USAID
FROM THE AMERICAN PEOPLE

ADVANCING CLIMATE-RESILIENT EDUCATION TECHNICAL GUIDANCE

CONTENTS

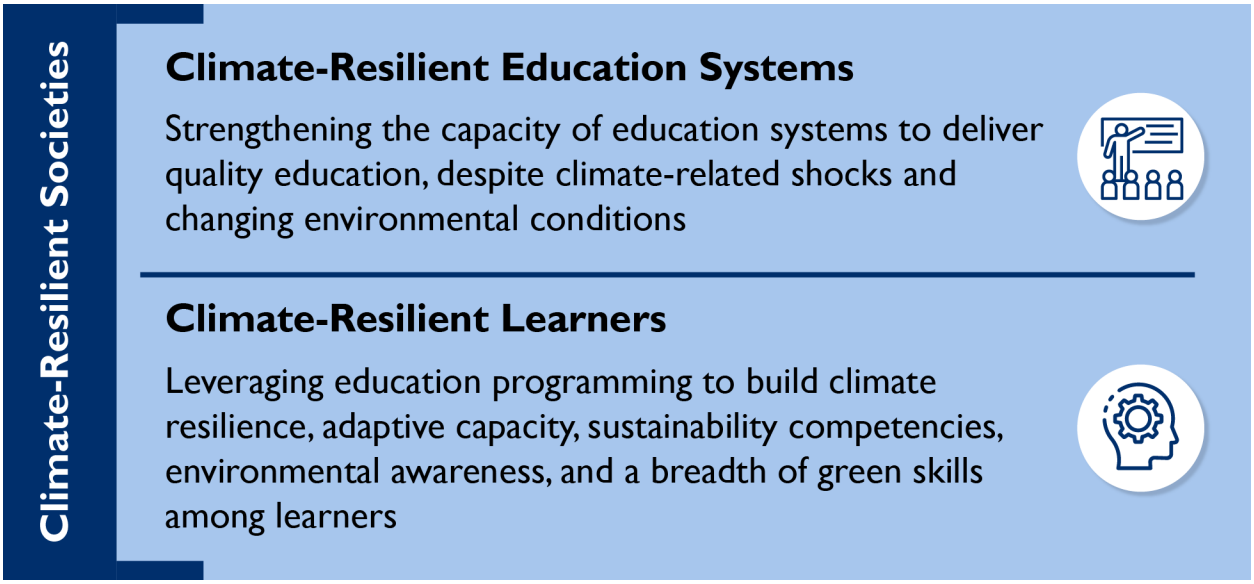
OVERVIEW AND PURPOSE

The Advancing Climate-Resilient Education Technical Guidance builds on the USAID 2022–2030 Climate Strategy and the 2018 USAID Education Policy to support USAID Missions and partners who seek to integrate climate action and awareness into education programs and are committed to achieving climate-resilient education systems and fostering climate-resilient learners (Figure 1). It outlines how to identify opportunities for climate action that respond to known climate hazards through mitigative, adaptive, and transformative actions.

The guidance is designed for use at the activity design and monitoring and evaluation stages of the USAID Program Cycle. It does not prescribe new processes, but rather serves to aid Missions and partners in integrating climate considerations into existing processes.

Education-directed funds must be used for programs that assist countries to achieve measurable improvements in learning and educational outcomes. Funds directed for education must not be used for programs that do not have the improvement of learning and educational outcomes as a specific, measured objective. The guidance highlights strategic entry points for application across the education continuum, while acknowledging that systematically addressing climate change will require leveraging additional resources for a holistic, cross-sectoral approach.

Figure 1. Climate-resilient education systems and learners

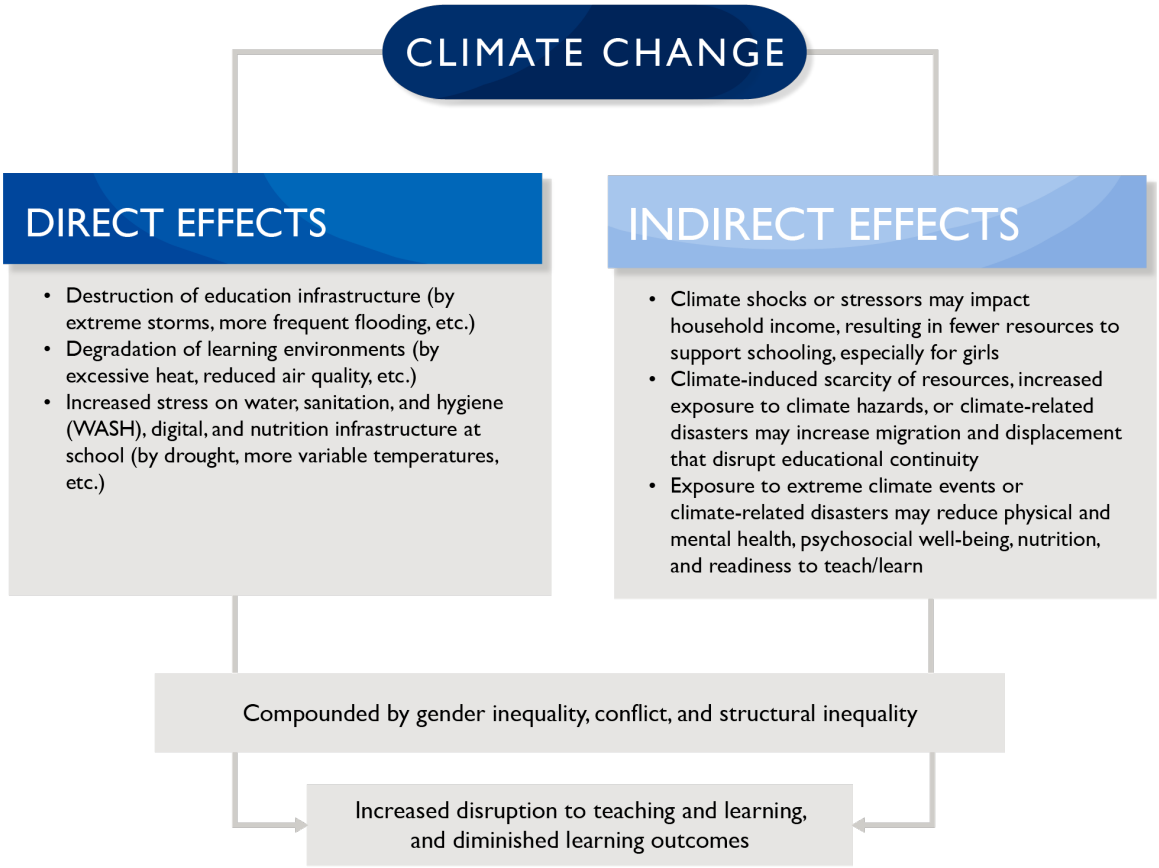


BACKGROUND

CLIMATE CHANGE'S IMPACT ON EDUCATION

Climate change can translate into significant disruptions for learners, educators, and their communities. Disruptive effects can occur through direct and indirect pathways, and can compound or be compounded by existing inequalities, especially those experienced by women and girls, learners with disabilities, learners from Indigenous communities, refugees, and learners who are internally displaced (see Figure 2).[i]

Figure 2. The impact of climate change on education[i]



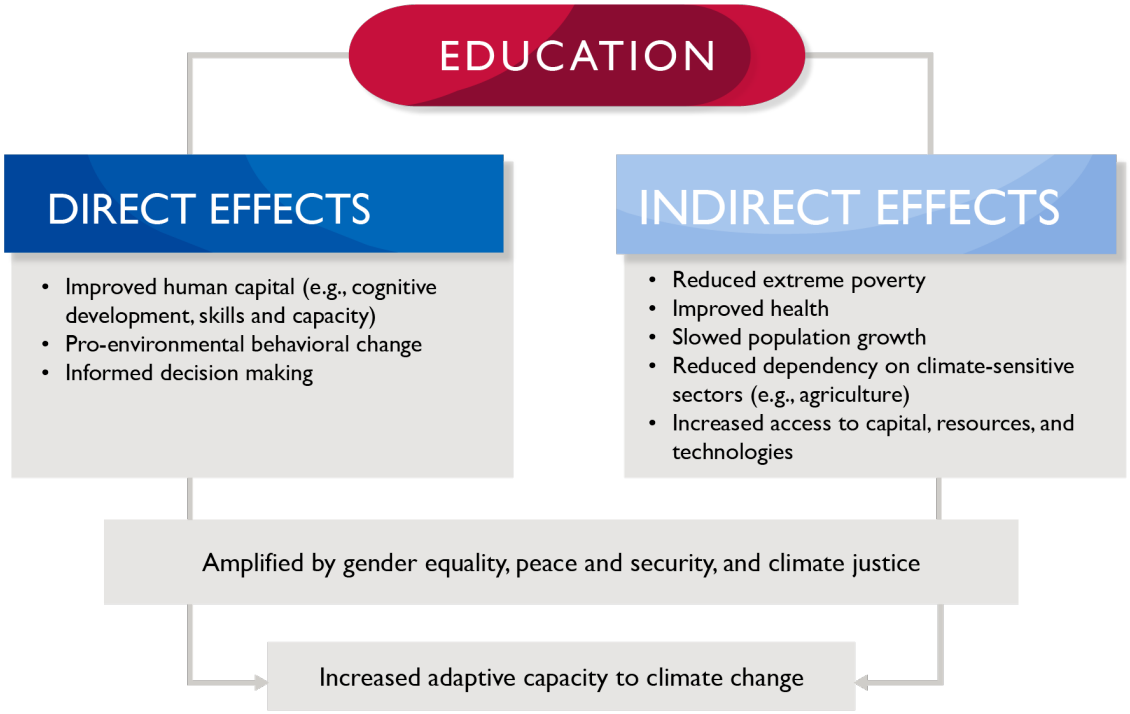
The impact of climate change may be more or less disruptive to education depending on the local education system's ability to cope and to adapt—its climate resilience.

[i] See also UNICEF East Asia and Pacific Regional Office (EAPRO), *It Is Getting Hot: Call for Education Systems to Respond to the Climate Crisis* (Bangkok: UNICEF EAPRO, 2019).

EDUCATION'S CONTRIBUTIONS TO CLIMATE ACTION

Resilient education systems can better deliver improved outcomes for children and youth.[2] Figure 3 illustrates the positive relationship between education, especially secondary education for girls in low- and middle-income countries,[3] and increased adaptive capacity to climate change. This relationship is amplified by the degree to which gender equality, peace and security, and climate resilience are prevalent.

Figure 3. Education's contributions to enhanced adaptive capacity[4]

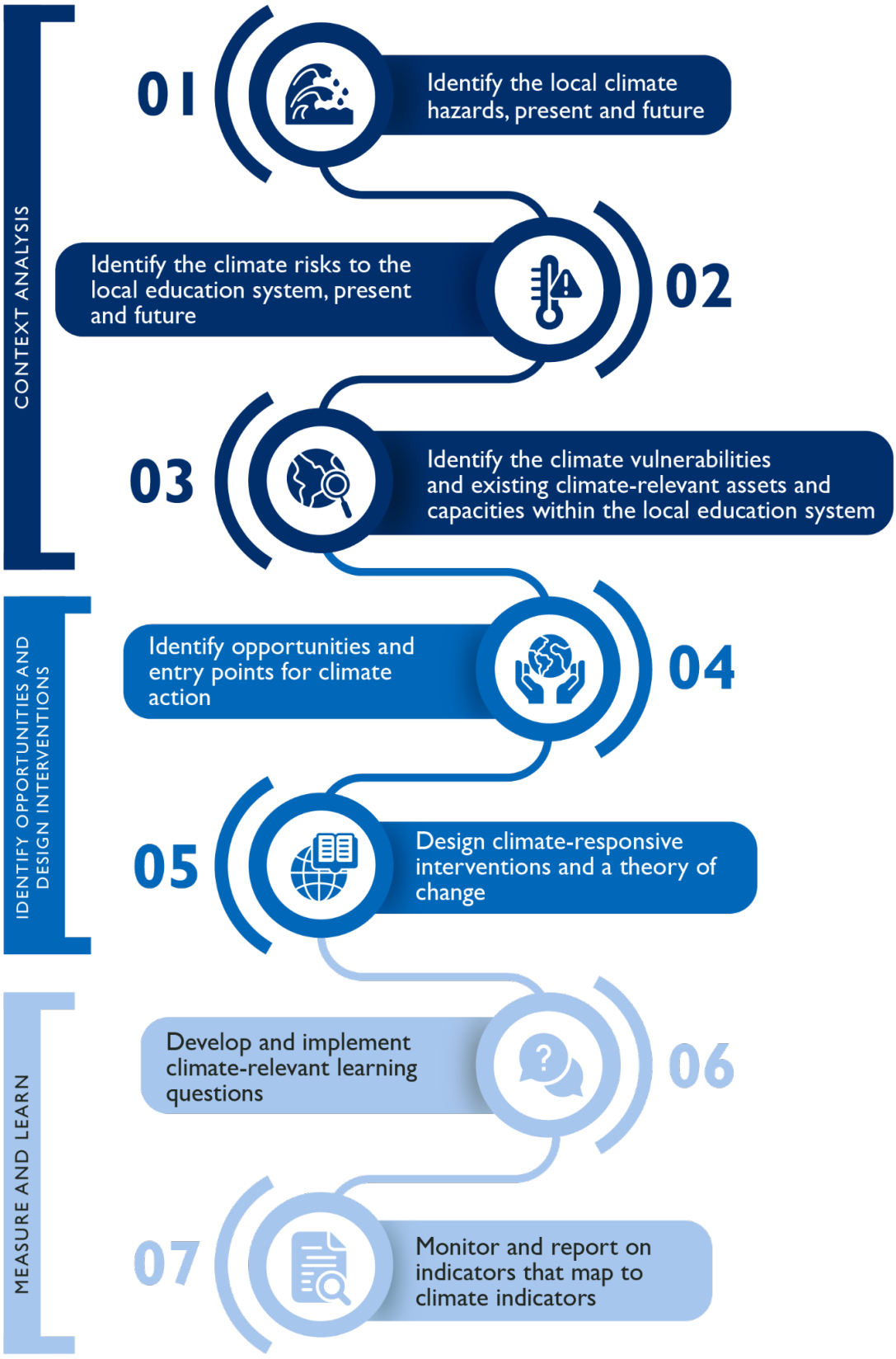


DESIGNING CLIMATE-RESILIENT EDUCATION PROGRAMMING

To achieve climate-resilient education systems and foster climate-resilient learners, USAID Missions and partners should integrate climate considerations more systematically into activity design and monitoring and evaluation. These considerations include: understanding how climate change affects education locally; exploring context-specific opportunities and programmatic interventions; and measuring and learning to build evidence of effective practices.

This section describes seven steps to facilitate the design of climate-resilient education programming. The steps are organized into three primary tasks, illustrated in Figure 4. They align with the process outlined in the USAID Theory of Change Workbook and incorporate the systems thinking perspective of USAID's 5Rs Framework.

Figure 4. Seven steps to climate-resilient education programming



By following these steps, Missions and partners should be able to develop the following outputs, listed by task below.

TASK	OUTPUTS
Context Analysis 	• Assessment and analysis of the climate hazards, climate risks, and climate vulnerabilities facing the local education system • Mapping of the existing climate-relevant assets and capacities of the local education system
Identify Opportunities and Design Interventions 	• List of potential actions and proposed interventions, organized by opportunities for climate mitigation, adaptation, and transformation, as well as opportunities to strengthen climate resilience among learners and systems • Theory of change and initial intervention design that incorporate the above actions and interventions
Measure and Learn 	• Learning questions • Indicators to monitor and/or measure progress

CONTEXT ANALYSIS

When planning an activity, Missions and partners should understand how climate change affects the local education system, what the system's existing capacity to respond is, and how these factors might inform education activity design, implementation, and measurement. To do this, Missions and partners may follow three steps:

1. **Identify Climate Hazards:** In consultation with local stakeholders, take stock of the different types of climate hazards relevant to the current local context, as well as the near- and long-term future.[ii] These may include sudden-onset **climate shocks** like extreme storms, heatwaves, riverine flooding, as well as chronic and protracted **climate stressors** like drought, rising sea level, rising temperatures, etc.
2. **Identify Climate Risks**: Consider the potential adverse impacts (the climate risks) the identified climate hazards could have on the local education system and its learners. A climate risk is the potential for a climate-related hazard, like drought, to have adverse consequences on human or ecological systems. In the context of education systems, climate risks can vary depending on the point of reference within the local education system (e.g., from the perspective of the system's

[ii] While this guidance document is focused on climate hazards and risks, USAID Missions and partners should consider these in a broader all-hazards approach and in the context of disaster risk reduction.

resources, rules, roles, relationships, or results[iii]). Climate risks can also vary for different populations (e.g., very young children, adolescent girls, displaced children and youth). The level of climate risk to education systems and to individuals is the result of a dynamic relationship between the system's or individual's level of **exposure** to the climate-related hazard, and their level of **vulnerability** (e.g., susceptibility to harm or a lack of capacity to cope or to adapt) to that hazard.

3. **Identify Climate Assets and Capacities:** To better identify the underlying vulnerabilities of the local education system and its learners, take stock of existing climate-relevant assets and climate-resilience capacities that may reduce the likelihood or effect of climate-related disruptions.
    a. Climate-relevant assets are material (e.g., climate-proofed school infrastructure) and immaterial (e.g., knowledge of climate solutions, skills in disaster risk management) aspects of the education system or learner that can help to reduce the potential impact of climate hazards.
    b. Climate-resilience capacities enhance the system's or individual's ability to anticipate and reduce the potential effects of climate shocks and stressors, to absorb or cope with those shocks and stressors, to adapt to past or future shocks and stressors, or to fundamentally transform the underlying causes of climate risk and vulnerability.

This stock-taking exercise can be performed by local education staff and stakeholders or with a broader group of participants from across development sectors. At every step of the way, Missions should ensure representation of Critical Populations including, but not limited to, girls and young women, children and people with disabilities, refugees and internally displaced peoples, and Indigenous Peoples, whose experience with climate change should inform climate solutions.

The context analysis can be augmented by consulting USAID's Country and Regional Climate Risk Profiles, which contain analyses of context-specific climate risks and climate risk–management strategies. Missions and partners may also benefit from a more in-depth analysis of climate risks using USAID's Climate Risk Screening and Management Tool—including the tool's Education, Social Services, and Marginalized Populations Annex, which provides education sector-specific questions and examples. To complement these diagnostic exercises, Missions and partners may use other tools, such as USAID's Rapid Education and Risk Analysis (RERA) Toolkit and those included in this Mapping of Education Systems Assessments, to conduct additional relevant assessments and analyses (e.g., social network analysis, gender analysis, systems diagnostics, value chain/market analysis) that will yield information on education systems' vulnerability to the effects of climate change.

IDENTIFY OPPORTUNITIES AND DESIGN INTERVENTIONS

As Missions and partners move from planning to activity design, the next step would typically be reviewing the evidence to identify best practices and to design suitable interventions.

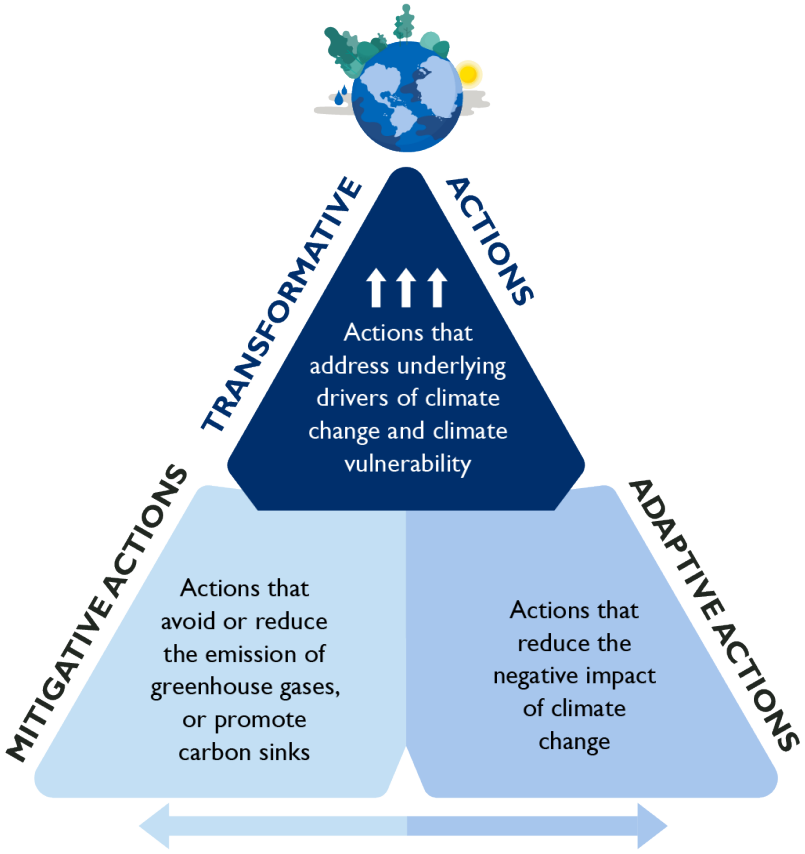
However, due to limited existing evidence on integrating climate considerations into education, especially in low-income country contexts, Missions and partners will need to generate evidence

[iii] See USAID's Technical Note: The 5Rs Framework in the Program Cycle.

through implementation, monitoring, and evaluation. Identifying opportunities and designing interventions should be iterative processes alongside activities for measuring and learning—the latter of which will be discussed in the next section. Steps 4 and 5 will help Missions and partners explore opportunities to strengthen resilience and initiate thinking around intervention design to integrate climate into a theory of change:

4. **Explore Opportunities to Strengthen Resilience:** Explore the types of actions that respond to the climate risks and vulnerabilities identified in the context analysis and will strengthen the resilience of learners and education systems. The types of actions should be assessed for how they contribute to climate mitigation, adaptation, or transformation (see Figure 5), and their potential to achieve systems change. USAID Missions and partners should pay particular attention to the ways opportunities for action take the needs, experiences, and contributions of Critical Populations into account. This step can be complemented by consulting Step 5 (Identify Opportunities) in Part A and Step 6 (Identify and Select Climate Risk Management Options) in Part B of USAID's Climate Risk Screening and Management Tool for Strategy Design, as well as Steps 4 and 6 in the Education, Social Services, and Marginalized Populations Annex. Additional resources, such as USAID's Gender Analysis for the Climate Strategy, may also be useful when exploring opportunities and entry points to build climate-resilient education systems.

Figure 5. Mitigative, adaptive, and transformative climate actions



5. **Design Interventions and a Theory of Change:** Incorporate the outputs from Steps 1–4 into your theory of change and begin to design the intervention. USAID Missions and partners should work with local experts and stakeholders to leverage community assets, especially Indigenous

knowledge, and to prioritize local community ownership and autonomy in the design of climate-integrated education programming. Building on Step 4, climate-resilient education program design should center the needs, experiences, and contributions of Critical Populations, especially those most vulnerable to the effects of climate change, like girls and young women, and children and people with disabilities. Programs should align with the USAID Education Policy's principles and priority areas, and may include approaches that integrate climate knowledge, environmental awareness, adaptive capacity, sustainability competencies, and green skills[iv] into education activities that work to improve foundational learning, core subject-matter content, and employability skills.[5]

MEASURE AND LEARN

Given the limited evidence of effective education interventions that integrate climate change, especially in low-income country contexts, it is important that USAID Missions and partners support the testing and trialing of evidence-informed approaches while collecting data and building evidence of best practices along the way. When possible, these efforts may be integrated into traditional USAID education sector evaluations and learning assessments. For example, Missions and partners already using the Workforce Outcomes Reporting Questionnaire (WORQ) to understand the employment situation of youth can also use the tool to determine if youth obtained employment in green sectors after participating in green skills training.

USAID Missions and partners can facilitate evidence generation through two steps in the monitoring and evaluation phase:

6. **Learn and Adapt:** Proactively incorporate data and evidence generation into education activities that build climate resilience. For example:
    a. Develop climate-relevant learning questions based on a theory of change.
    b. Implement studies to test, adapt, or sustain the integration of climate into education interventions.
    c. Use implementation research to understand how a climate-resilience education intervention works.
    d. Collect, analyze, and use cost data to inform planning, management, and sustainability.
    e. Create feedback loops to incorporate input from local stakeholders.

    Monitoring, evaluation, and learning (MEL) activities can help generate data and insights to support Missions, partners, and decision makers in learning from and adapting education programs to better create conditions for climate resilience; modifying implementation plans to better serve Critical Populations, including those most climate vulnerable; and recalibrating country and regional priorities to mitigate the impacts of the climate crisis and build resilience.
7. **Monitor and Report:** Report on education activities that align with USAID's Education Policy, and also align with and contribute to the Agency's Climate Strategy, climate indicators, and the climate Key Issue narrative. When reporting on an education indicator that maps to a climate indicator or narrative, Missions and partners are encouraged to report on the climate indicator or

[iv] The term "green skills" refers to the breadth of technical, vocational, and professional skills, soft skills, and transformative skills needed to contribute to a socially, economically, and environmentally just human society that cares for the human and non-human world and reduces the impact of human activity on others.

narrative. The Mapping of Education and Climate Indicators may be used as a reference during this process.

STRATEGIC ENTRY POINTS FOR APPLICATION ACROSS THE EDUCATION CONTINUUM

This section highlights strategic entry points for integrating climate resilience throughout the education continuum, across four education sub-sectors: education in conflict and crisis; pre-primary, primary, and secondary education; adolescence and youth workforce development; and higher education, with an additional focus on cross-cutting areas of action.[6] Examples are based on what evidence and practice suggest would be promising actions to pursue, although more evidence is needed.

EDUCATION IN CRISIS AND CONFLICT

CONSIDER THE COMPOUNDED EFFECTS OF CLIMATE IN CONTEXTS OF CONFLICT AND CRISIS

For children and youth, a conflict or crisis of any nature exacerbates the already tenuous environmental conditions needed for the safe delivery of education. This not only decreases the likelihood that learners will remain in school, but also negatively affects their capacity to cope with, respond, or adapt to successive shocks and stressors.[7] Because caregivers and other adults in their environment also suffer the traumatic experience of conflict and its impacts, children and youth become even more susceptible to abuse and failure to thrive.

Conflict and crisis drive migration and forced displacement, disrupting learners' access to education and putting girls and young women at heightened risk. Indeed, analysis demonstrates that countries with high climate vulnerability also experience high child displacement.[8] In 2020, climate disasters together with armed conflict displaced 6.6 million children in Sub-Saharan Africa; more than 4.4 million of these children were between ages five and fourteen.[9]

For USAID Missions and partners working in conflict and crisis settings—and Missions in countries experiencing a large number of climate migrants or climate refugees—climate-relevant education programming can build resilience at both the individual learner and systems levels. Climate-resilient systems can also strengthen the resilience of the network of supportive services that surround children and youth in conflict settings through disaster risk–management planning, helping to ensure some degree of continuity in learning and service delivery despite climate change.

FOCUS ACTIVITIES ON PREPAREDNESS, PLANNING, AND RESPONSE IN ADDITION TO BUILDING LEARNERS' CAPACITIES AND SKILLS

In contexts of conflict and crisis, the focus should be the provision of safe, relevant, and quality education for learners affected by climate crises. This may include preparedness, planning, and response activities as well as specific interventions to build learners' capacities and skills. The education in crisis and conflict community has a large body of work on disaster risk reduction (DRR) that aims to ensure the continuity of education when learners and systems are affected by climate crises, and can inform climate-relevant interventions. USAID Missions and partners should build on this work to identify strategies to better incorporate climate considerations into education responses. Tools that may help in developing programming to ensure continuity of education include the Education Commission's Delivery Approaches in Crisis or Conflict Situations; the Global Alliance for Disaster Risk Reduction and Resilience's Comprehensive School Safety Framework; the Global Education Cluster and the Inter-Agency Network for Education in Emergencies' (INEE) Harmonized Training Module 12: Risk Reduction; INEE's Guidance Note on Conflict Sensitive Education; USAID's Rapid Education and Risk Analysis Toolkit; and the United Nations Educational, Scientific and Cultural Organization's (UNESCO) Disaster Risk Reduction in Education.

Preparedness, Planning and Response in Education

Investing in preparedness, planning, and response for climate-induced hazards is critical for a resilient education system. The Global Alliance for Disaster Risk Reduction and Resilience in the Education Sector's (GADRRRES) Comprehensive School Safety Framework recommends:

Engage schools in school level risk assessment, planning, and monitoring and evaluation.

Localize and implement Standard Operating Procedures (SOPs) for disaster and emergency response. This includes: safe evacuation, evacuation to a safe haven, safe assembly, shelter-in-place, lockdown, and safe-family-reunification, as well as hazard-specific safety-measures.

Develop and update contingency plans for educational continuity.

Support parents and caregivers as partners in sustaining children's learning, with mental health and psychosocial support.

PRE-PRIMARY, PRIMARY, AND SECONDARY EDUCATION

PRIORITIZE THE ACHIEVEMENT OF CLIMATE RESILIENCE ALONGSIDE FOUNDATIONAL SKILLS

Two priorities from USAID's Education Policy are: (1) ensuring all children have access to quality education that is safe, relevant, and promotes social well-being, and (2) ensuring children and youth gain the literacy, numeracy, and socio-emotional skills that are foundational to future learning and success. In a climate-impacted world, not only is the safety of learning environments threatened, especially for the most climate-vulnerable populations, but so is the opportunity to develop foundational skills.

Acquiring foundational learning skills is critical to building climate resilience at the individual level, and programs that seek to improve foundational learning skills provide multiple entry points and opportunities for strengthening learners' resilience and increasing awareness of climate change and positive environmental practices. For example, programs that aim to improve learners' acquisition of literacy, numeracy, and social-emotional skills may integrate climate-relevant themes and topics into teaching and learning materials, the national curricular framework, or skills-based learning programs. **Climate resilience** is the enhanced capacity to act—whether in anticipation of potential exposure to climate hazards, coping with climate-related shocks or stressors, adapting to future climate risks, or by transforming underlying causes of climate vulnerability.

SYNERGIZE EFFORTS IN GENDER AND SOCIAL INCLUSION WITH EFFORTS TO ADVANCE CLIMATE RESILIENCE

Climate change acts as a threat multiplier for marginalized populations, including girls and young women, people with disabilities, learners displaced by conflict or crises, and learners from Indigenous communities. Climate change exacerbates their experiences with intersecting forms of inequality, poverty, and violence, and elevates the obstacles that prevent them from accessing school and developing foundational skills. Many of the barriers excluding them from school also impede their capacity to adapt to climate change.

To build the climate resilience of the most vulnerable children and youth, efforts will be needed to transform the system's rules[v] and vulnerable learners' access to resources that shape their climate vulnerabilities, including employing principles of Universal Design for Learning and gender transformative pedagogies. While there is little evidence on effective practices for integrating education and climate change, USAID Missions and partners could synergize their educational efforts in gender and social inclusion with their efforts in advancing climate resilience, documenting best practices along the way.

For more background on the intersection of girls' education and climate change, see Brookings' Three Platforms for Girls' Education in Climate Strategies, the UK Foreign, Commonwealth and Development Office's Addressing the Climate, Environment, and Biodiversity Crises In and Through Girls' Education, the Institute for Development Studies' Education, Girls' Education and Climate Change, and INEE's State of Girls' Education in Crisis and Conflict.

For more background on the intersection of disability and climate change, see International Disability Alliance's COP26 Advocacy Paper, the World Bank and Global Facility for Disaster Reduction and Recover's (GFDRR) Five Actions for Disability-Inclusive Disaster Risk Management, CBM Global's 4Ps for Inclusion of Persons with Disabilities within Climate Change Plans for Inclusion of Persons with Disabilities within Climate Change Plans, and the United Nations High Commissioner for Refugees (UNHCR), Internal Displacement Monitoring Centre (IDMC), and International Disability Alliance's (IDA) Disability, Displacement, and Climate Change brief.

[v] According to The 5RS Framework in the Program Cycle, "Rules refer to formal laws, regulations and statutes and to less formal norms, incentives and expectations that influence the structure of the system and the way it functions."

INTEGRATE CLIMATE-RELEVANT THEMES INTO TEACHING AND LEARNING MATERIALS

While research suggests increased levels of education can help create the necessary conditions for resilience,[10] *climate-relevant* education aims to build a breadth of green skills to strengthen resilience, although more evidence is needed. One strategy for supporting pre-primary, primary, and secondary learners through USAID education programming is to integrate climate-relevant themes and topics into the national curricular framework or into skills-based learning programs. In other contexts, this could include collaborating across sectors to leverage resources and integrate activities that advance environmental education and climate objectives.

SUPPORT TEACHER TRAINING AND TEACHER PROFESSIONAL DEVELOPMENT TO INTEGRATE CLIMATE TOPICS

Research suggests that professional development opportunities can have an empowering effect for teachers' sense of self-efficacy and confidence to engage with climate change content.[11] Studies show that there is a positive correlation between teachers' and learners' knowledge and attitudes toward climate change, pointing to the potential powerful impact of investing in and empowering teachers.[12] USAID Missions and partners may consider partnering with teacher training colleges or nongovernmental organizations to provide teachers with training and support to integrate climate change knowledge and awareness into subjects such as literacy, numeracy and science.[13] Another option is partnering with grade- or subject area–specific communities of practice to develop and test subject-specific lesson plans on literacy, numeracy, and science that incorporate local climate impacts and solutions to teach subject-area concepts.[vi]

PSYCHOSOCIAL SUPPORT FOR EDUCATORS AND LEARNERS

In times of crisis, educators need support to create safe learning spaces that help learners cope with the effects of climate change and develop critical thinking, problem solving, empathy, and other soft skills that will lead to individual resilience.[14] For climate- affected communities, efforts should be complemented by continuous teacher professional development opportunities as well as a focus on teacher well-being and trauma-informed psychosocial support.[15]

INCORPORATE LOCALLY RELEVANT CLIMATE-RELATED TOPICS INTO LEARNER-CENTERED TEACHING AND LEARNING MATERIALS

Educators around the world report not having access to climate-related teaching and learning materials, including locally relevant lesson plans and youth-centered activities.[16] To help fill this gap, USAID education programs could incorporate climate topics such as how to respond to heat waves or water shortages into foundational learning materials that aim to improve educational and learning outcomes.

[vi] Efforts may also be needed to transform the underlying drivers of climate vulnerability among teachers and the broader education workforce (e.g., school leadership, education administrators, and other education support personnel). This might entail ensuring education personnel have safe, conducive, and inclusive working conditions; are adequately and consistently compensated; and have ample opportunities for professional development.

The specific type of teaching and learning materials will need to be co-determined with local education stakeholders and climate-impacted communities, including children and youth.

ADOLESCENCE AND YOUTH WORKFORCE DEVELOPMENT

SYNERGIZE POSITIVE YOUTH DEVELOPMENT AND CLIMATE-RELEVANT EDUCATION

Research suggests that climate-relevant education shares many principles and strategies with a Positive Youth Development (PYD) approach to supporting the development of healthy, productive, and engaged youth.[17] USAID Missions and partners can use the PYD framework and its domains as a set of criteria to guide the design of climate-relevant education programs and activities that view youth as agents of change, meeting USAID priorities around youth empowerment and youth participation, especially in the context of sustainable livelihoods. Likewise, climate-relevant education programs can be an important context for promoting PYD program features, especially in climate-vulnerable communities. If programs apply a gender-transformative and equity lens, PYD-informed climate-relevant education can address harmful norms and practices by fostering healthy relationships and a sense of belonging, creating a path toward more inclusive systems change.

Young people are central to developing local solutions to climate change and holding governments and societies accountable for creating a more equitable and inclusive path to a greener, fairer future. However, it is important to remember that youth are not a homogenous group with equal or equitable opportunities for participation in climate action or development programming.[18] Meaningful youth engagement therefore requires differentiated outreach based on the diverse needs and assets of youth, their contexts and circumstances, as well as their intersecting vulnerabilities. There may be significant variation in resource needs, opportunities, and in the constellation of support structures needed to help youth navigate transitions to green jobs.

USAID's 2022 Youth in Development Policy and Youth Power's Positive Youth Development Framework include additional context and background on PYD and USAID youth priorities.

TARGET A BREADTH OF GREEN SKILLS IN GREEN YOUTH WORKFORCE DEVELOPMENT PROGRAMS

A key priority of USAID's Education Policy is for youth to gain the livelihood skills needed for employment and to make positive contributions to society. In a climate-impacted world, such livelihood skills should prepare youth for opportunities to engage in sustainable livelihoods that are resilient to the impacts of climate change, while also contributing to the protection, conservation, and restoration of Earth's natural resources.

In this context, green skills are often confined to technical, vocational, and professional skills—green skills for green jobs, like green business and finance; science, technology, engineering, and math (STEM); research and data analysis; environment and ecosystem management, etc. However, youth will also need soft skills to tackle the challenges of climate change and to prepare for thriving in a greener, more sustainable world of work. Therefore, programs should also consider equipping youth with skills like

adaptability, flexibility, and critical thinking, as well as transformative skills like leadership and strategic thinking, coalition building and creating networks, engagement and communication, and prioritizing Indigenous perspectives.[19] In short, youth recognize that they need a breadth of skills to achieve their desired contribution to society. Green youth workforce development programs should follow suit.[20]

REMOVE BARRIERS THAT COULD IMPEDE YOUTH ACCESS TO AND PARTICIPATION IN GREEN JOBS

Around the world, young people have had uneven exposure to and limited opportunities with green jobs.[21] A global survey of young people in 53 countries found that while 60 percent of respondents are aware that opportunities exist in the green economy, only 42 percent feel these opportunities are available in their local area.[22] Among the potential barriers are the rules that structure participation.

These include formal rules like traditional educational certifications required by the private sector, which the majority of youth may not be able to access. Other rules include the financial history required to access small business loans or government grants that young people, especially young women and youth-led organizations, may not have had the opportunity to build. Barriers to entry may also be informal rules that define what constitutes a green job,[vii] which determine the education and training investments workforce development service providers, donors, private employers, and government decision makers pursue. Such informal definitions can bias youth workforce projects and activities toward highly technical or highly technology-centric sectors that have traditionally been dominated by certain populations, like urban males. Without targeted investments in youth from underrepresented populations, like rural females, these definitions can entrench inequalities in the green economy.[23]

CREATE ACCESS TO NOT ONLY GREEN SKILLS, BUT ALSO FINANCIAL CAPITAL AND WRAPAROUND SUPPORT

For many young people, especially young women, barriers to accessing formal education and training are a significant challenge to the green economy. Additional challenges include a lack of wraparound support while attending green-skills training programs, a lack of access to paid apprenticeships or internships in green sectors, and a lack of access to seed funding and start-up capital to launch their own "eco-preneurial" endeavors.[24]

Many youth-led organizations working on climate and environmental justice issues are volunteer-led, people-powered, crowdfunded, and less well-resourced compared to the youth-centered counterpart initiatives hosted by adult-led institutions.[25] As a result, youth-led organizations do not always have the resources to train and hire more youth. Lacking sufficient institutional resources to expand or deepen their climate work, they are often hampered in their capacity to reach their full potential and achieve their full impact on society.

[vii] A green job is defined here as "Any job that contributes to the well-being and flourishment of present and future generations; upholds human rights, including women's rights and the rights of indigenous and marginalized populations; and supports the regeneration of the natural world, its resources, and its socio-ecological systems on which our human economies rely." (Kwauk and Casey, 2021). This can include sectors like climate-smart agriculture and renewable energy that have been predominantly conceived as "green," as well as sectors like education and health that are not immediately perceived as "green" but have a significant impact on strengthening the climate adaptation and climate resilience of society, especially its most vulnerable members.

WORK WITH GREEN YOUTH-LED ORGANIZATIONS, NOT JUST COHORTS OF INDIVIDUAL YOUTH

Green youth workforce development initiatives rightfully target their programming to cohorts of individual youth, often in partnership with ministries of education, ministries of youth, and other local government and private sector entities that can help smooth the pathways to green employment. However, initiatives should also develop partnerships and collaborations with youth-led organizations that are working to advance climate action.[26] Green youth-led organizations play an important role in the green economy as entities contributing to human well-being and the environment, and in the education system as real-time implementers of youth workforce development programs. Cultivating strong relationships with these organizations also serves as an entry point to transformative youth-centered systems change.

HIGHER EDUCATION

ORIENT RESEARCH AND COMMUNITY ENGAGEMENT FUNCTIONS TOWARD TACKLING THE CLIMATE CRISIS

The fourth priority for USAID's Education Policy is to strengthen and elevate the role of country-level higher education institutions (HEIs) as central actors in development, including through research application, education delivery, and community engagement. In a climate-impacted world, the role and functions of HEIs, as outlined in USAID's Higher Education Program Framework, should be adapted and oriented toward achieving results that not only build climate resilience but also promote sustainable development. Local HEIs can be leveraged to achieve outcomes that meet the climate-resilience and development needs of Critical Populations, including girls and young women, people with disabilities, learners displaced by conflict or crises, and learners from Indigenous communities.

MAINSTREAM CLIMATE CHANGE THROUGHOUT HIGHER EDUCATION RESEARCH OUTPUTS AND PROGRAM OFFERINGS

To build climate-resilient learners and societies, HEIs could develop and consolidate a collection of resources dedicated to climate change and mainstream a climate lens throughout higher education research outputs and program offerings. For example, local higher education networks could develop country databases of green learning opportunities so prospective students could identify learning pathways to green careers. They could develop climate-relevant knowledge hubs, like the Education Sub Saharan Africa (ESSA) African Education Research Database, to help propagate a more diverse set of knowledge systems and cultural logics around climate solutions. They could also launch a Climate Justice Research Accelerator that dedicates resources to underrepresented researchers working to understand how climate change and climate solutions affect the most vulnerable populations.

Efforts are needed to fill the gap in climate-relevant resources that could otherwise contribute to building climate resilience among learners while spurring further innovations in climate action. USAID Missions and partners can contribute by incentivizing higher education research, including longitudinal research that disaggregates data by gender, disability, geography, education levels, etc., to explore the issues and documentation of evidence relevant to understanding the intersection of education and climate resilience in low- and middle-income country contexts.

PRIORITIZE EQUITY CONSIDERATIONS IN HIGHER EDUCATION DECISION MAKING

Higher education investments may support research and innovation in the country's priority adaptation and decarbonization sectors. However, such an approach could replicate gender and other social inequalities if consideration is not given to the ways systemic exclusion of and historic discrimination against certain populations can influence who is likely to benefit from sector-specific investments. For instance, prioritizing resources for STEM-relevant sectors because they are relevant to priority decarbonization sectors may mean populations underrepresented in STEM fields of study will have fewer opportunities to benefit from these investments.

To avoid this, equity considerations should be mainstreamed into climate-related programs. For example, higher education partnerships between U.S. and local HEIs should prioritize identifying local faculty and students from underrepresented, climate-vulnerable populations to lead climate-resilience research and innovation in priority sectors that are relevant to meeting community development needs. Higher education partnerships may also identify priority sectors for research funding based on a sector's contribution to building climate resilience in inclusive and gender-transformative ways. Such prioritization would create possibilities for greater investment in sectors critical for climate adaptation, like education (including early childhood care and education) and health.

BOLSTER THE ROLE OF HIGHER EDUCATION INSTITUTIONS IN CLIMATE ACTION

A primary role of HEIs is to serve as local, national, and regional research and development hubs, and this role can be leveraged to identify climate-resilience solutions by driving innovation, generating ideas, and building evidence. However, HEIs have many more roles to play. As thought leaders and knowledge brokers, HEIs can help highlight for local (and global) policymakers and decision makers the evidence of climate change's disproportionate impact on the most vulnerable, as well as evidence of the efficacy of climate-resilience solutions for the most marginalized. In this way, HEIs can help to ensure local and global climate decision making reflects the knowledge, experience, and needs of those who bear the greatest burden of climate change. As public messengers, HEIs can become a powerful source of information about climate preparedness, helping to raise local, regional, and global awareness of climate change, its local manifestations, drivers, risks, impacts, and solutions. As disseminators of climate-relevant knowledge and technology, HEIs can become essential green-skills capacity-builders and trainers throughout society, helping to prepare present and future generations of professionals to work in green jobs. Given these important pathways to building climate-resilient societies, opportunities and incentives should be created to bolster the many roles that HEIs can play in climate action.

FACILITATE THE COORDINATION OF CLIMATE-RELEVANT EDUCATION AND TRAINING ECOSYSTEMS

Given the scale of green education and training needed, HEIs are well positioned to facilitate the coordination of national and regional ecosystems of green education and training service providers. Such ecosystems will be vital to filling green learning opportunity gaps, especially among populations with little current access to HEIs that can deliver a breadth of green skills.[27] This may require strengthening linkages between HEIs and community-based organizations through partnerships, outreach, and engagement opportunities that offer education and training that serve community needs. It may also require strengthening linkages between pre-primary, primary, secondary, and HEIs to ensure learners,

especially from Critical Populations, have adequate opportunities to build the foundational skills required for higher levels of learning in climate-relevant fields of study.

CROSS-SECTORAL ACTIONS

This section presents promising approaches that intersect with education and may require collaboration across sectors to achieve, including by identifying opportunities to leverage diverse funding sources.

STRENGTHEN THE CLIMATE-RESILIENCE OF SCHOOL INFRASTRUCTURE

Investing in climate-resilient education infrastructure could be one of several lines of defense to protect education and sustain learning outcomes in the face of climate change and potential climate-related disruptions to learning. However, more evidence and cost analysis of infrastructure investments are needed. This includes data on learning and educational outcomes related to infrastructure investments for maintenance, retrofitting, and new construction.

The World Bank's Global Library of School Infrastructure provides a live data repository and quantitative metrics on the impact of disasters on school facilities, and its Roadmap for Safer and Resilient Schools provides guidance on investment plans and intervention designs to make education infrastructure more resilient to natural hazards, including climate-related hazards. GADRRRES' Comprehensive School Safety Framework and UNESCO's Guidelines for Assessing Learning Facilities in the Context of Disaster Risk Reduction and Climate Change Adaptation are also critical resources for budgeting and planning.

ALIGN CLIMATE AND EDUCATION POLICIES AND STRATEGIES

Policy coherence around climate and education is key to directing attention to and unlocking resources for the climate and education nexus. However, policy ambition toward climate-relevant education is often the exception rather than the norm. In 2021, only 53 percent of 100 countries' national curriculum frameworks mention climate change.[28] As of 2022, only 32 percent of 140 new, updated, or revised Nationally Determined Contributions mentioned climate change education as a climate strategy.[29]

Global frameworks may help guide local policy ambition around climate and education, including: Article 6 of the United Nations Framework Convention on Climate Change (UNFCCC), Article 12 of the Paris Agreement, and Target 4.7 of the Sustainable Development Goals. Guidelines have also been developed to assist country-level actors in developing climate-relevant learning strategies.[30]

When USAID Missions and partners are working on education policies or strengthening the enabling policy environment to promote quality education, they should consider integrating climate-relevant policies to unlock critical resources and empower key roles and relationships in the global and local education systems.

CONCLUSION

Education programs and activities that seek to integrate climate change considerations and action should aim to achieve climate-resilient education systems and build climate-resilient learners, while adhering to the USAID Education Policy and identifying meaningful opportunities to contribute to the USAID Climate Strategy. The seven steps to facilitate the design of climate-resilient education programming and the strategic entry points for application across the education continuum should serve as a guide to Missions' and partners' strategic approaches to integrating climate change and education as well as advancing climate action in local contexts.

ENDNOTES

[1] Adapted from C. Kwauk, L. Chanyau, M. Grecequet, and L. Steer, "Education," in *State and Trends in Adaptation Report 2022* (Rotterdam and Abidjan: Global Center for Adaptation, 2022).

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[6] For additional background, consult USAID's Education Policy, USAID's How-To-Note on Integrating Social Emotional Learning, USAID's Social and Emotional Learning and Soft Skills Policy Brief, USAID's Youth in Development Policy, and USAID's Higher Education Learning Agenda.

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[20] Importantly, "green skills" do not exclude the priorities, mindsets, or experiences of countries for whom "blue" skills, a "blue" workforce, and a "blue" economy—one centered on marine-based ecosystems rather than land-based ecosystems—take precedence. In short, "green" and "blue" can be used interchangeably here but would need to be more precisely articulated in practice.

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[25] Pettee and Kwauk, *Analysis of Global Youth-Led Climate Initiatives*.

[26] Pettee and Kwauk, *Centering Youth in Green Workforce Development.*

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