

## **Main conclusions of the International Conference on Technologies for Climate-resilient Infrastructure, held in Tehran and online on 26 November 2024**

### **I. Introduction**

1. The International Conference on Technologies for Climate-resilient Infrastructure was attended by 70 virtual participants from 20 member States of the Economic and Social Commission for Asia and the Pacific.

2. The Conference featured technical sessions on: (a) technologies for climate-resilient infrastructure; (b) green and blue climate resilience technologies using the living labs approach; and (c) cross-sector collaboration across sectors, industries, and governments to scale up climate-resilient infrastructure in the Asia-Pacific.

### **II. Summary of discussions**

3. The conference stressed the importance of technological and policy responses for climate-resilience of infrastructure. Key points include utilizing technology ecosystems (Artificial Intelligence/ Machine Learning, digital twins), build startup ecosystems for innovation, utilise advanced data systems for evaluating risks, early warnings, and loss and damage estimation. Continuous monitoring, evaluation, and learning are critical for effectively managing climate risks.

4. It is essential that city planning integrate resilience and sustainability, incorporating green spaces, protecting natural habitats, and adopting inclusive approaches. Demonstration projects, local solutions, partnerships, and training modules can enhance climate-resilient urban outcomes.

5. Coastal areas, urban planning, agriculture, water, energy, and disaster preparedness are critical sectors that face substantial climate risks. Strategies suggested included restoring wetland, building seawalls, integrating drought-resistant crops, precision agriculture, green and blue infrastructure, storm-water management, and community education.

6. For urban resilience, the challenges listed included technical gaps, high costs, and inadequate policy frameworks. Strategies for resilient urban buildings suggested were energy-efficient designs, smart technologies, renewable energy integration, and recycling construction waste.

7. The Islamic Republic of Iran has implemented innovative water management technologies such as sprinkler irrigation, flood management, and renewable energy solutions, improving agricultural productivity and drought response.

8. It was stressed that advanced technology interventions in energy storage, renewable integration, precision agriculture, and water management

are important as well as investments in construction, energy, and agriculture are also vital.

9. In Nepal, integrating data and innovative solutions such as bio-engineering and hydro turbine, early warning systems, retrofitting has strengthened resilience in the hydro power sector.

10. With an objective to become a global innovation cluster, the Daejeon Metropolitan City of the Republic of Korea has embarked on a 4-pronged innovation strategy, aiming for a 40% greenhouse gas reduction by 2030. Key strategies used were transitions to green building eco-friendly transport, and circular economy.

11. Enabling measures like green remodeling, zero-energy buildings, and smart agriculture can significantly reduce emissions. The Global Innopolis Network Initiative is a promising science technology and innovation cooperation platform to promote joint response to urban challenges through practical joint research, and facilitate interaction and networking between business, science and technology, people and cities.

12. Water resource governance requires proactive measures such as community engagement, multistakeholder collaboration, and technical capacity-building. Open data and forecasting tools drive energy transitions, demonstrated by Jeju Island's innovative solutions for grid stability and renewable integration.

13. India's efforts in climate-resilient infrastructure include the National Hydrogen Mission, promotion of Electric Vehicles, and Production Linked Incentive scheme. Key challenges mentioned were financing, limited public-private partnerships, research and development infrastructure gaps, inadequate climate data, underutilization of nature-based solutions, policy constraints, and delays in energy transition. India also fosters international collaboration through agencies like the Coalition for Disaster Resilient Infrastructure and the International Solar Alliance, sharing practices and building capacities globally.

## **II. Recommendations**

### **a. General Recommendations**

14. Governments and organizations should foster and leverage startup ecosystems to drive innovation, enhance operational capacities, and scale technologies aimed at building resilient societies. These efforts must be complemented by strategies and norms that are grounded in local realities and guided by forward-looking assessments to ensure their relevance and effectiveness.

15. Policymakers and practitioners should utilize advanced technologies and data systems for comprehensive risk evaluation, the development of people-centred early warning systems, and loss and damage estimation to support climate financing. To adapt to the dynamic nature of climate risks, an iterative process of monitoring, evaluation, and learning should be integrated into these efforts.

16. Inclusive climate resilience planning must actively engage citizens and stakeholders through participatory decision-making. Clear and accessible documentation is crucial for fostering widespread understanding and enabling informed contributions from all involved parties.
17. Comprehensive vulnerability analyses should be conducted to identify at-risk communities and regions, guiding targeted interventions and resource allocation. The use of technology ecosystems and digital tools is vital for these assessments and for addressing the complex and systemic challenges posed by climate change.

**b. Recommendations for the Asian and Pacific Centre for Transfer of Technology**

18. The Asian and Pacific Centre for Transfer of Technology should enhance cross-sector collaboration, promote South-South cooperation, and strengthen capacity-building initiatives to support the development of climate-resilient infrastructure.
  19. The Centre should facilitate innovation in climate-resilient technologies, bridging the gap between supply and demand for such solutions.
  20. Platforms like the Centre's international conference, held during the Governing Council session, should continue to serve as a forum for sharing experiences and best practices in climate-resilient technologies, while also helping countries identify their specific technological needs.
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