International Conference on Scaling Up and Adoption of Fourth Industrial Revolution Technologies for Climate Resilience

15 September 2023
Guangzhou, China and online

Organized by:
Asian and Pacific Centre for Transfer of Technology (APCTT) of the
United Nations Economic and Social Commission for Asia and the Pacific (ESCAP)

Meeting Report (Draft)

A. Summary of discussions

1. The International Conference on Scaling Up and Adoption of Fourth Industrial Revolution Technologies for Climate Resilience, organized by APCTT, brought together 78 participants from 12 member States of Economic and Social Commission for Asia and the Pacific (ESCAP), namely China, India, Indonesia, Japan, Malaysia, Pakistan, Russian Federation, Singapore, Thailand, UK, USA and Vietnam. The participants included Policymakers and government officials from the member States in Asia and the Pacific, representatives from the academia, national laboratories, R&D institutions, and industrial and research organizations and enterprises engaged in the development and deployment of 4IR technologies.

2. The conference provided a platform for member States to platform to deliberate on the priorities, strategies and good practices for scaling up and adoption of 4IR technologies for addressing climate change, and to explore potential opportunities and modalities of cross-border collaborations.

3. Today, the Fourth Industrial Revolution (4IR) technologies are a major driving force behind faster economic development of countries. The technological transformation is unprecedented in terms of its speed, scope, scale of usage, and involves various new technologies, including Artificial Intelligence, Internet of Things (IoT), Machine Learning, 3D printing, Robotics, Big Data, among others.

4. Critical knowledge of 4IR technologies lies with specific countries and the private sector. This knowledge needs to be shared through cross-border collaboration between countries.

5. The member States could come together to jointly study specific climate change impacts, identify and implement focused actions. For effective regional cooperation, countries will have to show openness and transparency, design and implement appropriate actions to leverage 4IR technologies for climate resilience.

6. Venture Capital (VC) investment in innovative and transformative technologies and new business models could contribute to climate mitigation efforts and lead to improving resilience of traditional infrastructure and adaptation to climate change. Small-scale VC funds are currently focusing on investing in early-stage technologies and new business models in areas such as energy access, clean technology, carbon accounting-related technology, resource efficiency and sustainable cities. Specific 4IR solutions to support climate adaptation include AI-driven intelligent fleet and vessel management, smart grid, smart meters and analytics, climate information modelling and data collection.

7. Policies to promote 4IR skills should focus on creating enabling environment for skills development, green jobs and green enterprises development, inclusion of women and girls, and inclusion of under-represented groups. Green skills to design and use 4IR technologies for climate resilience could include sustainability awareness, sustainability reporting skills, gender skills, cleantech skills, and assessing an enabling environment.

8. Critical considerations for green skills development include: ethical technology development; eco-friendly design; stakeholder engagement; data collection & analysis; familiarity with reporting frameworks; communication; gender awareness, user-centered design, inclusivity and diversity; green infrastructure planning; resource efficiency; regulatory frameworks; access to funding; infrastructure, market demand.

9. Innovation and entrepreneurship can be important enablers of green transformation, and in this context, the role of the business sector is key. Increasingly, Green entrepreneurs and startups are emerging who create and operate environmentally sustainable businesses combining both social and economic development.

10. To promote green skills, the framework of entrepreneurship education should include green skills for value creation, experiential learning, interdisciplinary education and technical and soft skills for meeting the demand of industry.

B. Recommendations

1. It is necessary to assess the readiness and requirements of countries to adapt Industry 4.0 in the region.

2. The rapidly growing Aviation sector with increasingly huge carbon emissions should be a focus sector for emission reduction measures.

3. The education system is not yet ready for technology transfer. Appropriate programmes could be designed to connect young scientists with the market to increase the commercialization potential of their innovations. It is recommended to facilitate capacity building, skill development workshops, certification, and collaboration with higher education institutes to conduct these skill development programmes.

4. APCTT could facilitate Public-Private-Partnership to promote 4IR technologies for climate resilience, provide policy and technical support to member States, and develop programmes for South-South collaboration for knowledge-sharing, mentorship programmes and capacity building of stakeholders;

building M&E programmes for policies on 4IR technology to advise member States for redesigning the national policies and programmes as and when required.

5. APCTT is advised to develop a consolidated strategy / platform for promoting 4IR technologies and to provide policy support to countries; review of 4IR technologies; Capacity and capability development, identify innovative decarbonization technologies for promotion; engage multi-stakeholders to build public awareness etc.