APCTT
Asian and Pacific Centre
for Transfer of Technology
ESCAP

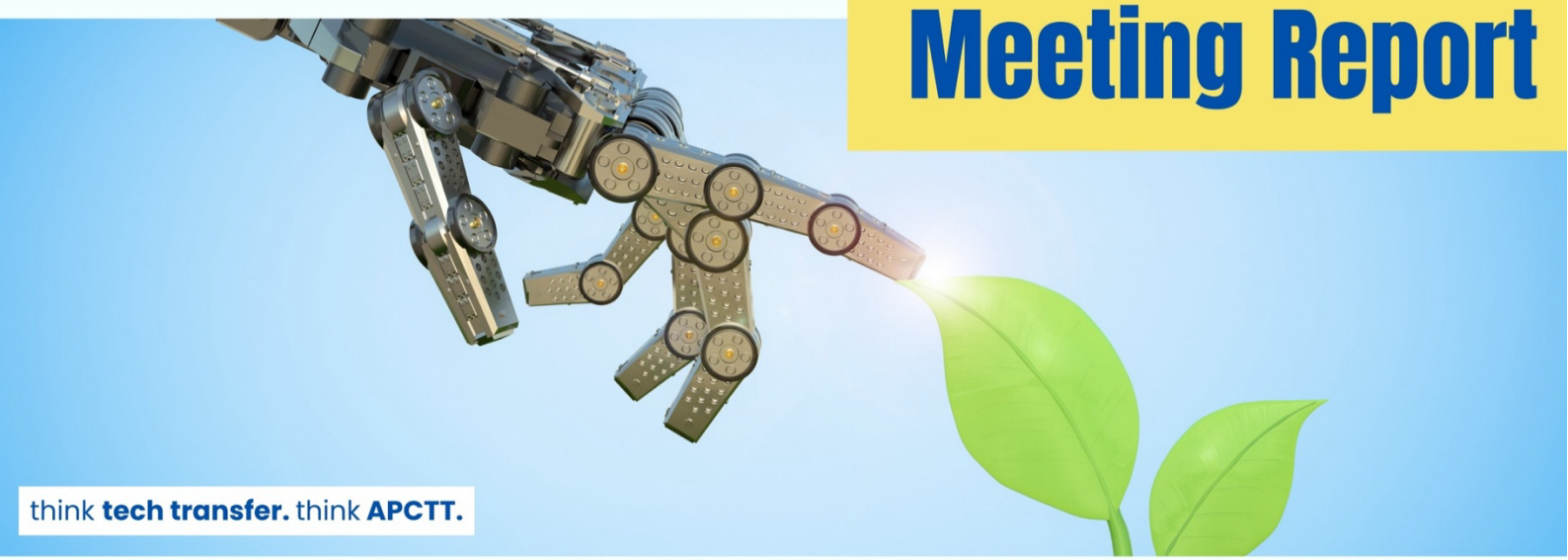
वैज्ञानिक और औद्योगिक अनुसंधान विभाग
Department of
Scientific and Industrial Research
सत्यमेव जयते

Technology and Innovation Conclave 2.0

28 - 30 JANUARY 2026 | New Delhi, India

AI for Climate Action and Resilience

Meeting Report



think **tech transfer.** think **APCTT.**

Jointly organized by

Department of Scientific and Industrial Research (DSIR), Government of India, and
Asian and Pacific Centre for Transfer of Technology (APCTT) of the United Nations ESCAP

Executive Summary

Background and Purpose

The Technology and Innovation Conclave 2.0, organised by DSIR and APCTT of UN ESCAP in January 2026, brought together 198 participants from 11 Asia-Pacific Member States to discuss AI in climate action and resilience. The Conclave focused on scaling AI-enabled climate solutions through stronger governance, innovation, and regional cooperation.

Guiding Objectives

The Conclave aimed to: promote AI applications for climate action; support youth-led innovation; strengthen responsible AI governance; and advance regional cooperation and technology transfer.

Programme Highlights

The three-day programme featured an exhibition by 25 innovators (including Government of India research agencies) spanning energy, infrastructure, disaster management, agriculture, and environmental monitoring. Five thematic technical sessions enabled in-depth examination of specific challenges, hackathon winners received ministerial recognition, and an exposure visit to the India Meteorological Department offered delegates first-hand insight into AI-enabled climate prediction modelling.

High-Level Messages

Senior representatives from Government of India (Dr. Jitendra Singh, Dr. N. Kalaiselvi, Dr. M. Ravichandran), the UN (Ms. Armida Alisjahbana via video, Mr. Stefan Priesner, Dr. Preeti Soni) delivered four overarching messages:

- The climate crisis is an immediate and accelerating reality across Asia-Pacific, demanding urgent action.
- AI has demonstrated efficacy in disaster forecasting, environmental monitoring, renewable energy optimisation, and resource management.
- Effective climate response demands a governed hybrid approach integrating human judgment, institutional strength, and AI-driven analytics.
- Cross-border technology transfer and platforms such as APCTT are foundational to a regional response proportionate to the scale of the challenge.

Technical Sessions: Key Findings

Session 1 - AI Technologies: Opportunities and Challenges: AI has moved into operational deployment across policy design, climate-resilient infrastructure, and biodiversity governance. Hybrid AI-numerical models show strong promise for weather forecasting; successful deployment depends on robust talent ecosystems and careful adaptation to local conditions.

Session 2 - AI in Action: Case Studies from Asia-Pacific: Edge AI with IoT sensors can deliver hyperlocal (250m resolution) flood and fire risk alerts even in low-connectivity environments. Case studies from Indonesia and Nepal showed AI super-resolution models converting coarse climate data into actionable local forecasts; SMS-based AI farm advisories using 30+ years of historical data support irrigation scheduling and yield optimisation.

Session 3 - Policy Frameworks and Responsible AI Governance: National approaches from Malaysia, Indonesia, Thailand, the Philippines, Uzbekistan, Sri Lanka, and Nepal cover AI strategies, climate legislation, data governance, and regulatory sandboxes. Core principles consistently invoked: fairness, transparency, accountability, safety, and privacy. Progress requires enforceable standards, enabling regulatory environments, and sustained multi-stakeholder engagement.

Session 4 - Technology Transfer and Regional Cooperation: A significant volume of regional IP remains commercially undeveloped. A proposed AI-enabled Virtual Technology Exchange Platform through APCTT would match climate challenges with transferable technologies across borders. AI drone ecosystems with indigenous controllers were highlighted as a priority to reduce import dependency.

Session 5 - Youth and Young Entrepreneurs: Young innovators are developing decentralised early-warning systems, climate-resilient energy technologies, and precision agriculture tools. Critical gaps identified include targeted funding, accelerator programmes, and mentorship. Recommendations include a regional Climate AI Catalyst Fund, shared AI sandboxes, and a Digital Public Infrastructure 2.0 framework built on GPU compute and curated public datasets.

Hackathon and Innovation Pipeline

A pre-Conclave Hackathon (organised with FITT, IIT Delhi) received 268 submissions spanning AI/ML, IoT, blockchain-based climate finance, digital twins, and remote sensing. Winning solutions covered AI-based power grid management, biomass conversion, and precision farming, reflecting strong pipelines in clean energy, circular economy, and climate-smart agriculture.

Priority Technologies and Structural Gaps

Priority technologies identified for urgent development or transfer: quantum sensing for earth observation and glacier monitoring; indigenous AI drone ecosystems; secure early-warning architectures; regional data platforms and AI-enabled technology exchange infrastructure; advanced crop simulation models; and AI-based carbon accounting dashboards.

Structural gaps include: deficiencies in data quality and standardisation; insufficient system interoperability; inadequate institutional capacity; fragmented data ecosystems; limited ESG reporting capacity among SMEs; poor integration between AI governance and climate policy; and limited cross-border visibility of available technologies.

Cross-Cutting Insights

- AI is a powerful enabling instrument, not a self-sufficient solution. Durable climate resilience requires embedding AI within legislative and regulatory frameworks engaging governments, academia, industry, and civil society.
- Standardised approaches are inadequate to the region's diversity. Effective deployment demands rigorous contextualisation accounting for local geography, infrastructure, and socio-economic vulnerabilities.
- Ethical responsibility and accountability are prerequisites, not supplementary considerations, for establishing the public trust on which legitimate AI deployment depends.
- Inclusivity is a substantive programmatic requirement: meaningful youth engagement and gender-responsive design are essential to ensure AI solutions serve vulnerable and marginalised populations.

Key Recommendations

Overall Recommendations

- Designate APCTT as a neutral regional hub for capacity building, technology sharing, and IP commercialisation.
- Institutionalise AI in national decision-making, including mandates for cross-country data sharing on Himalayan climate systems and flood prediction.
- Embed ethics, transparency, and accountability in governance frameworks for AI in climate modelling, early warning, and emissions reduction.
- Launch an AI-enabled Virtual Technology Exchange Platform through APCTT and NRDC India.
- Sustain post-Conclave momentum through regional meetings, communities of practice, and technology-enabled campaigns.

Session-Specific Recommendations

- Session 1: Integrate AI with sensor technologies for climate-resilient buildings; deploy hybrid AI-numerical models for forecasting and energy management.
- Session 2: Implement Edge AI with IoT for hyperlocal early warnings; deploy SMS-based AI farm advisories powered by long-term historical data.

- Session 3: Establish national AI-climate data platforms and steering committees for early warning, reservoir inflow forecasting, and cyclone tracking.
- Session 4: Develop AI drone ecosystems with indigenous controllers; establish regional AI sandboxes and TRL-evaluated technology matching through APCTT.
- Session 5: Launch a regional Climate AI Catalyst Fund; establish an Asia-Pacific AI for Climate Resilience Mission aligned with carbon markets and farmer economics.

Outcomes and Way Forward

The Conclave yielded three principal outcomes: a deepened regional understanding of AI applications for climate action; a more precise articulation of priority technologies and governance mechanisms; and a renewed commitment to regional cooperation, technology transfer, and youth-led innovation under the APCTT framework.

Forward-oriented commitments include the development of regional data and technology platforms; mainstreaming AI within climate and sectoral policy; strengthening responsible AI governance at national and regional levels; and leveraging the SANKALP Lecture Series, the National Quantum Mission, and the proposed Virtual Technology Exchange Platform to deepen regional cooperation.

The deliberations of Technology and Innovation Conclave 2.0 represent a foundational step in constructing a more interconnected, accountable, and impact-oriented ecosystem for AI-enabled climate action across the Asia-Pacific region.

The full version of the meeting report of the Technology and Innovation Conclave 2.0 can be accessed here.