



# FROM COMMITMENT TO ACTION: INTEGRATING SUSTAINABLE DEVELOPMENT INTO NATIONAL EDUCATION PRIORITIES

A Practical Guide for Policymakers,  
Practitioners, and Researchers



Global Schools  
Program



SUSTAINABLE DEVELOPMENT  
SOLUTIONS NETWORK  
A GLOBAL INITIATIVE FOR THE UNITED NATIONS



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### **SDSN**

The UN Sustainable Development Solutions Network was set up in 2012 under the auspices of the U.N. Secretary-General. SDSN mobilizes global scientific and technological expertise to promote practical solutions for sustainable development, including the implementation of the Sustainable Development Goals (SDGs) and the Paris Climate Agreement.



### **Global Schools Program**

The Global Schools Program is an initiative of the SDSN. Global Schools develops the tools, resources, and programs to support schools and educators around the world. The vision of the program is to create a world where every primary and secondary school student is being equipped with the knowledge, values, and skills necessary for shaping a sustainable and prosperous world for all. Global Schools works internationally to support schools and educators with evidence-based training and localized classroom resources in order to integrate sustainable development into school curricula, operations, and activities.



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The SDSN pursues its mission by working with member institutions in countries around the world, organized into networks at the national and regional level. Each network focuses on distinct projects and priorities in line with their local contexts and challenges. To date, SDSN has approximately 60 regional and national networks and 1,700+ member institutions. These institutions translate the latest expertise in sustainable development into action through research, by launching solution-based initiatives, and by localizing and mobilizing support for the SDGs.

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## Message from Jeffrey Sachs



**Jeffrey D. Sachs**  
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**S**ustainable development is the great challenge of our time. Climate change is accelerating, threatening lives, livelihoods, and ecosystems globally. Communities around the world are still grappling with the health and economic impacts of the COVID-19 pandemic. Wars and violence are causing mass suffering and dislocations. And yet our technologies and tools to end poverty, hunger, and preventable diseases are more powerful than ever. The key to building the future we want lies with the world's young people, who will be the leaders of government, business, academia, and civil society in the years ahead. Our single most powerful investment is in the health and education of today's youth around the world — so that they can grow, develop, and gain technical skills and ethical orientations for a peaceful, prosperous, fair, and sustainable future.

In the years to 2030, educational access and educational quality for all young people should be our great priority. Education for Sustainable Development, ESD, will be key to empower young people with skills and values needed to achieve sustainable development.

As the President of the UN Sustainable Development Solutions Network (SDSN), I am very excited to present this toolkit, which provides a detailed methodology to carry out a comprehensive needs assessment of education policy and curriculum to create meaningful ESD curriculum tailored to the needs of each region and community.

We at SDSN are deeply grateful to Siemens Gamesa Renewable Energy for their generous support. SDSN is also deeply thankful to all the educators, administrators, and students who continue to push for transformative education and sustainable development all over the world.

# Acronyms and Definitions

## **Sustainable Development Goals (SDGs):**

The SDGs are targets for global sustainable development adopted in 2015. The 17 SDGs address issues related to poverty, hunger, health, education, energy, work, industry, inequalities, cities, consumption, climate, ocean life, ecosystems, peace, and partnerships. Achieving these goals requires a profound transformation in the way we live, think, and act. The role of education in achieving all of the SDGs is given heightened emphasis (UNESCO, 2020).

**Transformative Education:** Transformative education involves teaching and learning that motivates and empowers learners to make informed decisions and act at the individual, community, and global levels. With a focus on sustainability and global citizenship, transformative education implies ensuring that curriculum, pedagogy, learning materials, schools, and learning environments are meaningful for the social, political, economic, cultural, and environmental contexts. Transformative education puts in place experiential and explorative learning that involves “head, heart, and hand” through cognitive, socio-emotional, and behavioral dimensions (UNESCO, 2022a).

**Target 4.7:** Constitutes one of the objectives of SDG 4: quality education. Target 4.7 calls for national and local bodies to ensure that by 2030, all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through ESD and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture’s contribution to sustainable development (UNESCO & Education International, 2021).

## **Education for Sustainable Development (ESD):**

ESD is an integral element of SDG Target 4.7. It empowers learners of all ages with the knowledge, skills, values, and agency to make informed decisions and take individual and collective action to change society and care for the planet. ESD is a lifelong learning process and an integral part of quality education. It enhances the cognitive, socio-emotional, and behavioral dimensions of learning and encompasses learning content and outcomes, pedagogy and the learning environment itself (UNESCO, 2023).

**Global Citizenship Education (GCE):** GCE is an educational approach that nurtures respect and solidarity in learners in order to build a sense of belonging to a common humanity. GCED equips learners with knowledge, skills, values, and behaviors to become responsible and active global citizens in building inclusive and peaceful societies (UNESCO, 2018).

**21<sup>st</sup> Century Skills:** Refer to an overarching concept regarding the knowledge, skills and attitudes citizens need to be able to fully participate in and contribute to the knowledge society. This need is mostly attributed to the changes in society, and more particularly, to the rapid development of technology and its impact on the way people live, work and learn (UNESCO International Bureau of Education, 2013).

**Curriculum:** Curriculum represents a systematic and intended packaging of competencies (i.e. knowledge, skills and attitudes that are underpinned by values) that learners should acquire through organized learning experiences both in formal and non-formal settings (UNESCO International Bureau of Education, 2015).

**Intended curriculum:** A set of formal documents which specify what the relevant national education authorities and society expect that students will learn at school in terms of knowledge, understanding, skills, values, and attitudes to be acquired and developed, and how the outcomes of the teaching and learning process will be assessed (UNESCO International Bureau of Education, 2013).

**Implemented curriculum:** Involves the actual teaching and learning activities taking place in schools through interaction between learners and teachers as well as among learners; that is how the intended curriculum is translated into practice and actually delivered. Also defined as the ‘curriculum in action’ or the ‘taught curriculum’ (UNESCO International Bureau of Education, 2013).

**Attained curriculum:** Comprises the knowledge, understanding, skills and attitudes that learners actually acquire as a result of teaching and learning. It can be assessed through different means and/or demonstrated in practice, and it may also differ from the intended and the implemented curriculum (UNESCO International Bureau of Education, 2013).

**Competencies:** Defined as the sum of skills (basic and new basic skills) needed to live in a contemporary knowledge society (UNESCO International Bureau of Education, 2013). Some of the ESD competencies include collaboration, critical thinking, self-awareness, and integrated problem solving.

**Learning Outcomes:** The measurable skills, abilities, knowledge, or values that students should be able to demonstrate as a result of completing a course or a project are referred to as learning outcomes. They are student-centered rather than teacher-centered in the sense that they describe what students will do rather than what the instructor will teach (University of South Carolina, n.d.).

**Environment:** Conceptual category that refers to holistic notions of physical and human dimensions of the environment and the processes and impact of interactions within it. ESD acknowledges the interrelatedness of environmental challenges in a complex mix of social and economic issues, seeking to empower learners to think critically and make informed actions toward environmental integrity and justice (UNESCO, 2020).

**Economy:** Conceptual category that refers to a complex and multidimensional system of relationships pertaining to SDG 8 *Decent Work and Economic Growth*; SDG 8 includes the production, consumption, distribution, and exchange of goods, of which inclusive and sustainable means of continued growth and employment are imperative (UNDESA, 2023). ESD promotes shared and circular views of the economy as alternatives to unsustainable production and consumer-heavy societies through encouraging learners to explore sufficiency, fairness, and solidarity in the economy (UNESCO, 2020).

**Society:** Conceptual category that refers to society envisioned as human arrangements where every individual has an active role to play, based on the fundamental values of equity, equality, social justice, human rights, freedoms, tolerance, and diversity (UNESCO, 2021b). ESD is recognized as a process of societal transformation, equipping learners with skills, knowledge, and attitudes towards advocating for a just and sustainable society for future generations (UNESCO, 2020).

**Governance:** Conceptual category that broadly refers to the culture and institutional environment in which citizens and stakeholders interact among themselves and participate in public affairs, inclusive of processes designed to ensure accountability, transparency, responsiveness, rule of law, stability, equity and inclusiveness, and empowerment (UNESCO International Bureau of Education, 2015). Governance relating to ESD implicates institutions, particularly learning institutions, in ensuring their governance processes align with sustainable development principles and encouraging collaborative governance among diverse stakeholders (UNESCO, 2020).



# Executive Summary

Given the scale and intensity of global challenges facing future generations, policymakers have a responsibility to transform national education systems in order to better prepare children for such a future. Education for Sustainable Development (ESD) ensures that learners of all ages are equipped with the values, knowledge, attitudes, and skills to shape communities that can not only withstand future challenges and shocks, but also thrive in the global economy. The purpose of this guide is to provide policymakers, practitioners, and researchers working in the field of education with a detailed, practical, and evidence-based methodology for integrating ESD into national educational strategies and curricula. The step-by-step guidance was developed in close consultation with several leading academics and practitioners in the field of education, and empirically tested in a series of pilot studies in Ghana, Turkey, and Morocco.<sup>1</sup> The guide provides readers with a toolkit that includes designing an ESD Curriculum Framework, policy and curriculum analysis, innovative lesson design, detailed evaluation, and a roadmap for efficiently and rapidly scaling up ESD across the national education system.

## Rationale

Research shows that ESD, and its core pedagogical features, can be highly effective tools for enhancing educational outcomes, while also supporting social and environmental objectives (Ardoin et al., 2018). These findings suggest that ESD offers a win-win strategy for governments seeking to prioritize sustainability while also improving their national educational systems. And yet, according to studies by GERM and UNESCO, at this point in time ESD has been largely absent from the K-12 education landscape in most countries around the world (UNESCO, 2016; UNESCO, 2021a). This is a missed opportunity for learners, countries, and the 2030 Agenda.

Given the myriad of potential benefits offered by ESD, its integration into national education systems should be a priority for policymakers. However, the main challenge often lies in the fact that within most countries, national-level curriculum revisions can often take up to a decade to complete, and proposed changes are often extremely slow in reaching classrooms.

Thankfully, experiences from the field have shown that an alternative and potentially more effective approach is available to policymakers seeking to rapidly integrate ESD into educational priorities. Instead of relying on national-level curriculum overhaul, policymakers can build on existing curriculum to scale up ESD efforts. This strategy not only likely increase the speed of integration, but more importantly, it could help ground ESD interventions in local realities, thereby potentially maximizing their relevance and suitability for local actors (i.e. teachers and schools).<sup>2</sup>

With this in mind, the steps presented in this guide aim to provide policymakers and practitioners with the necessary analytical frameworks and tools to help develop evidence-based and locally relevant ESD interventions, and to embed them within existing national curriculum for all grades and subject areas. The guide is divided into seven major subsections:

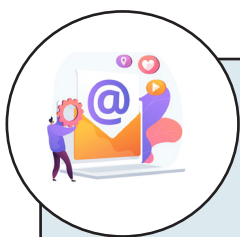
<sup>1</sup>This methodology was developed and tested following expert consultations with leading ESD researchers throughout the world, including Professors Oren Pizmony-Levy (Columbia University), Fernando Reimers (Harvard University), Alan Reid (Monash University), Felisa Tibbitts (Utrecht University), Andy Ofori-Birikorang, (University of Education, Winneba), Mustafa Öztürk (Hacettepe University), and Abdelkrim Marzouk (Al-Akhawayn University) - among others.

<sup>2</sup>Global Schools believes that state-of-the-art ESD should (a) be adapted to local geographical, political, social, and cultural realities; (2) be focused on all dimensions of sustainability, including environmental, social, and economic; (c) encompass all domains of learning, including cognitive, socio-emotional, and behavioral; and (d) draw on innovative pedagogies and experiential learning methods.

## Sections of the Toolkit



Ultimately the authors hope this guide can support Ministries of Education (MoEs) in identifying efficient, effective, and locally relevant approaches to scale ESD in interventions in the classroom and across their national education systems.



Stakeholders interested in using this guide are encouraged to contact Global Schools ([globalschools@unsdsn.org](mailto:globalschools@unsdsn.org)) for further guidance and potential collaboration opportunities. We are also keen to hear your feedback regarding our proposed frameworks and tools. Our aim is to consistently improve and update our methodology in future iterations of this guide, based on your feedback.

# CHAPTER 01

## INTRODUCTION



# 1. Education for Sustainable Development

## 1.1 What is education for sustainable development

In the face of today's challenges, the world needs responsible and committed citizens to find viable and sustainable solutions over time. Through education, these personal transformations can also lead to broader societal changes that create a more sustainable, peaceful, and just world for all (UNESCO & Education International, 2021). ESD is an essential framework to attain this goal.

ESD aims to empower learners to resolve global challenges through transformative action. It focuses on promoting environmental integrity, economic viability, cultural diversity, and a just society (UNESCO, 2014).

As such, its inclusion in national education policies, curricula, teacher education, and student assessment are indicators of progress toward achieving Sustainable Development Target 4.7 (UNESCO, 2022). The 184 Member States that adopted the Education 2030 Framework for Action (WEF, 2015) have agreed to promote ESD and Global Citizenship Education (GCED) in their education systems. Yet, according to a recent UNESCO survey (UNESCO, 2021a), ESD is largely absent from the K-12 education landscape in most countries around the world. For that reason, some priority areas to address this gap are advancing policy, promoting an inclusive curriculum, and capacity building for educators (UNESCO, 2014).

### 1.1.1 ESD in national laws and policy

Many Ministries of Education (MoEs) have committed to aligning their curriculum to ESD (UNESCO, 2022b). Despite an international push for this type of education, many declarations on ESD and proceedings at international summits have not been adopted at the regional and local levels (Martin et al, 2013 as cited in Hume & Barry, 2015). This is partially due to the fact that most political systems themselves are unable to move towards sustainable practices.

Following the UNESCO decade of action on ESD, 80% of countries reported appointing an ESD focal point and 50% of countries had established a national coordination body (UNESCO, 2014 as cited in Didham & Ofei-Manu, 2018). Additionally, 66% of 70 reporting countries in the UNESCO 2013 survey reported having an ESD plan and 50% indicated it was in their policies (Didham & Ofei-Manu, 2018).

However, oftentimes national mandates on ESD in Sustainable Development plans do not trickle-down and integrate into education policy to be implemented. ESD policies are often created as a standalone policy isolated from decisions such as educational planning, teacher training, and budgeting (Benavot, 2014).

Based on reports of 75 nation-states for the period 2017-2020 (UNESCO, 2022), themes related to *learning to live together* (cultural diversity and tolerance, gender equality, human rights and peace) are more often reflected in laws and policies than those related to *learning to live sustainably* (climate change education, environmental sustainability, human survival and well-being, and sustainable consumption and production).

Thus, the challenge of including ESD in policy and laws is urgent. For example, a UNESCO study found that 90% of 50 countries studied have laws and policies that include climate change related to primary and secondary education, but only 39% have national laws and strategies that can support implementation (UNESCO, 2022).



### 1.1.2 ESD in curriculum

Promoting curriculum on ESD topics is considered to be a key pillar of ESD integration (UNESCO, 2017), as curriculum influences students' learning outcomes. Benavot (2014) asserts that ESD policies gain legitimacy only if they are tied to national education priorities.

Re-designing curricula is not only about incorporating new knowledge-based topics, but also about incorporating structures and activity design that improve learning outcomes. Within curriculum documents, Amadio (2013) also found an emphasis on ESD skills and competencies as well as an emphasis on student-centered approaches and collaboration. However, because ESD also emphasizes frameworks that are beyond traditional subject-based learning, such as creativity, problem-solving, and critical thinking, policy makers are faced with additional challenges for integrating it in their curriculum (Amadio, 2013).

Furthermore, ESD combines cognitive, value-based, and behavioral aspects of learning. However, inclusion of the socio-emotional learning dimension, seen as critical for ESD, was found to be rare in a UNESCO study of primary and secondary curricula including 50 countries (UNESCO, 2022).

A study that examined national laws, policies, and intended curriculum pertaining to formal basic education, found that there is a declining emphasis on the social and behavioral dimensions while the focus on the cognitive dimension increases in upper education levels. (Educational content up close, UNESCO, 2019).

Since ESD is multifaceted it cannot be integrated as a stand-alone or additional subject (Hume and Berry, 2015). Despite an international push for this type of education, many regional and local governments are still unable to promote ESD integration, often limiting it to a half-hearted awareness raising campaign with limited engagement rather than a transformational education strategy (Martin et al, 2013 as cited in Hume & Barry, 2015). A UNESCO study analyzing 100 countries' national curricula found that only 53% of curriculum referenced climate change at all, which is a critical component of the environmental dimension of ESD (UNESCO, 2021).



### 1.2.3 ESD in teacher capacity and pedagogy

Explicitly addressing ESD in policy and curriculum documents is a meaningful step; however, properly implementing new frameworks requires resources to develop teacher capacity and expertise in new pedagogical approaches (Bourn et al., 2017). Studies by the World Bank and UNICEF in Eastern Europe and Sub-Saharan Africa on positive developments in curriculum showed that reforms did not change classroom practices (Amadio, 2013). This reveals the importance of ensuring teachers receive adequate training on new classroom practices that support the implementation of new education policies and curriculum.

A study across 18 countries on the learning impacts of ESD revealed that “pedagogies have had a stronger transformative impact on primary and secondary education than the sustainability content” (Laurie et al., 2016). Unfortunately, pre-service training and opportunities for teachers to enhance their skills to deliver quality transformative education are lacking. According to the Global Education Monitoring Report, only 8% of 66 countries surveyed integrated sustainable development in teacher education in 2013 (UNESCO, 2016). Additionally, for the countries that do have in-service training or teacher professional development on Education 2030, it is mostly focused on a specific component of ESD and not developed in an interdisciplinary and holistic way across all themes and all aspects of teacher education (Bourn et al., 2017).

In a global teachers’ survey conducted in 2021 of 58,000 respondents, UNESCO found that teachers are interested in teaching ESD; however, teachers say that lack of curriculum coverage of ESD and GCED is the most profound system-level barrier to teaching ESD and GCED themes. In the classroom itself, teachers lack the education resources and support to implement ESD in an effective way and state that training opportunities do not sufficiently cover issues such as climate change. When it comes to skills and assessment, teachers are more confident in teaching cognitive skills related to ESD, rather than socio-emotional and behavioral skills that are seen as essential to achieving the 2030 Agenda. The survey also revealed that 40% of teachers cannot assess students ability to act in line with ESD (behavioral dimension) and 33% cannot assess interdisciplinary topics in ESD. This reveals the need to re-think pedagogical practices in teacher training as well as in curriculum. New ESD policies should address how teachers are implementing ESD in the classroom (UNESCO & Education International, 2021).

Teacher agency is also considered to be an important factor in the achievement of social change through education. Beyond knowledge and expertise on how to teach Target 4.7, mandates that allow teachers the individual autonomy to make the national curriculum more local can be effective (Didham & Ofei-Manu, 2018). Policy and curriculum can support teachers, or can prevent teachers from teaching ESD due to the curriculum being too crowded and teachers not having time to implement new approaches in the classroom. While carrying out the analyses presented in this toolkit, the intersection of teacher training, students assessment, national policy, and curriculum should be kept in mind.



## 2. Presentation of the Toolkit



### 2.1 Who is this toolkit for?

This toolkit is intended for policymakers, researchers, practitioners, and curriculum developers, either working inside the MoE or in close partnership with it. The toolkit is structured in such a way that its successful implementation will be largely dependent on obtaining data, resources, and access, which is typically only available to the MoE. While there are exceptions to this rule, the role of the ministry nevertheless remains crucial for the large-scale implementation of recommendations which may likely be issued by the researchers at the conclusion of this project<sup>3</sup>.

<sup>3</sup> Please note: This guide is open for all to use. However, if you are a research-focused NGO or foundation, academic center, Ministry of Education or other government body, and you would like to engage in a formal partnership with SDSN so that we can endorse and promote your research outputs, please email: [globalschools@unsdsn.org](mailto:globalschools@unsdsn.org)

### 2.1.1 Purpose of the analysis and desired outcomes

Education policy documents, national curriculum frameworks, and textbooks will be analyzed to determine the ESD topics and competencies that they contain. Policy and curriculum mapping and a needs assessment will be conducted. The findings can be used to:



Develop new curricula and lesson plans



Design programmatic interventions to support ESD a into national priorities



Make policy recommendations to Ministries of Education and the like

## 2.1.2 How should practitioners, ministries, or researchers use this toolkit?

This toolkit describes an approach to analyze national education policy and curriculum, specifically for sustainable development themes and priorities. It is recommended that those interested in applying this methodology read through all sections of the toolkit before finalizing an approach.

Before starting this project, stakeholders should ensure that the appropriate resources can be allocated to the project. In addition, stakeholders should note what types of curriculum are currently under review in their local context, and what conceptual framework is appropriately in line with national priorities. All of these steps will be addressed in detail in later sections of the toolkit.

## 2.2 Piloting in Ghana, Morocco, and Turkey

The toolkit and the corresponding methodology is based on the lessons learned from an 18-month pilot program in Morocco, Ghana, and Turkey, with partners from the Mohammed VI Foundation for Environmental Protection (Morocco), the Hassan II International Environmental Training Center (Morocco), Al Akhawayn University (Morocco), Hacettepe University (Turkey), the University of Education (Ghana), and the Millennium Promise Alliance, Inc. (Ghana). The program was led by the Global Schools Secretariat and advised by leading education experts<sup>4</sup> from Monash, Harvard and Columbia universities. Each country team in Ghana<sup>5</sup>, Morocco<sup>6</sup>, and Turkey<sup>7</sup> was led by a local research director and their respective research teams.

During the 18-month pilot, 50+ researchers worked closely with MoEs and/or other institutions to analyze national policy and curriculum, with the overall goal to create interventions that would integrate ESD into national education priorities and strategies. The pilot was conducted in 4 separate languages, and involved 80+ stakeholders on Advisory Committees, including representatives from various teacher unions, government agencies, local councils, civil society organizations, universities, and businesses.

### 2.2.1 Summary of process

The Global Schools Program's (GSP) research pilot comprised six phases. At the beginning of each phase, the GSP shared instructions and hosted calls with each country's research director to facilitate cross-communication and knowledge-sharing. This allowed all research teams to provide input on all the methodological documents via a bottom-up process. Each research team in Ghana, Morocco, and Turkey mapped sustainable development competencies against the country's basic education laws, curriculum framework, and subject-specific curriculum for primary and secondary education. This exercise aimed to create three preliminary reports that mapped the concepts of sustainable development against national policies, laws, and curriculum textbooks. Research teams then analyzed the importance and relevance of ESD within the overall national policy architecture.

Based on the mapping and needs assessments carried out, teams drafted a series of sample lesson plans, following a set of defined guidelines. In some cases, these lessons were tested and evaluated in a classroom setting. This included the careful monitoring and evaluation of educators and students in their engagement with the lesson plans through a series of specialized tests, quizzes, and surveys, in order to collect and evaluate the data across four key areas (student engagement, student learning, student behavior, and teacher satisfaction).

After the curriculum piloting, research teams drafted reports outlining the main findings and conclusions. For more details on the methodology of the pilots, the three country reports for Ghana, Morocco, and Turkey, as well as an overall summary report can be found [on the Global Schools website](#).

<sup>4</sup> Dr. Felisa Tibbitts, Dr. Alan Reid, and Dr. Oren Pizmony-Levy

<sup>5</sup> Chief Nathaniel Ebo Nsarko (Research Director), Professor Andy Ofori-Birikorang, Ph.D., Professor Samuel Abeiku Hayford, Ph.D., Professor Dandy George Dampson, Ph.D., Professor Ernest Akwasi Amponsah, Ph.D., Christiana Hammond, Ph.D., Mavis Amo-Mensah, Ph.D., and Richardson Addai-Mununkum, Ph.D.

<sup>6</sup> Dr. Abdelkrim Marzouk Ph.D (Research Director), Mrs. Meryem Khodari.

<sup>7</sup> Dr. Mustafa Öztürk (Research Director), Aysin Albayrak-Sarı, Ph.D., Hacettepe University, Turkey; Abdullah Bağcı, Ph.D., Hacettepe University, Turkey; Seçil Dayıoğlu-Öcal, Ph.D., Hacettepe University, Turkey; Burtay Hatice İnce, Ph.D., Gazi University, Turkey; Neşe Soysal, Ph.D., University College London, UK.

### 2.2.3 Discussion of findings



#### Ghana

Researchers from Ghana conducted a situational analysis to determine the connectedness of Ghana's educational policies, legal documents, and curriculum to Agenda 2030. Following a research framework and instruments provided by the GSP, seven Ghanaian educational policy documents together with twenty K-6 curriculum documents were analyzed to highlight gaps and explore synergies between the content of these documents and Agenda 2030 learning outcomes.

For their analysis, the researchers purposely selected the seven most relevant and current key education policies, planning documents, and laws in Ghana. Analysis was delimited to the K-6 curriculum as the national council for curriculum assessment (NaCCA) had yet to finish reviewing the curriculum for grades 7-12. Policy documents were reviewed and coded relative to the ESD indicators using keywords that emerged from the data.

The results from the GSP research and analysis led to a recommendation for a review of documents by the Ghanaian Ministry of Education and all other relevant agencies. Specifically, as a result of the research, a recommendation was made to conduct a revision of the following acts and policies to ensure they address SDGs more comprehensively: the Education Act (Act 778), the Inclusive Education Policy, ICT for Accelerated Development, and the National Science Technology and Innovation Policy (Ofori-Birikorang et al., 2021).



#### Turkey

The Turkish research team analyzed 476 pages of education policy documents and 1,253 pages of curriculum documents spanning 6 academic disciplines. This encompassed 23 subject areas in total across elementary, middle, and high school. The research team concluded that, within Turkey's national education laws and policies, concepts of sustainable development and 21st-century skills were more prevalent than global citizenship education (GCE) frameworks. The research also revealed that UNESCO ESD Competencies such as collaboration, critical thinking, and self-awareness had more direct references in Turkey's education policies than other competencies (Öztürk, 2021).

Data from the national curriculum mapping and analysis revealed that science, followed by social studies and geography, placed greater emphasis on sustainable development. Specifically, the Turkish primary and secondary curriculum emphasizes: healthy lives and well-being for all ages (SDG 3); inclusive, safe, resilient, and sustainable cities and human settlements (SDG 11); and sustainable and responsible consumption and production patterns (SDG 12). Another important conclusion was that the lower secondary curriculum contained the most SDG references, followed by secondary school and elementary school, respectively (Öztürk, 2021). Regarding gaps in addressing sustainable development in the curriculum, researchers concluded that SDG 5: Gender Equality and SDG 13: Climate Action fell short.

The pilot revealed that the Turkish national curriculum and education policies have thus far promoted significant steps in incorporating ESD/GCE competencies and content. However, progress can be made in closing the current gaps.



## Morocco

The Moroccan research team also conducted a policy and curriculum analysis. First, the country team conducted a literature review and sampled sixteen articles to understand how the term “21st-century skills” was defined, with the goal of understanding how these skills can be better adapted and recognized across Morocco. During the policy analysis, Morocco’s country team found parallels between the aims of the SDGs and Moroccan policy papers, specifically observing a strong link between GCE and national priorities (Marzouk and Khodari, 2021). For example, the *National Charter for Education and Training* prioritizes sustainable development nationally.

Furthermore, Morocco’s quantitative curriculum analysis revealed that SDG references vary depending on the subject area. ESD concepts and the 17 SDGs are presented inconsistently throughout the different levels of the education system, with varying degrees across disciplines. For example, primary education science textbooks contain more SDG-related content than any other material at that level. Another significant finding revealed that SDG content varied depending on the lesson language (Marzouk and Khodari, 2021).

After the mapping and Advisory Committee formation stage, the Moroccan team developed, tested, and evaluated twelve sustainable development courses that appropriately addressed SDGs within the national context. Lesson plans from the courses were administered to 12 schools, and pre- and post- evaluations were given to both students and facilitators. Evaluations found that, at all levels, students showed an increased understanding of the SDGs, developed a stronger interest in the and acquired new behavioral, social, and cognitive competencies. Additionally, teachers reported increased participation among their students (Marzouk and Khodari, 2021).

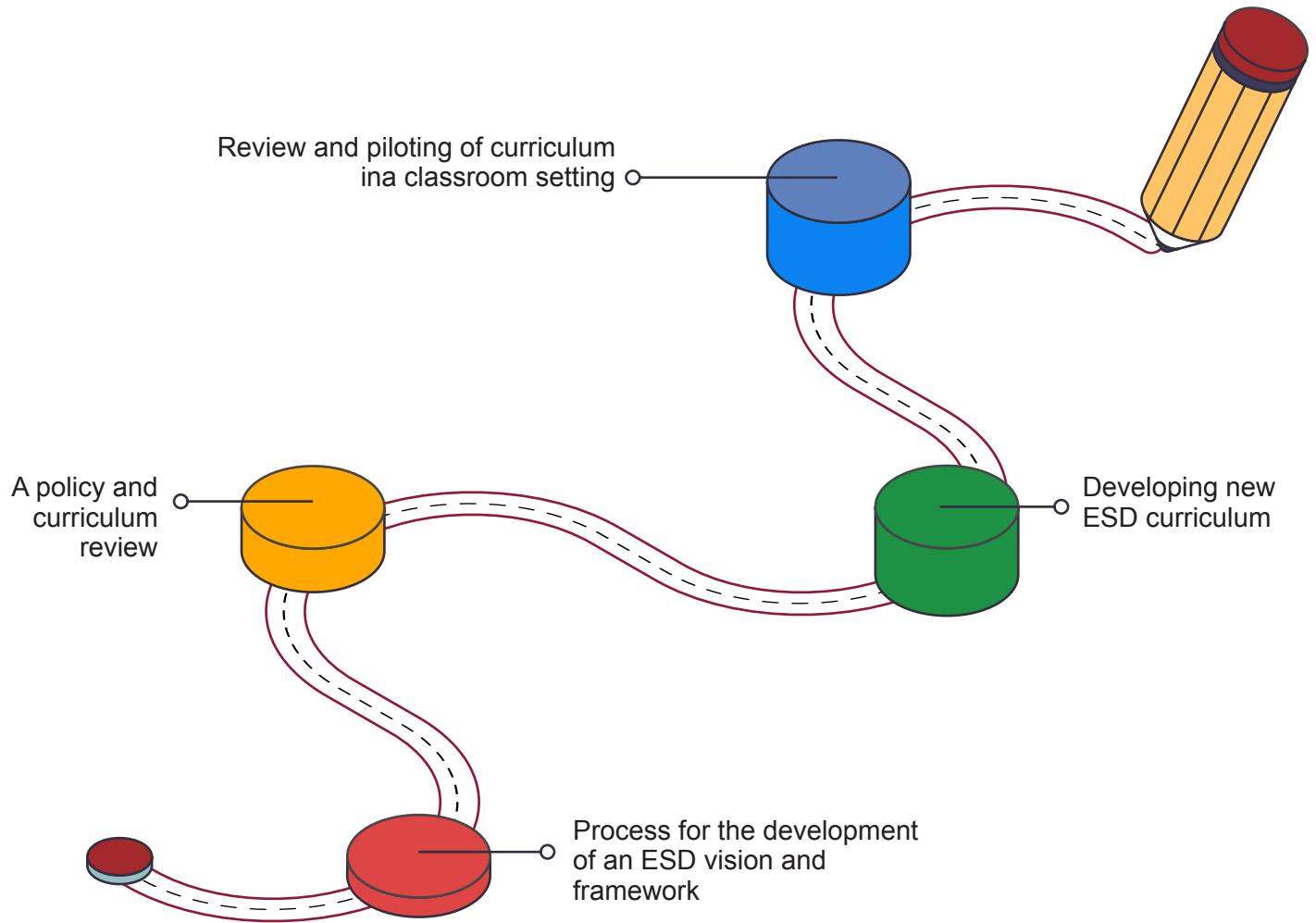




### 3. Structure of the toolkit

Based on the experiences of the pilots, Global Schools Secretariat has put together a toolkit to guide other policymakers and researchers on analyzing national education policy and curriculum. The remaining sections of the toolkit will present a detailed process for the development of an ESD vision

and framework, a policy and curriculum review, developing new ESD curriculum, and for the review and piloting of curriculum in a classroom setting. The following graphic demonstrates a roadmap for how to navigate the remainder of the document:



# CHAPTER 02

## PROJECT SET-UP





## Introduction

Before engaging in all of the steps laid-out in this toolkit, it is important to ensure that the managing organization of this project has the necessary resources and structures in place to carry out the work. Therefore, this section of the toolkit is written primarily for administrative departments of research groups that are managing the curriculum and policy mapping and review process. In some cases, this department will be hosted within the Ministry of Education (MoE) itself. This section does not need to be read by researchers or research assistants, unless they will also be involved in the management of the project.

All of the steps and procedures in the following sections should be considered with specific regard to the local and/or national context for carrying out the curriculum and policy analysis. While a standardized methodology, including keywords and indicators, is presented to carry out this analysis, at all stages, country teams should adapt and localize based on the country's individual needs and priorities. This chapter details the steps for:

Ensuring the appropriate human resources for the project

1



Gaining political support

2



Partnering with local organizations

3



4



Agreeing on logistics of curriculum review based on capacity

5



Solidifying broad alignment on final goals of curriculum revision

6



Setting-up an Advisory Committee

7



Agreeing on logistics of curriculum review based on capacity

8



Ensuring access to materials needed for the policy and curriculum review

9



Establishing timeline and ways of working

## 1. Before the Project Starts

There are a variety of elements that organizations should consider before conducting a policy/curriculum study on Education for Sustainable Development (ESD). These aspects, including human resources, political support, and potential partnerships, should be considered before committing to the following steps in this toolkit.

### 1.1 Human resources

Human resources are absolutely crucial for the successful implementation of the policy and curriculum review detailed in this toolkit. To be successful, organizations should seek to fill the following three roles:



Country Chair/  
Principal  
Investigator



Country  
Manager/Co-PI



Research  
Assistant(s)

**Firstly, institutions should appoint an appropriate Country Chair (CC)/Principal Investigator (PI)**, who should be a senior academic working in a related field, preferably with expertise in sustainable development and/or education. The CC will be responsible for the managerial set-up of the program, program oversight, and liaising with stakeholders.

**Secondly, a CM or Co-PI should be included in the managerial setup of this project.**

The Country Manager will be responsible for the day-to-day management of the program and the coordination of the researchers. This includes providing careful and detailed guidance to RAs; ensuring access to data for various phases; adapting the research methodology where necessary; identifying potential research challenges; and designing creative techniques to overcome them.

**Thirdly, it is important that all researchers involved** in the project already have some prior experience and exposure to the national curriculum and education policies and laws. It is also equally important that all researchers involved in the project receive adequate training in sustainable development frameworks. A list of free, online training courses on ESD is available in Annex 7. It is highly recommended that all researchers complete at least one ESD course before they begin their analyses. In most cases, the organization(s) leading this project will have already identified individuals at the institution that can fill these positions. If not, and the organization will seek to hire new individuals, a short summary of the job descriptions for the CC, CM, and RAs can be found in Annex 1.

## 1.2 Gaining political support

In cases where this analysis is not being directly carried out by the Ministry of Education (MoE), and policy links may be ambiguous, it is important for external institutions to ensure that they have support from key stakeholders within the country. In many countries, the national or local MoE, or equivalent, is a key partner in curriculum review. Some countries have a technical arm of the MoE that is specifically tasked with curriculum work. Therefore, it is highly advised to involve the local MoE, or equivalent, as a partner in the research process, given the entity's knowledge about curricular objectives.

Institutions external to the MoE can send a letter to the MoE, asking them to be a core partner in this project. The MoE can provide:

If possible, during the entire project, institutions external to the MoE should have direct and continuous contact with someone working in the curriculum development field within the MoE. This will promote open communication with the relevant government agency at all times, in order to share results. In this way, the MoE can feel more accountable for the research work and have an active part in leading the group.



Information on what subjects are currently under review and where the government might need technical input. This will be especially helpful when defining the scope of research and the conceptual framework, detailed in later sections of this toolkit



Access to curriculum resources, such as textbooks, policy documents, or education framework



Contacts for schools and master teachers that are already responsible for testing out new curriculum modules or new subjects in the classroom



### 1.3 Partnering with local organizations

Institutions hosting research teams (MoE or otherwise) will likely want to partner with outside organizations that are focused on education, climate action, research, or the like. Outside organizations can be civil society organizations, other government departments, teachers' unions, or coalitions that will bring value and support to the overall project goals.

One of the purposes of partnering could be to obtain financial or in-kind donations that will facilitate the technical aspects of the research work. During the Global Schools Pilot Projects, examples of beneficial partnerships have been: (1) a partnership with a local foundation to provide funding for additional staff for the project (2) a partnership with a civil society organization or teachers union with better access to schools and teachers' communities to pilot the new curriculum modules (3) a partnership with other university departments that can provide technical support.

Research teams can engage with partners with whom they've had a prior relationship, or they can carry out partnership scoping in the local community. Before approaching other organizations to partner with on this work, it is important to review the following questions:



What is the organization's prior experience with ESD, or related disciplines?



What are the roles and responsibilities of each organization in the partnership?



What value does this partnership bring to the project? Will the partner support with a donation, with disseminating project outcomes, with in-kind staff capacity, or with data analysis services? What value do you bring to the partner?



Do your overall goals for engaging in this project align?



### 1.4 Agreeing on logistics of curriculum review based on capacity

Now that the institution has recruited the necessary human resources, as well as established key partnerships with stakeholders, it is important for the entire team to have a broad sense of the logistical aspects of the curriculum review in order to ensure the success of the project.

First, institutions should take into consideration the curriculum reviews that are fast approaching at the national level. The institution should work to evaluate the purpose of analyzing policy/curriculum at this point in time based on the MoE’s objectives. Key questions to consider include:

- |   |  |  |  |
|---|--|--|--|
| <p><b>1</b></p> <p>What are the MoE’s current objectives when it comes to curriculum?</p> | <p><b>2</b></p> <p>What curriculum reviews are fast approaching at the national level?</p> | <p><b>3</b></p> <p>Which states/localities should be focused on for the curriculum mapping analysis?</p> | <p><b>4</b></p> <p>What subjects have never undergone curriculum review?</p> |
|---|--|--|--|

In this stage, the institution is encouraged to approach these questions from a logistical and human resource perspective. In later sections, the curriculum review will be further refined in an inclusive manner; however, it is important to manage expectations of what can be accomplished in a certain amount of time, based upon the curriculum reviews that are fast approaching. The CC leading this project should have a sense of the time and resources they are able to allocate to this work.

It is important to note that in this instance, the policy and curriculum analyses focus on the intended curriculum, which is defined as the specific, formal documents such as education policies, textbooks, curriculum frameworks, and associated assessments. Later sections of this toolkit will review and refine the conceptual framework, coding, and review methods for the policy and curriculum analyses across sustainable development, global citizenship, and associated domains.

### 1.5 Ensure broad alignment on final project goals

While it is too early to foresee the outcomes of the policy/curriculum mapping process and the corresponding analysis, all partners (including the research institution, ministry, and other stakeholders) should have a broad understanding of how the final results of the research can be used to inform future curriculum development and national level revisions.

Discussions should continuously be taking place on the relevance of the project to the local context, the ability to apply the research to practical interventions, and the overall outcomes that the institution desires to achieve through this work.

## 2. Bringing stakeholders together

Educational transformation may require system-wide changes, and some of the changes proposed after the policy and curriculum mapping may require reorienting the curriculum toward new competencies and learning outcomes, which

will have implications for many stakeholders, including policymakers, educators, parents, students, and more. Therefore, it is important to manage curriculum revision in an inclusive process.

### 2.1 Establish an Advisory Committee

It is suggested that the institution managing the project brings in a wide breadth of stakeholders in the form of an Advisory Committee. An Advisory Committee can provide new perspectives, underpinned by experiences, which may go unnoticed in desk research, potentially adding new outlooks and observations to our understanding of the curriculum and how it is executed. Working with a committee showcases the institution's commitment to inclusive decision-making processes, as well as nuanced, applied research.

The stakeholders on the Advisory committee, either implicitly or explicitly, represent a sector, group, or institution that is a critical player in the education system and can provide buy-in for the final curriculum strategy. Stakeholder groups can represent the government, civil society, academia, teachers' unions, universities responsible for teacher training, advocacy groups on the environment, parents' groups, or parents' unions. These individuals, and the sectors they represent, are more likely to support a new curriculum strategy developed in consultation with one another. In addition, committee members can become advocates and mobilize their constituencies to support new strategies.

It is suggested that the Advisory Committee is established before the work of the researchers begins. A first meeting should be held with the Advisory Committee to further refine an inclusive process of curriculum revision before the researchers begin their technical work.

#### 2.1.1. The role of the Advisory Committee

The Advisory Committee will have a defined role in order to support the curriculum revision process. The Advisory Committee will not be involved in

the technical review of the curriculum, nor will they make technical decisions included in the later sections on details such as the conceptual framework and keywords used for curriculum mapping.

In fact, the Advisory Committee will not have decision making and sign-off capacity. Rather, once the committee is established, its main role will be to:

1. Provide feedback after various stages of the research, including the strategic direction of the project;
2. Disseminate the results and advocate for the effective implementation of ESD in their respective sectors, and, more generally, with decision-makers.

More specifically, it is suggested that the Advisory Committee participates in four consultations during the project:

1. The Advisory Committee participates in an introductory, kick-off meeting at the beginning of the project;
2. The Advisory Committee participates in a follow-up consultative process after the policy/curriculum mapping is complete;
3. The Advisory Committee participates in a consultative meeting/process after the development of the ESD curriculum vision for the local context;
4. The Advisory Committee participates in a final consultation meeting after the new curriculum has been developed, piloted and revised.

Throughout the process, the Advisory committee will be responsible for disseminating outcomes of the different stages of the project and advocating for the adoption/implementation of ESD.



## 2.1.2 Steps to establish an Advisory Committee

In this toolkit, we have provided a step-by-step process, complemented by further resources in the Annexes, to support the set-up of an Advisory Committee.



**Review the Proposed Structure.** First, institutions can review the proposed composition for the Advisory Committee (See Annex 3) to gain a better understanding of its proposed structure. The composition can be adjusted based on the local context.

**Decide who will chair and manage the Advisory Committee.** Second, regardless of which institution is leading this project, it is suggested that the MoE chairs the committee, and be responsible for organizing and managing the Advisory Committee. In this way, the MoE is the focal point for managing the inclusive curriculum review, while the research institution is responsible for the technical aspects of the policy/curriculum mapping.

If the MoE does not have the capacity to manage the Advisory Committee, the CC at the research institution will be the lead focal-point for the management of the Advisory Committee. The CC will determine the agenda and manage the meetings, while the CM will be in charge of all operations and management of processes associated with the Advisory Committee, including regular communications, engagement, invitations, minutes, reporting, etc.

**Conduct Research on Potential Members.** Third, using the Committee Composition and the Nomination Criteria (see Annexes 2 and 3), institutions can begin selecting representatives to serve on the Advisory Committee. Please note, this list is not exhaustive, and institutions may choose their own additional and context-specific questions/criteria for selecting members. During this process, it is important to define general criteria that your team believes are an important and appropriate prerequisite for members of the Advisory Committee. Once a list has been compiled, it is important to come together with MoE representatives and other partners to review all potential nominees carefully.

**Establish the Terms of Reference (ToR) for the Advisory Committee.** Fourth, institutions should review and finalize the ToR for the Advisory Committee and its members (see an example in Annex 4). Institutions may choose to amend some parts of the template to fit their local priorities. When drafting the ToR, it is important to clarify at what points the Advisory Committee will be involved in a consultation process to give feedback on the different aspects of the curriculum review. We suggest that the Advisory Committee participates in one kick-off meeting, and three additional consultations throughout the process.

**Formally invite members to join.** Fifth, once all the key elements (ToRs, invitation letter, list of potential members) have been finalized, the institution may begin outreach and formally invite members to join the Advisory Committee. While waiting for responses from potential members to accept/reject the offer to join, begin simultaneously working on the agenda and logistics of the opening meeting. The opening meeting will be an opportunity for the institution and partners to formally introduce the project, explain the roles and responsibilities of the committee, and receive initial feedback from committee members on the proposed direction.

**Invite the Advisory Committee to a kick-off meeting.** The next step is to select a date for the opening meeting of the Advisory Committee. If the MoE is chairing the committee, as suggested, it is likely they will set the date of the meeting. They will also determine logistics (e.g. duration and teleconferencing arrangements). Institutions can support in finalizing a preliminary agenda for the meeting (see Annex 5). Once the agenda and date have been settled, an email can be sent to the entire committee sharing the ToRs, agenda, and other supplementary materials.

## 2.2 Manage curriculum revision in an inclusive manner

*There is no 'one size fits all' version of ESD. Political and socio-cultural realities and specific environmental and ecological challenges make a contextual grounding of ESD essential. That is why we need locally and nationally relevant interpretations of ESD and related forms of education. (UNESCO 2014a as cited in UNESCO, 2017, p.49)*

ESD curriculum touches on what is the most valuable knowledge to be taught, reflecting on the relationship between education and society, and thus it can be easily argued that, at every key point, ESD curriculum development efforts should be shared with stakeholders. Key stakeholders are those who have a vested interest in or who will be responsible for the implementation of the curriculum, usually those with direct links to schools. Some of these stakeholder groups may already be represented on the Advisory Committee; however, a wider stakeholder group with multiple representatives might be brought in at key points during the ESD curriculum visioning and development processes, including:

1. The Board of Education and the MoE (national level);
2. Educational authorities at the regional and district levels;
3. Teachers and teachers' unions;
4. Students and their families;
5. Community leaders;
6. Curriculum developers;
7. School headmasters and department heads;
8. Higher education teacher trainers and experts;
9. Indigenous leaders or leaders of specific ethnic groups;
10. NGOs engaged in ESD-related efforts;
11. Private sector representatives;
12. Donors.



One challenge in relation to ESD visioning and curriculum review is choosing which stakeholders to involve and how. Educational authorities may already be familiar with standard stakeholder groups, and invitations may naturally be extended to their leadership as well as other experts. The engagement of teachers, students, local governmental authorities, NGOs and others may help to ensure inclusive and multi-stakeholder involvement once the curriculum is ready to be put into action. If time and capacity allow, we recommend that a wider constituency – beyond the Advisory Committee – be exposed to the various consultations phases throughout this project.

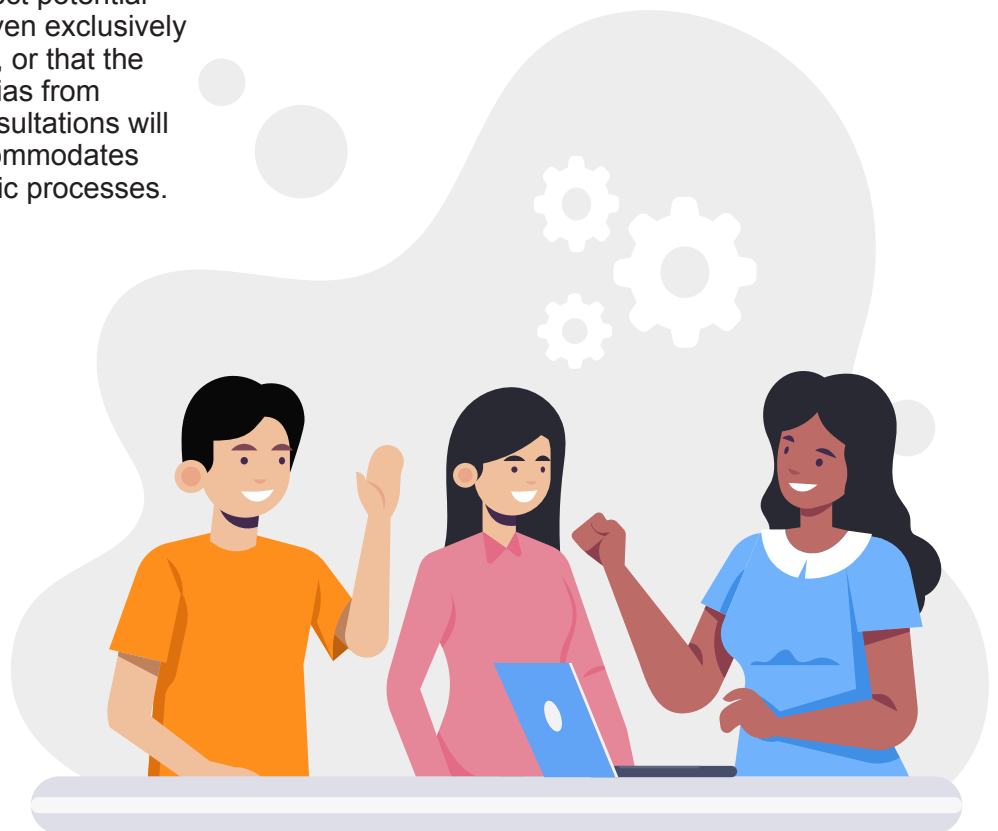
Moreover, leaders should include stakeholders that have not been present in earlier curriculum consultations – for example those coming from marginalized groups, such as persons with disabilities and indigenous people – and private sector representatives. Decisions will also need to be taken about how to meaningfully inform and potentially involve members of the general public in the review process.

Meaningful engagement in discussions with resulting adjustments will help to ensure that the project reflects the views and interests of a diverse set of stakeholders and that the ESD content can be easily communicated. Moreover, these inclusive processes may help to deflect potential criticisms that the reform is being driven exclusively by the government or a foreign entity, or that the program is imposing an ideological bias from above. Ongoing and transparent consultations will demonstrate that the ESD effort accommodates different views and reflects democratic processes.

A Phase 1 consultation process might take place at the conclusion of the policy review/curriculum mapping analysis. The report might be shared in a workshop that could also be used to present ESD and receive input at an early stage on the general plans for ESD in the schooling system. A Phase 2 input process could take place once the ESD Curriculum Framework has been drafted (The ESD Curriculum Framework will be detailed in *Chapter 3* and *Chapter 5* of this toolkit). A Phase 3 input process could take place after the curriculum has been developed, piloted, and revised.

For each of these potential phases of input, the leading institution for this work should be clear about the goals for each process, the documentation of input, potential new areas of collaboration with stakeholders, and the ways in which feedback will be applied to the ESD curriculum efforts.

Of course, the more widespread the use of stakeholders in consultative processes, the more labor-intensive and time consuming it will be to establish an ESD national curriculum strategy. In addition, there may not be an appetite amongst all stakeholders for the fine details of the new curriculum, such as specific lessons. The managing institution, in consultation with the Advisory Committee, will need to decide when and how to involve stakeholders.



### 3. Final preparations for the research

By this point in the process, the institution managing the project would have appointed or hired researchers to carry out the policy review/ curriculum mapping. Also, they would have established a working partnership with the MoE and become aware of the curriculum reviews that are fast approaching at the national level. They would also have a sense of the time and resources they are able to allocate for this project.

Furthermore, they would have received general input from the Advisory Committee on broad priorities for the curriculum revision. In addition, they would have made decisions on how wide-spread the consultative processes should be at each phase of the project, based on time, capacity, and resources available.

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#### 3.1 Ensure access to materials needed for the policy/curriculum review

At this stage, the institution should be preparing to carry out the technical phases of the research. During the policy and curriculum review, the research team will have to analyze policy documents as well as curriculum frameworks and/or textbooks.

While specific, technical decisions on conceptual frameworks for the analysis will be taken by the researchers in the next section, the institution should now be focused on determining what types of sources and/or documents will be used in the analysis. For example, during the policy analysis, the research team might choose to only review policy documents from the last ten years. Alternatively, they might choose to review the top five policy documents that have most affected the education sector. Additionally, some countries might have a framework on implementing sustainable development that would be relevant to education policy. During the curriculum analysis, the research team might choose to review curriculum frameworks. Alternatively, they might choose to review a textbook that is used in the country's national curriculum.

At this point, these decisions should be made broadly from a logistical perspective – how many documents and/or textbooks can be reviewed based on the institution's human resources and time to complete the project. Being familiar with the MoE's objectives will help teams refine expectations for the policy/curriculum review.

Secondly, the institution should seek to make the job of the researchers easier by ensuring documents are available. For example, some documents such as policies and broad curriculum frameworks are readily found and searchable on relevant government websites. In other cases, in a more decentralized system, the institution might choose to review individual textbooks. In either case, the institution needs to determine whether these resources are accessible online in pdfs, or if they exist as physical resources. If the institution managing this project is external to the MoE, it might be the case that they need to work directly with the MoE to gain access to documents needed for the policy and curriculum analysis. The managerial team should seek to gain access to any resources necessary so that the research team can begin the technical work, which is detailed in the next section.

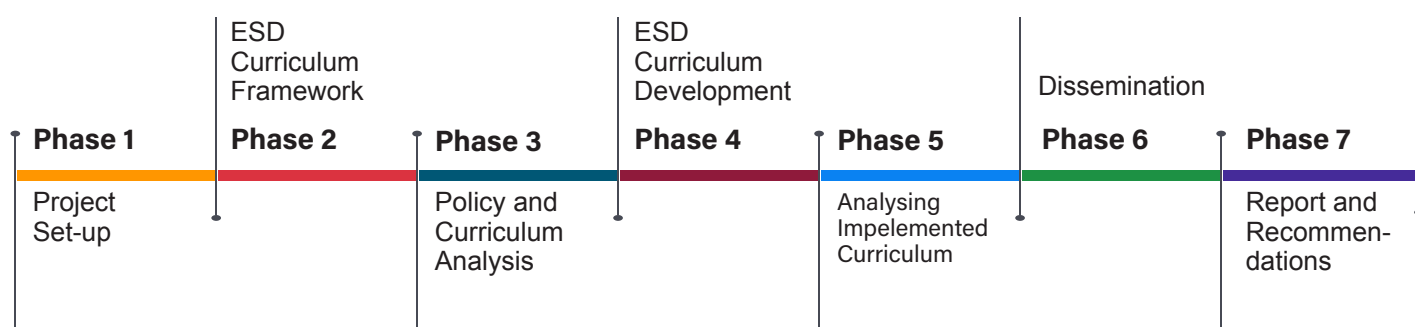
## 3.2 Agree on a timeline and way of working

### 3.2.1 Timeline

Finally, it is important for both the managerial and research teams to establish a timeline to complete the analysis. The timeline for the policy and curriculum analysis will depend on the scope of the analysis that is being carried out and the number of documents that need to be reviewed. Intuitively, researchers will need to allocate more time to the analysis if they are covering all grade levels and subjects, versus researchers that are focusing on one subject, such as the middle-grade science curriculum.

It is suggested that a minimum of twelve weeks be spent on the policy and curriculum analysis. This would include a rigorous review of national education laws, policies, subject curricula, syllabi, and official textbooks. It will be crucial to clearly identify, quantify, and carefully analyze correlations and gaps in the existence and integration of ESD into policy and curricula across grades and subject areas.

The exact methodology for analysis and coding structure can be found in chapter 4. A complete suggested timeline of the entire research project can be found in Annex 6.



### 3.2.2 Ways of working

Expectations should be established across the team on ways of working. These expectations should be clearly stated and communicated to the entire research team. The CM can consider the following key questions:

1. How often will the team meet, and in what capacity? What is the preferred method of communication between team members?
2. Does everyone understand the project timeline and deliverables expected?
3. Do the RAs clearly understand the purpose of the project as well as the methodology? Do they need to be provided with additional training? How should they ask for additional clarification?
4. How many RAs will review each textbook, policy document, and/or curriculum document?
5. Will RAs be divided up to analyze different documents based on their prior expertise?

## Annex 1: Sample job descriptions

Capacity	Description
Country Chair / PI	<ul style="list-style-type: none"> <li>● Country Chair (CC) / Principal Investigator (PI) <u>should</u> be a senior academic or practitioner working in a related field, preferably with expertise in sustainable development and/or education, with extensive experience managing research projects, and with strong links to the government.</li> <li>● The CC / PI has 3 main functions: <ul style="list-style-type: none"> <li>○ (1) <u>program setup</u> (e.g. mobilize resources; liaise with key stakeholders such as their university, Ministry of Education (MoE), and the Global Schools team to get the project up and running in time);</li> <li>○ (2) <u>program oversight</u> (work closely with the Co-I to ensure deadlines and quality standards are being met);</li> <li>○ (3) <u>stakeholder's liaison</u> (work closely with the MoE and serve as a spokesperson for the program throughout).</li> </ul> </li> <li>● The CC / PI should on average contribute <u>at least 2 hours per week</u> to this project. However, in some months, especially during the preparation phase, this number might be higher, while during the latter phases, this number might be much lower.</li> </ul>
Country Manager / Co-Investigator	<ul style="list-style-type: none"> <li>● Country Manager (CM) / Co-Investigator (Co-I) <b>must</b> hold a PhD in the field of education or a related discipline and have some experience managing research projects. The CM / Co-I <b>must</b> also be quite familiar with the country's primary and secondary curriculum and have some relevant past experience in this area.</li> <li>● The CM / Co-I has 2 main functions: <ul style="list-style-type: none"> <li>○ (1) <u>day-to-day management and coordination</u> (e.g. recruitment of researchers; attending / organizing meetings with the Global Schools secretariat, the CC / PI, the Research Assistants, the Ministry of Education, Advisory Committee; ensuring programmatic and procedural tasks are accomplished, deadlines are met, and the work is done with high quality).</li> <li>○ (2) <u>research application</u> (e.g. provide careful and detailed guidance to Research Assistants; ensure access to data for various phases; adapt the research methodology where necessary; identify potential research challenges and design creative techniques to overcome them, etc.).</li> </ul> </li> <li>● The CM / CO-I is expected to begin their work at the beginning of the implementation phase (at the very latest) and should on average contribute <b><u>at least 25 hours per week</u></b>.</li> </ul>
Research Assistant	<ul style="list-style-type: none"> <li>● Research Assistants (RAs) <b>must</b> hold a master's degree or equivalent in the field of education or a related discipline, and have some experience with applied <u>quantitative</u> and <u>qualitative</u> research.</li> <li>● RAs should have experience in curriculum design, with deep knowledge of the national curriculum setting.</li> <li>● The project should have at least <b><u>3 x part-time RAs</u></b> that can contribute on average <b><u>at least 20 hours per week</u></b>.</li> </ul>



## SAMPLE TERMS OF REFERENCE

<b>Position</b>	<b>Research Assistant</b>
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### Activities

Act. No.	Activity Title
1.1.	Reviewing current curricula of primary and secondary education levels in terms of ESD competencies
1.2.	Developing, implementing and evaluating lesson plans and educational materials to be used for primary and secondary classrooms

### Tasks and Duties (objectives and activities)

Responsible for all the studies, reviewing and reporting related to current curricula in terms of ESD competencies

Duties will include:

- 1) Analysis of existing curricula
- 2) Preparation of a report including assessment of current situation and recommendations to improve the current curricula
- 3) Developing lesson plans and educational materials to be used for primary and secondary school students
- 4) Implementing lesson plans and educational materials
- 5) Evaluating lesson plans and educational materials
- 6) Preparation of pre- and post-test documents for the evaluation phase
- 7) Working in close contact and reporting all relevant activities to the team leader during and after each phase

### Qualifications Required

#### Qualifications and Skills

- University degree in education with preferred emphasis in pedagogy and curriculum
- Excellent reporting skills
- Full computer literacy

#### General Professional Experience

- 5 years of general working experience

## Annex 2: Nomination criteria for the Advisory Committee

<b>Sector Leadership</b>	What is this person's experience with respect to the segment/sector they are being selected under? Are they considered a leader in their own sector? Why?
<b>Education Experience</b>	What is this person's experience with respect to ESD – either implicitly or explicitly? Are they known for roles/experiences/expertise associated with ESD or its key themes? Could their advice be valuable and add important insights into this debate?
<b>Networks</b>	Does this person represent a large network and/or organization? If so, how relevant is their network/organization to the project? Is their network/organization likely to be supportive of this project?
<b>Influence</b>	Does this person have influence/authority by virtue of their experience or position, within their organization/network or with other potential stakeholders? In other words, is their network/organization likely to listen to them and support ESD efforts?
<b>Capacity</b>	Does this person have the time, capacity and willingness to be a part of the Advisory Committee and the following projects? Is this person likely to actually be engaged with the process and serve as an effective advocate for ESD within their network and more widely?
<b>Diversity</b>	How does this person fit in with the Advisory Committee composition when additional factors are taken into consideration? Additional factors may include gender, age, regional, linguistic, and/or socio-economic diversity.

### Annex 3: Advisory Committee matrix

Sector/ Segment	Number of Representatives	Description/Breakdown
<b>Practice</b>	At least 5 members	The Advisory Committee should aim to have at least five members from the “practice” sector. This refers to teachers, departmental coordinators, and principals. There are several considerations to take into account, including private vs. public schools, STEM vs. humanities, primary vs. secondary, principal vs. teacher/department coordinator, etc. While the country team has some flexibility in determining the final composition, it is important that at least 50% of the “practice” segment be classroom teachers, and with at least one teaching STEM and one teaching humanities.
<b>Government</b>	At least 2 members	The Advisory Committee should aim to have at least two members from the “government” sector. This refers to researchers, department secretaries, managers, and/or ministers. While the country team has some flexibility in determining the final composition, it is important that at least one individual represents the Ministry of Education (MoE). Ideally, the institution will already be working in close partnership with the MoE. In addition, we also encourage the country teams to recruit at least one member from the Ministry of the Environment (or its national equivalent). However, institutions can also take into consideration other relevant agencies and ministries, including energy, youth & sports, planning, foreign affairs, etc. They may also consider members of national parliamentary committees on education or the environment. Please see an example from <a href="#">Ghana</a> .
<b>Civil Society</b>	At least 2 members	The Advisory Committee should aim to have at least two members from the “civil society” sector. While the country team has some flexibility in determining the final composition, it is important that at least one individual represents the environmental NGO sector, especially if they are working with schools and teachers. Advocacy groups on education and/or the environment would be good candidates for this category of the Advisory Committee.
<b>Academia</b>	At least 3 members	The Advisory Committee should aim to have at least three additional members from the “academia” sector. This refers to professors, deans, and researchers from universities, think tanks, and knowledge institutions. While the country team has some flexibility in determining the final composition, it is important that at least one person represents education/curriculum research, and at least one person represents environmental/sustainability research. In addition, university representatives could represent the pre-service teacher training sector, as they can provide important input on how teachers could be trained to implement new curriculum.
<b>Teachers and Parents Unions</b>	At least 2 Members	The Advisory Committee should also seek to include union representatives, including one from a teachers’ union and one from a parents’ union. It is suggested that there is at least one representative from each stakeholder group.
<b>Others</b>	At least 4 members	The institution has flexibility in determining the composition for the “others” segment of the Advisory Committee, especially in comparison to previous segments. Here, you may choose to invite student leaders, sustainability/ education philanthropists and foundations, directors of pre-service teacher training centers, managers of digital education platforms, other educational authorities at state/regional/district levels, community leaders, religious leaders, private sector representatives, representatives of indigenous or other ethnic groups, etc. However, the institution must ensure the individual’s background is relevant to the mandate of this project.

## Annex 4: Sample terms of reference (ToR)

### Advisory Committee

#### Background

The world came together in 2015 to adopt the 2030 Agenda for Sustainable Development, and the goals set out within it – the Sustainable Development Goals (SDGs). The SDGs are a plan of action for a better world, agreed to by all governments, to be achieved by 2030. This is because global challenges of extreme poverty, wealth inequality, conflict, and climate change will escalate quickly and dangerously if we do not urgently change course. The Sustainable Development Goals (SDGs) give us a globally agreed-upon plan to fight these challenges and foster a better world for future generations.

#### Target 4.7

To achieve the SDGs, it is critical that every individual acquires the sustainable development knowledge, global citizenship values, and 21st-century skills necessary to tackle the greatest challenges of our time and shape a sustainable future. Education is a crucial enabler for this transformation. In fact, Target 4.7 of the 2030 Agenda states *“by 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture’s contribution to sustainable development.”*

#### Country Institution

The **[insert name of host institution]** is convening a national committee to mobilize the leading voices in the field of education and sustainable development to support the implementation of ESD in primary and secondary education across the national education system.

#### Mission

Support the national implementation of ESD in primary and secondary education.

#### Strategy

The committee will:

1. Provide feedback on the ESD research outcomes and applications.
2. Provide strategic advice to the country team in their mission to research, implement, and scale ESD and SDGs in primary and secondary education.
3. Participate in relevant dissemination campaigns to advocate for the implementation of ESD at the national level, with a focus on primary and secondary education.

## Composition

The [insert country and/or state name] Advisory Committee is an advisory body composed of approximately twenty members. The members will be drawn from practice, academia, civil society, and government, including eminent advocates, experts, and policy-makers, with an extensive background in the field of education and/or sustainable development. The composition of the Advisory Committee will ensure diversity of representation and will provide balance in terms of geography, gender, age, sector, language, and thematic expertise.

## Core Responsibilities

All members of the Advisory Committee will act in a personal, honorary, and unpaid capacity. All members of the committee are expected to support the mission of the [insert name of country] Advisory Committee, as outlined by **section MISSION**. However, core operational responsibilities include:

1. Attending and contributing to Advisory Committee meetings held virtually approximately 4 times over the next 12 to 18 months.

## Commitment and Duration

All members of the task force are expected to commit at least twenty (20) hours a year. Members are expected to serve for at least 12 months.

## Optional responsibilities

All members of the task force are welcome to participate in additional activities, in line with the mission and strategy of the Advisory Committee, including:

1. Promoting specific campaigns for the implementation of ESD in primary and secondary education.
2. Promoting specific products and initiatives created by the country team in support of ESD.
3. Supporting in building strategic partnerships to strengthen efforts for the implementation of ESD in education.

## Nomination and appointment

Candidates can be self-nominated or nominated by others. Final selection and appointment are at the discretion of the [insert name of host institution].

## Annex 5: Sample agenda for Advisory Committee meeting

Here, you will find a preliminary sample agenda with a very basic description of roles, responsibilities, and priorities for the first Advisory Committee meeting. Institutions have the flexibility to change the agenda based on local needs.

- **Welcome**
  - The CC welcomes all Advisory Committee members.
  - The members are invited to introduce themselves and share their background.
- **Introduction**
  - The CC and the CM introduce the project.
  - The CC and CM introduce the Advisory Committee, its purpose, the ToRs, the expectations, etc.
- **Research: Policy/Curriculum Mapping**
  - The CC and members of the research team introduce the scope of the research project.
  - Following the presentation, the team will respond to questions/comments from the Advisory Committee, with the administrator taking note of all questions/recommendations/issues.
- **Next Steps**
  - The CC outlines the next step of the research process and explains the key deliverables.
  - The CC explains the role of the Advisory Committee as an advisory body, and outlines its importance for the research process, but also the implementation of the research and recommendations that follow the research.
  - The CM explains the next steps, i.e. when they will be in touch to:
    - Share the minutes of the meeting;
    - Share the results of the next research phase;
    - Share the date for the next National Committee meeting.
- **Conclusion**
  - Final words from the CC, thanking everyone and setting the stage for the next phase.



## Annex 6: Suggested Timeline

Phase	Description
<b>Phase 1</b> <i>Project Set-up</i>	<u>Approx. 6 weeks</u> Appoint/recruit the Country Chair, Country Manager, and Research Assistants. They are onboarded, officially inducted into the program, and given the necessary instructions, training, and tools to kick off phase 2 in their respective countries.
<b>Phase 2</b> <i>ESD Curriculum Framework</i>	<u>Approx. 3 weeks</u> In this phase, the Research Team has the opportunity to start developing their draft ESD Curriculum Framework, which will provide teams with a better understanding of ESD theoretical frameworks before starting the policy and curriculum analyses.
<b>Phase 3</b> <i>Policy and Curriculum Analysis</i>	<u>Approx. 12 weeks</u> Research teams are equipped with the tools to rigorously analyze their stated national primary and secondary educational laws, policies, subject curricula, syllabi, and official textbooks. They will clearly identify, quantify, and carefully analyze the correlations and gaps in integrating ESD into policy and within the curriculum of specific grades and subject areas, producing a ~20-page report.
<b>Phase 4</b> <i>ESD Curriculum Development</i>	<u>Approx. 8 weeks</u> Teams will use tools and resources provided to adapt or create a series of lesson plans based on latest sustainable development science and the insights gained from previous exercises
<b>Phase 5</b> <i>Analyzing Implemented Curriculum</i>	<u>Approx. 14 weeks</u> Teams will test the lessons in local schools to evaluate the cognitive, behavioral and socio-emotional effects of the sample lesson plans on learning outcomes within the classroom. The country teams will revise the lessons as necessary, based on the evaluation results.
<b>Phase 6</b> <i>Dissemination</i>	<u>Approx. 4 weeks</u> Teams will disseminate the outputs of the research through a series of presentations for the Advisory Committee and other stakeholders based on the results of the piloting.
<b>Phase 7</b> <i>Report with recommendations</i>	<u>Approx. 8 weeks</u> Teams draft and publish final reports which summarize the project, including objectives, methods, techniques, results, and discussion for each of the phases, which will be published officially and globally disseminated. The report will provide a series of recommendations for policymakers and curriculum designers at the ministry level.

## Annex 7: Suggested MOOCs for researchers

[Click here for a list of online training courses](#) for researchers on ESD, Global Citizenship, and 21st-Century Skills.

# CHAPTER 03

## ESD CURRICULUM FRAMEWORK



## Introduction

The Advisory Council and Research Team are in place. It is now time to start formulating a vision for ESD in the schooling system in preparation for the upcoming work of curriculum review and development. This section of the toolkit addresses technical tasks that the Advisory Committee, the Research Team, and other education actors might use in developing components of an ESD Curriculum Framework for the schooling system.

The primary tasks associated with this phase of work are:

1. Linking ESD with the general goals of education;
2. Understanding ESD definitions and conceptual frameworks;
3. Committing to core pedagogical and methodological approaches.

A holistic ESD Curriculum Framework will contain links with general educational aims, ESD vision and key competences<sup>8</sup>, and key pedagogies/ suggested teaching methodologies. Note that the elaboration of detailed learning outcomes, strategies for learner assessment and for infusing ESD within the existing curriculum, which should also be part of the ESD Curriculum Framework, will be developed in *Chapter 5*, following the curriculum mapping exercise.

The format for the presentation of an ESD Curriculum Framework is flexible, and educational authorities engaged in curriculum development may already have established templates for this purpose. The Research Team and/or Advisory Committee should check to see if there are any existing curriculum frameworks in the national or local context that might be emulated or adapted to include ESD components (e.g., global citizenship education framework).

The ESD Curriculum Framework should address all four conceptual categories of ESD (environment, economy, society, good governance), all three learning domains (cognitive, socio-emotional, and behavioral), local through global treatment of key themes, key SDG curriculum messaging, and ensure minimal, substantive ESD exposure to every student. Such a framework document would be a vision for ESD throughout the schooling system, one that would ensure the opportunity for every learner to receive quality ESD. This framework document could help to validate the development of a new curriculum and the ongoing review of courses, with immediate as well as longer-term perspectives. Below, *Box 1* presents a potential draft outline for the ESD Curriculum Framework document, with specific learning outcomes and a detailed curriculum strategy to be developed following the curriculum mapping.

This section of the toolkit will detail parts 1 to 3 of the ESD Curriculum Framework below. The remaining sections, parts 4 to 7, will be revisited after the policy and curriculum analysis, when researchers have more detailed information on the current state of ESD in their contexts.

While not all elements of the framework in *Box 1* can be completed without doing a full analysis of the curriculum (detailed in *Chapter 4*), it is important to build a full understanding of ESD, its relevance to national education priorities, and core approaches that should be infused in any new curriculum revision. The Research team will return to the ESD Curriculum Framework and continue working on the remaining sections after they have full knowledge of the state of ESD in their national/local contexts following the policy and curriculum analyses.

<sup>8</sup> Curriculum development processes contained in this handbook are oriented towards a competency-based approach to ESD, reflecting the notion that knowledge, skills and attitudes are all important aspects of learning and necessary for young people to develop capacities to apply ESD principles in their lives. Even if a national system does not consider itself competency-based, as long as learner outcomes fall across this range of domains, this resource will be relevant.



## Box 1. ESD Curriculum Framework (suggested draft outline)

1. Definition of ESD, conceptual categories (e.g., environment, economics, society, good governance), and learning domains (cognitive, socio-emotional, behavioral).
2. Links with national education aims.
3. Core pedagogical and methodological approaches.
4. Curriculum strategies (e.g., transversal, key subject carriers, separate subject, whole school).
5. Key ESD competences, by age/grade level.

### Key Competences

**Pre-primary & lower primary (ages 5-9)**

**Upper primary (ages 9-12)**

**Lower secondary (ages 12-15)**

**Upper secondary (ages 15+)**

Key Competences	Pre-primary & lower primary (ages 5-9)	Upper primary (ages 9-12)	Lower secondary (ages 12-15)	Upper secondary (ages 15+)
X				
X				
X				

6. ESD competencies translated into learning outcomes and themes according to pupil age and subject matter (depending upon curriculum strategies). The learning outcomes should cover the cognitive, socio-emotional, and behavioral learning domains.
7. Learner assessment strategies.

In the next section, we have outlined details related to part 1 of the ESD Curriculum Framework. It includes the definition of ESD, conceptual categories, and learning domains. We will present various concepts that will be needed by the Research Team when doing the policy and curriculum analyses. In the following chapter, the Research Team will have the ability to further adapt these definitions based on their local understanding of these concepts.



# 1. ESD definition, conceptual categories, and learning domains

## 1.1 Definition

As discussed in the introduction chapter, ESD is an educational framework that empowers learners to make informed decisions and take responsible actions for environmental integrity, economic viability and a just society for present and future generations, while respecting cultural diversity. To achieve such changes, ESD proposes a holistic and transformational process that enhances cognitive, socio-emotional and behavioral dimensions of learning (UNESCO, 2020).

Transformation necessitates a certain level of disruption, with people opting to step outside the safety of the status quo or the “usual” way of thinking, behaving, or living. The pedagogical implications of transformative action require that learners have opportunities to develop critical inquiry, experiment with new “disruptive” ideas, and solve relevant issues to them, among others. In addition, transformative action points to the absolute importance of community where learners find common values and causes, and take collective action that lead to broader societal changes (UNESCO, 2019, Framework for the implementation of ESD beyond 2019).

## 1.2 Conceptual framework

For the purpose of this toolkit, we have organized ESD into two conceptual frameworks: **Sustainable Development (SD)** and **Global Citizenship (GC)**. While SD focuses on promoting environmental integrity, economic viability, and cultural diversity (UNESCO, 2014), GC concentrates on fostering proactive roles of learners, both locally and globally, for a more just, peaceful, and equal world (UNESCO, 2013). Certainly, ESD and Global Citizenship Education (GCE) cover a wide range of overlapping issues and also complement each other in their practical approaches (UNESCO, 2022).

## 1.3 Conceptual categories

Furthermore, to deeply analyze curriculum documents, we divided the ESD framework into four smaller conceptual categories: *environment*, *economy*, *society*, and *governance*. These ESD categories have consistently been used in ESD curriculum development and analysis.

Many definitions have been ascribed to those categories. For example, in Box 2 are the *International Civic and Citizenship Education Study’s* (ICCS) definitions of the subdomains within sustainability, related to concepts of environment, society, and economics.

### BOX 2. ICCS/IEA’s Definitions of “sustainability” in School Curriculum

**Sustainability.** The subdomain, sustainability, is related to the principle that human development meets the needs of the present without compromising the ability of future generations to meet their own needs (see Schulz et al., 2016; United Nations, 1987). The principle of sustainability requires both collective and individual activities to make human development more sustainable. Aspects of sustainability include:

- Environmental sustainability as a “state in which the demands placed on the natural world can be met without negatively impacting on the natural world or reducing its capacity to support human life” (Schulz et al., 2016, p. 18).
- Social sustainability as a “state in which current social practices, processes and systems support the capacity for future generations to have the same or greater access to social resources than the current generation to ensure human survival and promote the well-being of all human beings”.
- Economic sustainability as a “state in which an economy can support a defined level of economic production indefinitely through responsible consumption and production so that it can meet future demands in a sustainable way”.

Source: ICCS Assessment Framework 2022, p. 30.

The Research Team is encouraged to place broad definitions of SD and GC into their draft ESD Curriculum Framework, so that there is a common understanding of these issues. The same can be done for the environment, economy, society, and governance.

The team should not spend too much time on plugging these definitions into the template at this point in time, as these definitions will be further reviewed and refined in the next section within the context of the policy/curriculum mapping.

## 1.4 Learning domains

UNESCO has identified three learning domains relevant for ESD learning: cognitive, socio-emotional and behavioral. The cognitive domain comprises knowledge and thinking skills necessary to better understand the thematic sustainable development areas and the challenges in achieving them. The socio-emotional domain includes social skills that enable learners to collaborate, negotiate and communicate to promote the achievement of

self-reflection skills, values, attitudes, and motivations that enable learners to develop themselves. The behavioral domain describes action competencies (UNESCO, 2017, p. 11). Earlier research on ESD in curriculum has shown the latter domain to be underrepresented (UNESCO, 2019).

For effective teaching and learning of ESD, all three learning dimensions need to be developed in conjunction (UNESCO, 2019):

- **Cognitive:** To acquire knowledge, understanding, and critical thinking about global, regional, national, and local issues; the interconnectedness and interdependence of different countries and populations; as well as the social, economic, and environmental aspects of sustainable development;
- **Socio-emotional:** To have a sense of belonging to a common humanity; sharing values and responsibilities; having empathy, solidarity and respect for differences and diversity; as well as feeling and assuming a sense of responsibility for the future;
- **Behavioral:** To act effectively and responsibly at local, national and global levels to promote a more peaceful and sustainable world. This domain nurtures the ability of learners to act in responsible, compassionate, respectful, and non-violent ways, building constructive relationships. It also refers to action competencies, such as participating constructively in community (local or global) projects that promote sustainable development in one's immediate environment and beyond. Finally, the behavioral dimension helps learners apply their learnings according to local community norms or broader societal standards.

It is likely that the Research Team is already familiar with a variety of learning domains; however, the above domains are the ones that should be kept in mind to effectively integrate ESD in teaching and learning. The Research Team should insert definitions of the ESD learning domains into their draft curriculum framework.

Now that we have inserted broad definitions into the ESD Curriculum Framework, we will address part 2 of the framework, so that Research teams can begin thinking about how these concepts and definitions are relevant to national priorities.

## 2. Links with national education aims

The forthcoming policy review will reveal in detail how SD and GC themes are already explicitly included in key education policy documents. Moreover, at the initiation of the ESD curriculum project, some links between ESD and the general goals of education may already be evident. These links will already help to justify the elaboration of ESD aims and approaches for the schooling system. Such language might be included in project documents, the preamble to the ESD Curriculum Framework, and any subsequent curriculum.

We suggest looking for links between ESD aims and those of the national education system. To this end, the Research Team should analyze the National Education Framework, the Basic Education Law, or National Goals of Education documents to identify key links with the definitions of ESD and the conceptual categories of environment, economy, society, and governance, which were explained in the previous section.

Note that even without an explicit reference to ESD and related themes within existing policy documents, it may be possible to link ESD with the main aims of education. During the GSP pilot projects, the Moroccan Research Team's policy review identified a link between the fundamental education policy framework and ESD through the commitment of the government to fulfill international agreements, including the SDGs. A key education framework law<sup>9</sup> mentions the right of all Moroccan children to a "modern, high quality and accessible education" ((Marzouk & Khodari, 2021, p. 18), which was also found to be associated with ESD. Following the policy review, the Moroccan team was able to make links between education policy documents and specific SDGs, such as those related to promoting gender equality and reducing inequalities.

In some countries, key policy documents contain key competencies for students, which ESD can be linked with. Key competencies are categorized differently across educational systems. For example, they might include reasoning competencies (such as problem-solving and critical thinking); intrapersonal competencies (e.g., self-concept); interpersonal competencies (e.g., ability to function democratically in a group), and positional competencies (e.g., ability to cope with complexity) (UNESCO International Bureau of Education et al., 2004). National goals for education may be sufficiently broad (e.g., "active member of society"), so ESD can be seen as related to and supportive of meeting such aims. Once again in the case of Morocco, that same framework law identified some key competences that could be linked with ESD:

The educational system aims at encouraging and motivating the values of excellence, and innovation at various levels of education through "developing the learner abilities, refining their critical thinking, and providing them with an opportunity for creativity and innovation and enabling them to engage in a society of knowledge and communication" (Marzouk & Khodari, 2021, p. 18).

This short-term strategy of linking ESD with key national education goals positions ESD for further expansion. A medium- to long-term strategy might then be to expand explicit references to ESD themes within policy documents as those policy documents come up for revision. Ideas about how to do this will emerge from the forthcoming ESD policy review. Note that school policies and guidance notes are updated on an ongoing basis, and the basic education law and learning outcomes framework is typically updated every ten years or so. The strengthening of treatment of ESD within key policy documents – when accompanied by a genuine implementation of related practices in schools – will reinforce the ability of a system to integrate ESD. Now, we will turn our attention to core pedagogical and methodological approaches that embrace ESD. The literature detailing these approaches will provide an overview that will give important background to Research Teams before the upcoming analysis.

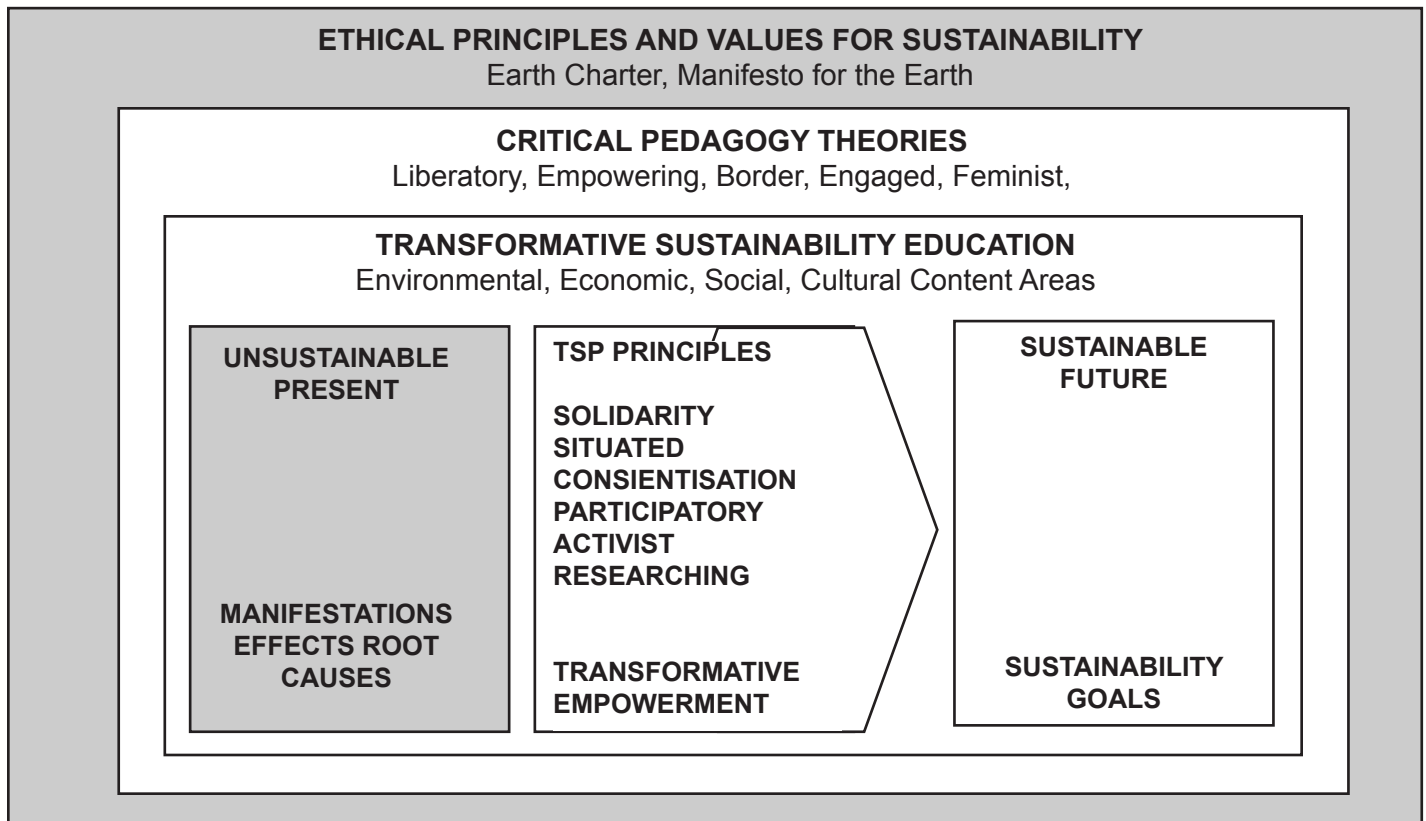
<sup>9</sup> *The Framework Law (Lois Cadre) 51.17 relative to the Strategic Vision of Higher Council for Education, Training and Scientific Research*

### 3. Commit to core pedagogical and methodological approaches

UNESCO has emphasized that ESD teaching and learning processes should be transformative, that is, they should empower people to make informed decisions and take action to modify the structures of an increasingly complex world (UNESCO, 2022). The ESD Curriculum Framework should recognize the methodological approaches aligned with this goal. This section presents pedagogies that contribute to the complex, holistic, and competency-based approach to ESD. To begin with, Figure 1 below, developed by Bedford (2022), illustrates the interrelationship between

the ethical principles for sustainability, related (critical) pedagogical theories, ESD conceptual categories, and a range of learning outcomes that reflect an awareness of the manifestations, effects, and root causes of unsustainability (Bedford, 2022). These together form the basis for a ‘transformative sustainability pedagogy’. The result is that learners will have more motivation and ability to act individually and/or collectively to promote sustainability. The transformation desired comes about through behavioral changes and taking action.

Figure 1. Framework for Transformative Sustainability Pedagogy (Bedford, 2022)



Source: Bedford (2022)

Learner-centered, active, reflective, and collaborative practices are encouraged in order to bring about transformative ESD. We note that these elements are not specific to ESD but are educational principles or approaches that have been identified as effective in promoting the expected changes in ESD. Learning outcomes that encompass all three domains of learning (cognitive, social-emotional, and behavioral) will

require the use of many of these methodologies. We now present a series of core approaches that can be considered as ‘good practices’ for ESD, which future curriculum writers are encouraged to keep in mind. These core ESD pedagogies and methodologies are briefly described below so that the analysis team can incorporate them into the ESD Curriculum Framework.

## 2.1 Core ESD pedagogies and methodologies

**Critical pedagogy** is considered essential for the integration of sustainable development into education. This pedagogy encourages students to critically assess current situations, clarify their own values to challenge prevailing norms and political decisions, question how society affects the process, and propose possible solutions (Blewitt, 2008). All variations of critical theories that occur have a common thread, which is to criticize the current system and advocate change in the future to achieve social justice. From the perspective of 'pedagogy of liberation', educational activities begin with discussions and analyses of culturally and locally relevant issues. Once the challenges, conflicts, and contradictions of the social relations in which people live are understood, learners are challenged to organize themselves and address the problem. The teacher, in this context, collaborates with the students as an equal contributor to the pedagogical practice (Grigorov & Fleuri, 2012).

**Transformative learning** is linked with critical pedagogy. Change is the goal of this type of education: not forced change, but changes in the student's own thoughts and actions. These modifications, in turn, generate changes in the learner's own lifestyle, in their school, and in their community, and ultimately impact global change (Hofman, 2015). The educator empowers and challenges learners to question and modify their perspectives and worldviews, subsequently enabling them to develop a more complex understanding of the world (UNESCO, 2018). Transformative learning requires a paradigm shift toward doing things differently (transformation) rather than merely optimizing what we already know (Hofman, 2015).

**Critical thinking.** Reflexive and critical thinking are important aspects of ESD (Hofman, 2015). For reflection to occur, students must be exposed to different perspectives (Chiba et al., 2021) and have the ability to arrive at different outcomes or solutions. Reflective thinking is a key element of pedagogies for ESD. It requires active, persistent, and careful consideration of beliefs and knowledge, assumptions, and subsequent conclusions (Dewey, 1997, cited in Brendel, 2020). Research has described differences between reflective thinking and reflective practice, in that the latter focuses on actions, their alternatives, and consequences. For ESD, reflective processes are required for both knowledge and actions.

**Problem-based learning.** The central theoretical learning principles in both problem-based and project-organized learning concern three dimensions: the problem, the content, and the team (Graff and Kolmos, 2003). Learning is organized around problems and is a central principle for the development of motivation. The problem serves as the basis for the learning processes, because it determines the direction of it, and places weight on the formulation of a question rather than an answer. The formulation of problems also allows the learning content to be related to the context. Experiential learning is also an implicit part of the formulation of problems and is especially important in relation to which problems the students are attracted to, and to which problems are formulated by the student on the basis of their own experiences and interests.

**Learner-centered.** This approach considers students as autonomous and emphasizes their active construction of knowledge rather than the recipient of a passive transfer of knowledge. Thus, learners' prior knowledge and experiences are the starting points for any learning process (Barth, 2015, cited in UNESCO, 2018). Furthermore, learner-centered approaches promote self-reflection on learning processes in order to manage and monitor them. Creating meaning becomes one of their primary objectives (TakingITGlobal, 2021). In that sense, the role of the educator shifts from the expert to the facilitator of learning processes (Barth, 2015, cited in UNESCO, 2018).



Learner-centeredness is not only valued by educational researchers. From focus groups with students from 26 countries participating in the UNESCO Associated Schools Network, a key idea that emerged was the desire for learner-driven pedagogy (TakingITGlobal, 2021). Students requested to assume more responsibility for their learning, such as suggesting topics and the focus of lessons.

**Collaborative learning.** Collaborative learning goes beyond group work in a classroom. It requires participants to agree on the strategy they want to use to achieve a common goal. Their actions, although they may differ individually depending on the strengths of each participant, respond to shared concerns in a school, institutional, or community setting. Participating in the learning process is therefore engaging because it seeks to change practices in ways that are meaningful to all (UNESCO, 2018).

A collaborative learning space does not only involve students. In co-engaged environments, learners and educators devise and address solutions together (UNESCO, 2018). The community, parents, or other educational stakeholders are also invited to participate and nurture learning environments in ESD. In that way, learners work together with other community members in the search for common solutions.

**Active/participatory learning.** Hands-on experiences are necessary to bridge the gap between knowledge and action (Brundiens et al., 2010) and fulfill the behavioral domain for ESD learning, which was underrepresented in previous ESD research (UNESCO, 2019). A carefully designed curriculum, guided by theory and reinforced by participatory and experiential learning, can play an essential role in influencing future global citizens by broadening students' horizons beyond the classroom (Chiba et al., 2021). Participatory learning can be fostered through group work, debates, class discussions, and case study analyses, among other learning activities (UNESCO, 2014; Laurie et al., 2016, Trevino et al., Round Square Schools).

**Situated relevance. Located and connected.** Among effective ESD programs, a common characteristic was that the content should be relevant to the students' interests, since students can more easily understand the principles if they relate them to their personal experience (Brody and Ryu, 2006, cited in Chiba et al., 2021). For this reason, whenever possible, ESD should be applied and grounded in the local economic, social, and ecological context so that it can be implemented in relation to actual conditions and existing values. Such local examples can be followed by regional, national, international, and global cases (Sterling & Huckle, 2014).

**Whole-school approaches.** Transforming reality to achieve ESD requires more than isolated efforts. It needs the integration of ESD principles into all dimensions of a learning institution, such as curriculum, pedagogy, structures, organization, and ethics, which affect each other and must be viewed as a coherent whole (Sterling & Huckle, 2014). A holistic approach to the institution involves rethinking school governance, teaching content and methodology, campus and facilities management, as well as cooperation with partners and communities at large. The institution itself becomes and functions as a model for learners (TakingITGlobal, 2021). ESD requires integrative and interdisciplinary courses in which subject-specific boundaries tend to disappear to show how complex problems are solved holistically in schools as they are in reality (Sterling & Huckle, 2014).

The Research Team will want to understand each of these approaches and consider how to integrate them into their ESD Curriculum Framework. The team can also reference this section when doing curriculum writing. If any methodologies are not already commonly used within schools, for example, it may be necessary to include additional details in the curriculum about how to carry out such activities.

## Conclusion

Now that we have identified the key ESD conceptual categories and pedagogies, we will turn to the policy and curriculum analysis. After the technical analysis is carried out, the Research Team will have the opportunity to return to the ESD Curriculum Framework and refine it before moving onto ESD curriculum writing. At this point, the ESD Curriculum Framework will remain a draft, and it will provide a shared understanding of ESD priorities that can be taken into account as the analysis begins.



# CHAPTER 04

## CARRYING OUT THE POLICY REVIEW AND CURRICULUM MAPPING



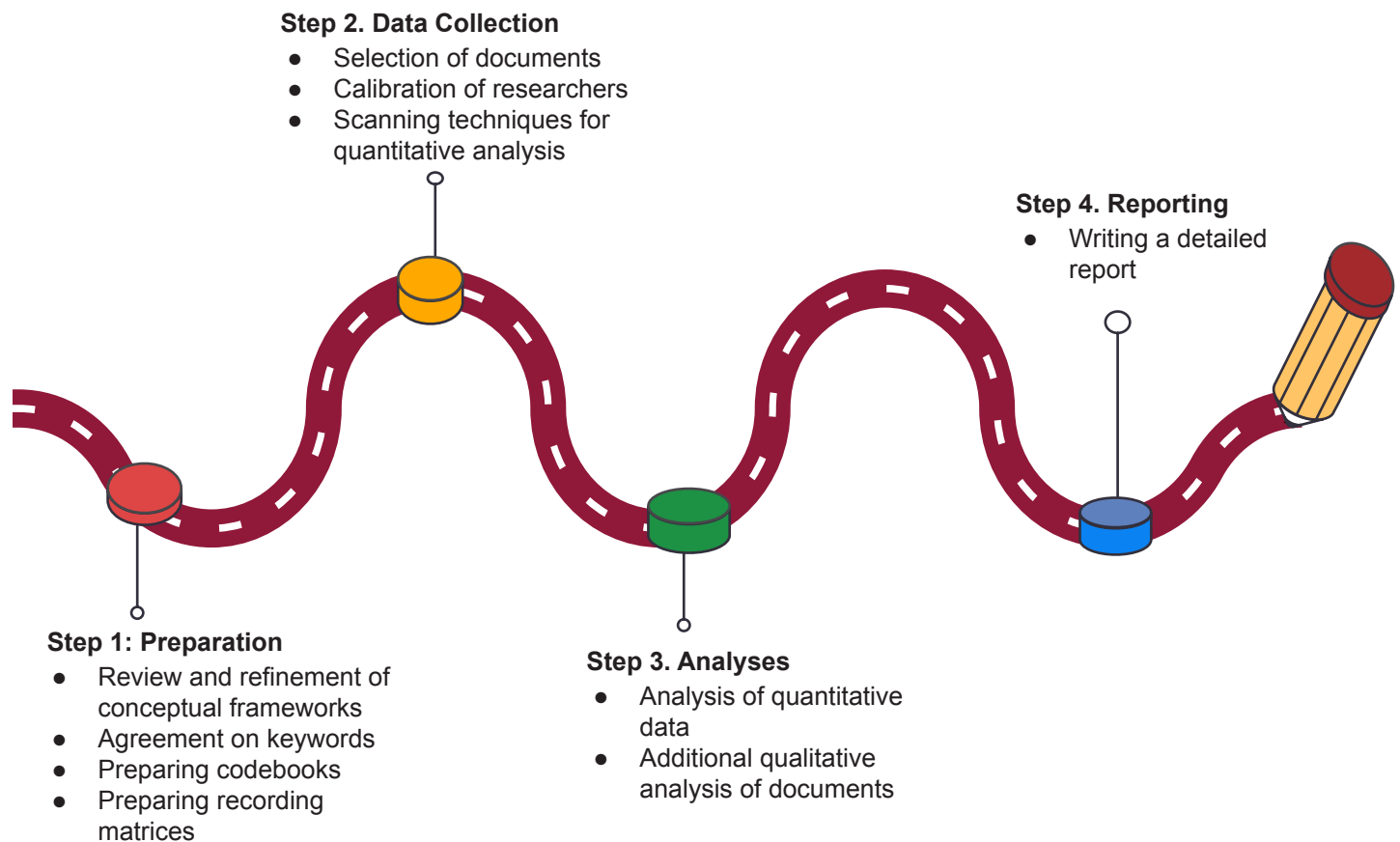


## Introduction

In order to revise existing or insert new ESD curriculum into national plans, it is essential for practitioners and researchers to first clearly identify and analyze the existing presence of Target 4.7/ESD within policy and curricula documents across grades and subject areas. This section of the toolkit addresses technical

tasks that the Research Team may undertake to map the curriculum and analyze education policy documents based on an ESD framework. Both processes require document or text analysis.

The primary tasks for both the policy review and



The analyses of policy and curriculum documents can take place simultaneously or sequentially (for example, reviewing policy documents first and then carrying out curriculum mapping). Therefore, this section presents the four key steps of preparation, data collection, analyses, and reporting, sometimes addressing both policy review and curriculum mapping together, and other times separately (for example, in relation to coding).

This section also offers concrete suggestions for how Research Teams might organize their work, as well as good practices to keep in mind. In order to carry out a successful document analysis, researchers should agree on the concepts and codes involved as well as the procedures for data collection, recording, and analysis. It is natural, however, that there will be adaptations made based on the resources and preferences of the researchers.

## 1. Preparation

**Purpose of Review.** The main purpose of the Target 4.7/ ESD policy and curriculum analyses is to inform the Research Team – and ultimately key stakeholders and the general public – of the status of Target 4.7/ESD within key policy and curriculum documents. Detection of ESD themes and learning

outcomes in existing policy documents can justify the strengthening of such goals in the school curriculum. Conversely, an absence or low presence of such themes in policies and curricula might instigate revisions of these documents.

### 1.1 Review and refinement of conceptual frameworks

#### Policy Review

Education policy documents typically provide an overview of goals, standards, and meta-competencies for a schooling system and are, therefore, rather general in nature. In these types of documents, we would not expect to find detailed recommendations for subject-matter content, compared to curriculum documents. Therefore, the conceptual frameworks suggested for the policy review are broad. We propose a conceptual framework for the policy review and a separate and more detailed one for curriculum mapping. These are interrelated, yet distinct.

The Target 4.7 conceptual framework proposed for the policy review covers **Sustainable Development (SD)** and **Global Citizenship (GC)**. Within each of these broad concepts, we have identified categories of illustrative themes (keywords) that can be applied in the policy review (See Section 1.2.).

#### Curriculum Mapping

For the curriculum mapping, we propose the conceptual categories of *Environment*, *Economy*, *Society*, and *Governance*. These are ESD categories that have consistently been used in ESD curriculum development and analysis. Again, illustrative keywords for these categories are presented in Section 1.2.

We note that the curriculum mapping concepts are linked with all the SDGs, which can be seen in Table 1. While the SDGs and their respective targets are highly interlinked, making the separation of one goal from the rest extremely difficult, we have nevertheless divided the goals into 11 subcategories, in order to further simplify the framework and help identify complex inter-linkages across the goals and targets.





**Table 1. Thematic breakdown of Sustainable Development Goals**

Conceptual category	Thematic subcategories
<b>Environment</b> (mainly related to goals 7, 11, 12, 13, 14, 15)	Pollution and Waste (most directly related to goals 11, 12, 14, 15)
	Biodiversity and Conservation (most directly related to goals 2, 11, 14, 15)
	Climate Change (most directly related to goals 7, 8, 11, 12, 13, 14, 15)
<b>Society</b> (mainly related to goals 1, 2, 3, 4, 5, 6)	Food and Agriculture (most directly related to goals 1, 2, 3, 6, 7, 15)
	Health and Wellbeing (most directly related to goals 1, 2, 3, 5, 6)
	Education and Skills (most directly related to goals 4, 5, 8, 9, 10)
	Water and Sanitation (most directly related to goals 1, 2, 3, 5, 6, 14, 15)
<b>Economics</b> (mainly related to goals 1, 8, 9, 10)	Industry and Innovation (most directly related to goals 8, 9)
	Poverty and Inequality (most directly linked to goals 1, 8, 10)
<b>Governance</b> (mainly related to goals 16 and 17)	Human Rights (most directly related to goals 16, 17)
	International Cooperation (most directly linked to Goal 17)

### Agreement on Definitions for Each Conceptual Category

Before any review begins, it will be important to ensure that the Research Team agrees on the general definitions for each of these conceptual frameworks and categories – both broad (e.g. SD and GC) and somewhat narrower (e.g. environment). This agreement affects the scope and meaningfulness of the review, including the concepts and themes to investigate and potentially (further) integrate within the curriculum. The proposed definitions, based on terminology developed and promoted by UNESCO, were presented in Chapter 3.

However, there is no ‘one size fits all’ version of ESD. In certain national contexts, it may be that instead of using the term Education for Sustainable Development, the education systems use Environmental Education, Education for Sustainability, or Climate Change Education to refer to the same or similar concepts.

*Political and socio-cultural realities and specific environmental and ecological challenges make a contextual grounding of ESD essential. That is why we need locally and nationally relevant interpretations of ESD and related forms of education. (UNESCO, 2017, ESD Learning Outcomes, p. 49).*

We also note that the conceptual categories themselves can be understood and applied in more complex and meaningful ways. For example, this toolkit uses ‘environment’ as a category, and understands one of its key messages as *“protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss”*; therefore a deeper engagement with this concept might be ‘environmental sustainability’, defined by the ICCS/IEA as a *“state in which the demands placed on the natural world can be met without negatively impacting on the natural world or reducing its capacity to support human life”* (Schulz et al., 2016, p. 18).

Context matters, and, for that reason, agreement affects the scope and meaningfulness of the review, including the concepts and themes to investigate and potentially (further) integrate within the curriculum.

Regardless of the outcome of the discussion on the definition of concepts (which will be used during the analysis and eventually be added to the final report), we highly recommend that the conceptual categories proposed in this toolkit for the policy and curriculum reviews be retained. However, minor changes in the title or application that do not change the essence of the concepts and associated keywords may be possible.

## 1.2 Agreement on keywords

The quantitative content analysis that will take place during the review of the policy and curriculum documents will first involve a word occurrence analysis. Such quantitative searches are rough measures but can be instructive by revealing: 1) the highest numbers of occurrences of a particular keyword, indicating the importance of a concept being analyzed, and 2) the absence of a concept, suggesting a lack of importance. For a more comprehensive understanding of ESD concepts found in a document, a context, qualitative analysis is required. This will be presented later in section 3.2.

In the next subsections (1.2.1 and 1.2.2), this handbook proposes codes for the quantitative content analyses of policy and curriculum documents. However, the Research Team should review, discuss, and agree upon the keywords that will be used for the analyses, based on the previous agreement of the conceptual frameworks and categories that house these keywords. It is important to note that the decision on which keywords to use will inevitably be based on the

Research Team’s understanding of the national context and the goals of this initiative, associated discussions of the overarching conceptual categories, and the different educational and cultural backgrounds of each team member. Additionally, some keywords translate differently into other languages.

Consequently, additions, omissions, or alterations might be made, though these should be consistent with the conceptual categories in which they are housed. Whichever codes are finalized, the members of the Research Team should have a shared understanding of what they mean. This will be double-checked in the Calibration of Researchers phase (2.2).

Once the Research Team has agreed on the keywords to be used in the policy review and curriculum mapping, there should be an agreement on the specific definitions. These keywords and definitions will become part of a codebook, which is explained in the next section (1.3).

### 1.2.1 Keywords for policy review

The following codes are proposed for detecting the explicit presence of Sustainable Development and Global Citizenship in policy documents. These

#### ***Sustainable Development***

##### Keywords:

‘sustainable development’

‘sustainability’

‘green economy’

‘environmental protection’

‘climate change’

codes are derived from UNESCO literature as well as other sources engaged in curriculum development for these conceptual categories.

#### ***Global Citizenship***

##### Keywords:

‘global citizenship’

‘international cooperation’

‘human rights’

‘cultural diversity’

‘gender equality’

The below tables (Table 2 and 3) are illustrative of a locally-led review and selection of keywords that will be used during the policy review, across each of the conceptual categories of ‘Sustainable Development’ and ‘Global Citizenship’. In this example, the team reviewed the original keywords

proposed in this toolkit, demonstrated in the far-left column (titled “Original Keywords”), and then decided to drop some keywords and add others based on the terms that are considered more appropriate in the context of the country where the analysis is being carried out. The revised keywords are demonstrated in the column on the right (titled “Revised Keywords”).

**TABLE 2. Example of Revised Keywords for Conceptual Category of ‘Sustainable Development’ during Policy Review**

Original Keywords	Revised Keywords
‘sustainable development’	‘sustainable development’
‘sustainability’	<del>‘sustainability’</del> (dropped)
‘green economy’	‘green economy’
‘environmental protection’	<del>‘environmental protection’</del> (dropped)
‘climate change’	‘ecosystem protection’ (added keyword)
	‘biodiversity’ (added keyword)
	‘climate change’
	‘global warming’ (added keyword),
	‘future generations’ (added keyword)

**TABLE 3. Example of Revised Keywords for Conceptual Category of ‘Global Citizenship’ during Policy Review**

Original Keywords	Revised Keywords
‘global citizenship’ ‘international cooperation’ ‘human rights’ ‘cultural diversity’ ‘gender equality’	‘global citizenship’ ‘ <del>international cooperation</del> ’ (dropped) ‘United Nations’ (added keyword) ‘human rights’ ‘ <del>cultural diversity</del> ’ (dropped) ‘social inclusion’ (added keyword) ‘peace’ (added keyword) ‘gender equality’

### 1.2.2 Keywords for curriculum mapping

The following codes are proposed for detecting the presence of ESD in curriculum documents. These codes are derived from UNESCO literature as well as other sources engaged in curriculum development for these conceptual frameworks. We have several caveats to note before presenting the codes.

First, we believe that for ESD to be seen as being holistically treated within a national curriculum, all four conceptual categories - environmental health, economic prosperity, social well-being, and good governance - should be addressed in the curriculum. Therefore, we suggest that while the Research Team might make some adjustments in terms of the keywords used, all four conceptual categories be represented in the analysis.

In order to accommodate the need to carry out the curriculum mapping while keeping in mind implications for curriculum revision and development, we have developed ‘curriculum messages’ for each of the conceptual categories based on the SDGs. Such messages are built on overarching competencies or learning outcomes that may guide the Research Team in understanding what the ESD curriculum should

address. These curriculum messages are not part of the initial quantitative content analysis but can assist the Research Team in adjusting or adding keywords, in carrying out any follow-up qualitative analysis, and in considering how to strengthen existing ESD treatments.

#### Environment

##### Keywords:

‘environment’  
 ‘climate change’  
 ‘natural disaster’  
 ‘pollution’  
 ‘biodiversity’  
 ‘oceans’  
 ‘land’  
 ‘forest’  
 ‘air’  
 ‘natural resources’  
 ‘energy’

Key SDG-related curriculum messages:

- Ensure access to affordable, reliable, sustainable and modern energy (Goal 7)
- Ensure sustainable consumption and production patterns (Goal 12)
- Take urgent action to combat climate change and its impacts (Goal 13)
- Conserve and sustainably use the oceans, seas, and marine resources for sustainable development (Goal 14)
- Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss (Goal 15)

It is important to note that each of the keywords proposed above may also have synonyms that are being used interchangeably within curriculum documents. It is therefore important for Research Teams to determine whether this is the case, and adjust their approach accordingly. For instance, if in a curriculum document, the word environment and ecosystem are used interchangeably to refer to similar concepts, researchers should ideally map both keywords and make note of this. Below (Table 4) are some examples of keywords and their synonyms (although please note that synonyms are not limited to the examples provided below, as there are likely local synonyms which may not be listed here and are therefore more appropriate for usage).

**TABLE 4. Example of Synonyms for Keywords with the ‘Environment’ Category**

Keyword	Synonyms
environment	ecology <u>or</u> ecosystem
climate change	global warming
pollution	waste <u>or</u> garbage
ocean	sea <u>or</u> river <u>or</u> lake
forest	jungle <u>or</u> park <u>or</u> woods
biodiversity	wildlife <u>or</u> plant life <u>or</u> marine life
natural disaster	floods <u>or</u> storms <u>or</u> drought

Similar to the example for the Policy Review, below are illustrative results of a process of review and selection of keyword lists for the curriculum review. In the table, the Research Team reviewed the original SDSN keywords in this Toolkit for the conceptual category of the environment,

demonstrated in the far left column (Table 5). After a review at the country level, the Research Team decided to drop some keywords and add others based on the terms that are usually used in their country. The revised keywords are demonstrated in the column on the right.



**TABLE 5. Example of Revised Keywords for Conceptual Category of ‘Environment’ during Curriculum Mapping**

Original Keywords	Revised Keywords
‘environment’	‘environment’, ‘ecology’ (keyword added)
‘climate change’	‘climate change’, ‘global warming (keyword added)
‘natural disaster’	‘natural disaster’, ‘storms’ (keyword added)
‘pollution’	‘ <del>pollution</del> ’ (dropped), ‘waste’ (keyword added)
‘biodiversity’	‘biodiversity’, ‘wildlife’ (keyword added)
‘oceans’	‘oceans’, ‘sea’ (keyword added)
‘land’	‘land’
‘forest’	‘forest’, ‘jungle’ (keyword added)
‘air’	‘air’
‘natural resources’	‘natural resources’
‘energy’	‘energy’

Now, we will present the proposed keywords for the category of the environment.

### **Economy**

#### Keywords:

‘economic growth’

‘poverty’

‘inequality’

‘innovation’

‘employment’

‘infrastructure’

#### Key SDG-related curriculum messages:

- End poverty in all its forms (Goal 1)
- Promote sustained, inclusive, and sustainable economic growth, full and productive employment and decent work for all (Goal 8)
- Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation (Goal 9)
- End poverty and reduce inequality within and among countries (Goal 10)

**TABLE 6. Examples of Synonyms for Keywords with the ‘Economy’ Category**

Keyword	Synonyms
economic growth	development <u>or</u> industrialization
poverty	wealth <u>or</u> income
employment	work <u>or</u> labor

**TABLE 7. Example of Revised Keywords for Conceptual Category of ‘Economy’ during Curriculum Mapping**

Original Keywords	Revised Keywords
‘economic growth’	‘economic growth’, ‘development’ (keyword added)
‘poverty’	‘poverty’, ‘wealth’ (keyword added)
‘inequality’	‘inequality’
‘innovation’	‘ <del>innovation</del> ’ (dropped)
‘employment’	‘employment’, ‘labor’ (keyword added)
‘infrastructure’	‘infrastructure’

Now, we will present the proposed keywords for the category of society.

### **Society**

#### Keywords:

‘food’

‘agriculture’

‘health’

‘education’

‘sanitation’

‘water’

‘gender’

#### Key SDG-related curriculum messages:

- Ensure food security and engage in sustainable agricultural production (Goal 2)
- Ensure healthy lives and promote well-being for all at all ages (Goal 3)
- Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all (Goal 4)
- Achieve gender equality and empower all women and girls (Goal 5)
- Ensure availability and sustainable management of water and sanitation for all (Goal 6)

**TABLE 8. Examples of Synonyms for Keywords with the ‘Society’ Category**

Keyword	Synonyms
food	nutrition <u>or</u> hunger
agriculture	farming
health	wellbeing
education	learning <u>or</u> skills
sanitation	hygiene <u>or</u> water
water	Freshwater
gender	women <u>or</u> girls

Now, we will present the proposed keywords for the category of governance.

## Governance

### Keywords:

'legal justice'

'governance'

'inclusion'

'citizenship'

'peace'

'human rights'

'global cooperation'

### Key SDG-related curriculum messages:

- Promote peaceful and inclusive societies for sustainable development, provide access to justice for all, and build effective, accountable, and inclusive institutions at all levels (Goal 16)
- Strengthen the means of implementation and revitalize the global partnership for sustainable development (Goal 17)

**TABLE 9. Examples of Synonyms for Keywords with the 'Governance' Category**

Keyword	Synonyms
governance	institutions <u>or</u> rule of law
inclusion	diversity
global cooperation	global partnerships <u>or</u> United Nations

**TABLE 10. Example of Revised Keywords for Conceptual Category of 'Governance' during Curriculum Mapping**

Original Keywords	Revised Keywords
'legal justice'	'legal justice', 'corruption' (keyword added)
'governance'	'governance', 'institutions' (keyword added)
'inclusion'	<del>'inclusion'</del> (dropped), 'diversity' (keyword added)
'citizenship'	'citizenship'
'peace'	'peace'
'human rights'	'human rights'
'global cooperation'	'global cooperation'

We recommend using all of the suggested keywords for the policy review and curriculum mapping activities. However, if the Research Team decides to use only a portion of these lists, keywords should still be selected from across the conceptual categories. Researchers

are also welcome to adapt suggested keywords or add additional ones. However, these changes should be made according to the corresponding curriculum messages. This will help to ensure an exploration of a multi-dimensional, holistic treatment of ESD within educational documents.



### 1.3 Codebooks

Once the Research Team has agreed on the keywords to be used in the policy review and curriculum mapping, there should be an agreement on the specific definitions. These keywords and definitions will become part of a codebook. A codebook is a resource detailing the ways in which the data will be collected and recorded. The codebook should be a self-explanatory document that researchers can refer to and can be elaborated on as new issues arise during the research process. Here are some suggestions for the components of a codebook, which the Research Team can use as a starting point.

#### Section I of the Codebook: Background

The *front section* of a codebook typically contains the study title; the purpose of the study; a general description of methodology; data collection instruments; and the format of the codebook. Note that this information will be useful for the eventual report that will be developed as an outcome of the analyses.

#### BOX 3. Abbreviated Hypothetical Example of the Front Section of a Codebook

##### CODEBOOK

#### Policy Review of Romanian Education Policies for SDG 4.7/Education for Sustainable Development Institute for Educational Sciences (IES)

Bucharest, Romania

#### Section I. Background.

Purpose of the Study. A Research Team at IES will carry out a text-based analysis of the presence of keywords associated with Sustainable Development Goal 4.7 and Education for Sustainable Development (SDG 4.7/ESD) in key Romanian education policy documents. The two conceptual categories associated with SDG 4.7/ESD are ‘sustainable development’ and ‘global citizenship’. Drawing on UN materials, sustainable development is a broad term to describe policies, projects, and investments that provide benefits today without sacrificing environmental, social, and personal health in the future; global citizenship is defined as a sense of belonging to the global community and a common sense of humanity, with its presumed members experiencing solidarity and collective identity among themselves and collective responsibility at the global level.

The purpose of this analysis is to determine the presence of these concepts within key policy documents, as a rationale for the integration of these concepts within the Romanian national curriculum. In addition, the study may reveal gaps and opportunities for strengthening the presence of SDG 4.7/ESD concepts within these or future policy documents.

Methodology. IES has identified five key education policy documents for analysis, which are available in either PDF or Microsoft Word format. For PDF documents, word searches can be carried out by inserting them in the ‘search’ box in the upper left-hand corner of the screen. For Word documents, searches can be carried out by using the ‘find’ button, located within the ‘editing’ tab on the upper right-hand corner of the screen.

Each of the policy documents will be analyzed for the presence of the keywords associated with ‘sustainable development’ and ‘global citizenship’. The keywords are listed in Section II, along with their definitions and abbreviations. Section II also details how keywords should be recorded using Excel matrices.



## Section II of the Codebook: Main Section

The *main section* of the codebook presents each variable or, in this case, each keyword that will be used in the scanning. For each keyword, the following information will be provided:

- what the keyword represents (i.e., definition);
- the abbreviation for the keyword<sup>1</sup>;
- how the keyword was measured (e.g., counting of occurrences);
- how the keyword was recorded (e.g., indicating numerically the number of times a keyword appears in a text excerpt);
- the text excerpt itself, and word minimum and maximum<sup>2</sup>

If not already included in Section I, the main section should present how the data will be collected. As illustrated in Box 3, the ESD research will be carried out by using the ‘find’ or ‘search’ functions in word processor software (such as Word or Google Docs). Some research teams may also be able to make use of research software (see Annex 8).

Below is an example of portions of Section II of a hypothetical codebook for the Policy Review, for the conceptual category of ‘Sustainable Development’.

### BOX 4. Abbreviated Example of the Main Section of a Codebook

CODEBOOK
<p><b>Policy Review of Romanian Education Policies for SDG 4.7/Education for Sustainable Development</b></p> <p><b>Institute for Educational Sciences (IES)</b></p> <p>Bucharest, Romania</p>
<p><b>Section II. Keywords – Measurement and Recording Instructions</b></p> <p><u>General instructions for measurement and recording:</u></p> <p><i>Measurement:</i> each occurrence within a document (e.g., 0, 1, 2, etc.), Note: do not leave cell blank; input “0” when a keyword is not present.</p> <p><i>Recording:</i> each occurrence within the document, with page number and excerpted text (minimum one sentence, maximum four sentences).</p> <p><i>Summary:</i> total occurrences within document</p> <p><u>Keywords:</u></p> <p>Keyword: Environment</p> <p><i>Definition:</i> pertains to humans, plants, and other living and nonliving things. Also, it may refer to the condition of the various habitats of different species worldwide.</p> <p><i>Abbreviation:</i> Env</p>

<sup>1</sup>Because data sets can be quite large, abbreviations are often developed for keywords. For example, ‘environment’ could be reduced to ‘Env’ and ‘gender equality’ could become ‘GenEq’.

<sup>2</sup>Some teams will want to discuss what qualifies as an adequate and workable excerpt. For example, the researchers should decide if the text excerpt should include sentences or entire paragraphs, ensuring that the Excel sheets do not become too cumbersome.

First, there should be an explanation of how keywords will be recorded when found in a document. For example, this could include the number of occurrences of that particular keyword on a certain page, along with the page number and related textual excerpts.

Additional instructions or explanatory notes can also be included in the codebook. Sometimes codebooks also indicate how summary statistics will be calculated. For the curriculum review, we recommend that summary statistics be calculated for (a) the number of times a keyword appears in each curriculum document; (b) the number of

times a keyword appears across all curriculum documents; (c) “a” and “b” combined, however categorized by conceptual category, such as environment, economy, society, and good governance.

The codebook might include other kinds of notations for each keyword. For example, a researcher could use a question mark, if the researcher is uncertain of how to categorize a finding. These are some of the technical details that need to be worked out among the researchers and will require attention both in the planning phase and in the calibration phase (presented in section 2.2).



## 1.4. Recording matrices

The results of the keyword searches should be input into relevant recording matrix. These matrices should capture all the relevant quantitative results and allow for further analysis to be conducted, such as a summary of the keyword searches as well as any subsequent context (qualitative) analysis. It is natural that the Research Team's idea about what should be contained in the matrix will evolve during the calibration phase of the review processes.

There are many considerations for setting up recording matrices that are linked with core questions for the analyses. Some criteria for the matrices are that they be:

- user-friendly – easy to record data;
- practical – efficient in terms of time required to record data;
- functional – able to log data in such a way that can be manipulated for quantitative analysis;
- complete – complete with all the essential data from a keyword search

## Policy Review

For the *policy review*, given the relatively limited number of documents that are likely to be reviewed, we recommend that **researchers only include keywords in the matrix after they find them in the documents**. In other words, the matrices used in the policy review will require the researcher to insert the keyword, as well as the occurrences, when the keyword is present.

One Excel-based matrix could be set up for each of the policy documents that will be reviewed. Each matrix should allow for the recording of:

- which keywords are present in the document.
- the number of times the keyword appears on a specific page. If the keyword appears on another page, the Research Team will record that entry on a new row in the codebook. The page numbers will allow other Research Team members to cross-check the results.
- related text excerpts.

Below you will find an example of a recording matrix for the policy review (Table 11).

**TABLE 11. Recording Matrix for Policy Documents**

Policy Document Name:

Keywords (Researcher should insert)	# of times on page	page	Text excerpt	Researcher comment

In Table 12, an example of how to fill the Recording Matrix of a policy document is shown.

**TABLE 12. Example of Partially Filled Recording Matrix for Policy Documents**

Policy Document: General Education Law (2012)

Keyword (Researcher should insert)	# of times on page	page	Text excerpt	Researcher comment
SusDev	2	6	“Education for <b>sustainable development</b> (ESD) is a response to the urgent and dramatic challenges the planet faces.”	ESD should be visible in the national curriculum.
EcDev	1	3	“No country can achieve sustainable <b>economic development</b> without substantial investment in human capital.”	
Env	2	2	“There is growing evidence of international <b>environmental</b> problems, such as global warming, ocean pollution, and declines in species diversity.”	

If a small number of documents are being reviewed, please see footnote for alternative approach<sup>10</sup>.

<sup>10</sup> If a small number of policy documents are being reviewed, it may be possible to develop a single matrix for recording keywords across policy documents. In that case, an additional column will need to be added for recording the policy document. In general, the Research Team will want to set up matrices that best meet the criteria of use-friendliness, practicality, functionality, and completeness.

## Curriculum Mapping

The setting up of recording matrices for *curriculum mapping* will involve many of the same decisions that were taken when setting up the matrices for the policy review. Given the extensive word length of curriculum resources, we advise the Research Team to develop a separate recording matrix for each document and prepare the matrix ahead of time.

Note that in contrast to the policy review, where we recommend that researchers only insert keywords after they find them in the document, in the curriculum analysis, we suggest researchers **start by adding a comprehensive set of keywords to the matrix before reviewing the documents.** In this case, researchers would need to not only input the occurrences for keywords that are present, but also note when keywords are absent. For example, if the researcher inserts the keyword

‘environment’ and does not find it in the text, the use of ‘0’ (zero) confirms that the researcher did not find any evidence of the keyword, rather than somehow missing it in their search. Moreover, by inserting zero, it will be possible to use Excel summary calculations for which keywords were not present in any given document. This should assist curriculum developers in identifying the gaps that they may want to fill in the curriculum revision process.

In the matrix, one row will be used for each keyword. The columns would then allow for the recording of page number(s) where the keyword appears and for the recording of the related text excerpt. Given the diversity of curriculum documents, we recommend that the following information be recorded for each source in the matrix:



1 type of curriculum document: subject-specific policy document; syllabus; textbook or teaching and learning resource;

2 title and year of publication

3 subject(s)

4 grade level(s)

5 mandatory or optional subject



See the example below of an unfilled curriculum mapping matrix (Table 13). Note that these keywords have been adapted by a hypothetical Research Team based upon local context.

**TABLE 13. Example Recording Matrix for Curriculum Documents for ‘Environment’ Conceptual Category – Quantitative Results Only**

Name of Curriculum Document: (title, year of publication)

Type of curriculum document: (subject-specific policy document; syllabus; textbook or teaching and learning resource)

Subject(s) (if applicable)

Grade level(s) (if applicable)

Mandatory or optional (if applicable)

Keywords	# of times on page	page	Text excerpt	Researcher comment
Env				
ClimChg				
Pollutn				
Ocean				
Atmsphr				
Biodiv				
Ecosys				
Conserv				

The raw data should be collected and recorded in the matrix in a way that it can later be reorganized for analysis and collation. For example, it makes sense to record data for each curriculum document as it is reviewed. However, once this has been undertaken, the Research Team will want to analyze the presence of specific ESD concepts across different curriculum documents, possibly combining curriculum documents for the same grade level or subject matter. How these summary statistics will be calculated will need to be specified in the codebook.

As part of the finalization of matrices, the Research Team should decide how to manage the data collected, for example, manually and/or using a computer-based system. Manual systems require more storage space and will be extensively time-consuming to compare and analyze data by hand.

On the other hand, computer-based monitoring systems require software and human capacity but are the ideal way to collect and manage data. We assume that Research Teams will be recording the coding digitally. There are different kinds of software that are readily available on many computers and can help us in managing our data. A list of suggested software is in Annex 8 (database software, spreadsheet software, word processing software, and project management software).

If Research Team members are dividing up the documents for review, it might be wise to set up the matrices as a shared Google Sheet. Teams can also use an Excel Sheet where all the results can be input. Data analysis can be completed using any data analysis software.

## 2. Data Collection

### 2.1 Selection of documents

The Research Team will need to select documents to review. In Chapter 2, we briefly discussed that the institution and managers of the project should start thinking about the selection of documents based on logistics, capacity, and ability to access public documents and textbooks. In this section, we will give more specific ideas for the Research Team on the final selection of documents to be used in the analysis.

#### Policy Review

Key K-12 *education policy* documents to consider reviewing have to do with the goals of education.

Other documents to review include those that influence curriculum policies. Such documents include, but are not restricted to, the Basic Education Law, the National Curriculum Framework, education vision documents, education quality frameworks, and strategic education plans. There may also be relevant policy initiatives to consider, such as a National Plan of Action for ESD. In Costa Rica, for example, there is already a National Plan of Action on ESD, which can be referenced by others as a policy that encompasses both sustainable development and education. The policy can provide ideas to other nations and localities (see Box 5 for an example), or it can be an example of what types of national policies the Research Team should seek to analyze.

#### BOX 5. Costa Rica – Profile of success in embedding ESD into sustainable development policies

In 2006, Costa Rica approved the National Commitment on the Decade of Education for Sustainable Development, The most recent comprehensive national policy instrument on climate change, the National Strategy on Climate Change (Estrategia Nacional de Cambio Climático), includes capacity-building and public awareness, education and cultural change, with the aim of increasing environmental literacy.

Source: UNESCO, 2017, ESD Learning Outcomes, p. 49.

In addition, national curriculum framework documents will have elements that are analyzed as part of the *policy review* (e.g., competencies for graduates of primary school); however, other components might be analyzed in the curriculum mapping activity (e.g., subject-specific competencies or learning outcomes). In decentralized education systems, there may be provincial or other sub-national policy documents to analyze. The Research Team will need to be discerning and prudent about which documents, or portions of documents, would be essential to include in the policy review. Typically, four to six policy documents should be sufficient.

#### Curriculum Mapping

For *curriculum mapping*, the Research Team will need to obtain subject-specific curricula, syllabi, and official textbooks. Due to the extensive number and length of such documents, it may be wise to

restrict the analysis to, for example, a review of only specific subjects or grade levels. The Research Team might decide to focus on the curriculum coming up for review in the natural cycle of the education system; the curriculum mapping results would then flow into preexisting revision processes.

The Research Team will likely be using digitally based assistance in carrying out the word search. This means that the documents selected for review need to be available digitally and of sufficiently good quality. PDFs are generally easier to scan than documents that are available as JPEGs. The Research Team might check that policy and curriculum resources selected for review are digital, to ensure that electronic scanning is viable.

## 2.2. Calibration of researchers

Preparing the Research Team for the policy review and curriculum mapping is an ongoing process. The calibration of researchers ensures that data gatherers have a shared understanding of the concepts involved and will carry out data collection in the same way. This applies to all segments, including policy analysis, quantitative curriculum analysis as well as qualitative curriculum analysis. The calibration of researchers is especially important when coding is being done manually by researchers (not through digital word searches).

Once the codebooks and recording matrices have been set up, it would be wise to have a practice run to see if researchers use them in the same way.

A good way to test this would be to give the researchers the same policy or curriculum document and to independently carry out keyword searches and recording in the matrixes. This internal piloting should reveal what ambiguities might need to be clarified so that all team members have a shared understanding of the review and recording processes.

Practice runs could be carried out several times as techniques are worked out. It is natural that issues and needs will emerge in the early stages of review, but it is important that these issues can be resolved before intensive scanning work begins. Note that codebooks and matrices may be revised during this period.

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## 2.3. Scanning techniques for quantitative analysis

The list of keywords in the codebook and matrices can be used to locate the thematic presence of key ESD themes within individual policy documents and curriculum sources. Shorter documents might be reviewed manually rather than digitally, but this is more time-consuming and potentially less accurate. Searches might be carried out using the 'find' function of the Word processing software or through the use of research software such as NVivo.

The Research Team might agree to do searches for individual keywords as well as a combination of them. For example, 'sustainable development' would be one avenue of search, but 'sustainability' might be added to this category. The more codes that are listed, the more time-consuming the review effort, so Research Teams will need to be prudent about the number of keywords used.

At various stages of the scanning, it would be prudent to review the matrices for completeness and accuracy in recording the results of keyword searches. Back-up digital copies or storage in the Cloud will ensure that data is not lost.

### 3. Analyses

Document analysis is a systematic procedure for reviewing or evaluating documents. It includes data examination and interpretation to elicit

meaning, gain understanding, and develop empirical knowledge. In carrying out policy and curriculum analysis for ESD, both content and context analyses will be carried out, which will be explained in this section.

#### 3.1. Quantitative, content analysis

Once the frequencies of each keyword have been recorded for an individual document, the total frequencies of each keyword can be calculated and included in the matrix. The processes for developing summary statistics should be included in the codebook. Here are two examples of how the data could be summarized:

1. The absolute totals for each keyword/ domain might be presented (e.g., 'gender equality' is mentioned three times in a specific subject curriculum) and, for curriculum mapping, compared across types of curriculum documents, grade levels, and subjects.
2. The results might also be presented by conceptual category. For example, the keywords could be compiled based on each category, such as 'society'.

These totals can be extracted and presented in graphs that will help to illustrate the comparative treatment of keywords across documents. Results can be shown in tables, bar graphs, or even in word clouds.

The overall analysis of the degree to which individual keywords and conceptual categories are present (or absent) will provide a fuller picture of the treatment of ESD concepts in policy and curriculum documents. For example, policy documents might contain references to 'economics' but no reference to 'sustainable development' or 'sustainability'. This might be a telling omission of the treatment of economic development.

Research Teams will need to critically reflect on the meaning beyond the initial keyword search tallies. This stage of the analysis will be central to discussions about how best to strengthen the presence of ESD in educational documents. A full analysis, however, will require a qualitative aspect to complement the quantitative one. This is what is presented in the next section.

#### 3.2. Qualitative, contextual analysis

Qualitative reviews will be carried out simultaneously or as an immediate follow-up to the quantitative analysis of both the policy and curriculum documents. These additional analyses will provide a deeper understanding of the contexts in which these ESD concepts are present. Just as in the quantitative analysis, the calibration of researchers will be equally as important, and a practice run can be carried out by the Research Team to ensure there is a shared understanding of the review and recording

#### Policy Review

For the *policy review*, the Research Team could return to the places in the documents where excerpts associated with Sustainable Development (SD) and Global Citizenship (GC) concepts have been located. A reading of the full paragraph or section where the keyword(s) is located will help the researcher in assessing the degree of treatment (e.g., one short reference only or within a paragraph that deals deeply with issues related to SD/GC). For example, it will be interesting to note the placement of keywords within policy documents (e.g., associated with core aims of education).

This information would be included in the analysis report and help to bring depth to the understanding of the treatment and absence of ESD within educational policies.

### Curriculum Mapping

Similarly, a qualitative review that builds on the findings of the quantitative results will be essential for the curriculum mapping. An understanding of how ESD themes are present in the curriculum will provide immediate guidance on the revision or development of new curriculum.

At the conclusion of the quantitative review (keyword search) of *curriculum documents*, the researcher should review the results and carry out four additional qualitative analyses.

#### 3.2.1 Curricular Presence of the Keyword

The first is an analysis of the curricular presence of the keyword. This analysis seeks to understand how deeply and holistically a keyword/ concept is treated within individual curriculum documents, and the exposure that learners will have to ESD themes across different grades and subjects.

For each keyword that is present in the curriculum, the researcher would review the related sentence or paragraph where the keyword is located and assign one of the following codes:

- present but only as a sub-topic in lesson(s) in the curriculum (e.g., code = 0)
- present as the main focus of a lesson(s) (e.g., code = 1)
- present as a unit (series of lessons) (e.g., code = 2)
- present as a defining characteristic of a curriculum (e.g., code = 3)

As a reminder, the documents selected for the curriculum analysis will include subject-specific curricula, syllabi, and official textbooks, to allow for a targeted keyword search and the assignment of one of the following four codes above. Table 14 is an example of a curriculum mapping recording matrix that incorporates the curricular presence of the keyword excerpt.

#### 3.2.2 Local, Global, or Both

The second qualitative analysis of the related excerpt in which the keyword is present is a judgment of whether the keyword gives a local perspective, global perspective, or both.

For example, 'environment' could be linked with global matters in a curriculum, or it could be primarily focused on the national or sub-national context. Understanding which levels are represented will assist curriculum developers in filling gaps, as ESD concepts should be operating on both local and global levels.<sup>1</sup>

For each keyword that is present in a curriculum, one of the following codes would be input:

- not able to determine (e.g., code = 0).
- local/national/sub-national (e.g., code = 1)
- global/ cross-national (e.g., code = 2)
- both global and local (e.g., code = 3)

#### 3.2.3 ESD Learning Domains

A third qualitative analysis will be carried out in relation to the presence of ESD learning conceptual categories/competences within the curriculum. As described in chapter 2. ESD Curriculum Framework, UNESCO has identified three domains as relevant for ESD learning: cognitive, socio-emotional and behavioral.

For those keywords that emerge in the first qualitative analysis as being a main focus of a lesson or having an even larger curricular footprint, researchers could review the curriculum and determine which of the learning domains are represented. Note that it would be necessary for the keyword to be present in the learning outcomes of a curriculum in order to be able to assess how these outcomes are distributed across the cognitive, socio-emotional and behavioral domains. Therefore, only a subset of keywords would likely be eligible to undergo this analysis. UNESCO places a high emphasis on transformative learning and therefore the socio-emotional and behavioral domains will ideally be well represented. If they are not, this is an area for revision. These learning domains will also be related to the pedagogy and methodologies employed in lessons, one of the topics in the next section.

- Cognitive (e.g., code = C).
- Socio-Emotional (e.g., code = S)
- Behavioral (e.g., code = B)

<sup>1</sup>We suggest coding for 'local' and 'global' but recognize that there is a spectrum of possible answers within each of these categories. 'Local' may refer to national or subnational applications, including the local community. 'Global' is both non-national and cross-national. Researchers will need to agree on how to interpret and apply this scale.



### 3.2.4 Links with SDG Curriculum Messages

A final qualitative analysis will be carried out to determine if the existing curriculum is oriented towards the 'content and spirit' of the SDGs. Earlier in section 1.2.2, we presented the key curriculum messages associated with each of the conceptual categories of the Environment, Economy, Society and Good Governance.

In reviewing the curriculum mapping results for each keyword, the Research Team should discern

For example, for the *Good Governance* conceptual category, the following curriculum messages were identified:

- Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels (Goal 16).
- Strengthen the means of implementation and revitalize the global partnership for sustainable development (Goal 17).

If the curriculum scanning showed the presence of the keyword "justice", the Research Team might examine the associated curriculum excerpt to

determine if the treatment of justice was associated with key messages (i.e. access to justice for all, and accountable and inclusive institutions). We suggest using the codes of:

- not able to determine (e.g., code = 0).
- not aligned with key curriculum message (e.g., code = 1)
- partly aligned with key curriculum message (e.g., code = 2)
- aligned with key curriculum message (e.g., code = 3)

In Table 14, we provide an example of the qualitative ratings added to the recording matrix.



**TABLE 14. Example Recording Matrix for Curriculum Documents for ‘Environment’ Conceptual Category – Quantitative Results and Qualitative Ratings**

Name of Curriculum Document: (title, year of publication)

Type of curriculum document: (subject-specific policy document; syllabus; textbook or teaching and learning resource)

Subject(s) (if applicable)

Grade level(s) (if applicable)

Mandatory or optional (if applicable)

Keywords	# of times on page	page	Text excerpt	Rating of presence in curriculum (0-3)	Rating of global and local (0-3)	Presence of Learning Domains (C, S, B)	Links with Curriculum Messages (0-3)
Env							
ClimChg							
Pollutn							
Ocean							
Atmsphr							
Biodiv							
Ecosys							
Conserv							
Waste							
RespCons							

Note that when a keyword, such as “justice” appears multiple times in a curriculum document, it might be prudent to review all the related excerpts at the same time, and render an overall judgment for the alignment of the excerpts with related curriculum messages. This exercise is an important, final step in identifying areas to address in the upcoming curriculum development phase.

However, unlike quantitative methods, qualitative approaches require a deeper understanding of the key curriculum messages. However, in their present form, these messages are single

sentences and defining alignment with these messages might require a more holistic understanding of some of the sustainable development knowledge areas, based on the coding provided above. To assist in this process, the analysts are strongly encouraged to read the summaries of briefings related to each of the key curriculum messages created by the United Nations. These briefings (Table 15) can familiarize the analysts with the underlying dimensions of each goal and allow them to make more informed and nuanced decisions about the treatment of each curriculum excerpt and its relationship with the key curriculum messages.

**TABLE 15: Briefings on the Sustainable Development Goals**

<b>Society</b>	
Ensure food security and engage in sustainable agricultural production (Goal 2)	<a href="https://www.un.org/sustainabledevelopment/wp-content/uploads/2016/08/2_Why-It-Matters-2020.pdf">https://www.un.org/sustainabledevelopment/wp-content/uploads/2016/08/2_Why-It-Matters-2020.pdf</a>
Ensure healthy lives and promote well-being for all at all ages (Goal 3)	<a href="https://www.un.org/sustainabledevelopment/wp-content/uploads/2017/03/3_Why-It-Matters-2020.pdf">https://www.un.org/sustainabledevelopment/wp-content/uploads/2017/03/3_Why-It-Matters-2020.pdf</a>
Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all (Goal 4)	<a href="https://www.un.org/sustainabledevelopment/wp-content/uploads/2017/02/4_Why-It-Matters-2020.pdf">https://www.un.org/sustainabledevelopment/wp-content/uploads/2017/02/4_Why-It-Matters-2020.pdf</a>
Achieve gender equality and empower all women and girls (Goal 5)	<a href="https://www.un.org/sustainabledevelopment/wp-content/uploads/2016/08/5_Why-It-Matters-2020.pdf">https://www.un.org/sustainabledevelopment/wp-content/uploads/2016/08/5_Why-It-Matters-2020.pdf</a>
Ensure availability and sustainable management of water and sanitation for all (Goal 6)	<a href="https://www.un.org/sustainabledevelopment/wp-content/uploads/2016/08/6_Why-It-Matters-2020.pdf">https://www.un.org/sustainabledevelopment/wp-content/uploads/2016/08/6_Why-It-Matters-2020.pdf</a>
<b>Economy</b>	
End poverty in all its forms (Goal 1)	<a href="https://www.un.org/sustainabledevelopment/wp-content/uploads/2016/08/1_Why-It-Matters-2020.pdf">https://www.un.org/sustainabledevelopment/wp-content/uploads/2016/08/1_Why-It-Matters-2020.pdf</a>
Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all (Goal 8)	<a href="https://www.un.org/sustainabledevelopment/wp-content/uploads/2016/08/8_Why-It-Matters-2020.pdf">https://www.un.org/sustainabledevelopment/wp-content/uploads/2016/08/8_Why-It-Matters-2020.pdf</a>
Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation (Goal 9)	<a href="https://www.un.org/sustainabledevelopment/wp-content/uploads/2019/07/9_Why-It-Matters-2020.pdf">https://www.un.org/sustainabledevelopment/wp-content/uploads/2019/07/9_Why-It-Matters-2020.pdf</a>
End poverty and reduce inequality within and among countries (Goal 10)	<a href="https://www.un.org/sustainabledevelopment/inequality/">https://www.un.org/sustainabledevelopment/inequality/</a>
<b>Environment</b>	
Ensure access to affordable, reliable, sustainable and modern energy (Goal 7)	<a href="https://www.un.org/sustainabledevelopment/wp-content/uploads/2016/08/7_Why-It-Matters-2020.pdf">https://www.un.org/sustainabledevelopment/wp-content/uploads/2016/08/7_Why-It-Matters-2020.pdf</a>
Ensure sustainable consumption and production patterns (Goal 12)	<a href="https://www.un.org/sustainabledevelopment/wp-content/uploads/2019/07/12_Why-It-Matters-2020.pdf">https://www.un.org/sustainabledevelopment/wp-content/uploads/2019/07/12_Why-It-Matters-2020.pdf</a>
Take urgent action to combat climate change and its impacts (Goal 13)	<a href="https://www.un.org/sustainabledevelopment/wp-content/uploads/2019/07/13_Why-It-Matters-2020.pdf">https://www.un.org/sustainabledevelopment/wp-content/uploads/2019/07/13_Why-It-Matters-2020.pdf</a>
Conserve and sustainably use the oceans, seas, and marine resources for sustainable development (Goal 14)	<a href="https://www.un.org/sustainabledevelopment/wp-content/uploads/2019/07/14_Why-It-Matters-2020.pdf">https://www.un.org/sustainabledevelopment/wp-content/uploads/2019/07/14_Why-It-Matters-2020.pdf</a>
Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss (Goal 15)	<a href="https://www.un.org/sustainabledevelopment/wp-content/uploads/2019/07/15_Why-It-Matters-2020.pdf">https://www.un.org/sustainabledevelopment/wp-content/uploads/2019/07/15_Why-It-Matters-2020.pdf</a>
<b>Governance</b>	
Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels (Goal 16)	<a href="https://www.un.org/sustainabledevelopment/wp-content/uploads/2019/07/16_Why-It-Matters-2020.pdf">https://www.un.org/sustainabledevelopment/wp-content/uploads/2019/07/16_Why-It-Matters-2020.pdf</a>
Strengthen the means of implementation and revitalize the global partnership for sustainable development (Goal 17)	<a href="https://www.un.org/sustainabledevelopment/wp-content/uploads/2019/07/17_Why-It-Matters-2020.pdf">https://www.un.org/sustainabledevelopment/wp-content/uploads/2019/07/17_Why-It-Matters-2020.pdf</a>

## 4. Reporting

The overall content and context analyses will be written up in a report that will overview the results and any implications for discussions moving forward. This might take into account the following:

- to have policy documents address both Sustainable Development and Global Citizenship frameworks;
- to have the curriculum address the conceptual categories of the economy, environment, society and good governance in a meaningful manner;
- to have the ESD-related curriculum contain learning outcomes across the cognitive, socio-emotional, and behavioral domains;
- to have ESD-related curriculum promote the key messages of sustainable development.

An example can be found in corresponding Box 6. Annex 9 contains a suggested outline for writing up a report that includes both the policy review and curriculum analyses.

### BOX 6: Excerpt From Turkey's National Policy and Curriculum Analysis

*“The national learning outcomes within the Science Curriculum put the most emphasis on the SDGs. There are a total of 188 references to SDGs (explicit f=140) within the Science Curriculum. This happens to be, by far, the number one subject-specific curriculum that is connected to ESD and GCED learning outcomes.*

*In terms of the domains of learning objectives, the percentages indicate that over 70% of the national learning outcomes represent the cognitive domain. The rest of the national learning outcomes are related to the other learning domains.*

*The overall findings reveal that the level of attention attached to SDGs highly depends on the thematic representation of a specific SDG and the content covered in a particular subject (p. 9).”*

*Öztürk, Mustafa, Ph.D., “Global Schools Final Report Turkey.” May 2021. Global Schools Program and the United Nations Sustainable Development Solutions Network.]*

### 4.1 Conclusion and Consultation

A Phase 1 consultation process might take place at the conclusion of the policy review/ curriculum mapping analysis. The report might be shared in a workshop that could also be used to present ESD and receive input at an early stage on the general plans for ESD in the schooling system, such as during the design of the ESD Curriculum Framework.

This workshop would be an opportunity to clarify the meaning of ESD concepts, share and receive feedback on initial ideas about ESD learning outcomes and curriculum strategies, and generate collaborators in the curriculum development and field-testing processes. This could be considered Phase 1 of a broad input process. A sample agenda for such a workshop is included in Annex 10.

## Annex 8: Suggested software to collect and manage data

There are different kinds of software that can help the Research Team in managing their data.

### Spreadsheet software options

- Google Sheets
- Microsoft Excel
- Apple Numbers
- Quip
- EtherCalc
- Zoho Sheets

### Word processing software

- Google Docs
- Microsoft Word
- Apple Pages
- Lotus Word Pro
- Notepad
- Work pages
- OpenOffice Writer

### Data Analysis software

#### *Quantitative tools*

- Stata
- SPSS
- SAS
- Python
- R
- Microsoft Excel

#### *Qualitative tools*

- NVIVO
- Atlas.ti
- MAXQDA
- Dedoose
- Quirkos
- Taguette



## Annex 9: Report Outline

Section title	Section description & key questions	Section length
<b>Executive Summary</b>	This section summarizes the purpose, the local context, methodologies used, key findings, and the conclusion of the entire exercise	1 page
<b>Introduction</b>	This section sets the context for the exercise, including the purpose of the report, the process, and the objectives.	2 pages
<b>Policy Review</b>	<p><b>This section provides an analysis of policy documents.</b></p> <ul style="list-style-type: none"> <li>● Provide a brief background on the purpose of the exercise ~ half page</li> <li>● Create a table which outlines the types of documents reviewed/analyzed and provide a full list of the documents. For each document reviewed, please provide a very brief (1-2 sentence) description, and state why it was selected for review (1-2 sentence). ~ 1 page</li> <li>● Outline methods used for reviewing/analyzing the documents. ~ 1 page</li> <li>● Summary of results and key findings according to specific documents with reference to the presence/gaps of ESD. ~ 1-2 pages</li> </ul>	3-4 pages
<b>Curriculum Review</b>	<p><b>This section provides an analysis of curriculum documents (educational frameworks, textbooks, etc.).</b></p> <ul style="list-style-type: none"> <li>● Provide a brief background on the purpose of the exercise ~ 1 page</li> <li>● Outline methods used for reviewing/analyzing the documents. ~ 1 page</li> <li>● Summary of general, empirical results/findings. ~ 8-9 pages</li> <li>● Analysis and general recommendations of key findings (at this stage recommendations do not need to be overly specific). ~ 1-2 pages</li> </ul>	10-12 pages
<b>Conclusion</b>	Summarize the results and key findings of the exercise, including presence/gaps, and areas for improvement.	1 page
<b>References</b>	List all the sources cited and reviewed	1-2 pages
<b>Matrices/Tables</b>	These should be included as part of the final report.	No limits

## Annex 10: Sample workshop agenda for a stakeholders' consultation

**Aims:** The aim of this workshop is to share the results of the ESD-focused analysis of key policy documents and education curriculum and to plan for next steps in the development of related curriculum.

- 9:00-9:15 Welcome and overview of the aims and agenda of the workshop
- 9:15-9:45 MoE/expert presentation: the meaning and importance of ESD within the education system, including UNESCO and SDSN efforts
- 9:45-10:15 Teacher/pupil presentations: ESD effort in practice (lesson or school-wide practice)
- 10:15-10:45 Research Team presentation: ESD curriculum mapping results, highlighting key recommendations for curriculum development
- 10:45-11:00 Break
- 11:00-11:30 MoE/expert presentation: ESD curriculum strategies (with handout)
- 11:30-12:15 Small group work: Brainstorming of potential ESD curriculum strategies (e.g., cross-curricular, key subjects, whole school, with documentation of small group work) (Note: small groups should indicate which strategies they support and why)
- 12:15-13:00 Sharing of small group results with whole group, with discussion
- 13:00-14:00 Lunch
- 14:00-14:30 MoE/expert presentation: ESD Competences and Learning Outcomes (with handout)
- 14:30-15:15 Small group work: Review of potential ESD Competences and Learning Outcomes linked with Curriculum Strategies (discuss priorities, edits and additions; documentation of small group work) (Note: this activity might be organized around school level, subject-matter, etc. depending upon the Research Team/National Advisory Committee sense of where the ESD curriculum effort will be focused)
- 15:15-15:40 Sharing of small group results with whole group, with discussion
- 15:45-16:00 Break
- 16:00-17:00 Guided, open discussion on next steps

# CHAPTER 05

## ESD CURRICULUM REVISION AND DEVELOPMENT





## Introduction

This section of the toolkit addresses technical tasks that the Advisory Committee, the Research Team, and other education actors might undertake to use the results of the curriculum mapping in developing an ESD curriculum strategy for schools and undertaking curriculum development. These are the third and fourth phases of what can be seen as the cycle for curriculum revitalization, beginning with: (1) curriculum visioning, (2) review and analysis, followed by (3) curriculum strategizing, (4) curriculum writing, (5) developing associated supports systems for teachers and classrooms, (6) implementation and (7) evaluation.

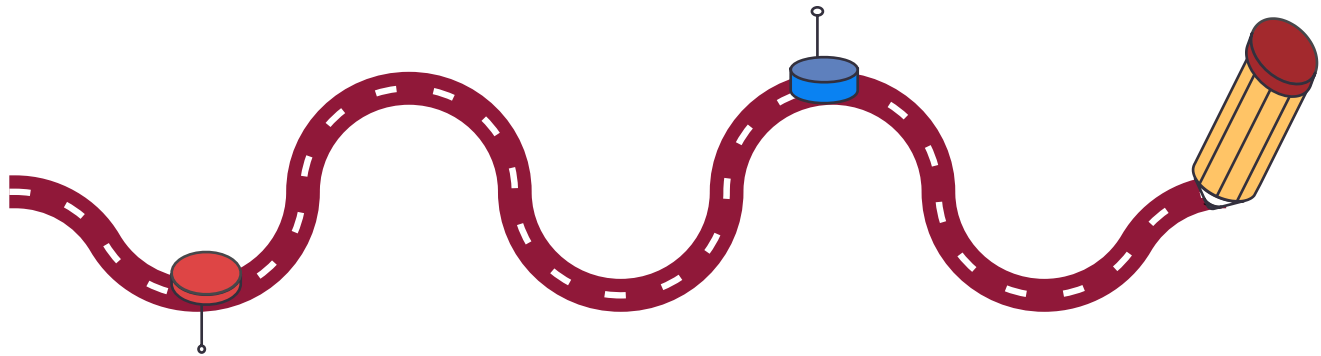
The results of the policy and curriculum analyses have indicated both coverage and shortcomings of ESD themes within key education policy documents and national curriculum. The qualitative analyses in the curriculum mapping will have shown how holistically a keyword/concept is treated within individual curriculum documents; how well learning outcomes are

associated with cognitive, socio-emotional, and behavioral goals; local to global perspectives in the existing curriculum; and to what extent the existing curriculum addresses the SDG curriculum messages for each conceptual category. It is now time to develop specific curriculum strategies for advancing ESD and developing related lesson plans.

In this chapter, we will return to the ESD Curriculum Framework detailed in Chapter 3 of the Toolkit and continue drafting the remaining sections. Following the policy/curriculum review, the Research Team will be well positioned to proceed with curriculum planning. The research process itself will have required the Research Team to clarify their understanding of ESD. The quantitative analyses will have revealed both coverage and shortcomings in relation to ESD themes in the existing curriculum. The primary tasks suggested for this phase of work are:

### Step 2. ESD Curriculum writing

- Establish specific processes for writing curriculum and having it reviewed and approved;
- Undertake curriculum design and development, including potential revision of existing curriculum, adaptation of ESD curriculum already developed, and/or development of new curriculum;
- Support implementation of new ESD curriculum.



### Step 1. Extending the Existing ESD Curriculum Framework

- Agree on general curriculum strategies and approaches, e.g., subject-specific, transversal/ cross-curricular, whole school;
- Agree on ESD competencies;
- Determine ESD learning outcomes and themes;
- Identify learner assessment strategies.

**NOTE:** The document is not intended to be prescriptive, but to provide guidance for curriculum developers to craft an ESD curriculum policy with support for their local context.

## 1. Extending the existing ESD Curriculum Framework

The comprehensive ESD Curriculum Framework is a document that serves as a blueprint for ESD curricular initiatives in the country. This was already presented in Chapter 3, to give the Research Team a general conceptual framework to approach their

analysis; in this chapter, we return to the ESD Curriculum Framework to support the Research Team in more detailed planning that will lead into curriculum development. Once again, we share in Table 16 the proposed outline shared previously in Chapter 3 of the handbook.

**TABLE 16. ESD Curriculum Framework (suggested draft outline)**

1. Rationale for ESD (global/local) and links with national education aims.
2. Definition of ESD, conceptual categories (e.g., environment, economics, society, good governance) and learning domains (cognitive, socio-emotional, behavioral)
3. Good practices for teaching pedagogy and methods.
4. Curriculum strategies (e.g., transversal, key subject carriers, separate subject, whole school).
5. Key ESD competencies, by age/grade level.

Key	Pre-primary & lower primary (ages 5-9)	Upper primary (ages 9-12)	Lower secondary (ages 12-15)	Upper secondary (ages 15+)
X				
X				
X				

6. Learning outcomes and themes according to pupil age and subject matter (depending upon curriculum strategies and ESD competencies. The learning outcomes should cover the learning domains of cognitive, socio-emotional, and behavioral.
7. Learner assessment strategies.



The first part of the ESD Curriculum Framework developed in Chapter 3 contains key components, including links with national education aims, definitions of ESD and its conceptual categories, and pedagogical and methodological approaches. This framework also should include general strategies for the curriculum, overarching ESD competencies, as well as more detailed learner outcomes. These will help to guide the curriculum development process.

We note that there are many ways in which curriculum can be evident, including in national education frameworks and standards, subject-specific curriculum, learning resources, and assessment measures. The curriculum may include new strategies for encouraging ESD practices in schools, both through the formal curriculum but also through school-wide approaches, extracurricular activities, and links with the community.

In the daily life of schools, curriculum presents itself in lesson plans and activities. If we take a broader view of curriculum, then we can also see other aspects of school life that influence students and educators. Extracurricular activities, links with the local community, school culture, participation in school governance, as well as welcoming and safe school environments for all members of the school community provide additional opportunities for ESD. All these aspects of curriculum are eligible to be considered in developing an ESD curriculum strategy, though this section focuses primarily on formal, intended curriculum, such as those found in subject-specific standards, lesson plans, textbooks, and learning resources. Teams will need to adapt the advice in this section to the ways in which curriculum is imagined and shared in their national context.

In fleshing out a strategy for infusing ESD within learning processes, teams should address all four conceptual categories of ESD (environment, economy, society, good governance), all three learning domains (cognitive, socio-emotional and behavioral), and embrace local through global treatment of key ESD themes. We also encourage teams to commit to developing all related curriculum over time, across all subjects as well as across the whole school.

### 1.1 Agree on general curriculum strategies and approaches

The overall ESD approaches – including both subject-specific curriculum as well as broader approaches in the schools – that can be identified include:

- Creating a separate, stand-alone subject, such as sustainable development (which might be obligatory or optional)<sup>11</sup>;
- Integrating ESD themes within key subjects (“carrier subjects”) such as geography, natural science, economics, languages, and literature. The strategy of integrating ESD within one or two carrier subjects is commonly seen by actors pushing to strengthen ESD in formal curricula. If this strategy is chosen, the carrier subject(s) should be mandatory, as this will help to ensure that all learners receive ESD, not just the portion of students who choose an optional subject or attend a school where the subject is offered. This strategy requires an understanding of how an ESD perspective, learning outcomes, and content can support the achievement of the overall competencies enshrined in the subject.

<sup>11</sup> The authors of the report recommend integrating ESD in a more interdisciplinary manner, and would encourage one of the other approaches listed. However, in the absence of other options due to certain challenges and limitations, this strategy is still a viable approach to ensure that ESD is included in the curriculum.

- A transversal integration of ESD values and methodologies (e.g., interactive and learner-centered methods) across all subjects;
- School-wide activities (such as “themed days”) and clubs;
- School-wide governance and culture (with a focus on sustainable consumption, for example, or alternative energies);
- Links with the community.

In selecting the appropriate strategy for any context, it will be necessary to assess the opportunities and challenges for strengthening or introducing ESD within the formal curriculum. This will require an analysis of the political and educational landscape and the likelihood of success for each strategy.

Below in Table 17 are some pros and cons for the various curriculum approaches. It’s important to note that the pros and cons of each approach are likely highly context-dependent, and they should be evaluated accordingly by the Research Team and other relevant stakeholders.

**TABLE 17. Curriculum Approaches**

Curriculum Approach	Advantages	Disadvantages
Creating a separate subject(s) (although the authors recommend a more interdisciplinary approach)	<p>All aspects of ESD adjusted to education level and local context can be introduced in relevant learning outcomes.</p> <p>The subject or course will have its own logic, only referring to the overall aim of education in the school law.</p> <p>Hours are ensured for the teaching of the subject or course.</p> <p>Learning outcomes are likely to be holistic and coherent with a clear and detailed taxonomy.</p>	<p>The existence of ESD in the curriculum will be vulnerable, as it can be easily removed if, for instance, there is a change in government, and it is decided politically to cancel the subject or course.</p> <p>If the subject or course is not mandatory but optional, not all students will receive ESD.</p>
Integration within carrier subject(s)	<p>Does not challenge the existence of other subjects it could potentially replace.</p> <p>More likely to be implemented successfully and quickly at scale.</p>	<p>ESD may end up reflected in only knowledge-based learning outcomes and not skill-based ones, because other content and learning outcomes need to be covered by the carrier subject.</p> <p>Treatment of ESD in the curriculum may be fragmented.</p>
Mainstreaming across all subjects and levels	<p>ESD will not be as vulnerable to changes in the curriculum, as it is integrated across many levels and subjects.</p> <p>Adequate time for ESD is likely to be scheduled, especially when learning outcomes are integrated into mandatory subjects and content areas, which are related, work together to provide a holistic approach to ESD.</p>	<p>ESD does not “live” anywhere in particular in the curriculum and may be subordinated to other subjects and themes.</p>
School-wide and co-curricular experiences, including through partnerships with community members	<p>Encourages participatory, learner-centered methods.</p> <p>Clubs can encourage students to participate in extracurricular activities and engage with local government agencies and community organizations.</p> <p>Community-based organizations and NGOs can provide support to classroom teaching and provide places where students can do further studies or experiential learning.</p>	<p>If there is too much emphasis on optional directives from the Ministry of Education and not on integrating explicit ESD learning outcomes into mandatory subjects, then schools may end up not integrating ESD in any extracurricular activities.</p>

The national teams will need to decide what would be a pragmatic focus for an immediate and specific curriculum reform effort. This decision might be influenced by a number of factors, such as the sub-set of curricula that were analyzed (thus already reflecting either a priority or a pragmatic consideration such as an upcoming curriculum review cycle), available resources, etc. Since there is only so much latitude for inserting new curriculum, the Research Team in consultation with the Ministry and the Advisory Committee will need to take an initial decision on what areas to prioritize in any curriculum revision. This is something that the Research Team can share in the consultation workshops with stakeholders after the policy and curriculum review, and receive input on.

For all strategies presented, the national teams should recommend classroom hours sufficient for the delivery of quality ESD, as well as a clear curriculum with educational aims, content areas, and learning outcomes based on progressive taxonomies across levels.

## 1.2 Agree on ESD competencies

After agreeing on the relevant curriculum strategy, the next task requires infusing ESD within learning processes. The Research Teams should develop key ESD competencies, which can be broken down by age/grade level. According to UNESCO, the impact of “quality education and learning effectiveness is actualized through the application of competencies that have been defined as essential for supporting development in specific contexts,” and these can cover diverse skills and content (UNESCO). A useful reference point to start out with the development of ESD competencies (point 5 of the suggested draft outline in Table 16) might be the ‘curriculum messages’ associated with ESD conceptual categories (see Box 7). These ‘curriculum messages’ contain information that can be used for thematic coverage as well as for learning outcomes including the cognitive, socio-emotional, and behavioral domains. Therefore, we suggest using these ‘curriculum messages’ found in Chapter 4 to develop ESD competencies that will be used in the ESD Curriculum Framework.

We have included these curriculum messages in Box 7 as a reference.



## BOX 7. ESD Curriculum Messages, by Conceptual Categories

### Environment

- Ensure access to affordable, reliable, sustainable and modern energy (Goal 7)
- Ensure sustainable consumption and production patterns (Goal 12)
- Take urgent action to combat climate change and its impacts (Goal 13)
- Conserve and sustainably use the oceans, seas, and marine resources for sustainable development (Goal 14)
- Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss (Goal 15)

### Economy

- End poverty in all its forms (Goal 1)
- Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all (Goal 8)
- Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation (Goal 9)
- End poverty and reduce inequality within and among countries (Goal 10)

### Society

- Ensure food security and engage in sustainable agricultural production (Goal 2)
- Ensure healthy lives and promote well-being for all at all ages (Goal 3)
- Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all (Goal 4)
- Achieve gender equality and empower all women and girls (Goal 5)
- Ensure availability and sustainable management of water and sanitation for all (Goal 6)

### Good governance

- Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels (Goal 16)
- Strengthen the means of implementation and revitalize the global partnership for sustainable development (Goal 17)

Language around competencies includes action verbs such as students being able to recognize, explain, illustrate, discuss, explain, analyze, assess, and/or apply themes related to ESD. The Bloom's taxonomy below shows increasingly higher levels of understanding and application.



FIGURE 1. Bloom's Taxonomy

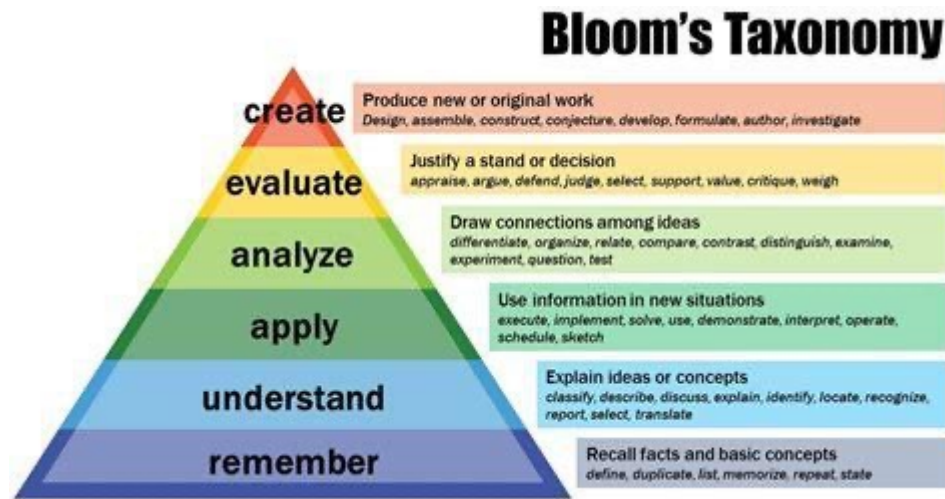


Table 18 below is an example of how such competencies might be broken down for different ages/grade levels using one of the 'curriculum messages' in the 'environment' conceptual category. This table does not present all of the potential competencies for this 'curriculum message' for each age cluster. It merely attempts to show a progression of competencies across grade levels, with increasing conceptual complexity as pupils age, as well as an incorporation of more national and global (rather than only local) treatment of sustainability issues as students progress through the grades.

The Research Team might prefer to use prompts other than the 'curriculum messages' associated with the SDGs to develop their ESD competencies. For example, it might be decided for the 'environment' conceptual category to develop competencies linked with each of the keywords used in the analysis (environment, climate change, pollution, etc.). We have also included a literature review of quality ESD curriculum in Annex 16, which can serve as a key resource for the development of the ESD Curriculum Framework as well as associated curriculum development.



**TABLE 18. Example of ESD Key Competencies, for ‘Environment’ Conceptual Category, by age/grade level (not comprehensive)**

SDG-based Curriculum Message	Related Key Competencies (developed by team)	Pre-primary & lower primary (ages 5-9)	Upper primary (ages 9-12)	Lower secondary (ages 12-15)	Upper secondary (ages 15+)
<p>Conserve and sustainably use the oceans, seas, and marine resources for sustainable development (Goal 14)</p>	<p>Understand the natural resources that support life on Earth</p> <p>Describe the principles of limited resources and conservation of resources</p> <p>Apply the principles of conservation and responsible use of natural resources in one’s own life</p>	<p>Understand the role of water in our lives (local/global)</p> <p>Compare the different kinds of plants and animals that live in water near us (local)</p> <p>Describe the food that we get from oceans and lakes (local/global)</p> <p>Create an artistic product that reflects the beauty of lakes and oceans</p> <p>Understand the importance of taking care of our environment</p>	<p>Understand the principle of limited natural resources</p> <p>Analyze the consequences of water pollution on plants, animals, and humans (local/global)</p> <p>Compare different strategies for combating water pollution (local)</p> <p>Understand the principle of sustainable development (global)</p>	<p>Understand ways that economic development can be carried out in ways that conserve oceans, seas, and marine resources (global)</p> <p>Recognize that individual actions can make a difference in addressing conservation and sustainable use of marine resources (local/global)</p> <p>Develop a campaign to address a local issue related to water pollution or water conservation (local)</p>	<p>Describe the different actors engaged in promoting conservation and sustainable use of oceans, seas, and marine resources (local/global)</p> <p>Analyze policies promoting conservation and sustainable use of marine resources (local/global)</p> <p>Draw links between sustainable development and marine resources and sustainable development in other spheres (local/global)</p>

### 1.3 Determine ESD learning outcomes and themes

The key ESD competencies from the ESD Curriculum Framework now need to be translated into specific learning outcomes and themes according to pupil age and subject matter, in accordance with the curriculum strategies. By this time, Research Teams will have already chosen which type of curriculum approach(es) they will use in designing the new ESD curriculum and created key ESD competencies. Now, building upon the prior steps, Research Teams will develop ESD learning outcomes. In other words, depending on the curriculum approach chosen, ESD learning outcomes and themes would be developed for either 1.) a separate, stand-alone subject 2.) key carrier subjects, 3.) across all curriculum (transversal approach) and/or 4.) in a whole school approach.

Box 8 lists potential learning outcomes related to 'sustainability' and the high school subject of economics. Annex 11 contains additional ESD learning outcome lists for the concept of 'sustainability' for high school history, middle school civics, middle school/primary school earth science, and primary school literature. Annex 12 includes examples of ESD activities that can be undertaken school-wide, and an example of the integration of ESD within an existing school club. Note that the learning outcomes presented are not linked with any ESD Curriculum Framework, as will be the case for the Research Teams in the local country context. These learning outcomes are not presented with associated conceptual categories, such as 'environment,' 'society,' 'economics,' and 'good governance', though these can be discerned and could be broken out in the ESD Curriculum Framework document developed by the team.

#### **BOX 8. Potential learning outcomes related to 'sustainability' for a high school economics course**

1. Understand the economic and environmental costs and benefits of different production and consumption practices.
2. Analyze the impact of economic policies and institutions on sustainable development.
3. Evaluate the effectiveness of different approaches to sustainable development, such as green technologies and eco-efficiency.
4. Understand the concept of sustainable development and the role of economic systems in achieving it.
5. Understand the importance of intergenerational equity and the rights of future generations in economic decision-making.
6. Understand the economic implications of climate change and strategies for addressing it.
7. Understand the relationship between economic growth and environmental degradation and explore alternatives to the traditional paradigm of economic growth.
8. Understand the role of international trade and investment in sustainable development and the challenges posed by globalization.
9. Understand the importance of social and economic inequalities in sustainable development and the need for an equitable distribution of resources.
10. Develop skills in critical thinking, problem-solving, and decision-making in the context of sustainable development.

Care should be taken to ensure that learning outcomes collectively cover the learning domains of cognitive, socio-emotional, and behavioral outcomes, and encompass the treatment of local, national, and global issues. A guide that goes through a more-structured process for creating learning outcomes can be found in Annex 13.

## 1.4 Identify learner assessment strategies

In some traditional education contexts, ESD learning might be focused on the gaining of knowledge and theories related to sustainable development. However ESD learning, with its transformative pedagogy, includes “learning to ask critical questions; learning to clarify one’s own values; learning to envision more positive and sustainable futures; learning to think systemically; learning to respond through applied learning; and, learning to explore the dialectic between tradition and innovation” (UNESCO, ESD, 2011, p. 8). ESD learning outcomes should cover the cognitive, socio-emotional, and behavioral learning domains.

Learner assessment should therefore reflect the multifaceted goals intended for students and the diverse pedagogical methods used (individual work, small group work, project work, discussion, and so on). This approach should be recognized in the ESD Curriculum Framework. The areas of student development that might be assessed are:

understanding of content, remembering basic factual material, and grasping the meaning of concepts;

skills of analyzing problems, understanding the perspectives or points of view of other groups, and designing new solutions to problems;

attitudes, motivation, or interest;

application, action, and generalization.

Techniques for assessing these kinds of learning outcomes are closely linked with the ways in which the teaching and learning processes themselves are organized and include (non-comprehensive):

- essays and reports;
- tests;
- observations of student behavior;
- project-based work;
- examples of student work, such as maps;
- student journaling;
- artistic forms of expression, including creative writing, visual arts, etc.;
- portfolios of student work carried out at different points in time in the class, illustrating learner development;
- participation in simulations and role plays;
- participation in debates, moot and mock courts, and governance bodies.

Whenever possible, the teacher should not simply give a mark, but include constructive comments that note the strengths of the students’ work as well as areas for improvement.

ESD encompasses not only knowledge and intellectual skills acquisition, but also socio-emotional dispositions, such as a motivation to ‘make a difference’ and skills, such as being aware of one’s values, the capacity to express one’s thoughts, and the ability to work as part of a team. Skills related to specific actions, such as expressing one’s point of view through the use of facts and working as part of a team, can be assessed through “naturalistic” products, such as the written work of learners, plans of action and project-related work (mentioned in the list above), as well as the observation of learner behaviors.

Most teachers are already familiar with standard assessment techniques, such as administering tests and marking essays. Giving marks for non-traditional classroom activities, such as small group work, is more challenging. Sometimes the teacher does not feel that they have sufficient information to assess the participation and cooperative behavior of individual students in group work. Some teachers who make use of small group work in their primary school lessons assess the quality of learner participation. An appraisal of small group work might look at how well learners stay on task, cooperate with others, and contribute their fair share of the work.

This assessment could be carried out through a simple checklist completed by both the learner and others in the group. Grades for project work and participation in classroom discussions also might be given by classmates, as well as the teacher. In a learner-centered approach, which ESD endorses, students will actively take part in designing and carrying out assessments, reflecting on their own efforts as a part of the learning process.

We encourage peer- and self-review processes as part of the ESD assessment techniques, as these encourage learner self-reflection and development.

Research Teams can include mention of methods of assessment in their draft ESD Curriculum Framework.

## 1.5 Conclusion

At this stage, all of the previous steps should be written-out and included in the ESD Curriculum Framework document. This document will act as a guiding blueprint for curriculum development and, afterward, the piloting of a newly developed curriculum. The team should ensure to include all of the prior steps in the suggested template in Table 16 and ensure internal alignment on all aspects before moving forward to the ESD curriculum writing section.

A Phase 2 input process could take place now that the ESD Curriculum Framework has been drafted. At this point, feedback could be solicited from within the education community (e.g., teachers, subject specialists, NGOs, and higher education trainers) through a text-based dissemination of the ESD framework draft and an associated feedback form that probes for the content, quality, and comprehensiveness of the framework, suggestions for improvement, and the implementation of the framework. Box 9 contains an example of framing questions that might be used in a survey or workshop format.

### BOX 9. Possible framing questions for a consultation (Phase 2)

- Is the concept of “competency” clear and adequate or are there other concepts/approaches that could be used instead?
- Is the list of competencies/learning outcomes aligned with the ESD vision and complete?
- Is a greater explanation or illustration of the competencies/learning outcomes necessary?
- Are the competencies/learning outcomes unique? Do they overlap?
- Are individual competencies/learning outcomes meaningful?
- Will teachers need support in understanding the concept of ESD competencies and how it applies to their teaching?
- Are there any possible challenges for applying the competencies within curriculum frameworks and teaching and learning materials?
- Are there possibilities and/or challenges for assessing ESD competencies?
- Are there any other experiences/practices from other countries that have successfully applied an ESD competency-based approach?

## 2. ESD curriculum writing

The ESD Curriculum Framework that has been developed by the Research Team, and shared with/reviewed by key stakeholders, is essentially the blueprint for curriculum development. Now, the Research Team will move into the ESD curriculum writing stage.

The curriculum writing stage is one that is both creative and technical. This section concerns practical considerations for developing curriculum, including the options below:

- revisions of existing lessons, for example, found in textbooks;
- integration of new lessons developed by others (such as those collected by SDSN in Annex 16), and adapted/localized for local use;
- integration of new lessons or larger curriculum pieces newly developed by the Research Team or other local writers.

Bear in mind that the thematic components of ESD that have been developed by UNESCO or other international actors have ‘universal’ qualities that need to be contextualized for national and local school systems. The process of localization is one of the biggest challenges of implementing ESD around the world, as every education system is different – in terms of standards, laws, priorities, content and curriculum, delivery model, and degree of flexibility. As such, localizing a universal and global concept like ESD can be challenging. Contextualizing ESD requires knowledge, decision-making, and examinations of local cultures. More specifically, to create ESD lesson plans, educational communities need to identify locally relevant issues, perspectives, skills, values, and behaviors central to each sustainable development component: environment, economy, society, and good governance.

We note that there is no single model of curriculum development, and ministries of education will have their own ‘tried and true’ processes. This handbook is not intended to repeat what may already be well known by educational authorities in terms of curriculum development processes, but rather to highlight contents essential for quality ESD, such as consultation processes and lesson piloting. This section will therefore not go into depth on such standard procedures for curriculum writing but present examples that might serve as a resource specifically oriented towards ESD efforts.

Please note that this handbook also addresses the analysis of implemented curriculum in Chapter 6. Although this is primarily geared toward the field testing of new ESD curriculum, the Research Team may want to collect the perspectives of teachers on existing curriculum and methodologies prior to curriculum development. Information about successful practices as well as barriers may assist in the ESD curriculum development process. Techniques for collecting such information are included in Chapter 6.

### 2.1 Establish specific processes for writing curriculum and having it reviewed and approved

The Research Team may want to develop a work plan that includes the phases of curriculum writing/development, piloting, and finalization (both the piloting process and the finalization process are detailed in Chapter 6). A work plan typically incorporates key stages of work and working processes with the range of actors engaged in the curriculum development effort, including writers, reviewers, and field testers. Work plans have also incorporated the use of technologies in supporting such processes. Detailed plans are typically accompanied by estimates of time, as well as human and financial resource requirements, including a cushion for unexpected delays and costs.



ESD lesson development and revision might be carried out by members of the Research Team or by other writing specialists brought into the process. In decentralized systems, educational authorities at the sub-national level are involved in curriculum development, and schools have the freedom to build portions of their learning program. As mentioned earlier, in some education systems specific arms of the Ministry are responsible for curriculum revision/development.

Those leading curriculum reform efforts have often put into place a capacity-development process for curriculum writers. Any new members of the team will need to deeply understand SDG Target 4.7, the ESD Curriculum Framework, and the work of the Research Team. Even local and national actors well versed in these areas may benefit from training that helps to forge a common sense of “mission, objectives, tasks and expected outcomes” (Georgescu, 2013).

Local actors may be continuously exposed to methods and practices from both within and outside of the country that can inform elements of the overall curriculum development effort, including not only curriculum and programming but also lesson and textbook design, new teaching techniques, and use of ICTs and social media. As such, ongoing discussions between educational actors, stakeholders and those leading ESD reform can help to create a shared understanding about which strategies are likely to be successful in the local environment.

Earlier in this handbook, we recommended that consultation with stakeholders take place to present the results of the policy review and curriculum mapping and also after the development of the first version of the ESD Curriculum Framework. A Phase 3 input process could take place after the curriculum has been developed, piloted, and revised. The presentation of the ESD Curriculum Framework and associated curriculum could be shared within the education community both in writing and in public presentations.

## 2.2 Undertake curriculum design and development

This section is focused on the revision or development of intended curriculum, including individual lesson plans or modules, subject-specific syllabi, and curriculum associated with co-curricular and school-wide approaches. Whereas the ESD Curriculum Framework described curriculum goals and learning outcomes, at this stage writers will design learning activities to support those goals. Each of these activities should aim to reflect the pedagogical ‘best practices’ presented in Chapter 3 and should be aligned with the ESD Curriculum Framework, the detailed results of the curriculum mapping, and decisions about which specific curriculum to focus on first. Research Teams can review the pedagogical best practices presented in the previous sections.

The curriculum mapping exercise will have highlighted for each conceptual category and associated keywords: the depth of treatment of ESD themes (if at all); whether treatment was local, global, or both; if SDG-based curriculum messages were being addressed; and the coverage of cognitive, socio-emotional, and behavioral learning domains in the curriculum. This abundance of information is a key consideration for what to focus on, in conjunction with the ESD Curriculum Framework. Essentially, what the curriculum developers have to work with is the ‘top down’ framework of ESD competencies and thematic coverage, and ‘bottom up’ information on the actual status of ESD as revealed through the curriculum mapping. Between the ambitions of the ESD Curriculum Framework and the existing curriculum, decisions will need to be made that are both strategic and practical. Should the curriculum writers focus on strengthening the treatment of ESD within those subjects where there is some evidence of ESD themes? This would likely involve curriculum revision. Should writers focus on the development of new lessons or even units addressing ESD in subjects that are lacking in these areas? Ideally, there will be sufficient time and resources to address all of these needs over time.

As stated at the beginning of this section, the curriculum development work might require a combination of strategies, including *revision of existing lessons/curriculum, development of entirely new ones, or adaptation/ localization of lessons developed outside of the country*. This handbook addresses each of these curriculum development processes separately, but they share a similar aim towards enabling holistic, competency- based and skills-oriented ESD learning.

Annex 14 contains sample unit and lesson planning matrices, respectively, that show how a team might approach ESD curriculum development. The overall goal is to move the curriculum along a spectrum where, at one end, there is no evidence of ESD to the other end where there is an evident focus on ESD. An intermediary point might be ESD-inclusive, where there is some limited treatment of ESD-related content and approaches, but it is not a primary focus.

### **2.2.1 Revision of existing lessons and learning resources**

The first strategy we will discuss is the revision of existing lessons and learning resources. Options for strengthening curriculum where some ESD is already present include increasing the amount of time and curriculum space for ESD themes – especially in obligatory subjects – to ensure: 1) that these themes are related and work together to provide a holistic (not fragmented) treatment of key themes and 2) that the existing curriculum uses teaching and learning methods that are, for example, more problem-oriented, participatory, and learner-centered (Kerr et al).

The curriculum mapping will have revealed where ESD-related themes are already present. In promoting a holistic and quality treatment of ESD, existing curriculum might be revised in ways that are aligned with the ESD Curriculum Framework and best practices. Based on the experience of Global Schools, this approach is likely to be the most viable strategy for rapidly integrating ESD themes into learning (at scale) without the need to revise existing curricula. In other words, this strategy has the potential to cause the least amount of disruption to the existing

curriculum ecosystem, potentially making it easier to adopt when compared to the other options. Moreover, since teachers and schools are quite familiar with the existing curriculum, an approach that mainly relies on adaptation of existing curriculum (instead of creating an entirely new one) is likely to be easier to garner teacher and school-wide buy-in. Some possible approaches toward adaptation may include:

#### *Individual lesson plans*

- Integration of new ESD-related learning outcomes to a preexisting lesson;
- In conjunction with these new outcomes, adding associated ESD concepts and methodologies within the existing lesson.

#### *Subject-specific syllabi*

- Integration of new ESD-related learning outcomes to a preexisting unit of study (cluster of lessons);
- In conjunction with these new outcomes, adding associated ESD concepts and methodologies within existing lessons.

#### *Co-curricular and school-wide approaches*

- Integration of ESD concepts and activities to existing school club(s), school policies, and school-wide events.

The ESD additions might be collected in a single resource to be used by teachers, until the learning resources (e.g., textbooks) themselves can be changed. The example in Box 10 describes how a regular lesson on the topic of water purification can be adjusted to integrate themes related to sustainability. In another example in Box 11, we present a way to adapt an English as a foreign language lesson to include ESD-related messaging on sustainable cities and communities (SDG 11). Finally, we present an example lesson plan submitted as an assignment for the Global Schools Advocates training course, in Box 12.

**BOX 10: Adapting a water purification lesson to integrate ESD**

The premises of sustainability include the idea that decision-making has to include social, ethical, environmental, and economic factors. While economic success is measured in terms of production and consumption, and largely mediated by money, the system has a bias towards competitive consumption to the extent that the economy is divorced from the environment and social cohesion that sustains it. Moderating the bias towards conventional economics in lesson structures and processes is a key element in ESD, bringing the social and environmental parts of the total economy back into play as a central part of the lesson.

***Example of 'Talking about water' in a secondary classroom***

In a typical topic on water purification and distribution, a diagram shows the route from rainfall to reservoir to house and factory and finally the sewage treatment works. Students are asked to purify dirty water experimentally using a variety of functionality and through the addition of aluminum sulfate as a flocculant.

The issue behind the task is for students to understand that clean drinking water requires a process. However, this task has not included any key questions about the choices, environmental costs and benefits and issues surrounding clean water.

*How can the teacher include those elements to have a holistic perspective of the problem?*

First, by adding some activities that promote critical thinking. For example, asking questions such as:

- Why does so much water need treatment?
- Why do we flush drinking water down the toilet?
- Is the current system sustainable?
- Is this system effective?
- Is the water quality good? How do we know?
- Is it cheap or expensive? What are the alternatives?

Give students the opportunity and time to ask their own questions about the topic. Economics is an investigative process; a series of questions about the best use of resources. Used imaginatively it can engage in philosophical deliberation about the purpose of an economic system, and about its stakeholders, rewards, and values.

**Source:** Sterling & Huckle, 2014, pp. 82-84.

## BOX 11: Adapting a secondary school EFL lesson with vocabulary on cities

**Subject:** English as a Foreign Language (EFL)

**Grade:** Grade 9

In the intended curriculum, students are asked to identify and apply English vocabulary such as extreme adjectives. In addition, students need to use these adjectives to describe a particular location. The objective of this task is to promote mastery of extreme adjectives through using them in an oral presentation. However, this task has not included any key questions about the environmental/economic trade-offs in urban areas or how to make cities more sustainable.

### *Original curriculum objectives*

- To identify and apply extreme adjectives to describe cities.
- To prepare a presentation.

*How can the teacher integrate new ESD-learning outcomes to a pre-existing unit of study?*

Expanded learning objectives linked with SDG 11

- To discuss what makes a city sustainable.
- To identify and apply extreme adjectives to describe sustainable cities.
- To research and evaluate ways to make Guayaquil more sustainable.
- To prepare a presentation following a presentation plan about my previous findings.

*How can the teacher incorporate ESD-methodologies into the existing lesson?*

Procedure (adapted from source material, see full blog below)

- Students review extreme adjectives used to describe cities. As a warm-up, students play a Kahoot and jot down the extreme adjectives they find in the game.
- Students brainstorm ideas around the question: "What would a perfect city look like?" to come up with an overall agreement on a perfect city.
- Students are asked to compare their own city, Guayaquil, with the descriptions mentioned during the brainstorming session, using the key vocabulary and adjectives to describe cities.
- Students watch a video about the meaning of sustainability and how to be financially, socially, and environmentally sustainable. Students work in pairs and with the entire class, using the key vocabulary from previous lessons to describe how those cities have achieved sustainability and how those solutions are related to SDG 11 targets.
- Students create a presentation around the question: how can we make Guayaquil more sustainable? They are requested to analyze the following points and use extreme adjectives to describe the city:
  - To what extent is your city sustainable?
  - What can be done to make your city more sustainable?
  - How are your solutions related to SDG 11 targets?

**Source:** Lissette Pino, Global Schools Advocate in Ecuador, Global Schools Program, 2022. <https://www.globalschoolsprogram.org/post/implementing-sdg-11-in-lesson-plans>

## BOX 12: Lower Secondary School Science Lesson

**Subject:** Science

**Grade:** Lower Secondary School (Age 12)

### *Original curriculum objectives*

- Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.
- Use information from several sources to provide evidence that Earth events can occur quickly or slowly.

### *Curriculum objectives linked with SDG 13, SDG 5, and SDG 3*

- The learner is able to understand how erosion and an unkempt environment leads to poor health.
- The learner can identify the causes of erosion in their environment, and how this leads to poor health.
- The learner can list ways to curtail erosion in their environment.

### Procedure

- The instructor shows a series of pictures and/or videos of an unkempt environment;
- The instructor builds on observations of the photos, asking the following questions:
  - Why is the environment changing? Do you think it changes slowly or quickly?
  - How do you think wind and water affect the environment?
  - What does this do to communities when the environment changes?
- The instructor explains erosion and its link to affecting biodiversity, the life of animals, and the health of humans; learners are encouraged to reflect on if this affects them directly.
- In pairs, students come up with causes of erosion and the adverse effects of this on the environment; they share back to the class; the instructor categorizes these effects under SDG 15 (Life on Land), SDG 3 (Good Health) or SDG 14/6 (Oceans and Water)
- The instructor summarizes the lesson and asks questions to evaluate learning. The instructor relates the lesson to future lessons.

**Source:** Adapted from Ngunan Gertrude Kwado, Global Schools Advocates' Training Assignment, 2021.

These boxes provide examples of the revision of existing lessons and learning resources. The Research Team can decide, based on their prior analysis, if this is an appropriate strategy. Research Teams will have collected data during the Policy/Curriculum mapping that can inform where ESD is already present and where there are consistent gaps. This will help them decide how and where to revise and/or strengthen existing learning resources.



## 2.2.2 Development of new curriculum

The second strategy we will discuss is the development of new ESD curriculum. The curriculum mapping will have shown places where ESD-related themes are absent. In promoting a holistic and quality treatment of ESD, new lessons and units might be developed that are aligned with the ESD Curriculum Framework and best practices. Some possibilities (not comprehensive) include:

### *Individual lesson plans and subject-specific syllabi*

- Development of new lessons and units based on ESD-related learning outcomes.

### *Co-curricular and school-wide approaches*

- Initiation of new school club(s), school policies, community partnerships and school-wide events aligned with ESD-related learning outcomes.

As mentioned earlier, Annex 14 contains sample unit- and lesson-development templates that might be used for lesson planning.

## 2.2.3 Adaption of ESD curriculum already developed

The third strategy to discuss is the adaptation of ESD curriculum that was designed by an external source, ensuring that it is relevant for the local context. The Research Team may opt to make use of ESD lessons and activities that have been developed elsewhere. [Global Schools has made available a set of 60 open-access lessons in different languages](#) that address sustainable development and global citizenship themes. These lesson plans are an example of an ESD curriculum that can be adapted by Research Teams. Annex 16 contains other ESD-related resources for consideration. Any lessons borrowed from elsewhere need to be properly referenced and made relevant to the local context.

In order to ensure that lessons from outside the country would be relevant and effective in local schools, two processes are usually undertaken:

1. A text-based review by teachers and curriculum experts;
2. A trying-out, or piloting, by teachers in their classrooms.

We recommend that at least one of these processes be used, and ideally both.



### Box 13: Evaluating Global Schools Lessons in Turkey

*In the Global Schools Pilot Project in Turkey, teachers were asked to do a text-based review of the Global Schools Lesson Plans. “25 practicing teachers at the K-12 levels from various school contexts across the country were included in the process. All of the teachers included in this phase had previously completed certified training on ESD. The teachers were selected purposefully to ensure that each level of education would have the same number of teachers (8 teachers from each level - elementary, middle, and high school levels. Each teacher was sent an evaluation checklist (Global Schools Program Piloting Project Lesson Plan Evaluation Checklist along with 5 to 10 lesson plans designed specifically for the grade level that they were currently or were previously teaching. Teachers were required to go through each lesson plan, respond to the items provided in the evaluation checklist, and provide their opinions as practicing teachers. After a careful examination of each lesson plan, the teachers were asked to specify the option that indicates their opinion on the lesson plan concerning specific dimensions on a scale from 1 (one) to 5 (five)...As an overall evaluation, the teachers were asked the following open-ended item: ‘In line with the ratings you have given, indicate how appropriate the lesson plan you have examined is for in-class or out-of-class implementations by checking one of the boxes below and providing your reasons briefly’...[teachers] reported that 61.2% of the Global Schools Program lessons could be adopted and implemented in their current form whereas the remaining 38.8% should be modified or improved to make the lesson plans more local” (Öztürk, 2021).*

Curriculum developers might keep in mind a number of criteria when considering how to adapt lessons from abroad, which are aligned with the ESD Curriculum Framework but are not attuned to the circumstances of your local classrooms. Criteria that might be used in reviewing lessons not originally developed locally include the following categories:

#### *Classroom constraints*

- Class size – make the tool work with a larger or smaller group;
- Time available – shorten or lengthen the duration of the activities;
- Materials needed – find, make, or substitute required materials;
- Space requirements – reorganize the classroom, use a larger space, move indoors or outdoors.

#### *Cultural Familiarity*

- Change key content to make it more familiar (names, foods, pictures);
- Substitute local texts or art (folklore, children’s stories, songs, games, artwork, and proverbs).

#### *Local Relevance*

- Use names and processes of local institutions;
- Sensitivity or appropriateness for local behavior norms (e.g. for genders and ages);
- Ensure content is sensitive to the degree and kind of development, good governance, environmental concerns, and other features of local society.

#### *Inclusivity for diverse students*

- Appropriate reading level(s) of texts for student use;
- Activities suitable for different learning styles / multiple intelligences;
- Accommodations for students with special educational needs;
- Sensitivity to cultural, ethnic, and linguistic diversity;
- Sensitivity to students’ socioeconomic status.

Annex 15 presents a more detailed treatment of these criteria. Research Teams can review the Annex if they want to explore this strategy, and decide which approaches are the most relevant for their contexts.

## 2.3 Supporting the implementation of new ESD curriculum

Developing curriculum and related resources to support it is a multi-year process. While supporting the ESD curriculum implementation over many years might be outside of the scope of the preliminary research, it is still important to mention what is required to ensure successful implementation of the new ESD curriculum.

The Ministry, and any relevant stakeholders on the Advisory Committee, will need to develop a plan to address needs and secure necessary resources. The planning stage will also anticipate the implementation, monitoring, and evaluation of the curriculum. The supports that typically end up in curriculum implementation plans are:

- review and approval of the curriculum;
- the production and distribution of the curriculum;
- an associated communications and publicity strategy;
- development of associated curriculum system supports, including instructional materials and teacher training;

- the elaboration and distribution of teaching and learning materials, including suggestions for assessment;

- the development of an in-service training program and cooperation with higher education institutions in relation to pre-service training;

- ongoing monitoring of implementation.

Pupil textbooks, teacher guides, and other state-endorsed teaching and learning materials are essential for bringing life into the ESD curriculum. Students require resources to support their learning inside and outside the classroom. Teachers should also be provided with the necessary supports to carry out ESD activities, including teaching materials and professional development. Teachers may also need assistance in building their own lesson plans. Box 14 presents the content for an ESD teacher training module recommended by UNESCO. Box 15 presents the syllabus for the Global Schools training course, targeted at educators and school leaders. This syllabus can be used as inspiration for other, locally designed teacher training courses.

### BOX 14. Possible content of an ESD Teacher Training Module

- Basic concepts of sustainable development from a local, national and international perspective
- ESD concepts from a local, national and international perspective
- Disciplinary, interdisciplinary and transdisciplinary views of key examples of sustainability challenges
- Project-oriented work on specific problems of local, national and global importance in cooperation with educational institutions and other (local) partners
- Research-based analysis of ESD processes in different learning settings (such as schools, colleges or non-formal educational institutions)
- Practical experiences with ESD approaches and their critical reflection

Source: UNESCO, 2017, p. 52.

**BOX 15. Global Schools Advocates Course Syllabus  
(Teacher and School Leader Training on ESD)**

Module 1: Introduction to Sustainable Development

Topics Covered:

- Welcome
- Note-taking Handbook
- Background on the Global Schools Program/SDSN
- Anthropocene and the Sustainable Development Goals
- The Age of Sustainable Development

Module 2: Education for Sustainable Development

Topics Covered:

- What is Education for Sustainable Development? (ESD)
- Current Literature on ESD
- Relevance of ESD for Education
- Monitoring ESD and Target 4.7
- ESD Competencies
- ESD Pedagogy and Examples
  - SEL
  - Place-based Learning
  - Play-based Learning
  - Inquiry-based learning
  - Project-based learning
  - Examples
- Active Teaching Strategies for the Classroom
  - Examples in Action

Module 3: Integrating ESD into Your Curriculum

- How can you integrate SDGs into your core curriculum?
- Principles for Localization
- Connecting SDG Targets to your national context
- Lesson Planning and Learning Objectives
- Resources
  - Global Schools Lesson Plans
  - Ideas by SDG
  - Lesson Planning Template
  - Lesson Ideas
  - Links to Games/Comics/Stories
  - Resources on Outside Websites
- Ideas for Classroom Assessment
- Additional Topics within ESD
  - Primary and ECE
  - STEM

Module 4: Creating a School-Wide Movement

- Your mandate bringing ESD to your school
- Communicating with your school
- The whole-of-school approach
- School Leadership
- Creating a School Vision
- Stories of Change and Case Studies



## Conclusion

This chapter has provided examples and suggestions on how to complete the ESD Framework, which acts as a guiding blueprint for the Research Team's work. In addition, it has detailed a few ways to undertake curriculum design and development, including: revision of existing curriculum, development of new curriculum, and adaptation of curriculum already developed. These are various options that the Research Team can pursue in order to revise or design a new ESD curriculum. As emphasized throughout this toolkit, conversations about which options to pursue can take place in consultation with the Advisory Committee and stakeholders within the Ministry, to ensure that any curriculum work is aligned with national priorities. The Ministry of Education – along with its schools – should set up systems to monitor the implementation of ESD curriculum and analyze this data regularly in order to ensure quality implementation and to organize additional supports as necessary. This is taken up in the next section. Also, in the next chapter, we will describe how to design a pilot study to field test the revised ESD curriculum, or to field test a new ESD curriculum.





**Annex 11: Examples of infusion of ‘sustainability’ learning outcomes for a range of subjects**  
**Potential learning outcomes related to ‘sustainability’ for a high school history course**

1. Understand the historical context and evolution of the concept of sustainable development, and how it relates to contemporary issues.
2. Analyze historical events, movements, and policies that have had an impact on sustainable development.
3. Understand the role of history in shaping current environmental and social issues and how historical perspectives can inform strategies for addressing these issues.
4. Understand the historical context of current global environmental challenges such as climate change, deforestation, and pollution.
5. Understand how historical patterns of resource use and exploitation have contributed to current environmental and social inequalities.
6. Understand the historical roots of current social and economic systems and their impact on sustainable development.
7. Understand the historical context of current global governance structures related to sustainable development and the role of international institutions in addressing global environmental challenges.
8. Develop skills in historical analysis and interpretation, and apply them to the study of sustainable development.
9. Understand the importance of intergenerational equity and the rights of future generations in historical perspective.
10. Understand the historical context of different cultures and societies and how they have addressed environmental and social issues related to sustainable development.

**Potential learning outcomes related to ‘sustainability’ for a middle school civics course**

1. Understand the role of government, civil society, and individuals in promoting sustainable development.
2. Understand the importance of active citizen participation and engagement in promoting sustainable development.
3. Analyze the impact of public policies on sustainable development, including policies related to energy, transportation, land use, and resource management.
4. Understand the role of international institutions and agreements in promoting sustainable development.
5. Understand the importance of intergenerational equity and the rights of future generations in decision-making and policy-making.
6. Develop critical thinking and problem-solving skills in the context of sustainable development and civic engagement.
7. Understand the role of media and communication in shaping public perceptions and attitudes toward sustainable development.
8. Understand the importance of diversity, equity, and inclusion in sustainable development and civic engagement.
9. Understand the impact of economic systems on sustainable development and the role of markets and government in promoting sustainable economic growth.
10. Understand the role of civil society organizations, non-government organizations and social movements in promoting sustainable development and promoting social change.

**Potential learning outcomes related to 'sustainability' for a primary or middle school earth science course**

1. Understand the basic concepts of earth science, including the structure and composition of the Earth, the water cycle, weather, and climate.
2. Understand the importance of preserving natural resources and biodiversity for future generations.
3. Learn about different forms of renewable and non-renewable energy and their impact on the environment.
4. Understand the importance of reducing waste and conserving energy, water, and other resources.
5. Learn about different environmental problems and their causes and possible solutions, such as pollution and deforestation.
6. Understand the impact of human actions on the natural environment and the importance of taking care of the planet.
7. Learn about the impact of climate change and the role of individuals and society in addressing it.
8. Understand the importance of biodiversity and how to protect it.
9. Develop critical thinking and problem-solving skills by analyzing environmental problems and possible solutions.
10. Understand the importance of taking personal responsibility for protecting the environment, and how to make environmentally-friendly choices in daily life.

**Potential learning outcomes related to 'sustainability' for a primary school literature course**

1. Understand the importance of preserving natural resources for future generations.
2. Appreciate the beauty and value of nature through literature.
3. Learn about different cultures and their relationship to the environment through literature.
4. Understand the impact of human actions on the environment and the importance of taking care of the planet.
5. Develop empathy and understanding for animals and other living things through literature.
6. Learn about different ways to reduce waste and conserve energy and other resources through literature.
7. Learn about different environmental problems and their causes and possible solutions through literature.
8. Develop critical thinking skills through the analysis of literature and its representation of environmental issues.
9. Understand the importance of taking personal responsibility for protecting the environment.
10. Develop creativity and imagination through writing and storytelling about environmental issues.

## Annex 12: Examples of infusion of ESD within school-wide activities and a school club

1. Green school initiative: Develop and implement a school-wide recycling program, establish a school garden, and incorporate environmental education into the curriculum.
2. Energy conservation: Conduct an energy audit of the school and develop a plan to reduce energy consumption. Encourage students and staff to turn off lights and equipment when not in use, and to use natural light whenever possible.
3. Sustainable transportation: Encourage students and staff to walk, bike, or use public transportation to get to school, and organize a “Walk/Bike to School Day” event.
4. Curriculum integration: Integrate sustainable development concepts and issues into the existing curriculum across all subjects, such as math, science, social studies, and language arts.
5. Community service: Encourage students to participate in community service projects related to sustainable development, such as cleaning up a local park, planting trees or working with local organizations that promote sustainable living.
6. Guest speakers: Invite local experts, community leaders, and sustainability advocates to speak to students and staff about different aspects of sustainable development and how they can get involved.
7. Celebrate earth day: Organize an annual Earth Day event, including activities, workshops and campaigns to raise awareness of environmental issues and sustainable living.
8. It is important to note that these activities can be adjusted to match the specific goals and resources of the school and the student's age. Also, it's important to involve both students and staff in the planning and implementation of these activities to ensure their success and sustainability.

### Example of integration of ESD within a school club - Gardening Club

1. The Gardening Club can focus on creating a sustainable school garden. This can include researching and choosing plants that are native to the area and require minimal water and maintenance, using organic gardening methods, and composting food waste to create nutrient-rich soil.
2. The club can also focus on educating the school community about sustainable gardening practices. They can organize workshops and presentations on topics such as composting, organic gardening, and the importance of biodiversity in the garden.
3. The club can partner with local organizations and experts to learn more about sustainable gardening practices and bring that knowledge back to the school community.
4. The club can also incorporate sustainable development concepts into the existing curriculum by creating lesson plans that integrate gardening and environmental education into subjects such as science, math and social studies.
5. The club can create a campaign to reduce food waste in the school and encourage the consumption of fresh and healthy food.
6. The club can also organize environmental service projects, such as cleaning up a local park or helping to create a community garden in the neighborhood.

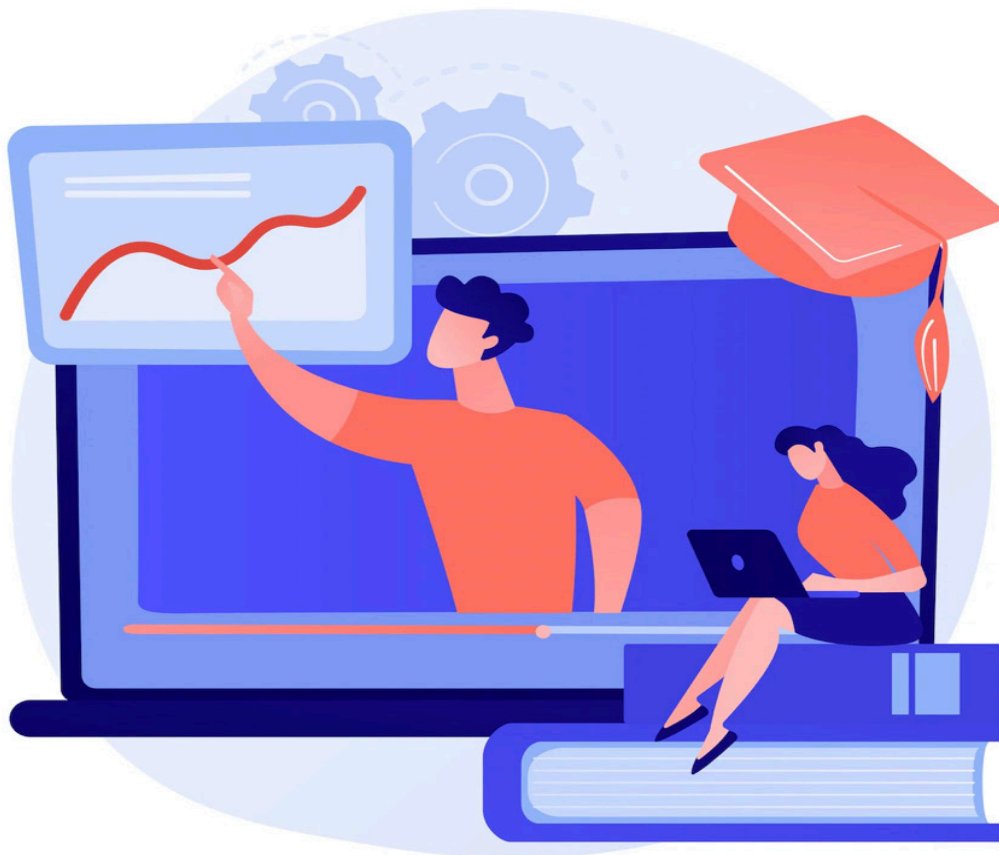
**NOTE:** This is just one example of how education for sustainable development activities can be integrated into an existing school club, but the same principles can be applied to other clubs such as recycling, energy saving or biking clubs. It's also important to involve both students and staff in the planning and implementation of these activities to ensure their success and sustainability.

### Annex 13: Creating learning outcomes

A learning outcome is a concise description of what students will learn and how that learning will be assessed. Having clearly articulated learning outcomes can make designing a course, assessing student learning progress, and facilitating learning activities easier and more effective. Learning outcomes can also help students regulate their learning and develop effective study strategies.

In this Annex, you will find a document summarizing a process to create learning outcomes, for those individuals who would like additional guidance and examples. [Please click here to access the document.](#)

Source: <https://teachingcommons.stanford.edu/teaching-guides/foundations-course-design/course-planning/creating-learning-outcomes>



## Annex 14: Sample unit planning template

### Example Template 1

Module	Lesson No.	Overview	Essential Questions	Student Outcomes
<b>Module/Unit 1</b>          <b>Title</b>	Lesson 1 Title	This first lesson will...	-Can our class ....  -Can our class...	Students will be able to:
		<b>Lesson Ideas:</b> -Supportive reflection activities -Class collaboration to establish the Rules of Engagement - Go over methodology for the program- example- the use of reflection journals, creating a class glossary, the use of multimedia, etc.		
	Lesson 2 Title	<b>Overview</b>	-What are ....?	Students will be able to:
		<b>Lesson Ideas:</b>		
	Lesson 3 Title	<b>Overview</b>	-What does this mean for...?	Students will be able to:
		<b>Lesson Ideas:</b>		
	Lesson 4 Title	<b>Overview</b>		Students will be able to:
		<b>Lesson Ideas:</b>		
	Lesson 5 Title	<b>Overview</b>		Students will be able to:
		<b>Lesson Ideas:</b>		



## Example Template 2

<b>Title:</b>	
<b>Overview</b> (3-4 sentences)	
<b>Student Ages or Grade Level</b> (Check all that apply)	
<input type="checkbox"/> 10-12 <input type="checkbox"/> 13-15 <input type="checkbox"/> 16-18 <b>OR</b> <input type="checkbox"/> 8th <input type="checkbox"/> 9th <input type="checkbox"/> 10th <input type="checkbox"/> 11th <input type="checkbox"/> 12th	
<b>Essential questions the lesson will address:</b>	
<b>Learning outcomes</b>	
<i>Students will be able to...</i>	
<b>Curriculum Glossary and Concepts</b>	
<b>Formative assessment strategies</b> (What will you be looking for in their work, and how?)	
The teacher can make note of...	

Materials for Instructor	Materials for Students
<ul style="list-style-type: none"> <li>▪</li> <li>▪</li> </ul>	<ul style="list-style-type: none"> <li>▪</li> <li>▪</li> </ul>
<b>Lesson Plan</b> <i>(Include specific steps with estimated time – total time should add up to 50 minutes)</i>	
Beginning	
Middle	
End	
<b>Homework</b>	
<b>Notes for Teacher-</b> <i>(Could include additional references and resources where teachers could find additional information; suggestions for how the lesson might be adapted/localized; less resource-intensive options in terms of materials)</i>	

## Example Template 3

GLOBAL SCHOOLS LESSON PLAN TEMPLATE		
Teacher's name:	Date and Course:	Topic:
ESD Skills and Related SDGs:	Community Relevance and Actions:	Teaching Technique:
LEARNING OBJECTIVE		
ASSESSMENT		
MATERIALS		
Parts of the Lesson	Key Details	Key Academic and Learning Topics for Today's Lesson
<b>INTRODUCTION</b> -Daily Routine -Learning Outcome and Agenda -Motivation		
<b>TEACHING, LECTURE AND MODELING</b> (I do) -Engage Student -Key knowledge		
<b>ACTIVITY</b> -Group or pair work		
<b>ACTIVITY</b> -Individual Work		
<b>CLOSING and ASSESSMENT</b> - Reflect on Learning Outcome -Review Key Points or Common Errors -Relate to Future Lessons		

## Annex 15: Adapting curriculum

Source: UNESCO and UNODC (2019), p. 81.

### Adapting Curriculum for Classroom Constraints

#### **Large group of students:**

The tools in this toolkit all encourage active student participation. To encourage this participation with a large class or group size, teachers may use group discussion strategies, small group work, and creative use of space.

<b>Group Discussion Strategies</b>	<p>Rather than the teacher asking a question of the full class, and then taking responses from one student at a time, the teacher can...</p> <ul style="list-style-type: none"> <li>● pose a question to all students,</li> <li>● then have them discuss in pairs or small groups,</li> <li>● before sharing with the full class</li> </ul>
<b>Creative Use of Space</b>	<p>To implement tools with a great deal of student interaction in a crowded classroom, teachers can</p> <ul style="list-style-type: none"> <li>● move unnecessary furniture out of the room,</li> <li>● store materials where they are easily accessible until needed,</li> <li>● conduct an activity outdoors in a field or courtyard, or in another school space, such as a hall or gym.</li> </ul>
<b>Small Group Work</b>	<p>If a tool uses a role play or project activity intended for a small number of students, divide the class into small groups of that number. Each group can follow the same instructions, and the teacher can rotate through the groups, listening to and advising each one. The teacher can call all groups together for instructions or discussion, using the strategies above.</p>
<p><b>Low-Resource Environment:</b></p> <p>Teachers should not feel limited by the materials listed in a tool. Below are a few tips for adapting tools to fit available resources.</p>	
<b>Reusable &amp; Locally-available materials</b>	<ul style="list-style-type: none"> <li>● If printing and photocopying machines are not available, print or write on sturdy paper or card and laminate if possible, so the materials can be used again.</li> <li>● Create game boards and pieces, puzzles, flash cards, and other teaching aids using everyday materials – cans, bottle caps, cardboard boxes, plastic bottles, etc.</li> </ul>
<b>Alternatives to Technology</b>	<ul style="list-style-type: none"> <li>● Instead of asking students to type, have them write on paper.</li> <li>● Rather than research on the internet or in a library, ask knowledgeable community members to share information as guest speakers.</li> <li>● If it is not possible to show a video, try creating a student role-play activity that shows or demonstrates a similar situation or story.</li> </ul>

## Adapting Curriculum for Cultural Familiarity and Local Relevance

### *Cultural Familiarity:*

To improve your students' understanding of concepts in these tools, substitute familiar content in place of unfamiliar, keeping the ESD concepts in place.

<b>Content Changes</b>	<p>Much of the simple content in tools can usually be changed without affecting the learning outcomes. Some examples include:</p> <ul style="list-style-type: none"> <li>● names (characters' and place names)</li> <li>● foods and clothes</li> <li>● pictures related to the setting and characters</li> </ul>
<b>Story, Art, and Game Changes</b>	<p>In some cases, a tool may focus on a text, story, play, game, or artwork that is unfamiliar and from a foreign region or culture. In these cases, teachers can substitute a local equivalent, such as a story that has a similar plot or lessons, or artwork showing a similar issue. Activities and most discussion questions related to ESD that go with these texts, games, and art should not need to be changed to reach the same learning outcomes.</p>
<p><b><i>Local Relevance:</i></b></p> <p>Some tools will require changes to fit the local society before the activities will be relevant to teachers and students in diverse contexts.</p>	
<b>Institution and Process Changes</b>	<p>Because ESD-good governance tools often involve discussing institutions and political processes, teachers will frequently need to substitute the names of local institutions or describe how individuals access police, courts, and government offices in the local environment.</p>
<b>Sensitivity to Local Norms</b>	<p>Stories, pictures, and texts in the tools may include people behaving in ways that are not considered appropriate in the local society, sometimes for that person's gender or age. In these cases, teachers may wish to discuss this cultural difference explicitly with students, or change the text.</p>
<b>Strength of Good Governance in Society</b>	<p>It is important for teachers to be sensitive to the state of good governance that students experience in their society. For example, where good governance is weak and/or corruption is common, a teacher may choose tools that focus on values and skills for "doing good," respecting one another's rights and conflict resolution, rather than on citizens' ability to organize campaigns or protest injustice.</p>



## Adapting Curriculum to Include Diverse Students

### ***Learning Levels, Styles, and Abilities:***

Students learn in different ways and at different paces, based on their background knowledge, home and social background, brain structure, motivations, and interests. Below are some reminders of ways teachers may need to adapt the tools to suit students' learning needs.

<p><b>Students' Reading Level</b></p>	<p>Many tools include activities in which students must read text. Teachers should review the reading requirements before using a tool to decide if the text is a good fit for their students' reading level(s). To adjust the reading level for students, teachers can:</p> <ul style="list-style-type: none"> <li>● simplify the language,</li> <li>● bring simpler or more complex texts about the same topic</li> <li>● read aloud to the class, or</li> <li>● ask students with higher reading levels read aloud to their peers</li> </ul>
<p><b>Learning Style Adaptations</b></p>	<p>In any classroom, teachers will have students with a wide range of learning styles. Some learn better visually, others by reading or solving problems. Some students learn better independently, while others learn well in groups. Choose tools with a range of activities, so that students have multiple opportunities to learn ESD content in different ways.</p>
<p><b>Accommodations for Students with Special Needs</b></p>	<p>For those students who are affected by a known disability, or who struggles with certain types of learning tasks, adapt the activities for their specific needs. For example:</p> <ul style="list-style-type: none"> <li>● Follow any accommodations or modifications that they usually receive through an individual education plan, if applicable.</li> <li>● Allow them to receive extra help from an aid or a peer with reading and writing tasks.</li> <li>● Provide more visual support (pictures and symbols) for those with low reading levels or less knowledge of the language of instruction.</li> </ul>

## Annex 16: Examples of curriculum resources

<b>Global Schools Lesson Plans, Fernando Reimers</b>	Lesson Plans	<a href="https://www.globalschoolsprogram.org/resources-for-educators">https://www.globalschoolsprogram.org/resources-for-educators</a>	A comprehensive, 60-lesson plan curriculum developed by Professor Fernando Reimers at Harvard University. Free download in English, Spanish, Portuguese, Chinese, Arabic, French, Bengali, Greek, Georgian, Turkish, Italian, and Russian!
<b>Academy 4SC: SDGs</b>	Lesson plans	<a href="https://academy4sc.org/videos/categories/sdgs/">https://academy4sc.org/videos/categories/sdgs/</a>	Academy 4SC is an open source group of educators and professionals from other disciplines that provide educational resources on a variety of topics related to civics, of which global issues and the SDGs are a part of. Resources on Goals 8-17. A compilation of videos that include infographics and free lesson plans that can be downloaded via an external link to Teachers Pay Teachers
<b>Go Goals Boardgame</b>	Digital Resource	<a href="https://go-goals.org/downloadable-material/">https://go-goals.org/downloadable-material/</a>	A free board game targeted for early learners to learn about the SDGs and Global Goals. Available in multiple languages.
<b>Frieda Makes a Difference</b>	Digital Resource	<a href="https://issuu.com/unpublications/docs/frieda_2018">https://issuu.com/unpublications/docs/frieda_2018</a>	A free digital book published by the UN. Aimed at early learners to learn about the SDGs and Global Goals.
<b>World's Largest Lesson</b>	Lesson plans	<a href="https://worldslargestlesson.globalgoals.org/resources/?_sft_language=english">https://worldslargestlesson.globalgoals.org/resources/?_sft_language=english</a>	Free resources, including lesson plans and activities on all of the UN Sustainable Development Goals.
<b>Smithsonian Science Education Center</b>	Lesson plans	<a href="https://ssec.si.edu/explore-our-curriculum-resources">https://ssec.si.edu/explore-our-curriculum-resources</a>	Curriculum resources, broken down by grade and topic, to integrate sustainable development into science courses.
<b>World Savvy Case Study Lessons</b>	Lesson plans	<a href="https://www.worldsavvy.org/resource_category/case-study/">https://www.worldsavvy.org/resource_category/case-study/</a>	"World Savvy developed a case study approach, aimed at supporting student inquiry and deeper understanding. Global issues are complex with a wide array of perspectives to unpack, a case study starts with an authentic example that supports students with the voice and ideas of people who are deeply impacted by the issue."
<b>Climate Box</b>	Digital Resource	<a href="https://climate-box.com/">https://climate-box.com/</a>	Free resource developed by UNDP that includes a short digital textbook, quizzes, and visuals (maps and posters) regarding climate change. Ties into several SDGs and ESD practices.
<b>Young People's Trust for the Environment</b>	Lesson plans	<a href="https://ypte.org.uk/lesson-plans/sustainable-development">https://ypte.org.uk/lesson-plans/sustainable-development</a>	A collection of several lesson plans and additional resources focused on sustainable development, particularly of topics regarding climate change and the environment.
<b>RFK Human Rights Defenders Curriculum</b>	Lesson plans	<a href="https://rfkhumanrights.org/our-programs/speak-truth-to-power/lesson-plans">https://rfkhumanrights.org/our-programs/speak-truth-to-power/lesson-plans</a>	"Beginning with the story of a human rights defender, each lesson plan outlines a series of activities inspired by the defender's advocacy. Designed to encourage students themselves to "Become a Defender," the lesson plans are available in eight languages, engage students at all levels, and align with Common Core Learning Standards"

<b>Eco-Schools</b>	Lesson plans	<a href="https://www.ecoschools.global/lesson-plans-for-teachers">https://www.ecoschools.global/lesson-plans-for-teachers</a>	A collection of lesson plans made by teachers around the world collected by the Foundation for Environmental Education and Eco Schools. Each lesson plan has a specific SDG focus, though the collection of plans is inclusive of a majority of the SDGs.
<b>Scoilnet</b>	Lesson Plans	<a href="https://www.scoilnet.ie/primary/theme-pages/geography/esd/">https://www.scoilnet.ie/primary/theme-pages/geography/esd/</a>	Scoilnet is the Department of Education and Skills (DES) official portal for Irish education. However, they have curated a variety of resources that include lesson plans, stories, and videos directly connected to ESD practices and other relevant topics.
<b>UNESCO</b>	Lesson Plans	<a href="https://en.unesco.org/themes/education/sdgs/material">https://en.unesco.org/themes/education/sdgs/material</a>	Includes links to resources, including lesson plans, of all SDGs. Lesson plans differ and range from ECE, primary, and secondary levels.
<b>PBS</b>	Lesson Plan	<a href="https://www.pbs.org/newshour/classroom/2021/04/lesson-plan-becoming-agents-for-change-through-the-sustainable-development-goals/">https://www.pbs.org/newshour/classroom/2021/04/lesson-plan-becoming-agents-for-change-through-the-sustainable-development-goals/</a>	An introductory lesson plan for lower/upper secondary students that aims to introduce the SDGs broadly and focus on a case study involving water issues, with cases from the USA and South Africa.
<b>TeachSDGs - Goals Project</b>	Lesson plans	<a href="https://www.goalsproject.org/">https://www.goalsproject.org/</a>	TeachSDGs is a global grassroots organization comprising of teachers dedicated to teaching the SDGs. The Goals Project aims to connect classrooms worldwide in advancing education on the SDGs. Real-time lessons and past resources, including past lessons and materials, can be accessed.
<b>Commonwealth Secretariat</b>	Curriculum Framework	<a href="https://www.researchgate.net/">https://www.researchgate.net/</a>	Education Section of the Health and Education Unit within the Commonwealth Secretariat has developed a Curriculum Framework for the SDGs to support member countries in addressing all 17 SDGs through education and learning.
<b>Akari Curriculum Management</b>	Curriculum Evaluation	<a href="https://akarisoftware.com/wp-content/uploads/2022/02/un-sdg-integration-curriculum-higher-education-v2.pdf">https://akarisoftware.com/wp-content/uploads/2022/02/un-sdg-integration-curriculum-higher-education-v2.pdf</a>	Akari Software is a curriculum management solution provider in the EMEA and APAC regions. A Higher Education software company, specialising in the development of software to support Curriculum Design processes and Curriculum Mapping processes. This page provides the link to a report outlining multiple case studies of how higher education institutions have attempted to map and integrate the SDGs into curriculum.
<b>Principles for Responsible Management Education</b>	Curriculum Framework	<a href="https://d30mzt1bxg5llt.cloudfront.net/public/uploads/PDFs/">https://d30mzt1bxg5llt.cloudfront.net/public/uploads/PDFs/</a>	"A report that aims to provide concepts and frameworks to support business schools – both PRME Signatories and non-signatories – as they integrate the SDGs into their curricula, research and partnerships. Secondly, it aims to provide a practical focus by offering examples of approaches already adopted by business schools."

<b>Students Organizing for Sustainability (UK)</b>	Curriculum Mapping	<a href="https://www.sos-uk.org/resources-file/2022-23-sdg-curriculum-mapping-overview">https://www.sos-uk.org/resources-file/2022-23-sdg-curriculum-mapping-overview</a>	"In response to this institutional and student demand, the University of Winchester and NUS developed a training and support package for mapping the curriculum to the SDGs through a student-led audit. The package also includes mapping against education for sustainable development (ESD) teaching and learning approaches, to ensure students are not just acquiring knowledge but also the skills and competencies to deliver on sustainability."
<b>Innovation Lab Schools</b>	Open Source Curriculum	<a href="https://innovationlabschools.com/sdgcurriculum.html">https://innovationlabschools.com/sdgcurriculum.html</a>	Subscription required to access file (free). A network of educators that seek improved education for students in rural areas of Africa, are bringing learning to students. Created a new curriculum based on the SDGs with a strong connection to STEAM. The curriculum was developed in close collaboration with the TeachSDGs community.
<b>Smithsonian Science for the Global Goals</b>	Curriculum Framework	<a href="https://ssec.si.edu/smithsonian-science-global-goals-case-statement">https://ssec.si.edu/smithsonian-science-global-goals-case-statement</a>	The Smithsonian Science for Global Goals project provides new freely available online community research guides for youth ages 8-17 developed by the Smithsonian Science Education Center in collaboration with the InterAcademy Partnership. These research guides use the United Nations Sustainable Development Goals (SDGs) as a framework to focus on sustainable actions that are student-defined and implemented.
<b>Smithsonian Science for the Global Goals</b>	Open Source Curriculum	<a href="https://ssec.si.edu/explore-our-curriculum-resources?f%5B0%5D=field_subtype%3Acurriculum&amp;f%5B2%5D=file_id_is_free%3A1">https://ssec.si.edu/explore-our-curriculum-resources?f%5B0%5D=field_subtype%3Acurriculum&amp;f%5B2%5D=file_id_is_free%3A1</a>	A collection of various curricula (though some are more like unit plans) related to the above
<b>University College Cork</b>	Curriculum Toolkit	<a href="https://www.ucc.ie/en/sdg-toolkit/teaching/">https://www.ucc.ie/en/sdg-toolkit/teaching/</a>	the SDG Toolkit project has developed and curated resources to support staff in integrating sustainability into learning and teaching using the lens of the U.N. Sustainable Development Goals (SDGs). Resources in the SDG Toolkit were informed by student and staff consultations.
<b>UNESCO</b>	Curriculum Toolkit	<a href="https://unesdoc.unesco.org/ark:/48223/pf0000247444">https://unesdoc.unesco.org/ark:/48223/pf0000247444</a>	"The publication intends to guide readers on how to use education, and in particular ESD, in achieving the SDGs. It identifies learning objectives, suggests topics and learning activities for each SDG, and describes implementation on different levels from course design to national strategies. The document aims to support policy-makers, curriculum developers and educators in designing strategies, curricula and courses to promote learning for the SDGs. "
<b>Project 21C</b>	Open Source Curriculum	<a href="https://21stcskills-sdg.eu/en/resources/#:~:text=The%2021C%2DSDG%20Curriculum%20is,in%20their%20practices%20and%20activities">https://21stcskills-sdg.eu/en/resources/#:~:text=The%2021C%2DSDG%20Curriculum%20is,in%20their%20practices%20and%20activities</a>	The 21C-SDG Curriculum is a digital compendium of educational resources, resulting from the cooperation between different institutions and agents around Europe, looking for support and inspire educators in their practices and activities.

<b>Pacific &amp; Asian Affairs Council</b>	Open Source	<a href="https://www.paachawaii.org/SDGSuite">https://www.paachawaii.org/SDGSuite</a>	PAAC developed free lesson plans on various global issues and their relevance to Hawai'i. Each lesson relates to one or more of the 17 U.N. Sustainable Development Goals (SDGs) and includes a curated list of articles or videos, a short kahoot quiz to test comprehension, discussion questions, ideas for action, and more. These were designed to be easily adaptable for PAAC club meetings or classroom situations, but they also serve as an excellent teacher resource for lesson planning.
<b>Government of Manitoba</b>		<a href="https://www.edu.gov.mb.ca/k12/esd/correlations/full_doc.pdf">https://www.edu.gov.mb.ca/k12/esd/correlations/full_doc.pdf</a>	A pdf guide on how ESD principles are integrated and mapped into provincial curriculum. Includes resources and frameworks on how to approach ESD in curriculum
<b>Sustainability Exchange</b>		<a href="https://www.sustainabilityexchange.ac.uk/embedding_sustainable_development_in_the_curric">https://www.sustainabilityexchange.ac.uk/embedding_sustainable_development_in_the_curric</a>	Aimed at staff within learning institutions and provides information on how to embed sustainability into what and how they teach. In an easy to follow format, the document identifies some of the approaches currently being used, gathers a variety of examples and provides a list of contacts.



# CHAPTER 06

## ANALYZING IMPLEMENTED CURRICULUM



## Introduction

The previous sections of this handbook have been focused on the ESD curriculum approaches and design. These can be considered the intended curriculum, that is, the planned curriculum. There are two other phases of curriculum that are essential to bear in mind for ensuring and documenting success: the implemented curriculum (what actually takes place in a learning environment) and the achieved curriculum (the results for learners).

Learner assessment is one facet of data collection, and the design of curriculum was addressed in the previous section as an integrated part of the curriculum implemented by educators.

This section is devoted to research design and methodologies for looking more generally at implemented curriculum. This research might take place before and/or after a concerted ESD curriculum effort. For example, a study on how well existing ESD-related curriculum is being implemented in the classroom and school could be carried out to influence the design of new ESD curriculum and associated supports. If new ESD curriculum has been developed, research might also be carried out on its implementation at the draft stage; this is also called piloting or field testing.

Therefore, this section of the handbook presents techniques for researching implemented curriculum potentially at two different stages of the ESD curriculum effort:

- 1) Analyzing the implementation of *existing ESD curriculum* prior to curriculum development, in order to better understand how the new ESD curriculum might be designed to be most effective.
- 2) Analyzing the implementation of *newly developed draft ESD curriculum*, in order to gather information that can lead to improvements and the finalization of the curriculum. This is also called piloting or field testing.

Prior to work on new ESD curriculum, the Research Team might consult secondary sources or hold focus group conversations with teachers in order to understand their disposition toward the existing ESD curriculum. However, a more full-fledged study on implemented curriculum might also be organized. There are many possibilities for

carrying out research on implemented curriculum, including purpose, design, methods, and actors. The national teams will need to determine which scenario(s) are most practical given available time and resources. In looking at implemented curriculum (including the piloting situation), data might be collected on the following:

- teacher views on the quality of the intended curriculum;
- teacher input on the design and localization of curriculum, based on understanding of learner needs;
- teacher experiences related to how closely the implemented curriculum reflects the intended curriculum, and explanations of any differences;
- third-party observation of implementation of curriculum and teaching and learning processes;
- documentation of student engagement and learning.

A central aim for carrying out research on implemented curriculum in a field-testing situation is to confirm what works well in practice and to identify areas of potential improvement. There is therefore an added element of research in trying to identify concrete strategies for addressing any challenges for implementation that are revealed at this stage of curriculum development.

There are a range of data collection and analytical techniques at the disposal of researchers. This handbook cannot be the single source of such methods, which may already be familiar to the Research Team members. However, sample tools are included in this section and additional, open-access sources on data collection methods are included in Annex 8.

Two other comments can be made about the data collection. It may be possible to interest university faculty and students to assist in carrying out a study, though these researchers would need to be aware of ESD and its approaches, and any team would need to be supported and supervised. Classroom teachers will also play a central role in providing access to their classrooms, completing surveys and participating in interviews. It is also possible that they might become engaged as co-researchers, carrying out “action research” projects in their own classrooms. Action research is “a process by which practitioners attempt to study their problems scientifically in order to guide, correct, and evaluate their decisions and action” (Purcell, 2022).

Before we continue, please review the following definitions from the introduction section on the different types of curriculum:

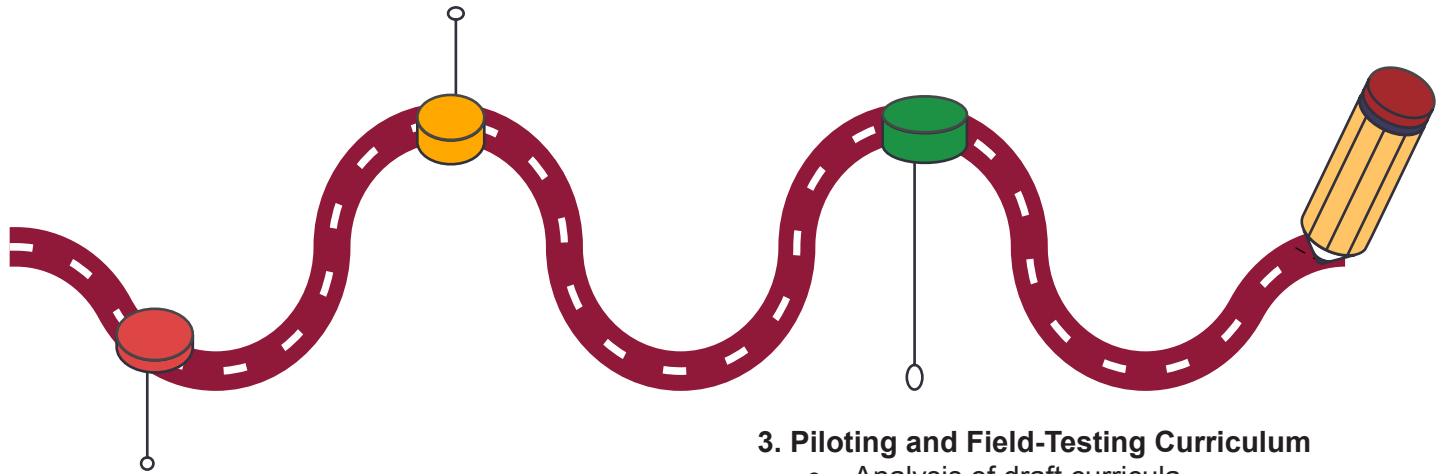
#### Box 16. Definitions of Curriculum

<b>Curriculum</b>	A systematic and intended packaging of competencies (i.e. knowledge, skills and attitudes that are underpinned by values) that learners should acquire through organized learning experiences both in formal and non-formal settings (UNESCO International Bureau of Education, 2015).
<b>Intended Curriculum</b>	A set of formal documents which specify what the relevant national education authorities and society expect that students will learn at school in terms of knowledge, understanding, skills, values, and attitudes to be acquired and developed, and how the outcomes of the teaching and learning process will be assessed (UNESCO International Bureau of Education, 2013).
<b>Implemented Curriculum</b>	The actual teaching and learning activities taking place in schools through interaction between learners and teachers as well as among learners, e.g. how the intended curriculum is translated into practice and actually delivered. Also defined as the ‘curriculum in action’ or the ‘taught curriculum’ (UNESCO International Bureau of Education, 2013).
<b>Attained Curriculum</b>	Curriculum which indicates the knowledge, understanding, skills and attitudes that learners actually acquire as a result of teaching and learning, assessed through different means and/or demonstrated in practice. It may differ from the intended and the implemented curriculum (UNESCO International Bureau of Education, 2013).

The remainder of this chapter will discuss:

## 2. Areas of Investigation for Implemented Curriculum

- Educator views of ESD
- Learning environment for implementing ESD
- Implementation of ESD curriculum in the classroom
- Curricular change processes
- Learner views and outcomes



### 1. Designing a Curriculum Implementation Study

- Key planning questions
- Data collection methods

### 3. Piloting and Field-Testing Curriculum

- Analysis of draft curricula
- Feedback following trying out a lesson

## 1. Designing a Curriculum Implementation Study

There are numerous practical considerations to consider when designing a curriculum implementation study. In this subsection, we present key planning questions, data collection methods, and analysis.

### 1.1. Key planning questions

#### Purpose and Scope of the Study

As part of the planning process, the Research Team and any others involved in the research will make explicit and agree upon the *purpose* of the research and *key questions* to be answered. For example, the main purpose could be articulated as: “to understand how closely the intended curriculum is implemented by educators”. Related questions would concern the degree of deviation and reasons presented by educators for this and – in a field-testing situation – any implications for how the curriculum might be improved.

The Research Team will also need to agree upon the *scope of the study*, in terms of the amount of curriculum to be analyzed. For example, a decision might be taken to analyze an entire curriculum, possibly dividing up lessons to be used by different teachers if it is not feasible for each participating teacher to try out the entire curriculum. The Research Team might also decide to study only a subsection of the curriculum, which would then need to be selected based on a clear criterion. For ESD-related research, a decision might be taken to study the implementation only of those lessons pertaining primarily with ESD, when an ESD lesson is embedded within a carrier subject.

#### Scale of the Study

The *scale* of the study concerns the number of teachers, classrooms and schools that will be involved. If intensive data collection will be involved (interviews and observations, in addition to surveys), it might be practical to work with a relatively small number of teachers, such as 8-10, in either the pilot study of new curriculum or in the analysis of existing implemented curriculum.

The more intensive the data collection, the more information can be collected, which might be very helpful in obtaining feedback on a new curriculum in a piloting situation.

However, if the Research Team would be satisfied with information collected through teacher surveys, it might be feasible to involve more teachers; this scenario would allow for the selection of educators across a wide range of learning environments (e.g., in terms of student populations, location of school, etc.) and the collection of results that could affirm the relevance and implementation of curriculum more broadly. The Research Team should ensure that classrooms containing minority or vulnerable students are included in the field testing to help ensure that the final version of the ESD curriculum will be effective with this, as well as other, learner groups.

#### Logistics of Data Collection

Also, the Research Team will need to decide on the *qualitative and quantitative data collection methods and analysis*, which are addressed in the next subsection. Furthermore, the Research Team will also need to agree on *who will be involved in data collection and analysis*, and the specific roles and responsibilities. It may be that external researchers and analysts could be recruited, including from university settings, or that educators themselves will be invited to participate in the design and analysis of research (through an “action research” approach). Whichever configuration is decided upon, all team members will need to become familiar with ESD alongside the specific tasks of the study. In accordance with instructions provided earlier in this handbook in the policy review and curriculum mapping section, if multiple researchers will be involved (including the teachers themselves) it is advisable to do a training or find other ways of ensuring that data collection will be carried out professionally, reliably, and consistently across researchers.

#### Timeline

As with any planning procedure, the *timeline* will need to be worked out. This timeline might need to take into account the following tasks:



- acquisition of funding;
- selection of researchers and analysts;
- recruitment of educators/classrooms/schools;
- arrangement of any necessary permissions from education authorities, and completion of consent forms by participants;
- development of research design with associated tools;
- preparation of teachers for their roles and assignments when piloting lessons;
- development of a system for ongoing distribution and collection of written data;
- data collection (over a certain time period), including regular visits to the classroom for interviews and classroom observations;
- regular feedback to the curriculum developer (if field testing);
- formal data analysis, compilation of results and (if field testing) recommendations to curriculum developer(s).

This kind of research might be carried out in just a few months or over the period of a year. A piloting study is generally carried out within 3-6 months, as there is often pressure to finalize the curriculum so that it can be released for use.

### Consent and Confidentiality of Data Sources

Each data collection method will involve obtaining permission to record and use the data. Before carrying out interviews, teams should obtain consent to use the information and agree with the interviewee on the degree of confidentiality that will be used in relation to the interview. For example, there should be an agreement about whether the name of the interviewee can be used, as well as any direct quotes, and if their pre-approval will be necessary for the latter. Surveys can, of course, be administered without asking for the participant's name. However, participants should know how the data will be used, even if their names will not be directly associated. If Research Teams do not ask for participants' names as part of the survey, they will need to find a way to keep track of who has completed surveys. This is especially important

if they will be carrying out follow-up surveys and want to associate these with the earlier responses of participants.

We recommend that when primary data will be collected – for example through teacher surveys or classroom observations – the Research Team ensures that their research design and instruments are consistent with local standards for university research ethics.

### Final Report and Recommendations

The *contents of the final report* and *who will have access to it* should also be agreed upon, reflecting the purpose of the research and the audience. Pilot-testing research, for example, typically results in quite detailed feedback on individual lessons – in addition to the overall curriculum – along with recommendations for revision. A more general study on curriculum implementation might address wider questions about, for example, teachers' comfort level with participatory methods of instruction and knowledge about ESD-related topics. Examples of study questions that might be asked as part of a piloting process are shared later in this section, with Annex 17 including additional questions for consideration.

## 1.2 Data collection methods

Many curriculum implementation studies take a 'mixed methods' approach, that is, both qualitative and quantitative methods of data collection and analysis are involved. A mixed methods approach has a clear advantage as it can benefit from insights that come with both quantitative and qualitative approaches.

- Qualitative research. Practically all educational research incorporates some form of qualitative research, involving interviews, observations, and surveys with "open ended" questions. This is because the process of teaching and learning is a complex and personal one. In understanding these processes, the Research Team needs to understand these experiences from the points of view of the educator and learner.

- Quantitative research. Educational research can also include quantitative analysis (such as the content analysis carried out in the policy review/curriculum mapping phase). Quantitative forms of research can be used to look at outputs (e.g., number of students in the classroom) but also the results of closed-ended questions on surveys.

Box 17 below presents key characteristics of qualitative and quantitative research methods.

### BOX 17. Key Characteristics of Qualitative and Quantitative Research Methods

#### *Qualitative research methods...*

- begin descriptively
- are not initially quantifiable
- use a small sample size
- are open-ended
- include perspectives of people studied, and also the researcher
- are process- rather than product-oriented
- are context oriented
- in purest form, are non-interventionary

#### *Quantitative research methods...*

- use predefined categories
- are quantifiable
- use a larger sample size than qualitative research projects
- are closed-ended
- use well defined methods of analysis
- employ defined variables
- are product-oriented
- are decontextualized

In selecting which specific methods to use, it is important for Research Teams to begin first with agreeing on the research question(s) they would like to address in the study. The research question(s) should drive the specific methods they decide to use. For example, if teams are interested in understanding students' experiences engaging in an ESD-related project, they will want to use some form of qualitative data collection, such as interviews, observations and/or open-ended questions with the students. If they are interested in capturing students' understanding and interest in ESD-related topics over the course of a class, then some form of quantitative, longitudinal data collection would be advisable.

### **Triangulation**

Triangulation is a technique of data collection that looks for "cross verification" of results through the use of different data sources or different research methodologies for the same area of investigation. Research Teams will want to triangulate when they can anticipate that one source of data will not provide reliable or sufficient findings. For example, if teams want to document if recycling practices have increased in schools, they might investigate school records of such incidents (quantitative approach). However, in order to understand the change processes that may have resulted in these reductions (for example, through student participation in ESD programming), then teams would also want to interview pupils and their teachers (qualitative approach). Research Teams will want to triangulate data sources or methodologies for those goals, outcomes, and objectives that are especially important so that they can have confidence in their findings.

### **Participatory research**

In participatory research, participants are encouraged to participate actively in the data collection process. Depending upon the ESD research design, Research Teams might ask participants to write in a journal about their experiences using the curriculum in an ongoing manner, incorporating their reflections. Participants might also interview each other. The involvement of participants in these kinds of tasks can be agreed upon in the planning phase but should also then incorporate any necessary preparation on interviewing techniques.

### **Sampling**

Surveys are easy to distribute and may be possible to administer to a large pool of educators involved in some way in implementing ESD curriculum. On the other hand, some data collection methods, such as interviews, are more labor intensive and may need to be carried out with only a subset of teachers and learners.

Research Teams will then need to decide if they will select participants randomly or non-randomly. If teams work with a small sample of piloting teachers, then their selection will not be random, because they will want to take into account background characteristics of the classroom, as well as the teacher, that are meaningful for research. That is, teams should look for representation according to characteristics that they think might result in differences, such as geographical location of the school, special characteristics of the learner groups, and background features of the educator (e.g., school level, subject(s) taught, years of teaching experience, ethnic/racial background, gender).

If Research Teams decide to carry out a larger piloting effort, they may want to use a stratified random sampling procedure. This might involve, for example, the identification of schools from different geographical regions of the country and, within each of the regions, a random selection of teachers for participation in the piloting and data collection. There is no single rule for deciding how many teachers to involve in piloting and how to select them. Research Teams just need to ensure that they have enough teachers (and diversity across them and their classrooms) to provide reliable information about the effectiveness of the ESD curriculum in different environments and in the hands of different kinds of teachers. Research Teams will also want to ensure that they can collect enough information from the teachers involved in the field testing to make judgements about how well the curriculum is working and areas of potential improvement.

### **Reliability and validity**

Research and evaluation is an uphill battle involving the careful crafting of data collection instruments and methodologies in order to trust the information collected. Data should be reliable, such that if different evaluators were to carry out the same study they would find the same results. Data should be

valid, that is, reflective of the actual situation we are trying to understand.

There are different ways Research Teams can organize data collection so that they improve the likelihood of that data being valid and reliable. One is to collect information from the sources most likely to know the real situation (for example, asking teachers directly about the outcomes of the trainings they attended and the effect on them). Another is to use different sources and approaches for the same research question so that they can compare the results. This latter technique is called triangulation, which was just referred to. Triangulation not only allows researchers to have greater confidence in their results (assuming that the differing sources show similar results) but also helps us to overcome the possibility that results will be skewed through respondent bias. Respondent bias (for example, wanting to please the researcher) is a common phenomenon and should be addressed methodologically in any evaluation we carry out.

### **Methodological honesty**

Any research report that is prepared should address the reliability and validity of the data collected. Research teams should be honest about the limitations of their research, for example: low participation in studies, a post-only

administration of a questionnaire, and even their own limitations as researchers (for example a lack of familiarity with a language used in classrooms). This transparency will help readers to assess for themselves the weight that can be given to any research results.

### **Piloting instruments**

Survey and interview questions should be worded with care and sensitivity to the setting and cultural context. After developing the first draft of research protocols, Research Teams will want to have these reviewed by other members of the team and possibly other stakeholders. Ideally, teams can also try out the survey or interview questions with 'live' participants and make any necessary adjustments before using them widely. The kinds of problems that reveal themselves in the survey and interview piloting stage might be that the questions are unclear, leading, or complex. Also, Research Teams may discover that despite their best efforts, the administration of the tools takes much longer than anticipated. It is best to identify these problems at the earliest stages of our data collection.

Below are some common data collection methods that are used in mixed-methods studies. The Research Team may be able to develop other creative measures, potentially in consultation with teachers.

## **1.2.1 Surveys or questionnaires**

Surveys (questionnaires) are ways to collect information from a large number of people. Surveys can be administered in person or digitally (via email, or on a survey platform, such as Qualtrics or Survey Monkey). In curriculum implementation research, researchers might ask teachers to complete a brief survey form after every lesson. It is important to include questions that are meaningful and allow researchers to understand the change process and its outcomes. Open-ended questions, where participants write their responses to questions in an open-ended manner, are best for achieving this aim. Diaries and self-reports are data collection methods that make use of open-ended questions.

However, closed-ended questions, such as multiple-choice questions or questions involving the use of a Likert-type scale, can be easily tabulated and can also provide useful feedback, allowing for a comparison of results across respondents. For this reason, Research Teams may want to include a combination of closed- and open-ended questions, bearing in mind the time and attention that will be required to read through and analyze open-ended responses. Examples later in this section and in the Annex provide a variety of question formats that might be used for surveys.

Note that there is an especially heavy burden to ensure that survey questions are clear and self-explanatory. The language should be simple and avoid hidden biases. As mentioned earlier, surveys should be tried out with a sample of respondents before administering them on a large scale so that any ambiguous or confusing questions can be caught and fixed.

Surveys can potentially be administered to all participants in a curriculum implementation study. If it is not feasible to administer surveys to all participants, Research Teams will want to develop a clear and systematic rationale for the sampling of individuals and/or groups.

### 1.2.2 Interviews

Interviews are ideal for obtaining in-depth information about the thinking, values, and behavior of respondents. The most effective approach for carrying out interviews is semi-structured, meaning there is a pre-set list of questions ahead of time that can spontaneously be adapted within the context of the interview. Structured interview questions (or protocols) do not allow for variation and are sometimes used when there are multiple interviewers involved, so that answers can be more easily standardized.

Research Teams might organize focus group interviews with groups of participants, and they might also hold key informant (individual) interviews with key stakeholders. Focus groups allow for interaction among participants and the potential confrontation of different points of view. Focus groups require facilitation skills that allow all voices to be heard, not just the loudest. By carrying out interviews in groups, researchers can see where there are agreements and also differences. Focus group interviews can also present new areas of exploration.

These interviews can be carried out in person (ideal) or virtually. The researcher might make use of audio or video recordings, though permission from the interviewee needs to be obtained beforehand. Any interviews with minors would require permission from their parents or guardians. As with surveys, questions used in interviews should be carefully tried out (piloted) in advance before administering on a large scale.

### 1.2.3 Observations

Observations allow researchers to witness activities, such as classroom teaching or school-wide events and practices, to gain a better understanding of change processes that are important for ESD. Observations are an irreplaceable technique for understanding how well educators are able to implement ESD curriculum and the classroom conditions that support such practices. Note-taking, the use of observation protocols, videotaping, and photography are all forms of documentation that can be used as part of an observation effort. When observing educators in curriculum implementation research, it is important for researchers to put them at ease and to encourage them to teach as naturally as possible. During observations, the Research Team can emphasize to teachers that their teaching is not being evaluated; rather, it is the curriculum that is being researched.

Observations can be structured to allow for cross-checking, or triangulating, information collected through other methods. For example, teachers implementing ESD curriculum might tell researchers in interviews that learners participate actively, and the researcher's observation of the classroom will help to confirm the degree and quality of this participation. Classroom observations may also help researchers tailor questions that will be asked to teachers in a follow-up interview about the choices that they made when teaching their lessons.



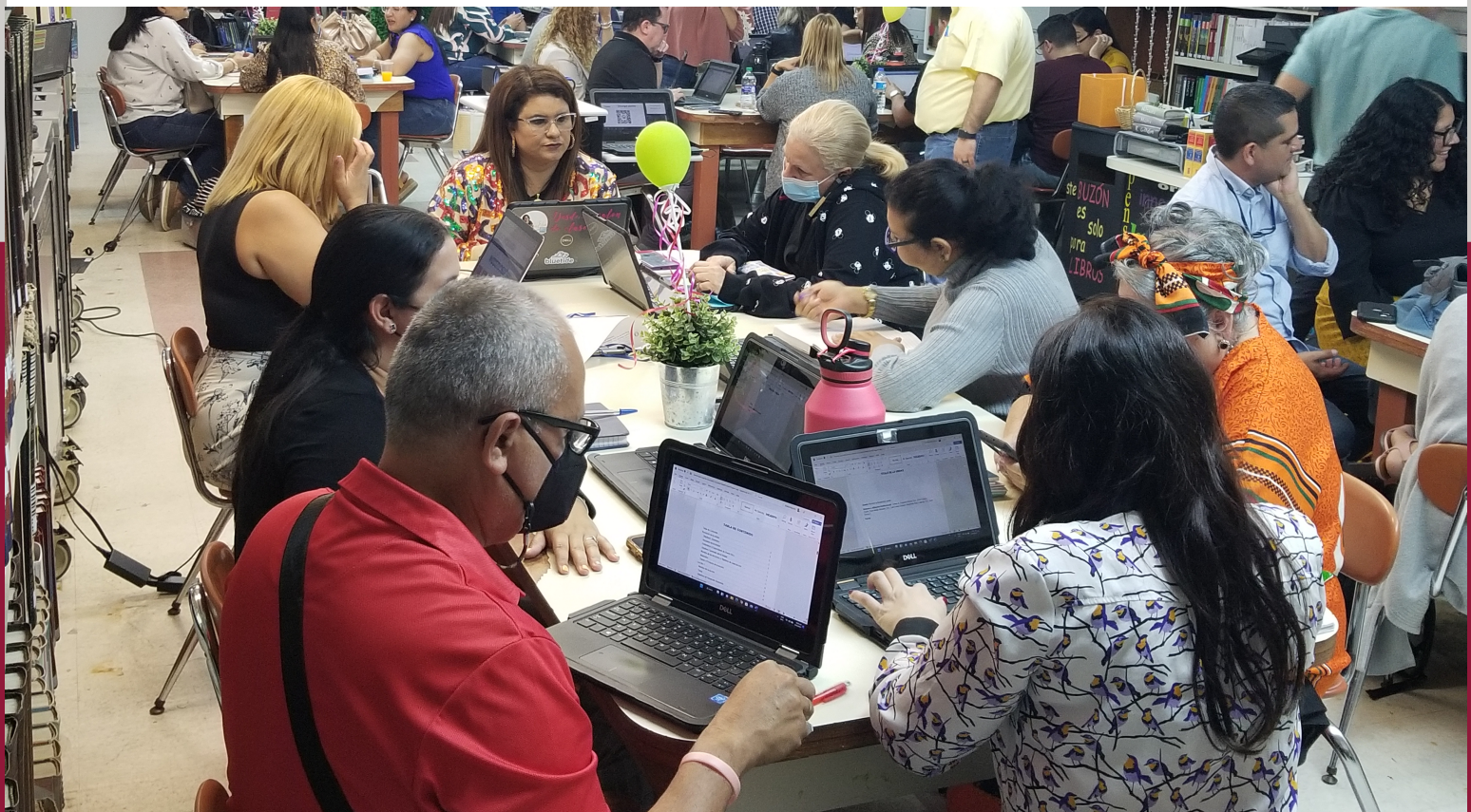
### 1.2.4 Text review

In a field-testing effort, it is common to ask educators to comment directly on the intended curriculum. Written feedback can be provided through the completion of a survey, (examples are provided later in this section and in Annex 17) but also by making specific editorial or content comments directly on the lesson text.

In a curriculum implementation study, there may be other text-based resources that the researcher may want to consult, such as the lesson plans of teachers, school-based documentation of school-wide activities related to ESD (such as recycling), and so on. Teachers and schools may already be keeping records that will be valuable for the research, though care has to be taken to not use resources that may contain the identity and private information of students.

### 1.2.5 Case studies

In some instances, several data collection methods are combined in order to create case studies, which integrate multiple sources of data in order to depict rich, multi-layered context for the intervention, the change processes, and the results. The 'unit of analysis' for the case study – whether it is individual teachers, schools or the country as a whole – should make sense within the context of an ESD curriculum effort. That is, the case study/ies should be neither too small (nor detailed) that we cannot derive general lessons from its example, nor so broad (and superficial) that we cannot identify important details of the curriculum implementation.



## 2. Areas of investigation for implemented curriculum

In a school setting, research of the implemented curriculum involves a ‘matching’ of the ESD curriculum (subject-specific or schoolwide) against its actual use. Implemented curriculum research will try to understand how curriculum is being used in practice, taking into account the learning environment context, the views and capacities of educators, learners and other stakeholders in the environment – and the outcomes of the effort on learners, educators, and perhaps the educational

settings itself. Having addressed to some degree the menu of methodologies that can be used in researching an ESD curricular program, this toolkit now addresses the five potential areas of investigation for curriculum implementation. The Research Team will need to decide which area(s) to investigate, based on research priorities as well as pragmatic considerations of time and resources. Potential areas to investigate include:

- educator views of ESD;
- the learning environment for the implementation of the ESD curriculum;
- the extent and quality of the implementation of the ESD curricular program;
- the change processes that took place;
- outcomes for learners.

Each of these areas are briefly explained, along with sample research

### 2.1 Educator views of ESD

Educator interest in curriculum topics such as ESD play a role in whether such themes are taken up in the classroom, especially if ESD is part of a non-mandated curriculum. Teacher discretion may also influence the planning time set aside for use of (new) ESD curriculum and the quality of such use.

Potential research questions on educator valuing of the ESD curriculum, which can be collected through surveys or interviews, include:

- Are teachers familiar with the general concepts of ESD?
- How important do teachers feel that it is to address ESD in their own classroom and in schools?
- How relevant do educators feel ESD is to the subject(s) they teach?
- What ESD topics are of particular interest to teachers?

### 2.2 Learning environment for ESD

Research on degree and quality of implementation will involve not only the documentation of actual use of curriculum but also understanding what influences the decisions that educators make about curriculum, for example, if they expand on a certain part of a lesson or drop a step. Aspects of the learning context that might be documented through discussions with educators and administrators include:

- prescribed curriculum content;
- implicit and explicit ways of teaching and learning (educational tradition and culture);
- content and forms of assessment (especially ‘high stakes’ assessment);
- the range of qualities intended to be cultivated in learners (for example ‘good citizenship’);
- physical conditions of learning (for example access to resources, size of classes and so on).

These features of the learning environment (local context, educator background on the topic, conditions in the classroom and school) will influence how educators make decisions about which elements of ESD curricular programming are taught, how they are taught, and for what purposes.

## 2.3 Implementation of ESD curriculum in the classroom

Research on ESD curriculum in the classroom is essentially the study of teaching and learning processes. The study of teaching and learning processes makes use of traditional research techniques in order to document actual practices related to teaching methodologies. Such studies within an ESD context might look for evidence of learner-centered approaches such as students asking questions related to the content of the lesson and the percentage of time devoted to large group lecture versus whole class discussion, work in small groups, or individual work. This research might also look for evidence (and successful use) of specific methodologies such as project work and others – especially ones that may be new to the teacher (please reference Chapter 3 of this toolkit for example methodologies).

Research on the degree and quality of implementation will involve not only documentation of actual use of curriculum but also understanding what influenced the decisions that educators made about curriculum use. Some potential research questions are:

### *Implementation (general)*

- Is the ESD curriculum (e.g., specific lessons whose primary focus is ESD-related) being implemented by teachers?
- If the ESD curriculum is being implemented, what are the reasons teachers give for offering it?
- If the ESD curriculum is not being implemented, what are the reasons given by teachers for not offering it?

In exploring teacher perspectives on implementation, the research might probe for the necessity and adequacy of any teaching supports the educator received to use the curriculum, and opportunities and barriers within the school affecting educators' abilities to use the curriculum.

Another area of interest could be teacher views on the quality of the ESD curriculum, which of course intersects with their motivation and ability to implement it. Potential research questions are:

### *Quality*

- How do teachers view the overall quality of the (current) ESD curriculum?
- How do teachers view the adequacy of the (current) ESD curriculum, in terms of coverage of ESD themes?
- How do teachers view the pedagogy/ methods of instruction associated with the (current) ESD curriculum, in terms of their (a) practicality of use in the classroom, and (b) appropriateness for achieving the intended learning outcomes for students?

In addition to the development of written reports, research on ESD implementation can be documented and shared through case studies, observations, photographs, videotapes of programming (perhaps combined with interviews with stakeholders) and artifacts such as learning materials, posters, training program agendas, and handouts. These other means of documentation and communication should be kept in mind as a supplement to any written reports that are produced.



## 2.4 Curricular change processes

In the process of establishing the ways in which an existing ESD curriculum has been implemented, we might investigate the change processes that have occurred. Essentially, there are two types of educational change, which Fullan and Steigelbaur (1992) call 'first order change' and 'second order change'. First order changes are changes that seek to improve the efficiency and effectiveness of what is already being done without disturbing the way in which the students are taught or the structures in which they are taught. Second order changes are more far reaching, and these affect the culture and structure of schools.

ESD curriculum changes associated with first order change might be:

- the introduction of new lessons within existing curriculum;
- the use of new or revised learning materials;
- the use of new learner assessments (but using modalities the educator is already familiar with).

Curriculum changes coming within second order parameters involve:

- the use of new teaching approaches;
- the use of new modes of learner assessment;
- the alteration of beliefs (people's understanding of what they do);
- the development of new structures.

Anticipated ESD curriculum changes involving second-order changes – which is very likely the case – will require more intensive educator training and support, and potentially the engagement of a range of stakeholders.



## 2.5 Learner views and outcomes

The implemented ESD curriculum is associated with changes in the learner, also known as the achieved curriculum. The Research Team may wish to document outcomes in learners as part of understanding the effectiveness of the implemented curriculum. This aspect of the research might involve direct consultation with learners, as well as the collection of information from their teachers.

The kinds of research questions that might be used with teachers:

- How well do students engage in ESD-related learning and activities?
- What kinds of results have teachers seen in their students after engaging with the ESD curriculum (general)?
- Are the curriculum's learning outcomes being achieved?

Researchers might analyze the artifacts of student engagement with ESD, for example, project-based work. Researchers might also consult with students on their views on ESD and their experiences in the classroom. Some possible research questions are below.

### *Learner Views of ESD*

- Are learners familiar with the general concepts of ESD?
- What are the ESD topics that are of most interest to learners?
- How important do learners feel that it is to know about ESD and carry out behaviors consistent with sustainable development?

### *Implementation (general)*

- Have the learners participated in any ESD curriculum (lessons, units, projects, or activities)? Which topic or conceptual category did this address?
- Did the learners enjoy the lesson? Why or why not? Which parts?
- How well do the students associate their understanding of ESD with their participation in certain lessons and/or activities?

### *Quality*

- How do the ESD lessons compare with other lessons learners take in this class with this teacher, or with other teachers in the school? In what ways is it better? Not as good?
- What are the ways that the learners engage with ESD learning in the classroom, for example, through discussion, project work, etc.?

### *Results*

- What is the evidence of ESD learning among students?

Some ESD practices will be experiential in nature, taking place through non-formal learning organized outside of regular classrooms, such as through study visits to community organizations, summer camps, or other kinds of short-term, experience-oriented programming. The research techniques will be similar to those just presented for curriculum-based programming, especially learner outcomes, although expectations should be consistent with the intensity and length of the program.



### 3. Piloting and Field-Testing Curriculum

To field test means to try out materials in a naturalistic setting to see if they function as intended by the authors or sponsors. Based on field testing, researchers — in collaboration with teachers — gather information about how the curriculum is applied in order to make changes that clarify confusion; elaborate on detail; offer more supportive guides for teachers and students; and enhance the chances that the text will be used in the classroom as intended by the author.

Field testing is essential for ESD materials, especially if activity-based methodologies are not commonly practiced. Moreover, if materials have been translated or adapted from abroad, it is essential to carry out a trial run to ensure cultural relevance. Of course, field testing can be done not only for texts, but also for visual and auditory materials.

In a field-testing context, many of the general questions shared earlier in relation to an implemented curriculum may also apply. In addition, there will be a more concerted focus on getting feedback that curriculum writers can use to adjust the lessons and identify additional support for educators. For example, field testing may reveal that teachers do not feel that their students can carry out project-based work due to time limitations. Some of the issues that emerge may be able to be handled inside of the curriculum — for example, coming up with a less-intensive ESD-related project. Other challenges may need to be tackled at the school level (e.g., time for teacher professional development).

Of course, field testing should be tailored to reflect the degree of changes that you are willing to make. For example, we do not suggest engaging large numbers of teachers in an elaborate two-year field-testing effort if the intention is only to make minor editorial changes.

The results of field-testing research can be rich and even surprising. Curriculum developers will learn which topics and methods engage learners most, and which topics and methods teachers find the most difficult. Practitioners will offer not only editorial comments but also suggestions for deletions (for example, to shorten a lengthy text) as well as additions (such as a glossary of terms). Benefits for field testing will extend beyond the modifications to the materials themselves. Participation in such an endeavor can be an extraordinary professional development experience for the teachers, as well as the text authors. The results can also be used to advertise the materials when they are ready for publication.

There are two distinct and complementary techniques for field testing.

1. The first is the analysis of curriculum and learning resources based on a content review of the materials.
2. The second is the implementation of the curriculum followed by feedback.

The latter was covered in the previous subsection on implemented curriculum but will be extended in this section to include feedback from the educator on potential improvements for the curriculum.

### 3.1 Analysis of draft curricula and learning resources in text form before piloting

Prior to trying out a curriculum, input on the content of a new curriculum can be solicited. Common techniques include:

- Teachers complete a short questionnaire;
- Teachers are interviewed in focus groups;
- Teachers provide written feedback directly on the curriculum.

Box 18 below contains some of the general criteria that might be used for the review of the new curriculum (not specific only to ESD curriculum).

#### **BOX 18. General Characteristics of Good Curriculum**

- Links to the national curriculum framework;
- Level of difficulty of language and concepts are appropriate for learner age and previous education;
- Culturally and contextually relevant, including relevance to the everyday lives of learners;
- Gender balance and (positive) representation of minorities and other groups;
- Has a user-friendly format;
- Available in non-majority languages in addition to dominant one(s);
- Comprehensible and accessible regardless of race, sex, age, or other status.

Source: DIHR (2021) , p. 40.

The good practices documented earlier in this handbook might also become the criterion for assessing the quality of new ESD curriculum. These include the curriculum covering all ESD learning domains (cognitive, socio-emotional, behavioral); referencing local, national, and global examples; use of ESD transformative pedagogy; and the effectiveness of the curriculum in achieving ESD competences and learning goals.

Teachers can be involved in giving feedback on the draft materials in print form, using structured criteria such as clarity of concepts, the appropriate level of language for the learner, pedagogical methods, relevance for local context, etc. Below in Box 19 are some sample criteria for assessing learning materials along these lines.

### BOX 19. Sample Criterion (General) for Assessing Learning Materials

1. *Conformity to curriculum.* To what extent does the text conform to curriculum guidelines?
2. *Content.* Is the content accurate and valid? Does it refer to local issues of concern?
3. *Level of language.* Is the language used in the text accessible to the pupils for whom it is intended? Is the use of any jargon necessary and limited?
4. *Pedagogical method.* Is the methodology suited to the children's age and level, and are the exercise and test materials equally useful?
5. *Presentation and design.* Is the quality appropriate in terms of: page layout; size and style of type used; general readability; spacing, margins, clarity of impression?
6. *Illustrations.* Are the illustrations relevant and appropriate in terms of: quality of execution: style, relationship with text, accuracy, use of color?
7. *Originality.* What elements of originality or creativity of approach are there; are there any special features of particular appeal to pupils or teachers?
8. *Physical quality of materials.* Is the quality appropriate in terms of page layout, spacing, size, and style of type used? Does the book exceed the minimum requirements for text paper, cover material, and binding?
9. *Conditions of the classroom.* Is the curriculum sensitive to the material conditions of the classroom, for example, access to the internet?
10. *Teacher support.* What help is given by way of a teacher's guide or additional materials in: the methodology of the teaching sequences; background information; test, evaluation and extra exercise materials; answer keys.

### 3.2 Feedback following trying out a lesson

Commonly used data collection methods include the completion of feedback forms by the educator (and sometimes also the learners) following each activity or learning session; observations of the resources in action by the developer; interviews with educators and learners; and a review of any artifacts associated with the piloting (such as learner work). Focus group interviews with learners will provide valuable information from their perspective with regard to their experiences with a lesson. Evaluators can ask learners to share something from the lesson that was new for them, if the lesson made them think about anything differently, if they enjoyed the lesson, and how the lesson compared with others they have in other subjects.

Box 20 contains criteria that can be incorporated into a feedback form that a teacher fills out after every lesson, a written report that a teacher fills out after using a larger portion of the textual materials, or interviews that are conducted by researchers with the field-testing teachers. Each criterion could receive a rating — for example, a rating between 1 (unacceptable) to 5 (excellent), with 3 (acceptable). However, it is essential to collect details on the teacher's opinion of the text, so include open-ended questions.

#### BOX 20. Sample Questions for Lesson Feedback Form

1. Was the lesson used as it was presented in the text? Was it modified in any way? If so, how?
2. Was the lesson completed?
3. Was the lesson successful? Please explain why/why not.
4. Is this lesson likely to bring about the learning outcomes identified for this lesson?
5. Suggestions for changes.
6. Special events that took place in the classroom

In the piloting phase of the Global Schools Pilots in Turkey, educators provided feedback on specific elements of the Global Schools lessons, not only the lesson as a whole. Field-testing teachers commented on:

- whether the name of the lesson plan reflects its content;
- suitability of the suggested duration of the lesson plan;
- relevancy of the subject(s)/theme(s) that are associated with the lesson plan;
- relevancy of the SDGs that are associated with the lesson plan;
- educational objectives and learning outcomes specified in the lesson plan;
- assessment/evaluation method specified in the lesson plan;
- implementation form/pattern suggested in the lesson plan;
- relevancy of the lesson plan for the students in the suggested age group;
- conformity of the lesson plan to the curriculum of the suggested grade level;
- conformity of the lesson plan to the general educational goals of the Ministry.

(Öztürk et al., 2021, p. 37)

In addition to providing detailed feedback for each lesson, educators were asked to provide an overall assessment of the readiness of the lesson plan. Teachers were asked to indicate one answer from a multiple-choice option:

A. The lesson plan could be implemented in its current form. Why?

B. I do not think this lesson plan is suitable for implementation. Why?

C. I recommend the lesson plan be modified/ improved. Please indicate briefly what improvements and revisions are needed

(Öztürk et al., 2021, p. 38).

Ideally, the data collection, analyses, and modifications of the ESD curriculum will be a collaborative process between stakeholders, practitioners, researchers, and curriculum writers. Practitioners have the 'view from the ground' about the effectiveness of the draft materials and will make useful suggestions for modifying the text. In a school setting, practitioners might include students as well as teachers.

The researcher's role is critical for training teachers in data collection, developing instruments, skillfully eliciting suggestions from practitioners, and analyzing results. The curriculum writer needs to be informed in an ongoing manner of the results of the field testing, so that material alterations can be made expediently. However, it is ideal if the curriculum writer and researcher conduct any classroom observations together that might be organized so that the author can see with his or her own eyes how their materials are being used.

Classroom observations of a teacher field testing portions of a draft text might involve the following steps: Ask the teacher to read through the unit or chapter, and then teach it her or his own way to the students. Observe the teacher's method of instruction and make note of the following points:

- Clarity of presentation and logical sequencing;
- Use of examples and relevance to students' local culture and situation;
- Use of blackboard and other visual aides;
- Use of vocabulary;
- Involvement of students: do they ask questions, does the teacher ask them?;
- What are the questions about? Teacher's assessment of student understanding;
- Does the teacher correlate the lesson with the student's previous knowledge?

Remember that under such observations, it is not the teacher that is being evaluated, it is the text. If there are differences between the way that the author conceived a lesson and the way that it is being carried out — differences that observers feel do not improve upon the lesson — then the burden is on the text developer to improve the draft in ways that will facilitate lessons being carried out as originally intended.



### 3.3 Conclusion

After carrying out a pilot study for the draft curriculum, the Research Team will likely have collected ample data that can be used to make recommendations to the Advisory Committee and the MoE officials. In the final chapter, we will discuss how the results of the pilot study and the research can be used to change the final versions of the ESD curriculum, feed into programmatic interventions, and support the policy-making process.

One idea is a Phase 3 input process could take place after the curriculum has been developed, piloted, and revised. The presentation of the ESD Curriculum Framework and associated curriculum could be shared within the education community both in writing and in public presentations.

At this stage, outreach is primarily focused on dissemination, but it is still possible to receive feedback that can be incorporated into the finalization of the curriculum. In some country contexts, draft curriculum documents have been shared publicly for input, especially from students, families, and the general public. In addition to reflecting the participatory ethos of ESD and the legal imperative of participation from a human rights perspective, this kind of outreach is practical for advertising ESD at the grassroots level and building enthusiasm and support.



## ANNEX 17: Supplementary Piloting Questions for teachers

*\*Please note that these questions are not a substitute for core piloting questions, but rather supplementary. The core piloting questions should be derived from the in-text portions of this handbook.*

### Supplemental questions on evaluating individual lessons

1. Which aspects of the lesson plan did you find most interesting to teach?
2. Which aspects of the lesson plan did you find most challenging to teach?
3. Were the lessons appropriate for your students, in terms of age, background knowledge, and materials needed to deliver the lesson?
4. Were you familiar with the concepts in the lesson?
5. Do you feel you had the adequate amount of training to deliver this lesson?
6. Did the lesson plan teach you anything about sustainable development that you did not know?
7. Did it teach you anything about pedagogy that you did not know?
8. How could the lesson be improved?
9. Do you think this lesson/unit should be part of the national curriculum?
10. Do you think lessons with topics similar to this one should be part of the national curriculum?
11. What part of the lesson did you find the most useful?
12. What part of the lesson did you find least useful?
13. Would you be willing to teach this again?

### Supplemental questions at the end of the piloting

1. Do you think sustainable development should be part of the national curriculum? Why?
2. Do you think these lessons will have an impact on students (positive or negative)?
3. What challenges do you foresee if the lessons or the concepts outlined in them were implemented on a national scale?
4. Would you recommend this lesson to other teachers/schools?

### Supplemental questions on student observations

1. In your opinion, approximately how many students responded positively to this lesson? Why do you think they did so?
  - a. Was this number different from regular classroom lessons that you teach? Please compare. (the previous official curriculum lesson can be used as a baseline)
2. Please select the most relevant option for the following statements (Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree Scale):
  - a. Students were engaged during the lesson and actively participated in the learning activities (by asking questions, sharing their opinions, etc.)
    - i. Students were more engaged during this lesson compared with their usual classes (the previous official curriculum lesson can be used as a baseline)
  - b. Students understood the concepts and issues presented in this lesson
    - i. Students understood the concepts and issues presented in this lesson *better* compared to the concepts presented in the national curriculum (the previous official curriculum lesson can be used as a baseline)
  - c. Students understood the relevance of this lesson to their communities
    - i. Students understood the relevance of this lesson to their communities *better* than the lessons from the national curriculum (the previous official curriculum lesson can be used as a baseline)

- c. Students understood the relevance of this lesson to their daily lives
    - i. Students understood the relevance of this lesson to their daily lives *better* than with the relevance of lessons in the national curriculum (the previous official curriculum lesson can be used as a baseline)
  - d. Students enjoyed the lesson and had fun learning
    - i. Students enjoyed the lesson and had fun learning *more so* than compared to other topics in the national curriculum (the previous official curriculum lesson can be used as a baseline)
3. In your opinion, will any of the knowledge, values, behaviors and/or skills gained during this lesson in any way contribute to the overall students' academic performance? Please explain.
  4. What positive or negative behavior did you observe in your students during this lesson? Please explain.
  5. Did the lesson inspire action or positive social change in your students? Please explain.

# CHAPTER 07

## CONCLUSION





## Report launch and dissemination

In the last stage of the project, the team could compile a final report, which summarizes each of the phases into separate chapters that feature the results, methods, and key discussion points/considerations associated with that phase. The final report should ideally have two additional sections: (1) reflections, and (2) recommendations.

The reflection section would describe the research team's analysis of their experiences during the project. It would include the main challenges and actions adopted to deal with them, as well as positive highlights. Researchers should ideally comment on both the methodology proposed in this toolkit as well as the implementation process (e.g. were the chapter instructions detailed enough? Was the analytical framework easy to understand? What hardships did they encounter during the implementation?). This reflection piece is crucial as it enables researchers to firstly disclose the roadblocks faced by the team, help account for any limitations to the study, and secondly flag these roadblocks (and remedies) for other researchers who may wish to undertake a similar project in the future.

At this point in the project, researchers would ideally have a clear sense of what actions and solutions are needed to rapidly and efficiently integrate ESD into national education priorities and practices (taking into account local political, financial and administrative constraints). The recommendations section is likely the most important part of the final report as it enables researchers to provide constructive feedback and articulate solutions to the challenges identified throughout the project. To the extent possible, the description of these solutions should be detailed, nuanced and balanced. For instance, the Research team may highlight three potential strategies/models for the integration of ESD themes into educational priorities and practice. Researchers should clearly and fairly describe all three models, even if they may prefer one over the others. In practice, the section could begin with a brief overview of all three models, followed by a commentary on the pros and cons of each model based on key issues of interest (e.g. timing, resources, feasibility, impact, etc).

The researchers should then ideally conclude the section by stating which of the three is their preferred model, clearly articulating the reasoning behind their choice and providing evidence and examples from the research to support their conclusion. Before the recommendation section can be finalized, the Research team may find it useful to consult key stakeholders in the Advisory Committee and/or MoE to further reflect on potential models. However, given the extent of information likely available to researchers at this point in the project (e.g. results from the policy and curriculum mapping, stakeholder consultations, field tests, surveys, interviews, etc) it is highly likely that the preferred solution has already been envisioned and merely needs to be put into words for the final report. It is also recommended that the ESD framework which was created by the Research team earlier in the project, be used as the basis for this exercise. Given that the successful adoption and implementation of any particular model/strategy will likely need to deal with the key considerations and elements outlined in the ESD framework, its use would seem crucial in the context of this exercise.

Finally, once the report has been compiled, the Research team should present the final output to all key stakeholders, including the Advisory Committee, the Ministry of Education, and other relevant bodies. It is recommended that the Research team organize a public event to officially launch the report where research results and the solutions are discussed with all key stakeholders.



## Final Remarks

Given the scale and intensity of global challenges likely facing future generations, policymakers have a responsibility to transform national education systems in order to better prepare children for such a future. Education for Sustainable Development (ESD) ensures that learners of all ages are equipped with the values, knowledge, attitudes, and skills to shape communities that can not only withstand future challenges and shocks, but also thrive in the global economy.

This guide aimed to present policymakers, practitioners, and researchers with detailed step-by-step guidelines to create and adapt ESD curricula, and integrate it into national strategies and priorities. It outlines a multi-phased process, which includes policy and curriculum analyses, building an ESD Framework, and creating or adapting ESD curriculum. It also provided suggested frameworks and questions for piloting or field-testing curriculum

This document is meant to provide tools to support researchers and practitioners in determining what practices are best-suited for their local contexts, and the ideas and methods in this toolkit can help support the development of an ESD roadmap for national or local education systems. Use of this toolkit can contribute to continued learnings on ESD, and further feedback and case-studies are encouraged. These will be included in future iterations of the toolkit to support the global community in giving learners the knowledge and skills to build a more sustainable world.

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