MECCE
MONITORING AND EVALUATING CLIMATE COMMUNICATION AND EDUCATION PROJECT

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SUSTAINABILITY AND EDUCATION POLICY NETWORK

Monitoring, Evaluating, and Reporting on Action for Climate Empowerment

A Toolkit to Support Country-Level Leadership

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About the Monitoring and Evaluating Climate Communication and Education Project

This resource was developed by the Monitoring and Evaluating Climate Communication and Education (MECCE) Project (mecce.ca), an international partnership focused on increasing the quantity and quality of ACE globally. The Project team includes over 100 Party and non-Party stakeholders, with the UNFCCC, UNESCO, IPCC, and UNESCO GEM Report on the Advisory Committee. The Project responds to the lack of data available to support countries in benchmarking and target-setting quality ACE. It engages diverse stakeholders across regions and sectors, including Parties, youth, and Indigenous peoples, including through Regional Hubs open to participation by all.

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List of Acronyms

ACE	Action for Climate Empowerment (popular name for Article 6 of the UNFCCC)
COP	Conference of the Parties
CSO	Civil Society Organization
ESD	Education for Sustainable Development
GWP	Glasgow Work Programme on Action for Climate Empowerment
IPCC	Intergovernmental Panel on Climate Change
MECCE	Monitoring and Evaluating Climate Communication and Education Project
MER	Monitoring, Evaluation and Reporting
NDCs	Nationally Determined Contributions
NFP	National Focal Point
NGO	Non-Governmental Organization
SDGs	Sustainable Development Goals
UN	United Nations
UNDESD	UN Decade of Education for Sustainable Development
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNITAR	United Nations Institute for Training and Research

About this resource

The principal objective of this resource is to facilitate implementation of monitoring, evaluation, and reporting (MER) on Action for Climate Empowerment (ACE) at the national level, in accordance with Article 6 of the United Nations Framework Convention on Climate Change (UNFCCC) and Article 12 of the Paris Agreement.

Recognizing that each country's situation is different, this resource is intended to foster subnational, national, and international cooperation in undertaking ACE MER activities through:

- A roadmap to guide development of Strategic ACE MER Frameworks
- A basic understanding of the principles and methods of carrying out ACE MER
- Processes to engage key stakeholders and communities in ACE MER

This resource is intended primarily for ACE National Focal Points. It will also be useful to policy-makers at sub-national and international levels, as well as to civil society, academia, intergovernmental organizations, and the private sector.

Introduction

Action for Climate Empowerment, or ACE, is a term adopted by the United Nations Framework Convention on Climate Change (UNFCCC) to denote work under Article 6 of the Convention (1992) and Article 12 of the Paris Agreement (2015). The overarching goal of ACE is to empower all members of society to engage in climate action through six ACE Elements (Figure 1).

Figure 1. The Six ACE Elements

Why monitor, evaluate, and report on ACE?

ACE is critically important to spur the level of social and political will to support the needed transition to post-carbon societies. Despite this, ACE has historically received little focus in intergovernmental negotiations, and for many countries it is still underdeveloped as a key component of mobilizing climate action and achieving agreed upon emission targets.

Rigorous, effective MER can help advance ACE implementation by enabling countries to establish benchmarks, set targets, and track progress in ACE policy-making and practice. MER can also deepen understanding of quality ACE, including barriers and enablers to ACE and climate action. Finally, MER can provide an evidence-base for ACE reporting, such as in countries' National Communications and Nationally Determined Contributions (NDCs) submitted to the UNFCCC.

MER in the Glasgow Work Programme on ACE and its Action Plan

The potential of MER for advancing ACE is recognised in the Glasgow Work Programme (GWP) on ACE and its Action Plan, where it is one of four priority areas for advancing ACE implementation.

The GWP MER priority aims to strengthen "monitoring, evaluation and reporting of the implementation of all six ACE elements at all levels, according to Parties' specific priorities, needs

and national circumstances" (UNFCCC, 2021). Further, the GWP notes MER will be strengthened through Parties reporting on ACE implementation in their National Communications (e.g., accomplishments, lessons learned, challenges, and opportunities) and engaging the public and ACE stakeholders with MER findings (e.g., in National Communications, national action plans, and/or in reporting on domestic programmes on climate change). The GWP also recognizes that partnering with non-Party stakeholders can help achieve affordable and effective MER. Importantly, MER can facilitate achievement of each of the Programme's other priority areas (see Table 2).

Table 1. The MER Priority Area of the GWP on ACE Action Plan (from the GWP Action Plan, 2022)

Activity	*Responsible entity or entities*	*Timeline*	*Deliverables/outputs*	*Level of implementation*
D.1 Strengthening monitoring, evaluation and reporting of the implementation of all six ACE elements	Leading: secretariat Contributing: relevant organizations, research community	Ongoing to COP 31 (2026)	Compiling monitoring, evaluation and reporting best practices and resources and making such information available to Parties for use for their reporting on ACE activities on a voluntary basis, and reporting thereon in the annual summary report under the Glasgow work programme	International
D.2 Enhancing understanding of what constitutes high-quality and effective evaluation of ACE activities, according to national circumstances	Secretariat, Parties, national ACE focal points, relevant organizations, research community	Ongoing to COP 31 (2026)	Organizing interactive workshops at all levels, including at the ACE Dialogue in 2023, with experts, national ACE focal points, youth leaders and other stakeholders to discuss ways of assessing the effectiveness of ACE implementation	International, regional, national
D.3 Supporting the consideration by the Subsidiary Body for Implementation of the annual summary report to be prepared by the secretariat on progress in implementing activities under the Glasgow work programme	Secretariat	Ongoing to COP 31 (2026)	Holding information sessions prior to the sessions of the Conference of the Parties to present progress in implementing activities under the Glasgow work programme as reported in the annual summary report	International

Table 2. How MER is Useful for Progressing Each GWP Priority Area

Priority Area	**How MER is Useful**
Policy Coherence	• Identifies ACE policy approaches in use across countries and regions. • Supports development of ACE that supports other UNFCCC priorities (e.g. gender, capacity building), and international frameworks (e.g., Sustainable Development Goals (SDGs), particularly Targets 13.3 and 4.7).
Coordinated Action	• Provides data to benchmark ACE across sectors, set ACE targets in NDCs, and share ACE progress in more coordinated ways in National Communications, and intergovernmental reporting, such as on the SDGs.
Tools and Supports	• MER is a tool and support for improving ACE quality and increasing ACE quantity, nationally and globally. • Reporting supports peer learning through sharing of ACE activities and expertise across countries and regions. • Collaboration between Party and non-Party stakeholders is central to ensuring accessible global data and monitoring tools to support member Parties' ACE MER, in ways that are both coordinated and flexible.

How does MER connect to National ACE Strategies?

Developing a National ACE Strategy can help support implementation of ACE at the national level. A country's National ACE Strategy can outline tools and activities to promote action on all six ACE Elements, including developing a monitoring and evaluation (M&E) strategy to measure the effectiveness, outcomes, and impacts of ACE (step #10, see Figure 2).

When MER is addressed in a country's National ACE Strategy, this helps set timelines and processes for undertaking MER in ways that can help advance ACE implementation and target setting.

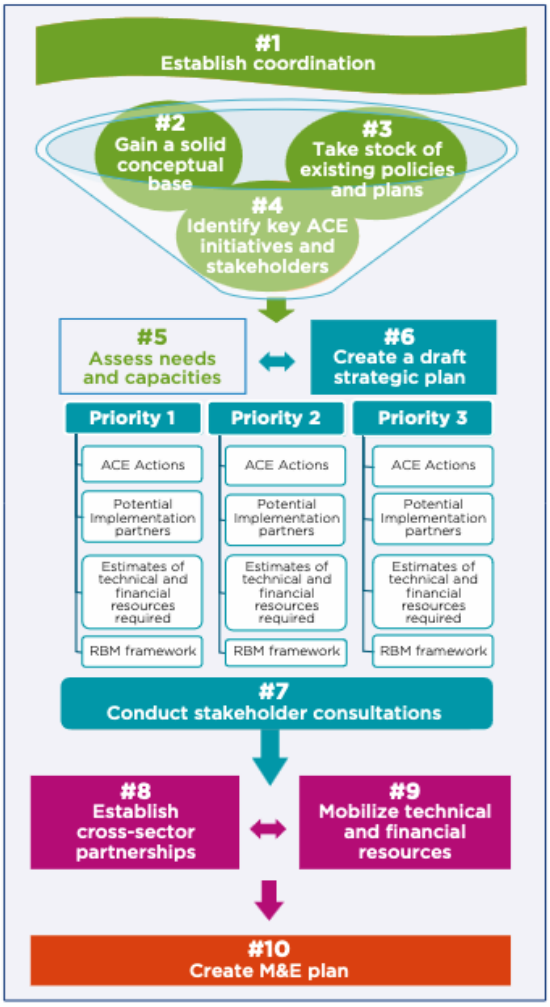

Figure 2. Ten Steps for Developing a National ACE Strategy (from UNESCO and UNFCCC, 2016)

Considerations for ACE MER

Quality ACE

Monitoring and evaluation are useful tools for increasing the *quantity* of ACE being undertaken, however, **it is important to also ensure that what is furthered is *quality* ACE**. Thus, a first step in developing MER plans is to define ACE.

Early ACE often assumed that learning *about* climate change would lead to greater action to solve the climate crisis. After decades of this approach, it is apparent that traditional ACE has not been able to spur the scale of action required (MECCE Project, 2021). Research suggests that ACE is more impactful when it is holistic, culturally- and regionally-responsive, and engages with climate justice (Hargis & McKenzie, 2020; Monroe et al., 2019). While climate change *knowledge* is important in driving action, ACE should also teach skills to support systemic and individual climate *action* and provide *socio-emotional* skills to build emotional resiliency and enable the collaboration needed to address from climate change, across sectors and target audiences[1] (Hargis & McKenzie, 2020).

[1] A holistic approach to ACE involves engaging various learning dimensions:
Cognitive: Aimed at developing knowledge of climate change, and the learning agility necessary to better understand climate change, including its underlying anthropogenic and biophysical causes, impacts, and solutions.
Socio-emotional: Aimed at developing the emotional intelligence and/or interpersonal skills that enable learners to manage emotions and feelings about climate change and its impacts, and relationships with others in an effort to better and more effectively collaborate, negotiate, and communicate with others to address climate change. This can also include self-reflection skills, knowledge, values, attitudes and motivations that enable learners to build their own capacity for resilience in the face of climate change and its impacts.
Action and Behavioural: Aimed at developing action competencies, including skills and practices, individual and collective agency, and behavioural change to address climate change and to minimize one's own and collective climate impact.

Tailoring ACE initiatives and communications to *specific audiences* also encourages climate action. In addition, quality ACE will vary by region and sector based on local knowledge and approaches to climate empowerment.

Finally, as the climate crisis is exacerbated by, and contributes to, inequality, ACE should engage with *climate justice* (Trott et al., 2023). This means addressing climate injustice through ACE, as well as ensuring the contributions of climate vulnerable communities are included in ACE and ACE MER planning and implementation. Examples of disadvantaged groups and populations at risk include age, ethnicity, gender, and socio-economic minorities.

Stakeholder engagement

UNESCO and UNFCCC (2016) recommend *engaging diverse stakeholders* when developing a National ACE Strategy. Likewise, it is also important to engage stakeholders in MER planning and implementation. For instance, defining ACE represents an opportunity to engage key non-Party stakeholders, such as youth, Indigenous peoples, women, educators, researchers, civil society, and industry. *Participatory* approaches involve collaborating with stakeholders to develop MER plans, conduct MER, and apply the results (Rossi et al., 2004), and can increase capacity to carry out MER.

There are multiple benefits to meaningfully engaging with stakeholders in ACE MER, including:

- Increases the likelihood that ACE definitions and resulting monitoring, evaluation, and reporting are relevant to key ACE stakeholders' activities on the ground.
- Supports the identification of ACE initiatives that are already happening in your country, and the range of initiatives that could be done.
- Increases social infrastructure and opportunities for co-development of initiatives across stakeholder groups.
- Assists with creating strong partnerships early to support implementation of MER.

Box 1. Country examples of stakeholder engagement in MER

Equity and Diversity in Climate Change Approaches in Mexico

Mexico offers opportunities for public participation in climate change programs and policy-making. *The Special Climate Change Program (2020–2024)* addresses diverse social groups, especially those more vulnerable to climate change. The National Institute for Women (Inmujeres) took part in developing the Program, promoting gender perspectives in policies that counter climate change.

In 2020, the Special Climate Change Program (2020–2024) conducted a survey to enhance government priorities and policy-making through citizen participation. The survey found that citizens want more and better climate change communication and education (i.e., ACE). These results were used to set Strategic Priorities, one of them being to "Enhance the knowledge mobilization, communication and environmental education in order to create a climate culture in the country and to promote the inclusion of citizens' perspectives in public policies regarding climate change."

Box 1 Continued. Country examples of stakeholder engagement in MER

Engaging the general public and industry in MER in the Republic of Korea

In the the Republic of Korea*'s 3rd National Climate Change Adaptation Plan (2020)*, climate change M&E includes both citizen-participatory monitoring and national-level monitoring. The plan also mentions the government's intention to create a monitoring system to which the public may contribute. The government also collaborates with major industries in the country to develop climate adaptation manuals. The content of the manuals is based on information obtained through case studies of climate adaptation in different manufacturing and industry areas.

Community-based MER conducted by Indigenous Peoples in Canada

The *Indigenous Community-Based Climate Monitoring Program* is a 10-year program launched in 2018 under Crown-Indigenous Relations and Northern Affairs Canada. The program receives funding each year for community-led projects to monitor the effects of climate change on communities and Indigenous territories. The Program also supports access to tools and best practices; enhances collaboration and coordination among initiatives; and supports Indigenous participation in program oversight of projects funded within the Program focus on communication and education.

The subsequent sections will discuss ideas and resources for conducting each of evaulation, monitoring, and reporting, including in ways that involve stakeholder engagement.

Evaluating Quality ACE

How is evaluation useful for progressing quality ACE?

Evaluation can be used to identify and better understand the types of ACE being undertaken in a country, as well as which components of quality ACE are strong or could be further developed. Evaluation can also help improve ACE quality by providing information about whether and how key climate vulnerable groups, including youth, Indigenous, and other marginalised groups are participating in ACE, including factors that enable or hinder their participation. Evaluation can also help us to understand whether ACE activities are having their desired impact in furthering climate action. In addition, evaluation can help to highlight accomplishments and identify areas for improvement (e.g., GEF, 2007 from UNESCO and UNFCCC, 2016). All of this can enable the development and improvement of locally-appropriate ACE planning and implementation.

Evaluation ultimately can be used to achieve the goals of ACE, identify what kind of ACE is happening, and improve it in the future. When used as a complement to strategic planning processes and program implementation, evaluation can therefore support improved decision-making, more efficient use of resources, and improved short- to long-term outcomes.

National-level ACE evaluation is typically complicated by the dispersed nature of ACE activity in most countries, and further constrained by resource availability. **While some countries may be able to conduct national level evaluations, others may need to find ways to encourage key sectors and organizations to carry out evaluation activities at sub-national levels.** In the second case, national governments can develop and distribute national evaluation frameworks and guidelines, link evaluation to accountability mechanisms, and provide written and digital resources to provide guidance on evaluation methods and measures.

Box 2. A national evaluation and self-evaluation of Climate Change Education and Training in Italy

The Italian Ministry for Education and the Ministry for University and Research are supported by multiple agencies that assist with developing and evaluating policies. These include the National Institute for the Evaluation of the Education and Training System, the National Evaluation Agency of the University and Research System, and the National Institute of Documentation, Innovation and Educational Research. Together, these institutions monitor and compile educational data, including information relating to climate change education. In addition, the Ministry for Education, through the Directorate General for Statistics which is part of the national statistics system, manages the Single Portal on School Data, which allows a Self-Evaluation exercise by Schools and a general evaluation of the National system of Education, also concerning learning outcomes.

Defining quality ACE

Defining ACE and its Elements provides a starting point to determine what will be monitored, evaluated, and reported on. Because all six ACE Elements are important and distinct from one another, it is key to define the desired outcomes of each ACE Element (e.g., Figure 2).

There are many available resources to help with defining ACE overall and the specific ACE Elements. The Glasgow Work Programme states that "Action for Climate Empowerment plays a key role in promoting the changes in lifestyles, attitudes and behaviours needed to foster low-emission, climate resilient and sustainable development" and its "importance to achieving the objective of the Convention and the purpose and goals of the Paris Agreement" (UNFCCC, 2021). Definitions of the six ACE Elements are available in the ACE Guidelines (See Figure 3, and UNESCO and UNFCCC, 2016) and other resources such as this UNFCCC Blog Post on "What is ACE."

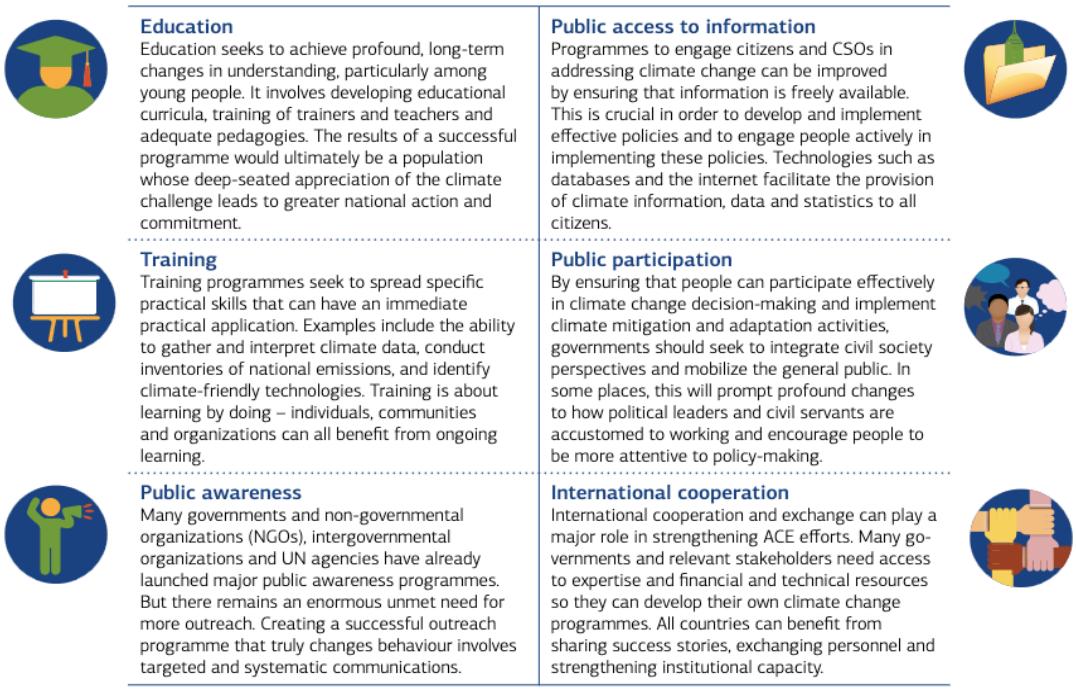

Figure 3. Definitions of the Six ACE Elements (from UNESCO and UNFCCC, 2016)

Understandings of the ACE elements should take into account *regional and cultural variations* in ACE across countries. For example, public awareness campaigns in Sub-Saharan African countries are likely to encourage different climate actions from those in Eastern and South Asian countries. The definitions should also be *informed by research*. For example, if a public awareness campaign focuses exclusively on transmitting knowledge of climate change, and does not address socio-emotional and action components, this does not reflect research-informed understandings of quality ACE. Engaging key stakeholders such as academic researchers, national statistics offices, and others knowledgeable in evaluation can provide avenues for developing research-informed definitions.

More locally responsive definitions may also be developed through *reviewing documents* such as ACE-related policies and plans, national ACE strategies, and reports/websites of ACE initiatives in a given country, or across countries. Other resources that provide overviews of national-level laws, policy, and programs relevant to ACE, such as the MECCE Project's Country Profiles, may be available and provide a good starting point for developing definitions.

Strong definitions make it easier to identify and prioritize what can and should be evaulated, as well as monitored and reported on. For example, using the "SMART goals" framework can be helpful for developing goals and outcomes that are more easily measured. SMART stands for specific, measurable, achievable, relevant, and time-bound (see for example, First Nations Development Institute, n.d.). When the goals of ACE are *specific* and grounded in a specific *timeframe*, they will be more easily *measured* and *accomplished*. The definition of ACE should also be *relevant*. For example, while it may be tempting to use existing environmental and sustainability education initiatives as a proxy for ACE, research suggests that climate change should be be a distinct highlighted area of focus (Reid, 2019).

The different types of evaluation

The ACE Guidelines define evaluation as the "the systematic and objective assessment of an on-going or completed project, programme or policy, its design, implementation and results in relation to specified evaluation criteria" (OECD, 2002 from UNESCO and UNFCCC, 2016). This enables us to assess the *quality* of ACE implemention and make adjustments to enhance ACE activities.

Evaluations use social science research methods to answer specific questions—"evaluation questions"—about a social project, program, or policy.[2] Evaluation questions are formulated so that they are able to be answered with data that are either already available or able to be collected (Rossi, Lispey, & Freeman, 2004). The type of evaluation used is guided by the stage of implementation and the questions you want to answer with your evaluation (Rossi et al., 2004).

In the case of ACE, the evaluation questions will often focus on understanding the impacts of ACE. A question that might initially come to mind is, "is ACE 'working' in my country?" Questions like this are typically answered by outcome/impact evaluations, which are used to assess if a project, program, or policy is producing intended changes, and if so, how or why (Rossi et al., 2004; UNDP, 2011). Outcome/impact evaluations can help identify successes and provide information to support decision-making (Rossi et al., 2004; UNDP, 2011).

[2] The remainder of this booklet uses the terms 'ACE initiative' and 'ACE approach' to refer to all the possible permutations that ACE can take, including programs and projects.

However, there are many other kinds of evaluations that can provide valuable information to improve ACE planning and implementation. For example, formative evaluations are often carried out at the same time as a program is implemented to support early program improvements, which can ultimately reduce resource costs (Rossi et al., 2004). Process evaluations determine whether a program or activity is being implemented or delivered as intended, which can help identify previously unknown barriers and improve program quality (Rossi et al., 2004). Rapid evaluations are designed to provide findings quickly to inform decision-making over periods from 10 days to 6 months. Rapid evaluations use iterative and flexible designs; often engage stakeholders in the design, data collection, and analysis; and can be helpful when time and resources are limited (Williams, 2022).

Monitoring Quality ACE

What is monitoring?

The ACE Guidelines define monitoring as "*the systematic collection of data on specified indicators to provide management and the main stakeholders of an ongoing development intervention with indications of the extent of progress and achievement of objectives and progress in the use of allocated funds*" (UNESCO and UNFCCC, 2016).

Monitoring focuses on tracking the quantity of ACE activity, versus evaluation which focuses more on assessing and improving ACE quality. Comparable data on the quantity of ACE activity can enable Party and non-Party stakeholders to benchmark the amount of quality ACE occurring, track changes in the quantity of ACE over time, and support the setting of increasingly ambitious ACE targets to further increase quantity (e.g., through National Communications reporting, or target setting in Nationally Determined Contributions (NDCs) and National Adaptation Plans (NAPs)), and support urgent, coordinated action. The ultimate goal of monitoring will typically be to measure whether efforts to increase the quantity of ACE are effective.

How is monitoring useful for progressing ACE?

In initial stages, monitoring helps to determine the amount of ACE currently happening, which is also known as a benchmark or baseline, which can be defined as *"a standard or point of reference against which things may be compared or assessed over time or across different units."* Benchmarking is achieved through tracking measures, or indicators, which are developed based on the definitions of ACE.

Once the benchmark is determined, the results can be reported in national documents such as National Communications, as well as through domestic avenues to increase public awareness of climate change and improve public access to information on climate change. Benchmarking also allows realistic targets, or goals, for increasing the amount of quality ACE to be set. These can be included in target setting, such as through development of ACE targets in documents such as NDCs and NAPs under the UNFCCC and Paris Agreement processes. Subsequent monitoring cycles can then show whether the amount of ACE is changing over time, and support the development of more ambitious targets.

Monitoring is therefore a tool for supporting increasing the quantity of ACE provision over time. When combined with evaluation, which helps us understand what quality ACE is, monitoring can be a powerful way of ensuring that monitoring increases the *quantity* of *quality ACE* in a country and globally.

Different types of indicators

Indicators can be defined as, "*proxy measures for complex systems.*" By themselves, indicators provide a snapshot of different components of ACE, and by combining them we are able to get an overall picture of progress on individual ACE elements, and ACE overall. Indicators can be used to give status updates; support public communication; measure the impacts of a policy priority, strategy, or decision making process; and to set targets to drive future action.

There are many different types of indicators, but one of the main standards is described below. Indicators are often linked to the different components of an initiative, program, or project, as shown in Figure 4.

Inputs can be thought of as the resources required to implement an ACE initiative, such as staff and budgets (Rossi et al., 2004; CDC, n.d.). Outputs are concrete products or deliverables that result from the ACE initiative's activities, such as evidence of curricula or other policy commitments (Rossi et al., 2004; CDC, n.d.). It is also possible to develop indicators of processes, which can help show if an ACE initiative is working as intended (Rossi et al., 2004; CDC, n.d.). Both input and output indicators are often captured in counts, such as the number of training modules produced or number of students trained, which makes them easier to collect data for. Due to their ease of collection, input and output indicators tend to be more common (Pizmony-Levy, 2018).

When we conduct M&E, we are often most interested in knowing outcomes, defined as the changes in target audiences/participants (e.g., learning achievements and increased competencies and actions) that result from exposure to ACE initiatives (Rossi et al., 2004; CDC, 2018). **However, measuring outcomes can be challenging and thus it can be useful to also look at input, output, and process indicators.** For example, it can be challenging to collect high quality measurements of behavioural changes at national scales, especially when those outcomes occur far in the future from the ACE initiative being implemented.

One way to approach examining outcomes is to break it down into short, medium, and long-term outcomes. Rather than focusing on set timeframes, it can be helpful to define short-term (or initial) outcomes as changes in knowledge, skills, and attitudes and medium-term (or intermediate) outcomes as changes in behaviour (Martin, 2019). When defining long-term outcomes of ACE (often called impacts), a national government may be interested in broad, large-scale shifts across sizable segments of the country's citizenry. It may not be possible to attribute large-scale shifts solely to one ACE initiative, and so short- and medium-term outcomes can act as proxies.

It is important to note that there are often broader factors out of an ACE initiative's control that may impact attainment of the intended outcomes of the ACE initiative. Known as moderators, for ACE initiatives, these are often related to inequality and may include factors like differential language fluency (e.g., newcomers to the country), poverty, and educational achievement.

Figure 4. The relationship between inputs, activities, outputs, and outcomes

Figure 4 provides a simple illustration of the relationship between inputs, processes, outputs, and outcomes. Data can be collected at any stage along an ACE activity cycle. In this way, monitoring allows the tracking of progress towards ACE outcomes as well as the inputs, outputs, and processes that take place to contribute to that outcome.

To provide concrete examples of the above, Box 3 (below) provides a hypothetical illustrative example of the use of M&E to develop a national-level social media campaign to increase public awareness of climate change. Table 1 below defines different types of indicators and provides example indicators that could be used in relation to the illustrative example in Box 3.

Table 3. The different types of measures, with an example of a public awareness campaign

Indicator Type	**Indicator Definition***	**Public Awareness Social Media Campaign Example**
Input	Measure resources required to implement ACE initiatives, often captured in counts.	● Number of communications staff that prepared the campaign ● Amount of the budget allocated to the campaign and monitoring
Process	Measure the process by which the ACE initiative create changes.	● Number of stakeholders consulted ● Number of views, likes, and shares on each social media platform, including by population segment
Output	Measure concrete products or deliverables that result from the activities, often captured in counts.	● Number of social media posts ● Content themes used in social media posts, including by population segment
Outcome	Measure changes in people or conditions as a result of the ACE initiative.	● Short-term: Increased knowledge of climate change science, policy, and practice among those exposed to the campaign, as indicated by social media post content and hashtags used ● Medium-term: Increased climate action among those exposed to the campaign, as indicated by social media post content and hashtags used ● Long-term: Those exposed to the campaign adopt more carbon-neutral lifestyles, as indicated by social media post content and hashtags used
Moderator	Broader factors that are not in the ACE initiative's control that may impact attainment of the outcomes.	● Unequal access to mobile data and internet (e.g., ● due to poverty, living in remote areas) ● Differential digital literacy (e.g., due to age) ● Differential language fluency (e.g., newcomers to the country)

* Adapted from W.K. Kellogg Foundation (2004) and CDC (2018)

Box 3. Illustrative example: Using M&E to develop a national-level climate change public awareness campaign

In this hypothetical situation, a federal environment ministry identifies low public awareness of climate change as an issue based on available global data on perceived impact of climate change on future generations. As a result, they review their national climate change communication strategy where public awareness is defined as "the general public is aware and knowledgeable about climate change (science, policy, and practice) and the actions (both mitigation and adaptation) that need to be taken."

A decision is made to target increased public awareness through developing a national social media climate change campaign. Staff and a budget are allocated to the campaign. An advisory committee is created with key stakeholders such as federal outreach organisations at the state level, NGOs, museums, education, climate and environment departments, and research partners with content, data collection, and analysis expertise.

After the communications staff develop a first draft of the messages and images, they are shared with the research partners. The researchers give feedback that the messages and images may produce climate anxiety in target audiences, which may lead to climate inaction. They also recommend tailoring the messaging to different population segments, and creating an action component, such as encouraging people to use a campaign hashtag when they post photos and videos of the climate actions they are taking as a result of the campaign.

After using the researchers' feedback to improve the messages, the campaign decides to conduct stakeholder consultations to ensure the messages developed are tailored to various stakeholder audiences. Stakeholder consultations reveal a variety of moderators that may impact (help and hinder) the campaign's ability to reach all of the country's citizens. For example, the country includes large rural and remote areas, with differential access to the internet. Further, the country's largest cities include large pockets of citizens who are not fluent in the country's official language.

Following the consultation, the campaign decided to implement a parallel non-digital campaign with messaging in federal buildings and on national television, with advertisements translated into the most common additional language, targeted to key areas of the country.

Once the social media campaign is implemented, the team reviews their available monitoring data. The data that are most easily collected are those on inputs and outputs, such the budget allocated to the campaign; and the number of views, likes, and shares on the different social media platforms during the campaign. They also collect process data, such as the number of stakeholders consulted in preparing the campaign.

The campaign decides to conduct a deeper analysis of the photographs and videos to get an idea of the types of climate actions that were most popular, which provides an idea of the short- and medium-term outcomes of the social media campaign. Finally, they also look at long-term outcomes a year later through global data available on perceived impact of climate change on future generations, to see if country results have shifted as a result of the public awareness campaign.

Identifying indicators of quality ACE

It is important to monitor the extent of good quality ACE, rather than poor quality ACE. Developing culturally-responsive, research-informed definitions that are built on understandings of quality ACE provides a strong foundation for developing monitoring approaches, indicators, and data that support increases in the quantity of quality ACE.

In the evaluation section, we discussed the importance of identifying the intended outcomes of ACE by defining ACE elements, including through consulting stakeholders and existing documents, such as ACE-related policies. Defining ACE can act as a starting point for identifying potential indicators.

Above, we suggested using the "SMART framework" to develop strong definitions of ACE. Likewise, the SMART framework can also be used to revise existing or develop new indicators or decide which indicators to use out of those available (Compass, n.d.). In the case of indicators, SMART stands for:

- Specific: The indicator should accurately describe what is intended to be measured, and not include multiple measurements.
- Measurable: The indicator should be able to be measured with data that can be collected or accessed.
- Achievable: Collecting/accessing data for the indicator should be straightforward and cost-effective.
- Relevant: The indicator should be closely connected with the input, output, process, or outcome being measured.
- Time-bound: The indicator should include a specific time frame. This may be dictated by the data that are used.

In consulting existing documents to develop definitions of ACE, you may identify documents with already-developed indicators, and other ministries, programs, researchers, countries, etc. that are already tracking those indicators. In this case, it is recommended to review the already-developed indicators against the definitions of ACE and considerations of quality ACE. If any changes are advisable, explore collaborations with the group(s) that are tracking the indicators. Working with other groups to track the same indicators and/or collect data provides an opportunity to take coordinated action and develop coherent policies within countries or regions, and can reduce the burden of building M&E capacity from scratch.

It can also be helpful to brainstorm new indicators that measure quality ACE using a range of indicator types, forgetting (for a moment) real world constraints. The brainstormed indicators (whether existing or new) should align some or all of the ACE Element definition and with the types of indicators discussed above (i.e., inputs, outputs, outcomes, and processes). It is also important to consider the characteristics of quality ACE discussed above (i.e., holistic, regionally/culturally responsive, and research-informed).

Identifying potential data to use

Once potential indicators are brainstormed, it will be helpful to identify the types of data that are available to support development of the indicators. As shown in Table 4 below, there are many kinds of data that can be used to calculate indicators.

The data used to create indicators does not have to be collected directly by countries. There are a variety of third-party data sources such as polls, surveys, and standardized assessments that may regularly collect high quality data and may be available for little or no cost. There may also be research groups in the country that have developed relevant indicators with global data available. Third-party data has the advantage of not only being more cost effective, it is often high quality, and can reduce the perception of self-serving bias. Using third-party data also increases the likelihood of international comparability. It is also possible to create data, which can be more expensive and may require longer time-frames.

It may be possible to create data by working with other ministries, which also has the added benefit of supporting the mainstreaming of ACE through governments. For example, it may be possible to modify national household surveys carried out by a national statistics office or to require federal funding recipients to provide specific data in their reports. In countries with a national formal education curriculum, it may be possible to include ACE-related modules in standardized tests.

Box 4. The MECCE Project's Interactive Data Platform: Global Indicators, Country Profiles, and Case Studies

Launched in 2022, the MECCE Project's Interactive Data Platform provides accessible information on the extent and type of ACE provision across countries, regions, and the globe. The platform includes several data types.

Shown below, a set of Global Indicators are able to be explored through a fully interactive experience. Users are able to explore the indicators and relevant global, regional, and national data focused on Action for Climate Empowerment (ACE).

The platform also includes Country Profiles of ACE. Each Country Profile summarizes country progress on ACE and SDG Targets 4.7 and 13.3, including ACE-related legal and policy frameworks, ACE initiatives, and M&E activity. Descriptions, final reports, photographs, and videos of the funded Case Studies are also posted on the platform as they become available.

Figure 5. Global Indicators on the Interactive Data Platform

Table 4. Types of monitoring data, definitions, examples, strengths, and weaknesses

Type of Data	What it is	Examples	Strengths	Weaknesses
Surveys and Polls	Collects data through questionnaires, often asking respondents to answer on a scale. The questionnaires are most often answered online, on paper, or on the telephone.	• World Risk Poll • Facebook Climate Opinion Poll	• Possible to reach a large number of people. • Easy to create comparisons between different groups. • Able to provide information about knowledge, attitudes, skills, and behaviours.	• Might not adequately represent the population. • Self reported information may not be accurate.
Standardised Assessments	Typically used in education, these are often large-scale tests that measure skills and/or knowledge to provide ranks at different levels (e.g., school, school division, sub-national, national).	• Programme for International Student Assessment (PISA) • International Civic and Citizenship Education Study (ICCS)	• Standardised, scalable questions that provide a somewhat "neutral" assessment. • Easy to create comparisons between different groups. • Able to provide information about knowledge, attitudes, skills, and behaviours.	• More likely to occur in developed countries. • Often only include specific segments of the population. • Often restricted to assessing knowledge and attitudes. • Self reported information may not be accurate. • Can include biases and selection of respondents can be complicated.
Documents	Analyzing collections of documents for relevant content, such as climate change content in national curriculum. These can be official documents such as policies and official reports, or non-official documents such as websites, news and reports from NGOs/CSOs.	• The MECCE Project's country curriculum analysis and Country Profiles (see Box 5)	• Possible to look in detail at highly relevant documents. • Possible to look at a large number of documents. • Official sources give an idea of country commitments.	• Do not necessarily provide information on knowledge, attitude, skill, and behaviour changes. • Keyword searches can be limited and only show a small part of the bigger picture. • More sophisticated analyses are time consuming.
Big Data Analytics	Large scale data collected through online/social media, citizen science, or other sources from which relevant trends can be extracted.	• Hashtag analyses • Analyses using AI • The MECCE Project's indicator of climate change-related publishing in higher education	• Enables very large scale analysis. • Easy to create comparisons between different groups. • Able to provide information about knowledge, attitudes, skills, and behaviours.	• Determined by the platform's algorithm. • Artificial intelligence approaches are highly technical and time consuming.

Prioritizing which indicators to use

Selecting which indicators to use for monitoring will likely require balancing a variety of different priorities. **It is important to prioritize the highest quality data sources available that can be monitored on an ongoing basis, within capacity constraints.** Some considerations for prioritizing data include:

- Do the data provide sufficiently useful information on the ACE element in question? (e.g., prioritizing climate change education over environmental and sustainability education)
- Is the technical capacity available to collect/compile, analyze, and/or interpret the data? If not, are you able to develop partnerships that can fill that gap?
- Do the data cover all or an acceptable number of regions of the country?
- Are the data available at appropriate time intervals? Depending on the ACE element, the data may not not need to be collected annually; however, it should be collected approximately every 3-4 years, including for reporting cycles such as UNFCCC National Communications.
- Is the cost of the data reasonable?
- Is it possible to divide up the data by variables that can support decision-making, such as state/province, urban/rural, gender, age, and ethnicity?
- Are the data collected in a rigorous, transparent, and scientific manner such that it can be replicated and stand up to outside scrutiny?

Once the possible data sources have been assessed for their quality and feasibility, it is likely some data sources can be easily eliminated.

The remaining data sources can be matched to the indicators identified in the initial brainstorming phase. At this point, there may be several possible indicators that could be feasibly monitored, but it may not be possible to monitor them all.

In subsequent prioritization steps, it may be advisable to go back to the considerations above to find a good balance of benefits and constraints, relaxing certain criteria if needed. It may also be helpful to consider the remaining indicators and ACE Elements in relation to strategic planning processes, as it may be advantageous to prioritize monitoring some ACE elements over others.

Creating indicators

To create indicators, data are transformed in a standardised, replicable way. It is recommended to develop simple indicators, rather than more complex indexes or composite indicators, which combine several data points (Compass, n.d.). Not only are simple indicators more easily calculated, their meanings are simpler to interpret, report, and use in decision-making.

An example of a simple indicator is a MECCE Project's Global Indicator of Public Awareness, *"perceived impact of climate change on future generations"* (MECCE Project, n.d.). While the below describes a Global Indicator with data available for a range of countries, **in a national context, a similar indicator could be divided into data on specific states/provinces, urban/rural, age groups,** etc. which can help inform policy decision-making targeting specific regions or populations of a country.

The Public Awareness indicator is based on data from the Climate Change Opinion Survey (2022), conducted by Facebook's Data for Good and the Yale Program on Climate Change Communication. Respondents from 103 countries responded to the question, *"How much do you think climate change will harm future generations of people?"* on a scale from "not at all" to "a great deal." The indicator uses only data from the percentage of people who replied "a great deal," and

divides them into levels. Countries where 0-20% of people responded “a great deal” were assigned to Level 1, countries where 21-40% of people responded “a great deal” were assigned to Level 2, and so on, up to Level 5, where 81-100% of people responded “a great deal.”

The Indicator results are represented in the figures below. The first figure shows the number of countries in each of Levels 1-5. We can see that most countries are in Level 3 and 4, which means that in most countries, 41%-80% of people who answered this question felt climate change would harm future generations a great deal.

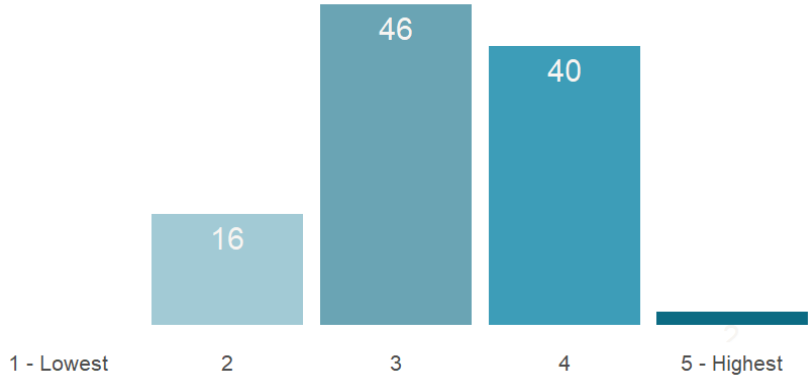

Figure 5. Number of countries in each indicator level for the “perceived impact of climate change on future generations” indicator

The second figure shows the percentage of countries in each indicator level by SDG Region, where the darker colours mean higher indicator levels and light grey represents missing data. This graph provides a great deal of information. For example, it shows that the countries in Level 5 are exclusively in the Latin American and Caribbean (LAC) region. The graph also shows that concern for future generations, as shown by this indicator, is highest in the LAC and Europe and Northern America regions (in this case, 8 out of the top 10 countries are in the LAC region). The graph also shows pronounced data gaps, which are due to a combination of *moderators* such as regional differences in Facebook use and internet access.

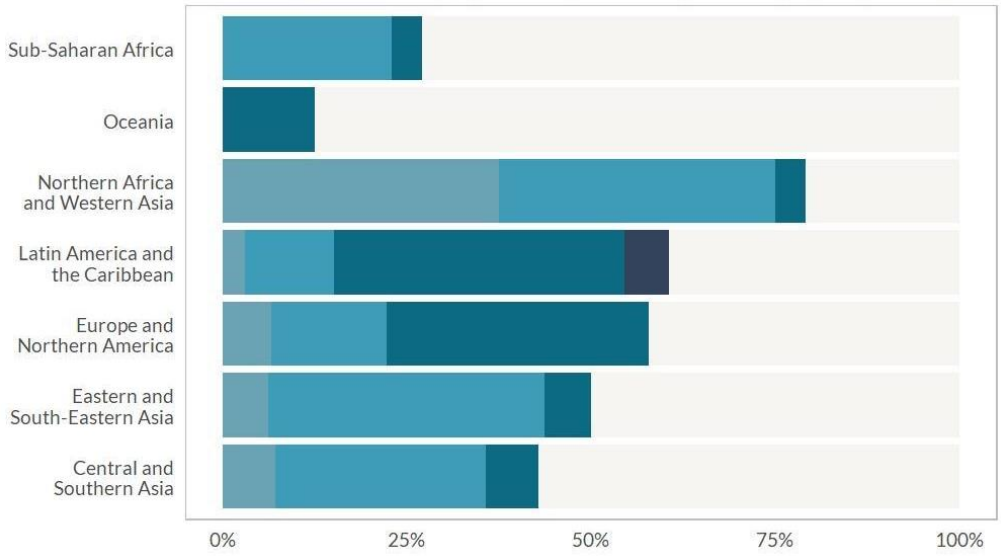

Figure 6. Percentage of countries in each indicator level for the “perceived impact of climate change on future generations” indicator, by SDG Region

Box 5. Examples of national-level indicators of ACE

National Climate Change & Green Economy Learning Strategy (2016)
In 2016, Ghana developed its first *National Climate Change and Green Economy Learning Strategy*. The document takes stock of existing ACE activities in Ghana and developes several indicators that the country aims to achieve, for example:

- Number of new and innovative climate change and green economy courses developed and operationalised.
- Number of teachers trained on climate change and green economy.
- Amount of money set aside from national budgets for climate change learning activities.

Canada's Federal Sustainable Development Strategy, 2022–2026
The new *Federal Sustainable Development Strategy* (2022–2026), published by Environment and Climate Change Canada, strongly focuses on climate change. Chapter 13 is dedicated to climate action. The Strategy includes indicators to measure Canada's progress toward the SDGs and includes climate change communication and education indicators, such as:

- By 2026, increase the annual number of Canadians accessing environmental sustainability information through the Canadian Environmental Sustainability Indicators website, and through the Canadian Indicator Framework portal, to 260,000 visits from a baseline of 239,188 visits in 2020.
- By 2026, increase the number of Canadians accessing climate information through the Canadian Center for Climate Services from a baseline of 200,815 visits to the portals in 2021.
- Proportion of municipal organizations who factored climate change adaptation into decision making processes.

Reporting on ACE

What is ACE reporting?

Article 6 of the UNFCCC invites national governments and stakeholders to report publicly on the implementation of all six ACE Elements. Reporting at the intergovernmental level can also report on progress to achieve SDG Targets 13.3 and 14.7.

In linking M&E to reporting, the GWP acknowledges that M&E findings can not only be used to improve ACE and its implementation over time; M&E can also be used to improve reporting. In its description of the MER priority area, the GWP describes reporting as a way to strengthen ACE. Parties are encouraged to report on accomplishments, lessons learned, challenges, and opportunities of ACE implementation in their National Communications. The GWP also acknowledges that reporting can engage the public and ACE stakeholders with MER findings, not only in National Communications but also in national action plans and reporting on domestic programmes on climate change.

How is reporting useful for progressing ACE?

A prior analysis of 368 National Communications and NDCs from 194 countries (McKenzie, 2021; UNESCO, 2019) found that, while 95% of the reports included some content on ACE, the content was primarily descriptive and aspirational. The reports also show gaps in reporting of all six ACE Elements. Specifically, the reports heavily emphasized formal education, public awareness, and cognitive learning, with little focus on quality ACE and all ACE Elements. The reports also contained little data that could be used for M&E purposes.

ACE reporting has several functions. For example, reporting on ACE progress provides Parties with the opportunity to *reflect on prior ACE activity*, highlighting successes, good practices, and challenges. Because ACE M&E supports progress tracking across all six ACE Elements, M&E can *reduce existing reporting gaps* in National Communications as well as other intergovernmental and domestic reports. Reporting on past activities also *supports peer learning* through sharing progress and good practices, and demonstrates building momentum over time. This provides a mechanism for furthering the *other priority areas of the GWP*, facilitating coordination of ACE actions, improving policy coherence, and supporting the sharing tools and resources.

Reporting can be used to communicate *changes in ACE activity over time*. When the first round of M&E is used to identify a baseline of ACE activities, this baseline can be reported in intergovernmental and domestic reports. Subsequent rounds of reporting will show whether ACE is increasing over time. Reporting on simple indicators allows any changes over time to be demonstrated more concretely.

Reports can also draw on M&E data and use those data to support *target setting*. Once a baseline is set, concrete and achievable targets can be included in NDCs. Subsequent M&E cycles can be used to gradually increase ambition over time. The NDC can therefore be used as a tool to report on concrete ACE goals and progress towards anticipated outcomes.

Finally, reporting on ACE activity and progress in domestic reports represents a way to communicate with *local ACE stakeholders* about ways to *improve the quality of local ACE policy and practice*. This can assist with mainstreaming of ACE across ministries and different levels of government, as well as across different sectors. Domestic reporting also provides avenues for achieving the ACE Elements of public awareness, public access to information, and public participation.

Box 6. Country Examples of ACE MER

Holistic approaches to MER in Scotland

Climate Ready Scotland: Climate Change Adaptation Programme 2019-2024 is a Scottish five year adaptation program, which extensively includes ACE. Six holistic principles guide MER of the program, including:

- Principle 1: In order to ensure measurable progress indicators, they should be considered alongside the identification of planned outcomes.
- Principle 2: Continuous monitoring of programs, policies, and interventions will be conducted to assess their progress and track both short- and long-term goals.
- Principle 3: The framework will establish a connection between the adaptation process and the resulting outcomes.
- Principle 4: Interim progress will be evaluated through outcome and process milestones.
- Principle 5: When appropriate, existing indicators and monitoring frameworks will be utilized.
- Principle 6: The framework is driven by improvement and learning. It seeks to identify what should be measured, rather than solely focusing on what can be measured.

Box 6 Continued. Country Examples of ACE MER

MER cooperation across different levels in Ethiopia

In 2020, Ethiopia published the *Climate Change Education Strategy of Ethiopia 2017-2030*. The Strategy calls for the establishment of a results-based monitoring and evaluation system and divides MER into three levels:

- At the federal level: The Technical Committee oversees the implementation of the CCE strategy to monitor and/or supervise progress on a quarterly, biannual, and annual basis.
- At the regional level: A joint task force involving three Bureaus undertakes quarterly monitoring activities (Ministries of Environment, Education, and Finance and Economic Development)..
- At the local level: A committee comprising multiple stakeholders (principals and teachers, city offices of education, environmental protection, and finance) supervises the implementation of the strategy on a monthly basis.

Long-term goals for ACE in Chile

The *Long-Term Climate Strategy of Chile: Path to Carbon Neutrality and Resilience by no later than 2050* incorporates ACE with other long-term goals to make Chile carbon neutral by 2050. Chile connects MER to already established MER systems and uses UNFCCC reporting mechanisms to establish a national MER system including Nationally Determined Contributions, Biennial Update Reports, and National Communications.

Next Steps: Developing a strategic ACE MER framework

This section provides an elaborated process for developing and implementing a Strategic ACE MER Framework to mainstream ACE MER in national contexts. One the steps outlined in the evaluation, monitoring, and reporting sections have been taken, the next step is to compile the information into a MER plan. The steps below are adapted from the National ACE Strategy guidelines (UNESCO and UNFCCC, 2016).

Step 1. Initiation and Planning

Step 2. Implementation Phase 1 - Initial Data Collection

Step 3. Midterm Review - Set Benchmark and Targets

Step 4. Implementation Phase 2 - Apply M&E Findings and Continue to Collect Data

Step 5. Report on ACE and Create Updated Strategic ACE MER Framework

Figure 7. Elaborated process for developing and implementing a Strategic ACE MER Framework (adapted from UNESCO and UNFCCC, 2016)

Step 1. Initiation and Planning

- Form/hire an M&E working group
- Define the purpose and objectives of M&E of ACE in your country
- Define the ACE elements, using culturally appropriate definitions, in consultation with key stakeholders and communities

- Identify existing and develop new potential indicators according to the national context
- Identify potential measures and data for each indicator according to the national context
- Prioritize an achievable set of indicators
- Develop an indicative budget
- Develop organizational processes for carrying out M&E of the indicators
- Develop the Strategic ACE MER Framework

Step 2. Implementation Phase 1 - Initial Data Collection

- Coordinate information gathering and management
- Compile and/or collect data; conduct focused on studies emerging questions if needed

Step 3. Midterm Review - Set Benchmark and Targets

- Collate and analyze data
- Identify baselines for the indicators and ACE elements
- Share findings and lessons learned with the general public and key stakeholders and communities
- Receive input from key stakeholders and communities on target setting and application of findings and lessons learned to improve ACE and ACE M&E

Step 4. Implementation Phase 2 - Apply M&E Findings and Continue to Collect Data

- Use findings from the midterm review to improve ACE and ACE M&E (e.g., improving indicators, data collection tools)
- Coordinate information gathering and management
- Compile and/or collect data; conduct focused on studies emerging questions if needed

Step 5. Report on ACE and Create Updated Strategic ACE MER Framework

- Collate and analyze data
- Identify changes from baseline ACE activity relative to targets set in the midterm review
- Share findings and lessons learned with the general public and key stakeholders and communities
- Receive input from key stakeholders and communities on target setting and application of findings and lessons learned to improve ACE and ACE M&E
- Include findings and lessons learned into intergovernmental and domestic reports
- Develop updated Strategic ACE MER Framework with improved indicators and targets

We hope these tools are helpful in taking next steps with MER of ACE, and welcome input or ideas to further develop this guide and additional shared resources for ACE MER globally.

Below we provide additional tools and resources to assist with developing ACE MER frameworks.

Additional Tools and Resources

Glasgow Work Programme on Action for Climate Empowerment and its Action Plan

UNFCCC. (2022). *Decision 23/CP.27 Action Plan under the Glasgow Work Programme on Action for Climate Empowerment.*

UNFCCC. (2021). *Decision 18/CP.26 Glasgow Work Programme on Action for Climate Empowerment* (pp. 17-26).

United Nations (2015). *Transforming our World: The 2030 Agenda for Sustainable Development. United Nations: New York.*

Monitoring, Evaluating, and Reporting of Action for Climate Empowerment

The MECCE Project. (2023). *Assessing Implementation of Quality ACE: Monitoring, Evaluation, and Reporting in the Glasgow Work Programme on ACE, and its Action Plan.*

UNESCO. (2020). *Integrating Action for Climate Empowerment into Nationally Determined Contributions: A Short Guide for Countries*.

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UNESCO and UNFCCC. (2016). *Action for Climate Empowerment Guidelines for Accelerating Solutions through Education, Training and Public Awareness*.

MECCE Project. (n.d.). *Interactive Data Platform*. The Project's Country Profiles, Global Indicators, and Case Studies data are accessible through this page.

Monitoring and Evaluation

Williams, E. (2022). *Rapid Evaluation.*

Rapid Research Evaluation and Appraisal Lab. (2020). *Resources.*

Martin, P. (2019). *The Logic Model: A Look at Outcomes and Indicators.*

United Nations Development Programme. (2009). *Handbook on Planning, Monitoring And Evaluating for Development Results.* New York, USA

W.K. Kellogg Foundation. (2004). *Evaluation Handbook.*

Rossi, P.H., Lipsey, M.W., & Freeman, H.E. (2004). *Evaluation: A Systematic Approach (7th Ed.).* Sage Publications, California, USA.

Centres for Disease Control. (n.d.). *A Framework for Program Evaluation.*

EvalCommunity. (n.d.). *Types of Evaluation*.

First Nations Development Institute. (n.d.). *Successful Evaluation: Creating SMART Goals and Objectives.*

Robert R. McCormick Foundation. (n.d.). *Program Evaluation Guide*.

World Bank Group, Independent Evaluation Group. (n.d.). *Evaluation Capacity Development: Monitoring and Evaluation – A Closer Look.*

Stakeholder Engagement Tools

Cooper, E. (2023). *For Better Community Engagement, Turn to the Community!* Consensus Building Institute.

World Resources Institute. (2015). Building Climate Equity: Creating a New Approach from the Ground up.

UNDP (2013). Overview of linkages between gender and climate change.

UN Joint Framework Initiative on Children, Youth and Climate Change. (2013). Youth in action on climate change: inspirations from around the world.

Haq et al., Stockholm Environment Institute (2008). Growing old in a changing climate: meeting the challenges of an ageing population and climate change: Involving the elderly in climate change policy making.

Community Tool Box. (n.d.). *Chapter 3, Section 14: What is a SWOT Analysis and Why Should You Use One?*

Seeds for Change. (n.d.). *Consensus Decision Making: A Short Guide*.

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McKenzie, M. (2021). Climate change education and communication in global review: tracking progress through national submissions to the UNFCCC Secretariat. *Environmental Education Research*, *27*(5), 631-651.

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Reid, A. (2019). Climate change education and research: possibilities and potentials versus problems and perils? *Environmental Education Research*, *25*(6), 767-790.

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MECCE
MONITORING AND EVALUATING CLIMATE COMMUNICATION AND EDUCATION PROJECT

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SUSTAINABILITY AND EDUCATION POLICY NETWORK

www.mecce.ca
@SEPNetwork
mecce.info@usask.ca

University of Saskatchewan

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