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

Ministry of Science and Technology
Department of Scientific and Industrial Research

International Conference on Fourth Industrial Revolution Technologies for Sustainable Development

Jointly 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)

and

Department of Scientific and Industrial Research (DSIR), Ministry of Science and Technology, Government of India

30 November 2021
New Delhi, India
(Virtual)

BACKGROUND

The COVID-19 pandemic has severely impacted socio-economic fabric of our societies across the world, causing unprecedented human suffering and economic disruptions as well as our way of life. The crisis has clearly affected the advancements towards achieving the 2030 Agenda for Sustainable Development. Towards fighting the pandemic, the fourth industrial revolution (4IR) technologies (such as Internet of Things, artificial intelligence, Big Data analysis, blockchain, intelligent manufacturing systems, among others) are playing a critical role in integrating the development approaches to calibrate economic, social and environmental dimensions. The 4IR technologies are rapidly becoming mainstreamed, enabling faster digital transformation of production and manufacturing systems, and thus have become the means and solutions to many of the world's problems. It is imperative for countries to understand how and where these technologies could be harnessed to tackle some of the world's most pressing environmental, economic, and social challenges, under the umbrella of the 2030 Sustainable Development Goals (SDGs).

The 4IR technologies have offered ground-breaking applications in the healthcare sector in the development of vaccines and medicines as well as designing targeted responses such as population screening, tracking the infection, contact tracing, prioritizing the use and allocation of resources, among others. Innovative 4IR technologies can be key enablers of sustainability and environmental resilience – offering opportunities to respond to climate change.[1] The technologies are also supporting economic recovery of countries through providing novel and efficient ways of conducting business, production, education, and research and development (R&D).

This International Conference is envisaged to facilitate knowledge sharing on the development and utilization of 4IR technologies for sustainable development, particularly in the post COVID-19 era. The conference also aims to foster collaboration among policymakers in Asia and the Pacific region, representatives from public and private sector organizations, R&D institutions, academia, and experts involved in various aspects of 4IR technologies.

OBJECTIVES

- Enhance awareness on the opportunities, policy tools and strategies to promote innovations and utilization of 4IR technologies for achieving sustainable development, focusing on sectors such as healthcare, climate change, sustainable production, and resilient recovery of industries.
- Explore innovative strategies and best practices to advance 4IR technological innovations to address the critical developmental challenges in the post COVID-19 era.
- Provide policy recommendations to facilitate regional cooperation and cross-border transfer of 4IR technologies to support achievement of SDGs.

TARGET AUDIENCE

Policy makers and Government officials from the member States in Asia and the Pacific, representatives from public, private as well as non-governmental organizations, R&D institutions, academia, representatives from technology promotion agencies, and other relevant stakeholders.

TENTATIVE PROGRAMME

[1] https://www.itu.int/en/action/environment-and-climate-change/Documents/frontier-technologies-to-protect-the-environment-and-tackle-climate-change.pdf

Date: 30 November 2021
Time: 0900 – 1615 hours (India Time: GMT + 5:30)

OPENING SESSION		
09:00-09:50	Welcome Address	**Ms. Preeti Soni** Head, Asian and Pacific Centre for Transfer of Technology, United Nations Economic and Social Commission for Asia and the Pacific (ESCAP)
	Opening Address	**Dr. Shekhar C. Mande** Secretary, Department of Scientific and Industrial Research (DSIR), and Director General, Council of Scientific and Industrial Research (CSIR), Ministry of Science and Technology, Government of India
	Special Remarks	**Ms. Armida Salsiah Alisjahbana** Under-Secretary-General and Executive Secretary of the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP)
	Keynote Address	**Dr. Rajiv Kumar** Vice Chairman, NITI Aayog (National Institution for Transforming India), Government of India
	Group Photo	
09:50-11:15 **PLENARY SESSION I: 4IR technologies to achieve Sustainable Development Goals (SDGs) – Opportunities and challenges** *This plenary session will deliberate on the overarching role of 4IR technologies to address the challenges of sustainable development. It will also touch upon the issues of digital divide and intellectual property management in wider adoption of such technologies.* **Chair: Mr. Sanjeev Sanyal, Principal Economic Advisor, Department of Economic Affairs, Ministry of Finance, Government of India**		
09:50-10:05	Role of 4IR technologies in achieving the Sustainable Development Goals (SDGs)	**Mr. Purushottam Kaushik** Head, Centre for the Fourth Industrial Revolution (India), World Economic Forum
10:05-10:20	Policies and financial tools for resilient economic recovery to achieve SDGs in the fourth industrial revolution era	**Mr. Sanjeev Sanyal** Principal Economic Advisor, Department of Economic Affairs, Ministry of Finance, Government of India
10:20-10:35	Intellectual property management in the fourth industrial revolution era	**Dr. Carlos María Correa** Executive Director, South Centre, Geneva, Switzerland
10.35-10:50	Bridging the digital divide to support adoption of 4IR technologies	**Prof. Subhasis Chaudhuri** Director, Indian Institute of Technology (IIT) Bombay, Mumbai, India
10:50-11.15	Discussion	
11:15-11:30	COFFEE BREAK	

11:30-12:45 **BREAKOUT SESSION I: 4IR technologies to combat COVID-19 and strengthen healthcare systems** *This breakout session will deliberate on the policies, strategies, innovations, and applications of 4IR technologies to fight the COVID-19 pandemic. The deliberations will focus on how healthcare is posed to transform into a smart and resilient sector with use of such technologies during and post COVID-19 pandemic.* **Chair: Dr. Randeep Guleria, Director, All India Institute of Medical Sciences (AIIMS), New Delhi, India** **Rapporteur: Prof. P. Uma Maheswari Devi, Director, Internal Quality Assurance Cell (IQAC) and Professor, Department of Applied Microbiology & Biochemistry, Sri Padmavati Mahila Viswa Vidyalayam (Women's University), Tirupati, India**		
11:30-11:45	Future of healthcare under fourth industrial revolution – Implications for policy and strategy development	**Dr. Randeep Guleria** Director, All India Institute of Medical Sciences (AIIMS), New Delhi, India
11:45-12:00	Disruptive 4IR applications in medical/healthcare services to combat COVID-19 in Asia-Pacific	**Prof. Subhas Chandra Mukhopadhyay** Director of International Engagement, School of Engineering, Macquarie University, Australia
12:00-12:15	Digital transformation and innovations in healthcare – Opportunities and challenges	**Dr. Anurag Agarwal** Director, Institute of Genomics and Integrative Biology, Council of Scientific & Industrial Research (CSIR-IGIB), New Delhi, India
12:15-12:30	The Fourth Industrial Revolution: Towards Structural Transformations of Asia-Pacific Healthcare Systems	**Dr. Kalenzi Cornelius,** Fellow, Korea Policy Centre for the Fourth Industrial Revolution (KPC4IR), Korea Advanced Institute of Science and Technology (KAIST), Republic of Korea
12:30-12:45	Discussion	
11:30-12:45 **BREAKOUT SESSION II: 4IR technologies for climate change mitigation and clean energy** This breakout session will deliberate on enabling policies and strategies to harness 4IR technologies to reduce Greenhouse gas (GHG) emissions and shift towards clean energy sources. The experts will share experiences, good practices, and case studies for climate change mitigation by harnessing 4IR technologies. **Chair: Mr. Jagjeet Singh Sareen, Assistant Director General, International Solar Alliance (ISA), India** **Rapporteur: Dr. Sukhomay Pal, Professor, Mechanical Engineering, IIT Guwahati, India**		
11:30-11:45	Accelerating clean energy innovations and applications through investments in emerging technologies	**Mr. Jagjeet Singh Sareen** Assistant Director General, International Solar Alliance (ISA), India
11:45-12:00	Enabling policies and strategies to promote 4IR technologies for climate change mitigation in Asia-Pacific	**Dr. Venkatachalam Anbumozhi** Director - Research Strategy and Innovation, Economic Research Institute for ASEAN and East Asia (ERIA), Indonesia
12:00-12:15	Harnessing 4IR technologies for sustainable and smart cities	**Mr. Kok-Chin Tay** Chairman of the Smart Cities Network, Director, Smart Cities Council ASEAN, Singapore

12:15-12:30	Adoption of 4IR technologies for development of clean energy and low carbon growth	**Prof. Pinakeswar Mahanta** Director, National Institute of Technology (NIT), Arunachal Pradesh and Professor, Mechanical Engineering, IIT, Guwahati, India
12:30-12:45	Discussion	
11:30-12:45 **BREAKOUT SESSION III: Harnessing 4IR technology for sustainable production and resilient economic recovery from the COVID-19 pandemic** *This breakout session will discuss the challenges, strategies, and good practices with examples from the Asia-Pacific region to facilitate sustainable production and resilient recovery from the COVID19 pandemic through accelerating the development and usage of 4IR technologies.* **Chair: Prof. (Dr.) Sachin Chaturvedi, Director General (DG), Research and Information System for Developing Countries (RIS), New Delhi, India** **Rapporteur: Dr. Indranil Biswas, Senior Principal Scientist, Programme Management Division, CSIR-Central Glass and Ceramic Research Institute (CGCRI), Kolkata, India**		
11:30-11:45	Policies and financial tools to support 4IR technologies	**Prof. (Dr.) Sachin Chaturvedi** Director General, Research and Information System for Developing Countries (RIS), New Delhi, India
11:45-12:00	Digital transformation through 4IR technologies – Competitiveness and sustainability of small and medium enterprises	**Ms. Yoonee Jeong** Senior Digital Technology Specialist (Digital Connectivity), Asian Development Bank (ADB) Singapore
12:00-12:15	Sustainable production in the age of fourth industrial revolution	**Ms. Maria Basso** Platform Curator, Shaping the Future of Advanced Manufacturing and Value Chains, World Economic Forum, Geneva, Switzerland
12:15-12:30	4IR-driven manufacturing for accelerating resilient recovery in post COVID-19 era	**Dr. Martyn Davies** Managing Director for Emerging Markets and Africa, Dean, Deloitte Alchemy School of Management, Deloitte**,** South Africa
12:30-12:45	Discussion	
12:45-13:45	LUNCH BREAK	
13:45-16:00 **PLENARY SESSION II: Panel Discussion on proposals for regional cooperation on 4IR technologies to promote sustainable development** *This session will deliberate on the strategies for regional cooperation to promote development and utilization of 4IR technologies for sustainable development. The panelists, among the representatives from the member States of ESCAP, will share views and experiences on the policy, strategies and good practices that have proved successful towards strengthened regional cooperation for innovation, transfer and commercialization of 4IR technologies. The discussion will help develop policy recommendations for regional cooperation to harness 4IR technologies.* **Chair: Mr. Rajan Sudesh Ratna, Economic Affairs Officer, Subregional Office for South and South-West Asia, ESCAP (Tbc)**		

13:45-14:00	Summary of breakout sessions I, II, III	**Chairs/Rapporteurs of breakout sessions I, II, III**
14:00-15:30	Panel discussion	**Representatives of Member States** (5-7 minutes each) Bangladesh (Tbc) People's Republic of China: **Ms. Xuemei Yang** Director, Department of International Cooperation, Ministry of Science and Technology (MOST), China India: **Prof. Abhay Karandikar** Director, Indian Institute of Technology (IIT), Kanpur, India India: **Prof. Jayant M Modak** Professor, Chemical Engineering and Former Deputy Director, Indian Institute of Science (IISc), Bangalore, India Indonesia (Tbc) Islamic Republic of Iran (Tbc) Nepal (Tbc) Sri Lanka: **Mr. Ajith Dhammika Jayasuriya** National Engineering Research & Development Centre (NERDC), Government of Sri Lanka Thailand: **Dr. Kamolrat Intaratat** Director of Expertise Research Centre, Associate Professor, School of communication Arts, Sukhothai Thammathirat Open University, Thailand Viet Nam **Ms. Le Thi Viet Lam** Deputy Director, Department of International Cooperation (MOST), Vietnam
15:30-16:00	Open discussion	
CLOSING SESSION		
16:00-16:15	Remarks Remarks	**Dr. Preeti Soni** Head, APCTT, ESCAP **Mr. Surinder Pal Singh**

	Vote of Thanks	Joint Secretary and National Focal Point for APCTT, Department of Scientific and Industrial Research (DSIR), Ministry of Science and Technology, Government of India **Dr. Ramanuj Banerjee** Scientist F and National Focal Point for APCTT, Department of Scientific and Industrial Research (DSIR), Ministry of Science and Technology, Government of India

Master of Ceremony: Dr. Vanita Sood, Deputy Secretary & Chief Welfare Officer (CWO), Department of Personnel & Training, Government of India