Advancing Global Climate Literacy and Action

As the impacts of climate change worsen world-wide, the need for increased climate communication and education (CCE) has never been more urgent. Monitoring and evaluation is key to increasing CCE activity at international, national, and regional levels.

In a recent review of Action for Climate Empowerment (ACE)[1], Member Parties recognised the need for more international consistency and ambition in monitoring and evaluation of CCE, while maintaining flexible and country-driven approaches. The Monitoring and Evaluating Climate Communication and Education (MECCE) Project is a global collaboration of 80+ leading researchers and agencies, including the UNFCCC, IPCC, UNESCO, and Global Education Monitoring Report. Together, we are working to increase the quality and quantity of CCE/ACE around the world to advance global climate literacy and action.

INCREASING CCE QUANTITY: CLOSING GAPS IN DATA DIVERSITY & AVAILABILITY
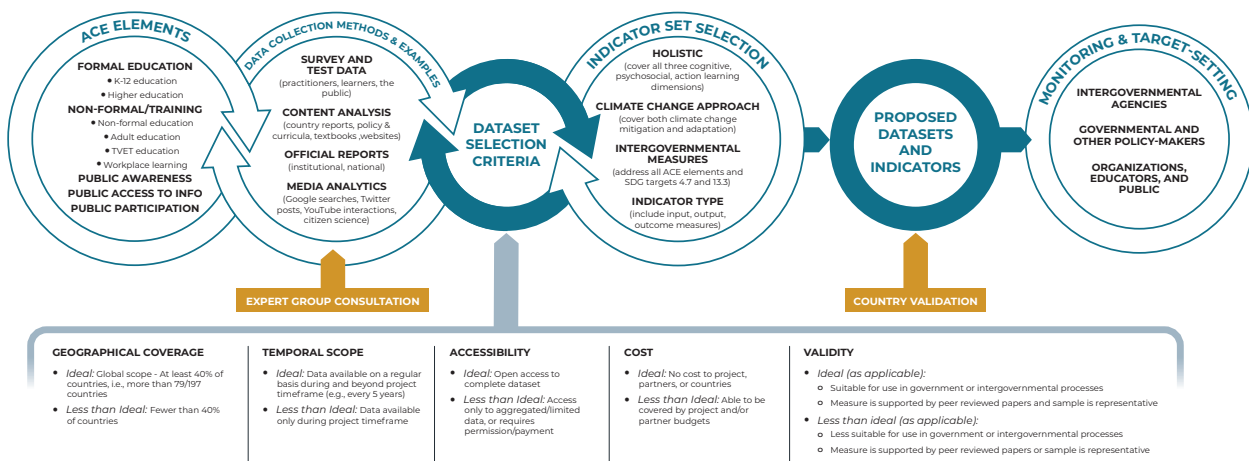
Indicator and Dataset Development

The MECCE Project is drawing on and developing a range of data sources to support indicators to enable ACE benchmarking, target-setting, and monitoring.

1. Gaps in existing data types are most pronounced in lower-income countries
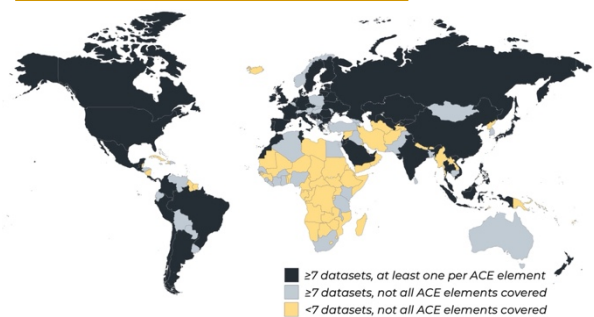
The MECCE Project team has identified over 125 existing data sources that could support global ACE progress monitoring and reporting. After applying the dataset selection criteria in Figure 1, we have narrowed to 32 datasets (existing or in progress) of potentially sufficient quality to support indicator development.

However, our analyses also indicate there are limited data of these types for 90 out of 197 UNFCCC Parties, and the data gap encompasses over 920 million people, including in Sub-Saharan Africa, Latin America and the Carribean, and Oceania (Figure 2). This suggests the need to also expand the *diversity* of data types to ensure that CCE/ACE activity in all regions can be identified and counted, and ideally that the data types engaged are applicable to all regions.

Figure 2. Map of Dataset Availability

- ≥7 datasets, at least one per ACE element
- ≥7 datasets, not all ACE elements covered
- <7 datasets, not all ACE elements covered

2. Currently, existing data availability across ACE elements is uneven

Of the six ACE elements, Training has only 3 datasets and Public Access to Information has only 2 datasets with current, relatively global, availability. The ACE elements with the greatest number of identified datasets to potentially support indicator development are Public Participation and Higher Education.
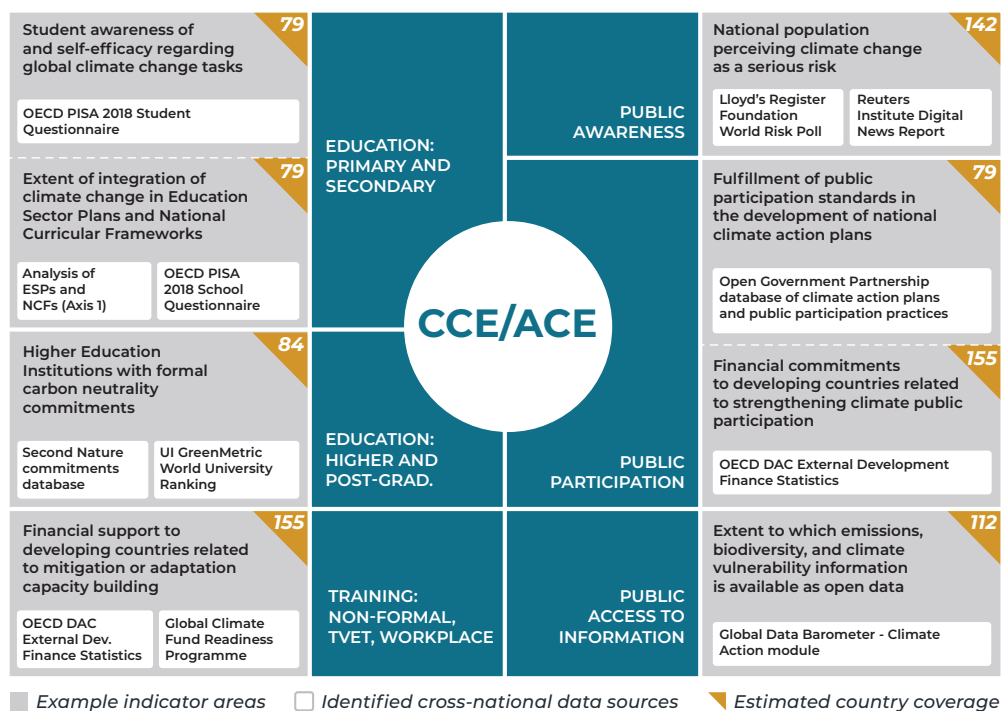
By ACE element, the existing datasets identified as suitable for CCE indicators have large variations in country coverage. The Higher Education datasets cover the fewest countries (84) and the Public Participation and Training datasets each cover the most countries (196 each).

Figure 1. Indicator Development Process

3. Developing global indicators to help track and advance ACE progress

To date, the MECCE Project has defined 57 possible indicator areas linked to 32 datasets across the ACE elements. These include inputs such as resources allocated for CCE, and outputs such as evidence of CCE integration in curricula or policy. We are currently working on refining indicator areas and data sources in collaboration with our multidisciplinary team of experts. Figure 3 shows a sample of possible indicator areas across the ACE elements, along with associated existing datasets and estimated countries covered by available datasets.

Figure 3. Sample Indicator Areas, Associated Existing Datasets, and Country Coverage

Student awareness of and self-efficacy regarding global climate change tasks — **79** — OECD PISA 2018 Student Questionnaire	EDUCATION: PRIMARY AND SECONDARY	National population perceiving climate change as a serious risk — **142** — Lloyd's Register Foundation World Risk Poll / Reuters Institute Digital News Report — PUBLIC AWARENESS
Extent of integration of climate change in Education Sector Plans and National Curricular Frameworks — **79** — Analysis of ESPs and NCFs (Axis 1) / OECD PISA 2018 School Questionnaire		Fulfillment of public participation standards in the development of national climate action plans — **79** — Open Government Partnership database of climate action plans and public participation practices
Higher Education Institutions with formal carbon neutrality commitments — **84** — Second Nature commitments database / UI GreenMetric World University Ranking	EDUCATION: HIGHER AND POST-GRAD.	Financial commitments to developing countries related to strengthening climate public participation — **155** — OECD DAC External Development Finance Statistics — PUBLIC PARTICIPATION
Financial support to developing countries related to mitigation or adaptation capacity building — **155** — OECD DAC External Dev. Finance Statistics / Global Climate Fund Readiness Programme	TRAINING: NON-FORMAL, TVET, WORKPLACE	Extent to which emissions, biodiversity, and climate vulnerability information is available as open data — **112** — Global Data Barometer - Climate Action module — PUBLIC ACCESS TO INFORMATION

CCE/ACE

■ *Example indicator areas* ☐ *Identified cross-national data sources* ◤ *Estimated country coverage*

Country Profiles of Climate Change Communication and Education

A partnership between the UNESCO Global Education Monitoring (GEM) Report and the MECCE Project is generating new insights on country approaches to CCE. The profiles offer a comparative perspective of country progress on ACE and Sustainable Development Goal (SDG) Targets 4.7 and 13.3. The profiles aim to promote peer learning and policy dialogue between countries on CCE/ACE.

The first available 20 country profiles cover varied geographic and income contexts (Figure 4). The profiles are available on the MECCE Project website and the GEM Report's PEER website at education-profiles.org. Up to 50 more profiles will be published in 2022.

Figure 4. Locations of Completed CCE Country Profiles

Research methods and profile preparation process

The profiles are based on reviews of each country's international commitments and national laws, policies, action plans, and programs.

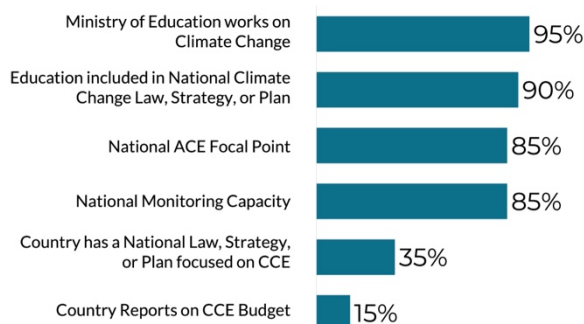The profiles offer a description of each country's:

1. National CCE context, including climate change impacts; relevant government agencies; laws, policies, and plans; CCE terminology in use; and national budget allocated to CCE
2. Climate change education activities related to the Education and Training ACE elements. This includes curriculum and teacher education in primary and secondary education, and tertiary education, TVET, and adult education
3. Climate change communication activities related to the Public Awareness, Public Access to Information, and Public Participation ACE elements
4. National CCE/ACE monitoring

Country experts, including ACE focal points, were invited to review and provide input on the profiles.*

The collaboration also mapped the content of the first 20 profiles by 16 measures, grouped into three categories: (a) implementation and monitoring; (b) curriculum content; and (c) inclusion of in legislation, policies, strategies, or plans.

1. The country profiles to date suggest room to increase CCE/ACE-focused national laws, strategies, and plans; as well as CCE/ACE budget reporting

Figure 5. CCE/ACE Inclusion Across 20 Countries

Ministry of Education works on Climate Change	95%
Education included in National Climate Change Law, Strategy, or Plan	90%
National ACE Focal Point	85%
National Monitoring Capacity	85%
Country has a National Law, Strategy, or Plan focused on CCE	35%
Country Reports on CCE Budget	15%

* For input contact the GEM Report (education.profiles@unesco.org) or the MECCE Project (mecce.info@usask.ca)

Across the 20 countries, 95% of ministries of education mentioned working on climate change in some capacity (Figure 5). Moreover, 90% of countries have a national climate change law, strategy, or plan that includes some CCE/ACE related content. Only 35% of countries have a stand-alone law, strategy, or plan devoted to CCE/ACE (see Box 1).

Of the 20 countries analyzed, 85% have existing national monitoring mechanisms that could be used to track CCE/ACE progress, however current CCE/ACE tracking is often uncoordinated. A total of 85% of the countries have ACE focal points.

Finally, mainstreaming CCE/ACE in countries requires predictable and consistent financing; however, only 15% of the 20 countries report publicly on the portion of their national budget allocated to CCE/ACE.

2. For primary/secondary education, climate change is most often mentioned in National Curriculum Frameworks; however, engagement needs deepening

Figure 6. Climate Change Content included in Formal Education Curricula in 20 Country Profiles

In the 20 countries, 75% of National Curriculum Frameworks refer to climate change, although little guidance is offered beyond statements that climate change should be addressed. Only 45% of Education Sector Plans and 40% of national education laws mention climate change (see Figure 6 and Box 2).

3. Most of the 20 countries' frameworks address climate change education; however, there are gaps in teacher training and engagement with psychosocial and action-focused learning

Figure 7. Climate Change Education in Legislation, Policies, Strategies, or Plans in 20 Country Profiles
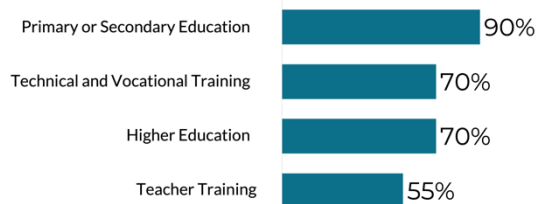
Of the 20 countries analyzed, 90% engage with CCE in primary or secondary education (Figure 7), with most focused on cognitive learning on climate change (Box 3). Fewer countries have frameworks supporting CCE in technical and vocational training (74%), higher education (70%), or teacher training (55%).

4. Nearly all of the 20 countries have frameworks that address climate change communication. Countries often identify marginalized groups and climate vulnerable sectors as priorities in these frameworks

Figure 8. Climate Change Communication in Legislation, Policies, Strategies, or Plans in 20 Country Profiles
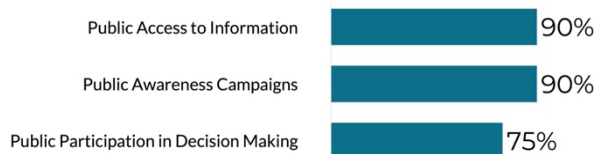
Nearly all of the 20 countries have a national law, policy, or plan that addresses climate change through a focus on public awareness campaigns and public access to information (90%). While 75% refer to public participation in CCE/ACE in a law, policy, strategy, or plan, countries do not always integrate strong citizen decision-making into these frameworks (Figure 8). Box 4 describes three examples of country approaches to public participation on CCE/ACE.

CCE Country Profile Highlights

Box 1. Few of the 20 countries have a law, strategy, or plan with a central focus on CCE/ACE. Rather, CCE/ACE is often included as an element of broader frameworks or priorities. In Italy, climate change is in the formal education curriculum as a mandatory component of Civic Education, while in Costa Rica it sits within Education for Sustainable Development. In Tajikistan, CCE/ACE is included in Environmental Education, which is a compulsory subject.

Box 2. A MECCE Project consultancy for UNESCO which analysed the curricular frameworks of 100 countries found **47% did not include a focus on climate change. The depth of inclusion in frameworks that did mention climate change was minimal.**

Sub-Saharan Africa and Oceania, the UN SDG regions most vulnerable to climate change impacts, were more likely to include climate change content.

Read more in UNESCO's Getting Every Curriculum, Every School Climate-Ready and Learn for Our Planet reports. The Learn for Our Planet report also includes results from a survey of key stakeholders in nearly 50 countries and interviews of 20 key informants.

Box 3. Most of the 20 countries address climate change in education by focusing primarily on cognitive learning within STEM subjects. Less attention is paid to psychosocial and action-focused learning. **New Zealand is a country also working to address eco-anxiety in children and youth.** The Ministry of Education published Climate Change: Prepare Today, Live Well Tomorrow in 2020. The resource includes a wellbeing guide to support year 4 students in managing climate change-related anxiety.

Box 4. The country profiles highlight **country-driven approaches to public participation in climate change decision-making.** Since 2016, the Colombian Ministry of the Environment and Sustainable Development has offered a Citizen Participation Plan. This plan supports citizen contributions to decision-making related to climate change, environment, and quality of life issues through public hearings and consultations.

In Bangladesh, public participation is important for national climate change policy development. The National Adaptation Programme of Action (2009) was completed after consultations with communities, civil society, and professional groups. Locally Led Adaptation (LLA), which devolves decision-making to the lowest appropriate level, is commonly used by the government and non-government agencies.

The Gambia's National Climate Change Policy (2016) aims to mainstream climate change content in non-formal education. It emphasizes youth participation in climate change responses and the importance of age-appropriate engagement.

FURTHERING GLOBAL CLIMATE ACTION BY IMPROVING CCE/ACE QUALITY

Early CCE/ACE often assumed that learning about climate science would lead to greater action to solve the climate crisis. After decades of this approach, CCE/ACE has yet to spur the scale of action required. The MECCE Project is contributing to understandings of more holistic and impactful CCE/ACE approaches.

Knowledge Syntheses

Two MECCE Project knowledge syntheses provide insights on psychosocial influences on climate change inaction, and regional and cultural considerations for understanding quality CCE/ACE.

1. CCE/ACE should engage with psychological barriers, social norms, and broader discourses to close the knowledge/attitude-behaviour gap

Our review of existing research confirms that climate change knowledge is important in driving action. Yet, the reviewed studies suggest a variety of factors contribute to a knowledge/attitude-behavior gap that may promote inaction. For example, climate change elicits emotions such as fear, anger, and compassion, which positively and negatively influence action. Most articles reviewed focus on ideology-driven denial, while others focus on self-protective denial. Factors such as social norms and networks, and public, social, and cultural discourses, also influence climate action.

2. CCE/ACE should empower learners by prioritizing transformative learning outcomes

The reviewed studies indicate that framing CCE/ACE initiatives to specific audiences encourages climate action. Our findings also suggest that CCE/ACE should prioritize transformative outcomes through empowering experiences that engage learners with their communities; build synergistic, collective action; and direct their emotions towards positive change.

3. Climate change impacts, political and cultural discourses, and technologies are key regional influences on CCE/ACE

Our review shows that CCE/ACE is influenced by regional climate change impacts and risks. New vulnerabilities such as drought, flooding, wildfires, cyclones, sea level rise, and heat waves catalyse interest in CCE/ACE amongst a wide range of publics. In each region, CCE/ACE is also culturally mediated by diverse political discourses that dominate and/or intersect with cultural habitus and livelihood demands. Technologies of adaptation, mitigation, education, and social learning also influence CCE/ACE content and approaches, depending on their availability or absence.

Funding Available: Call for Case Studies

The MECCE Project is seeking proposals to carry out funded Case Studies of innovative CCE/ACE. Over the next three years, we will support at least 30 Case Studies worldwide with up to $10,000 CAD each. The combined knowledge will be shared with policy makers, practitioners, and researchers around the globe to help further understandings of quality CCE/ACE.

Apply for Case Study Funding by January 4, 2022 at mecce.ca/case-studies

MOBILIZING KNOWLEDGE THROUGH INTERNATIONAL COLLABORATION

The MECCE Project supports research-informed policy and decision-making by intergovernmental and national policy-makers; as well as education, communication, and civil society sectors.

Early Findings from the MECCE Project

- Inclusion of CCE/ACE content in countries' laws, strategies, and policies is often minimal and lacking in depth
- Climate change communication frameworks often identify marginalized and vulnerable groups
- Primary and secondary education on CCE/ACE often focuses mostly on cognitive learning
- Addressing psychosocial factors and engaging transformative learning empowers action
- Tailoring CCE to audiences furthers action
- Climate change impacts and broader public discourses often catalyze interest in CCE
- Technology availability influences CCE content and approaches in varied regional contexts
- Current CCE/ACE data availability is uneven across regions and ACE elements, particularly Training and Public Access to Information
- Collaboration to generate greater diversity of accessible data across all ACE elements and regions is key to furthering CCE/ACE action

Collaborate and Learn with Us

Our collaborative team approach ensures project insights are built on a broad knowledge base and mobilized widely through a global network.

Contact Us

Visit mecce.ca or sepn.ca to find out more and sign up for our e-News. Follow ⦿ 🐦 @SEPNetwork or on LinkedIn. The MECCE Project is a Sustainability and Education Policy Network (SEPN) initiative funded by a $2.5M CAD Partnership Grant from the Social Sciences and Humanities Research Council of Canada, with an additional $2+ million in partner funding.