

Asian and Pacific Centre for Transfer of Technology
Governing Council

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Report on the activities of the Centre for the period December 2019 to November 2020

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I. Introduction

1. The Asian and Pacific Centre for Transfer of Technology promotes regional cooperation in science, technology and innovation to achieve the Sustainable Development Goals by 2030.
2. The Centre assists member States to strengthen their capabilities to develop and manage national innovation systems; develop, transfer, adapt and commercialize technologies; improve the terms of transfer of technologies; and identify and promote the development and transfer of technologies relevant to the region.
3. The Centre has been fostering inclusive partnerships between governments, research and development institutions, private sector and civil society for transfer, dissemination and diffusion of environmentally sound technologies between countries in the Asia-Pacific Region.
4. The Centre supports development of partnerships and creation of enabling environment for innovation and technology transfer. the activities of the Centre not only contributes towards the Sustainable Development Goal 9 (Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation), and Sustainable Development Goal 17 (Strengthen the means of implementation and revitalize the global partnership for sustainable development), but also supports the other Sustainable Development Goals through specific technologies related to different Sustainable Development Goals.
5. This report covers the activities carried out by the Centre during the period December 2019 to November 2020.
6. The Centre's primary focus areas in the reporting period were as follows:
 - (a) Strengthening and promoting sound national innovation systems to harness technology innovations for sustainable development;
 - (b) Capacity building support to develop, transfer, commercialize and adopt new and emerging technologies that have the transformative potential to

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achieve the Sustainable Development Goals;

(c) Enhancing knowledge and exchange of best practices on science, technology and innovation policy, promotion of new and emerging technology innovations, technology transfer and commercialization, intellectual property management and technology licensing, strategies to address the challenges of COVID-19 pandemic;

(d) Production of periodicals and publications on science, technology and innovation policy, technology transfer and commercialization, intellectual property management, new and emerging technologies and other related areas;

(e) Facilitation of regional cooperation and networking in science, technology and innovation, and cross-border technology transfer.

7. During the reporting period, the Centre delivered and actively contributed to 7 demand-driven capacity building activities in 5 member States (China, Indonesia, Japan, Thailand and Uzbekistan) in close collaboration with 27 partner institutions. The activities included international conferences and regional capacity building workshops. The Centre reached out to 587 target participants comprising representatives from science, technology and innovation policy makers, and representatives from technology promotion agencies, technology transfer intermediaries, academia, research and development institutions, small and medium enterprises, startups and financial institutions.

8. The Centre benefited from participation of experts from the Asia-Pacific member States namely Australia, Bhutan, China, India, Indonesia, Islamic Republic of Iran, Japan, Lao People's Democratic Republic, Malaysia, Maldives, Myanmar, Philippines, Republic of Korea, Sri Lanka, Singapore, Thailand, Timor-Leste, Turkmenistan, Uzbekistan and Viet Nam. The experts shared their domain knowledge, experiences and best practices with the target participants. The Centre's activities also benefited from participation of experts from Botswana, Ireland, Poland, Trinidad and Tobago, the United States of America, Association of Southeast Asian Nations Secretariat, from other United Nations Organisations such as United Nations Educational, Scientific and Cultural Organization and World Intellectual Property Organization.

9. The Centre's online periodical 'Asia-Pacific Tech Monitor' delivered latest information on: technology trends and developments; science, technology and innovation policies; technology market; technology transfer and commercialization; intellectual property management; and new and emerging technologies including the fourth industrial revolution technologies (Annex II).

10. During the reporting period, the Centre contributed to strengthening the capabilities of stakeholders from countries with special needs such as Bangladesh, Bhutan, Lao People's Democratic Republic, Maldives, Myanmar and Timor-Leste.

11. The Centre expanded the outreach of its capacity building activities to Central Asian countries such as Turkmenistan and Uzbekistan.

12. The list of partner institutions, who worked with the Centre in delivering activities during the reporting period, is provided as Annex I.

II. Activities carried out by the Centre during the reporting period (December 2019 - November 2020)

A. Strengthening of national innovation systems

13. The Centre provided capacity building support to strengthen national innovations systems of the member countries. Following are the key activities carried out and/or contributed by the Centre:

(a) **Expert Dialogue on Science Engineering Technology Innovation Priorities and Implementation Means – Asia-Pacific Online Consultation, 1 September 2020, Indonesia (virtual event):** The Centre supported the event organized by the Regional Science Bureau for Asia and the Pacific, the United Nations Educational, Scientific and Cultural Organization, Jakarta, Indonesia. The regional dialogue brought inputs and insights from related experts in Asia and the Pacific to reach a regional consensus on the role of science, engineering, technology and innovation for delivering the Sustainable Development Goals. Eleven experts from Australia, China, Indonesia, Japan, Malaysia, Myanmar, Pakistan and Sri Lanka shared experiences, key challenges and the lessons learnt. They provided suggestions on how to overcome the challenges as well as areas for international collaboration and networking to advance achieving Sustainable Development Goals in the region. The Centre shared perspectives on the role of Sustainable Development Goals-ready technologies and innovations for the Asia-Pacific region. The regional dialogue was attended by 63 participants from Afghanistan, Australia, China, India, Indonesia, Islamic Republic of Iran, Japan, Malaysia, Myanmar, Pakistan and Singapore, Sri Lanka and Viet Nam.

(b) **International Conference on Circular Economy and Technology Transfer for Small and Medium Sized Enterprises, 23 September 2020, Bangkok, Thailand (hybrid event):** The Centre organized this conference jointly with the Ministry of Higher Education, Science, Research and Innovation, Thailand and the Thailand Institute of Scientific and Technological Research. The conference was held in conjunction with Association of South East Asian Nations Sustainable Energy Week, 23-27 September 2020, Bangkok, Thailand. The conference deliberated on: circular and bio-circular-green economy concepts; bio-circular-green economy policies and practices; bio-circular-green innovations and best practices for small and medium enterprises; bio-circular-green technologies for sustainable development, commercialization and adoption; and areas for regional cooperation. Experts from India, Malaysia, Thailand, Viet Nam and ESCAP shared their perspectives and experiences, case studies and best practices. The conference enhanced knowledge and understanding of 70 participants from 13 member States, namely China, India, Indonesia, Lao People's Democratic Republic, Malaysia, Maldives, Myanmar, Philippines, Singapore, Thailand, Timor-Leste, Turkmenistan and Viet Nam. The participants comprised government officials, scientists, private sector representatives, technology intermediaries, small and medium enterprises and other relevant stakeholders. The experts shared their perspectives and experiences on bio-circular-green model for sustainability, climate change mitigation and adaptation and the ways to support small and medium enterprises in taking up inclusive bio-circular-green technologies in the Association of Southeast Asian Nations region.

(c) **Regional Workshop on New Paradigms of Innovation and Technology to Address the Challenges of COVID-19 Pandemic, 3 November 2020, Tashkent, Uzbekistan (hybrid event):** The Centre organized

this regional workshop jointly with Ministry of Innovative Development, Republic of Uzbekistan. Policymakers and experts from China, India, Ireland, Japan, Philippines, the Republic of Korea and Uzbekistan discussed strategies to use technologies, including emerging fourth industrial revolution technologies, to address the challenges during- and post-COVID scenarios. The experts highlighted the various challenges of COVID-19 in the areas of healthcare, business, production, education and research and development. In order to complement the knowledge with real experience, the regional workshop was held on the first day of the virtual InnoWeek.uz 2020 expo, part of the International Week of Innovative Ideas (3-8 November 2020) organized by the Ministry of Innovative Development, Uzbekistan. The workshop contributed to enhancing the knowledge, skill and capabilities of 86 participants from 10 member States, namely China, India, Indonesia, Japan, Pakistan, Philippines, Republic of Korea, Sri Lanka, Thailand and Uzbekistan. The participants included government officials, research scientists, private sector representatives, technology intermediaries, small and medium enterprises and other relevant stakeholders involved in innovation and technology transfer.

(d) International Forum for Sustainable Asia and the Pacific 2020, 10 November 2020, Hayama, Japan (virtual event): The Centre contributed to this event organized by the Institute for Global Environmental Strategies, Japan. The forum deliberated on the model of ‘co-innovation’ and its potential role in facilitating the cross border transfer of technologies, including transfer of Japanese technologies to other countries in Asia. The forum discussed about co-innovation as a collaborative and iterative approach to jointly innovate, manufacture and scale up technologies. Nine experts from India, Japan, Asian Development Bank and Institute for Global Environmental Strategies shared their viewpoints and case studies with the participants. The Centre shared regional perspectives on low carbon technology collaborations in Asia to foster technology transfer and co-innovation.

(e) International Conference on Emerging Technologies to Combat the COVID-19 Pandemic, 1 December 2020, Guangzhou, China (hybrid event): The international conference will be jointly organized with Ministry of Science and Technology, People’s Republic of China and Guangzhou University of China. The conference aims to facilitate awareness on using new and emerging technologies such as fourth industrial revolution technologies to effectively address the impacts of the pandemic and in mitigating the risks. The conference will provide a platform to share the challenges, strategies and best practices from across the Asia-Pacific region so as to assist in effective prevention, adaptation and recovery from the pandemic. Experts will share best practices of national strategies, collaborative research and development, innovation, and cross-border technology transfer which are considered important to address the challenges of pandemic effectively. The conference would enhance the knowledge and understanding of about 100 participants including senior Government officials and experts from Bhutan, Bangladesh, China, India, Indonesia, Ireland, Islamic Republic of Iran, Japan, Malaysia, Nepal, Pakistan, Philippines, Republic of Korea, Singapore, Sri Lanka, Switzerland, Thailand and Uzbekistan.

B. Technology transfer capacity building

14. During the reporting period, the Centre organized the following capacity-building activities:

(a) Regional Workshop on Technology Transfer – Renewable Energy Technologies for Climate Change Mitigation, 24-25 September 2020, Bangkok, Thailand (hybrid event): The Centre organized this regional

workshop jointly with Ministry of Higher Education, Science, Research and Innovation, Thailand and the Thailand Institute of Scientific and Technological Research. The workshop discussed policies and strategies, institutional and financial mechanisms, and innovative business models for renewable energy technology transfer, adoption and deployment. Experts from India, Japan, Republic of Korea, Thailand, ESCAP and United Nations Educational, Scientific and Cultural Organization shared experiences and relevant case studies from across the Asia-Pacific region. The workshop witnessed participation of 83 representatives from 14 member States, namely Bhutan, China, India, Indonesia, Islamic Republic of Iran, Japan, Lao People's Democratic Republic, Myanmar, Philippines, Republic of Korea, Thailand, Timor-Leste, Trinidad and Tobago, and Turkmenistan. The participants comprised policy makers, government officials, scientists, private sector representatives, technology intermediaries and other stakeholders from the domain of renewable energy (including bio-energy) and climate change related aspects, from the Association of Southeast Asian Nations and other Asia-Pacific countries. As a concrete outcome in this area, the Centre supported the establishment of the Association of Southeast Asian Nations Network of Excellence Centre of Biomass Conversion Technology in cooperation with Thailand Institute of Scientific and Technological Research, Thailand.

(b) International Workshop on Intellectual Property Management and Technology Transfer, 19 November 2020, Indonesia (virtual event):

The Centre organized this international workshop jointly with Indonesian Institute of Science. The workshop deliberated on: policy framework on intellectual property and technology transfer – global and national perspectives; intellectual property management tools, strategies and best practices; and collaborative research to enhance technology transfer through Science and Technology Parks. Experts from India, Indonesia, Japan, Malaysia, Republic of Korea, Thailand and the World Intellectual Property Organization shared their viewpoints and experiences related to intellectual property management, technology transfer and licensing. Case studies and best practices were also shared by the speakers. The workshop enhanced knowledge, understanding and skill of 176 participants from 12 member and associate member States, namely Bhutan, Hong Kong Special Administrative Region of the People's Republic of China, India, Indonesia, Japan, Malaysia, Pakistan, Republic of Korea, Singapore, Thailand, Uzbekistan and the United States of America. Experts from Botswana, Ireland and Poland also participated in the workshop. The participants comprised policy makers, representatives from government agencies, academia, research and development institutions, technology-based enterprises and other relevant stakeholders.

C. Providing technology intelligence through publications

15. The Centre disseminated information on recent technological trends and developments through its periodicals and publications. The Centre's publication has been used widely by the policymakers, institutions, and technology transfer intermediaries and other experts. The online periodical Asia-Pacific Tech Monitor (www.techmonitor.net) features articles on the latest technology trends and developments, technology policies, technology market, innovation management, technology transfer and new products and processes. The list of the Centre's publications during the reporting period is provided as Annex II.

16. The Centre published 4 issues of Tech Monitor focussing on special themes such as technology-based start-ups, sustainable ocean economy, Intellectual Property Management, and Technology to control COVID-19 pandemic (Annex II). The Tech Monitor issues featured 16 articles contributed

by 31 authors and experts from Bangladesh, China, India, Malaysia, Philippines, Republic of Korea, Thailand and the Asian Development Bank. The articles presented data and analysis on critical issues related to the respective special themes and included case studies and best practices from the region and outside. The periodical also disseminated short articles on- useful guides; best practices for start-ups and small and medium enterprises; and 50 selected technology offers and requests from the technology database of the Centre.

17. The Centre shared its online Asia-Pacific Tech Monitor 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 1489 key stakeholders and e-subscribers from the member countries. The Centre also disseminated the e-periodicals through social media platforms such as Facebook.

18. The Centre 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’. The publication and the training manuals cover key topics such as: identification and protection of intellectual property assets, intellectual property strategy and management tools, intellectual property commercialization, technology transfer, enforcement strategy and dispute resolution, and intellectual property policy options and recommendations for research and development organizations. The target users of the publication and the training manual are policy makers, managers of technology licensing and transfer offices, and the private sector enterprises. The publication is currently in the press for printing.

19. The Centre is currently developing a guidebook on ‘Innovation and technology transfer for clean energy in Asia and the Pacific’. The guidebook focuses on policies, strategies, business models and regional cooperation for innovation and transfer of clean energy technologies in the Asia-Pacific region. The guidebook covers chapters on: introduction to need for transition to clean energy and importance of technology transfer and innovation in the Asia-Pacific; investigation of technology transfer and innovation - case studies pertaining to clean energy; leveraging available public resources for policymakers; and conclusions and recommendations to support clean energy technology transfer. The target users of the guidebook are policy makers and clean energy practitioners.

D. Support to inter-governmental meetings of ESCAP

20. **Seventy Sixth Commission Session of ESCAP, 21 May 2020, Bangkok, Thailand:** The Centre provided substantive support and submitted the report on the fifteenth session of its Governing Council, held in Malaysia. The Centre organized the election of the Governing Council for the period of 2020-2022. The following are the outcomes of the 76th Commission session on the Centre’s work programme:

(a) The Commission endorsed the report of the Governing Council of the Asian and Pacific Centre for Transfer of Technology on its fifteenth session (ESCAP/76/20) (Decision 76/3).

(b) The Commission noted the information provided by the secretariat on the overview of partnerships, extrabudgetary contributions and capacity development (ESCAP/76/27) and expressed its appreciation for the contributions to the Centre pledged by members and associate members for 2020 (Decision 76/12). They are: China - RMB 190000, India - \$870000, Macao, China - \$5000, Republic of Korea - \$24630 and Thailand - \$15000.

(c) In addition to the host country, India, the Commission elected the following members and associate members to the Governing Council of the Asian and Pacific Centre for Transfer of Technology for the period 2020 to 2023: Bangladesh, China, Indonesia, Islamic Republic of Iran, Nepal, Pakistan, Republic of Korea, Sri Lanka, Thailand and Uzbekistan.

21. **Third Session of the Committee on Information and Communications Technology, Science, Technology and Innovation of ESCAP, 19-20 August 2020, Bangkok, Thailand:** The Centre provided substantive support and reported the outcomes of its activities to the Committee. The Committee made the following recommendation related to the Centre:

(a) The Committee acknowledges that the support provided by the Asian and Pacific Centre for Transfer of Technology in the period 2018–2020 strengthened the capacities of member States in critical areas of science, technology and innovation. The Committee recommends that the Centre continue to facilitate knowledge-sharing and provide demand-driven capacity-building support with regard to enabling science, technology and innovation strategies to advance sustainable development. The priority areas of focus for the Centre's continued work include technology transfer and commercialization, intellectual property management and technology-based entrepreneurship and start-ups, with a special focus on fourth industrial revolution technologies, renewable energy, agriculture, water, and climate change mitigation and adaptation technologies. In addition, the Committee underlines the need to continue strengthening the institutional and human capacities of the Centre and recommends that member States consider providing or enhancing extrabudgetary financial support to the Centre and financing new technical cooperation projects to ensure the variety and sustainability of its capacity-building, research and technical assistance work. (ESCAP/CICTSTI//2020/7) (Recommendation 13)

E. Cooperation with United Nations organizations, international organizations and other partners

22. During this reporting period, the Centre jointly delivered activities/ worked closely with United Nations agencies and international organizations including Regional Science Bureau for Asia and the Pacific of the United Nations Educational, Scientific and Cultural Organization, Indonesia; World Intellectual Property Organization, Geneva, Switzerland; Private Financing Advisory Network; Energy Division, Environment and Development Division and Trade Investment and Innovation Division of ESCAP; Institute for Global Environmental Strategies, Japan; World Resources Institute; Green Climate Fund; while implementing capacity-building activities in the Member States.

F. Digital Outreach

23. During the reporting period, the Centre redesigned and enhanced its institutional website and technology databases in alignment with the current focus of work programmes and activities.

24. The Centre continued to extend its outreach to stakeholders, policy makers and institutions through digital tools including Facebook (facebook.com/UNAPCTT). The Centre coordinated with Strategic Communications and Advocacy Section of ESCAP to disseminate information about its activities and outputs through ESCAP newsletters and twitter updates.

Annex I - List of Partner Institutions

1. Anand and Anand, Intellectual Property Law Firm, India
2. Asian Institute of Technology, Thailand
3. Asia- Pacific Economic Cooperation
4. Asia-Pacific Industrial Property Center, Japan Institute for Promoting Invention and Innovation
5. Asia Public-Private Partnership Institute, Toyo University, Japan
6. Association of South East Asian Nations Secretariat
7. Council of Scientific and Industrial Research, Government of India
8. Department of Cottage and Small Industry, Ministry of Economic Affairs, Government of Bhutan
9. Green Climate Fund, Republic of Korea
10. Guangzhou University, Guangzhou, People's Republic of China
11. Indonesian Institute of Science, Indonesia
12. Institute for Global Environmental Strategies, Japan
13. Korea Enterprise Innovation Promotion Institute, Republic of Korea
14. Korea Advanced Institute of Science and Technology, Republic of Korea
15. Ministry of Higher Education, Science, Research and Innovation, Thailand
16. Ministry of Innovative Development, Republic of Uzbekistan
17. Ministry of Science and Technology, People's Republic of China
18. Private Financing Advisory Network, Bangkok, Thailand
19. Thailand Institute of Scientific and Technological Research, Thailand
20. UNITEN R&D Sdn. Bhd, Malaysia
21. World Economic Forum
22. World Resources Institute, India

United Nations agencies

23. Energy Division, ESCAP
24. Environment and Development Division, ESCAP
25. Trade Investment and Innovation Division, ESCAP
26. United Nations Educational, Scientific and Cultural Organization, Regional Science Bureau for Asia and the Pacific, Jakarta, Indonesia
27. World Intellectual Property Organization, Geneva, Switzerland

Annex II

List of Publications of the Centre (December 2019-November 2020)

Publication title	Focus area	Periodicity	Target audience
Asia-Pacific Tech Monitor	Promotion of technology-based startups in the Asia-Pacific – Policies and strategies (Oct-Dec 2019)	Quarterly	Science technology and innovation policymakers, small and medium enterprises, research and development institutions, academia, technology transfer intermediaries
	Science Technology and Innovation for a Sustainable Ocean Economy – Strategy, opportunities and partnerships in the Asia-Pacific (Jan-Mar 2020) in support to the theme of the 76 th ESCAP Commission Session held in May 2020	Quarterly	Science technology and innovation policymakers, small and medium enterprises, research and development institutions, academia, technology transfer intermediaries
	Intellectual Property Management – Innovative strategy for technology transfer and commercialization (Apr- Jun 2020)	Quarterly	Science technology and innovation policymakers, small and medium enterprises, research and development institutions, academia, technology transfer intermediaries
	Technological innovations to control COVID-19 pandemic – Opportunities, strategy and best practices for the Asia Pacific (July- Sep 2020) (In press)	Quarterly	Science technology and innovation policymakers, small and medium enterprises, research and development institutions, academia, technology transfer intermediaries
Publication on Intellectual Property Management and Technology Licensing	Intellectual property management and technology licensing (In press)	One time publication	Science technology and innovation policymakers, small and medium enterprises, research and development institutions, academia, technology transfer intermediaries
Publication on Innovation and Technology Transfer for Clean Energy in Asia and the Pacific	Innovation and technology transfer for clean energy (Under development)	One time publication	Science technology and innovation policymakers, small and medium enterprises, research and development institutions, academia, technology transfer intermediaries