



EDS/SMS/6.1

## **METADATA SDG INDICATOR 13.3.1**

**LAST UPDATED 27 JUNE 2024**

**Goal 13:** Take urgent action to combat climate change and its impacts

**Target 13.3:** Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning

**Indicator 13.3.1:** Number of countries that have integrated mitigation, adaptation, impact reduction and early warning into primary, secondary, and tertiary curricula.

## Institutional information

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**Organization(s):**

UNESCO International Bureau of Education and UNESCO Institute for Statistics

## Concepts and definitions

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**Definition:**

Extent to which green content (related to environment, sustainability, climate and biodiversity) is prioritized and integrated in national curriculum policy frameworks and the intended curricula (syllabi) of science and social science subjects in grades 3, 6, and 9.

**Rationale:**

From a process perspective, the indicator responds to the decision of the SDG 4 High-level Steering Committee (HLSC) in December 2022 to identify a benchmark indicator that captures progress in realizing commitments to greening education, under the Greening Education Partnership, made at the UN Transforming Education Summit in September 2022. These efforts are within the framework of two SDG 4 targets: on education for sustainable development (4.7) and on climate education (13.3). The HLSC called on all Member States ‘to set national targets’ once such an indicator has been developed and agreed upon. The indicator also responds to the need to collect objective data, considering that monitoring of progress in this area has been based on country self-reporting so far.

From a substantive perspective, including more green content in the official intended curriculum, which structures teaching and learning processes in schools, is a precondition if countries are to fulfil their greening education commitments. The process of greening the curriculum involves revisions to subject timetables as well as to subject and grade specific curricula. This indicator focuses on the inclusion of green content (references to environment, sustainability, climate and biodiversity) in two knowledge domains in the curriculum: science and social science. The methodology is based on a keyword search in national policy documents and represents the first attempt to capture green content in a comparable way.

**Concepts:**

**Keywords:** Since 2019, UNESCO has commissioned multiple studies (see References) to explore the inclusion of green keywords in key policy and curriculum documents. These studies, supplemented by extensive consultations, resulted in the identification of 35 greening keywords that fall into three clusters:

environment/sustainability, climate change, and biodiversity. All 35 keywords have been translated into more than 30 languages and translated terms have been verified by experts.

**Standardized references:** The number of references to green keywords was summed separately within each specific reporting category – for example, by knowledge domain or grade level -- and then standardized by the number of words in the relevant documents within the reporting category for each country, according to the following formula: Total references to green keywords divided by the total words in the document(s) multiplied by 1,000,000. This value is referred to as standardized references.

**Federal systems:** Documents for countries with federated education systems were collected at the appropriate sub-national level. In calculating the standardized references for this indicator, the entire pool of documents from all sub-national units from the relevant reporting category were grouped.

**Science and social science curricula:** In addition to the national curriculum framework document, up to four science and up to four social science subject curricula (syllabi) were selected for analysis, including all interdisciplinary subjects such as environment education and education for sustainable development.

#### **Comments and limitations:**

The focus on the science and social science curriculum of grades 3, 6 and 9 was selected in order to cover the typical range of compulsory schooling in most countries. By not examining other grade levels in primary and secondary education and other knowledge domains (e.g., language, mathematics, art), the proposed indicator does not provide a comprehensive account of the greening of the curriculum. It is also recognized that the existence of a keyword does not capture how these terms are used in schools. It is anticipated that better tools of text analysis will improve the methodology so that the indicator captures not just the incidence of specific keywords but also their contextualized meaning and connections with other keywords. Such development will help align the indicator further with the [Greening Curriculum Guidance](#), which UNESCO issued in May 2024. Finally, while the national curriculum framework may be quite far from what is taught in the classroom, subject syllabi ensure that the analysis remains quite close to actual classroom teaching.

## Methodology

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#### **Computation method:**

For each country the standardized references were calculated for 21 categories: 3 keyword clusters (environment/sustainability, climate change, biodiversity) by 7 document types, i.e. 2 knowledge domains (science and social science) for 3 grade levels plus the national curriculum framework. Within each of these categories a logarithmic transformation is applied (natural log of the standardized reference +1). Scores are then weighted: national curriculum frameworks and each grade level (3, 6 and 9) each contribute 25% of the final score (which means each grade level and knowledge domain are 12.5%). Within each of these 7 document type categories, keyword clusters are weighted 70% for environment/sustainability, 15% for climate change, and 15% for biodiversity. The maximum total score possible for a country is 100.

#### **Disaggregation:**

The indicator cannot be disaggregated. However, it is possible to report the average percentage of the maximum score for that category, which can be reported by keyword group, grade and knowledge domain. Such reporting contains important policy messages, for instance that countries are less likely to include keywords related to biodiversity and climate change (than for the more general environment/sustainability cluster), in grades 3 and 6 (than in grade 9), and in social science (than in science).

#### **Treatment of missing values:**

- **At country level**

In 4 cases where national curriculum frameworks do not exist, education sector plans were included in the analyses instead. To determine any potential bias in the inclusion of education sector plans, analyses were performed in 58 countries where both national curriculum frameworks and education sector plans were identified. It was found that education sector plans have, on average, lower levels of standardized references to environment, sustainability, climate and biodiversity (379) than national curriculum frameworks (684).

The indicator is not calculated for countries if the national curriculum framework or the subject syllabi in both science and social science subjects at one grade level were missing. However, if a complete set of subject syllabi was located for at least one of the two knowledge domains, the country was included in the analysis. For these countries the missing knowledge domain was scored the same as the existing knowledge domain.

- **At regional and global levels**

Not applicable.

#### **Regional aggregates:**

Global and regional aggregates are derived by using the national primary and secondary school age population as weights.

#### **Sources of discrepancies:**

Extracting keywords is not always straightforward due to different ways in which documents are processed, including scans of physical documents. Different software may yield varying counts. Keyword translations may not consistently cover the same word forms across all languages.

#### **Methods and guidance available to countries for the compilation of the data at the national level:**

Countries can calculate the standardized keywords in the relevant documents and compile those into the indicator based on the methodology described in this document. However, for the time being this analysis is carried out centrally for efficiency purposes.

#### **Quality assurance:**

Keywords and their translations were reviewed by native speakers who were also familiar with greening concepts. Documents were reviewed against a set of criteria before being included for analysis.

Before its annual data release and addition to the global SDG Indicators Database, the UNESCO Institute for Statistics submits all indicator values and notes on methodology to National Statistical Offices, Ministries of Education or other relevant agencies in individual countries for their review and feedback.

## Data sources

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### Description:

A database of over 1,500 curriculum documents has been compiled, in the following categories:

- 1) National curriculum frameworks or, in a few cases, education sector plans.
- 2) Science and social science subject curricula (syllabi) for grade 3.
- 3) Science and social science subject curricula (syllabi) for grade 6.
- 4) Science and social science subject curricula (syllabi) for grade 9.

A search in the curriculum documents for the 35 environment, sustainability, and climate change keywords was carried out in 30 languages. All keywords were initially translated and then validated by language proficient experts. The keyword searches were carried out in 24 languages using NVivo 12, a qualitative data software management software. In 6 languages, which could not be read by NVivo, manual searches of keywords were conducted by trained, language proficient, coders. Altogether NVivo and the manual coders identified around 19,000 green keywords in the two types of curriculum documents: 90% of the keywords were related to environment and sustainability, and 10% to climate change and biodiversity.

### Collection process:

Up to eight science and social science subject curriculum documents were collected at each grade level (3, 6 and 9) in each country or subnational jurisdiction. In some instances, different subnational jurisdictions use the same curricula. Many countries have a single general science and social science subject for both grades 3 and 6, rather than an array of specialized subjects, which is more common in secondary education. A range of sources were used to collect curricula, including scanning websites and searching archives of recent curriculum studies. National Commissions for UNESCO also provided curricula, following a request by the UNESCO International Bureau of Education. In cases where these methods did not yield the relevant grade 3, 6, or 9 curricula, country experts were consulted. National curriculum frameworks and education sector plan documents were located by searching education ministry websites and databases such as UNESCO IIEP Planipolis, UNESCO IIEP Siteal, UNESCO ERCE, Eurydice, OECD Policy Outlook, and Edumeres, as well as consulting country experts.

## Data availability

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### Description:

A complete set of documents to calculate the indicator is currently available for 90 countries, representing 47% of 193 UN member states and 73% of the global population.

### Time series:

The indicator is estimated annually starting from 2023. National time series will be constructed in the future by tracking the replacement of curricula documents going forward. Changes in such a time series will be relatively slow as curricular documents are not changed frequently.

## Calendar

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**Data collection:** Documents used in the construction of the Greening Education Indicator were collected between 2020 and 2024. While the analyses of the content of the documents can be made more sophisticated using multilingual text mining tools of these documents, it is anticipated that countries would be asked to reconfirm or update the documents once every 4-5 years.

**Data release:** The data would be released once a year with updates and additional cases depending on new documents ministries of education make available.

## Data providers

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Curriculum units in ministries of education provide the national curriculum framework and subject syllabi documents.

## Data compilers

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The analysis is carried out by the Monitoring and Evaluating Climate Change Education and Communication project at the University of Saskatchewan in partnership with the Global Education Monitoring Report, the International Bureau of Education, the UNESCO Institute for Statistics, and the UNESCO Division for Peace and Sustainable Development / Greening Education Partnership.

## References

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- [Greening curriculum guidance: Teaching and learning for climate action](#). 2024. UNESCO: Paris.
- [Education and climate change: Learning to act for people and planet](#). 2024. UNESCO: Paris.
- [Climate change and sustainability in science and social science: Primary school curricula](#). 2024. UNESCO: Paris
- [Climate change and sustainability in science and social science: Secondary school curricula](#). 2024. UNESCO: Paris
- [Learn for our planet: A global review of how environmental issues are integrated in education](#). 2021. Paris: UNESCO. 48 pp.
- [Getting every school climate-ready: how countries are integrating climate change issues in education](#). 2021. UNESCO: Paris.

- [\*Educational content up close: Examining the learning dimension of Education for Sustainable Development and Global Citizenship Education\*](#). 2019. Paris: UNESCO.

## Related indicators

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None.