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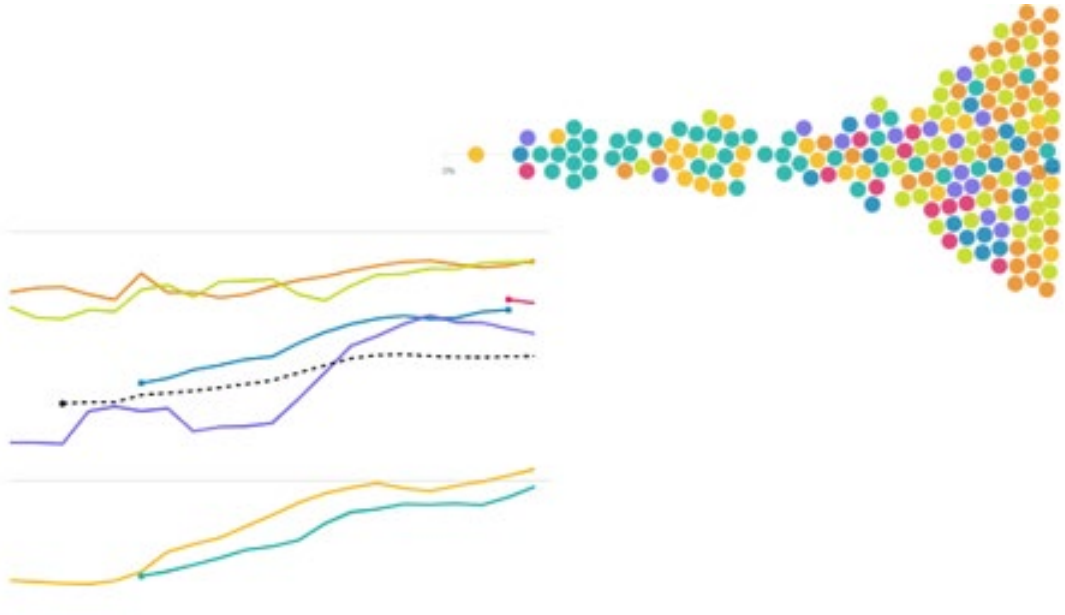
SDG 4 BENCHMARKS

DATABASE INTEGRATION



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Introduction

The first phase of the process of establishing national benchmarks was launched on 4 August 2021 when the Assistant Director-General for Education, Ms. Stefania Giannini, invited all ministers of education to submit national benchmarks for selected SDG 4 indicators for 2025 and 2030 by the 1st of October 2021, in alignment with the targets in their national plans and strategies.

On 6 August 2021, Ms. Silvia Montoya and Ms. Manos Antoninis, directors of the UNESCO Institute for Statistics (UIS) and the Global Education Monitoring Report (GEMR) and co-chairs of the Technical Cooperation Group on SDG4 indicators (TCG), sent letters to all countries' focal points asking them to complete a template with their national benchmarks for 2025 and 2030.

The template included information on latest values for each indicator, regional averages at baseline, regional minimum benchmarks for 2025 and 2030 and a set of proposed minimum and feasible values that countries could use as indicative values to set their own national benchmarks when these were not included in their national plans or strategies.

The indicators selected for benchmarking in the first phase were the following (see annex I):

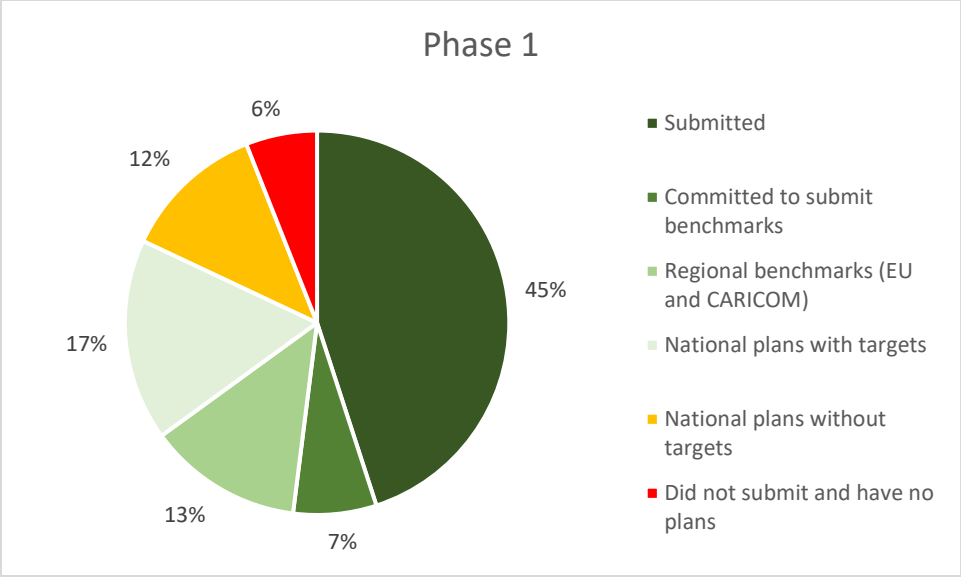
- SDG 4.1.1: Proportion of children and young people (a) in grades 2/3; (b) at the end of primary; and (c) at the end of lower secondary achieving at least a minimum proficiency level in (i) reading and (ii) mathematics, by sex
- SDG 4.1.2: Completion rate (primary, lower secondary, upper secondary)
- SDG 4.1.4: Out-of-school rate (primary education, lower secondary, upper secondary)
- SDG 4.2.2: Participation rate in organized learning (one year before official primary entry age)
- SDG 4.c.1: Proportion of teachers with the minimum required qualifications (pre-primary, primary, lower secondary, upper secondary)
- SDG 1.a.2: Proportion of total government spending on essential services (education)
- Government expenditure on education as a percentage of GDP

The second phase of the process of establishing national benchmarks was launched at the end of February 2022 and was marked by the addition of the seventh benchmark indicator, namely the 'Gender gap in upper secondary completion rate'.

Timeline

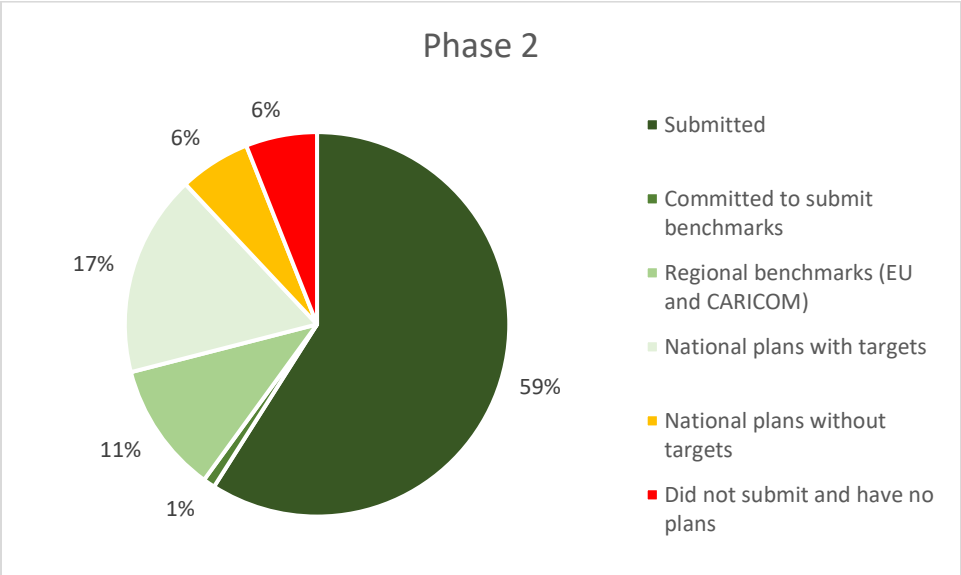
Phase 1

- Mailout: 6 August 2021
- Deadline: 1 October 2021
- Reminder 1: 13 October 2021
- Reminder 2: 30 November 2021 to 2 December 2021
  Note: Additional individual reminders were sent out to countries that did not submit national benchmarks along with invitations to bilateral meetings.
- Results:



Phase 2

- Mailout: 28 February 2022 to 2 March 2022
- Deadline: 31 May 2022 (extended to 10 June 2022)
- Reminder 1: 13-14 April 2022 (shared resources to assist in the establishment of benchmarks and invited to bilateral meeting, focusing on countries that had never submitted before)
- Reminder 2: 4-11 May 2022 (shared metadata files and invited to bilateral meeting)
- Reminder 3: 31 May 2022 (extended deadline)
  Note: Additional individual reminders were sent out to countries that did not submit national benchmarks along with invitations to bilateral meetings.
- Results:



Regional and bilateral meetings

The UIS has collaborated with regional organizations to assist countries in setting national benchmarks and to establish minimum regional benchmarks for all selected indicators for 2025 and 2030, except for the gender gap in upper secondary completion rate. For more information on this, please consult the SDG4 benchmarks page on the TCG website.

The UIS has conducted regional workshops to present the benchmarks background, objectives and templates in both 2021 and 2022. These were followed by bilateral meetings with countries that expressed interest to discuss further the process of benchmarking or requested assistance. The UIS has also followed up repeatedly on a one-to-one basis with countries that have not submitted any national benchmarks or have no targets in their national education sector plans and strategies.

Internal management of the submissions

Steps followed when country submits benchmarks template

- Acknowledge receipt of submission after checking the email, the template submitted and other attachments (if applicable).
  Note: Take note of any preliminary questions that may be important at this stage and get back to country for clarifications.

- Save the template submitted in the appropriate shared folder.
  Note: If the template is received after the database is closed, save it in the 'Not used yet' folder so that it is uploaded in the next update of the database.

- Save the email in the shared folder.

- Track the information that the template was submitted in the repository in the shared drive: Repository_NationalDocs_NationalValuesBenchmarks_rev_08032022.xlsx
  Note: In phase II, document also if the submission included benchmarks for the new indicator 'gender gap in upper secondary completion rate'.

- Check contacts and update the mailing list if necessary.

- Process the submission and check every value submitted:
  - Check if it is in line with baseline value
  - Check if it is in line with latest value
  - Check consistency between different indicators (for instance, consistency between different indicators such as completion rate and out-of-school rate)
  - Check source of data (for instance, check if learning benchmarks were set based on values derived from cross-national evaluations, i.e. international or regional, that are comparable; also check if completion rates were set based on values derived from household surveys)
  - Check methodology for each indicator (differences in methodology were noted for several indicators, particularly SDG 4.1.2, SDG 4.1.4 and SDG 4.2.2)

- Communicate with country in case we have any questions and follow up closely until we have full validation and clearance of all the values submitted.

- Fill gaps in benchmarks set by proposing values in clear-cut cases (for instance for expenditure indicators or when latest value of an indicator was close to 100%).

  Note: More details on data quality are discussed below with a clear description of the methodology used to validate benchmark values set by countries.

Sources of benchmarking

National Education Sector Plans

➢ **Methodology**

National Education Sector plans were located on the websites of the Ministries or Departments of Education, in the Voluntary National Review (VNR) documents, and on other official government websites. Once located, the latest version of the plan was selected for a thorough review.

Some of the main sources for National Education Sector plans were:

- Websites of Ministries/Departments of Education.
- Health Systems Governance and Financing (who.int)
- Droit-Afrique - Portail du droit des 24 pays d'Afrique francophone
- CABRI | Connect - Share - Reform (cabri-sbo.org)
- Global Partnership for Education
- Education Policy Bank (pacificdata.org)
- Home | Planipolis (unesco.org)

The detailed review process of the plans included looking for target values set by countries for selected 20 indicators or alternative proxy indicators that are close to the selected indicators, looking for reference baseline values used, and locating the national methodology of calculation of the indicators. Mined national data are then entered into the 'Benchmark data mining template' and/or 'Progress rate template'.

The *'Benchmark data mining template'* allowed the systematic collection of the target values set by countries from National Education Sector Plan publications. Several important metadata were tracked as part of the template such as:

- if the national methodology of calculation exists
- if the national methodology of calculation differs from the UIS methodology
- if the value found is a proxy (such as net enrollment rate as a proxy for out-of-school children rate)
- if the target value was reported with the required level of disaggregation
- if the target value was set for a year different than 2025 and 2030
- if national learning assessments are used for learning outcomes indicator (4.1.1).

The '*Progress rate template'* was designed to estimate 2025 and 2030 targets for countries based on baseline values and national targets countries set and reported for years other than 2025 and 2030. Thus, national baseline values and set target values were inserted into the template which then estimated

target values for 2025 and 2030, applying the same annual progress rate countries had anticipated when setting their own targets. The 'Progress rate template' also tracks metadata mined such as the source of the value and national methodology of indicator calculation.

To increase the coverage of countries, indicators, and disaggregation levels, target values reported only for the total secondary level were used as a proxy for both lower and upper secondary levels. These cases are flagged in the database.

➢ **Results**

Table 1 summarizes the results of the data mining process from national education sector plans by region.

- Out of a total of 208 countries belonging to the UIS regional classification, information on quantitative targets could be mined for 103 cases (50%).
- The mined values for 30 countries were published (14% of the total 208 countries).
- A total of 467 documents were reviewed (sectoral strategic plans, national plans, VNRs, among others), out of which 183 of them contained quantitative targets (39%). The rest of the documents either had no targets related to SDG 4 or were limited to only a general commitment statement by the country regarding the indicators.
- For each country, information was sought on 20 indicators. A total of 488 target values were obtained directly from national publications, of which 70 were published. 239 targets were estimated using the 'Progress rate template', which made it possible to publish an additional 62 targets.
- The regions with the highest levels of country coverage were Sub-Saharan Africa (70% of the countries), Central Asia, and South and West Asia (67% of the countries for both regions).
- In terms of the number of countries for which mined targets were published, Sub-Saharan Africa and Latin America stand out, with 28% and 21% of the total number of countries respectively.

Table 1. Summary of the mining process of target values by region

Region	Number of countries			Number of plans and documents		Number of targets		Number of targets estimated with 'Progress rate template'	
	Total	Mined at least one indicator	Published	Located	Contain target values	Mined	Published	Estimated	Published
Arab States	20	8	2	44	15	27	6	0	0
Asia and the Pacific	52	33	5	168	57	185	26	118	0
Central Asia	9	6	1	35	7	18	1	16	0
East Asia	17	10	1	63	20	78	8	50	0
South and West Asia	9	6	1	28	15	46	4	39	0

Pacific	17	11	2	42	15	43	13	13	0
Central and Eastern Europe	21	7	3	43	9	21	9	7	0
North America and Western Europe	27	4	3	18	4	10	3	4	4
Latin America and the Caribbean	42	19	4	107	31	87	11	25	8
Latin America	19	12	4	65	22	69	11	17	8
Caribbean	23	7	0	42	9	18	0	8	0
Sub-Saharan Africa	46	32	13	87	67	158	15	85	50
Total	**208**	**103**	**30**	**467**	**183**	**488**	**70**	**239**	**62**

Table 2 summarizes the outcome of the mining process by indicator.

- The indicators for which the most targets were mined are '4.2.2 Participation rate in organized learning (one year before the official primary entry age)' with 50 mined target values, followed by '1.a.2 Proportion of total government spending on essential services (education)' and '4.1.2.i Completion rate primary' with 42 and 36 mined target values respectively. The new indicator 'Gender gap in upper secondary completion rate' (or cc.3.gg) was the least represented with a total of only 3 national target values found.
- In terms of publication, values for indicators '4.2.2' and '1.a.2' were mostly published: for both, 14 cases were published considering both direct publication from the 'Benchmark data mining template' and 'Progress rate template'. On the other hand, for 'cc.3.gg', none of the mined or estimated target values were published.

Table 2. Summary of target values mining process by indicator

Indicator	Number of targets		Number of progress rates targets	
	Mined	Published	Mined	Published
1.a.2	42	5	20	9
1.a.GDP	22	1	12	5
4.1.1.a math	11	1	9	2
4.1.1.a read	13	2	8	1
4.1.1.b math	17	4	10	2
4.1.1.b read	19	4	11	3
4.1.1.c math	18	3	13	2
4.1.1.c read	18	3	13	2
4.1.2.i	36	5	15	4
4.1.2.ii	32	4	14	4

4.1.2.iii	28	5	10	4
4.1.4.i	34	6	19	4
4.1.4.ii	30	5	23	6
4.1.4.iii	28	4	16	5
4.2.2	50	9	21	5
4.c.1.a	22	2	6	1
4.c.1.b	26	2	8	2
4.c.1.c	20	2	5	1
4.c.1.d	19	3	4	0
cc.3.gg	3	0	2	0
Total	**488**	**70**	**239**	**62**

➢ **Outstanding issues**

- National Plans do not publish all indicators or they publish indicators different than the 20 selected. To overcome this challenge and increase coverage of countries, indicators, and disaggregation levels, proxy indicators were used. For instance, the 'Out-of-school rate' indicator was calculated as 100% - 'Net Enrollment Rate' in some cases.
- The cases where countries used household survey data to set targets for indicators that UIS calculates based on administrative data were tracked and tagged in the database.
- For indicators based on learning assessments, the values derived from international or regional assessments are considered. The cases where countries set targets based on national assessments were tracked and flagged in the database.
- Sometimes, the ISCED level to which the indicator refers is not correctly documented in the publications. This is common for secondary education where lower and upper secondary (ISCED 2 and 3) are often reported together, which reduces the accuracy of the target.
- In several publications, it was observed that countries do not document (explain clearly) the methodology of calculation of the indicators for which they set targets, which leaves ambiguity in the database as to whether the indicator is comparable with the UIS indicator or not. Such cases are tracked in the database and flagged accordingly.
- On many occasions, it was observed that in sector plan documents countries mostly include a commitment statement to pursue SDG 4 targets but do not necessarily set quantitative targets with timelines.
- The National Education Sector Plan documents were not straightforward to locate in most cases. The resources that were found useful for the process were VNRs, National websites, and the inventory of national publications.
- National publications sometimes do not clearly present the information in charts and graphs. It can also be frequently observed that some countries use graphs and charts to report on indicator performance and targets set for the future, but without clear labeling to allow correct interpretation of the information.

- In national publications, countries tend to use national data for population and GDP which usually differs from values in UNPD or WB. This results in baseline and target values published by countries not comparable with UIS-published values. This is mainly applicable for indicators 1.a.2, 1.a.GDP, 4.1.2, 4.1.4, and 4.2.2 which require either population or GDP data for their calculation.
- In some cases, national school age classification of countries differs from ISCED mapping countries submitted: thereby, the same term of 'primary' refers to different student age groups in such cases. This also results in non-comparable data.
- Some countries in national publications only include public institutions, thus reporting baseline and target values refers only to public institutions.

Voluntary National Reviews

➢Methodology

The methodology for mining National Education Sector Plan documents applies to the process of mining target values from VNRs. Additionally, VNR-specific methodological notes are listed below:

The VNRs for countries were located from the following sources:

- Voluntary National Reviews | High-Level Political Forum
- Voluntary National Reviews: Sustainable Development Knowledge Platform

During the process of locating the VNR publication for review, the latest publication was selected.

The VNRs have one section for each SDG goal, where the country's progress towards this goal is presented along with the country's performance on related SDG indicators. Targets, if included in the VNR, were mostly located in the Annex of the document.

➢Results

Table 3 below summarizes the process of mining national targets from VNRs.

- Only 12 countries, out of 122 that submitted the national reports in 2020, 2021, or 2022, set a target for 2030 or any other year in between.
- 73 countries used UIS methodology to calculate at least one benchmarking indicator
- 4.1.1 was the most common indicator countries used to show progress towards achieving the goal.

Table 3. Summary of the process of mining target values from VNRs by region and indicator

Region	Total	1.a.2	1.a.GDP	4.1.1	4.1.2	4.1.4	4.2.2	4.c.1	Equity	Target	UIS Methodology
World	**122**	**25**	**8**	**43**	**33**	**15**	**37**	**32**	**15**	**12**	**73**
Arab States	**11**	**3**	**0**	**2**	**4**	**3**	**6**	**4**	**1**	**2**	**7**
Asia and the Pacific	**27**	**10**	**4**	**12**	**8**	**3**	**12**	**7**	**5**	**3**	**22**
Central Asia	6	3	1	3	0	0	3	1	0	0	5

East Asia	9	2	1	5	4	1	5	3	3	1	7
South and West Asia	7	4	2	3	4	2	2	2	2	2	6
Pacific	5	1	0	1	0	0	2	1	0	0	4
Central and Eastern Europe	**11**	**0**	**0**	**3**	**1**	**0**	**1**	**0**	**0**	**0**	**4**
North America and Western Europe	**15**	**1**	**0**	**1**	**1**	**0**	**1**	**0**	**0**	**0**	**1**
Latin America and the Caribbean	**21**	**4**	**3**	**11**	**2**	**0**	**9**	**8**	**2**	**3**	**16**
Latin America	14	2	0	8	1	0	6	5	1	3	11
Caribbean	7	2	3	3	1	0	3	3	1	0	5
Sub-Saharan Africa	**37**	**7**	**1**	**14**	**17**	**9**	**8**	**13**	**7**	**4**	**23**

➢**Outstanding issues**

The issues and challenges of mining National Education Sector Plan documents apply to the process of mining target values from VNRs as well. Additionally, VNR-specific challenges are listed below:

- Only 2 out of 3 countries used the 20 selected benchmarking indicators to demonstrate the progress in their VNRs.
- Most of the countries did not set up targets and/or included targets in their VNRs but only presented baseline and actual values instead.
- For indicators 4.1.1, 4.1.2 (including gender gap), 4.1.4, and 4.2.2 the source of information was different from the source according to UIS methodology.
- Indicators 4.1.1, 4.1.2, 4.1.4, and 4.c.1 were not calculated for all the levels of education requested for benchmarking.

Database management

The database contains 208 countries, 7 indicators (20 sub-indicators), and 23 years (2000-2022).

The main variables are:

- **Baseline 2015:**
  The baseline uses data for 2015 +/- 2 years. The data source and priority for each indicator are shown in the table below.

Indicator	Data source and priority				
	Learning assessment	Adminstrative data	HHS* observed	HHS modelled	Expenditure
4.1.1 Learning	1				
4.1.2 Completion rate			1	2	
4.1.4 Out-of-school		1	2		
4.2.2 Participation one year before primary		1	2		

4.c.1 Trained teachers		1			
Expenditure on education (FFA.1 & FFA.2)					1
Gender gap			1	2	

* HHS: Household Survey

For instance, '4.1.2 Completion rate Indicator' prioritizes the use of HHS observed data from 2015 +/- 2 years (priority 1), if available. If not, then the indicator will use HHS modelled data from 2015 +/-2 years (priority 2).

- **National benchmarks (2025 & 2030):**

Variable	Data source and priority			
	Submission Phase 2	**Submission Phase 1**	**Regional benchmark (EU & CARICOM)**	**National plan (progress rates & benchmarks)**
National benchmark (2025 & 2030)	1	2	3	4

The data sources are not combined. For instance, if a country submits national benchmarks in Phase 2, that is the only source of national benchmarks used, even if there are other benchmarks available in submission Phase 1, or regional benchmarks, or benchmarks in national plans.

The UIS has mined national benchmarks from national plans in two ways as described in the previous section:

a) Mining national benchmarks: this involves identifying the values of national benchmarks or targets set by countries in their national plans.
b) Mining progress rates: progress rates were mined when countries use other sources of data to set their national benchmarks. Those progress rates then have been applied to the UIS data to get the national benchmarks.

Regional benchmarks:

- **European Union countries:**
  - 4.1.1: at least 85% of students achieving at least the minimum level of competencies in reading and mathematics in lower secondary
  - 4.1.2: at least 91% of upper secondary completion rate
  - 4.2.2: at least 96% for participation rate in organized learning one year before primary
- **CARICOM countries:**
  - 4.1.1: at least 75% of students achieving at least the minimum level of competencies in reading and mathematics in a) grade 2 or 3, b) at the end of primary, and c) at the end of lower secondary

- 4.1.4: no more than 5% of children and 15% young people out of school in primary and upper secondary respectively
- 4.c.1: at least 85% of teachers with the minimum required qualifications

For countries where regional benchmarks are used, the national benchmarks are defined as the highest (or lowest for the out-of-school indicator) value between the latest national value and the regional benchmark.

Group averages of baseline and national benchmarks:

Averages of SDG regions and country income group were calculated as the average of baseline or national benchmarks weighted by population, except for expenditure indicator, where the median was used instead.

Lessons learnt

Many of the lessons learned were presented in the previous sections on issues and challenges and it is important to highlight the points below:

a. Benchmarks are tied to the data used as source for setting them
b. Harmonization of multiple data sources is key to monitor progress
c. There are discrepancies between data sources
d. Group averages are difficult to calculate when the data coverage is low (e.g., Indicator 4.1.1)
e. Countries have much more data available than the ones submitted to the UIS

Annex I: Benchmark indicators

Thematic area	Indicator			Disaggregation
Early childhood	Global Indicator 4.2.2	Participation rate one year before primary	1	
Basic education	Thematic Indicator 4.1.4	Out-of-school rate	3	(i) primary, (ii) lower secondary and (iii) upper secondary school age
	Global Indicator 4.1.2	Completion rate	3	(i) primary, (ii) lower secondary and (iii) upper secondary education
Equity	Target 4.5	Completion rate, gender gap in upper secondary	1	
	Global Indicator 4.1.1	Minimum learning proficiency	6	(i) early grades, (ii) end of primary and (iii) end of lower secondary, in (a) reading and (b) mathematics
Quality	Global Indicator 4.c.1	Trained teachers	4	(i) pre-primary, (ii) primary, (iii) lower secondary and (iv) upper secondary education
Financing	Global Indicator 1.a.2 and Education 2030 benchmarks	Education expenditure	2	(i) as share of total public expenditure and (ii) as share of gross domestic product
			20	