Thai Nguyen University of Agriculture and Forestry

Green Transformation in Tropical Agricultural Universities

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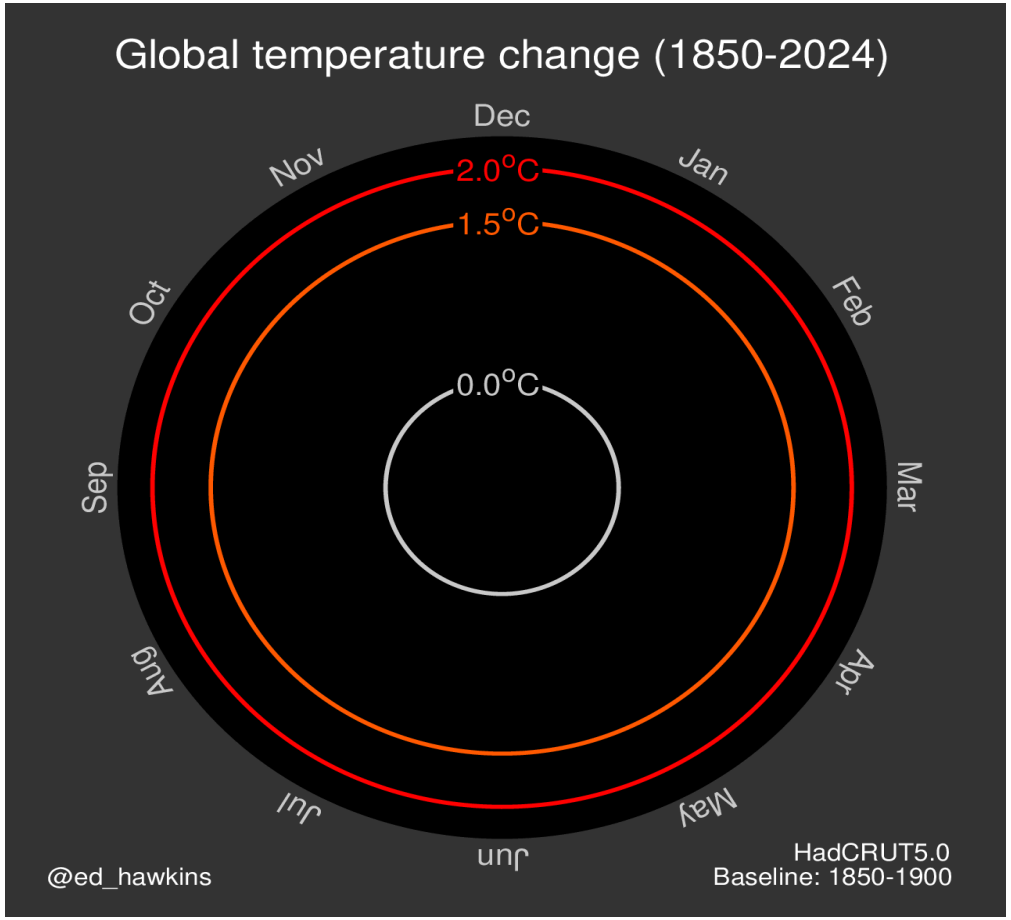
Cùng Bạn ra thế giới - Bring you to the World !

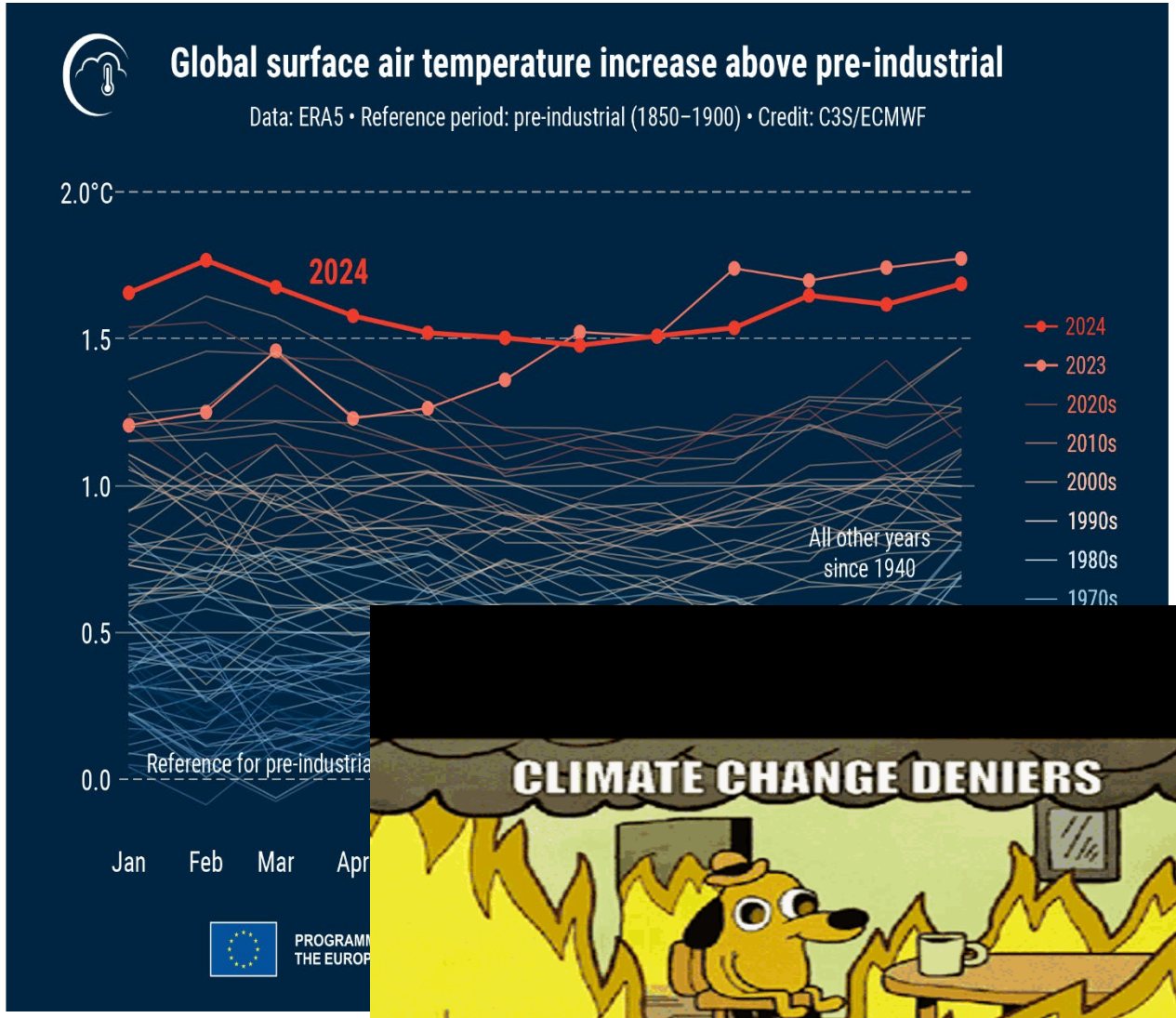
Outline

- Context: Why now?
- Defining Green Transformation in Universities
- Global Trends & Good Practices
- Green Transformation in Vietnam's Universities
- Pathways for Transformation: A University Roadmap
- Role of Agricultural & Tropical Universities
- Inspiring Call to Action



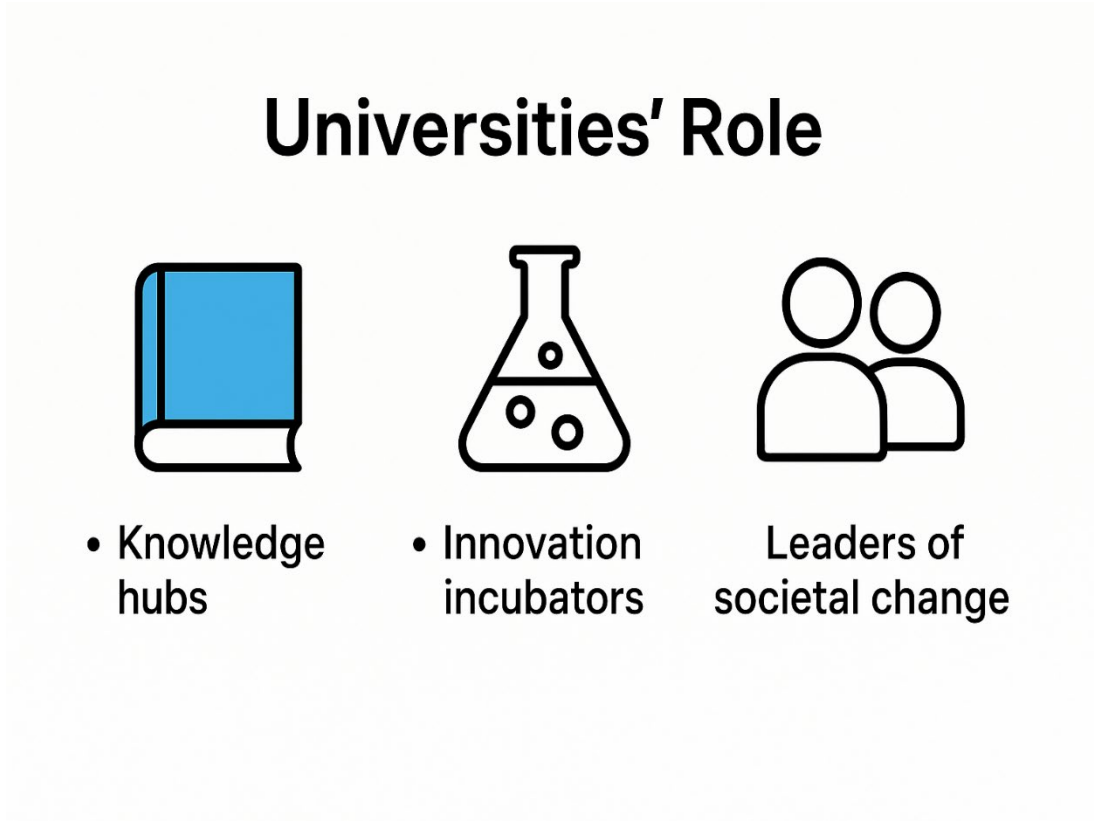
Why Now?

- **Climate crisis intensifying:** Unprecedented global and local impacts.
- **Net Zero commitment:** A call for transformation.
- **Universities as catalysts:** Driving research, innovation, and education for sustainability.
- **The urgency is real:** Universities cannot remain neutral; we are part of the solution.



Universities' Role

- Our role goes beyond teaching – we shape mindsets, technologies, and solutions that transform society.
- Knowledge hubs – generating and sharing knowledge for a sustainable future.
- Innovation incubators – developing technologies and creative solutions.
- Leaders of societal change – empowering people and driving transformation.

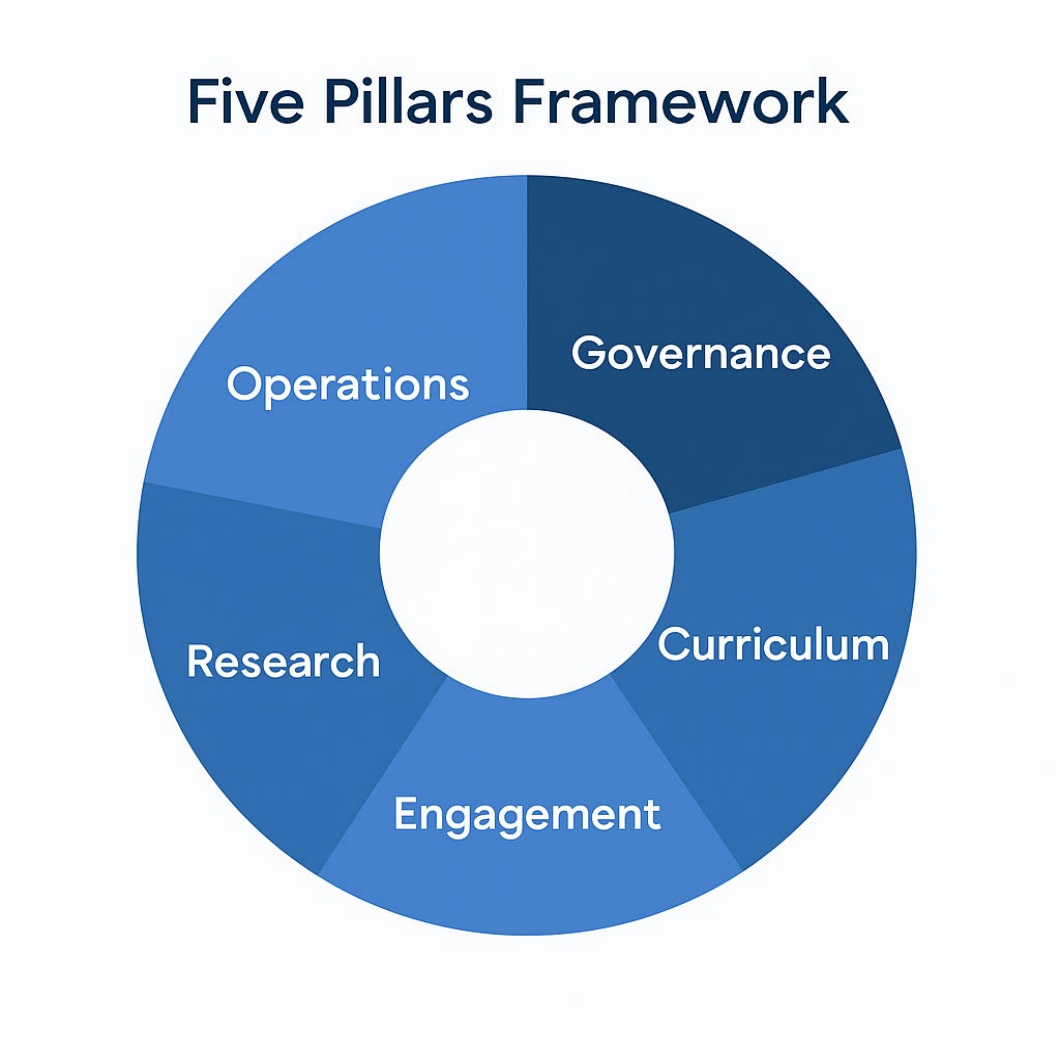


What is Green Transformation? Beyond "Green Campus"

- Green transformation = holistic change – integrating education, operations, and culture.
- Not just energy-saving – it's about systems thinking and behavioral shifts.
- From visible actions to systemic change – addressing root causes, not just symptoms.

Five Pillars Framework

- **Governance** – leadership commitment, policy integration, and strategic direction.
- **Operations** – implementing green practices in energy, waste, water, and campus infrastructure.
- **Curriculum** – embedding sustainability and climate literacy.
- **Research** – advancing innovation and solutions for sustainable development.
- **Engagement** – connecting with communities, industry, and policymakers to drive real-world impact.

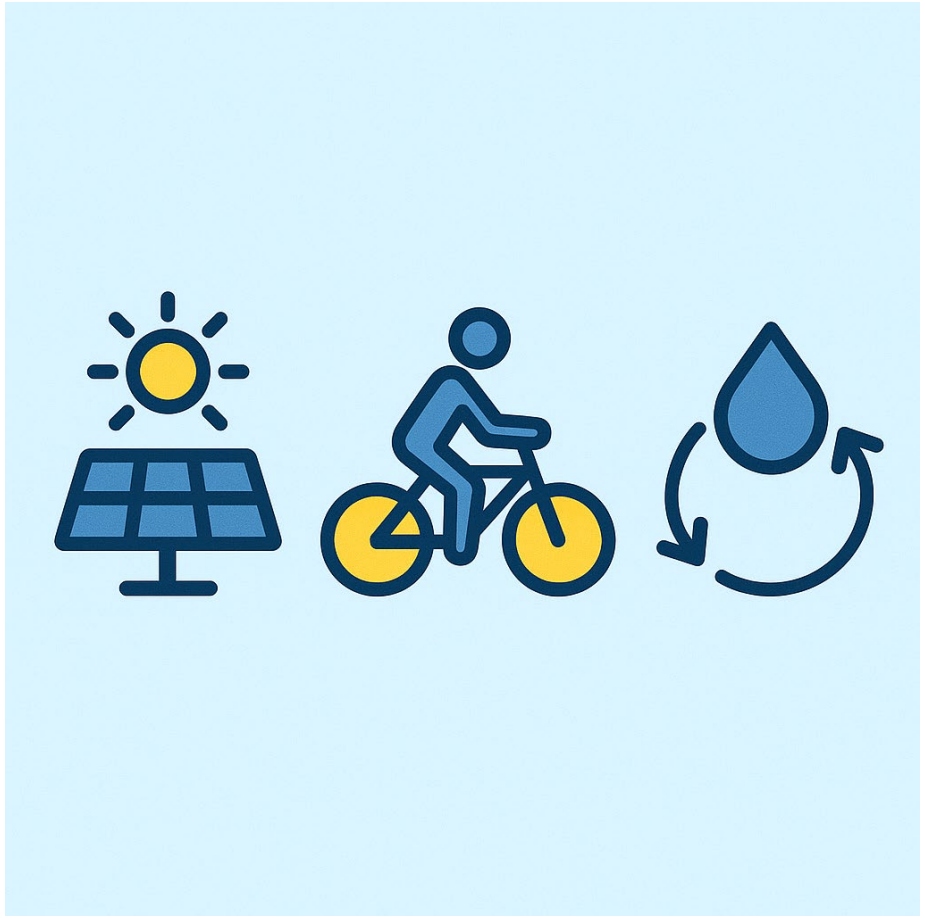


Pillar 1: Governance

- **Leadership commitment** – driving institutional sustainability from the top.
- **Sustainability in strategy** – embedding long-term environmental and social goals.
- **Institutional policies & KPIs** – setting measurable standards and tracking progress.

Pillar 2: Operations

- **Energy efficiency & renewables** – optimize use, transition to solar and other clean sources.
- **Sustainable mobility & buildings** – promote low-carbon transport and green infrastructure.
- **Waste, water, food systems** – reduce, reuse, recycle; manage resources in circular ways.



Pillars 3–5

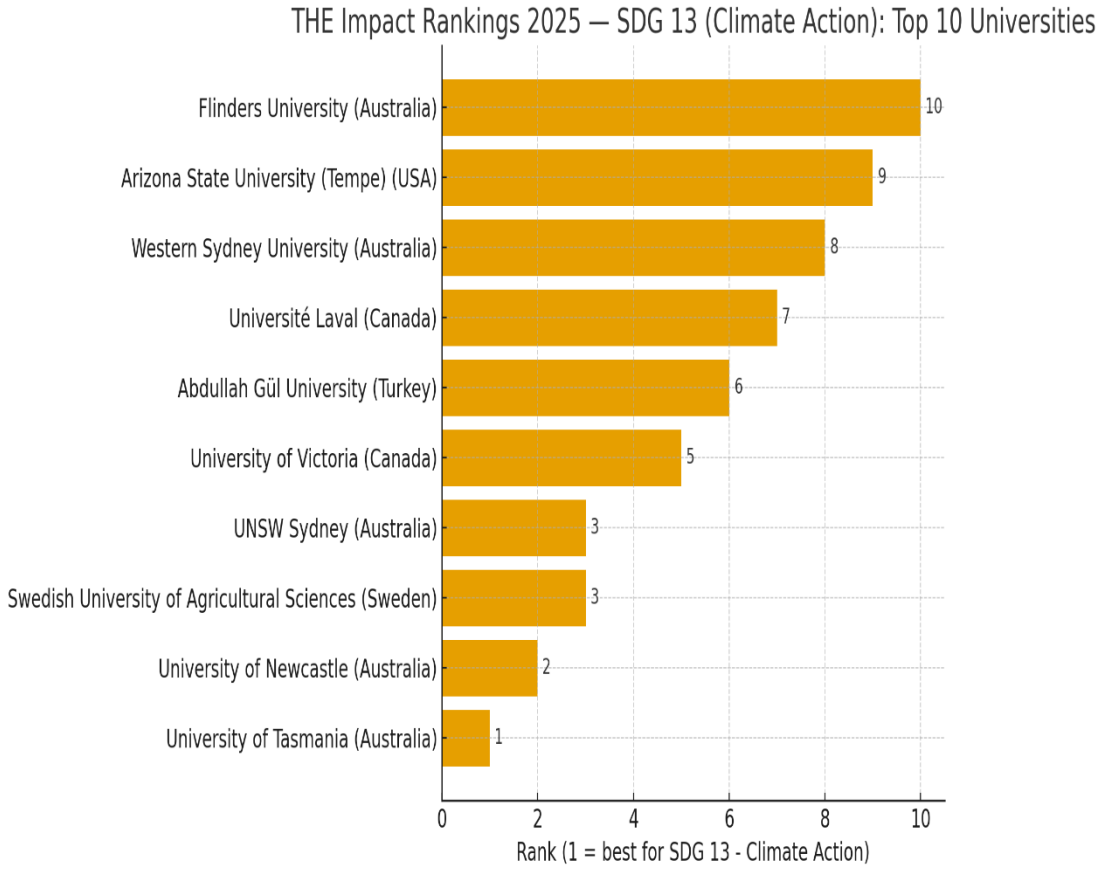
- **Curriculum** – embed sustainability literacy and climate knowledge across disciplines.
- **Research** – advance innovation in climate solutions, sustainable agriculture, renewable energy, and NbS.
- **Engagement** – connect students, communities, and the private sector for real-world impact.

Global Trends & Good Practices

- **Universities worldwide leading sustainability** – transforming campuses into living labs for climate action.
- **Networks** – connecting through SDGs, Education for Sustainable Development (ESD), and Climate Neutral Universities initiatives.
- **Shared vision** – collaboration, innovation, and collective impact for a sustainable future.

Case 1: Carbon Neutral Campus

- *Times Higher Education* has assessed and ranked 1,089 universities from 105 countries/territories on their contributions to the United Nations' Sustainable Development Goal 13: Climate action
- Top universities leading climate change mitigation in 2025
- Universities leading in sustainability transform their campuses into "living laboratories" by integrating real-world sustainability challenges into research, education, and campus operations.



Case 2: Curriculum Innovation: University of California

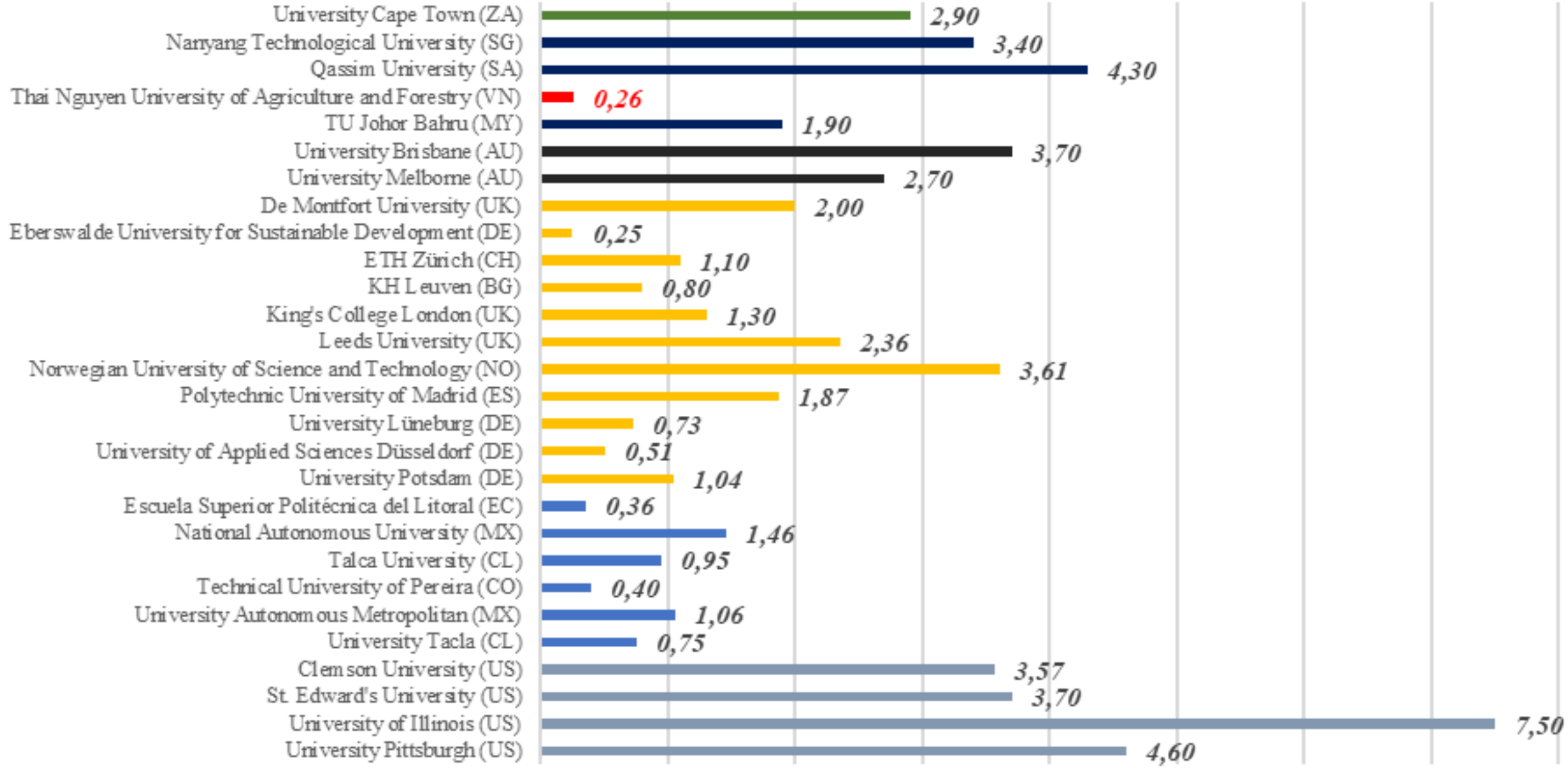
- The UC system integrates climate change and sustainability themes into courses across all majors
- Every campus offers interdisciplinary programs and experiential learning
- Students graduate with sustainability literacy
- UC graduates are empowered to lead climate action in their professions and communities.

Case 3: Community Partnerships

- Wageningen (Netherlands): food system solutions.
- Pioneering climate-smart and circular food system innovations
- Strong extension work with farmers, cooperatives, and local governments to co-create sustainable agricultural solutions.
- Training students and professionals to design integrated food, water, and land-use systems

Vietnam Context

- Higher Education Institutions (HEIs) in Vietnam are increasingly adopting sustainability initiatives.
- Strong policy momentum through national commitments such as Net Zero by 2050, the National Green Growth Strategy.
- Opportunities to align teaching, research, and campus operations with climate and sustainability goals.



University carbon footprints in tCO_{2e}/capita; ZA = South Africa. SG = Singapore. SA = Saudi-Arabia. VN = Viet Nam. MY = Malaysia. AU = Australia. UK = United Kingdom. DE = Germany. CH = Switzerland. BG = Belgium. NO = Norway. ES = Spain. EC = Ecuador. MX

TUAF as a Green Transformation Case

- Pioneered experiential climate education through field-based learning, student-led projects, and community engagement.
- Integrates research, teaching, and outreach to address local climate and sustainability challenges.
- Developed demonstration models such as the Climate Learning Centre and Climate Park.
- Acts as a regional hub for climate action, connecting universities, schools, farmers, and policymakers.

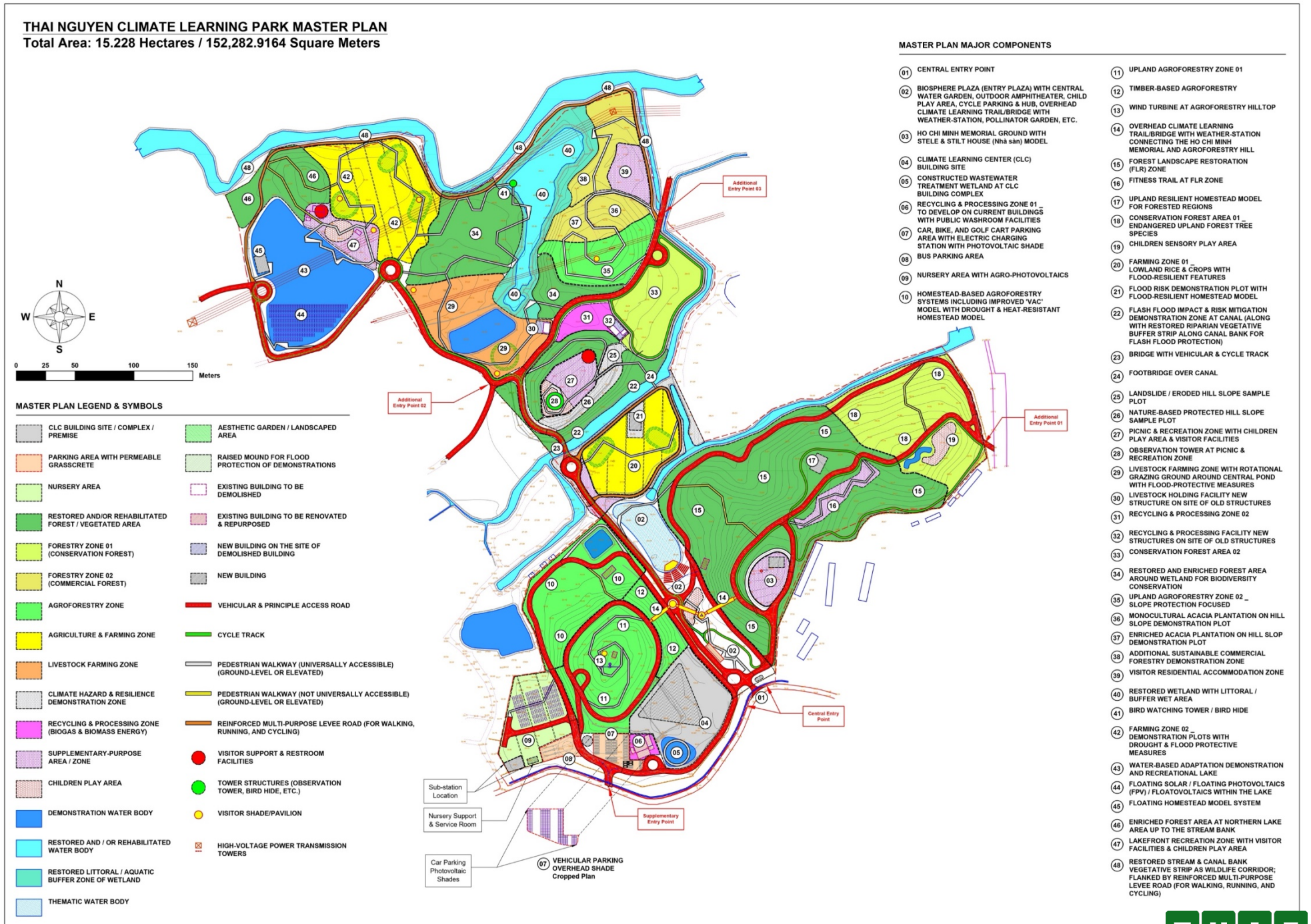
Climate Learning Center Overview

- Established as a regional model for climate education
- Operates as a living laboratory
- Integrates education, demonstration, and innovation to address climate challenges
- Acts as an outdoor classroom and innovation hub.

Climate Park Master plan

6-RE DESIGN CONCEPT

- REstoring
- REgenerating
- REcycling
- REplicating
- REthinking
- REsilient

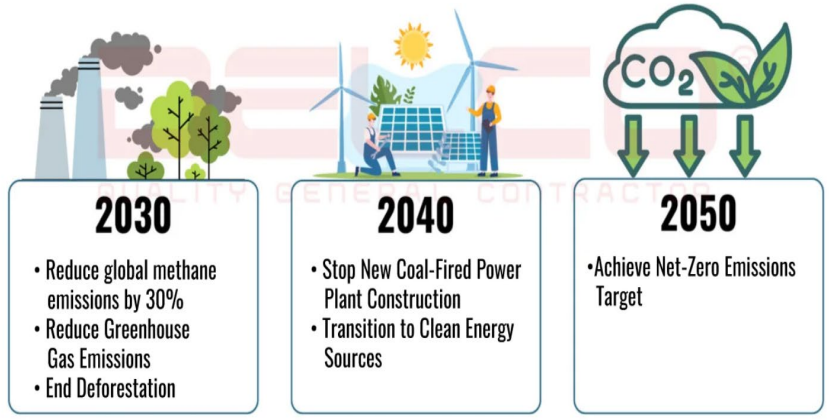


Challenges

- Real progress is visible through campus initiatives, curriculum reforms, and student engagement in sustainability.
- However, systemic barriers eg., funding, and incentives slow down large-scale transformation.
- Without strong policy and financial support, the green transition risks remaining symbolic rather than transformative.

Opportunities

- National Net Zero 2050 roadmap provides clear direction and policy momentum.
- Expanding international partnerships enhance research, innovation, and knowledge exchange on climate solutions.
- Strong student enthusiasm and leadership are driving forces for climate action and campus sustainability.



Transformation Roadmap Overview

- Five action pathways to guide universities toward climate neutrality and sustainability.
- Emphasizes a whole-of-institution approach, integrating governance, operations, education, and partnerships.
- Encourages context-specific adaptation, allowing each university to align with its strengths and local priorities.

Pathway 1: Leadership & Policy

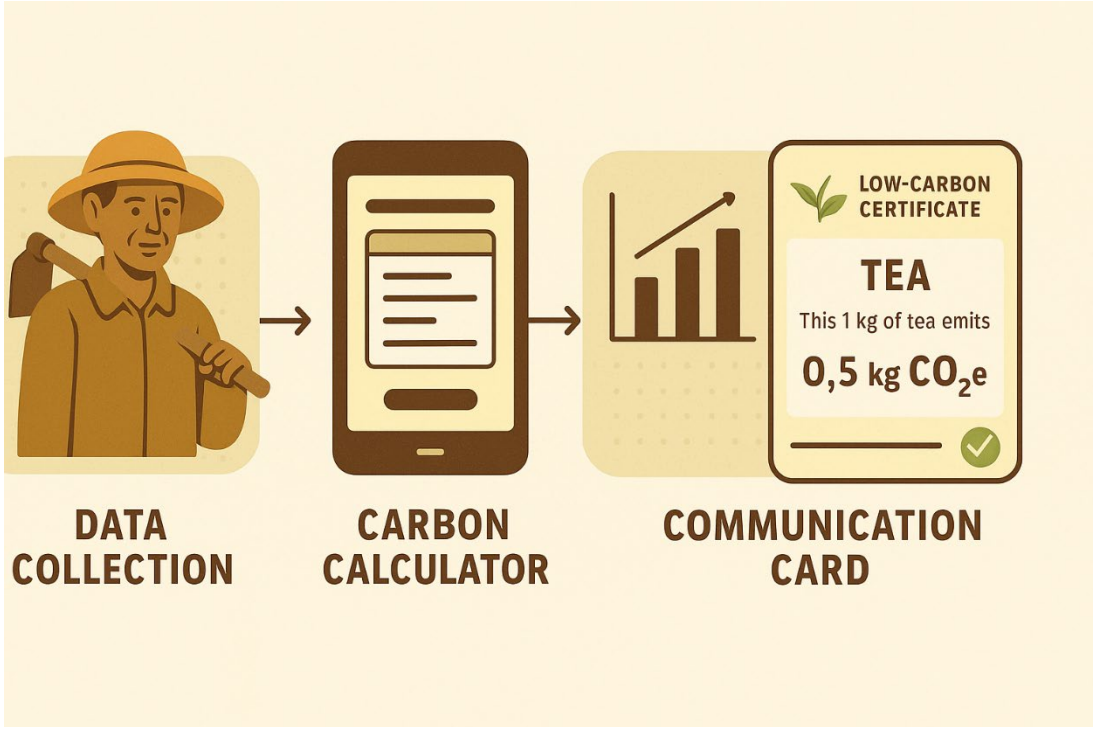
- Institutionalize sustainability within the university’s vision, mission, and strategic plans.
- Establish green governance structures
- Develop clear policies and accountability mechanisms for carbon reduction, resource use, and reporting.
- Foster leadership commitment
- Encourage inclusive participation

Pathway 2: Curriculum & Capacity

- Integrate climate change and sustainability across all academic programs
- Strengthen faculty capacity through training, resources, and collaboration.
- Promote interdisciplinary and experiential learning.
- Develop new courses, toolkits, and materials aligned with national goals.
- Build a culture of continuous learning.

Pathway 3: Campus Living Lab

- Transform the campus into a living laboratory
- Pilot low-carbon and circular innovations
- Use campus data (e.g, CFP) for teaching, research, and performance monitoring.
- Encourage student-led projects and innovation challenges
- Showcase the campus as a model of sustainable operations and behavior change



Pathways 4 & 5

Pathway 4 — Partnerships & Engagement

- Build strategic collaborations with government, industry, farmers, NGOs, and international networks to scale impact.
- Promote co-creation of knowledge and solutions through joint research, innovation, and community-based projects.
- Strengthen university–community linkages.
- Engage students and youth networks as active partners in outreach and climate action initiatives.

Pathway 5 — Measurement & Accountability

- Conduct regular carbon footprint assessments to track progress toward Net Zero goals.
- Implement sustainability reporting systems.
- Use data-driven decision-making to improve campus operations and learning outcomes.
- Foster a culture of transparency and continuous improvement, sharing results and lessons with stakeholders.

Role of Agricultural & Tropical Universities: Unique role

- Train future leaders in agriculture.
- Play a critical role in advancing SDGs
- Act as knowledge hubs linking science, policy, and local practice.
- Inspire innovation and resilience.

Bridge of Knowledge

- Connect scientific innovation with indigenous and local knowledge to co-create practical, culturally grounded climate solutions.
- Position universities as bridges linking researchers, communities, and policymakers for inclusive knowledge exchange.
- Foster mutual learning partnerships that value both modern science and ancestral wisdom.

Closing & Call to Action

- Universities are powerful societal change-makers, shaping knowledge, values, and the next generation of leaders.
- Collaboration through UNTA can accelerate transformation and shared learning across regions.
- “A green university today builds a sustainable society tomorrow.”
- Together, we can turn campuses into living models of sustainability and climate action.

THANK YOU!

Time for Q&A

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