDCs. In the long term, they aim to assist countries to develop the technological and innovative capabilities to achieve growth, promote structural transformation and reach the Sustainable Development Goals.

Process: The UN Technology Bank conducts demand-driven, evidence-based Technology Needs Assessments, aligned with a country's national development priorities. The assessments are informed by rigorous consultations with national, regional and international stakeholders, including government entities, the private sector, academia, and civil society in a step-by-step process:

- Identify specific sectors or economic activities that would benefit from technological solutions.
- Identify main technology gaps.
- Assess a country's capacity to acquire and use transferred technologies.
- Identify appropriate technological solutions compatible with the country's level of development.

Technology Needs Assessments provide actionable recommendations for investment in technological development through tech transfer and capacity building

Climate-smart Agriculture

- Value chain management: traceability, quality control, information sharing and financing platforms
- Post-harvest management: solar dryers, cold chain technologies
- Precision agriculture: IoT, AI, remote sensing to assist decisions
- Water management: subsoil and drip irrigation

Health

- E-health and telemedicine: to increase access to healthcare in remote areas
- Increased diagnostic and monitoring capacity: using imaging machines such as CT scan, PET scan, MRI and X-ray machines
- Greater data management and logistics capacity

Climate Change

- Climate monitoring, forecasting and dissemination techniques and technologies
- Waste management technologies (landfill methane capture and composting technologies)
- Rainwater harvesting and water treatment technologies
- Aquaculture
- Coastal protection technologies (e.g. groynes, sea walls, offshore breakwaters and revetments)

Education

- Distance learning: online education, audio/video and e-learning technology
- Improved educational management: e-databases and software programmes
- Digitalization of higher education institutions (TVETs and universities) for maintenance of data in systems

Our work so far
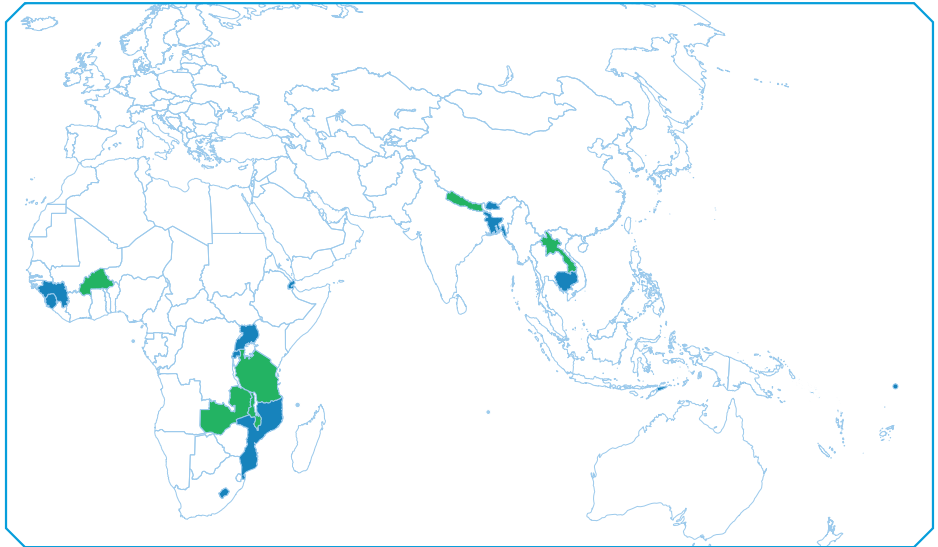
■ Completed   ● Ongoing

Collectively, the TNAs have already identified core areas for investment, acting as a bridge between immediate development needs and long-term resilience, with 13 TNAs completed.

Asia
31% - 4 TNAs

Bangladesh (2023)
Bhutan (2020)
Cambodia (2022)
Timor-Leste (2020)

Africa
61% - 8 TNAs

Djibouti (2023)
Lesotho (2022)
Mozambique (2022)
Rwanda (2022)
Sierra Leone (2022)
The Gambia (2020)
Republic of Guinea (2021)
Uganda (2020)

Pacific
8% - 1 TNAs

Kiribati (2022)

Country priority areas

Assessments completed so far have identified priorities across several socio-economic sectors:

Agriculture and food   Education   Health   Energy   Environment