



United Nations
Educational, Scientific and
Cultural Organization



UNESCO
INSTITUTE
FOR
STATISTICS

SDG 4 monitoring: framework development

Global Alliance for Monitoring Learning
Fourth meeting
28-29 November 2017
Madrid, Spain

GAML4/REF/18

The following text is taken from Chapter 1 of the UIS Sustainable Development Data Digest No. 2: *The Quality Factor: Strengthening National Data to Monitor Sustainable Development Goal 4*

1. Monitoring the international education agenda

In September 2015, 193 Member States of the United Nations (UN) unanimously adopted the 2030 Agenda for Sustainable Development. Building on the Millennium Development Goals (MDGs) approved in 2000, the 2030 Agenda is comprised of 17 Sustainable Development Goals (SDGs) and 169 targets. They are committed to a shared global agenda to end widespread poverty and inequity by improving social and human rights, promoting sustainable economic growth and protecting the environment (UN, 2000, 2015). The associated SDG indicator framework was developed by the Inter-Agency Expert Group on SDG indicators (IAEG-SDGs), a group created by the United Nations Statistical Commission, and adopted by the UN General Assembly in July 2017.

Education is a central theme throughout the 2030 Agenda, which includes a stand alone education goal and education related targets within seven other SDGs (UIS, 2016).¹ In particular, SDG 4 is ambitious and aims to “ensure inclusive and equitable quality education and promote lifelong learning opportunities for all” by 2030. The goal consists of ten targets to guide countries along a transformative path to a sustainable education agenda.

SDG 4 has a broader focus than the MDG Education Goal 2 (“Achieve universal primary education”) and expands on the Education for All (EFA) goals adopted by the international education community in Dakar in 2000.² SDG 4 is all encompassing in terms of sub-sector coverage, ranging from early childhood education to lifelong learning. Quality of learning, inclusion and equity are central tenets to achieving the goal. Going beyond education, SDG 4 is also linked with the other goals in terms of acquiring knowledge

and skills to promote sustainable development, eliminating gender disparities and expanding access to education to all youth and adults to increase their employment opportunities.

Since September 2015, several processes have begun – or continued in some cases – to work towards the implementation of a coordinated and integrated monitoring framework and the development of the indicators to monitor SDG 4. The first edition of the Sustainable Development Data Digest (2016) documented these efforts, including the selection of monitoring criteria and how key targets and indicators were defined through a country led process guided by experts and advisory groups. This section provides an update to the 2016 Digest discussion on the activities related to the development of the SDG 4 monitoring processes and indicator definitions.

1.1 The new monitoring framework for SDG 4

A review of the implementation of the MDG monitoring framework since 2000 has provided lessons for the development of the criteria for monitoring the SDGs. From a statistical perspective, the MDG framework was built on a set of concrete, measurable indicators and generally enabled the improvement of national capacity for statistical monitoring in many developing countries. However, some of the data related challenges that were revealed included the lack of clarity or inconsistencies among goals and indicators, as well as insufficient financial and technical support to improve national monitoring systems. The relationship between global and

¹ Other targets related to education are included in SDG 1 (on poverty), SDG 3 (on health and well being), SDG 5 (on gender equality), SDG 8 (on decent work and economic growth), SDG 12 (on responsible consumption and production), SDG 13 (on climate change) and SDG 16 (on peace, justice and strong institutions). See Table 2 in UIS, 2016.

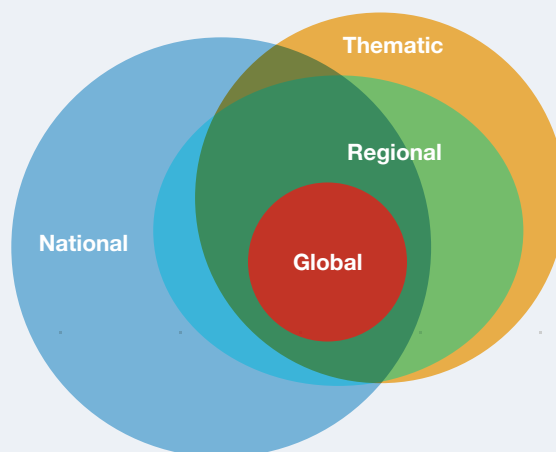
² For more information on education related targets and indicators, see the UN Millennium Declaration and the Dakar Framework for Action (UN, 2000; UNESCO, 2000).

national indicators was distorted for some goals, indicators did not sufficiently address inequities among groups, and data quality was subject to discrepancies and differences among data providers (IAEG-MDG, 2013).

In December 2014, UN Secretary-General Ban Ki Moon called for a comprehensive approach to monitoring the SDGs, which was later reflected in the 2030 Agenda's collective and universal call to action (UN, 2015; UNSG, 2014). While he emphasised the importance of effectiveness, efficiency, evidence and universality as guiding principles for reviewing SDG progress, the UN Secretary-General also recommended using a participatory framework in which all stakeholders and related groups (e.g. civil society, business, parliament, academia and government) could recognise their shared responsibility in achieving the SDGs. **Figure 1** shows this proposed multi-tiered, multi purpose framework composed of four monitoring levels – national, regional, global and thematic – which have the following characteristics:

- **National level monitoring** of SDG 4 is linked to the needs of national and sub-national governments in developing education sector plans and informing education policies. Data that provide high-level granularity and adapt to the specificities of the national context – such as in sub-national geographical units, specific disadvantaged groups or by wealth – offer a greater capacity to inform policy by examining relevant disparities in education outcomes. Monitoring SDG 4 at this level benefits from the active participation of a diverse group of stakeholders representing their respective constituencies and education related concerns.
- At the **regional level of monitoring**, a set of indicators may be developed to take account of priorities and issues of common interest that are shared by countries in a particular region, as outlined in regional planning documents or frameworks. Some frameworks are designed to specifically monitor SDGs within a regional policy context. This is the case of the European Union (EU) SDG Indicator Set, which is composed of 100 indicators to monitor the

Figure 1. Four levels of monitoring education targets



Source: UNESCO Institute for Statistics, 2016.

17 SDGs. The six regional indicators selected for monitoring SDG 4 have strong links with the Education and Training 2020 strategic framework of the EU, focusing on investing in young people and increasing lifelong learning opportunities (Eurostat, 2017). In a different vein, the African Union developed a broad set of development goals for the region in Agenda 2063: the Africa We Want, with its own set of region specific indicators. Integrating the monitoring systems of Agenda 2063 and the SDGs is part of the ten year implementation plan for national governments (African Union Commission, 2015a, 2015b).

- **Global level monitoring** relies on a more limited and carefully-selected group of leading indicators to provide an overview of progress towards each target. The harmonisation of monitoring and reporting of SDGs for cross-country comparability is also of critical importance. The ability to analyse and compare national data across countries and years provides insights into measuring performance, driving policy reform and allocating resources equitably to improve learning among all population groups. The knowledge sharing and universal review is convened annually under the UN's High-Level Political Forum on Sustainable Development (HLPF) (UN, 2017).
- **Thematic monitoring** adds a level of monitoring of comparable indicators within a specific sector (e.g. education, environment, energy, health) or cross cutting theme (e.g. gender). Thematic indicators serve as a framework to track progress on a cross nationally-comparable basis, with a more in depth view of sectoral priorities than available in the global monitoring framework. Through the agency of the Secretary General, this level provides the opportunity to identify sector specific challenges and bottlenecks and mobilise the action required to address them. The HLPF convenes annual thematic meetings during which it hosts in depth reviews of a

cross cutting issue, such as poverty eradication (in 2017), sustainability and resiliency (in 2018) and empowerment, inclusiveness and equality (in 2019) (UNDESA, 2017).

On 4 November 2015, 184 UNESCO Member States adopted the Education 2030 Framework for Action, which provides guidance (“indicative strategies”) at national, regional and global levels on how to achieve SDG 4 and how to monitor implementation of each of the ten SDG 4 targets. Education 2030 emphasises that SDG 4 monitoring must include a “multidimensional approach covering system design, inputs, content, processes and outcomes” (UNESCO, 2015, para. 97). It also designates the UNESCO Institute for Statistics (UIS) as the official source of cross nationally-comparable data in education and mandates the Global Education Monitoring Report (GEM Report) to monitor and assess progress in achieving SDG 4 and other education related goals.³ National governments have the primary responsibility for building monitoring mechanisms in accordance with the consensus reached at the regional and global levels and in consultation with civil society organizations (CSOs). The document was the result of an 18-month collective effort characterised by numerous regional and national consultations led by governments and civil society. UNESCO and other international partners facilitated this process (UNESCO, 2015).

Included within the Education 2030 Framework for Action is a proposed draft list of 43 thematic indicators – including the 11 global indicators – to chart global progress on education. The UIS, together with partner organizations and experts from Member States and civil society, developed this proposal to provide countries with monitoring guidance around a set of education-related concepts linked to the global targets. The continued refinement and further development of these indicators into monitoring frameworks are the subject of several processes, described in the following section.

³ The GEM Report, which was launched in 2016, was formerly known as the Education for All Global Monitoring Report.

1.2 The development and implementation of global and thematic indicator frameworks for SDG 4

As with the MDGs, progress towards each of the SDGs and their targets needs to be monitored regularly between now and 2030. Selecting and defining indicators to monitor the global education targets has been a process building on the experience of the MDGs. Assessing progress towards the international goal requires measurement tools which are relevant for analysing the impact of national education policies and for reaching a set of globally-comparable indicators.

1.2.1 The global indicator framework

In December 2014, the UN Statistical Commission (UNSC) established an Inter-Agency Expert Group on the SDG indicators (IAEG-SDGs) composed of the Chair of the UNSC and 27 regionally-representative experts from national statistical offices to develop a global indicator framework for all SDGs.⁴ Following several rounds of global consultations and meetings with UN Member States, international and regional organizations, academia, businesses, NGOs and civil society, the IAEG-SDGs first proposed a list of 11 global education indicators to monitor SDG 4 in March 2016, which was ultimately approved at the 48th Session of the UNSC in March 2017 and formally adopted by the UN Economic and Social Council (ECOSOC) and the UN General Assembly (UNGA) in June and July 2017, respectively.⁵ This global monitoring framework for SDG 4 represents the most basic set of indicators considered indispensable for countries to monitor the education goal (see **Table 1**).

With consensus reached on the list of global education indicators, the IAEG-SDGs developed a tier classification tool to identify the state of

development of each indicator and its availability on a global scale (see **Box 1**). Tier 1 and Tier 2 indicators have internationally-established methodologies and standards, although Tier 2 indicators are not regularly produced by countries. Tier 3 indicators require the development of methodologies and standards, and this work has been prioritised by the IAEG-SDGs. All indicators are considered equally important for monitoring SDG 4, independent of their tier classification.

The development and validation of new methodologies for Tier 3 global indicators falls under the responsibility of the indicator's custodian and partner agencies. The IAEG-SDGs, which oversees this process, identified three custodian agencies for the global indicators for education. The UIS is the custodian agency for 9 of the 11 SDG 4 global indicators and a partner organization for the remaining two. UNICEF and the Organisation for Economic Co-operation and Development (OECD) are the other two custodian agencies for these global indicators: an indicator related to child development (4.2.1) and an indicator for development assistance for scholarships (4.b.1).⁶

The IAEG-SDGs holds two annual meetings during which it reviews the list of indicators and considers minor changes or refinements from its members or editorial clarifications from the UN Statistics Division (UNSD).⁷ During these meetings, the IAEG-SDGs also assesses the tier classification for groups of selected indicators, examines methodologies proposed by custodian agencies and gives final approval for changes in the tier classification. Based on the outcomes of these annual meetings, the IAEG-SDGs will make recommendations to the UNSC to approve the refinements.

In addition to the annual reviews, the IAEG-SDGs will conduct major quinquennial reviews of the

⁴ For members, see Box 3 in Section 1.2 in the Sustainable Development Data Digest 2016 (UIS, 2016).

⁵ The SDG 4 global indicators were developed by the IAEG-SDGs in a process along with indicators for the other SDGs.

⁶ Some education-related indicators are monitored within other Goals, namely SDGs 1, 8, 12, 13 and 16. Information on the status of those indicators is available on the IAEG-SDGs website <https://unstats.un.org/sdgs/iaeg-sdgs/>

Table 1. The current status of global and thematic indicators to monitor SDG 4

SDG 4 targets		Indicator status	
		Indicators for reporting in 2017	Requires further development
Target 4.1 By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes			
4.1.1	Proportion of children and young people (a) in Grade 2 or 3; (b) at the end of primary education; and (c) at the end of lower secondary education achieving at least a minimum proficiency level in (i) reading and (ii) mathematics, by sex	X	X
4.1.2	Administration of a nationally-representative learning assessment (a) in Grade 2 or 3; (b) at the end of primary education; and (c) at the end of lower secondary education	X	
4.1.3	Gross intake ratio to the last grade (primary education, lower secondary education)	X	
4.1.4	Completion rate (primary education, lower secondary education, upper secondary education)	X	
4.1.5	Out-of-school rate (primary education, lower secondary education, upper secondary education)	X	
4.1.6	Percentage of children over age for grade (primary education, lower secondary education)	X	
4.1.7	Number of years of (a) free and (b) compulsory primary and secondary education guaranteed in legal frameworks	X	
Target 4.2 By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education			
4.2.1	Proportion of children under 5 years of age who are developmentally on track in health, learning and psychosocial well being, by sex	X	X
4.2.2	Participation rate in organized learning (one year before the official primary entry age), by sex	X	
4.2.3	Percentage of children under 5 years experiencing positive and stimulating home learning environments		X
4.2.4	Gross early childhood education enrolment ratio in (a) pre-primary education and (b) early childhood educational development	X	
4.2.5	Number of years of (a) free and (b) compulsory pre-primary education guaranteed in legal frameworks	X	
Target 4.3 By 2030, ensure equal access for all women and men to affordable quality technical, vocational and tertiary education, including university			
4.3.1	Participation rate of youth and adults in formal and non-formal education and training in the previous 12 months, by sex	X	X
4.3.2	Gross enrolment ratio for tertiary education by sex	X	
4.3.3	Participation rate in technical vocational programmes (15 to 24 year olds) by sex	X	

SDG 4 targets		Indicator status	
		Indicators for reporting in 2017	Requires further development
Target 4.4 By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship			
4.4.1	Proportion of youth and adults with information and communications technology (ICT) skills, by type of skill	X	X
4.4.2	Percentage of youth/adults who have achieved at least a minimum level of proficiency in digital literacy skills		X
4.4.3	Youth/adult educational attainment rates by age group, economic activity status, levels of education and programme orientation	X	X (to simplify)
Target 4.5 By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations			
4.5.1	Parity indices (female/male, rural/urban, bottom/top wealth quintile and others such as disability status, indigenous peoples and conflict affected, as data become available) for all education indicators on this list that can be disaggregated	X	
4.5.2	Percentage of students in primary education whose first or home language is the language of instruction		X
4.5.3	Extent to which explicit formula based policies reallocate education resources to disadvantaged populations		X
4.5.4	Education expenditure per student by level of education and source of funding	X	
4.5.5	Percentage of total aid to education allocated to least developed countries	X	
Target 4.6 By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy			
4.6.1	Proportion of population in a given age group achieving at least a fixed level of proficiency in functional (a) literacy and (b) numeracy skills, by sex	X	X
4.6.2	Youth/adult literacy rate	X	
4.6.3	Participation rate of illiterate youth/adults in literacy programmes		X
Target 4.7 By 2030, ensure all learners acquire 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			
4.7.1	Extent to which (i) global citizenship education and (ii) education for sustainable development, including gender equality and human rights, are mainstreamed at all levels in: (a) national education policies, (b) curricula, (c) teacher education and (d) student assessment	X	X
4.7.2	Percentage of schools that provide life skills based HIV and sexuality education		X
4.7.3	Extent to which the framework on the World Programme on Human Rights Education is implemented nationally (as per the UNGA Resolution 59/113)		X

SDG 4 targets		Indicator status	
		Indicators for reporting in 2017	Requires further development
4.7.4	Percentage of students by age group (or education level) showing adequate understanding of issues relating to global citizenship and sustainability		X
4.7.5	Percentage of 15 year old students showing proficiency in knowledge of environmental science and geoscience		X
Target 4.a Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all			
4.a.1	Proportion of schools with access to: (a) electricity; (b) Internet for pedagogical purposes; (c) computers for pedagogical purposes; (d) adapted infrastructure and materials for students with disabilities; (e) basic drinking water; (f) single sex basic sanitation facilities; and (g) basic handwashing facilities (as per the WASH indicator definitions)	X	X for (d)
4.a.2	Percentage of students experiencing bullying, corporal punishment, harassment, violence, sexual discrimination and abuse		X
4.a.3	Number of attacks on students, personnel and institutions		X
Target 4.b By 2020, substantially expand globally the number of scholarships available to developing countries, in particular least developed countries, small island developing States and African countries, for enrolment in higher education, including vocational training, information and communications technology, technical, engineering and scientific programmes in developed countries and other developing countries			
4.b.1	Volume of official development assistance flows for scholarships by sector and type of study	X	
4.b.2	Number of higher education scholarships awarded, by beneficiary country		X
Target 4.c By 2030, substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially least developed countries and small island developing States			
4.c.1	Proportion of teachers in: (a) pre-primary education; (b) primary education; (c) lower secondary education; and (d) upper secondary education who have received at least the minimum organized teacher training (e.g., pedagogical training) pre-service or in-service required for teaching at the relevant level in a given country, by sex	X	
4.c.2	Pupil-trained teacher ratio by education level	X	
4.c.3	Proportion of teachers qualified according to national standards by education level and type of institution	X	
4.c.4	Pupil-qualified teacher ratio by education level	X	
4.c.5	Average teacher salary relative to other professions requiring a comparable level of qualification		X
4.c.6	Teacher attrition rate by education level	X	
4.c.7	Percentage of teachers who received in-service training in the last 12 months by type of training		X

Note: Orange boxes are global indicators; blue boxes are thematic indicators. For information on definitions, methodology, interpretation and limitations for each indicator, please refer to UIS, 2017d.

Source: TCG, 2017.

Box 1. Categorisation of SDG 4 global indicators by IAEG-SDGs tiers

Tier 1

The indicator is conceptually clear and has an internationally-established methodology and standards. In addition, data are produced regularly by countries for at least 50% of countries and of the population in every region where the indicator is relevant.

4.2.2

4.b.1

4.c.1

Tier 2

The indicator is conceptually clear, has an internationally-established methodology and standards, but data are not regularly produced by countries.

4.1.1 (b) and (c)

4.3.1

4.4.1

4.6.1

Tier 3

No internationally-established methodology or standards are yet available for the indicator, but methodology/standards are being (or will be) developed or tested.

4.1.1 (a)

4.2.1

4.7.1

Mixed tiers

4.a.1 Tier 1/2/3 depending on the component

4.5.1 Tier 1/2/3 depending on the underlying indicator

Note: Tier classification is from 20 April 2017.

Source: UNDESA, 2016.

global indicator framework in 2019 and 2024 in preparation for the 2020 and 2025 UNSC review sessions. Substantive changes are only considered during these reviews. The members of the IAEG-SDGs determine the scope of the major reviews and will develop proposals to add, delete or modify selected indicators. They will consult widely on proposed changes through a series of open consultations with observer countries, regional and international organizations, civil society and other stakeholders. Additions may occur where the existing global indicators do not adequately cover the full intention of a given target or where existing global indicators are still not available at the time of the major review. Deletions of indicators could be considered when suitable methodologies cannot be developed on a global scale for a Tier 3 indicator or where existing indicators are not sufficiently powerful to measure progress. Modifications may be required for the purposes of clarification, simplification or where greater definition or discrimination is needed.

It is expected that the majority of the SDG 4 indicators in the current global framework will be retained. During 2016, the IAEG-SDGs expressed interest in considering additional global indicators for certain targets. Among these are out-of-school rates, completion rates and the number of years of free education – all of which are thematic indicators – for Target 4.1. The IAEG-SDGs would also like to expand Indicator 4.b.1 on expenditure on scholarships for study abroad to include privately funded scholarships. Given the broad range of scholarship providers, these data are not collected systematically or comprehensively to date and cannot be reliably aggregated.

1.2.2 The thematic indicator framework

The development of a thematic indicator framework for SDG 4 results from the work that began with the UIS chaired process of developing education indicators for the Education 2030 Framework for Action. In March 2014, UNESCO established the Technical Advisory

Group on Post-2015 Education Indicators (TAG) whose mandate included the selection of a set of indicators to monitor SDG 4, ultimately included as a draft in the Education 2030 Framework for Action. TAG's selection of 43 indicators – 11 global indicators and 32 thematic indicators – was based on five criteria, namely, relevance, alignment with the concepts in the target, feasibility for regular data collection across countries, ease of communication to a global audience and interpretability (UIS, 2017e; UNESCO, 2015).

The Education 2030 Framework for Action mandated that the UIS work with partners to lead in data collection, indicator development and strengthening of national data systems. In 2016, the UIS convened the Technical Cooperation Group (TCG) on the SDG 4-Education 2030 Indicators to lead the methodological development and implementation of the thematic indicator framework, designed to monitor comprehensively the global education targets. The TCG is composed of regionally-representative experts from 28 Member States (the same regional representation as the IAEG-SDGs and the United Kingdom, a former member), the GEM Report team, the OECD, UNESCO, UNICEF, the World Bank and civil society organizations, as well as observers from regional commissions and agencies and countries in the Education 2030 Steering Committee. The UIS hosts the Secretariat and co-chairs the TCG with the UNESCO Division for Education 2030 Support.

In October 2016, the TCG approved a set of 29 indicators (11 global and 18 thematic) available for reporting in 2017 based on the original list of 43 proposed SDG 4 indicators (see Table 1). The Global Education 2030 Steering Committee – a coordination mechanism hosted by UNESCO to support Member States and partners – endorsed the 29 indicators in their December 2016 meeting and hence provided important political support for adoption by countries. While the Steering Committee has a continuing coordinating role, it does not revisit the technical discussion around indicator selection.

⁷ Refinements can include the following types of changes: “specifying or correcting unit of measurement; simple clarification of terms used in the indicator; spelling and other obvious errors; or ‘splitting’ indicators into their components in multiple component indicators. A refinement can also be a minor change in an indicator or indicator list that will, in a simple way, solve a problem that is spotted when the collection of data has begun” (IAEG-SDGs, 2016, p. 2).

In 2016, the UIS also created the Global Alliance to Monitor Learning (GAML) to advise on the methodological development of the learning outcomes related SDG 4 indicators (global and thematic). GAML is composed of a broad array of experts and decisionmakers involved in national and cross national learning assessment initiatives, as well as donors and civil society organizations advocating for education. GAML operates through dedicated task forces for each of the learning outcomes related targets (4.1, 4.2, 4.4, 4.6 and 4.7) as well as a cross cutting task force to develop a Data Quality Assessment Framework (DQAF) for learning assessments. GAML's experts also lead the development of standards and good practices in learning assessments.

When the TCG approved the 29 indicators for reporting in 2017, it also identified 22 indicators which required further methodological development. Of these, 14 are the remaining thematic indicators of the original 43 indicators and another 8 are global indicators included in the list of the 29 for reporting in 2017 (see *Table 1*). The TCG established the Working Group on Indicator Development (WG ID) – composed of eight to ten TCG participants – with the mandate of finalising the methodologies for 15 of the 22 indicators.⁸ GAML will develop methodologies for the remaining seven indicators, which concern learning outcomes. As of early 2017, the WG ID and GAML task forces have been reviewing existing methodologies and data sources for their respective sets of indicators and consulting external experts as appropriate. They aim to make recommendations to the TCG on the most appropriate methodologies for the 22 indicators, thereby completing the development work for all 43 indicators by the end of 2018. Once the TCG approves the methodologies, the remaining 22 indicators will be ready for future reporting. In addition, the UIS will submit proposals for the annual IAEG-SDGs review to change the tier classification of

the relevant global indicators. The TCG and the GAML's work will also include advice from the UIS and its partner agencies for the major IAEG-SDGs reviews in 2019 and 2024.

1.3 The challenge of producing the required data for the indicators

The statistical capacity of most countries is being put to the test by the breadth, depth and ambition of the global education goals. The emphasis on equity and quality of education by the 2030 Agenda for Sustainable Development and the more comprehensive nature of the SDGs relative to the MDGs require more data than before and from a wider range of sources: administrative data, financial data, census, household surveys as well as national, regional and international learning assessments. Data requirements also include increased cooperation among different national ministries, agencies and other data custodians to cover the breadth of the SDG 4 from early childhood care and education to higher education and lifelong learning. Inputs from other sectors, such as health, women's affairs and labour, are required to produce data for the education related indicators in other SDGs (UNESCO, 2016).

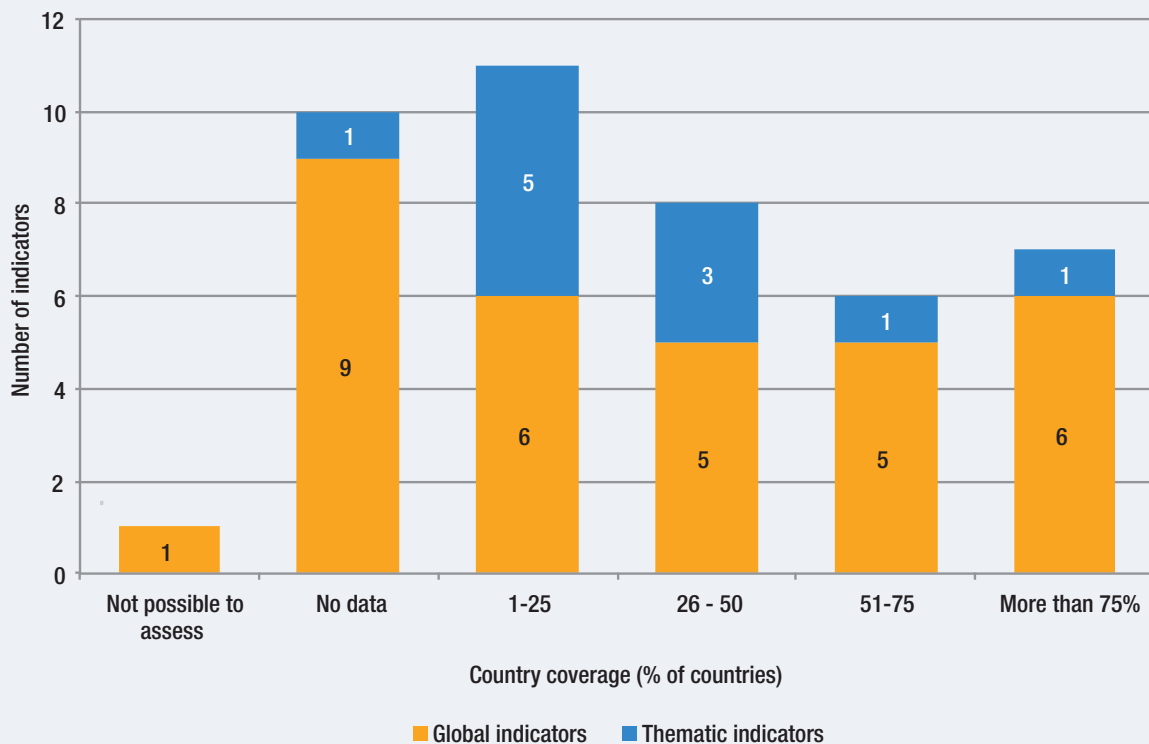
A recent assessment of national statistical capacity with regard to SDG 4 data collection underscores the challenge ahead for the production of quality indicators. In 2016, the UIS conducted assessments of data availability at the country level to monitor SDG 4. Staff responsible for education statistics in 121 countries in the Arab States, Asia and the Pacific, Latin America and the Caribbean, and sub Saharan Africa identified whether they already regularly produce the data required for the 43 global and thematic indicators. Fewer than one-half (47%) had sufficient data for the 11 global indicators, but nearly two thirds (63%) reported having the data needed to calculate the remaining 32 thematic indicators (not including the global indicators).

⁸ The TCG's Working Groups have about six to ten self-nominated members each, usually including at least three TCG member countries, two civil society or partner organizations, and one UIS staff acting as Secretariat. Observers of the TCG can be invited to join the working groups.

When the data are available, the quality and extent of data collection do not always meet SDG 4 expectations. Disaggregating data by measures of wealth and disability status, for example, was possible in only 14% and 19% of countries, respectively. Some concepts in SDG 4 are more likely to already be collected, such as participation and completion data which are available in 85% of the countries. Data on knowledge, skills, learning and school readiness, however, are available in only 43% of responding countries (UIS, 2016).

Country coverage in the UIS database is lower than the 2016 assessment suggested. **Figure 2** shows the availability of global and thematic indicators across all countries reporting in the UIS database in 2017: 10 of the 43 indicators were unavailable in all countries, while 8 global indicators and 11 thematic indicators are reported in 50% or fewer countries. Only one global indicator and six other thematic indicators have more than 75% coverage. Countries are struggling to report and, in many cases, collect the data

Figure 2. SDG 4 global and thematic indicator availability in the UIS database, June 2017



Source: Based on UNESCO Institute for Statistics, 2017c.

needed for calculating key indicators for the follow up and review of SDG 4 (UIS, 2017c).

The 2030 Agenda and the Education 2030 Framework for Action explicitly call upon international organizations and other stakeholders with technical expertise to support capacity building in data collection efforts required for the SDGs. The TCG has taken the lead in helping countries increase their technical capacity to collect and report data for the SDG 4 indicators. In early 2017, it established the Working Group on Statistical Capacity Building (WG SCB) and the Working Group on Data Reporting, Validation and Dissemination (WG DRVD) in addition to the aforementioned WG ID. The working groups report back to the full TCG, which makes decisions based on their recommendations.

The WG SCB is developing a framework of capacity building tools and guidelines to assist countries to assess their specific needs for capacity development and to identify sources of support. The framework will bring together existing tools and guidelines from a variety of sources. The working group will also identify gaps in the framework and make recommendations for the development of additional tools and guidelines.

The WG DRVD is mapping the flow of data from countries to international organizations and then to the UNSD for inclusion in the SDG Indicators Global Database. The group will identify the schedule for each data collection exercise and the organizations responsible. It will describe the quality assurance processes and feedback loops to countries for validation of final results. The group will make recommendations for a protocol between countries and organizations to ensure the efficient and transparent flow of data and agreement on results to be published.

The 2030 Agenda and the Education 2030 Framework for Action also call for the mobilisation of international public finance – notably oversees development assistance – to help implement the SDGs and complement domestic resources, especially in the poorest countries. The UIS has estimated that meeting

the data needs of the education agenda would cost around US\$2.2 billion over ten years; 43% of these total costs involve the use of regular sample-based learning assessments in early and late primary grades (UIS, 2017i). The private sector is encouraged to contribute to education coffers, while maintaining the respect of accountability, transparency and equity and in partnership with the public sector. The UIS has specifically recommended that the private sector mobilise in kind contributions to support the improvement of data collection and production (UIS, 2017i).

Expanding a country's capacity to collect and report data is a necessary first step to producing cross national comparable indicators. But it is not sufficient on its own. The other indispensable step is assessing the quality of the data being produced relative to international quality standards. This is the topic of Section 2. Accordingly, building the statistical foundations to properly monitor progress towards the education goal and targets must be focused on the production of quality data.

The term quality is interpreted in a broad sense, encompassing all aspects of how well statistical processes and their outputs fulfil the expectations of users and stakeholders (see **Box 2**). Over the past 20 years, statistical agencies have arrived at a consensus that the concept of quality of statistical information is multi dimensional and that there is no single measure of data quality. Particular efforts will be required to ensure that quality is an objective across all data production phases (development, collection, processing, validation and dissemination).

Enabling these efforts in a systematic way across national and international data production mechanisms and for a variety of data sources is the object of several UIS efforts. Section 2 discusses recent initiatives to promote a standardised level of quality across all SDG 4 data collection efforts. Section 3, which follows, considers specific capacity development strategies to support national education statistical systems.

Box 2. Criteria for validating quality data

The concepts listed below are often used to collectively evaluate the level of quality observed across the processes of data collection and dissemination. Not all dimensions have to be of the highest standard to reach the level of quality data, but it is essential to use a selection of these characteristics as benchmarks to validate the quality of data outputs.

Relevance. The relevance of a statistical output is the degree to which the data serve to address the purposes for which they are sought by users.

Accuracy. The accuracy of a statistical output is the degree to which the data correctly estimate or describe the quantities or characteristics they are designed to measure. Accuracy refers to the closeness between the values provided in the product and the (unknown) true values.

Reliability. It is the closeness of the initially released values of a statistical output to the values that are subsequently released for the same reference period.

Coherence. The coherence of a statistical output reflects the degree to which it is logically connected and mutually consistent with other statistical outputs. Coherence implies that the same term should not be used without explanation for different concepts.

Timeliness. The timeliness of a statistical output is the length of time between its availability and the event or phenomenon it describes. Timeliness is assessed in terms of a time scale that depends upon the period for which the data are of value, i.e. are sufficiently timely to be acted upon.

Punctuality. The punctuality of a statistical output implies the existence of and adherence

to an output dissemination schedule. An output is punctual if it is disseminated in accordance with the schedule.

Accessibility. The accessibility of a statistical output reflects how readily the data can be discovered, located and accessed from within data holdings. It includes the suitability of the formats in which the data are available, the media of dissemination, the availability of metadata and user support services, and, in the event that there is a charge, the affordability of the data to users.

Interpretability. The interpretability or clarity of a statistical output reflects the ease with which users can understand and properly use the data. The degree of interpretability is largely determined by the adequacy of the metadata that accompany the data, including definitions of concepts, target populations, indicators and other terminology describing the output and its limitations.

Objectivity. Statistical methods and outputs are determined by statistical considerations and not by pressure from providers, users or other stakeholders.

Impartiality. Commentaries and press releases are objective and non-partisan.

Transparency. Users are informed about sources and methods and about changes to these that might affect the outputs. The limitations of the outputs, and of the processes by which they are produced, are acknowledged.

Credibility: It refers to the confidence that users have in the products based primarily on their image of the producer and its statistical outputs, as well as in their trust in the objectivity and impartiality of the methods used.

Sources: Expert Group on National Quality Assurance Frameworks, 2012; UNCTAD and Task Team, 2016.