



Technology Bank for the Least Developed Countries

Distr.: General
5 December 2019

Original: English
English and French only

Council

Third session

Gebze, Turkey, 15 and 16 January 2020

Item 3 of the provisional agenda*

Matters arising from the second Council session

Technology Bank for the Least Developed Countries: budget and programme of work for 2020

* TBLDC/2020/1.



Overview

I. Introduction

1. In the Istanbul Programme of Action for the Least Developed Countries for the Decade 2011–2020, adopted in 2011 at the Fourth United Nations Conference on the Least Developed Countries, the Heads of State and Government and representatives of the States participating in the Fourth United Nations Conference on the Least Developed Countries called for the establishment of a technology bank dedicated to the least developed countries. The creation of the bank was a long-standing priority of the least developed countries that was confirmed in the Addis Ababa Action Agenda of the Third International Conference on Financing for Development and in the 2030 Agenda for Sustainable Development, under Sustainable Development Goal 17 (Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development).

2. On 23 December 2016, the General Assembly adopted resolution [71/251](#), on the establishment of the Technology Bank for the Least Developed Countries. By that resolution, the Assembly decided to establish the Bank as a subsidiary organ of the Assembly and adopted its Charter (see [A/71/363](#)). In the same resolution, the Assembly invited Member States and other stakeholders to provide voluntary funding to the trust fund for the operationalization of the Bank.

3. The operationalization of the Technology Bank was achieved in 2018, after the signing, on 22 September 2017, of the agreement between the United Nations and Turkey concerning the establishment of the Technology Bank and the agreement between the two parties on financial and in-kind support for the Bank, the inauguration of the premises of the Bank in Gebze, Turkey, on 4 June 2018, and, finally, the appointment of its Managing Director, on 24 November 2018.

4. The Technology Bank is a major step towards advancing the efforts of the least developed countries to enhance their science, technology and innovation capabilities and to integrate those capabilities into their sustainable development efforts and the structural transformation of their economies. The operationalization of the Bank, which is target 17.8 of Goal 17, is the first target to be reached under that Goal and contributes directly to the objective of the 2030 Agenda to leave no one behind, as well as to the implementation of the Istanbul Programme of Action.

5. In accordance with its Charter, the Technology Bank will continue to support the strengthening of the science, technology and innovation capacity of the least developed countries, including their capacity to identify, absorb, develop, integrate and scale up the deployment of technologies and innovations, including indigenous ones. The Bank will also support the capacity of the least developed countries to address and manage intellectual property rights issues; promote the development and implementation of national and regional science, technology and innovation strategies; strengthen partnerships among public entities and with the private sector working in this field; and promote cooperation among all stakeholders involved in science, technology and innovation, including researchers, research institutions and public entities, within and operating between the least developed countries, as well as with their counterparts in other countries. In addition, the Bank will promote and facilitate the identification and utilization of and access to appropriate technologies by the least developed countries, as well as the transfer of such technologies to them, while respecting intellectual property rights and fostering national and regional capacity among the least developed countries to use such technology effectively in order to bring about transformative change.

II. Overall orientation

6. The programme of work for 2020 will continue to be focused on in-country activities in the areas of science, technology and innovation reviews and technology needs assessments, as well as on additional activities in the following key areas:

- (a) Technology transfer;
- (b) Establishing and strengthening academies of science;
- (c) Enhancing innovation capacity in the least developed countries;
- (d) Enhancing science, technology and innovation capacities in the least developed countries.

These key areas have been included to reflect the Technology Bank's core mandate as outlined in its three-year strategic plan.¹

7. The programme of work for 2020 will be built on the achievements made under the programme of work for 2018–2019 in the areas of technology needs assessments and digital access to research programmes. Furthermore, additional such assessments will be conducted to increase country coverage significantly, and, with available resources, 10 countries will be reviewed in 2020, compared with the 5 countries reviewed in 2019.

8. Under the programme on enhancing innovation capacity in the least developed countries, which has replaced the programme on digital access to research, technical capacity-building support and training will be delivered by way of online training, through the introduction of a newly developed massive open online course. The new delivery modality will facilitate a significant increase in country coverage and is less resource-intensive. In 2018–2019, more than 2,600 experts in more than 15 countries were trained, and the objective for 2020 is to increase that number significantly and to reach all of the least developed countries.

9. In line with the strategic goal of developing national and regional innovation ecosystems that can attract technology and generate home-grown research and innovation, the Technology Bank, in partnership with the Office of Information and Communications Technology, will initiate the establishment of five regional technology innovation laboratories. The feasibility and strategy reports processes for three pilot countries will be launched in 2020.

10. Through existing and new partnerships, the Technology Bank will establish in 2020 a digital platform for technology transfer to assist the least developed countries in scouting, identification and review of appropriate technology solutions to address their needs related to achieve the Goals. The Bank will enhance their capacity to identify, absorb and adapt new technologies. The Bank will also partner with incubators and specialized research institutions to consolidate the technology transfer programme.

11. To further enhance institutional infrastructure and capacity in the least developed countries, in 2019 the Technology Bank launched a programme on academies of science, which can play an important role in the coordination of the regional and national science, technology and innovation agenda and serve as key interlocutors for the Bank. In 2019, four regional consultations were held in eastern, western, southern and northern Africa. A regional consultation for Asia and the Pacific is planned for February 2020. The outcomes of the consultations will form the basis of a capacity-building programme and for the establishment of new academies of science.

¹ Available at <http://unohrlls.org/custom-content/uploads/2017/01/Strategic-Plan-of-the-Technology-Bank-for-the-LDCs-8-August.pdf>.

12. To support the national and regional research and education capacity in science, technology and innovation in the least developed countries, the Technology Bank, in collaboration with key research institutions, will launch research programmes involving researchers from the least developed countries and key partner countries in science, technology and innovation-related fields and will also promote joint research programmes and exchange activities.

13. Furthermore, in 2020, the Technology Bank will continue to enhance its institutional capacity by increasing the number of its professional and administrative staff. In 2018–2019, the Bank relied on outside service providers for most of its core administrative capacity, which imposed significant operational limitations on the Bank's ability to implement its activities in a timely manner.

14. In 2020, the Technology Bank will continue to devote significant efforts to resource mobilization through the implementation of its resource mobilization strategy, which is being prepared at the time of writing. In addition, the Bank will continue to actively seek out new strategic partnerships in the public and private sectors to support technology deployment and capacity-building in the least developed countries.

15. Monitoring and evaluation will be undertaken at the programme level with the support of the Office of Internal Oversight Services. Although not outlined in the present document, monitoring and evaluation will follow the results-based model and monitoring framework, which is focused on achieving realistic expected results, monitoring progress towards their achievement, evaluating outcomes, integrating lessons learned into management decisions and reporting on performance.

16. The periodic monitoring of the progress of implementation will be conducted by the secretariat of the Technology Bank through reviews at mid-year or more frequently, as deemed necessary. This will allow the Bank and its partners to take stock of and troubleshoot any problems pertaining to the programmes in a timely fashion so as to ensure the prompt implementation of programme activities.

III. Overview of budget estimates and available resources

17. In accordance with its Charter, the Technology Bank is to be financed through voluntary contributions from Member States and other stakeholders, including the private sector and private foundations. The resources of the Bank are kept in a separate trust fund and subject to the Financial Regulations and Rules of the United Nations, including audit by the oversight bodies of the Organization.

18. Given the vast needs of the least developed countries in terms of science, technology and innovation, and on the basis of the Technology Bank's three-year indicative budget, which was prepared in December 2016 by the Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States, it is estimated that the Bank would require an annual budget of \$35 million to \$40 million in order to effectively undertake activities in all of the least developed countries, address the full range of objectives set out in its Charter and make the expected transformational impact in all of the least developed countries.

19. For the programme of work for 2020, the Technology Bank will be able to rely on a contribution of \$2 million from the host country, Turkey, in accordance with the agreement on financial and in-kind support for the Bank signed in 2017. In addition, unspent resources in the amount of \$4,287,451 are estimated at the end of 2019 (see table 1). Therefore, total available resources at the beginning of 2020 are projected to be \$6,287,451.

20. The overall budget requirements for 2020 are in the amount of \$4,730,689, which cover the costs of Council support, executive direction and management and operational support and the programme of work (see table 2).

21. The status of contributions, financial resources by component and post resources are described in tables 1 to 3.

Table 1
Status of contributions

(United States dollars)

	<i>Amount</i>
Fund balance, 1 January 2019	4 105 257
Voluntary contributions received in 2019	2 050 000
Subtotal	6 155 257
Pledges made in 2019	1 000 000
Subtotal with pledges	7 155 257
Expenditures, January–June 2019	(834 048)
Projected expenditures, July–December 2019	(2 033 758)
Subtotal	(2 867 806)
Projected unspent resources, 31 December 2019	4 287 451

Table 2
Financial resources by component

(United States dollars)

<i>Component</i>	<i>2018 expenditure</i>	<i>2019 approved</i>	<i>2020 estimate</i>
Council support	–	132 000	78 000
Executive direction and management and operational support	163 950	846 567	1 035 574
Programme of work	623 465	4 859 235	3 148 308
Subtotal	787 415	5 837 802	4 261 882
Programme support costs ^a	86 608	642 158	468 807
Total	874 023	6 479 960	4 730 689

^a Programme support costs for the trust funds is 11 per cent of total expenditure.

Table 3
Post resources

<i>Component</i>	<i>2018</i>	<i>2019 approved</i>	<i>2020 estimate</i>
Professional and higher	3	4	5
General Service and related categories	2	3	5
Total	5	7	10

A. Council support

22. The resource requirements for Council support are described in table 4.

Table 4

Resource requirements for Council support

(United States dollars)

<i>Object of expenditure</i>	<i>2018 expenditure</i>	<i>2019 approved</i>	<i>2020 estimate</i>
Travel	–	120 000	71 768
Hospitality	–	12 000	4 200
Contractual services	–	–	2 032
Total	–	132 000	78 000

23. The amount of \$78,000 will provide for the travel of Council members and other experts to Council sessions, including two sessions expected to be held in 2020, and hospitality for the Council sessions.

B. Executive direction and management and operational support

24. The Technology Bank's programme of work will continue to be overseen by the Managing Director (D-2). A new Administrative Officer (P-3) is proposed in 2020 to provide support to the Bank's expanding programme of work and operational oversight of administrative and finance activities.

25. Programme support staff functions will be restructured, and three of the five locally recruited General Service positions will be advertised in 2020. The three are those of Administrative Assistant, Finance and Budget Assistant and driver.

26. The provision of administrative services by the United Nations Office for Project Services will gradually be phased out in 2020 as the Technology Bank builds internal capacity.

27. Given the vulnerability of the Technology Bank's information technology infrastructure and the results of the 2019 cybersecurity assessment by the Office of Information and Communications Technology, the Bank will conduct annual security assessments to safeguard the integrity of that infrastructure. Investment in the new information management system will continue throughout 2020 with the purchase of software needed for data and document storage. The Bank will also review and consider the most cost-effective and efficient information technology support model to provide managed support and services.

28. An internship programme will be introduced in 2020 to offer students, from diverse academic backgrounds, a professional experience through practical work assignments within the international environment of the United Nations, while offering the Technology Bank the assistance of qualified students specializing in various professional fields.

29. Resource mobilization remains a key priority of the Technology Bank in 2020, and to this end, the resource mobilization strategy currently being developed will be operationalized in 2020.

30. The communications consultant engaged in 2019 will continue to work with the Technology Bank to finalize the communication and social media strategy, and to establish a new visual identity, a style guide and a repository of images to be used for

communications purposes and improve the Bank's website. The communication strategy will be instrumental to the success of the resource mobilization efforts of the Bank.

31. The resource requirements for executive direction and management and operational support are described in table 5.

Table 5

Resource requirements for executive direction and management and operational support

(United States dollars)

<i>Object of expenditure</i>	<i>2018 expenditure</i>	<i>2019 approved</i>	<i>2020 estimate</i>
Staff and other personnel costs			
1. International staff	102 605	266 600	324 300
2. Local staff	—	69 000	149 110
3. Consultants and experts	—	—	75 000
Subtotal, staff costs	102 605	335 600	548 410
Operational costs			
1. Travel of staff	47 033	52 967	135 164
2. Contractual services			
Security of premises	—	100 000	10 000
Website development, maintenance and administration	—	28 000	20 000
Translation and printing of documents	—	70 000	20 000
Other contractual services	—	2 000	6 000
3. Equipment and vehicles	—	40 000	62 000
4. Supplies	—	5 000	10 000
5. General operating expenses			
Information technology support services and software licences	—	9 000	12 000
Other miscellaneous expenses	—	6 000	10 000
Hospitality	—	10 000	5 000
Vehicle fuel and maintenance	—	—	24 000
Rental of sub-office at United Nations Development Programme Istanbul	—	—	3 000
Internship programme	—	—	20 000
Implementation direct costs	14 312	188 000	150 000
Subtotal, operational costs	61 345	510 967	487 164
Total	163 950	846 567	1 035 574

1. Staff and other personnel costs

32. The amount of \$324,300 will provide for the funding of two international staff members: the Managing Director (D-2) and one new Administrative Officer (P-3). The amount of \$149,110 will provide for the funding of five locally recruited support staff to work on budget and finance and administration. The provision of \$75,000 will cover the costs for the engagement of consultants for communication and resource mobilization activities.

2. Operational costs

33. The amount of \$487,164 will provide for operational costs, such as equipment, vehicles, supplies, information technology services, the translation and printing of documents, travel, hospitality, implementation direct costs and other miscellaneous expenses.

IV. Programme of work

A. Technology needs assessments programme

1. Background and rationale

34. Technology needs assessments provide a blueprint for the capacity-building programmes that each country may include as part of their national development strategies in order to accelerate efforts towards the implementation of the priorities contained in the Istanbul Programme of Action, as well as to promote the achievement of relevant Goals. Such assessments provide a set of science, technology and innovation capacity-building priorities that should provide a valuable guide to bilateral donors, multilateral and regional development banks, foundations, non-governmental organizations and the private sector. They also cover technology needs and enable technology developers and innovators to innovate technologies that suit the needs of the least developed countries. In that respect, the adoption, adaptation and implementation of technologies will be expedited and facilitated.

35. Science, technology and innovation-related policies, the innovation ecosystem and the technology commercialization capacity of the least developed countries are assessed, and gaps and appropriate interventions are identified. The technology needs assessments promote collaboration at the regional level and among groups of least developed countries sharing common characteristics and challenges, thereby allowing them to explore synergies and complementarities.

36. The beneficiaries of the assessment activity include the scientific community, government officials with responsibility for science, technology and innovation issues (i.e., ministries of science, industry, technology, education, agriculture and planning), entrepreneurs, educational institutions and civil society.

2. Relationship to the strategic plan of the Technology Bank

37. The assessment programme is linked to project 1 (science, technology and innovation policy and capacity-building), under the action lines of the strategic plan of the Technology Bank: (a) attracting outside technology and facilitating technology transfer on voluntary and mutually agreed terms and conditions; (b) supporting homegrown innovation and research; and (c) bringing imported and indigenous technologies to market.

3. Objectives

38. The objective of the programme is to perform technology needs assessments. Each assessment provides critical insights into the functioning of the national innovation capabilities, presents an overview of the national science, technology and innovation and technological deployment ecosystems and provides an understanding of the impact of the national policy framework in science, technology and innovation on national sustainable development. The objectives of the reviews are as follows:

(a) To identify the core areas of focus for the least developed country under review and specific initiatives to maximize the impact of technology as an instrument

to foster structural transformation, reduce poverty and promote sustainable development;

(b) To identify opportunities to strengthen science, technology and innovation-related capabilities and research and development infrastructure, as well as to improve the utilization of existing capacity-building programmes;

(c) To identify opportunities for collaboration at the regional level and among clusters of countries that share common characteristics and challenges, thereby allowing them to explore synergies and complementarities;

(d) To assist the least developed countries in identifying the technology solutions appropriate for their needs;

(e) To support the efforts of the least developed countries towards identifying, prioritizing and formulating their technology needs.

4. Expected accomplishments

39. The expected accomplishments under the programme are as follows:

(a) Facilitation of dialogue among all of the stakeholders involved in science, technology and innovation;

(b) Facilitation of the identification, prioritization and formulation of technology needs in the least developed countries;

(c) Contribution to the creation of policies, regulations and an enabling environment for technology transfer;

(d) Improvement of the national capacity of the least developed countries in the adoption, adaptation and implementation of technologies;

(e) Assessment of policy gaps and technology gaps;

(f) Formulation of capacity-building activities to improve science, technology and innovation for sustainable development.

5. Indicators of achievement

40. The indicators of achievement under the programme are as follows:

(a) Enhanced communication between policymakers and science, technology and innovation stakeholders;

(b) Enhanced profile of science, technology and innovation in national development strategies;

(c) Increased expenditure and investment in science, technology and innovation;

(d) Facilitated and informed access to technology information.

6. Main activities

41. The main activities involved in the preparation of the technology needs assessments are the following:

(a) Development of a methodology in collaboration with the relevant stakeholders for identifying, formulating and prioritizing technology needs;

(b) Initial technical fact-finding visit in order to interact with government officials and other key science, technology and innovation stakeholders from academia, the private sector and civil society and collect information and data, with

the aim of mapping the science, technology and innovation landscape, policies, legal frameworks, institutions and operational instruments;

(c) Organization of a workshop on science, technology and innovation policy design, review and implementation for high-level ministerial officials and other national stakeholders to plan the technology needs assessment review and the establishment of a national working group;

(d) Establishment of a national working group with representatives of the main national entities in the field of science, technology and innovation, designated by the authorities to perform in-country analysis of existing capacities;

(e) Interviews conducted by the contracted experts, together with members of the national working group, of the most relevant science, technology and innovation stakeholders (various ministries and major organizations) in the country in order to collect information on policies and policy instruments for the evaluation of the research and innovation landscape. Preparation of a draft technology needs assessment on the basis of the information collated from the inventories, other statistical material and desk-based research by the contracted experts. Organization of a validation workshop during the visit, after the draft is distributed to the national working group members and other stakeholders. Organization of training sessions on topics for which important gaps and a lack of capacities have been identified;

(f) Presentation of the major findings to the Government of the respective country, including a list of possible policy options, initiatives and capacity-building priorities, on the basis of the empirical evidence collected during the exercise.

7. Country coverage

42. In 2019, under the programme, the Technology Bank carried out a series of baseline reviews of five countries: Bhutan, the Gambia, Guinea, Timor-Leste and Uganda. The reviews were organized in collaboration with the United Nations Conference on Trade and Development, the United Nations Educational, Scientific and Cultural Organization and other relevant organizations. In 2020, the programme will be implemented in the following 10 countries: Bangladesh, Haiti, Kiribati, Lesotho, Mozambique, Nepal, Sierra Leone, the Sudan, Tonga and Zambia.

B. Technology transfer programme

1. Background and rationale

43. A technology gap exists between the least developed countries and the rest of the world, representing the differences in technological and innovation capabilities between developed and developing nations. As a result of inadequate incentive structures and institutional and policy weaknesses, technology is inaccessible to the least developed countries.

44. Bridging the technology gap is a necessary condition to accelerate convergence in terms of income and productivity levels and thus foster development. New policies and mechanisms are necessary to reduce this gap.

45. One of the core mandates of the Technology Bank is to support the least developed countries in closing that gap by supporting the development of new science, technology and innovation policies and mechanisms.

46. In that regard, in the General Assembly resolution [71/251](#), reference is made to the importance of improving the least developed countries' scientific research and innovation base, promoting networking among researchers and research institutions and helping the least developed countries to access and utilize critical and appropriate

technologies, building upon bilateral initiatives and coordinated support by multilateral institutions, including the relevant entities of the United Nations system, such as the Technology Facilitation Mechanism, and the private sector. Furthermore, the Charter of the Technology Bank has, as one of its objectives, to promote and facilitate the identification and utilization of and access to appropriate technologies by the least developed countries, as well as their transfer to the least developed countries, while respecting intellectual property rights and fostering the national and regional capacity of the least developed countries for the effective utilization of technology in order to bring about transformative change.

2. Relationship to the strategic plan of the Technology Bank

47. The programme is part of project 4 (supporting intellectual property rights acquisition and technology transfer). The projects and activities that are directly implemented, as well as those that are promoted and catalysed through the work of the programme, will help the least developed countries to build science, technology and innovation capacities, ecosystems and regulatory frameworks that can harness the benefits of newly available technologies by attracting outside technology, facilitating technology transfer and bringing imported and indigenous technologies to market.

3. Objectives

48. The main objectives of the programme are as follows:

(a) To build capacity in the least developed countries to attract outside technologies and facilitate technology transfer on voluntary and mutually agreed terms and conditions;

(b) To build capacity in institutions and mechanisms, including at the regional level, that can facilitate technology transfer;

(c) To facilitate negotiations for technology transfer to ensure efficient, effective and result-based technology transfer;

(d) To facilitate cost-effective access to customized information on available technologies;

(e) To assist the universities, research institutes, scientists and private businesses in the least developed countries in obtaining access to and utilizing available technical knowledge in order to conduct developmental research and adapt the technologies for local use;

(f) To support the transfer or diffusion of technologies to local entrepreneurs who can utilize them to produce more knowledge-intensive, higher value-added goods and services;

(g) To support the emergence of new entrepreneurs and attract existing entrepreneurs from inside and outside the country to initiate new ventures on the basis of technologies that are new to the country;

(h) To develop mechanisms to facilitate joint research and development programmes involving the least developed countries and their development partners for the development of technologies in the prioritized sectors;

(i) To assist in designing financing mechanisms which enable innovation, customization and the successful application of transferred technologies in the least developed countries;

(j) To enhance the awareness of key stakeholders in the least developed countries that, to be effective, the transfer of technology from developed countries to

the least developed ones must be absorbed and adapted to reflect the realities and priorities of the recipient least developed countries.

4. Expected accomplishments

49. The expected accomplishments under the programme are as follows:

- (a) Operationalization of a digital technology transfer platform;
- (b) Delivery of regional activities to enhance common understanding of the concept of technology transfer;
- (c) Establishment of five subregional technology transfer offices.

5. Indicators of achievement

50. The indicators of achievement under the programme are as follows:

- (a) Establishment in the Bank of the digital technology transfer platform;
- (b) Conduct of five regional workshops on the technology transfer model;
- (c) Establishment of five subregional technology transfer offices.

6. Main activities

51. The Technology Bank, working in collaboration with the private sector, government ministries and agencies, universities, research institutes, educational institutions, private foundations and non-governmental organizations, will undertake the following activities:

- (a) Organization of five subregional workshops to introduce the concept of the technology transfer platform;
- (b) Development of the digital technology transfer platform in consultation with the key stakeholders, including the database where technology needs and solutions are displayed;
- (c) Establishment of subregional technology transfer offices.

7. Country coverage

52. All of the least developed countries will have access to and benefit from the services provided under the technology transfer programme.

C. Establishment and strengthening of national academies of science in the least developed countries

1. Background and rationale

53. Scientific inputs and advice are critical to informing policy on a range of global objectives, many of them encapsulated in the Goals, which underpin the 2030 Agenda, the global blueprint for the economic, social and environmental development of the planet. Several stakeholders are working actively to expand the contributions of science and scientific advice to achieving the Goals. At the same time, the landscape of global scientific advice continues to evolve, with an increasing number of new, established and reconfigured organizations and networks providing advice relevant to global policymaking. There is a growing imperative for the current complex set of scientific advisory systems to work more coherently and effectively, and for the identification and implementation of effective practices for science advice to policy.

54. Academies of science are unique institutions capable of being major conduits between government and civil society. They serve the very important purpose of advising Governments by providing authoritative and organized guidance on issues related to science and technology, thus benefiting both the economy and society and, as such, should play a major role in the development of national science and technology, as well as in sustainable development policies. However, in the least developed countries, many academies lack the resources to contribute actively to national debate, and in many cases, academies are non-existent. In order to ensure that the policy design, implementation and review are as rigorous and effective as possible, it is vital that academies of science be involved in the process. To that end, the programme has been designed to establish such academies in countries in which they do not exist and to strengthen them in the countries in which they are weak.

2. Relationship to the strategic plan of the Technology Bank

55. The programme is part of project 1 (science, technology and innovation policy and capacity-building). It is specifically geared towards supporting the establishment of academies of science in the least developed countries, with the eventual success of the academies being determined by their ability to drive policies, form partnerships and encourage interactions at all levels of science, technology and innovation.

3. Objectives

56. The goal of the programme is to strengthen the capacity of academies of science in the least developed countries to serve as advisers to the Government and to industry on science, technology and innovation and to assist in directing science and technology policies. Such an approach is aimed at ensuring that science, technology and innovation will support the achievement of sustainable development.

57. Academies of science in the least developed countries, established locally or regionally, as supported by the Technology Bank and in partnership with regional networks, academies in developed nations and the World Academy of Sciences for the advancement of science in developing countries, will provide information and advice on science, technology and innovation, usually by performing studies on policy issues at the request of appropriate authorities. In certain cases, academies will convene research and technology leaders to address relevant issues of importance to the country. Academies will use appropriate communication portals at regular intervals to inform all relevant parties of recent relevant developments throughout the country.

4. Expected accomplishments

58. The expected accomplishments under the programme are as follows:

(a) Establishment of a platform for regular dialogue between policymakers and scientists to ensure the involvement of academies of science in national policy debates and national commitments in supporting national policy formulation, implementation and overall monitoring under the 2030 Agenda;

(b) Capacity development programmes for existing academies of science in the least developed countries;

(c) Establishment of new academies of science in the least developed countries where none previously existed and fostering the commitment of core national leaders or stakeholders in science, technology and innovation to support the new academies;

(d) Charters for new academies drafted with the participation of the Government and the legislature.

5. Indicators of achievement

59. The indicators of achievement under the programme are as follows:

- (a) Preparation of draft charters for academies of science in four pilot countries;
- (b) Establishment of new academies of science by the national legislative body or other relevant authority;
- (c) Increased involvement of academies of science in national and regional science, technology and innovation policy forums;
- (d) Ability of the academies to devise policies, form partnerships and encourage interactions related to science, technology and innovation at all levels.

6. Main activities

60. In collaboration with the Economic Commission for Africa, the Economic and Social Commission for Asia and the Pacific, the Network of African Science Academies, the Association of Academies and Societies of Sciences in Asia and contracted experts, the Technology Bank will carry out the following activities, which are necessary for the creation of new academies and the strengthening of existing ones:

- (a) Four subregional consultations in Africa and one in Asia and the Pacific to understand the current status of academies in the least developed countries in those subregions, in order to identify the priority capacity development needs of existing academies and prepare a road map for the establishment of new academies;
- (b) Capacity development in collaboration with regional networks of academies and “champion” academies in developed and developing countries;
- (c) Organization of capacity development activities for existing academies;
- (d) Identification of opportunities for South-South exchanges among academies on effective resource mobilization strategies.

7. Country coverage

61. In 2020, the programme for the establishment of new academies will commence with four pilot countries. Thereafter, it is envisioned that such academies will be established in 10 countries every year.

D. Enhancing innovation capacity in the least developed countries

1. Background and rationale

62. Research and innovation are drivers and critical sources of structural transformation. Learning from successful experiences and identifying opportunities at the national and regional levels can be valuable steps towards leveraging the potential of science, technology and innovation for poverty eradication and sustainable development, in particular in areas that are critical for the least developed countries. An essential component of the process consists of identifying the mix of institutions, organizations and partnerships that can enable countries to transform their productive structures and assist them in shifting to activities that support their efforts towards poverty eradication and sustainable development.

63. Given that innovation plays a critical role in achieving the Goals, and that the ability to innovate and engage in partnerships can be a significant factor in ensuring

the success of efforts by the least developed countries to implement the Goals, innovation capacity-building programmes are intended to support the least developed countries as they review, build, adopt and implement technology solutions to address the socioeconomic challenges that they are facing.

64. Through the use of cutting-edge, frontier technology – such as blockchain, artificial intelligence, the Internet of things, financial technology (fintech) and drones – to address Goal-related challenges, innovation capacity-building programmes will establish national innovation laboratories in the least developed countries that will enhance the capacity to fully exploit technological innovation in order to resolve day-to-day challenges.

2. Relationship to the strategic plan of the Technology Bank

65. The programme is linked to project 1 (science, technology and innovation policy and capacity-building).

3. Objectives

66. The objectives of the programme are as follows:

(a) To design and implement a series of national innovation laboratories aimed at identifying priorities for science, technology and innovation problem-solving and taking stock of locally available and internationally relevant research findings, best practices, exemplary case studies of innovative approaches and strategies;

(b) To facilitate the commercialization of applied science developed in the least developed countries through entrepreneurship programmes, such as laboratory to market (lab-to-market);

(c) To develop local and regional collaborative innovation networks aimed at galvanizing the best practices and available resources identified in the innovation laboratory process and create measurable gains in the application of research towards innovation and progress in accomplishing the Goals;

(d) To offer stakeholders focused training in collaborative innovation and creative problem-solving skills at the individual, institutional and network levels, in order to galvanize stakeholders towards a robust, well-equipped stakeholder base poised to promote innovation for transformative change and sustainable development in their countries and regions.

4. Expected accomplishments

67. The expected accomplishments under the programme are as follows:

(a) The analysis of relevant policies and stakeholders, initiatives at the national level and compelling case studies of innovative programmes that may bear on the innovation support activities proposed;

(b) Design and implementation of a series of national innovation laboratories aimed at cataloguing best practices and available resources on key priorities identified by local partners;

(c) Development of a collaborative innovation capacity-building and training strategy to help leaders – researchers and policymakers, in non-profit organizations and the private sector – to overcome barriers to applying science, technology and innovation to solve problems;

(d) Design and activation of regional purpose-driven networks.

5. Indicators of achievement

68. The indicators of achievement under the programme are as follows:

- (a) Developing an overall concept note to serve as a general strategy document and road map;
- (b) Identifying stakeholder groups from various sectors, and representatives from each group;
- (c) Conducting innovation systems context analysis in each country;
- (d) Facilitation of action-oriented networks in the post-launch phase.

6. Main activities

69. The main activities under this programme are as follows:

- (a) Undertaking of detailed feasibility studies and production of strategy documents for the establishment of a technology innovation laboratory in selected countries;
- (b) Organization of extensive stakeholder consultations;
- (c) Outlining of a three-year operations strategy for each innovation laboratory;
- (d) Outlining of the administrative plan for the operationalization of each laboratory;
- (e) Outlining of a detailed resource mobilization strategy to support the operationalization of each laboratory.

7. Country coverage

70. In 2020, the programme will be launched in Uganda and in two other countries (to be selected).

E. Enhancing science, technology and innovation capacity in the least developed countries**1. Background and rationale**

71. Science, technology and innovation are the building blocks for economic growth and sustainable development. Capacity-building and skills development are integral to harnessing the transformative potential of the ongoing developments in science, technology and innovation. Over the past two decades, the exponential worldwide growth in technology, coupled with the increasing availability of Internet access, has significantly extended opportunities to gain access to information, communicate and collaborate, as well as to improve economic and social circumstances. However, many of the least developed countries have been unable to take advantage of such access owing to challenges with respect to infrastructure and costs and thus, large parts of the population of the least developed countries remain offline.

72. Building human and institutional capacity is critical for achieving the Goals. Goal 17 calls for enhanced international support for implementing effective and targeted capacity-building in the least developed countries in order to support national plans to implement all of the Goals. As science, technology and innovation act as an enabler of such development, the ongoing need for capacity and skills development is evident in most of the Goals. The Technology Bank, through its capacity-building efforts, can assist countries in acquiring not only technical or scientific knowledge

but also strategic, managerial and policymaking skills that will allow them to elaborate and implement science, technology and innovation strategies and programmes for development, inclusive public policies and effective means of governing.

2. Relationship to the strategic plan of the Technology Bank

73. The programme is linked to project 1 (science, technology and innovation policy and capacity-building), project 3 (digital research access and networking) and project 5 (intellectual property training and technical assistance) of the strategic plan of the Technology Bank.

3. Objectives

74. The primary objective of the programme is to enhance the science, technology and innovation-related capacities of representatives of government, universities, business and civil society in the least developed countries to ensure that there is a critical mass of expertise in science, technology and innovation within those countries. The specific objectives of the programme are as follows:

- (a) To increase the awareness of stakeholders in the public and private sector, universities and research institutions of the availability of scientific resources on the Research4Life platform;
- (b) To provide basic training in artificial intelligence and its challenges and opportunities;
- (c) To enhance the capacity of stakeholders in the least developed countries with respect to science, technology and innovation policies, tools, monitoring and evaluation frameworks and how they relate to the Goals;
- (d) To provide training on the use of satellite imagery for the mapping and monitoring of resources;
- (e) To provide general and specialized training for professionals in the field of intellectual property and the fundamentals of technology transfer.

4. Expected accomplishments

75. The expected accomplishments under the programme are as follows:

- (a) Increased access to and use of scientific and technical journals through the Research4Life platform;
- (b) Improved awareness and understanding of the contributions that artificial intelligence can make to national development;
- (c) Enhanced capacity to develop and implement sound science, technology and innovation policies and programmes;
- (d) Increased capacity to analyse satellite images for decision-making activities;
- (e) Increased awareness of issues relating to intellectual property, including industrial property, copyright and related rights.

5. Indicators of achievement

76. The indicators of achievement under the programme are as follows:

- (a) Number of user logins and institutions registered for access to the Research4Life platform;

(b) Number of citizens in the least developed countries trained in research skills, technologies and methodologies; in how to obtain access to and use the scientific resources on the Research4Life platform; in science, technology and innovation policies, tools, monitoring and evaluation frameworks and how they are related to the Goals; and in the use of satellite imagery for the mapping and monitoring of resources;

(c) Number of participants per training programme, with a detailed breakdown of participants by sector, institution, discipline, profession and gender;

(d) Number of workshops organized.

6. Main activities

77. The main activities under the programme are:

(a) A massive open online course on Research4Life will enhance the impact of the previously conducted capacity development activities with an online training tool that will cover the content for the following five Research4Life programmes:

- (i) Health InterNetwork Access to Research Initiative (Hinari);
- (ii) Access to Global Online Research in Agriculture (AGORA);
- (iii) Online Access to Research in the Environment (OARE);
- (iv) Access to Research for Development and Innovation (ARDI);
- (v) Global Online Access to Legal Information (GOALI).

The goal is to equip existing and potential users of the Research4Life programmes with the knowledge and skills required to gain access to and use the information effectively and efficiently, through an online training programme. Courses will be given throughout 2020, and participants in the least developed countries will be sponsored by the Technology Bank;

(b) A free online course in the elements of artificial intelligence will be actively promoted in the least developed countries at the highest level to encourage as broad a group of people as possible to learn what artificial intelligence is, what can and cannot be done with artificial intelligence and how to begin to create using artificial intelligence methods. The courses will combine theory with practical exercises and are self-paced. The course will be offered in partnership with the University of Helsinki;

(c) Training workshops and follow-up support through local networks will be the main focus of the programme. Beginning with five international workshops for the least developed countries, the training programme will introduce participants to the theory and practice of policies and programmes relating to science, technology and innovation. The programme will have three core elements: a conceptual framework for science, technology and innovation for the Goals; design and implementation of policies relating to technology and innovation; and monitoring, evaluation and learning relating to such policies and programmes;

(d) A course on the use of satellite imagery will provide participants with knowledge and understanding of satellite data processing and interpretation for all sectors. The course will be delivered in partnership with the United Nations Institute for Training and Research;

(e) A course on intellectual property rights will be open to all persons seeking to gain a general overview of intellectual property and will cover the fundamental aspects of intellectual property: copyright and related rights, trademarks, patents, geographical indications and industrial designs. It will also cover contemporary issues

that have an impact on the intellectual property field. The course will be offered in partnership with the World Academy of Sciences for the advancement of science in developing countries, the Japan Patent Office and the World Intellectual Property Organization.

7. Country coverage

78. The courses will be open to participants from all of the least developed countries.

Table 6

Resource requirements for the programme of work

(United States dollars)

<i>Object of expenditure</i>	<i>2018 expenditure</i>	<i>2019 approved</i>	<i>2020 estimate</i>
1. Staff and other personnel costs			
International staff	–	448 200	482 800
Consultants and experts	294 583	1 367 917	827 296
2. Travel			
Travel of staff	–	–	314 424
Travel of participants to meetings and workshops	156 002	1 373 999	933 700
Travel of resource persons/panellists	55 997	449 002	70 488
3. Contractual services	116 883	1 215 117	519 600
4. General operating expenses	–	5 000	–
Total	623 465	4 859 235	3 148 308

8. Staff and other personnel costs

79. An amount of \$482,800 will provide for the funding of three Programme Officer positions (P-4). The amount of \$827,296 will provide for the engagement of the consultants for the five programmatic areas (see table 6).

9. Travel

80. An amount of \$314,424 will provide for the travel of Technology Bank staff for their substantive and programmatic support to and participation in local consultations, workshops and courses. An amount of \$933,700 will support the travel of participants from the least developed countries in workshops, meetings and courses. An amount of \$70,488 will provide for the travel of resource persons and panellists to such meetings and workshops.

10. Contractual services

81. An amount of \$519,600 will provide for the cost of meetings and workshops and for the printing and layout services for the related reports.