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Evaluation of the Asian and Pacific Centre for Transfer of Technology**

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Evaluation of the Asian and Pacific Centre for Transfer of Technology (APCTT)

December 2023



ESCAP
Economic and Social Commission
for Asia and the Pacific

Evaluation of the Asian and Pacific Centre for Transfer of Technology (APCTT) of ESCAP

December 2023

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Commissioned by
ESCAP



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List of acronyms

ADB	Asian Development Bank
AIT	Asian Institute of Technology
APCICT	Asian and Pacific Training Centre for ICT for Development
APCTT	Asian and Pacific Centre for Transfer of Technology
APDIM	Asian and Pacific Centre for the Development of Disaster Information Management
APRIKNET	Asia-Pacific Regional Innovation Knowledge Network for Fourth Industrial Revolution Technologies
ACGF	ASEAN Catalytic Green Finance Facility
AISTDF	ASEAN-India S&T Development Fund
ASCCR	ASEAN State of Climate Change Report
ASEAN	Association of Southeast Asian Nations
CEFIA	Cleaner Energy Future Initiative for ASEAN
COP	Conference of the Parties
CSAM	Centre for Sustainable Agricultural Mechanization
DOST	Department of Science and Technology (Philippines)
DST	Department of Science and Technology (India)
ECOSOC	Economic and Social Council
ED	Energy Division
EDD	Environment and Development Division
ESCAP	United Nations Economic and Social Commission for Asia and the Pacific
GC	Governing Council
GCF	Green Climate Fund
GRIND	Grassroots Innovation for Inclusive Development
IDD	Information and Communications Technology and Disaster Risk Reduction Division
IGES	Institute for Global Environmental Strategies
IIM	Indian Institute of Management
IIT	Indian Institute of Technology
ITU	International Telecommunication Union
KECF	Korea-ESCAP Cooperation Fund
MEA	Ministry of External Affairs
MOU	Memorandum of Understanding

NEACAP	North-East Asia Clean Air Partnership
ROK	Republic of Korea
SACEP	South Asia Cooperative Environment Programme
SDG	Sustainable Development Goal
SDD	Social Development Division
SIAP	Statistical Institute for Asia and the Pacific
SPMD	Strategy and Programme Management Division
SRO-ENEAS	Subregional Office for East and North-East Asia
SRO-NCA	Subregional Office for North and Central Asia
SRO-Pacific	Subregional Office for the Pacific
SRO-SEA	Subregional Office for South-East Asia
SRO-SSWA	Subregional Office for South and South-West Asia
TD	Transport Division
TIID	Trade, Investment and Innovation Division
TOC	Theory of Change
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNCT	United Nations Country Team
UNDP	United Nations Development Program
UNEG	United Nations Evaluation Group
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change ⁴
UNIDO	United Nations Industrial Development Organization
UNFPA	United Nations Population Fund
UNRC	United Nations Resident Coordinator
UNRCO	UN Resident Coordinator's Office
UNTB	United Nations Technology Bank

Executive summary

Background of the evaluation

Established in 1997, the Asian and Pacific Centre for Transfer of Technology (APCTT) is one of the five regional institutes of the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP). It is governed by a Governing Council which advises on the formulation and implementation of the programme of work and reviews the administration and financial status of the Centre. In 2015, ESCAP members and associate members decided through resolution 71/1 on “Restructuring the conference structure of the Commission to be fit for the evolving post-2015 development agenda” to review each regional institution's continued substantive relevance and financial viability every five years. In response to this mandate, the ESCAP secretariat commissions an independent evaluation of each regional institution every five years to inform the above-mentioned review by the Commission. The first evaluation of APCTT was completed in December 2018, and the Commission considered its report at its 75th session held in May 2019. The current evaluation covers the period 2019-2023.

Purpose and scope

The purpose of the evaluation is to provide the Commission with an impartial and reliable body of evidence regarding APCTT's performance. This will facilitate the deliberations during the 80th session of the Commission in May 2024 on APCTT's continued relevance and financial viability. The evaluation also provides ESCAP management with forward-looking actionable recommendations to improve the results orientation and performance of the Centre. The specific objectives of the evaluation are to: (a) assess the results achieved and performance of APCTT using the standard evaluation criteria, including impact, relevance, effectiveness, efficiency, and gender mainstreaming; (b) determine ways to enhance the results-orientation of APCTT and identify specific outputs and delivery modalities that are most relevant to the member States, based on needs expressed by relevant stakeholders; and (c) recommend actions for improving the results orientation and performance of the Centre.

Methodology

The evaluation analysed the level of achievement of the Centre's results, making use of the Centre's results framework, implementation processes and contextual factors, establishing as much as possible causal linkages guided by the evaluation criteria and questions. It focused on the significant contributions of APCTT at the regional level and to the development of government policies and programmes at the national level. The following activities were carried out: desk review of relevant documents; in-depth individual interviews in person or via audio/video call of selected APCTT stakeholders; consultations with relevant ESCAP secretariat staff and members of the Reference Group; and electronic survey targeting members of the APCTT Governing Council, APCTT focal persons and other relevant government officials, and implementing partners and participants in various APCTT activities. The evaluation was conducted from 15 August to 31 December 2023.

Main findings and conclusions

The evaluation has found evidence that the work of APCTT has made **satisfactory impact** on the STI ecosystem of some of the member States. To cite just a couple of examples, the work of APCTT greatly impacted the creation and implementation of the Philippines' Grassroots Innovation for Inclusive Development (GRIND) Program, and enabled Uzbekistan to create a platform that enables it to obtain knowledge of technologies from other member States that can be transferred to and adopted by Uzbekistan and vice versa.

The evaluation has found evidence that the work of APCTT is **effective** and useful for enhancing awareness and promoting regional cooperation among its member States. The Centre has achieved its objectives

primarily in the area of capacity development, and to some extent in policy support; and its knowledge products and publications and technology databases have effectively complemented and supported the Centre's capacity building and policy support programmes and initiatives.

The evaluation has found evidence that the work of APCTT is **highly relevant** to the needs and aspirations of its member States. The relevance of the work of APCTT has been recognized by the Governing Council, the member States, and other stakeholders; and the Strategic Plan 2023-2027 has made the Centre even more relevant by aligning its priorities with the SDGs and the regional priorities.

The evaluation found evidence that the APCTT was **efficient** in delivering its programs, projects and activities. Even with a lean staff, the Centre was able to deliver an impressive number of activities (meetings, conferences, workshops, seminars) during the period in review. However, while perceived to be efficient in delivering its work, there is still room and need for further improvement.

The evaluation found evidence that the APCTT is **sustainable**. The Centre has attained some level of financial sustainability with the significant increase in the contribution of the host country, while the formulation and adoption of the Strategic Plan 2023-2027 has greatly improved the Centre's programmatic sustainability. The Centre's proposed partnership framework can further enhance its overall operational sustainability.

The evaluation found evidence that the APCTT has a **highly satisfactory** performance with respect to gender mainstreaming. The Centre is endeavouring to mainstream gender, disability inclusion and other cross-cutting issues into its programs, projects and activities; and it fully embraces gender mainstreaming and integrates it within the organization and throughout project implementation.

Recommendations

The APCTT Strategic Plan 2023-2027 already contains several recommendations for implementation over the five-year planning period. In conceptualizing this report's recommendations, this consultant exerted much effort to avoid duplication or overlap with the Plan's recommendations. Thus, this report offers the following five (5) action-oriented recommendations addressed to ESCAP management:

Recommendation 1: Develop novel and creative strategies to secure funding, develop partnerships, and prioritize implementation of the initiatives identified in the Strategic Plan 2023-2027.

Among the possible novel and creative strategies would be for APCTT to develop partnerships with subregional organizations such as ASEAN, with development institutions such as the Asian Development Bank (ADB), and with other sources of funding to implement the initiatives identified in the Strategic Plan. The ASEAN Consolidated Strategy in 4IR has many elements in common with the APCTT Strategic Plan in that it seeks to leverage technology to build resilience and a globally competitive economy that embraces innovation and contributes to sustainable development. The APCTT can also explore partnership with ASEAN for initiatives to be co-funded by APCTT/Government of India and the ASEAN-India S&T Development Fund (AISTDF) and/or the Cleaner Energy Future Initiative for ASEAN (CEFIA).

Recommendation 2: Give top priority to developing and implementing online capacity building courses on technology transfer and commercialization as well as in selected areas identified in the Centre's Strategic Plan (2023-2027).

The online certificate course will be a self-paced but supervised course through the Internet, where participants learn at their own schedule, for the purpose of learning how to transform inventions into innovations and acquire knowhow of the technology transfer and patent commercialization process. At the end of the course, participants will have the skill to become practitioners in technology transfer and intellectual property (IP) commercialization process armed with adequate knowledge of the process steps and critical factors that lead to transform early technology opportunities into successfully commercialized innovations. The course may be developed and implemented in partnership with a university (e.g., Indian Institute of Technology) or with an existing international technology transfer organization (e.g., The

Transfer Institute, CITI Program on Technology Transfer). An affordable course fee may be charged but scholarships, fellowships, or some form of financial support may be provided by APCTT to interested government officials (or other individuals endorsed by the Governing Council) in member States. Those who successfully complete all course requirements will be issued a certificate of completion.

Recommendation 3: Develop and implement a multi-year, donor-funded project comprising, among others, of a series of knowledge-sharing workshops in each of the Asia-Pacific subregions on research and development and innovation to address social and technological issues related to energy transition and renewable technologies, climate resilient infrastructure in cities, and digital and 4IR technologies.

This proposed workshop would be aimed at promoting mutual learning; seeking opportunities for cooperation among innovation actors; and promoting the active engagement of different stakeholders in the development of technological and innovative solutions. This is in line with the proposal from the representative of the Republic of Korea to organize online or onsite knowledge-sharing workshops on research and development and innovation to address local social issues such as energy transition through cooperation with the Centre and its member States within a financially viable scope.

Recommendation 4: Exert greater effort and put more emphasis on enhancing the visibility of APCTT.

Despite its long existence, APCTT remains relatively unknown, particularly among private corporations, venture capitalists, industry associations, and the like. As identified in the Strategic Plan, the Centre suffers from the following weaknesses: inadequate interface with private sector, start-up entrepreneurs, and similar institutions; inadequate use of large pool of linked technical experts for cross-regional support; and inadequate conversion of diverse conferences into mentorship, country action plans, and links to technical and financial mechanisms. Accordingly, APCTT ought to enhance its visibility among its stakeholders by, among others, (a) developing and implementing a communication and information strategy to make known its experience and expertise in technology transfer and commercialization; (b) producing promotional materials to improve visibility and awareness among its key stakeholders; and (c) explore opportunities for collaboration, particularly with the private sector and industry groups, as well as universities and academic institutions, for shared activities.

Recommendation 5: Consider possible amendment of the APCTT statute by proposing to delete the phrase “no fewer than” from the statute to make GC membership uniform among all regional institutes.

Among the five ESCAP regional institutes, only APCTT can have more than eight GC members in addition to the member from the host government. The APCTT statute states that “the Centre shall have a Governing Council consisting of a representative designated by the Government of India and no fewer than eight representatives nominated by other members and associate members of ESCAP elected by the Commission.” On the other hand, the statutes of all the other regional centres state that in addition to the representative from the host government, the centres shall have “eight representatives nominated by other members and associate members of ESCAP elected by the Commission.” The Secretary of the Commission floated the idea of setting the number of APCTT GC members to eight to make it uniform with the other regional institutes, which was supported by several ESCAP officials.

1. Introduction

The Asian and Pacific Centre for Transfer of Technology (APCTT) is one of the five regional institutes of the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP). It was established in 1977 to strengthen the capacity of member States to nurture and promote national innovation systems and to create an enabling environment for the development and transfer of technology. The APCTT was originally located in Bangalore as the Regional Centre for Transfer of Technology. It was renamed as APCTT in 1985 and moved to New Delhi in 1993 with host facilities provided by the Government of India. Its activities focus on science, technology, and innovation; technology transfer; regional cooperation; and technology intelligence.

The Centre is governed by a Governing Council which advises on the formulation and implementation of the programme of work and reviews the administration and financial status of the Centre. It consists of a representative designated by the Government of India and no fewer than eight representatives¹ nominated by other members and associate members of ESCAP elected by the Commission for a period of three years. The present Governing Council, elected for a tenure of three years (2023-2026), comprises eleven member States, namely, Bangladesh, China, India, Islamic Republic of Iran, Pakistan, Philippines, Republic of Korea, Russian Federation, Tajikistan, Thailand, and Uzbekistan.

In 2015, ESCAP members and associate members decided through resolution 71/1 on “Restructuring the conference structure of the Commission to be fit for the evolving post-2015 development agenda” to review each regional institution's continued substantive relevance and financial viability every five years. In response to this mandate, the ESCAP secretariat commissions an independent evaluation of each regional institution every five years to inform the above-mentioned review by the Commission. The first evaluation of APCTT was completed in December 2018, and the Commission considered its report at its 75th session held in May 2019.

The 2018 evaluation provided conclusions and action-oriented recommendations to enhance the performance of the Centre. It found that the mandate of the Centre remained relevant in the context of the ongoing reform of ESCAP and the 2030 Agenda. The evaluation found that the Centre delivered capacity-building activities efficiently despite its limited financial and human resources. However, under those limitations, it concluded that the effective operations of the Centre could not be sustained in the future. Based on the findings and conclusions of the evaluation, six recommendations were proposed for improving the financial sustainability of the Centre through increased contributions from the host government and other members and associate members of ESCAP. The evaluation also recommended strengthening partnership arrangements with the private and non-governmental sectors and giving more significant focus on the transfer, dissemination, and diffusion of emerging and environmentally sound technologies in developing countries.

The current evaluation is commissioned by the Strategy and Programme Management Division of ESCAP and covers the work of APCTT from 2019 to 2023 in member countries of Asia and the Pacific, ensuring subregional representation and balance between beneficiary countries and underserved countries. The evaluation focused on the significant contributions of APCTT at the regional level and to the development of government policies and programmes at the national level. The following activities were carried out in preparation of this report, namely, desk review of relevant documents; in-depth individual interviews in person or via audio/video call of selected APCTT stakeholders; consultations with relevant ESCAP secretariat staff and members of the Reference Group; and electronic survey targeting members of the APCTT Governing Council, APCTT focal persons and other relevant government officials, and

¹ During the interview, the Secretary of the Commission, ESCAP, floated the idea of setting the number of GC members to eight to make it uniform with the other regional institutes.

implementing partners and participants in various APCTT activities. The evaluation was conducted from 15 August to 31 December 2023.

The purpose of the evaluation is to provide the Commission with an impartial and reliable body of evidence regarding APCTT's performance. This will facilitate the deliberations during the 80th session of the Commission in May 2024 on APCTT's continued relevance and financial viability. The evaluation also provides ESCAP management with forward-looking actionable recommendations to improve the results orientation and performance of the Centre. The specific objectives of the evaluation are to:

- Assess the results achieved and performance of APCTT using the standard evaluation criteria, including impact, relevance, effectiveness, efficiency, and gender mainstreaming.
- Determine ways to enhance the results-orientation of APCTT and identify specific outputs and delivery modalities that are most relevant to the member States, based on needs expressed by relevant stakeholders.
- Recommend actions for improving the results orientation and performance of the Centre.

This evaluation assessed the impact, relevance, effectiveness, efficiency, sustainability, and gender equality, disability inclusion, and human rights mainstreaming of the Centre. It was intended to inform future programme design and provide lessons learned for possible future programming for relevant ESCAP capacity development work. The evaluation analysed the level of achievement of the Centre's results, making use of the Centre's results framework, implementation processes and contextual factors, establishing as much as possible causal linkages guided by the evaluation criteria and questions.

Evaluation Criteria	Evaluation Questions
Impact	<ul style="list-style-type: none"> • What have been the significant contributions of APCTT at the regional and to the development of government policies and programmes at the national level? • How could APCTT further enhance the results-orientation of its work?
Relevance	<ul style="list-style-type: none"> • Is the work of APCTT relevant to member States? • Do member States find the activities of APCTT useful for enhancing national capacity? • To what extent has APCTT adjusted to the changing needs of member States?
Effectiveness	<ul style="list-style-type: none"> • How effectively has APCTT contributed to member State capacity to adopt emerging and innovative technologies for sustainable development? • To what extent has APCTT enhanced the capacity of member State officials to adopt/adapt emerging and innovative technologies? • How many policy and decision makers participated in relevant capacity building projects and activities?
Efficiency	<ul style="list-style-type: none"> • How efficiently has APCTT utilized its human and financial resources to meet the needs of member States? • Do the outputs of projects and activities justify the cost of such projects and activities? • Did project activities unnecessarily duplicate similar activities by external parties?

<p>Sustainability</p>	<ul style="list-style-type: none"> • What is the likelihood that the APCTT’s operations will be sustained in the future? • What commitments have been made by member States to contribute to the Centre’s operating funds? • How much do member States support the full implementation of the Centre’s Strategic Plan 2023-2027?
<p>Human rights, gender equality and disability inclusion</p>	<ul style="list-style-type: none"> • To what extent have human rights, gender equality and disability inclusion been mainstreamed into the design and implementation of the work of APCTT? • What could be done to enhance human rights, gender equality and disability inclusion in the Centre’s work?

The evaluation was conducted in line with ESCAP Monitoring and Evaluation Policy and Guidelines and the United Nations Evaluation Group (UNEG) norms and standards for evaluation. The main users of the evaluation results are ESCAP, particularly the Asia and Pacific Centre for Technology Transfer and the Strategy and Programme Management Division. Other expected users include the Centre’s member countries and partners.

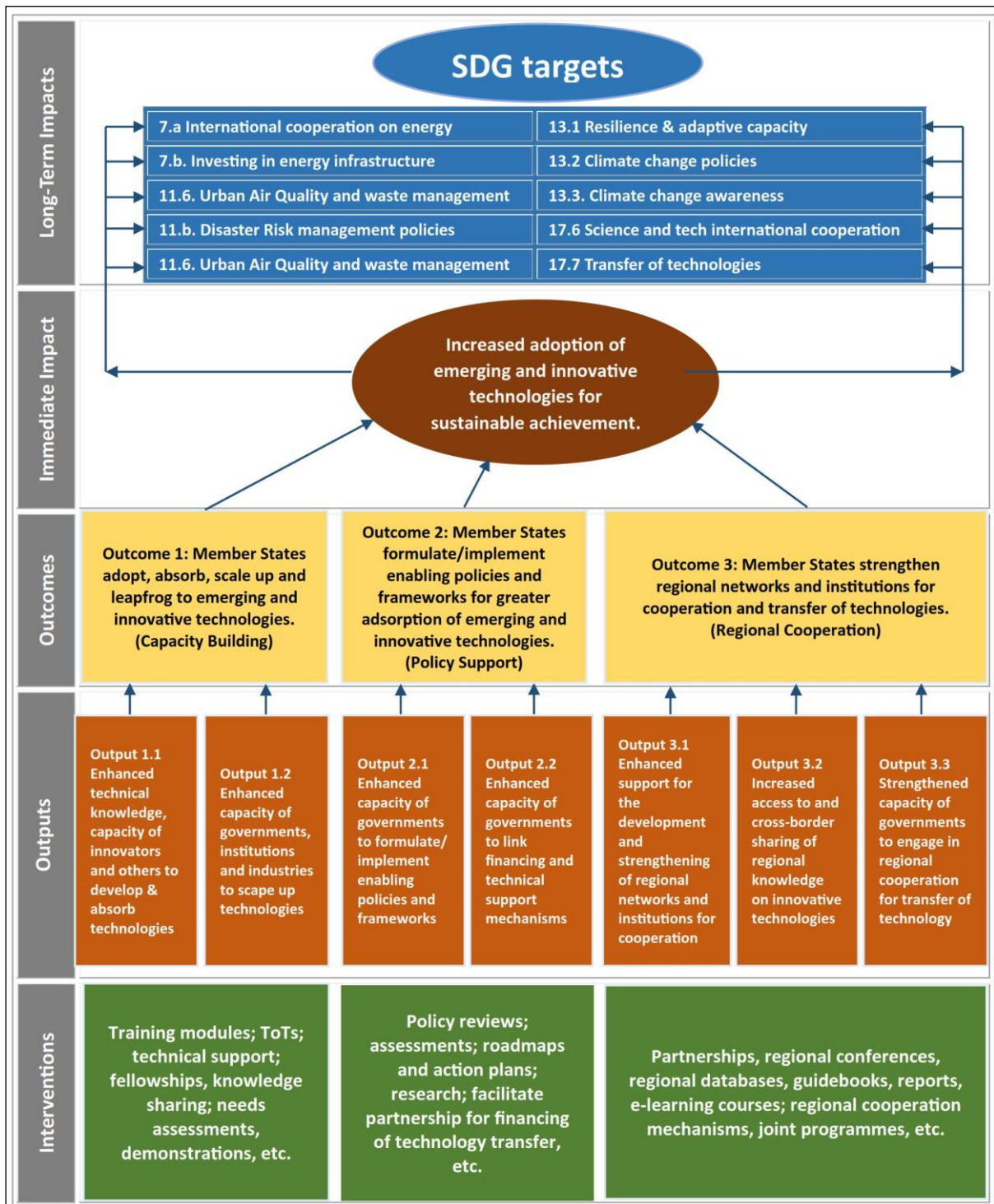
2. Description of the subprogramme

The Centre has evolved over the years as a technology transfer organization. In the 1980s, the primary focus was on strengthening science and technology policies of member States. The emphasis shifted to facilitating technology incubators in the 1990s, and strengthening national innovation systems, strategies, technology transfer and networking in the 2000s. It promoted technology-based sustainable development and built capacities, promoted knowledge transfer and regional cooperation with a focus on renewable energy, sustainable agricultural technologies, nanotechnology, and fourth industrial revolution technologies. From 2020 onwards, there has been an increasing demand on APCTT to focus on emerging and innovative technologies to support member States build back better from Covid and respond to climate change and disasters in the Asia-Pacific region.

To ensure its relevance to the changing needs of the region, APCTT maintains close linkages with national focal points in member States, other providers and users of technology and bodies involved in the management of innovation and technology transfer such as national ministries of science and technology, regional and national scientific research and development institutions, academic research institutions, industry associations, ESCAP regional institutes, and United Nations Country Teams, among others. The Centre's annual programme of work is designed based on the capacity-building needs of member States as expressed during the Governing Council sessions held every year.

In line with the recommendation of the Governing Council at its 17th session in December 2021 "to develop a strategic plan and redesign the work programme to bring it into alignment with the current priorities and needs of the member States," the Centre prepared a strategic plan covering the period 2023-2027. It outlines the vision of APCTT to "enhance regional cooperation for innovation, adoption, diffusion and transfer of innovative and emerging technologies in the Asia-Pacific region for addressing climate change and achieving SDGs". The APCTT Strategic Plan 2023-2027 was adopted at the 18th session of the Governing Council in December 2022 and the report of the 18th GC was adopted at the 79th session of the Economic and Social Commission of Asia and the Pacific in May 2023. The Theory of Change flowchart based on the new strategic plan is shown in Figure 2.1. A more detailed description of the theory of change is presented in Annex 2.

Figure 2.1 Theory of Change APCTT Strategic Plan 2023-2027

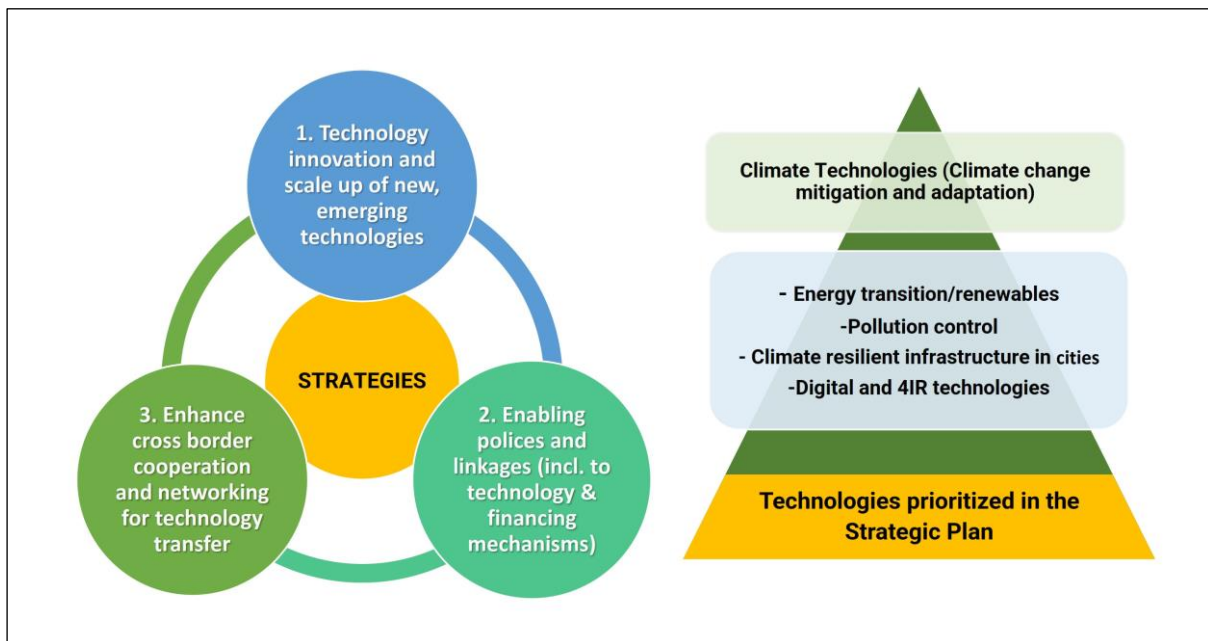


The issues addressed by the Centre and the relevant key social, political, economic, demographic, and institutional factors are addressed in varying lengths in the APCTT Strategic Plan, which covers three strategies: (a) Technology innovation and scale-up of new, emerging technologies; (b) Enabling policies and linkages (including technology and financing mechanisms); and (c) Enhance cross-border cooperation and networking for technology transfer. The following four areas have been prioritized in the Strategic Plan: (a) Energy transition and renewable technologies; (b) Climate resilient infrastructure in cities; (c)

Digital and fourth industrial technologies (4IR)²; and (d) Air pollution technologies. The strategic plan also presents an illustration of the interventions and their key assumptions based on a theory of change, including activities, outputs, outcomes, and impact (Annex 2).

Significant changes have been made in the Centre’s strategies as embodied in the Strategic Plan 2023-2027. The APCTT is now focusing on three interlinked strategies and seven pathways to meet its key objectives as illustrated in Figure 2.2.

Figure 2.2. APCTT’s Strategic Framework



The Centre’s strategies include the following:

Strategy 1: Technology innovation and scale-up of new, emerging technologies.

- Enhance skills, capacities and availability of technical personnel in member States on technologies prioritized by APCTT.
- Provide technical support in member States in technology assessments.

Strategy 2: Enabling policies and linkages, including technology and financing mechanisms.

- Strengthen national technology policies for innovation and adoption of technologies prioritized by APCTT.
- Link national stakeholders to financing and technology support mechanism.

Strategy 3: Enhance cross-border cooperation and networking for technology transfer.

- Strengthening regional frameworks, networks and institutions.
- Facilitate cross-border knowledge management.
- Strengthen regional cooperation mechanism on transfer of emerging technologies.

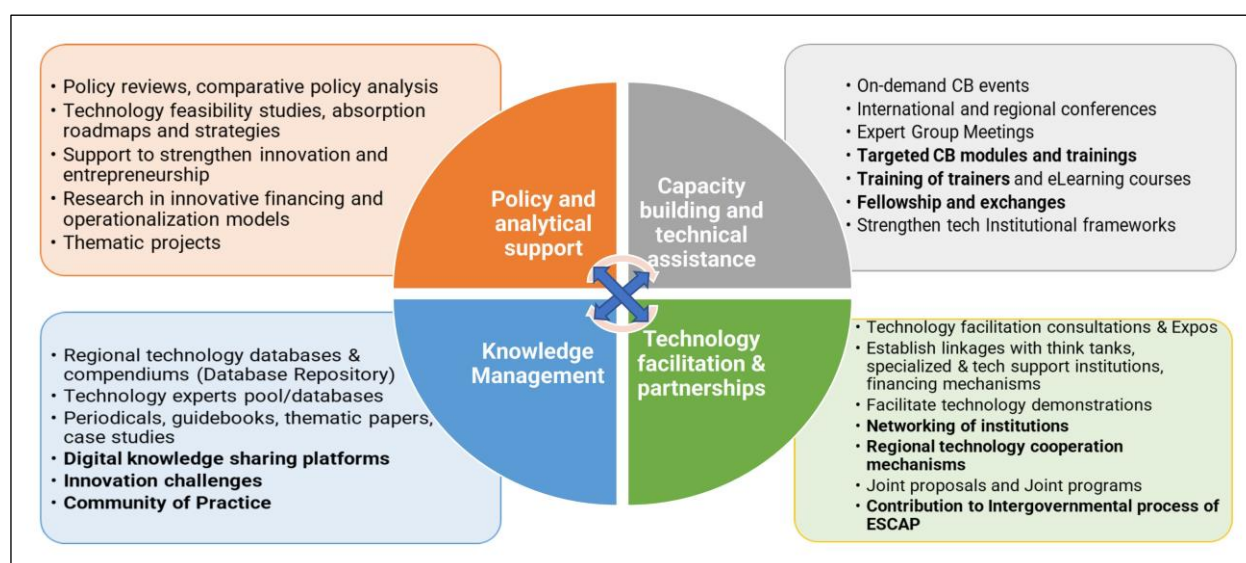
The Centre works on technologies related to achievement of the Sustainable Development Goals on two tracks of intervention, namely:

² Emerging technologies include new renewable energy technologies and 4IR technologies (AI, Blockchain, IOT and Bigdata technologies) for their application in climate change mitigation and adaptation.

- On-demand intervention tracks: This involves continuing to provide on-demand technical support, policy advice and capacity building in areas identified by member States for achieving the SDGs.
- Focused intervention track on technologies prioritized in the Strategic Plan: This involves developing a focused track on technologies related to climate change to meet the SDGs for the Asia-Pacific region, namely, energy transition and renewables; pollution control; climate resilient infrastructure in cities; and digital and 4IR technologies.

Figure 2.3 presents the key modalities or service lines that APCTT uses to implement the strategies.

Figure 2.3. Implementation Modalities



In line with the recommendation of the 2018 evaluation “that the host country ... increase its financial contribution to the Centre over an agreed period to a level comparable to that contributed by Governments hosting other ESCAP regional institutions.” the annual contribution of the host country to the APCTT has more than quadrupled from USD 201,745 in 2018 to USD 857,127 in 2022 (Table 2.1).

Table 2.1. Annual Contributions to APCTT (USD)

Year	Total	India	Percentage of India Contribution
2018	364,392	201,745	55.4
2019	445,988	233,492	52.4
2020	969,969	854,602	88.1
2021	1,068,425	869,373	81.4
2022	1,214,070	857,127	70.6
AVERAGE	812,569	603,268	69.6

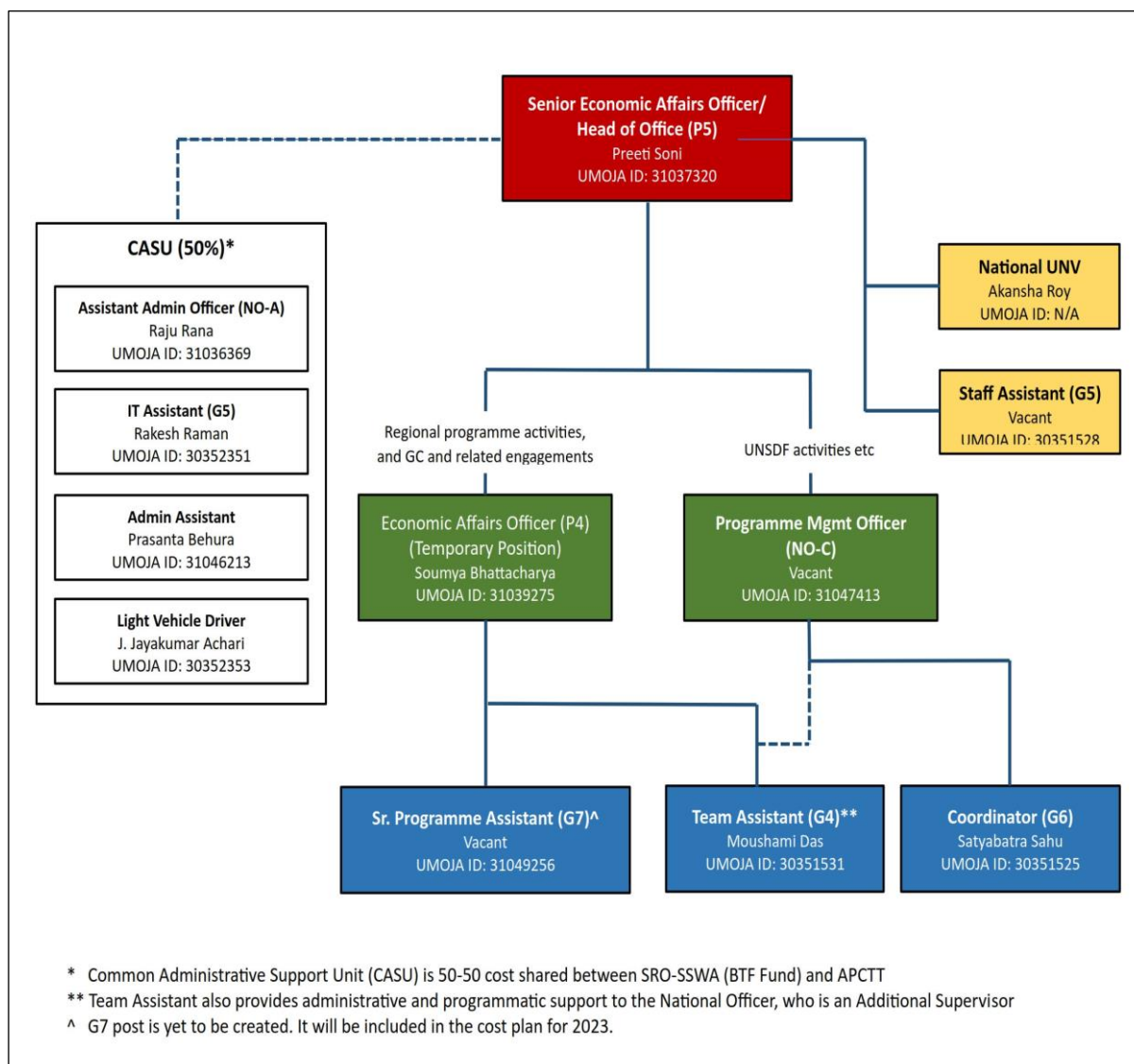
Source: Reports of APCTT Governing Council

As a result, the percentage contribution of the host government increased to a level ranging from 71-88 percent in 2020-2022 from 52-55 percent in 2018-2019. Furthermore, the total annual contribution of member States to APCTT in 2022 increased to a level comparable to that contributed by member States to other ESCAP regional institutions.

However, the average annual expenditure of APCTT during the period in review (2018-2022) was still the lowest among all the five ESCAP regional institutes, which could be a reflection of the APCTT’s relatively smaller staff complement and fewer activities (see Annex 8). As with other ESCAP regional institutes, APCTT also reported end-of-year fund balances, which might be indicative of the Centre’s improved financial sustainability.

The APCTT has a lean organization comprising basically of a Senior Economic Affairs Officer and Head of Office (P5), an Economic Affairs Officer (P4) (Temporary Position), and a Coordinator (G6). The organizational structure (version July 2023) is shown in Figure 2.4.

Figure 2.4. APCTT Organizational Structure



3. Evaluation methodology

3.1 Evaluation approach

The evaluation applied a mixed-method, inclusive and participatory approach through a combination of quantitative and qualitative analysis to inform findings. It utilized a mixture of primary and secondary sources of data and information from the desk review of relevant documents, publications and reports, as well as from interviews of key informants. The evaluation applied multiple methods, and cross-check information and data from various sources to ensure confidence in the findings. Such an approach helped ensure the generation of valid evidence for accountability, transparency, and the desired learning points from the evaluation. The evaluation matrix is presented in Annex 3.

3.2 Data collection and analysis

To meet the evaluation's purpose, scope and objectives, a desk review of relevant documents and reports was made augmented by consultations via video/audio call with relevant ESCAP secretariat staff and members of the Reference Group to get a better understanding of the different aspects of the project including its design and implementation and provide a useful basis for collecting other relevant data. The consultant also consulted the Evaluation Unit, SPMD, which manages and oversees the entire evaluation process. Through the Evaluation Unit, the Centre was requested to provide information on the impact of its work at the regional and country level.

In-depth individual interviews via video/audio call were also made with relevant government stakeholders, development partners, project management, and relevant UN entities. An electronic survey was administered targeting government officials, implementing partners, and workshop participants.

To help ensure data availability and responsiveness, information concerning project implementation were obtained from the survey of participants in meetings, symposia and workshops as well as the consultants and experts involved in the project and stakeholders selected by the project implementors. Survey respondents and individual interviewees were selected to include representation from officials of member States, particularly APCTT focal points, and selected ESCAP officials and APCTT staff, collaborators and partners.

The data were validated and analysed by triangulating the results of the interviews and the survey with data obtained from the desk review of reports and relevant documents as well as the information provided by APCTT. Through data triangulation the findings can be corroborated and any weaknesses in the data can be compensated by the strengths of other data, thereby increasing the validity and reliability of the results. Whenever possible, the data collected are disaggregated by gender.

3.3 Stakeholder analysis

The stakeholders include the APCTT staff, APCTT member States, particularly the members of the Governing Council and the country focal points, relevant ESCAP divisions, subregional offices, and regional institutes, APCTT cooperating and implementing partners, other UN entities, including the UN Country Team in India, relevant regional/international organizations, and participants in APCTT projects and activities.

The Governing Council comprises eleven member States, namely Bangladesh, China, India, Islamic Republic of Iran, Pakistan, Philippines, Republic of Korea, Russian Federation, Tajikistan, Thailand and Uzbekistan. The National Focal Points include representatives from fifteen countries, namely, Bangladesh, China, Fiji, India, Indonesia, Islamic Republic of Iran, Kazakhstan, Malaysia, Pakistan, Philippines, Republic of Korea, Sri Lanka, Thailand, Uzbekistan, and Vietnam.

The most relevant divisions of ESCAP include the Strategy and Programme Management Division, Trade, Investment and Innovation Division, Information and Communications Technology and Disaster Risk Reduction Division, Environment and Development Division, Energy Division, Transport Division, and the Subregional Office for South and South-West Asia. The other programme divisions, subregional offices, and regional institutes are also selectively included.

The United Nations Country Team in India including, among others, UNDP, UNEP, UNIDO, UNRCO, UNRC, UNFPA, UNAIDS, is also an important APCTT stakeholder.

The Governing Council, the National Focal Points, and ESCAP are the primary stakeholders while cooperating and participating organizations and UN entities in APCTT projects and activities constitute the secondary stakeholders. The stakeholders were involved in the evaluation through face-to-face and/or virtual interviews and electronic evaluation survey.

The main beneficiaries of the work of APCTT are the member countries in Asia and the Pacific. The primary target countries are the less developed and developing countries, in particular, the small island developing countries, in the region that need appropriate, clean and affordable technologies for their sustainable development. The key partners and their respective roles are summarized in Table 3.1.

Table 3.1. Key partners and their roles

Key Partners	Role of Partners
Country Focal Points	Guide and steer APCTT’s work programme. Participate in interventions including policy discussions, identifying and getting country technical personnel in accessing capacity building programmes and participating in knowledge management systems.
International emerging technology institutions (e.g., UNTB, etc.)	Engage with APCTT and its member States to bring in knowledge, networks and ideas for technology transfer in technologies prioritized by the Strategic Plan.
Academic institutions (e.g., IIT, AIT, IIM, etc.)	Design capacity building modules in emerging and niche technologies to be made available to APCTT member State personnel.
International universities and organizations	Partner in knowledge management and capacity building programmes of APCTT.
R&D institutions	Ensure that innovation in emerging technologies is developed and made available for scaling up to member governments after validation by APCTT and resource institutions.
UN Country Teams	Engage with national governments to make necessary changes in national policies and ecosystems to support the scaling up of emerging technologies.
Venture capitalists, investors, funds	Provide financial mechanisms for technology adoption of identified emerging technologies.
Think tanks	Input into the policy and systemic frameworks.
Industry associations and private companies	Ensure transfer of knowledge, skills and capacities to micro, small and medium enterprises and to integrate their concerns in national policy and industry ecosystems.
Civil society organizations	Ensure that communities are able to access requisite technologies and benefit from methods and technologies for enhanced resilience.

Science and technology media	Ensure that information about technology changes and the availability of emerging technologies are kept at the forefront of the consciousness of all stakeholders.
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In addition, APCTT has collaborated and will continue to collaborate with ESCAP's regional institutes, subregional offices, and substantive divisions in various ways, including, among others, supporting other regional institutes in developing and sharing training modules, providing space for substantive divisions to tap into APCTT networks, work together on selected regional events such as Asia-Pacific Climate Week and UNFCCC COP, and provide support for needed technology solutions.

3.4 Sampling

To help ensure data availability and responsiveness, information concerning the Centre's performance and results were obtained primarily from the survey of participants in the various workshops and meetings as well as the consultants and experts involved in the Centre's activities and stakeholders selected by the project implementors. Survey respondents and individual interviewees were selected to ensure fair and unbiased evaluation by having even representation from APCTT and ESCAP staff, APCTT member States, Governing Council members, National Focal Points, APCTT cooperating partners, other UN entities, and regional/international organizations.

A total of 19 face-to-face interviews were conducted (9 in Bangkok and 10 in New Delhi) and 15 online (MS Teams) interviews were made from Manila (see Annex 5). Three different survey questionnaires were sent out separately. There were 7 survey responses from members of the Governing Council and member States, 42 (41 complete, 1 partial) from APCTT collaborators and partners, and 5 from ESCAP management and staff.

The collected data from APCTT activities were disaggregated by gender, if available (Table A8.4, Annex 8).

3.5 Cross-cutting issues

The evaluation assessed whether during the period in review (2019-2023), the APCTT had consciously taken into consideration human rights, gender equality and disability inclusion perspectives in the hiring of staff and in the implementation of projects and other activities. The primary focus of the gender and disability assessments was on the substantive consideration of gender and disability inclusion in the analytical work, and the degree to which these insights were considered. Secondary focus was on gender and disability participation in the various capacity building activities of the Centre as well as in the efforts of APCTT to attain some degree of gender equality. Human rights and disability inclusion perspective was also considered in the evaluation.

3.6 Ethical considerations

The evaluator assumes overall responsibility for carrying out the evaluation in an objective and independent manner. This includes, among other activities, managing the work, ensuring the quality of interviews and data collection, preparing the draft report, presenting the draft report, and producing the final report after comments have been received in line with standard templates provided by ESCAP. The evaluator adheres to the UNEG Ethical Guidelines and Code of Conduct in evaluation, specifically to the following obligations, among others:

- Independence. Ensure that independence of judgement is maintained, and that evaluation findings and recommendations are independently presented.
- Impartiality. Operate in an impartial and unbiased manner and give a balanced presentation of strengths and weaknesses of the policy, program, project or organizational unit being evaluated.

- Conflict of Interest. Disclose in writing any past experience, of themselves, which may give rise to a potential conflict of interest.
- Competence. Accurately represent their level of skills and knowledge and work only within the limits of their professional training and abilities in evaluation.
- Accountability. Be accountable for the completion of the agreed evaluation deliverables within the timeframe and budget agreed.
- Confidentiality. Respect people's right to provide information in confidence and make participants aware of the scope and limits of confidentiality.

3.7 Risks and limitations

The success of the evaluation is contingent on the support and cooperation of the various informants and stakeholders during the conduct of the survey and interviews. The selection of the various informants and stakeholders is of utmost importance to ensure that there is no bias and that all views (positive or negative) are heard for a well-balanced assessment. Key limitations of the evaluation include a lack of sufficient outcome level results reported on APCTT reports. This may be mitigated by relying on extensive surveys and interviews and consulting with a wide range of stakeholders, including other UN entities, cooperating and implementing partners, and by triangulating data collected from multiple sources. Another limitation comes from the fact that some of the interviewees have had only limited interaction with APCTT (attended only one APCTT activity or started interaction with APCTT only recently).

Since the evaluation also had financial limitations and face-to-face interviews with all members of the APCTT Governing Council and the wider stakeholder group was not possible, maximum effort was made to obtain as much useful information as possible from the focal points and stakeholders in Bangkok and New Delhi, the only two cities to be visited. The evaluator would have the opportunity to meet members of the Governing Council at its 19th session in Tashkent, Uzbekistan in December 2023, and further refinements of the draft final evaluation report could be made after the GC session.

4. Evaluation findings

These findings are based on the review of relevant documents and reports (Annex 6) and the results of the interviews (Annex 5) and survey (Annex 4).

4.1 Impact

The evaluation has found evidence that the work of APCTT has made **satisfactory impact** on the STI ecosystem of some of the member States.³ This finding is reflected in the overall average score from the key informant interviews (Table A8.10, Annex 8) as shown graphically below.



Finding 1: The APCTT has made a modest, yet satisfactory, impact on the STI ecosystem of its member States.

APCTT reported the following initiatives as the Centre's key achievements and results during the past five years (2019-2023):⁴

- China established the Asia-Pacific Regional Innovation Knowledge Network for the 4th Industrial Revolution Technologies (APRIKNET-4IR) in cooperation with APCTT in 2020. The APRIKNET-4IR has served as a knowledge sharing hub to facilitate innovation collaboration on emerging technologies for achieving the sustainable development goals in the Asia-Pacific region.⁵
- Bhutan has included the blueprint of the national technology request database as a part of the country's Cottage and Small Industry Policy adopted in July 2019. In 2020, Bhutan established the online National Technology Database as a result of further technical advice provided by APCTT.⁶
- Enhanced knowledge, awareness and skills of city officials and stakeholders from Dhaka (Bangladesh), Gurugram (India) and Bangkok (Thailand) during 2022-2023 on policies, strategies and city level action plans for the adoption of innovative technologies for control of air pollution.⁷
- Eight member States, Bangladesh, India, Indonesia, Malaysia, Nepal, the Philippines, Sri Lanka and Thailand, shared their needs and availability of reliable and cost-effective technologies for responding to the pandemic through a technology facilitation consultative meeting for COVID-19 response and recovery on mutually agreed terms and conditions.⁸
- Established in 2023 a formal partnership between APCTT and Climate Technology Centre and Network (CTCN) through Letter of Exchange to jointly support member States in the development and transfer of climate technologies for energy-efficient, low-carbon and climate-resilient development in the Asia-Pacific region.

³ The interviewees were asked to give their overall rating as follows: 1 - not satisfactory, 2 – somewhat satisfactory, 3 – moderately satisfactory, 4 – satisfactory, and 5 – highly satisfactory. The same system of overall rating was also applied to the other evaluation criteria.

⁴ Specific communication from the Asian and Pacific Centre for Transfer of Technology.

⁵ https://www.unescap.org/sites/default/d8files/event-documents/Statement-APCTT_China.pdf

⁶ <https://www.dcsi.gov.bt/publications/annual-report-2019-2020>

⁷ <https://apctt.org/projet/enhanced-capabilities-adopt-innovative-technologies-city-air-pollution-control-select>

⁸ <https://www.unescap.org/kp/2022/technical-cooperation-highlights-2020-2021>

A member of the Governing Council stated that an important impact of APCTT is in having provided connections between the STI ecosystem in Uzbekistan with other member States in the region as well as with the relevant United Nations organizations. With the help of APCTT, Uzbekistan was able to create a platform that enables it to obtain knowledge of technologies from other member States that can be transferred to and adopted by Uzbekistan and vice versa, technologies that Uzbekistan can provide to other countries. The meetings, conferences, forums, and other activities have also benefitted the country's STI ecosystem and the people of Uzbekistan.

The Technology Application and Promotion Institute (TAPI), Department of Science and Technology (DOST), Philippines, reported that the work of APCTT greatly impacted the creation and implementation of DOST's Grassroots Innovation for Inclusive Development (GRIND) Program, first in Region XI, and later in other regions of the country. The GRIND Program aims to empower marginalized communities by developing and strengthening their existing grassroots innovations. APCTT's Tech Monitor has also been a highly useful source of technology information for the GRIND Program and other services offered by TAPI.

The Department of Scientific and Industrial Research (DSIR), Government of India, affirmed that the Centre's capacity building programmes had been highly useful for enhancing awareness and promoting regional cooperation and had enabled DSIR to showcase its expertise and experiences, enabling DSIR to contribute to intergovernmental processes and advocate for new and emerging technologies, while also learning from other countries.

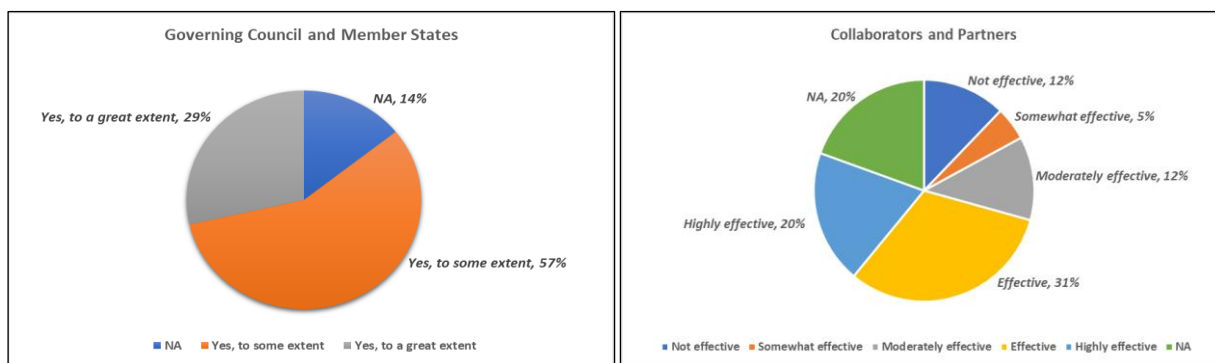
However, a senior official of a United Nations agency observed that with its limited budget and scant human resources, APCTT can make only modest impact on the STI landscape of its member States, its impact being primarily in the national innovation system. Its impact may be enhanced if the Centre is fully embedded in the relevant ESCAP divisions, that is, if the relevant divisions use the APCTT platform as the launching pad for anything related to technology.

4.2 Effectiveness

The evaluation has found evidence that the work of APCTT is **effective** and useful for enhancing awareness and promoting regional cooperation among its member States. The overall average score from the key informant interviews indicate that the Centre is effective as shown graphically below.



This finding is confirmed by the results of the survey of members of the Governing Council and of member States (Figure below and Figure A8.1, Annex 8) where 86% of respondents state that the APCTT has effectively enhanced the capability of member State officials to adopt/adapt emerging and innovative technologies to some or great extent; and of APCTT collaborators and partners (Figure below and Figure A8.3, Annex 8) where 63% of respondents state that APCTT's collaboration with their organizations was moderately to highly effective.

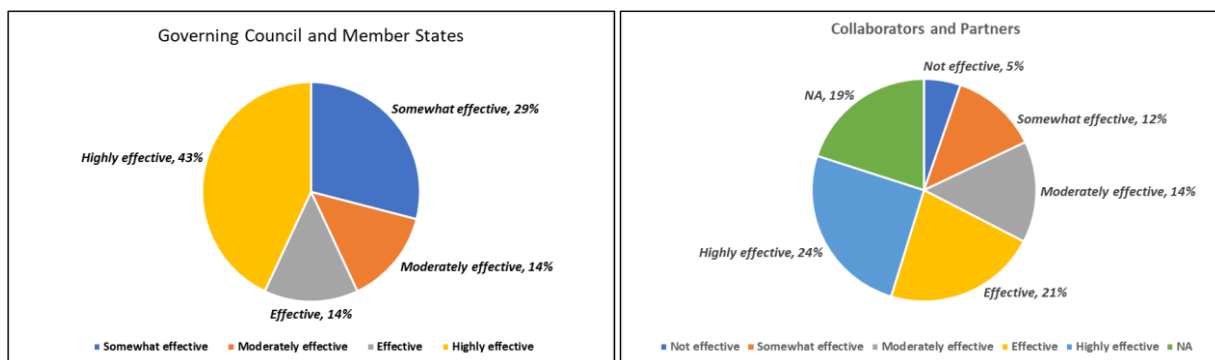


When asked of their experience collaborating and/or interacting with APCTT on how effective/well-organized the coordination/implementation of the Centre’s projects/activities was, 40% of respondents from ESCAP management and staff (Figure A8.2, Annex 8) gave a rating of moderately satisfactory, 40% satisfactory, and 20% no answer.

When asked how effective the Centre is in achieving its intended objectives and addressing the needs of the Asia-Pacific region in its three areas of work of cross-border cooperation, capacity development, and policy support, the responses of ESCAP management and staff on all three areas are almost the same: effective, 40%; not effective/somewhat effective, 20%; no answer, 40% (Figure A8.2, Annex 8).

Finding 2: The APCTT has achieved its objectives primarily in the area of capacity development, and to some extent in policy support.

The survey of GC members and member States and of APCTT collaborators and partners shows that 71% and 59% of respondents, respectively, believe that the Centre’s capacity development on technology transfer, new and emerging technologies, and online technology transfer support platforms has been moderately to highly effective.



During the period 2019-2023, APCTT built capacities and trained over 3,400 stakeholders from 36 countries in the Asia Pacific Region, including representatives from governments, technology promotion agencies, technology transfer intermediaries, academia, research and development institutions, city authorities, industrial enterprises, technology-based start-ups and financial institutions, on technology and innovation policy, technology cooperation and transfer, intellectual property management, fourth industrial revolution technologies, green innovations, biotechnology, energy, innovative technologies for climate resilience, disaster risk reduction, and control of air pollution.⁹ This is confirmed by the Department of Scientific and Industrial Research, Government of India, which stated that “the capacity building programmes of APCTT are very useful for enhancing awareness and promoting regional cooperation” and reported that “approximately 2,800 participants have been benefitted from a total of 42 APCTT capacity building events during 2019-2023.” It added that “through the joint international

⁹ Specific communication from the Asian and Pacific Centre for Transfer of Technology.

capacity building events, DSIR and APCTT have been able to showcase their own experiences and learnt from other countries. The events have brought in focused recommendations useful for the region.”¹⁰

The decisions of the Governing Council during the past five years (2018-2022) have consistently included a request “to continue providing demand-driven capacity-building support on national innovation systems and technology policy (including intellectual property rights and access to finance) as well as on the identification, transfer, adaptation and adoption of technologies” (GC14/GC15/GC16) and “to continue to provide demand-driven policy advice and analytical and capacity-building support to strengthen national innovation systems, technology innovations, transfer, adoption and diffusion” (GC17/GC18).¹¹

The Agency for Innovation Development, Ministry of Higher Education, Science and Innovation, Uzbekistan, affirmed that APCTT has proven effective in achieving its objectives primarily in the area of capacity development, and to some extent in policy support. The Centre has been an effective and valuable partner in facilitating technology transfer, fostering cooperation among Uzbekistan and other member states, as well as providing essential policy guidance. The Technology Application and Promotion Institute, Philippines expressed the same sentiment.

These survey results and observations during the interviews are consistent with the impressive number of the Centre’s capacity development and other activities during the period under review, which are summarized in Tables A8.3, A8.4, and A8.5 of Annex 8, notwithstanding the fact that the Centre has a lean staff and limited budget.

Finding 3: The APCTT’s knowledge products and publications and technology databases have effectively complemented and supported the Centre’s capacity building and policy support programmes and initiatives.

The web-based, on-line, quarterly periodical, Asia-Pacific Tech Monitor has been the flagship publication of APCTT featuring articles which provide up-to-date information on trends in technology development and transfer, technology policies and related issues, and new products and processes for the benefit of SMEs in Asia and the Pacific countries. Each issue of Tech Monitor focuses on a special theme and features articles that present trends in technology transfer and development, technology policies, market, data and analysis with respect to relevant issues, case studies, best practices and innovative technologies. For example, in 2022, APCTT published the following articles: (a) Affordable and Sustainable Clean Energy Technologies: Emerging policies and business models; (b) Regional cooperation for innovation and technology transfer – emerging strategies, models and collaborative networks; (c) Innovative Technologies for Air Pollution Control; and (d) Technology transfer for sustainable development in the Asia-Pacific (Table A8.1, Annex 8). The Technology Application and Promotion Institute, Philippines, has specifically identified the Tech Monitor as a most useful source of information on technologies needed in the institute’s work.

The Centre has also maintained and continued to make available to its member States the following databases: Technology 4SME, Renewable Energy Technology Bank (RET-Bank), Global Technology Databases, and National Technology Bases (Table A8.2, Annex 8). Several member States and, in particular, the Technology and Promotion Institute, Republic of the Philippines, stated that these databases have been highly useful sources of reliable and free information on emerging and appropriate technologies.

¹⁰ DSIR note given to the consultant titled “Supporting points for discussion for DSIR regarding APCTT evaluation,” 24 August 2023.

¹¹ GC14, GC15, GC16, GC17, and GC18 refer to the 14th to 18th meetings of the Governing Council.

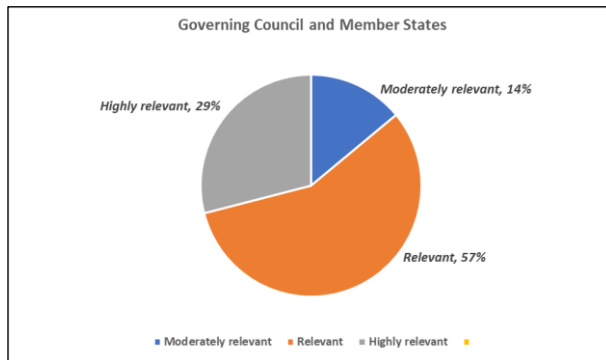
4.3 Relevance

The evaluation has found evidence that the work of APCTT is **highly relevant** to the needs and aspirations of its member States. The overall average score from the key informant interviews indicates that the Centre is highly relevant as shown graphically below.

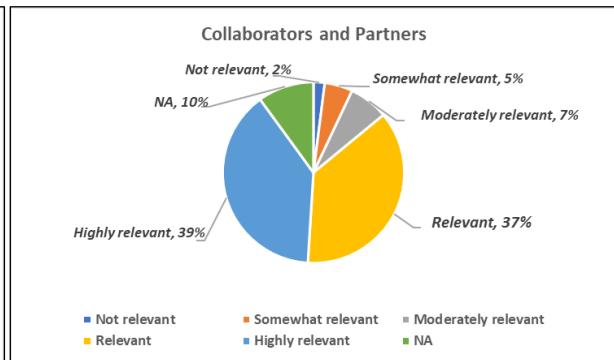


This finding is confirmed by the results of the survey of members of the Governing Council and of member States where 100% of respondents state that the APCTT’s strategic plan, outputs, and activities are moderately to highly relevant to the specific needs of their countries; and of APCTT collaborators and partners where 83% of respondents state that the topics/contents/outputs of the projects/activities they have participated in are moderately to highly relevant to the needs of the Asia-Pacific region.

Strategic plan, outputs, and activities

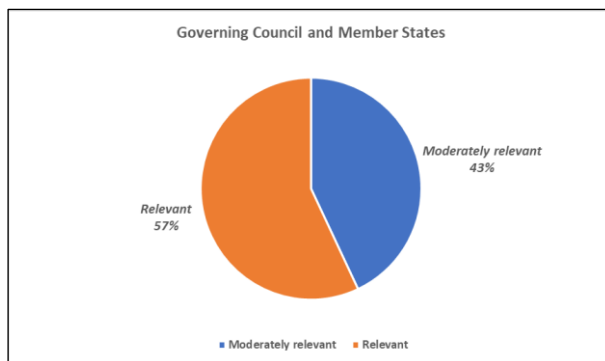


Contents of the projects participated in

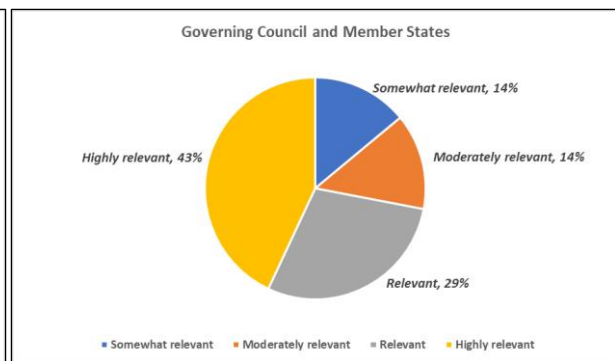


Finding 4: The relevance of the work of APCTT has been recognized by the Governing Council, the member States, and other stakeholders.

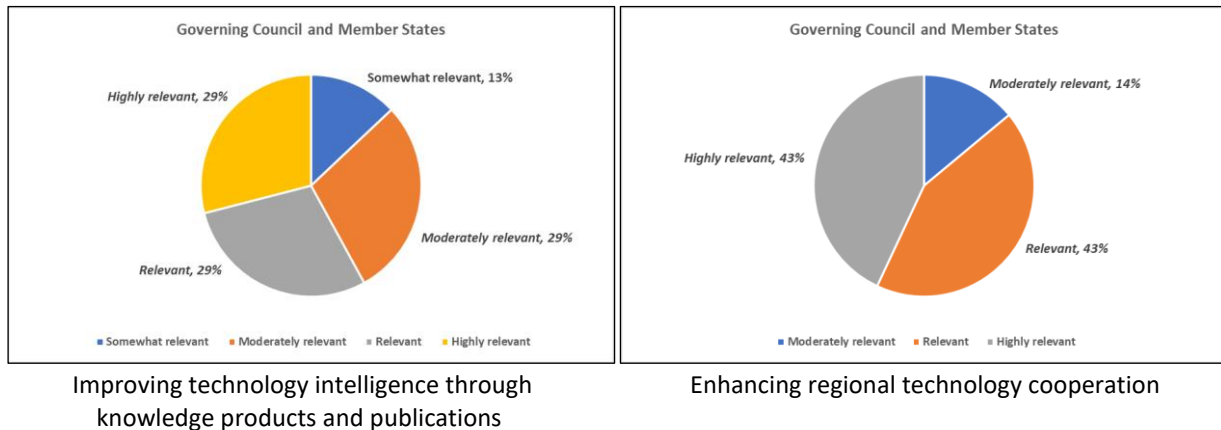
As shown in the charts below, the Governing Council and member States have confirmed the relevance of APCTT’s activities to the needs of their countries in the following four areas:



Strengthening national innovation systems



Enhancing innovation and technology transfer capacity



The continuing relevance of APCTT is reflected in the various decisions of the Governing Council (GC) during the period under review. For example, at its 15th session in December 2019, the GC reported its “findings that its (APCTT’s) regional activities are demand driven and highly useful to the needs of its members.”

The Centre’s relevance is also implicit in the following GC decisions. At its 17th and 18th sessions in December 2021 and December 2022, respectively, the GC requested the APCTT to “continue to provide demand-driven policy advice and analytical and capacity-building support to strengthen national innovation systems, technology innovations, transfer, adoption and diffusion, and to promote regional technology cooperation for the achievement of the Sustainable Development Goals.” At its 15th session in November 2019, and with only a slight variation at its 16th session in December 2020, the GC requested the Centre to “continue providing demand-driven capacity-building support on national innovation systems and technology policy (including intellectual property rights and access to finance) as well as on the identification, transfer, adaptation and adoption of technologies, with a special focus on renewable energy, new and emerging technologies, agriculture and water, and climate change mitigation and adaptation technologies.”

The relevance of APCTT has been affirmed by the Department of Scientific and Industrial Research, Government of India by stating that “APCTT has a unique position to support member countries to transfer of technologies for achievement of SDGs. There are no other institutions so focused on technology transfer for the region under the U.N. umbrella.”¹² The International Telecommunication Union (ITU) supported this view stating that the area of work of APCTT, technology transfer, is definitely relevant. But the concept of technology transfer is rapidly evolving and APCTT should adapt to changing conditions. The ESCAP Trade, Investment, and Innovation Division, the APCTT’s backstopping division, expressed the same view that the “APCTT remains relevant, particularly in creating platforms”. The Technology Application and Promotion Institute, Philippines, affirmed the highly relevant work of APCTT.

Finding 5: The APCTT Strategic Plan 2023-2027 has made the Centre even more relevant by aligning its priorities with the SDGs and the regional priorities.

One of the key reasons for preparing the Strategic Plan 2023-2037 is “to enhance relevance, effectiveness, impact and visibility of APCTT in the Asia-Pacific region.”¹³ The Strategic Plan has aligned the priorities of APCTT with the SDGs and the regional priorities. As such, the work of APCTT has been aligned with the global mandates (e.g., 2030 Agenda for Sustainable Development, Paris Agreement on Climate Change, 2013 ECOSOC Annual Ministerial Review Meeting), the mandates of ESCAP, and with the ESCAP Subprogramme 2 on Trade, Investment and Innovation. Consequently, APCTT can focus its work and build

¹² DSIR note given to the consultant titled “Supporting points for discussion for DSIR regarding APCTT evaluation,” 24 August 2023.

¹³ Strategic Plan 2023-2027, Asian and Pacific Centre for Transfer of Technology.

on these regional and global trends to enhance its relevance, maximize its delivery, and make tangible impacts to support member States in the region.

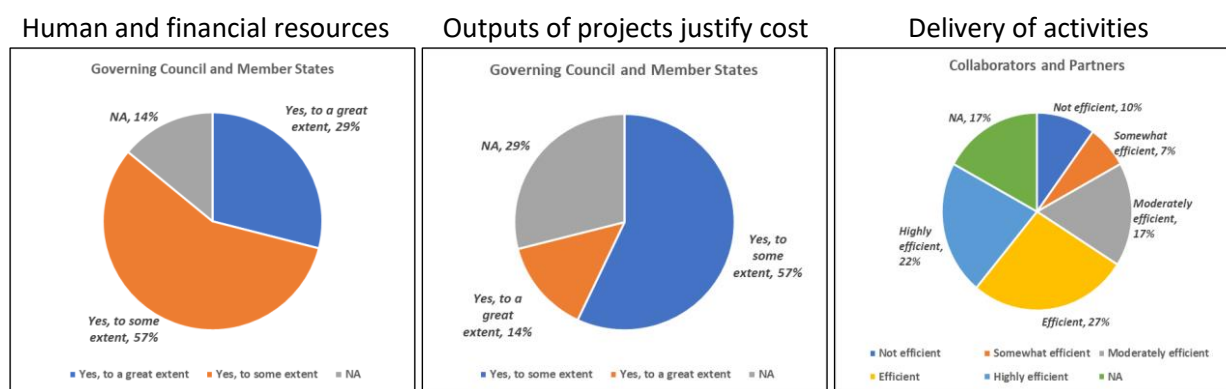
The Agency for Innovation Development, Ministry of Higher Education, Science and Innovation, Uzbekistan, informed that Uzbekistan is now in the next stage of establishing a strong and robust STI ecosystem, and added that, for this reason, the work of APCTT in technology transfer assumes great relevance to the needs of Uzbekistan’s STI ecosystem. Its relevance can be further enhanced if the Centre can conduct a regular assessment of the STI needs of Uzbekistan, maintain close communication with its STI authorities, and regularly update the Centre’s Strategic Plan to reflect the changing demands and priorities of member States. The Technology Application and Promotion Institute, Philippines, strongly support the implementation of the Strategic Plan, which it considered relevant to the needs of the region, in general, and the Philippines, in particular.

4.4 Efficiency

The evaluation found evidence that the APCTT was **efficient** in delivering its programs, projects and activities. In fact, the overall average score from the key informant interviews indicates efficient performance as shown graphically below.



This finding is confirmed by the results of the survey of members of the Governing Council and member States where respondents state that (a) the human and financial resources of APCTT are used efficiently to deliver activities and outputs in coordination with other stakeholders to some extent (57%) and to a great extent (29%); and (b) the outputs of projects and activities justify the cost of such projects and activities to a great extent (14%) and to some extent (57%). Furthermore, 66% of the APCTT collaborators and partners state that the Centre’s delivery of its capacity development activities is moderately to highly efficient.



When asked how efficient APCTT is in delivering its capacity development activities, the ESCAP management and staff gave the following answers: moderately efficient, 60%; somewhat efficient, 20%, no answer, 20% (Figure A8.2, Annex 8).

Finding 6: Even with a lean staff, the Centre was able to deliver an impressive number of activities (meetings, conferences, workshops, seminars) during the period in review.

One evaluative aspect of efficiency deals with how well the Centre's staffing match the demands of the Centre's programme of work. Presented in Annex 8 are summaries of the APCTT Knowledge Products and Publications, APCTT Technology Databases, Events and Activities Organized by APCTT (2019-2023) and Capacity Building Events to which APCTT made Substantive Contributions (2019-2023). The Centre organized 54 events and activities and made substantive contributions to 12 capacity building events during the period 2019-2023 for a total of 66 events/activities. These translate to an average of 13.2 events/activities annually or over 1 event/activity per month (Table A8.4, Annex 8). During this period, the Centre had basically only two G6 level staff (no P-level staff other than the head of the Centre). This reflects efficiency in the implementation of programs, projects and activities which is achieved through, among others, robust partnerships.

When asked how well the Centre's staffing and financial resources match the demands of the Centre's programme of work, 72% of the responding GC members and member States gave a rating of "satisfactory" to "highly satisfactory" (Table A8.1, Annex 8), while 80% of the responding ESCAP management and staff gave a slightly lower rating of "moderately satisfactory" to "satisfactory" (Table A8.2, Annex 8).

An example of a partnership that has enhanced efficiency, is seen in the implementation of the project *"Enhanced capabilities to adopt innovative technologies for city air pollution control in select countries of the Asia-Pacific"* funded by the Korea-ESCAP Cooperation Fund (KECF). A major factor in the success of the project is the partnership between APCTT and the Subregional Office for East and North-East Asia (SRO-ENE). For instance, the efficient organization of the study tour in the Republic of Korea (ROK) would have been extremely difficult for APCTT by itself taking into consideration its lean staff and distance from the ROK. But by partnering with SRO-ENE, the study tour became a great success. This project was implemented in partnership also with the ESCAP Environment and Development Division (EDD), Subregional Office for South and South-West Asia (SRO-SSWA), and Subregional Office for South-East Asia (SRO-SEA), as well as the following external partners: National focal points of APCTT, UNCTs in India, Bangladesh and Indonesia, North-East Asia Clean Air Partnership (NEACAP), and South Asia Cooperative Environment Programme (SACEP).

Worth mentioning are the long-standing robust partnership developed by APCTT with the International Solar Alliance on renewable energy and the newly developed partnership with the ESCAP Disaster Risk Reduction Section on climate issues.

Finding 7. While the Centre is perceived to be efficient in delivering its work, there is still room and need for further improvement.

The fact that the 18th GC session invited ESCAP members and associate members to consider contributing national experts in the mandated fields to work at the APCTT as non-reimbursable loans is indicative of the need to enhance the Centre's staffing to improve efficiency of the delivery of the Centre's programs and projects.

As stated by a member of the Governing Council, while the APCTT is delivering its work in an efficient manner, it can still be improved. One way is to identify thematic areas that can be focused on and ensure that the relevant or appropriate expertise is deployed. Program delivery can even be more efficient if people in the STI ecosystem are more intensively connected through robust exchange of scientists and relevant stakeholders, including active participation of government stakeholders.

Echoing the above view, a senior official of a United Nations agency observes that the efficient delivery of the Centre's programs and projects may be affected by the current staffing profile where long-serving, highly qualified staff occupy merely support staff level positions for lack of available professional level

posts. The lack of career opportunities and differences in the way of working affect work efficiency. This concern is reflected in the view expressed by an ESCAP senior official, that the Centre “has legacy issues”.

4.5 Sustainability

The evaluation found evidence that the APCTT is **sustainable**. The overall ratings from the key informant interviews support this finding as shown graphically below.



Finding 8: The Centre has attained some level of financial sustainability with the significant increase in the contribution of the host country.

In the 2018 evaluation of APCTT, the financial sustainability of the Centre was the major concern in the light of the relatively low level of contributions from the host government and member States. Since 2018, however, following the recommendation of the evaluation, the total contribution of the host government and member States has increased over three times from USD364,392 in 2018 to USD1,214,070 in 2022, with the contribution of the host government increasing over four times from USD 201,745 in 2018 to USD857,127 in 2022. This development has improved APCTT’s financial sustainability, with the Centre reporting an end-of-year fund balance of USD 3,248,498 in 2022 (Tables A8.6, A8.7, A8.8, A8.9, Annex 8).

However, the survey shows that only 58% of the GC members and member States support the recommendation to make annual contributions to the APCTT of USD 7,000 for least developed countries and USD 30,000 for developing countries: to a great extent, 29%; and to some extent, 29%. (Table A8.1, Annex 8)

Finding 9: The formulation and adoption of the Strategic Plan 2023-2027 has greatly improved the Centre’s programmatic sustainability.

A member of the Governing Council observed that “the APCTT’s Strategic Plan 2023-2027 has made the Centre even more sustainable.” The strategic plan was prepared with extensive review of relevant documents and reports, key informant interviews of members of the Governing Council and experts in the Asia-Pacific region, thematic discussions on technology transfer, fourth industrial revolution technologies, and climate change, focused group discussions with ESCAP substantive divisions and regional institutions, and with UN Country Team in India, discussions with the ESCAP SRO-SSWA, and online stakeholder perception survey of country focal points, ESCAP divisions and partners. The scenario analysis and consultations led to a more sustainable plan focussing only in four areas: energy transition and renewable technologies, climate resilient infrastructure in cities, digital and fourth industrial revolution technologies, and air pollution control technologies.

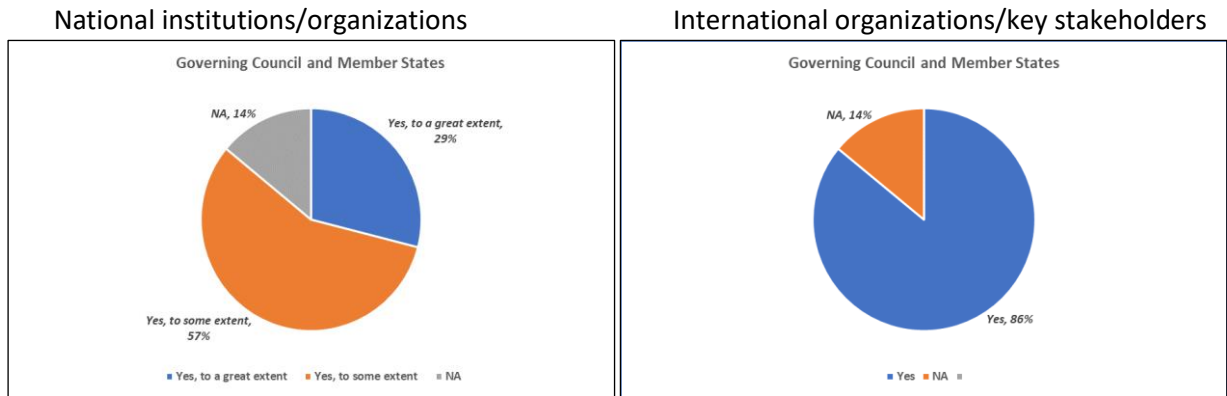
The survey shows that the full implementation of the Centre’s Strategic Plan 2023-2027 is strongly supported by the GC members and member States: to a great extent, 71%; and to some extent, 29% (Table A8.1, Annex 8).

Finding 10: The Centre’s proposed partnership framework can further enhance its overall operational sustainability.

The Centre plans to work closely with both internal and external stakeholders and partners. The primary internal stakeholders are the ESCAP substantive divisions and the regional institutions. The key external

stakeholders and partners are summarized earlier in Table 3.1.

The survey of GC members and member States shows that in the design and delivery of its outputs, the APCTT collaborates with the national institutions/organizations in their respective countries to some extent, 57%, and to a great extent, 29%. Furthermore, 86% of GC members and member States state that the APCTT has provided or contributed to networking and partnership with international organizations and key stakeholders in their countries.



During the interview, the senior official of the International Telecommunication Union (ITU) expressed the view that a robust partnership between APCTT and the ITU innovation center can enhance the sustainability of the two centers, and relocating the APCTT to Chennai where there are many technology incubators could probably further enhance APCTT’s long-term sustainability.

4.6 Cross-cutting Issues

The evaluation found evidence that the APCTT has a **highly satisfactory** performance with respect to gender mainstreaming. The overall ratings from the key informant interviews support this finding as shown graphically below.



Finding 11: The Centre is endeavouring to mainstream gender, disability inclusion and other cross-cutting issues into its programs, projects and activities.

The Centre’s Strategic Plan 2023-2027 explicitly covers the gender dimensions of inequality and vulnerability observing that “women are more vulnerable to external changes such as pandemics and climate change than men.” Accordingly, among the Centre’s core commitments includes “placing all women and girls at the centre of development” and to “listen to and work with the youth.” While disability inclusion and human rights mainstreaming are not explicitly evident in the strategic plan, these are implicit in its vision of “enhancing regional cooperation for innovation, adoption, diffusion and transfer of innovative and emerging technologies in the Asia-Pacific region for addressing climate change and achieving SDGs” since a sustainable future and an inclusive society are among the most basic human rights and aspirations.

Finding 12: The Centre fully embraces gender mainstreaming and integrates it within the organization and throughout project implementation.

The members of the Governing Council and various partners and stakeholders of APCTT agree that the Centre embraces gender mainstreaming and integrates it within the organization and throughout project implementation. For example, the Agency of Innovation Development, Ministry of Higher Education and Innovation, Uzbekistan affirmed that “the programs and projects of APCTT are implemented taking into consideration gender equality, disability inclusion and issues related to human rights.” Echoing this statement, the Technology Application and Promotion Institute, Philippines, ranked APCTT as “highly satisfactory” in terms of gender mainstreaming. Additionally, the International Telecommunication Union (ITU) observed that the past/current head of the Centre was/is a woman and APCTT is aware of the importance of gender mainstreaming, disability inclusion, and human rights issues. It was suggested that APCTT should consider producing a publication on women in technology transfer.

In 22 events and activities organized by APCTT where gender data are available, the overall percentage of male and female participants are 60% and 40%, respectively (Table A8.4, Annex 8). However, in two of these events, there were more females than males: Event 1: Male, 25 (32%); Female, 54 (68%) / Event 2: Male, 44 (30%); Female, 103 (70%). In another event, there was an almost equal number of males (72) and females (69). These data indicate that efforts are made to attain full gender equality in the Centre’s activities whenever there is an opportunity to do so notwithstanding the fact that the field of hard sciences, technology and engineering has been historically male dominated.

5. Conclusions

Based on the findings of this study, which resulted from a trenchant analysis of the collected triangulated evidence, this evaluation makes the following conclusions on the six criteria: impact – satisfactory; effectiveness – effective; relevance – highly relevant; efficiency – efficient; sustainability – sustainable; and cross-cutting issues – highly satisfactory. Accordingly, it is concluded that the APCTT is making a useful contribution towards its desired capacity building, policy support, and regional cooperation outcomes leading to increased adoption of emerging and innovative technologies for sustainable development.

In the 2018 evaluation, the issue of the long-term sustainability of the Centre was of the greatest concern. In this evaluation, the most significant conclusion that can be derived from the findings is that the sustainability of the Centre has been greatly enhanced with, among others, the quadrupling of the annual contribution of the host government. With the modest increase in financial resources, the Centre has been reporting fund surpluses at the end of each programme year. More importantly, it has been able to deliver on its mandate and play the role of a prime mover in member States adopting and transferring technologies.

The APCTT has made some impact on the STI ecosystem of some member countries (e.g., India, Uzbekistan, and the Philippines) through the Centre’s capacity building programmes, technology information and dissemination platforms (e.g., Tech Monitor, databases), and promotion of regional technology cooperation (e.g., expert group meetings, industry-academia-government consultative sessions).

The development of the Strategic Plan 2023-2027 has enhanced the Centre’s relevance. The strategic planning process, which made extensive use of perception surveys, focus group discussions, interviews, and consultations with a wide range of stakeholders, has brought a clearer focus on the work of APCTT in line with the specific needs and aspirations of its member States and aligned with ESCAP’s objectives and mandates. The decisions of the Governing Council and the results of the survey and interviews confirm the acceptance by member States of the four areas prioritized in the Strategic Plan, namely, energy transition and renewable technologies, climate-resilient infrastructure in cities, digital and fourth industrial technologies, and air pollution control technologies.

It is also concluded that the Centre has been able to effectively deliver its capacity building programmes. The number of capacity building events organized or co-organized by APCTT during the past five years is impressive. The focus and priority given by the Centre to capacity development at various stages, from innovation to technology development to scaling-up and absorption is well-recognized by member States as reflected in the decisions of the Governing Council and the results of the survey and interviews.

It is also evident that the Centre has efficiently delivered its programs, projects and activities despite having a lean organization with limited funds. This was achieved through robust partnerships with ESCAP substantive divisions, regional development partners, and UNCTs in the design and delivery of the outputs.

Finally, it is concluded that the Centre has always endeavoured to mainstream gender, disability inclusion and other cross-cutting issues into its programs, projects, and activities. The current head and the immediate past head of the Centre are both female. While the events that the APCTT has organized during the period in review have, on average, majority of male participants, in at least two of these events there were a majority of female participants. Furthermore, these cross-cutting issues are implicit in the Strategic Plan with its recognition of the “gender dimensions of inequality and vulnerability”.

6. Recommendations

The APCTT Strategic Plan 2023-2027 already contains several recommendations for implementation over the five-year planning period. In conceptualizing this report's recommendations, this consultant exerted much effort to avoid duplication or overlap with the Plan's recommendations. Thus, this report offers the following five (5) action-oriented recommendations addressed to ESCAP management:

Recommendation 1: Develop novel and creative strategies to secure funding, develop partnerships, and prioritize implementation of the initiatives identified in the Strategic Plan 2023-2027.

The Strategic Plan focuses on four areas: energy transition and renewable technologies, climate resilient infrastructure in cities, digital and fourth industrial technologies (4IR), and air pollution control technologies. Among the possible novel and creative strategies would be for APCTT to develop even closer collaboration with the host government and, more importantly, partnerships with subregional organizations such as ASEAN, with development institutions such as the Asian Development Bank (ADB), and with other sources of funding to implement the initiatives identified in the Strategic Plan. It would be useful to leverage innovation laboratories and incubation centres at universities and other entities that lie at the intersection of technology, financing, and emerging solutions. This could be done under overall ESCAP coordination in a strategic way.

For example, the focus of the APCTT Strategic Plan coincides well with the priorities of ASEAN, which opens the possibility of a mutually beneficial partnership. To leverage advances in 4IR technology, ASEAN has developed a strategic framework for tackling climate change, namely, the Consolidated Strategy in 4IR, which aims to provide policy guidelines in building the ASEAN Digital Community. This ASEAN strategy has many elements in common with the APCTT Strategic Plan in that it seeks to leverage technology to build resilience and a globally competitive economy that embraces innovation and contributes to sustainable development. For instance, an ASEAN member State, Malaysia, has recently implemented a National 4IR policy to leverage the synergies of their physical, biological, and digital worlds to increase the nation's overall value. ASEAN has also produced the ASEAN State of Climate Change Report (ASCCR) in close coordination with the Institute for Global Environmental Strategies (IGES) and with significant financial contribution from the Government of Japan.

The APCTT can also explore partnership with ASEAN for initiatives to be co-funded by APCTT/Government of India and the ASEAN-India S&T Development Fund (AISTDF). Established jointly by the Indian Ministry of External Affairs (MEA) and the Department of Science and Technology (DST), the AISTDF was enhanced in 2015 to an equivalent amount of USD 5 million. A subregional approach to partnership would be useful including with small island developing states where the issue of climate change has a distinct aspect.

Through the Memorandum of Understanding (MOU) between the Asian Development Bank (ADB) and ESCAP, the APCTT may also explore possible partnership with ADB. For instance, the ADB has a USD 15 million technical assistance program, supported by ADB's own funds and the Green Climate Fund (GCF), to develop projects that promote climate change adaptation and mitigation in Southeast Asia. The ADB also has a new program, which was announced at COP27, to help countries identify and develop projects, and build country capacity to accelerate a pipeline of green projects for the region. It is linked to the ASEAN Catalytic Green Finance Facility (ACGF), under the ASEAN Infrastructure Fund, and projects identified by the program could benefit from further funding from ACGF and its financing partners.

Finally, partnership and funding could also be explored with the Cleaner Energy Future Initiative for ASEAN (CEFIA), which is an initiative of the Ministry of Economy, Trade, and Industry of Japan that aims to advance public and private collaboration to accelerate energy transition and decarbonization in ASEAN countries. For the other subregions, in 2018, the ADB pledged to provide USD 80 billion in climate financing to South Asia and the Pacific over the next decade under its new Strategy 2030. The ADB has also approved the establishment of ADB Ventures, a new venture platform that will support and invest in

startups offering impact technology solutions that contribute to the achievement of the SDGs in Asia and the Pacific.

Recommendation 2: Give top priority to developing and implementing online capacity building courses on technology transfer and commercialization as well as in selected areas identified in the Centre's Strategic Plan (2023-2027).

The online certificate course will be a self-paced but supervised course through the Internet, where participants learn at their own schedule, for the purpose of learning how to transform inventions into innovations and acquire knowhow of the technology transfer and patent commercialization process. Course participants will acquire a comprehensive knowledge of the technology transfer process, including the basics of technology identification, assessment, protection, and maturation, as well as acquire the skills for partner engagement, negotiation, contracting and monitoring. Participants will learn how to formulate an effective action plan to transfer and commercialize a technology from the laboratory to the pilot stage, and to the market. At the end of the course, participants will have the skill to become practitioners in technology transfer and intellectual property (IP) commercialization process armed with adequate knowledge of the process steps and critical factors that lead to transform early technology opportunities into successfully commercialized innovations.

The course may be developed and implemented in partnership with a university (e.g., Indian Institute of Technology) or with an existing international technology transfer organization (e.g., The Transfer Institute, CITI Program on Technology Transfer). A partnership with an STI institution from the Republic of Korea may also be considered.¹⁴ The Centre may also take advantage of existing resources in think tanks and universities to build a strengthened network for courses. It would be helpful to facilitate improved peer learning among regional institutes, particularly between APCTT and APCICT.

An affordable course fee may be charged but scholarships, fellowships, or some form of financial support may be provided by APCTT to interested government officials (or other individuals endorsed by the Governing Council) in member States. Those who successfully complete all course requirements will be issued a certificate of completion.

Recommendation 3: Develop and implement a multi-year, donor-funded project comprising, among others, of a series of knowledge-sharing workshops in each of the Asia-Pacific subregions on research and development and innovation to address social and technological issues related to energy transition and renewable technologies, climate resilient infrastructure in cities, and digital and 4IR technologies.

This proposed workshop would be aimed at promoting mutual learning; seeking opportunities for cooperation among innovation actors; and promoting the active engagement of different stakeholders in the development of technological and innovative solutions. This is in line with the proposal from the representative of the Republic of Korea¹⁵ to organize online or onsite knowledge-sharing workshops on research and development and innovation to address local social issues such as energy transition through cooperation with the Centre and its member States within a financially viable scope.

Recommendation 4: Exert greater effort and put more emphasis on enhancing the visibility of APCTT.

Despite its long existence (established in 1977) and its high-quality work, APCTT remains relatively unknown, particularly among private corporations, venture capitalists, industry associations, R&D institutions, universities, and the like. It certainly is not the top choice for those seeking new, emerging, and innovative technologies. As identified in the Strategic Plan, the Centre suffers from the following weaknesses: inadequate interface with private sector, start-up entrepreneurs, and similar institutions;

¹⁴ At the 19th GC session held in Tashkent, Uzbekistan on 6-7 December 2023, the representative of the Republic of Korea stated that the ROK could partner with APCTT in developing STI online courses.

¹⁵ Proposed by the representative of the Republic of Korea during the 18th session of the APCTT Governing Council, 7-8 December 2022.

inadequate use of large pool of linked technical experts for cross-regional support; and inadequate conversion of diverse conferences into mentorship, country action plans, and links to technical and financial mechanisms. Accordingly, APCTT ought to enhance its visibility among its stakeholders by, among others, (a) developing and implementing a communication and information strategy to make known its experience and expertise in technology transfer and commercialization; (b) producing promotional materials to improve visibility and awareness among its key stakeholders; and (c) explore opportunities for collaboration, particularly with the private sector and industry groups, as well as universities and academic institutions, for shared activities. For improved visibility, APCTT may also more proactively leverage existing platforms (e.g., social media, TIID and other ESCAP newsletters and networks) to promote its activities.

Recommendation 5: Consider possible amendment of the APCTT statute by proposing to delete the phrase “no fewer than” from the statute to make GC membership uniform among all regional institutes.

The review of documents showed that among the five ESCAP regional institutes, only APCTT can have more than eight GC members in addition to the member from the host government. The APCTT statute states that “the Centre shall have a Governing Council consisting of a representative designated by the Government of India and no fewer than eight representatives nominated by other members and associate members of ESCAP elected by the Commission.”

On the other hand, the statutes of all the other regional centres state that in addition to the representative from the host government, the centres shall have “eight representatives nominated by other members and associate members of ESCAP elected by the Commission.” During the interview, the Secretary of the Commission floated the idea of setting the number of APCTT GC members to eight to make it uniform with the other regional institutes. This idea was supported by several ESCAP senior officials.

Annex 1: Evaluation TOR



Evaluation of the Asian and Pacific Centre for Transfer of Technology (APCTT) of ESCAP

Terms of reference

1. INTRODUCTION

1.1 Background

The Asian and Pacific Centre for Transfer of Technology (APCTT) is one of the five regional institutes of the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), servicing Asia and the Pacific region. It was established in 1977 to strengthen the capacity of member States to nurture and promote national innovation systems and to create an enabling environment for the development and transfer of technology. APCTT is headquartered in New Delhi, with host facilities provided by the Government of India. APCTT's activities focus on science, technology and innovation; technology transfer; regional cooperation and technology intelligence.

In 2015, ESCAP members and associate members decided through resolution 71/1 on "Restructuring the conference structure of the Commission to be fit for the evolving post-2015 development agenda" to review each regional institution's continued substantive relevance and financial viability every five years. In response to this mandate, the ESCAP secretariat commissions an independent evaluation of each regional institution every five years to inform the above-mentioned review by the Commission. The first evaluation of APCTT was completed in December 2018, and the Commission considered its report at its 75th session held in May 2019.

The evaluation provided conclusions and action-oriented recommendations to enhance the performance of the Centre. It found that the mandate of the Centre remained relevant in the context of the ongoing reform of ESCAP and the 2030 Agenda. The evaluation found that the

Centre delivered capacity-building activities efficiently despite the current limited financial and human resources. However, under those limitations, it concluded that the effective operations of the Centre could not be sustained in the future. Based on the findings and conclusions of the evaluation, six recommendations were proposed for improving the financial sustainability of the Centre through increased contributions from the host government and other members and associate members of ESCAP. The evaluation also recommended strengthening partnership arrangements with the private and non-governmental sectors and giving more significant focus on the transfer, dissemination, and diffusion of emerging and environmentally sound technologies in developing countries.

In 2022, APCTT developed a strategic plan for the period 2023-2027, as per the advice of its Governing Council, for implementation in cooperation with the member States. The strategic plan outlines the vision of APCTT to “enhance regional cooperation for innovation, adoption, diffusion and transfer of innovative and emerging technologies in the Asia-Pacific region for addressing climate change and achieving SDGs”. It defines three focus areas, including promoting technology innovation and scaling up innovative and emerging technologies, enhancing cross-border cooperation and networking for technology transfer and enabling policies and linkages, including technology and financing mechanisms. Following the adoption of the strategic plan by the Governing Council, APCTT will develop its annual programme of work.

During its 80th session scheduled for May 2024, the Commission will again review the continued relevance and financial sustainability of APCTT in accordance with resolution 71/1. Accordingly, ESCAP management is commissioning an independent evaluation of the Centre to guide the deliberations and inform decision-making by the Commission regarding the work of APCTT. Evaluation at ESCAP is a critical function that seeks to determine as systematically and objectively as possible the impact, relevance, effectiveness, efficiency, and gender mainstreaming of its programmatic work, including the work of divisions, regional institutes, and subregional offices. In 2021, the United Nations Secretary-General issued an administrative instruction on evaluation in the UN secretariat¹⁶ which includes a mandate that each UN secretariat entity, including ESCAP, evaluates each subprogramme at least once every six years.

The evaluation occurs when the United Nations Development System (UNDS) is undergoing a reform process. An essential aspect of the reform process is the requirement for greater coordination and collaboration among UN entities, including ESCAP, at the regional level and greater presence at multi-country and national levels, including through the United Nations Resident Coordinators and the United Nations Country Teams, including through the multi-country offices. The UNDS reform is part of the context and guidance for the present evaluation.

1.2 Purpose and objectives

This evaluation aims to provide the Commission with an impartial and reliable body of evidence regarding APCTT's performance. This will facilitate their deliberations during the 80th session of the Commission in May 2024 on APCTT's continued relevance and financial viability. The evaluation will also provide ESCAP management with forward-looking actionable recommendations

¹⁶ ST/AI/2021/3 on “Evaluation in the United Nations Secretariat”

to improve the results orientation and performance of the Centre. The evaluation is formative in nature, i.e., supporting organizational learning and decision-making, and informing formulation of future work programme and delivery modalities, particularly in the context of UNDS reforms.

The evaluation objectives include:

- (i) To assess the results achieved and performance of APCTT using the standard evaluation criteria, including impact, relevance, effectiveness, efficiency, and gender mainstreaming.
- (ii) To determine ways to enhance the results-orientation of APCTT and identify specific outputs and delivery modalities that are most relevant to the member States, based on needs expressed by relevant stakeholders.
- (iii) To recommend actions for improving the results orientation and performance of the Centre.

1.3 Scope

The evaluation will cover the work of APCTT from 2019 to the present. The following tentative questions to be answered by the evaluation under each evaluation criteria are proposed. Further refinement of the questions will be made during the inception phase of the evaluation.

Evaluation criteria	Tentative evaluation questions
Impact¹⁷	<ul style="list-style-type: none"> • What have been the significant contributions of APCTT at the regional and to the development of government policies and programmes at the national level? • How could APCTT further enhance the results-orientation of its work?
Relevance	<ul style="list-style-type: none"> • To what extent have the Centre’s overall strategic plan, including its outputs and activities, responded to the specific needs of the member States and aligned with ESCAP’s objectives and mandate?? • What adjustments are needed in the APCTT strategic plan to enhance the Centre’s relevance further? • How is the relevance of the Centre perceived by the member States? Which specific outputs were considered most relevant to the member States, and which outputs were found least relevant?
Effectiveness	<ul style="list-style-type: none"> • How effective was the Centre in achieving its intended objectives, in the three areas of work: 1) capacity development, 2) cross-border cooperation, and 3) policy support? • How could the Centre make its work more effective at national, subregional and regional levels?

¹⁷ Impact criterion is defined by the OECD as the extent to which the intervention has generated or is expected to generate significant positive or negative, intended or unintended, higher-level effects. Impact addresses the ultimate significance and potentially transformative effects of the intervention. OECD suggests that impact criterion can be used loosely to mean “results” in the broadest sense. It also clarifies that the use of impact criterion should not be confused with the term “impact evaluation”, which refers to specific methodologies for establishing statistically significant causal relationship between the intervention and observed effects. ESCAP uses the impact criterion to assess its contribution to changes in policies, strategies, norms, and standards in its member States in the medium term.

Efficiency	<ul style="list-style-type: none"> • How well do the Centre’s staffing and financial resources match the demands of the Centre’s programme of work? • To what extent did APCTT coordinate and cooperate with its backstopping division (TIID) and other ESCAP substantive divisions, regional development partners, and UNCTs in the design and delivery of the outputs? • How could the coordination and cooperation be further enhanced?
Human rights, gender equality and disability inclusion	<ul style="list-style-type: none"> • To what extent have human rights, gender equality and disability inclusion been mainstreamed into the design and implementation of the work of APCTT? • What could be done to enhance human rights, gender equality and disability inclusion in the Centre’s work?

2. METHODOLOGY

The evaluation will be conducted in accordance with the ESCAP Monitoring and Evaluation Policy and Guidelines and the UNEG norms and standards for evaluation. It will follow a participatory and consultative approach, whereby key APCTT stakeholders, particularly government beneficiaries and development partners, are engaged, and their views and feedback are systematically collected and used effectively in addressing the evaluation questions.

In assessing the impact of the Centre, the evaluation will use a theory of change approach to assessing the achievements of the Centre’s overall results. The development of the theory of change should be guided by the existing results framework of the Centre and its projects and the actual implementation strategy and delivery of outputs.

The evaluation will apply a mixed-method approach through a combination of quantitative and qualitative analysis to inform findings. The evaluation methodology will cover but not be limited to the following actions:

<p>a) Inception and scoping</p> <ul style="list-style-type: none"> • Preliminary review of documentation • Interviews with members of the reference group • Formulation of a theory of change • Preparation of an evaluation inception report • Meeting with the evaluation reference group • Preparation of questionnaires and interview guides
<p>b) A desk review of documents. The following documentation will be provided:</p> <ul style="list-style-type: none"> • List of APCTT’s stakeholders • Annual programme plan and project documents • Strategic plan 2023-2027 • Monitoring reports, including annual progress and terminal reports

<ul style="list-style-type: none"> • Reports of intergovernmental meetings and other significant events • Press releases • Results of surveys or questionnaires conducted by the Centre • Mission reports • Partnership agreements and reports
<p>c) Surveys of APCTT stakeholders (electronic)</p> <ul style="list-style-type: none"> • An electronic survey will be administered targeting government officials and implementing partners • Administration of the survey and analysis of data
<p>d) In-depth individual interviews (video/audio call)</p> <ul style="list-style-type: none"> • Governmental stakeholders • Development partners • ESCAP management and staff management
<p>e) Focus group discussions (video conference)</p> <ul style="list-style-type: none"> • If needed, in-depth discussions with selected stakeholders may be conducted
<p>f) Country case studies</p> <ul style="list-style-type: none"> • An assessment of selection beneficiary countries to understand the Centre's contribution to observed impacts based on available documents, survey results and consultations/interviews with APCTT and its stakeholders.
<p>g) Observation</p> <ul style="list-style-type: none"> • The evaluator will be given an opportunity to observe the proceedings of the Centre's activities during the period of the evaluation.
<p>h) Preparation of the evaluation report and presentation of findings</p> <ul style="list-style-type: none"> • Preparation of a brief note containing the preliminary findings, conclusions, and recommendations • Meeting with the reference group to discuss the preliminary evaluation results • Preparation of a draft evaluation report and review of the draft report • Finalization of the evaluation report

Data will be disaggregated by sex and other relevant demographic characteristics if it is available. The interviews and stakeholder analysis will involve and reflect the views of both male and female stakeholders. In analyzing the data, the evaluation will use and triangulate qualitative and quantitative approaches, provide charts and direct quotations and highlight good practices examples.

3. EVALUATION OUTPUTS

The following outputs will be delivered to ESCAP:

1. Inception report, including an evaluation work plan and framework detailing the methodology and approach for the evaluation, based on the ESCAP inception report template.
2. Results of online surveys
3. First draft and final evaluation reports based on the ESCAP evaluation report template.
4. Presentation (ppt) on the findings, conclusions, and recommendations

The reference group will review the draft evaluation report, including preliminary findings and recommendations, against the ESCAP standard quality criteria used to review evaluation reports (Annex 1). The final report, including a management response from the Executive Secretary of ESCAP, will be posted on the ESCAP's public and internal websites. A summary of the evaluation results will be reported to the ESCAP Commission.

4. ROLES AND RESPONSIBILITIES

4.1 Evaluation reference group

ESCAP uses an evaluation reference group to enhance stakeholder participation and provide oversight and substantive support to the evaluation. The evaluation reference group comprises the following members:

1. Executive Secretary or Deputy Executive Secretary of ESCAP (Chair)
2. Director, Strategy and Programme Management Division (SPMD)
3. Director, Trade, Investment and Innovation Division (TIID)
4. Head, APCTT (The Head may select one additional staff member from APCTT to take part in the evaluation reference group)
5. Chief of Evaluation Unit, SPMD (ex-officio member and secretariat).

The reference group provides technical and methodological guidance to the evaluation process; reviews and agrees on the evaluation terms of reference and inception report; reviews and agrees on a short-list of qualified evaluation consultants for selection and approval by the Executive Secretary of ESCAP; provides quality assurance support to the preparation of the evaluation report and validation of recommendations and support the dissemination of the evaluation results and the formulation of the evaluation management response and follow-up action plan.

SPMD, through its Evaluation Unit, is responsible for managing evaluations commissioned by ESCAP to promote impartiality and independence and comply with the United Nations Administrative Instruction on Evaluation in the United Nations Secretariat. SPMD, through its Evaluation Unit, oversees and manages the entire evaluation process and ensures that the evaluation is managed and conducted in line with the ESCAP Monitoring and Evaluation Policy and Guidelines and the UNEG norms and standards for evaluation.

4.2 Professional evaluator

A professional evaluator will be recruited to undertake a rigorous and independent evaluation. He/she is expected to produce evidence-based data and utilize appropriate and best-practice data collection methods and analysis. He/she will undertake a transparent and participatory evaluation process in consultation with the evaluation reference group, involving staff and partners at all evaluation stages.

The evaluator will assume overall responsibility for carrying out the evaluation in an objective and independent manner. This includes, among other activities, managing the work, ensuring the quality of interviews and data collection, preparing the draft report, presenting the draft report, and producing the final report after comments have been received in line with standard templates provided by ESCAP. The evaluator must have:

- Knowledge of the United Nations System; principles, values, goals, and approaches, including human rights, gender equality, organizational culture, and Sustainable Development Goals. Knowledge of the work and activities of ESCAP is desirable.
- At least 10 years of experience in evaluating complex programmes, projects, themes or institutions/organizations involving a wide range of stakeholders with excellent analytical, strategic planning and problem-solving skills.
- Experience in conducting evaluations of development programmes related to the work of APCTT is desirable

ESCAP adheres to the UNEG Ethical Guidelines and Code of Conduct in evaluation, and all staff and consultants engaged in evaluation are required to uphold these standards. To this end, ESCAP has developed a Consultants Agreement form that evaluators are required to abide as part of the contracting process (Annex 2).

4.3 Timeframe

The evaluation will be implemented from June to October 2023. The evaluation process will involve four main phases with the tentative timelines as shown below:

Phase	Timeframe
1. Preparatory phase <ul style="list-style-type: none"> • Brief APCTT on the evaluation process • Develop a TOR • Establish an evaluation reference group • Select and recruit a consultant 	June-July 2023
2. Inception <ul style="list-style-type: none"> • Desk review of documentation • Interviews with members of the reference group • Preparation of an inception report for the evaluation • Presentation of evaluation methodology and tools to the reference group 	July 2023
3. Data collection and analysis <ul style="list-style-type: none"> • Desk review of documentation • Preparation of surveys and interview guides • Administration of stakeholder surveys • Interviews and focus group discussions with stakeholders • Attendance at selected events/meetings • Data compilation and analysis 	August-September 2023
4. Report preparation and conclusion <ul style="list-style-type: none"> • Submit a brief report containing the preliminary findings, conclusions and recommendations 	October 2023

<ul style="list-style-type: none"> • Meet with the reference group to discuss the preliminary findings and recommendations • Prepare a first draft evaluation report • Prepare a revised draft evaluation report • Final evaluation report and summary note 	
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ANNEXES

Annex I. Quality criteria used to review evaluation reports

Report content	The report is structured logically and is well written
<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> • The report follows the table of contents outlined in the TOR and includes the relevant annexes • The executive summary is 1-2 pages and highlights the key findings, conclusions and recommendations • The report uses consistent grammar and spelling in line with UN rules, written in good English and is easy to read. Main messages are clearly distinguished from the text
Purpose, objectives	The report meets the purpose, objectives and scope of the evaluation stated in the TOR
<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> • The report gives a clear description of the object of evaluation. The expected results chain is clearly outlined. Key stakeholders are listed. • The report clearly explains the evaluation's purpose, objectives and scope, including main evaluation questions, and limitations • The report describes and explains the chosen evaluation criteria • Evaluation objectives and scope address gender and human rights
Evaluation method	The evaluation methodology and its application are explained clearly
<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> • The methodology is clearly explained and applied throughout the evaluation process • The report describes data collection methods and analysis and consultation process • Methods are appropriate for effective gender and human rights analysis • Amendments to the methodology identified in the inception report are clearly explained • The limitations and their implications for the validity of the findings and conclusions have been explained
Findings	The findings and conclusions are credible
<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> • Findings respond to the evaluation criteria and questions detailed in the scope and objectives section of the report • Findings are based on evidence gathered using methodology identified in the report • Findings are based on rigorous analysis, are evidence based and objective • Findings are adequately substantiated, balanced and reliable • The relative contributions of stakeholders to the results are explained
Conclusions	Conclusions are relevant, evidence based and insightful
<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> • The conclusions derive from the findings and are evidence based • Conclusions relate to the purpose and key questions of the evaluation • Conclusions are logically connected to evaluation findings
Recommendations	The recommendations are useful

<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> • The recommendations are clear and follow logically from the findings and conclusions • Recommendations are realistic, concrete and actionable within a reasonable timeframe • Recommendations for APCTT should be clearly within ESCAP's mandate
Gender	Gender is mainstreamed
<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> • The report discusses the extent to which the project integrates gender equality and human rights perspectives in project design, implementation and outcomes. • The evaluator collects and analyses data disaggregated by sex and other social groups. • Findings, recommendations and lessons learnt provide information on gender. • The report uses gender sensitive and human rights-based language.

Annex II: Evaluation Consultants Agreement Form

Evaluation Consultants Agreement Form

UNEG Code of Conduct for Evaluation in the UN System

By signing the consultancy contract for the evaluation assignment, the consultant agrees to abide by the [Code of Conduct for Evaluation in the UN System](#).¹⁸ specifically to the following obligations, among others:

- **Independence.** Evaluators shall ensure that independence of judgement is maintained, and that evaluation findings and recommendations are independently presented.
- **Impartiality.** Evaluators shall operate in an impartial and unbiased manner and give a balanced presentation of strengths and weaknesses of the policy, program, project or organizational unit being evaluated.
- **Conflict of Interest.** Evaluators are required to disclose in writing any past experience, of themselves, which may give rise to a potential conflict of interest.
- **Competence.** Evaluators shall accurately represent their level of skills and knowledge and work only within the limits of their professional training and abilities in evaluation.
- **Accountability.** Evaluators are accountable for the completion of the agreed evaluation deliverables within the timeframe and budget agreed.
- **Confidentiality.** Evaluators shall respect people's right to provide information in confidence and make participants aware of the scope and limits of confidentiality.

Annex 2: Theory of change

Theory of Change (TOC) is a manner of thinking about how different elements are linked and how they might affect each other. Its framework usually has five components: interventions, outputs, outcome,

¹⁸ <http://www.unevaluation.org/document/detail/100>

immediate impact, and long-term impact. In this evaluation we make use of a theory of change approach to understand the actual results achieved and the process of achieving results, guided by the results framework of the project and the actual implementation strategy and delivery of outputs. Through this approach, the precise link between activities and the achievement of the long-term goals are more fully understood. This approach explains how the activities undertaken by the project contribute to a chain of results that lead to the intended or observed impacts, which are represented in a diagram.

There are generally four main options for representing a theory of change, namely, linear results chain, outcomes hierarchy, triple column/row, and set of principles. For this evaluation, we will use the *linear results chain*, which is the most appropriate where activities are undertaken at the start and then consequences flow through in a linear fashion.

Two TOC flowcharts are presented.

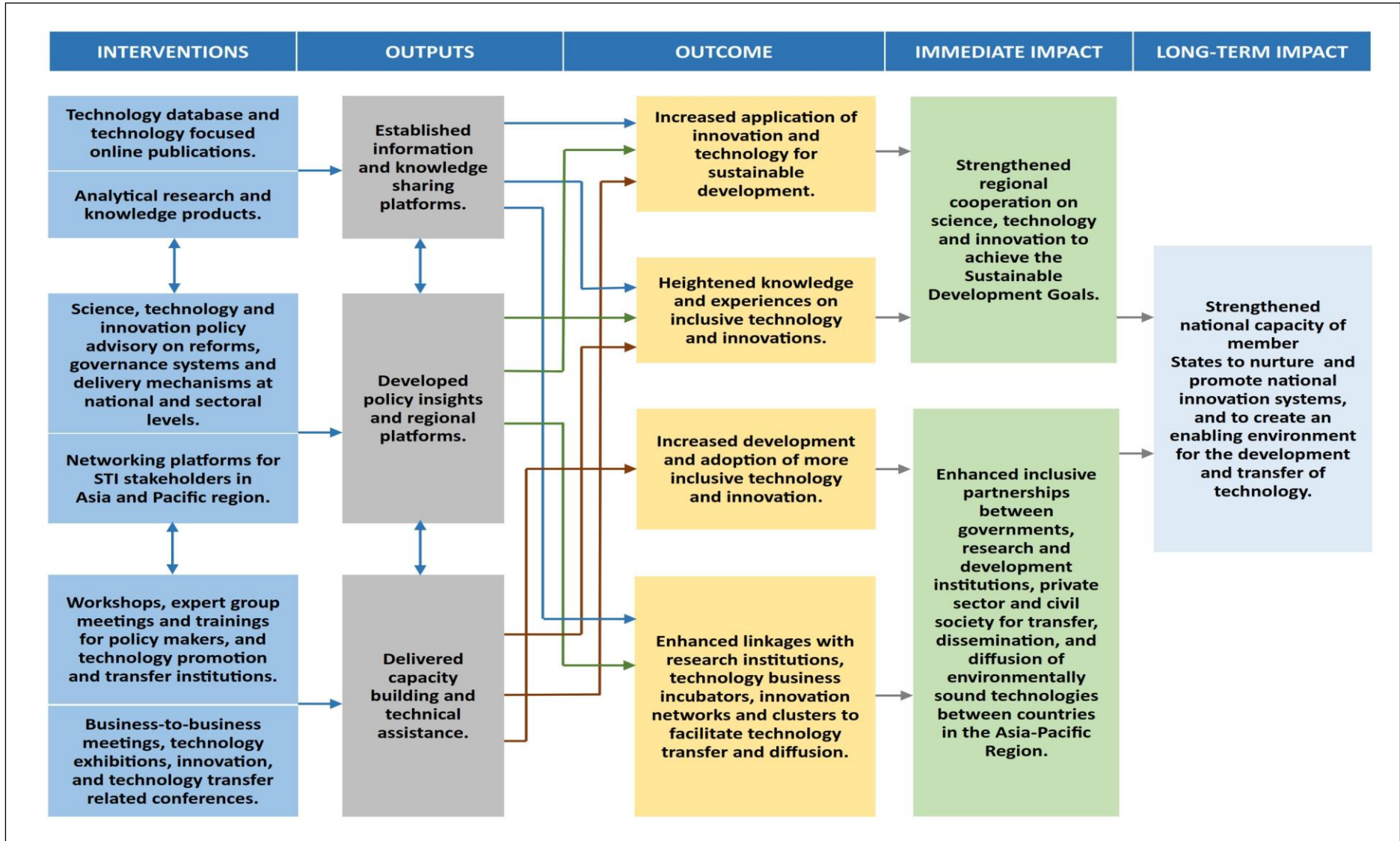
The first is a TOC flowchart based on the strategic areas and modalities for the APCTT Strategic Plan 2023-2027. As shown in Figure A2.1, the proposed interventions starting in 2023 are expected to result in increased adoption of emerging and innovative technologies for sustainable achievement.

The second is a reconstructed TOC flowchart based on the reported programs, projects and activities of the APCTT during the period prior to the adoption of the strategic plan (2019-2022). As shown in Figure A2.2, the interventions are aimed at attaining strengthened national capacity of member States to nurture and promote national innovation systems, and to create an enabling environment for the development and transfer of technology.

Figure A2.1. Theory of Change Flowchart of the APCTT Strategic Plan 2023-2027



Figure A2.2. Reconstructed Theory of Change Flowchart of APCTT 2019-2022



Annex 3: Evaluation matrix

Criteria	Key Question	Sub-Questions	Indicators	Source of Information	Methods	Assumptions
Relevance	Is the work of APCTT relevant to member States?	<p>Do member States find the activities of APCTT useful for enhancing national capacity?</p> <p>To what extent has APCTT adjusted to the changing needs of member States?</p>	<p>Percent of countries and relevant ESCAP staff indicating the work of APCTT remains relevant</p> <p>Percent of countries and relevant ESCAP staff indicating APCTT adjusts to the needs of member countries</p>	Representatives of Governing Council and member States, as well as relevant ESCAP staff	Interviews and surveys	<p>Representative sample</p> <p>Willingness to participate</p> <p>Significant response rate</p>
Effectiveness	How effectively has APCTT contributed to member State capacity to adopt emerging and innovative technologies for sustainable development?	<p>To what extent has APCTT enhanced the capacity of member State officials to adopt/adapt emerging and innovative technologies?</p> <p>How many policy and decision makers participated in relevant capacity building projects and activities?</p>	<p>Evidence of government officials and technical staff attended relevant trainings, workshops, or activities.</p> <p>Evidence of policy and decision makers participation in relevant capacity building projects and activities</p>	<p>Representatives of Governing Council and member States</p> <p>Available relevant documents and reports</p>	Interviews, surveys and desk review of relevant available reports and other documents	<p>Willingness to participate</p> <p>Significant response rate</p> <p>Availability of relevant reports and documents</p>
Efficiency	How efficiently has APCTT utilized its human and financial resources to meet the needs of	Do the outputs of projects and activities justify the cost of such projects and activities?	Percent of countries stating that project outputs justify the costs.	Representatives of Governing Council and member states	Interviews, surveys and desk review of relevant available reports and other documents	<p>Willingness to participate</p> <p>Significant response rate</p> <p>Availability of relevant reports and documents</p>

	member States?	Did project activities unnecessarily duplicate similar activities by external parties?	Documentary evidence of unnecessary duplication.	Representatives of collaborating and participating organizations and partners Available relevant documents and reports		
Sustainability	What is the likelihood that the APCTT's operations will be sustained in the future?	What commitments have been made by member States to contribute to the Centre's operating funds? How much do member States support the full implementation of the Centre's Strategic Plan 2023-2027?	Percent of member States indicating willingness to make annual contributions to APCTT Percent of member States fully supporting implementation of the Strategic Plan	Representatives of Governing Council and member States Available relevant documents and reports	Interviews, surveys and desk review of relevant available reports and other documents	Willingness to participate Significant response rate Availability of relevant reports and documents

Annex 4: Data collection instruments

Data needed for the evaluation were collected through desk review of relevant documents, in-depth individual interviews, evaluation survey, and consultations with relevant ESCAP secretariat staff and Reference Group.

Desk review of relevant documents

A desk review of relevant documents and reports was made including, among others, the documents and reports listed in Annex 6.

In-depth individual interviews

In-depth individual interviews in person or via video/audio were made with relevant ESCAP and APCTT officers and staff and with Thai and Indian Government officials, and with other government stakeholders, development partners, and APCTT partners and cooperators. The stakeholders for interview were selected to ensure that there was equitable subregional representation, and that the views of both male and female stakeholders were equally reflected. The key APCTT stakeholders include the members of the Governing Council, APCTT country focal points, UN Country Team in India. The list of individuals interviewed is presented in Annex 5.

Depending on who is being interviewed and the institution in which he/she belongs, some or all of these questions or slight variations of these questions may be asked, and the responses elaborated through extemporaneous follow up questions.

- In what APCTT projects or activities did you take part?
- What do you consider are the significant contributions, achievements or results of APCTT?
- How could the APCTT make its work more effective?
- Are APCTT projects and activities efficiently implemented?
- How effective is APCTT's collaboration with your institution?
- What partnerships can you suggest to make APCTT more effective?
- Does APCTT have qualified staff and sufficient financial resources to effectively deliver its work?
- The new APCTT Strategic Plan focuses on climate technologies, giving priority to energy transition and renewable technologies, climate resilient infrastructure in cities, digital and fourth industrial technologies, and air pollution control technologies. Do you agree with this?
- What further adjustments are needed in its Strategic Plan to enhance APCTT's relevance?
- 10. Does APCTT take into consideration human rights, gender equality and disability inclusion perspectives in the implementation of projects and activities?

Evaluation survey

An electronic survey was administered targeting members of the APCTT Governing Council, government officials, implementing partners, and participants in various APCTT activities. The stakeholders for the evaluation survey were selected to ensure that there was equitable subregional representation, and that the views of both male and female stakeholders were equally reflected. Three types of survey questionnaires were used: Survey Questionnaire for Governing Council Members and Member States; Survey Questionnaire for Heads of ESCAP Programme Divisions and SPMD, Subregional Offices, and Regional Institutions; and Survey Questionnaire for APCTT Collaborators and Partners. The responses were ranked into five levels:

- 1 Not relevant/effective/satisfactory
- 2 Somewhat relevant/effective/satisfactory
- 3 Moderately relevant/effective/satisfactory
- 4 Relevant/effective/satisfactory
- 5 Highly relevant/effective/satisfactory

For the Governing Council members and representatives of member States, the following questions were asked:

1. How relevant are the APCTT's strategic plan, outputs, and activities to the specific needs of your country?
2. How do you evaluate the relevance of APCTT's activities to the needs of your country in the following areas? 2.1 Strengthening national innovation systems 2.2 Enhancing innovation and technology transfer capacity 2.3 Improving technology intelligence through knowledge products and publications 2.4 Enhancing regional technology cooperation
3. Has the APCTT provided or contributed to the following functions in your country? 3.1 Research and analysis of trends, conditions, and opportunities 3.2 Advisory services 3.3 Dissemination of information and good practices 3.4 Networking and partnership with international organizations and key stakeholders 3.5 Training of national personnel, particularly policy makers, scientists, managers of technology promotion/ transfer agencies, and SMEs
4. How effective is the Centre in achieving its intended objectives and addressing the needs of your country in its three areas of work of cross-border cooperation, capacity development, and policy support? 4.1 Cross-border cooperation including sharing of best practices and experiences on science, technology and innovation (S&T policies, national innovation systems, and innovation management) 4.2 Capacity development on technology transfer, new and emerging technologies, and its online technology transfer support platforms 4.3 Science, technology and innovation (STI) policy advisory on reforms, governance systems and delivery mechanisms as well as networking platforms for STI stakeholders
5. To what extent has APCTT enhanced the capacity of member State officials to adopt/adapt emerging and innovative technologies?
6. Are the human and financial resources of APCTT used efficiently to deliver activities and outputs in coordination with other stakeholders?
7. Do the outputs of projects and activities justify the cost of such projects and activities?
8. Did project activities unnecessarily duplicate similar activities by external parties?
9. In the design and delivery of its outputs, to what extent does APCTT collaborate with national institutions/organizations in your own country?
10. How well do the Centre's staffing and financial resources match the demands of the Centre's programme of work?
11. To what extent do you support the recommendation to make annual contributions to the APCTT of USD 7,000 for least developed countries and USD 30,000 for developing countries?
12. To what extent do you support the full implementation of the Centre's Strategic Plan 2023-2027?

For Heads of ESCAP Programme Divisions and SPMD, Subregional Offices, and Regional Institutions, the following questions were asked:

1. During the period 2019-2023, has your division (or any unit/section in your division) collaborated with APCTT in any project or activity?
2. Based on your experience collaborating and/or interacting with APCTT, how would you rate the leadership quality of the Centre's Head?
3. How well do the Centre's staffing and financial resources match the demands of the Centre's programme of work?

4. How effective is the Centre in achieving its intended objectives and addressing the needs of the Asia-Pacific region in its three areas of work of cross-border cooperation, capacity development, and policy support?
4.1 Cross-border cooperation including sharing of best practices and experiences on science, technology and innovation (S&T policies, national innovation systems, and innovation management).
4.2 Capacity development on technology transfer, new and emerging technologies, and its online technology transfer support platforms
4.3 Science, technology and innovation (STI) policy advisory on reforms, governance systems and delivery mechanisms as well as networking platforms for STI stakeholders
5. How efficient is APCTT's delivery of its capacity development activities?

For APCTT Collaborators and Partners, the following questions were asked:

1. During the period 2019-2023, has your organization collaborated with APCTT in any project or activity?
2. How would you rate the overall effectiveness of APCTT's collaboration with your organization?
3. How relevant are the APCTT's strategic plan, outputs, and activities to the needs of the Asia-Pacific region?
4. How effective is the Centre in achieving its intended objectives and addressing the needs of the Asia-Pacific region in its three areas of work of cross-border cooperation, capacity development, and policy support?
4.1 Cross-border cooperation including sharing of best practices and experiences on science, technology and innovation (S&T policies, national innovation systems, and innovation management).
4.2 Capacity development on technology transfer, new and emerging technologies, and its online technology transfer support platforms.
4.3 Science, technology and innovation (STI) policy advisory on reforms, governance systems and delivery mechanisms as well as networking platforms for STI stakeholders.
5. How efficient is APCTT's delivery of its capacity development activities?

Consultations with relevant ESCAP secretariat staff and Reference Group

Consultations via video/audio call with relevant ESCAP secretariat staff and members of the Reference Group will be conducted to get a better understanding of the various aspects of the evaluation including its design and implementation and provide a useful basis for collecting other relevant data. The consultant will also regularly consult the Evaluation Unit, SPMD, which manages and oversees the entire evaluation process.

Annex 5: List of individuals interviewed

The lists of individuals interviewed are presented chronologically, in the order the interviews were conducted.

Table A5.1. Interviews in Bangkok
(22-23 August 2023)

Name	Title/Position/Organization
Ms. Rupa Chanda	Director, Trade, Investment and Innovation Division, ESCAP
Dr. Edgar Dante	Head, Evaluation Unit, ESCAP
Dr. Adnan Alliani	Director SPMD, ESCAP
Ibu Armida Salsiah Alisjahbana	Executive Secretary, ESCAP
Dr. Sanjay Srivastava (in Bangalore)	Chief, Disaster Risk Reduction Section, IDD, ESCAP
Mr. Zeynep Orhun Girard	Chief Capacity Development and Partnership Section, SPMD, ESCAP
Dr. Pratip Vongbandit	Deputy Governor, Research and Development Group for Sustainable Development, Thailand Institute of Scientific and Technological Research (TISTR)
Ms. Nongnuch Chunbandhit	Director, International Cooperation Strategy Group, International Affairs Division, Ministry of Higher Education, Science, Research and Innovation (MHESI)
Mr. Lorenzo Santucci	Secretary of the Commission, ESCAP

Table A5.2. Interviews in New Delhi
(24-25 August 2023)

Name	Title/Position/Organization
Dr. Preeti Soni	Head, APCTT, New Delhi, India
Dr. R K Sinha	Chief Scientist and Head, Human Resource Development Centre (CSIR-HRDC), Ghaziabad
Dr. Vinay Kumar	Principal Scientist, CSIR-HRDC
Mr. Surinderpal Singh	Joint Secretary, Ministry of Science and Technology, Department of Scientific and Industrial Research (DSIR), Government of India
Dr. Ramanuj Banerjee	Scientist-F, Ministry of Science and Technology, Department of Scientific and Industrial Research (DSIR), Government of India
Dr. Ajay Mathur	Director General, International Solar Alliance (ISA)
Mr. Atul Bagai	Head, UNEP India Office
Dr S. K Varshney	Scientist G, Department of Science and Technology (DST), Ministry of Science and Technology, Government of India
Dr. Satyabrata Sahu	Coordinator, APCTT
Mr. Subhash Yadav	IFS, Addl CEO, Urban Environment, Gurugram Metropolitan Development Authority (GMDA), Gurugram, Haryana, India

Table A5.3. Online interviews from Manila
(16 October - 6 November 2023)

Name	Title/Position/Organization
Mr. Ganbold Baasanjav	Director, SRO-ENEA, ESCAP
Ms. Parul Agarwala	Country Programme Manager, UN-Habitat India
Dr. Rama Swami Bansal	Head, International Division, CSIR, India
Mr. Olimjon Tuychiev	Director, Agency for Innovative Development, Ministry of Higher Education, Science and Innovations, Uzbekistan
Mr. Hongpeng Liu	Director, Energy Division, ESCAP
Ms. Atsuka Okuda	Regional Director, International Telecommunication Union (Former Chief, ICT and Development, IDD)
Dr. Anvar Shalmashi	Associate professor, Iranian Research Organization for Science and Technology
Dr. A.A.S.P. Jayasinghe	Deputy Director General, National Engineering Research and Development Centre, Sri Lanka
Mr. Zhang Xian	Director, Administrative Centre for China's Agenda 21, Ministry of Science and Technology, China
Dr. Balamurugan Nallamuthu	APCTT National Focal Point, Undersecretary of International Division, Ministry of Science, Technology and Innovation, Malaysia
Mr. Sangmin Nam	Director, Environment and Development Division, ESCAP
Mr. Shomi Sharp	UNRC, India
Ms. Shraddha Srikant	National Project Coordinator, UNIDO, India
Mr. Rokonzaman	Joint Secretary, Ministry of Science and Technology, Bangladesh
Ms. Marion Ivy D. Decena	Director, Technology Application and Promotion Institute, Department of Science and Technology, Philippines

Annex 6: List of documents reviewed

APCTT Conference Report, International Conference on Emerging Fourth Industrial Revolution (4IR) Technologies for Sustainable Development, Guangzhou, China, 22 July 2021.

APCTT Conference Report, Regional Workshop on Emerging Technologies to Respond to Climate Change, Kunming, China, 14 September 2021.

APCTT Conference Report, International conference on Innovation, Transfer and Diffusion of 4th Industrial Revolution Technologies, Guangzhou, China, 30 June 2022.

APCTT Conference Report, Regional Conference on Energy Resilience through Decentralized Power Plants and Smart Grid Integration, Bangkok, Thailand, 15 September 2022.

APCTT/KEFC Project Proposal, Enhanced capabilities to adopt innovative technologies for city air pollution control in select countries of the Asia-Pacific, 6 January 2022.

APCTT/KEFC Report, Inception Meeting for the Project “Enhanced capabilities to adopt innovative technologies for city air pollution control in select countries of the Asia-Pacific”, Virtual, 23 September 2022.

APCTT Meeting Report, Industry-Academia-Government Consultative Meeting to Address the Challenges of Energy Sector (Conventional & Non-conventional) and Energy Devices, Virtual, 17 October 2022.

APCTT Newsletter January to June 2023, Asia and Pacific Centre for Technology Transfer, New Delhi, India.

APCTT Note, Study tour on innovative technologies and good practices for air pollution for city officials of Bangladesh, India and Thailand, 18-21 September 2023, Republic of Korea.

APCTT Progress Report, Enhanced capabilities to adopt innovative technologies for city air pollution control in select countries of the Asia-Pacific, January – December 2022.

APCTT Project Document, Strengthening the National Innovation System (NIS) of ESCAP member countries with special focus on technology transfers and deployment of technology innovations, 25 March 2021.

APCTT Project Terminal Report, Promotion of regional cooperation amongst ESCAP member States to strengthen National Innovation Systems, 22 June 2020.

APCTT/DSIR/CSIR Meeting Report, Two-day International Knowledge Sharing Workshop on Cross-border Innovation, Acceleration and Challenges in International Transfer of Technologies, organized by DSIR, CSIR, APCTT, CSIR Science Centre, New Delhi, 14-15 November 2022.

APCTT/SUDS/ESCAP Meeting Report, Advancing Climate Action and Resilience of Cities in the Asia-Pacific Region Renewable energy and Air pollution control, Side event of 10th Asia-Pacific Forum on Sustainable Development (APFSD), Jointly organized by APCTT, SUDS, ESCAP, UNCC, Bangkok, 30 March 2023.

APCTT Report on the International Workshop on Intellectual Property Management and Technology Licensing, Bangkok, Thailand, 18 - 20 June 2019.

APCTT Report, Main conclusions and recommendations of the International Conference on Fourth Industrial Revolution Technologies for Sustainable Development, New Delhi, 30 November 2021.

APCTT Report, National Consultation Workshop – Bangladesh, In context of the project initiative Development of enabling strategies for the transfer of inclusive innovations and technologies, Bangladesh, 15 February 2022.

APCTT Report, Expert Group Meeting on Strengthening Regional Cooperation in Healthcare Biotechnology and Biomedical Sector, 22 March 2022.

APCTT Report, National Consultation Workshop - Nepal, In context of the project initiative Development of enabling strategies for the transfer of inclusive innovations and technologies, Nepal, 24 February 2022.

APCTT Report, Strategic Priorities for Adoption of Emerging Technologies in the Energy Sector for Climate Change Mitigation, Report on the Side event of 78th Commission Session of ESCAP, 24 May 2022.

APCTT Report, Technology Facilitation Consultative Meeting to address the Challenges of COVID-19 Pandemic, Virtual, 23 August 2021.

APCTT Workshop Report, International Workshop on Intellectual Property Management and Technology Transfer, Indonesia, 19 November 2020.

APCTT Workshop Report, Regional Workshop on Innovative Strategies for Research Commercialization and Technology Transfer, Tashkent, Uzbekistan, 24 November 2021.

APCTT Workshop Report, Regional Workshop on Mechanisms for Technical Cooperation on Green Innovation, Tashkent, Uzbekistan, 19 October 2022.

APCTT Workshop Report, Regional Workshop on Development of Enabling Strategies for Transfer of Inclusive Innovations and Technologies, Bangkok, Thailand, 8 December 2022.

APCTT Project Terminal Report, Strengthening regional technology cooperation and transfer amongst ESCAP member States to support sustainable development, January 2021.

APCTT Strategic Plan 2023-2027, Asian and Pacific Centre for Technology Transfer, New Delhi, India.

DA11 Country Report Bangladesh, Development of enabling strategy for the transfer of inclusive innovations and technologies, Bangladesh.

DA11 Country Report Bhutan, Development of enabling strategy for the transfer of inclusive innovations and technologies, Bhutan.

DA11 Country Report Nepal, Development of enabling strategy for the transfer of inclusive innovations and technologies, Nepal.

ESCAP/APCTT/GC/2022/1, Report of the Governing Council of the Asian and Pacific Centre for Transfer of Technology on its eighteenth session, Economic and Social Commission for Asia and the Pacific, Bangkok and online, 7-8 December 2022.

ESCAP/78/10, Report of the Governing Council of the Centre for Sustainable Agricultural Mechanization on its seventeenth session, Economic and Social Commission for Asia and the Pacific, Seventy-eighth session, Bangkok and online, 23–27 May 2022.

ESCAP/78/12, Report of the Governing Council of the Asian and Pacific Centre for the Development of Disaster Information Management on its sixth session, Economic and Social Commission for Asia and the Pacific, Seventy-eighth session, Bangkok and online, 23–27 May 2022.

ESCAP/78/18, Report of the Governing Council of the Asian and Pacific Centre for Transfer of Technology on its seventeenth session, Economic and Social Commission for Asia and the Pacific, Seventy-eighth session, Bangkok and online, 23–27 May 2022.

ESCAP/78/23, Report of the Governing Council of the Asian and Pacific Training Centre for Information and Communication Technology for Development on its 16th session, Economic and Social Commission for Asia and the Pacific, Seventy-eighth session, Bangkok and online, 23–27 May 2022.

ESCAP/78/25, Report of the Governing Council of the Statistical Institute for Asia and the Pacific on its seventeenth session, Economic and Social Commission for Asia and the Pacific, Seventy-eighth session, Bangkok and online, 23–27 May 2022.

ESCAP/77/9, Report of the Governing Council of the Asian and Pacific Training Centre for Information and Communication Technology for Development on its fifteenth session, Economic and Social Commission for Asia and the Pacific, Seventy-seventh session, Bangkok and online, 26–29 April 2021.

ESCAP/77/10, Report of the Governing Council of the Asian and Pacific Centre for Transfer of Technology on its sixteenth session, Economic and Social Commission for Asia and the Pacific, Seventy-seventh session, Bangkok and online, 26–29 April 2021.

ESCAP/77/12, Report of the Governing Council of the Statistical Institute for Asia and the Pacific on its sixteenth session, Economic and Social Commission for Asia and the Pacific, Seventy-seventh session, Bangkok and online, 26–29 April 2021.

ESCAP/77/15, Report of the Governing Council of the Centre for Sustainable Agricultural Mechanization on its sixteenth session, Economic and Social Commission for Asia and the Pacific, Seventy-seventh session Bangkok and online, 26–29 April 2021.

ESCAP/77/18, Report of the Governing Council of the Asian and Pacific Centre for the Development of Disaster Information Management on its fifth session, Economic and Social Commission for Asia and the Pacific, Seventy-seventh session, Bangkok and online, 26–29 April 2021.

ESCAP/76/11, Report of the Governing Council of the Centre for Sustainable Agricultural Mechanization on its fifteenth session, Economic and Social Commission for Asia and the Pacific, Seventy-sixth session Bangkok, 21 May 2020.

ESCAP/76/19, Report of the Governing Council of the Asian and Pacific Training Centre for Information and Communication Technology for Development on its fourteenth session, Economic and Social Commission for Asia and the Pacific, Seventy-sixth session, Bangkok, 21 May 2020.

ESCAP/76/20, Report of the Governing Council of the Asian and Pacific Centre for Transfer of Technology on its fifteenth session, Economic and Social Commission for Asia and the Pacific, Seventy-sixth session, Bangkok, 21 May 2020.

ESCAP/76/22, Report of the Governing Council of the Statistical Institute for Asia and the Pacific on its fifteenth session, Economic and Social Commission for Asia and the Pacific, Seventy-sixth session, Bangkok, 21 May 2020.

ESCAP/75/8, Report of the Governing Council of the Centre for Sustainable Agricultural Mechanization on its fourteenth session, Economic and Social Commission for Asia and the Pacific, Seventy-fifth session, Bangkok, 27–31 May 2019.

ESCAP/75/11, Report of the Governing Council of the Asian and Pacific Centre for the Development of Disaster Information Management on its third session, Economic and Social Commission for Asia and the Pacific, Seventy-fifth session, Bangkok, 27–31 May 2019.

ESCAP/75/18, Report of the Governing Council of the Asian and Pacific Training Centre for Information and Communication Technology for Development on its thirteenth session, Economic and Social Commission for Asia and the Pacific, Seventy-fifth session, Bangkok, 27–31 May 2019.

ESCAP/75/19, Report of the Governing Council of the Asian and Pacific Centre for Transfer of Technology on its fourteenth session, Economic and Social Commission for Asia and the Pacific, Seventy-fifth session, Bangkok, 27–31 May 2019.

ESCAP/75/21, Report of the Governing Council of Statistical Institute for Asia and the Pacific on its fourteenth session, Economic and Social Commission for Asia and the Pacific, Seventy-fifth session, Bangkok, 27–31 May 2019.

ESCAP, Report on the activities of the Centre for the period from December 2021 to November 2022, Asian and Pacific Centre for Transfer of Technology, Governing Council Eighteenth session, Bangkok and online, 7 and 8 December 2022.

ESCAP Project Proposal, Enhanced capabilities to adopt innovative technologies for city air pollution control in select countries of the Asia-Pacific, Asian and Pacific Centre for Transfer of Technology, January 2022.

ESCAP, Report on the activities of the Centre for the period December 2020 to November 2021, Asian and Pacific Centre for Transfer of Technology, Governing Council Seventeenth session, New Delhi, 1-2 December 2021.

ESCAP, Report on the activities of the Centre for the period December 2019 to November 2020, Asian and Pacific Centre for Transfer of Technology, Governing Council Sixteenth session, Guangzhou, 2-3 December 2020.

ESCAP Project Terminal Report, Promotion of regional cooperation amongst ESCAP member States to strengthen National Innovation Systems, Asian and Pacific Centre for Transfer of Technology, 22 June 2020.

ESCAP Project Terminal Report, Strengthening the National Innovation Systems (NIS) of ESCAP member countries with special focus on technology transfers and deployment of technology innovations, Asian and Pacific Centre for Transfer of Technology, 9 February 2021.

Annex 7: Management response

Annex 8: Data and Other Relevant Information

Table A.8.1. APCTT Knowledge Products and Publications

Year	Title	Type/Pages
Jan-Mar 2023	Technologies for Decarbonizing Transport Systems	Tech Monitor
Oct-Dec 2022	Affordable and Sustainable Clean Energy Technologies	Tech Monitor
Apr 2022	Harnessing Fourth Industrial Revolution (4IR) Technologies for Climate Change Mitigation in the Asia-Pacific Region	Working Paper 29 pages
Jan 2022	Contextualizing Transformation of Healthcare Sector in Asia-Pacific in the Post-COVID-19 Era	Working Paper 53 pages
Jan 2022	Innovation, Transfer and Diffusion of Fourth Industrial Revolution (4IR) Technologies to Catalyze Sustainable Development in Asia-Pacific	Working Paper 43 pages
2022	Intellectual Property Management and Technology Licensing	Guidebook 206 pages

Source: APCTT Website

Table A8.2. APCTT Technology Databases

Database	Description
Technology 4SME	An online platform for information exchange on the availability and sourcing of technologies for small and medium sized enterprises in countries in the Asia-Pacific region. The database comprises of three sections, namely: Technology offers, Technology requests, Joint venture, and Partnerships
Renewable Energy Technology Bank (RET-Bank)	An online technology database of tested and proven renewable energy technologies (RETs) initially in the areas of solar, biomass, wind, mini-hydro power and geothermal energy that is freely available for public access through its RECAP website.
Global Technology Databases	Provides a list of global and country technology databases that deal with the technology transfer related services for SMEs and entrepreneurs. Currently includes, among others: Mysore, India CTI-PFAN Database, Enterprise Europe Network, Singapore Explot Technologies Pvt. Ltd, Swiss Technology Transfer Association, UNFCCC Technology Portal, UNIDO ITPO Tokyo's Environmental Technology Database, WIPO Green Database
National Technology Databases	Accepts submission of technology offers, technology requests or joint ventures and partnerships. Currently include Bhutan CSI Technology Request Database, India CSIR Technologies Compendium, and India CSIR Technology Showcase

Source: APCTT website

Table A8.3. Report on APCTT Activities (2019-2022)

Dec 2021 – Nov 2022	Dec 2020 - Nov 2021	Dec 2019 – Nov 2020
Regional technology cooperation strengthened	Regional technology cooperation strengthened	Strengthening of national innovation systems
<p>Expert group meeting on strengthening regional cooperation in healthcare biotechnology and biomedical sector, 22 Mar 2022 (Virtual)</p> <p>Brainstorming session between STI agencies of India and APCTT for promoting regional technology cooperation, 19 Apr 2022, New Delhi, India</p> <p>Strategic priorities for adoption of emerging technologies in the energy sector for climate change mitigation (side event of seventy-eighth session of the Commission), 24 May 2022 (Virtual)</p> <p>Industry-Academia-Government consultative meeting to address the challenges of energy sector (conventional & non-conventional) and energy devices, 17 Oct 2022 (Virtual)</p>	<p>Technology Facilitation Consultative Meeting to address the Challenges of COVID-19 Pandemic, 23 Aug 2021, New Delhi, India (virtual event)</p> <p>Project component under the 'Eleventh Tranche of the UN Development Account' to promote inclusive technologies and innovations and development of roadmap for a technology database for 3 member States (Bangladesh, Bhutan and Nepal)</p>	<p>Expert Dialogue on Science Engineering Technology Innovation Priorities and Implementation Means – Asia-Pacific Online Consultation, 1 Sep 2020, Indonesia (Virtual)</p> <p>International Conference on Circular Economy and Technology Transfer for Small and Medium Sized Enterprises, 23 Sep 2020, Bangkok, Thailand (Hybrid)</p> <p>Regional Workshop on New Paradigms of Innovation and Technology to Address COVID-19 Pandemic, 3 Nov 2020, Tashkent, Uzbekistan (Hybrid)</p> <p>International Forum for Sustainable Asia and the Pacific 2020, 10 Nov 2020, Hayama, Japan (Virtual)</p> <p>International Conference on Emerging Technologies to Combat the COVID-19 Pandemic, 1 Dec 2020, Guangzhou, China (Hybrid)</p>
Innovation and technology transfer capacity enhanced	Technology transfer and science technology and innovation capacity enhanced	Technology transfer capacity building
<p>International conference on innovation, transfer and diffusion of fourth industrial revolution technologies, 30 Jun 2022, Guangzhou, China (Hybrid)</p> <p>Regional conference on energy resilience through decentralized power plants and smart grid integration, 15 Sep 2022, Bangkok, Thailand (Hybrid)</p> <p>Regional workshop on mechanisms for technical cooperation on green innovation, 19 Oct 2022, Tashkent, Uzbekistan (Hybrid)</p> <p>International knowledge-sharing workshop on cross-border innovation, acceleration, and challenges in international</p>	<p>International Conference on Emerging Fourth Industrial Revolution Technologies for Sustainable Development, 22 Jul 2021, Guangzhou, China (Virtual)</p> <p>3rd International Congress on Water Desalination, Application of Advanced Technologies in Unconventional Water Treatment for Zones under Water Stress, 14-16 Sep 2021, Tehran, Islamic Republic of Iran (Virtual)</p> <p>Regional Workshop on Emerging Technologies to respond to Climate Change, 14 Sep 2021, Kunming, China (Virtual)</p> <p>Regional Workshop on Innovative Strategies for Research Commercialization and</p>	<p>Regional Workshop on Technology Transfer – Renewable Energy Technologies for Climate Change Mitigation, 24-25 Sep 2020, Bangkok, Thailand (Hybrid)</p> <p>International Workshop on Intellectual Property Management and Technology Transfer, 19 Nov 2020, Indonesia (Virtual)</p>

<p>technology transfer, 14-15 Nov 2022, New Delhi, India (Hybrid)</p> <p>International conference on innovation, technology transfer and cooperation for addressing climate change, 6 Dec 2022, Bangkok, Thailand (Hybrid)</p> <p>Centre provided substantive contributions to the capacity building activities organized by external partner institutions:</p> <ul style="list-style-type: none"> • Workshop on opportunity for low-emission transportation in South Asia, Pacific & African regions, 20-23 Jun 2022, New Delhi, India. • International conference: Systems analysis for enabling integrated policy making, 10-12 Aug 2022, New Delhi, India. • East Asia Summit New Energy Forum 2022, 20 Oct 2022 (Virtual). 	<p>Technology Transfer, 24 Nov 2021, Tashkent, Uzbekistan (Hybrid)</p> <p>International Conference on Fourth Industrial Revolution Technologies for Sustainable Development, 30 Nov 2021, New Delhi, India (Virtual)</p>	
<p>Technology intelligence enhanced through knowledge products</p>	<p>Technology intelligence enhanced through knowledge products</p>	<p>Providing technology intelligence through publications</p>
<p>Developed and disseminated four issues of its online periodical Asia-Pacific Tech Monitor.</p> <p>Shared its online periodicals with readers from the member countries and outside the region as well. During the reporting period, the web version of the Tech Monitor was distributed to 1941 stakeholders and e-subscribers from the member States.</p> <p>Produced and disseminated the publication titled Intellectual Property Management and Technology Licensing - Guide for Policymakers and Managers of Research and Development Institutes, 2022, among national focal points and relevant stakeholders in member States.</p> <p>Finalized and disseminated three thematic papers related to innovation, transfer and diffusion of fourth industrial revolution technologies for sustainable development, healthcare, and climate change</p>	<p>Disseminated information on recent technological trends and developments through its online periodical Asia-Pacific Tech Monitor. The Centre published 4 issues of Asia-Pacific Tech Monitor focusing on special themes.</p> <p>Developed a publication titled “Intellectual Property Management and Technology Licensing - Guide for Policymakers and Managers of Research and Development Institutes”.</p> <p>Brought out 3 theme papers related to innovation, transfer and diffusion of fourth industrial revolution technologies for sustainable development, healthcare, and climate change mitigation, for circulation at the international conference on fourth industrial revolution technologies for sustainable development, 30 November 2021.</p>	<p>Published 4 issues of Tech Monitor focusing on special themes such as technology-based start-ups, sustainable ocean economy, Intellectual Property Management, and Technologies to control COVID-19 pandemic.</p> <p>Developed a publication and training manuals on intellectual property management and technology licensing. The publication was part of the United Nations Development Account project activities titled ‘South-South Cooperation for Science, Technology and Innovation Policies in the Asia-Pacific Region’.</p> <p>Developed a guidebook on ‘Innovation and technology transfer for clean energy in Asia and the Pacific’.</p>

mitigation, among stakeholders of member States. Developed a study report on 'Development of enabling strategy for the transfer of inclusive innovations and technologies' for policymakers to develop and adopt enabling strategies for enhancing access to inclusive innovations and technologies.		
Project-based activities		
National consultation: Bangladesh - Development of enabling strategies for transfer of inclusive innovations and technologies, 15 Feb 2022 (Virtual) National consultation: Nepal - Development of enabling strategies for transfer of inclusive innovations and technologies, 24 Feb 2022 (Virtual) Inception meeting for the project 'Enhanced capabilities to adopt innovative technologies for city air pollution control in select countries of the Asia-Pacific', 23 Sep 2022 (Virtual)		
Support to inter-governmental meetings of ESCAP	Support to inter-governmental meetings of ESCAP	Support to inter-governmental meetings of ESCAP
Seventy-eighth session of the Commission 23-27 May 2022, Bangkok, Thailand Committee on Information and Communication Technology, and Science, Technology, and Innovation, fourth session, 31 Aug – 2 Sep 2022, Bangkok, Thailand	Seventy Seventh Commission Session of ESCAP, 26-29 Apr 2021, Bangkok, Thailand	Seventy Sixth Commission Session of ESCAP, 21 May 2020, Bangkok, Thailand Third Session of the Committee on Information and Communications Technology, Science, Technology and Innovation of ESCAP, 19-20 Aug 2020, Bangkok, Thailand
Cooperation with international organizations and other partners Jointly delivered activities and worked closely with international organizations.	Cooperation with international organizations and other partners Jointly delivered activities and worked closely with international organizations.	Cooperation with UN, international organizations and other partners Jointly delivered activities and worked closely with international organizations.
Digital outreach Extended its outreach to stakeholders, policy makers and institutions through digital tools (e.g., website, technology databases), and social media.	Digital outreach Extended its outreach to stakeholders, policy makers and institutions through digital tools (e.g., website, technology databases), and social media.	Digital Outreach Extended its outreach to stakeholders, policy makers and institutions through digital tools (e.g., website, technology databases), and social media.

Development of strategic plan of the Centre Developed a draft strategic plan (2023-2027).		
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Source: APCTT reports

**Table A8.4. Events and activities organized by APCTT (2019-2023)
(Gender disaggregated)**

Events	Participants	
	M	F
1. Nineteenth Session of the Governing Council of APCTT, 6-7 December 2023, Tashkent, Uzbekistan.		
2. International Conference on Green Technologies for Climate Action and Resilience, 5 December 2023, Tashkent, Uzbekistan.		
3. Study Tour on Innovative Technologies and Good Practices for Air Pollution Control for City Officials of Bangladesh, India, and Thailand, 18-21 September 2023, Incheon & Seoul, Republic of Korea.	10	3
4. International Conference on Scaling Up and Adoption of Fourth Industrial Revolution Technologies for Climate Resilience, 15 September 2023, Guangzhou, China.	25	54
5. International Conference on Air Pollution, Perspective, Prediction, Prevention and Control, 31 August 2023, Bangkok, Thailand.		
6. Building the resilience agenda through technology, 27 July 2023, Bangkok, Thailand.		
7. Expert Group Meeting (EGM) on Innovative Technologies and Applications for Urban Air Pollution Control in Asia and the Pacific, 25 May 2023.	14	6
8. Scaling up climate change adaptation technology applications for a resilient future in Asia and the Pacific, 19 May 2023, Bangkok, Thailand.	28	17
9. Pacific Perspectives on Accelerating Climate Action, 15 May 2023, Bangkok, Thailand.		
10. Advancing Climate Action and Resilience of Cities in the Asia-Pacific Region - Renewable energy and Air pollution control', 30 March 2023, Bangkok, Thailand.		
11. Pacific Perspectives on Accelerating Climate Action, 15 May 2023, Bangkok, Thailand.		
12. Advancing Climate Action and Resilience of Cities in the Asia-Pacific Region - Renewable energy and Air pollution control', 30 March 2023, Bangkok, Thailand.		
13. Strategic Planning Meeting of Regional Alliance of Technology Transfer and Adoption Centers under South-South and Triangular Collaboration Programme on Science, Technology and Innovation among Cambodia, Lao PDR, Thailand and Viet Nam, 9 February 2023, Hanoi, Viet Nam.		
14. Regional Workshop on Development of Enabling Strategies for Transfer of Inclusive Innovations and Technologies, 8 December 2022, Bangkok, Thailand and Online.		
15. Eighteenth Session of the Governing Council of APCTT, 7-8 December 2022, Bangkok, Thailand.		
16. International Conference on Innovation, Technology Transfer and Cooperation for Addressing Climate Change, 6 December 2022, Bangkok and online.	44	103

17. International Knowledge Sharing Workshop on Cross-border Innovation, Acceleration and Challenges in International Transfer of Technologies, 14-15 November 2022, New Delhi, India.	50	35
18. East Asia Summit New Energy Forum 2022, 20 October 2022 (Virtual).		
19. Regional workshop on Mechanisms for Technical Cooperation on Green Innovation, 19 October 2022.	35	4
20. Industry-Academia-Government Consultative Meeting to address the Challenges of Energy Sector (Conventional & Non-conventional) and Energy Devices, 17 October 2022.	74	11
21. Inception meeting for the project titled Enhanced capabilities to adopt innovative technologies for city air pollution control in select countries of the Asia-Pacific, 23 September 2022 (Virtual).		
22. International conference: Systems analysis for enabling integrated policy making, 10-12 August 2022, New Delhi, India.		
23. International conference on Innovation, Transfer and Diffusion of Fourth Industrial Revolution Technologies, 30 June 2022, Guangzhou, China and online.	84	34
24. Workshop on opportunity for low-emission transportation in South Asia, Pacific & African regions, 20-23 June 2022, New Delhi, India.		
25. Strategic Priorities for Adoption of Emerging Technologies in the Energy Sector for Climate Change Mitigation, 24 May 2022.	39	29
26. Brainstorming Session between STI Agencies of India and APCTT for Promoting Regional Technology Cooperation, 19 April 2022, New Delhi, India.	16	4
27. Expert Group Meeting on strengthening Regional Cooperation in Healthcare Biotechnology and Biomedical Sector, 22 March 2022 in virtual mode.	27	8
28. National Consultation Workshop- Nepal: Development of enabling strategies for the transfer of inclusive innovations and technologies, 24 February 2022 (Virtual event).		
29. National Consultation Workshop- Bangladesh: Development of enabling strategies for the transfer of inclusive innovations and technologies, 15 February 2022 (Virtual event).		
30. Seventeenth Session of the Governing Council of APCTT, 1-2 December 2021, New Delhi, India.		
31. International Conference on Fourth Industrial Revolution Technologies for Sustainable Development, 30 Nov 2021, New Delhi, India.		
32. Regional Workshop on Innovative Strategies for Research Commercialization and Technology Transfer, 24 November 2021, Tashkent, Uzbekistan.		
33. Regional Workshop on Emerging Technologies to Respond to Climate Change, 14 September 2021, Kunming, China.	71	55
34. Technology Facilitation Consultative Meeting to address the Challenges of COVID-19 Pandemic, 23 August 2021.	35	16
35. International Conference on Emerging Fourth Industrial Revolution (4IR) Technologies for Sustainable Development, 22 July 2021.	84	41
36. Sixteenth Session of the Governing Council of APCTT, 2-3 Dec 2020, Guangzhou, China.		
37. International Conference on Emerging Technologies to Combat the Covid-19 Pandemic, 1 December 2020, Guangzhou, China.	94	35
38. International workshop on Intellectual Property Management and Technology Transfer, 19 November 2020, Jakarta, Indonesia.	72	69
39. International Forum for Sustainable Asia and the Pacific 2020, 10 November 2020, Hayama, Japan (virtual event).		
40. Regional Workshop on New Paradigms of Innovation and Technology to Address the Challenges of COVID-19 Pandemic, 3 November 2020, Tashkent, Uzbekistan.	61	25

41. Regional workshop on Technology Transfer - Renewable Energy Technologies for Climate Change Mitigation, 24-25 September 2020, Bangkok, Thailand.	35	37
42. Expert Dialogue on Science Engineering Technology Innovation Priorities and Implementation Means – Asia-Pacific Online Consultation, 1 September 2020, Indonesia (virtual event).		
43. Fifteenth Session of the Governing Council of APCTT, 6-7 November 2019, Kuala Lumpur, Malaysia.		
44. International Conference on Emerging Technologies for Achieving Sustainable Development Goals, 5 Nov 2019, Kuala Lumpur, Malaysia.		
45. Regional Workshop on Innovation and Technology Transfer Role of Intellectual Property 30 - 31 October 2019, Tashkent, Uzbekistan.	44	20
46. Visit of industry delegations from China, 8 December 2018 and 25 September 2019.		
47. International Training Programme on Skill Development and Employment Generation, 20 September 2019, Noida, India.		
48. Regional Workshop on Planning and Managing Technology Transfer for Inclusive Development, Thimphu, 16 – 18 July 2019.	51	32
49. Training workshop on Skill, Technology and Future of Work, 8-12 July 2019, Noida, India.		
50. Regional Workshop on New Paradigm in Technology Transfer and Commercialization, 8-10 July 2019, Ghaziabad, India.		
51. South and Southeast Asia Technology Transfer Matchmaking Conference, 13-14 June 2019, Kunming, China.		
52. International Workshop on Intellectual Property Management and Technology Licensing 18 - 20 June 2019, Bangkok, Thailand.	19	25
53. Study Mission to Bhutan for developing a blueprint structure of national technology transfer database, 9-10 April 2019, Thimphu, Bhutan.		
54. Workshop on policies to support Grassroots Innovation, 27 January 2019, Ahmedabad, India.		
<p>In 22 events/activities (workshops, conferences, seminars, meetings) where data are available, the overall gender profile is shown as follows: Male = 1,012 (60%); Female = 663 (40%); Total = 1,675</p> <p>Events/Activities per Year = 54/5 = 10.8</p> <p>If we add the capacity building activities where APCTT made significant contributions: Events/activities per Year = 54 + 12 = 66 66/5 = 13.2</p>		

Source: APCTT reports

Table A8.5. Capacity building events to which APCTT made substantive contributions (2019-2023)

1. 4th Forum on China-South Asia Technology Transfer and Collaborative Innovation, 15-19 August 2023, Kunming, China.
2. Strategic Planning Meeting of Regional Alliance of Technology Transfer and Adoption Centers under South-South and Triangular Collaboration Programme on Science, Technology and Innovation among Cambodia, Lao PDR, Thailand and Viet Nam on 9 February 2023, Hanoi, Viet Nam.
3. East Asia Summit New Energy Forum 2022, 20 October 2022 (Virtual).
4. International conference: Systems analysis for enabling integrated policy making, 10-12 August 2022, New Delhi, India.
5. Workshop on opportunity for low-emission transportation in South Asia, Pacific & African regions, 20-23 June 2022, New Delhi, India.

6.	3rd International Congress on Water Desalination, Application of Advanced Technologies in Unconventional Water Treatment for Zones under Water Stress, 14-16 September 2021, Tehran, Islamic Republic of Iran (virtual event).
7.	International Forum for Sustainable Asia and the Pacific 2020, 10 November 2020, Hayama, Japan (virtual event).
8.	Expert Dialogue on Science Engineering Technology Innovation Priorities and Implementation Means – Asia-Pacific Online Consultation, 1 September 2020, Indonesia (virtual event).
9.	International Training Programme on Skill Development and Employment Generation, 20 September 2019, Noida, India.
10.	Training workshop on Skill, Technology and Future of Work, 8-12 July 2019, Noida, India.
11.	South and Southeast Asia Technology Transfer Matchmaking Conference, 13-14 June 2019, Kunming, China.
12.	Workshop on policies to support Grassroots Innovation, 27 January 2019, Ahmedabad, India.

Source: APCTT reports

Table A8.6. Annual Contributions to APCTT (in US\$)

Year	Total	India	Percentage of India Contribution
2018	364,392	201,745	55.4
2019	445,988	233,492	52.4
2020	969,969	854,602	88.1
2021	1,068,425	869,373	81.4
2022	1,214,070	857,127	70.6
AVERAGE	812,569	603,268	69.6

Source: Reports of APCTT Governing Council

Table A8.7. Member States Contribution (in US\$) to ESCAP Regional Centres in 2022

Country	APCTT	APCICT	SIAP	CSAM	APDIM
Bangladesh	7,000	10,000	7,000	3,000	
Brunei Darussalam			15,000		
Cambodia		4,000	4,000	4,000	4,000
China	27,395		70,000	1,700,000	
Fiji			8,767	-	
Hong Kong, China			30,000		
India	857,127		25,000	15,000	
Indonesia	30,000		-	30,000	
Kazakhstan			3,500		
Macao, China	5,000	5,000	20,000		10,000

Malaysia	15,000		20,000		
Maldives			4,000		
Mongolia			7,622	-	
Pakistan	-		-	4,980	
Philippines	30,000		18,375	30,000	
Republic of Korea	217,548	1,522,210	50,661	10,000	
Samoa			3,990		
Singapore			30,000		
Thailand	15,000		23,000	13,500	
Viet Nam	10,000		20,000	3,000	
Total	1,214,070	1,576,656^a	360,915	1,813,480	14,000

a - Includes US\$ 35,446 contribution of Republic of Korea Ministry of Science and ICT

Source: Reports of APCTT Governing Council

Table A8.8. Comparison of Annual Expenditures of Regional Institutions (2018-2022)

Year	APCTT	CSAM	APCICT	SIAP	APDIM
2018	373,477	1,377,504	1,109,681	2,356,071	1,054,168
2019	267,011	1,726,162	1,308,365	2,135,912	1,089,162
2020	289,660	1,155,350	1,186,472	1,990,055	978,209
2021	462,896	1,510,928	1,539,188	2,131,644	813,181
2022	609,824	1,659,100	1,533,316	1,820,678	905,540
AVERAGE	400,574	1,485,809	1,335,404	2,086,872	968,052

Source: Reports of APCTT Governing Council

Table A8.9. Comparison of End-of-Year Fund Balances of Regional Institutions (2018-2022)

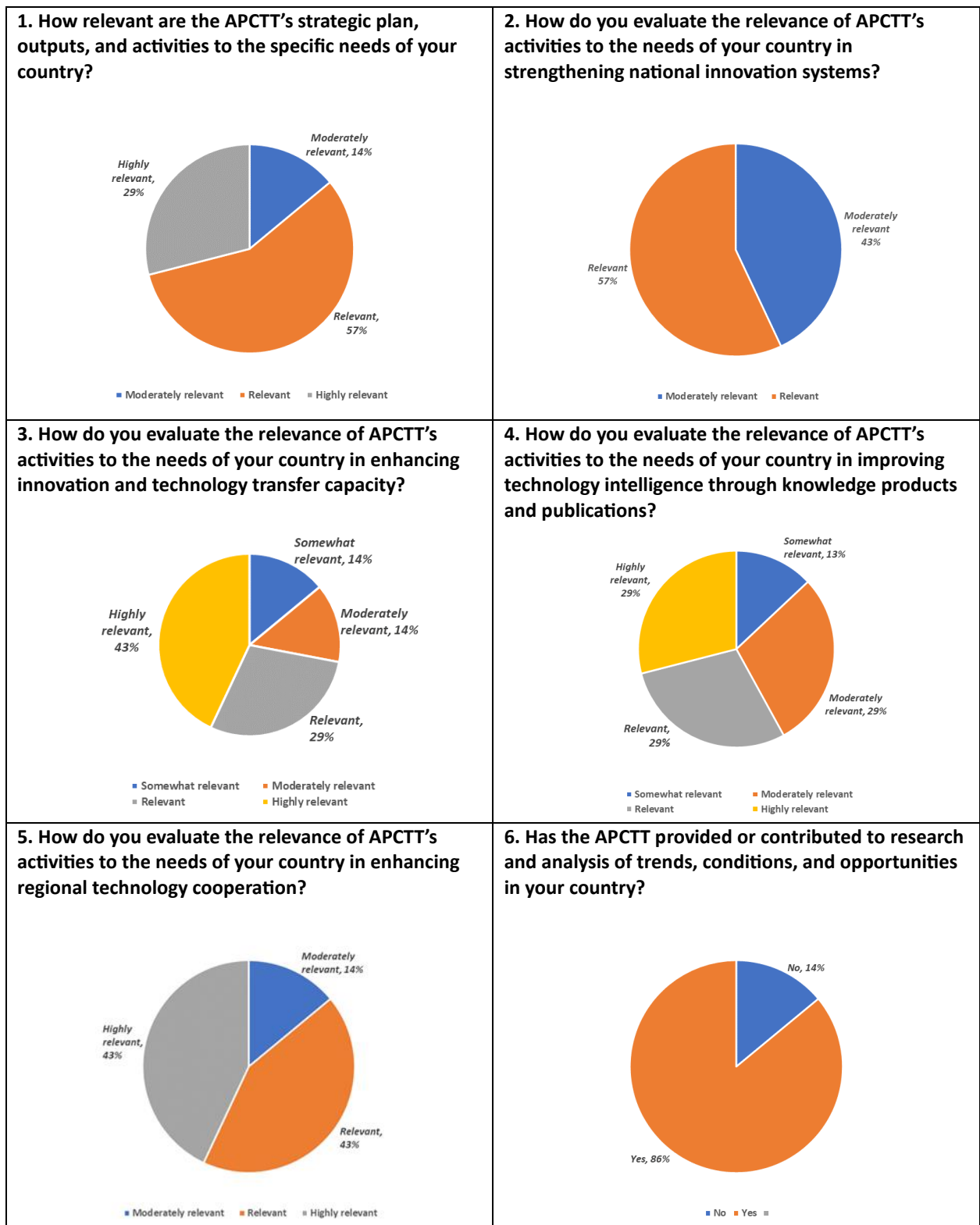
Year	APCTT	CSAM	APCICT	SIAP	APDIM
2018	1,104,818	3,916,860	3,428,800	4,861,509	2,802,549
2019	1,314,602	4,125,966	3,824,597	5,640,998	2,168,100
2020	2,015,663	4,641,120	4,202,187	5,959,678	1,400,844
2021	2,628,672	5,199,674	4,354,331	6,089,768	1,815,340
2022	3,248,498	5,383,030	4,421,742	4,655,360	929,327
AVERAGE	2,062,451	4,653,330	4,046,331	5,441,463	1,823,232

Source: Reports of APCTT Governing Council

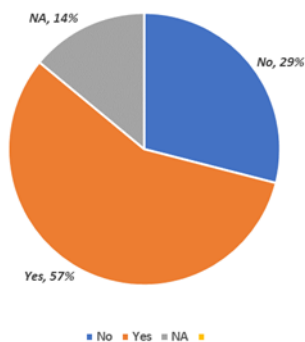
Table A8.10. Ratings from online interviews (16 Oct – 6 Nov 2023)

Interviewee No.	Impact	Relevance	Effectiveness	Efficiency	Sustainability	Gender
1	4	5	4.25	4.25		3.5
2			4	5		
3	4	5	4	4	4	5
4	4	4	5	4	4	5
5	3.25	4	3.5	3.75	3	3.5
6	3	3	3	3	3	3
7						
8	3.6	4	3.5	3.5	3	4
9	5	5	4.5	4	5	5
10	3	4	4	4	2	4
11						
12						
13		4	4			
14	4	5	4	5	3.5	4
15	4	4	4	4	3	5
Average of each parameter	3.8	4.3	4.0	4.0	3.4	4.2
No. of respondents with ratings	10	11	12	11	9	10

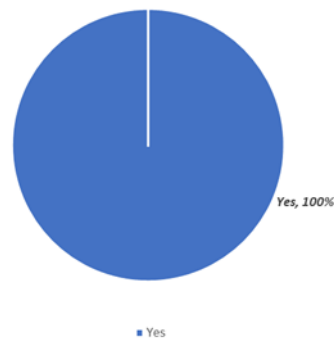
Figure A8.1. Survey responses of Governing Council and Member States



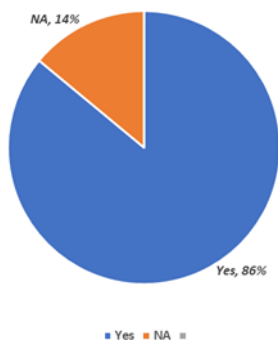
7. Has the APCTT provided or contributed to advisory services in your country?



8. Has the APCTT provided or contributed to dissemination of information and good practices in your country?



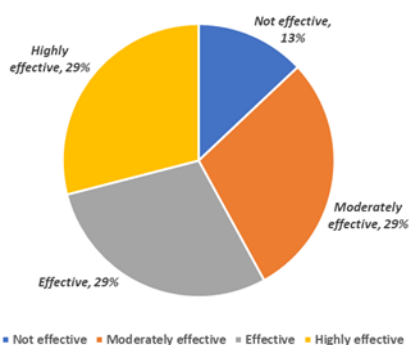
9. Has the APCTT provided or contributed to networking and partnership with international organizations and key stakeholders in your country?



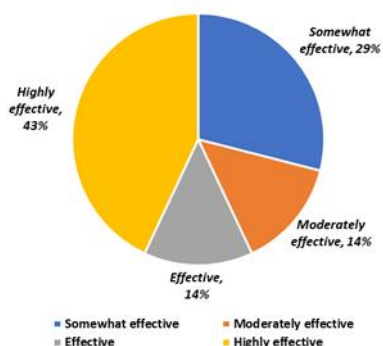
10. Has the APCTT provided or contributed to training of national personnel, particularly policy makers, scientists, managers of technology promotion/transfer agencies, and SMEs in your country?



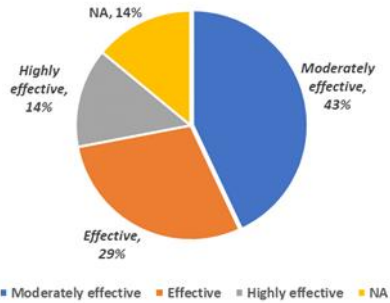
11. How effective is the Centre in achieving its intended objectives and addressing the needs of your country in cross-border cooperation?



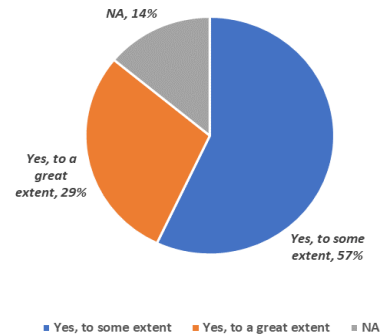
12. How effective is the Centre in achieving its intended objectives and addressing the needs of your country in capacity development?



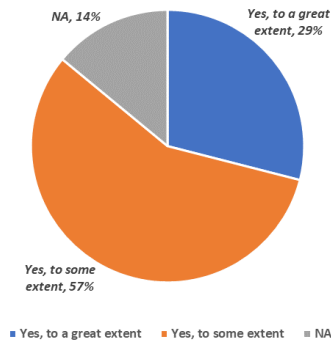
13. How effective is the Centre in achieving its intended objectives and addressing the needs of your country in policy support?



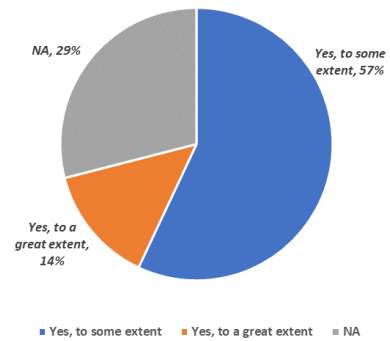
14. To what extent has APCTT enhanced the capacity of member State officials to adopt/ adapt emerging and innovative technologies?



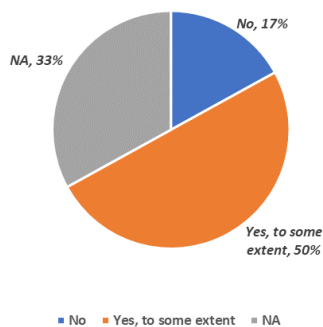
15. Are the human and financial resources of APCTT used efficiently to deliver activities and outputs in coordination with other stakeholders?



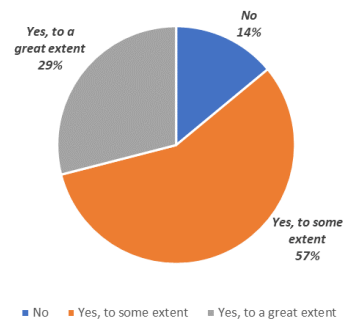
16. Do the outputs of projects and activities justify the cost of such projects and activities?



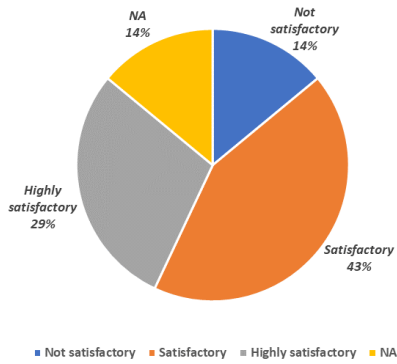
17. Did project activities unnecessarily duplicate similar activities by external parties?



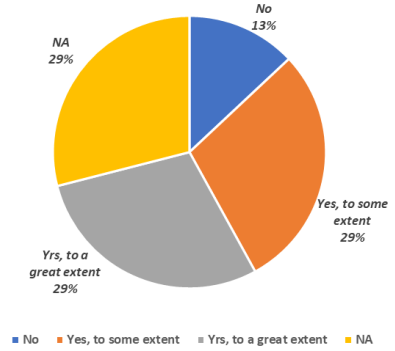
18. In the design and delivery of its outputs, to what extent does APCTT collaborate with national institutions/organizations in your own country?



19. How well do the Centre’s staffing and financial resources match the demands of the Centre’s programme of work?



20. To what extent do you support the recommendation to make annual contributions to the APCTT of USD 7,000 for least developed countries and USD 30,000 for developing countries?



21. To what extent do you support the full implementation of the Centre’s Strategic Plan 2023-2027?

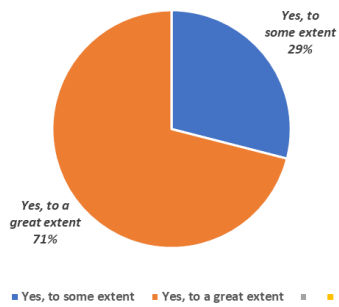


Figure A8.2. Survey responses of ESCAP management and staff

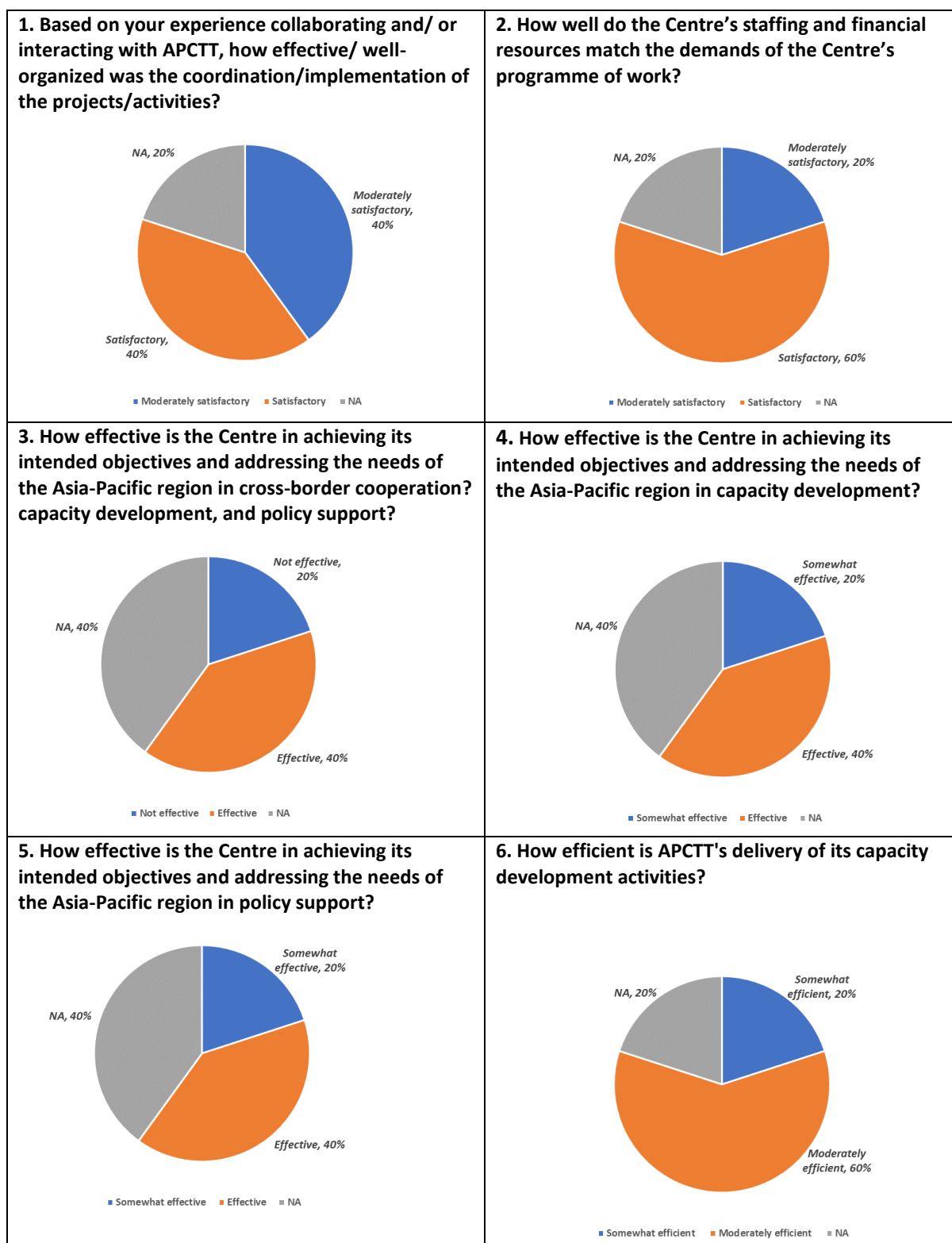
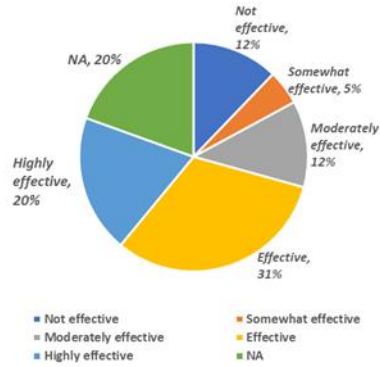
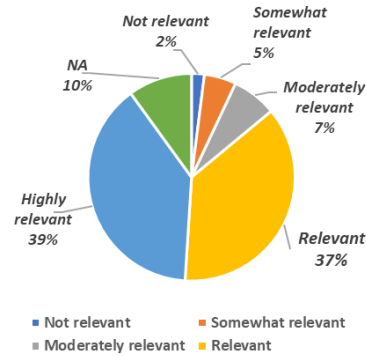


Figure A8.3. Survey responses of APCTT Collaborators and Partners

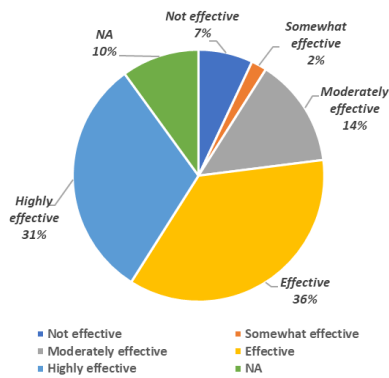
1. How would you rate the overall effectiveness of APCTT's collaboration with your organization?



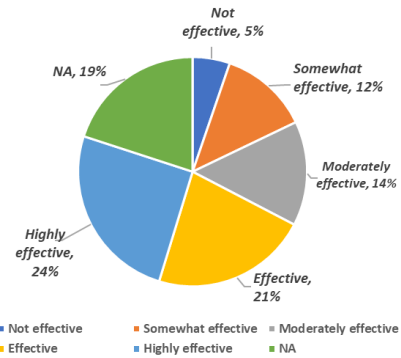
2. How relevant are the topics/ contents/ outputs of the projects/ activities you have participated in, to the needs of the Asia-Pacific region?



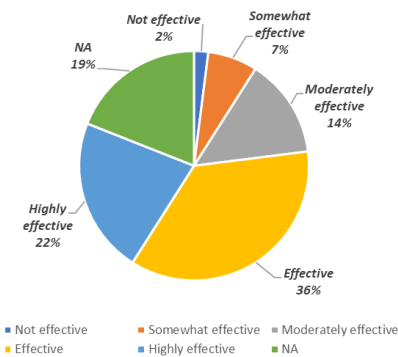
3. How effective is the Centre in achieving its intended objectives and addressing the needs of the Asia-Pacific region in cross-border cooperation?



4. How effective is the Centre in achieving its intended objectives and addressing the needs of the Asia-Pacific region in capacity development?



5. How effective is the Centre in achieving its intended objectives and addressing the needs of the Asia-Pacific region in policy support?



6. How efficient is APCTT's delivery of its capacity development activities?

