

Agenda item 4(a) v. Digital Technologies

# Knowledge Product: Practical Means to Support AI Implementation for Transformative Climate Solutions

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**United Nations** Climate Change  
Technology Executive Committee

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# Action-oriented Resource for AI Implementation

- This knowledge product serves as an **action-oriented resource** for NDEs, policymakers, local AI innovators and support providers
- Its purpose is to **identify** and **prioritize concrete AI implementation pathways** for climate action, focusing on the real-world delivery
- This work derives inputs from TEC knowledge products, UN reports, academic articles and policy papers as well as TEC and CTCN events



# Evidence Base: Global Survey and Expert Interviews

## Multi-Stakeholder Survey

Conducted in February 2026 via an online platform to gather practices, challenges, and lessons on AI implementation for climate action.

**350+**

Total Respondents

**>70%**

Developing Country Focus

### Regional Representation:

Africa, Asia-Pacific, Latin America & Caribbean, Europe and North America.

### Respondent Types:

Academia/Research, Innovators/Private Sector, Government (NDEs), NGOs/Practitioners.

## Deep-Dive Expert Interviews

11 structured discussions focusing on technical, policy, and financial requirements for scaling AI solutions.

### Interviewee Profile:

- Climate-Tech Entrepreneurs
- Researchers
- Local AI Practitioners

### Country Representation:

Brazil, India, Kenya, Lao PDR, Mexico, Nigeria, Papua New Guinea, Rwanda, Suriname, Trinidad and Tobago, US

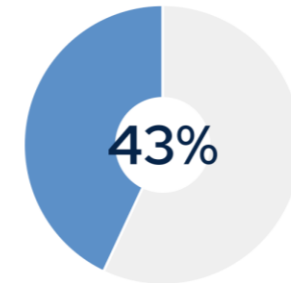


# The AI Divide: Structural Barriers to Implementation

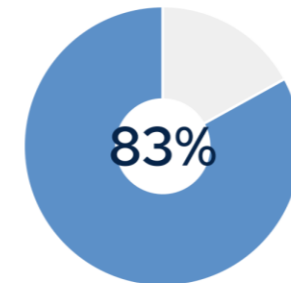
- **A "Profound AI Divide"** severely limits deployment in developing countries, risking vendor lock-in and digital sovereignty
- **Infrastructure Shortages:** Critical lack of High-Performance Computing (HPC), reliable network connectivity
- **Data Scarcity & Quality:** Data constraints are the primary scaling barrier for accurate model training
- **The Sustainability Paradox:** AI's high energy consumption conflicts with core climate goals, demanding green data center standards

## Access to AI Compute Infrastructure

Very poor or below average compute infrastructure  
(Developing Countries)



Poor-to-moderate compute access  
(Latin America & Caribbean)

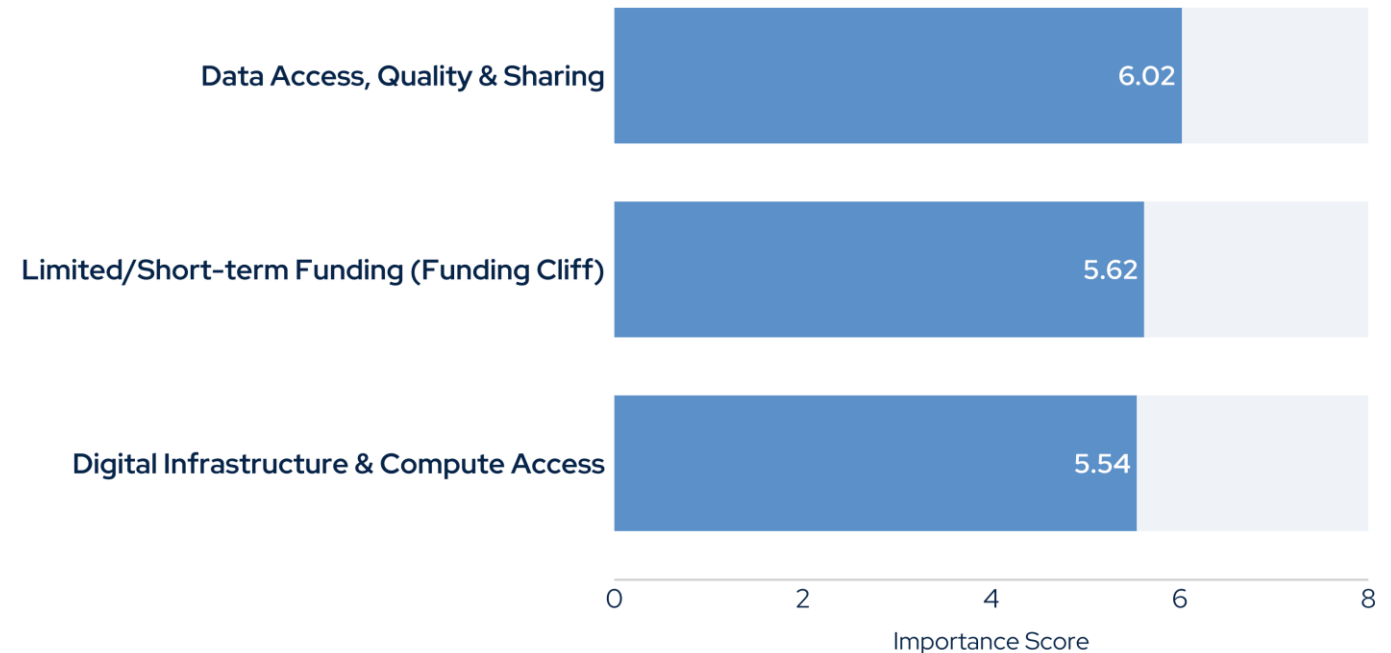


# Foundational Pillars and Top Implementation Obstacles

- **Data Efficacy:** Requires comprehensive, high-resolution local datasets and open data sharing frameworks
- **Infrastructure Access:** Addressing the critical lack of High-Performance Computing and reliable connectivity (33.8% rate internet connectivity as poor or very poor)
- **Skills:** Dual need for technical AI expertise and institutional/governance expertise

## Top 3 Ranked Challenges

Scores reflect weighted importance on a scale of 0 to 8



## AI Applications: Solutions in Action

### Case Study: The AI for SIDS Initiative (Trinidad & Tobago)

- **Solution:** Developing an AI platform for localized flood forecasting and early warning systems.
- **Challenge:** Encountered risk of vendor lock-in and bureaucratic data inaccessibility ("red tape").
- **Key Lesson:** Community co-design and a "slow and phased" approach is essential for building local trust and long-term adoption.

### Case Study: AI for Smart Irrigation (Laos PDR)

- **Solution:** Creating an AI-based system to provide farmers with data on water usage and climate for smarter irrigation.
- **Challenge:** Difficulty in collecting high-quality local data and a critical lack of local AI technical skills.
- **Key Lesson:** Sustainability requires intensive, long-term training of local experts and moving to open-source models to ensure local ownership.



# Beyond Conventional Support: Innovative Deployment Models

## Innovation Hubs & Centers of Excellence

Act as a bridge for policy translation and facilitate local ownership and co-design.

*Goal: Prioritize local ownership and defined scaling pathways over prestige.*

## Open-Source AI & Digital Public Goods (DPGs)

Offer reusable 'AI building blocks' to significantly lower entry barriers and accelerate innovation.

*Key: Success hinges on localization, linguistic inclusivity, and community stewardship.*

## Regional Computing Facilities

Fostering shared access and sovereign compute initiatives to mitigate vendor lock-in and empower local innovators.

*Action: Must be paired with policy-driven governance and local technical training.*

*Most used model: Innovation hubs*



# Overcoming the 'Funding Cliff' through Sustainable Finance

## Key Financial and Scaling Lessons:

- **Sustainable Finance:** Mobilizing catalytic capital and blended finance is ranked as the most urgent area by support providers to overcome the 'funding cliff'.
- **Venture Building Model:** Projects must transition from short-term grants to a sustainable venture building model (e.g. hybrid business) for long-term viability.
- **Public-Private Partnership (PPP):** Sustainable scaling requires embedding AI solutions in PPP models with clear, outcome-based contracts.
- **Policy Sandboxes:** Can create a 'bankable asset' for private investment when government policy is absent.



# The Need of a Systematic Shift

## Core Recommendations for Action:

- **Strengthen national data systems:** Fostering open and interoperable data ecosystems is paramount for digital sovereignty.
- **Mobilize sustainable finance:** Prioritize blended finance and the venture building model for long-term impact.
- **Foster local ownership:** Prioritize community co-design and linguistic inclusivity in all AI development.
- **Establish agile governance:** Create enforceable frameworks and regulatory certainty beyond technical pilots.
- **Create systematic shift:** Support must shift toward long-term institutional capacity and sovereign digital infrastructure.



**Thank you.**



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