Developing Robust and Responsive Education Data Systems to Transform Education Systems in Asia and Pacific

Introduction

Despite significant progress in expanding equitable access to quality education and improved learning outcomes, evidence shows that most countries in the Asia-Pacific region will struggle to achieve many targets of SDG 4 by 2030. The COVID-19 pandemic has worsened the situation with the reversal of progress from the last decades. At the same time, the pandemic has reshaped the way education is delivered, with both challenges and opportunities, as the countries in the region have designed various mitigation responses.

Making sound and relevant policies and plans and assessing their effectiveness are faced with the challenges of missing quality data; this undermines rigorous monitoring of SDG 4 progress in the context of national education programmes. 38% of data is missing for the SDG 4 indicators on average in the region. At this critical juncture, each country urgently needs to gather sufficient quality data on which to base actions for learning recovery, remediation, and education transformation.  

1 For more details, see: Background paper on data and monitoring prepared for AMPREC II.
Governments in Asia-Pacific need to prioritize establishing and operationalizing more robust and responsive monitoring systems to gather, compile, collate, analyze, and utilize quality data to devise needed strategies for transformative education systems and thus accelerate progress towards achieving SDG 4.

**Data and monitoring issues and challenges in Asia-Pacific**

75 percent of the countries in Asia Pacific established their national SDG4 benchmark values for 2025 and 2030 prior to the pandemic; however, a preliminary analysis from these countries shows critical data gaps in several of the benchmark indicators preventing monitoring of the countries towards achieving those benchmarks. This calls for calling for initiatives to fill the gaps.\(^2\)

A single source cannot generate all the data needed for monitoring SDG 4 and sector progress, particularly in the light of emerging needs in future. Countries need to strengthen and harmonize all the key data sources including 1) administrative data, 2) household surveys, 3) learning assessments and 4) expenditure accounts. However, many countries are still wrestling with fragmented data systems, making it difficult to compile various data to assess necessary indicators.

The existing lack of data in the region has been exacerbated by the COVID-19 pandemic, with major disruption of data collection as education and wider social and economic institutions were closed.

The prevailing lack of timely and quality data makes tracking access, participation, and performance in education difficult if not unfeasible. The resulting gap leaves policymakers and planners without information on the immediate challenges facing schools, students and teachers; this situation undermines efforts to take relevant measures to reach SDG 4 by 2030 or to alleviate potentially lasting impacts of the pandemic.

**The data and monitoring issues in the region\(^3\):**

- Fragmented education databases and data management systems are the most common challenge, making the compilation of data for various sub-sectors of education difficult.
- Household survey data are particularly valuable in providing disaggregated information. However, such surveys have limited coverage and frequency and are rarely used for planning or policy-making purposes.

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\(^2\) UIS (2021). SDG 4 Data Digest 2021 National SDG 4 benchmarks: Fulfilling our neglected commitment

\(^3\) Source: UIS (2020a), UNICEF (2020), UIS (2021a), UIS (2021b) and UIS (2021c)
Most countries lack large-scale learning assessment data and, owing to resource constraints, do not conduct regular assessments; monitoring learning outcomes is thus adversely affected.

A culture of data sharing among various governmental agencies is lacking. A central platform can make data from multiple sources accessible to different departments, based on cooperation among data producers; the absence of such a platform is a common impediment to improving monitoring of the SDG 4 and national education targets.

Inadequate technical capacities among personnel limit data analysis. Insufficient skills in defining, processing and interpreting data and in understanding methodologies, hinder the full use of data to identify key areas of attention.

Countries lack conducive environments for data production, including legal frameworks, clarity in mandates for data collection and compilation, adequate resources, and ICT infrastructure.4

Inadequate disaggregation of data makes it difficult to monitor inequalities in education access, participation, completion and learning.

Data to monitor effective school reopening, restoring access and learning recovery may also be required.

### Key priority areas to strengthen monitoring SDG 4, learning recovery and education transformation

Learning from the pandemic, countries should start planning to build a resilient and sustained education data system guided by strong data policies. A more conducive environment should include better infrastructure and capacity to undertake new surveys, using various means, such as social media, to generate the necessary data to respond to emergencies. The 3 key priorities in strengthening data and monitoring of SDG4 and learning recovery in the region are as follows (see also the accompanying chart):

a) Filling the data gaps for policy making, planning, and monitoring of SDG4;

b) Producing data for monitoring safe school re-opening and learning recovery;

c) Strengthening the education data system to become integrated and resilient, incorporating data from multiple sources to monitor SDG4 and learning recovery.

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4 Various national Data Quality Assessment Reports (2017-2018)
Generating and utilizing quality data for SDG 4 and sector development

Countries should make data collection for monitoring SDG 4 the top priority as it plays a crucial role in identifying challenges in achieving education sector goals and targets. In this regard, strengthening the national education data systems should aim to fill data gaps in monitoring education policies and plans, as well as producing data for learning recovery and its monitoring.

It is important that all data are accurate, available and accessible, as part of a holistic system for education data which follows common statistical standards and feeds into the education planning and policymaking. Some countries commenced an integrated education sector-wide data system which stores all education data in one place. Lao PDR has developed a Lao Education and Sport Management Information System (LESMIS) with components such as a teacher education management information system (TEMIS), personnel management information system (PMIS), and NFE-MIS. Similarly, Afghanistan, Bangladesh, Cambodia, Myanmar and Nepal have planned an integrated education data system for better planning and monitoring of the education system.

Priority 1: Strengthening existing data sources

An assessment of data production in the region should clarify the data challenges and gaps in SDG 4 monitoring to develop appropriate data policies, and data gap-filling strategies; these will include existing data collection mechanisms such as administrative data (EMIS), household surveys, learning assessment and education expenditure data. At national level, various SDG4 indicators require a clear benchmark, which should be embedded in the data system to monitor the extent and speed of progress in attaining it.

Priority 2: Developing an integrated data platform

In order to generate systematic education data and develop a statistical system to produce SDG 4 indicators collaboratively, an integrated education data platform is needed. The platform identifies the data sources and compiles, processes and presents all the indicators in a single place. This will help harmonize the reporting indicators correctly and reduce discrepancies among various agencies. Using standard data definitions and methodologies, and developing classification, data verification and validation systems can further improve stakeholder confidence in data use.

To make the EMIS more useful for all the sub-sectors, several countries are expanding the scope of EMIS from basic education to cover pre-primary and TVET higher education e.g. Brunei Darussalam, Lao PDR and Myanmar. Such expansion helps to harmonize the data collection and compilation procedures across different sub-sectors.
Key priorities for the learning recovery

While countries are re-opening schools and initiating learning recovery programmes, including online and remote learning, governments should also strengthen their data collection systems to monitor the effectiveness of such strategies.

**Priority 1: Identify data and indicators needed for learning recovery**

Without successfully helping students return to school and recover their learning outcomes, SDG 4 cannot be achieved. In order to develop and monitor education recovery plans, relevant data and statistics should be identified and embedded in the existing regular data collection mechanisms, such as EMIS and household surveys. Careful analysis of dropout, repetition and progression from one grade or level to another over the period would help in understanding their impact on education access and participation and on rates of recovery.

**Priority 2: Tools and methodologies for collecting data for learning recovery**

A separate module to capture the data on school re-opening and learning recovery can be designed as a part of the school data collection process. There is also a need for data to assess the impact of COVID-19 on students, teachers, stakeholders, and learning recovery. Countries should strengthen their national student learning outcomes assessments, with strategies to restore learning to pre-pandemic levels.

Key priorities for building robust and responsive data systems to transform education

**Increase investment in data and monitoring** - Countries need to strengthen their national education data system by investing financial, technical, and human resources so that it is agile, integrated, and resilient to future shocks, supported by appropriate data policies, as well as strategies for generating clear indicators from the system.

**Priority 1: Improved infrastructure** - Appropriate electronic devices and technologies should be put in place, providing a platform to bring together data from multiple sources. For example, adequate hardware such as computers, tablets, and the use of smart phones can improve the efficiency in data transfer and compilation. Similarly, appropriate software is necessary for data collection, compilation, analysis, and dissemination of data and statistics.

**Priority 2: Capacity Development** - Staff capacity is critical to a well-functioning data system. All staff should receive appropriate training on education statistics, indicators, methodologies, and reporting and be able to use a variety of software and hardware. There is also a need for capacity in using data for advocacy, planning and policy making.
Policy pointers

The inability to produce data and indicators could seriously impair policy and plan implementation by hampering the assessment of their effectiveness. In the face of the emerging challenges above, the following recommendations (immediate, intermediate and long term) may help countries develop resilient, responsive, and integrated data systems that can also respond to the learning loss caused by the COVID-19 pandemic, as well as monitor learning recovery; this will entail strengthening EMIS, household surveys and learning assessments.

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<th>Immediate</th>
<th>Intermediate and long term</th>
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<td><strong>Generating and utilizing quality data for SDG 4 and sector development</strong></td>
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<td>• Establish/update national benchmarks for SDG 4 indicators in achieving education goals and aspirations, but considering the impact of the pandemic.</td>
<td>• Improve current data systems e.g. EMIS, HHS, learning outcome surveys to generate granular and disaggregated data for measuring equity in education.</td>
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<td>• Develop national education data policies/strategies aligning with national statistical laws and strategies for development of statistics (NSDS) to provide clear guidelines on collecting, compiling, and disseminating data for SDG 4 monitoring. In addition, the policy should provide a clear mandate for collecting and compiling the data from multiple sources.</td>
<td>• Promote and expand EMIS, linking it with the School Management Information System (SMIS) in all schools and institutions (including private, TVET, ECCE, etc.) for efficient and timely data collection and compilation.</td>
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<td>• Improve the data coverage for ECCE, TVET, Higher Education and NFE, to implement and monitor lifelong learning policies and plans</td>
<td>• Prioritize strengthening national student learning outcomes assessment systems to track learning outcomes at key levels of education, thus monitoring the quality of education; this will inform policymakers about systemic inefficiencies that can lead to grade repetition and early dropout.</td>
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<th>Monitor school re-opening and learning recovery</th>
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<td>• Deploy appropriate data collection/compilation mechanisms for effective monitoring of school re-opening. This approach should focus on safety, equity, and inclusion. It should also collect data on online and distance learning programmes, their delivery, and students’ achievement.</td>
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<td>• Harness new and developing technologies and relatively new data sources, such as social media, to gain real-time data for monitoring the impact of the pandemic on learning.</td>
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<td>• Build the capacities of the MoE in using existing data systems to generate and analyze data for monitoring learning recovery.</td>
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<th>Robust and responsive data systems for transforming education</th>
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<td>• Undertake a mapping exercise to identify the data/variables produced by various data sources, their data coverage, as well as data standards and methodologies, in order to develop strategies for compiling data from multiple sources.</td>
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