UNITED NATIONS
ESCAP
Economic and Social Commission for Asia and the Pacific
Asian and Pacific Centre for Transfer of Technology (APCTT)

International conference on

INNOVATION, TRANSFER AND DIFFUSION OF FOURTH INDUSTRIAL REVOLUTION TECHNOLOGIES

30 June 2022
Guangzhou, China (Virtual Mode)

MEETING REPORT

A.   Summary of discussions

1.   The international conference was jointly organized by the Department of International Cooperation, Ministry of Science and Technology, People's Republic of China and the Asian and Pacific Centre for Transfer of Technology (APCTT) of the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP). It was hosted by the Asia-Pacific Regional Innovation Knowledge Network for 4th Industrial Revolution Technologies (APRIKNET-4IR) and its Secretariat Office at the Guangzhou University, People's Republic of China.

2.   The international conference brought together 132 participants from 17 member States of ESCAP, namely Azerbaijan, Bhutan, China, India, Indonesia, Islamic Republic of Iran, Japan, Malaysia, Namibia, Nepal, Pakistan, Philippines, Republic of Korea, Singapore, Thailand, Trinidad and Tobago and Uzbekistan. The participants comprised policymakers and government officials from the member States, experts and representatives from academia, national laboratories, R&D institutions, and industrial and research organizations engaged in development and deployment of 4IR technologies. The conference provided a platform to the participants and stakeholders to deliberate on strategies to enhance regional collaboration on innovation, transfer and diffusion of fourth industrial revolution (4IR) technologies, and to explore possible modalities of collaborations.

3.   Key international and national experts deliberated on the challenges, mechanisms and good practices of innovation, transfer and diffusion of 4IR technologies in the Asia-

Pacific Region. The experts discussed and provided recommendations on innovative strategies and modalities to strengthen regional cooperation.

4. It was emphasized that the 4IR technologies offer immense opportunities for establishing collaboration mechanisms between government, industry and academia as well as for regional cooperation. Key focus areas for the promotion of 4IR technologies are enabling policy ecosystem, institutional support, investments, R&D collaboration between research institutions and industry, and skill development through upgradation of educational curriculum incorporating 4IR aspects to meet the needs of industry.

5. The 4IR technologies are facilitating better convergence of economic sectors, i.e., between agriculture, manufacturing and services making them more productive, cost-effective and efficient in the market.

6. The 4IR technologies are offering effective solutions to transition towards carbon neutrality and climate change mitigation, as well as faster development of vaccines for the COVID-19 pandemic through use of open science and open data platforms. Intelligent manufacturing through 4IR-based platforms can bring new life to traditional and old industries by injecting them with new ideas and innovative applications.

7. The 4IR technologies such as Big Data has immense potential to understand the dynamics of labour markets of countries as seen during the COVID-19 pandemic. Big Data can be effectively used through enabling data partnerships between government, academia and the private sector. Businesses are now having increasing demands for data storage and data management which can be addressed through innovative 4IR-based applications leading to faster digital transformation of industry.

8. Innovation ecosystems of countries need to be goal-oriented to promote emerging technologies for national development. There is a need for national policymakers to be aware of the applications of emerging 4IR technologies to achieve maximum benefits across the sectors.

9. Policy frameworks, research and development, digital infrastructure and skills are key requisites for diffusion of 4IR technologies across the sectors. Countries would be required to develop inclusive approaches in policymaking to address the challenges in skill gaps, social protection, R&D access to digital infrastructure, etc.

10. Development of 4IR-based digital startups would require effective finance and partnerships, particularly at the global and inter-regional level. Open-source platforms and cross-border data exchange are good ways to facilitate effective transfer and commercialization of innovations and technologies to startups and enterprises through better collaboration between R&D institutions and industry.

11. With increasingly major part of research funding coming from the industry, the collaboration between R&D institutions and industry can be made more result-oriented and efficient. Germany and Japan provide good examples of such industry-oriented collaborations to develop new and technologies.

12. Country-level readiness assessment can be a useful method for policymakers to leverage 4IR technologies. This method is being applied in Namibia to use 4IR technologies for green and inclusive industrialization with focus on green hydrogen power production.

13. The 4IR technologies and their applications need to be inclusive and green and should be developed through partnerships for wider usage. In developing countries, it is recommended to showcase 4IR technology applications on the ground for people to understand and appreciate their importance and benefits.

B. General/Policy Recommendations

14. Concerted efforts are required to support reframing of the public policies of member States to promote development, transfer, adoption, diffusion of 4IR technologies. Public policies are also required to create opportunities for wider applications of 4IR technologies and across sectors.

15. National policymakers need to address the challenges of digital divide and digital literacy through skill development and capacity building. For example, digital skilling is necessary for high end of research and for those in the public policy, and capacity building is essential for both policymakers and micro small and medium enterprises (MSME) sector.

16. Regional cooperation should include focus on digital skill development particularly in the domain of 4IR technologies as it would drive entrepreneurship across the region. The aim should be to empower people through strengthening of their skills, improvement of R&D and development of innovative 4IR applications.

17. Joint research and innovation programmes will be an effective strategy to develop and adopt innovative 4IR-based solutions to address SDG related challenges. Development of R&D centric industry players will be key to innovation and commercialization of 4IR technologies in the market, particularly through startups.

18. University syllabus and curriculum could be designed and improved to build skilled manpower for meeting the needs of the industry facing shortage of talent in 4IR technologies. National policies, coupled by incentive schemes, could encourage facilitation of cross-border sharing of talent in the region.

19. Incubation funding to research institutes could help them attract entrepreneurs and startups for effective research collaboration and commercialization of research results.

Philippines is promoting AGORA (Accelerating Growth for One Research and extension in Action) which is a marketplace for ideas and innovation to develop demand-driven solutions for the market. This strategy helps in promoting research and innovation as well as strengthen inter-institutional linkages between R&D institutes, academia and industry. Similar policies and framework can be replicated by other counties from the region.

20. Appropriate policies are required to support SMEs and startups to increase their capability to process and use the data using 4IR technologies. For example, super-giant artificial intelligence (AI) based ecosystem is being developed by large companies in the Republic of Korea which can be used by universities and SMEs for their business activities.

C. Feedback from participants

The conference was received very well by the participants, which was corroborated through positive feedbacks. Around 87% of the responses received indicated that the conference covered strategies for cross-border transfer and diffusion of 4IR technologies. More than 93% of the responses received indicated that they found the presentations and deliberations by resource persons informative and insightful.