



Toolkit for TVET and HE in CAREC Region: Priority Actions for Green and Just Transition

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Introduction / Rationale

Need for Green & Just Transition

Climate change is rapidly increasing risks in Central Asia, especially for **vulnerable groups**. Heat, glacier loss, water scarcity, and disasters are threatening livelihoods and basic services. Current economic models are no longer sustainable under these conditions.

Green Transition: Shift to a **low-carbon, resource-efficient, climate-resilient economy** that creates jobs and strengthens resilience.

Just Transition: Ensure workers, industries, and communities are supported—no one is left behind.

***Together:** A pathway to sustainable growth, economic modernization, and social inclusion in CAREC countries.

Role of TVET & HE in Green & Just Transitions

Progress on Green & Just Transition is uneven due to **low labor participation and skills gaps.**

There is a **mismatch** between green job demand and available skills.

TVET & HE systems must **modernize** to align with labor markets and expand inclusion.

Responsive TVET & HE systems are the key to building a **skilled workforce for the transition.**

Need for Strengthening TVET & HE in CAREC

Green skills in TVET & HE remain **limited and fragmented**.

Reforms are underway, but HE lags behind with **weak industry links**.

Gaps in **research, data, implementation of qualifications frameworks, and alignment with labor market needs** limit impact.

Systems need to become **flexible, industry-connected, and innovation-driven** to support the transition.

Framework for Toolkit

Framework for Reforming TVET & HE in CAREC

Reforming TVET and HE systems for a green and just transition requires action across **5 key dimensions** of policy implementation:

- 1. leadership commitment,**
- 2. governance,**
- 3. policy design,**
- 4. institutional capacity, and**
- 5. stakeholder collaboration.**

- These dimensions interact in a **complex, non-linear process.**
- They shape how policies are developed, implemented, and monitored.
- Government **sets direction** by creating enabling policies, and guiding institutional change.
- TVET / HE institutional leadership **translates policy into action.**

Toolkit for TVET & HE in CAREC

Toolkit supports government and institutional leadership and development partners with **8 Priority Actions** aligned with the 5 key dimensions of policy implementation.

It provides 13 practical tools to evaluate readiness, identify strengths and gaps, and guide policy and institutional improvements.

Self-assessments help leaders determine what is fully, partially, or not yet in place.

Scorecard supports prioritization and progress tracking over time.

Overview of Priority Actions

Priority Action 1: Build Leadership Commitment

How do we understand the effect of climate change on learners, workforce, and communities?

How do we act on this knowledge?

- ✓ Strong leadership and climate literacy are essential.
- ✓ Stakeholder engagement turned awareness into action and builds shared ownership.
- ✓ Together, climate action is elevated from a technical issue to a strategic priority.

Priority Action 1 (Cont.): Commitment to Policy Action

How are TVET and HE policies aligned with national climate goals and future labor market needs?

- ✓ Policies need to be aligned with Nationally Determined Contributions (NDCs) to support climate goals and resilience.
- ✓ Current gaps show the need to align skills development and just transition across sectors.
- ✓ TVET & HE systems need to align with climate, industry, and labor market policies rather than operate separately.
- ✓ This ensures that TVET and HE systems play a strategic role in delivering skills for a green and just transition.

Priority Action 1 (Cont.): Integrating Policy into Practice

How are policies being translated into coordinated actions across sectors – or are they still working in silos?

- ✓ Policy integration means turning high-level commitments into real actions across governance, management and planning.
- ✓ This requires translating policies into strategies, action plans, roles, and accountability systems.
- ✓ Monitoring & reporting systems are needed to track progress and support continuous improvement.
- ✓ Cross-sector coordination is essential.
- ✓ Training and education need to be treated as part of a broader system, not isolated sectors.

Priority Action 1 (Cont.): Implementing Policy for Impact

How are institutions demonstrating sustainability in practice and preparing learners with skills for the green economy?

- ✓ Green campuses as **“living laboratories”** demonstrate real solutions (i.e. energy efficiency, renewable energy, and waste management) while linking learning with practice.
- ✓ This approach build climate awareness and hands-on skills for students, teachers, and the communities.
- ✓ Aligning curricula with **green skills and sustainability competencies** ensures graduates are prepared for future labor markets.
- ✓ TVET can deliver **job-ready green skills**, while HE provides **interdisciplinary knowledge**.
- ✓ Together, these actions connect policy commitments to workforce and sustainability outcomes.

Case Study: Living Lab at Baise University, PRC

- ✓ **“Living laboratory”** integrates education, sustainability, and community engagement.
- ✓ Learning through **real-world applications** related to energy systems, water management, recycling, and low-carbon technologies.
- ✓ Dedicated **Green Sustainability Center** connects operations, curriculum, and community.
- ✓ Model supports **competency-based education** and **links TVET and HE pathways**.
- ✓ Collaboration across **academia, industry, government, and community** ensures solutions are relevant, inclusive, and locally grounded.
- ✓ Living labs help learners understand both **technical solutions and social impacts**.

How can campuses become living laboratories where students learn by solving real sustainability challenges in the context of their communities?

Priority Action 2: Build Capacity of Teachers & Staff

How are we investing in teachers and trainers as lifelong learners who can deliver skills needed for green jobs and a just transition?

- ✓ Trainers to support green jobs and workforce transitions, including reskilling workers in energy, construction, and agriculture.
- ✓ This requires both technical green skills and understanding of labor markets, equity, and just transition principles.
- ✓ Capacity building needs to be experiential, context-specific and continuous with a focus on climate literacy and lifelong learning.
- ✓ TVET & HE need tailored approaches.
- ✓ Partnerships with industry and research institutions ensure relevance.

Priority Action 3: Integrate Green Skills into Curricula

How does curricula prepare learners for green jobs?

- ✓ Preparing the future workforce requires **systematic integration of green skills and sustainability competencies** across all education levels.
- ✓ Curriculum reform should be **anticipating future green jobs and skills needs**.
- ✓ Programs must align with **national climate policies, green growth strategies, and sector priorities**.
- ✓ Strong collaboration with **industry and labor market actors** is essential to identify emerging occupations and skills demand.
- ✓ Using **labor market data and skills foresight** ensures curricula remain relevant and responsive.
- ✓ Embedding **inclusion (especially gender equality) early in curriculum design** can help reduce inequalities and expand access to green jobs.

Case Study: Micro-Credentials for Flexible Green Skills, Nazarbayev University

- ✓ Nazarbayev University offers micro-credential programs to help professionals gain targeted, industry-relevant skills without full degree commitments.
- ✓ Flexible delivery (i.e. online, evening, and hybrid formats) allows learners to upskill while working.
- ✓ Programs emphasize practical, applied learning through real-world case studies and hands-on exercises.
- ✓ Learners can stack credentials toward advanced degrees, creating flexible learning pathways.
- ✓ This model supports lifelong learning and rapid skills development, aligned with evolving industry needs.

How are we providing flexible learning pathways that allow all workers to quickly gain the skills needed for the green transition?

Priority Action 4: Deploy Monitoring & Evaluation (M&E)

What are the right indicators to measure progress towards a green and just transition?

- ✓ M&E ensures **pilot initiatives can move to sustained impact.**
- ✓ M&E systems should:
 - Track inputs and implementation**
 - Assess whether intended outcomes are achieved**
 - Use evidence to adapt and improve programs**
- ✓ **Indicators are essential** to support quality assurance and continuous improvement.
- ✓ Indicators linked to the **5 core pillars** help systems demonstrate **leadership, accountability, and impact.**
- ✓ Indicators need to be integrated into **national monitoring systems and NDC reporting**, while institutions can use them to **track and report progress.**
- ✓ M&E is not just about reporting...it is a tool for **continuous learning and system improvement.**

Priority Action 5: Mobilize the Private Sector

How can we co-design TVET and HE systems with employers rather than just consultant with them occasionally?

How do employers see business value in investing in green skills for all?

- ✓ The private sector is essential to align skills with real labor market needs and avoid skills mismatch.
- ✓ Engagement must go beyond consultation to active collaboration in skills forecasting, standards, and training.
- ✓ Raise awareness of the business case for green skills—productivity, innovation, and risk reduction.
- ✓ Use incentives and partnerships at all levels (national, sector, institutional) to drive participation.
- ✓ Combine financial and non-financial incentives to sustain engagement, including with SMEs.
- ✓ Shift from ad hoc involvement to long-term partnerships to support a green and just transition.

Case Study: Embedding Green Skills in National Systems – Philippines and Bangladesh

- ✓ Governments in the Philippines and Bangladesh made employer engagement **systemic, not optional**.
- ✓ In the Philippines, **TESDA** engaged employers through **sector consultations, pilot programs, and work-based learning**.
- ✓ In Bangladesh, **NSDA** partnered with **industry bodies such as the garment sector** to align skills with export and sustainability needs.
- ✓ This approach ensures that green skills are **built into the system** to enable consistent employer participation and relevance.

How can campuses become living laboratories where students learn by solving real sustainability challenges in the context of their communities?

Priority Action 6: Champion Gender, Equality, and Inclusion

How can TVET and HE systems be inclusive and enable all groups to participate in the green transition?

- ✓ Systems must be **inclusive by design by ensuring equal access, participation, and outcomes.**
- ✓ Key actions include:
 - Expanding access to **STEM and technical training**
 - Providing **scholarships, flexible learning, and targeted outreach**
 - Increasing **representation in leadership**
 - Using **data and budgeting** to track and support equity
- ✓ Green skills need to go beyond technical abilities to include **empowerment, leadership, and confidence-building competencies.**
- ✓ Embedding inclusion into **curricula, teacher training, and national frameworks** can ensure lasting impact.

Priority Action 7: Promote Students as Change Agents

How can we give students opportunities to lead climate and sustainability actions?

- ✓ Students can be **active drivers of the green and just transition.**
- ✓ Education needs equip them to **take action and shape sustainable systems.**
- ✓ Hands-on engagement is key through **living labs and green campus initiatives for:**
 - Working on real world challenges (i.e. energy, water, waste, mobility)
 - Applying green skills in practice
 - Understanding social and environmental impacts
- ✓ Activities such as **monitoring energy use, supporting renewable projects, and leading awareness campaigns** can help to build critical skills such as systems thinking, collaboration, and civic responsibility.
- ✓ Empowering students strengthens **institutional culture and community impact.**

Case Study: Empower Students for Sustainability, Al-Farabi Kazakh National University (KazNU)

- ✓ Participation in the **UI GreenMetric ranking** drives action in energy, waste, water, and transport.
- ✓ Students are actively engaged through:
 - Research on environmental issues**
 - UNESCO chairs and interdisciplinary learning**
 - Hands-on projects** (i.e. Green Office initiatives)
 - Online courses on climate and sustainability**
- ✓ This approach connects **learning, action, and accountability.**
- ✓ It shows how institutions can create an environment where students are **active contributors to green transformation.**

How can we create systems where students can not only learn about sustainability, but can actively shape sustainability outcomes?

Priority Action 8: Promote Applied Research on Local Sustainability

How do institutions generate knowledge that aims to solve local climate and sustainability challenges?

- ✓ TVET and HE institutions can become **drivers of practical solutions** by focusing research on **local climate and sustainability challenges**.
- ✓ Applied research can generate **context-specific evidence and innovation** that supports communities, SMEs, and policymakers.
- ✓ Research needs to go beyond technical subjects to include **social sciences** and address:
 - Impacts on vulnerable groups
 - Gender dimensions of climate change
 - Inclusive and equitable policy solutions
- ✓ Institutions can act as **innovation hubs** through:
 - Hands-on research (i.e. waste audits, renewable energy prototypes)
 - Partnerships with industry on green technologies and practices
- ✓ Integrating **research, teaching, and real-world application** strengthens both climate action and inclusive development.

How to Use Toolkit

List of Tools Available

Tool 1. Initial Actions Informed by Climate Change Literacy in Leadership

Tool 2. Guidance for Sector / Subsector and Institutional Assessments

Tool 3. Stakeholder Engagement Informing Directions for Green and Just Transition

Tool 4. Guiding Questions and Key Steps for Policy Directions by Government Leadership

Tool 5. Steps for Creating a Living Lab

Tool 6. Key steps for supporting TVET trainers to advance green and just transition strategies

Tool 7. Key Steps in the Process for Reforming Curricula for both TVET and HE Contexts

Tool 8. Monitoring Mechanisms for Assessing TVET and HE Support to Green and Just Transition

Tool 9. Key Indicators Measuring Progress Against the 5 Core Pillars of a green and just transition for TVET and HE

Tool 10. Private Sector Engagement and Incentive Planning

Tool 11. Steps towards Equity and Social Inclusion

Tool 12. Actions for Projects Fostering Change Agents

Tool 13. Initiatives Fostering Applied Research

When to Use

- ✓ To support **policy formulation, implementation, and monitoring**
- ✓ To align policies with **national goals and local context**
- ✓ To ensure **stakeholder buy-in and practical relevance**
- ✓ To translate policy into **institutional action**
- ✓ To minimize resistance and strengthen **accountability**

Examples 1 & 2

Priority Action 1 (Leadership Commitment)

When / How: Align policies with national goals and local context

- Use **Tool 2 on Sector/Institutional Assessments**) to identify institutional strengths, gaps, and local climate risks.
- Combine with **Tool 3 on Stakeholder Engagement** to gather input from industry, students, and communities.

Priority Action 5 (Mobilize Private Sector)

When/How: Ensure stakeholder buy-in and practical relevance

- Use **Tool 10 for Private Sector Engagement & Incentive Planning** to engage employers in identifying green skills needs and co-designing training.
- Apply incentives (i.e. partnerships, co-financing, work-based learning) to secure participation.

Examples 3 & 4

Priority Action 6 (Gender, Equality, & Inclusion)

When / How: Ensure policies are inclusive and aligned with local needs

- Use **Tool 11 on Equity and Social Inclusion Steps** to identify barriers faced by women, rural learners, and disadvantaged groups.
- Apply findings to design scholarships, flexible learning options, and targeted outreach

Priority Action 8 (Applied Research)

When/How: Ensure implementation is relevant and inclusive

- Use Tool 13 on Applied Research Initiatives** to prioritize research on local climate impacts affecting vulnerable groups (i.e. women farmers and informal workers).
- Engage communities directly in research design and solutions.

Thank you