

OPENEMIS FOR INCLUSIVE EDUCATION

INDICATOR DEVELOPMENT FOR INCLUSIVE EMIS

Final Report for Save the Children Sweden

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OVERVIEW

This report is submitted to Save the Children Sweden (SCS) for approval and endorsement upon the completion of activities identified to reach objectives as stipulated in contracts between SCS and Community Systems Foundation (CSF).

The project focused on implementation of the diagnostics studies through (1) an analysis of existing education data collection and management mechanisms in the three research countries: Bangladesh, Kosovo and Indonesia and (2) the identification of practical solutions to better collect, manage and share data on Children with Disabilities (CWD) in and out-of-school for effective and informed implementation of more inclusive education policies.

The project studied how Education Management Information Systems (EMIS) currently used in research countries are able to report or not on inclusive education and documented evident gaps in existing data collection as well as the reporting mechanisms for tracking Children with Disability (CWD) in and out of schools.

Those diagnosis research on how information on inclusive education is captured and used by public administrations in charge of delivering education enabled the project to propose a coherent set of practical recommendations for better reporting on disability in education and inclusive education.

This research work was consolidated by the initiation of a global review of inclusive education frameworks used at international level to see how those tools could be adapted and articulated together in the research country contexts through the use of a generic and replicable OpenEMIS data collection and reporting solution which could be later generalized to other countries.

Preliminary outcomes of diagnostic studies started to inform improvement and revision of the generic OpenEMIS Education Management Information System, notably through the development of specific data collection and reporting features on Children with Disabilities (CWDs), including out-of-school children (OOSC), on school infrastructures and materials adapted for children with disabilities and on availability of trained specialized staff at school level.

Finally, a set of relevant indicators for identification of Children with Disabilities (CWD) and Out of School Children (OOSC) was developed to give governments information about these children's participation in schools, learning status, wellbeing and overall inclusion in education. Moreover, in addition to the existing and recently proposed indicators, a major innovative approach of this study opens the information gate to various forms of "home learning environment and activities" in support of the school-outreach strategy of the SDG4 Inclusive Education, especially aimed at children with very limited possibility of regular school attendance. In as much as this is a pilot project, several open-ended questions capture heretofore relatively unexplored areas of children's likes, dislikes, and fears about going to school and practices in support of or contrary to the "child-friendly school", such as corporal punishment.

The indicator framework developed under the project was piloted in a representative sample of schools and school catchment areas in Bangladesh, Kosovo and Indonesia.

Results of the pilot data collection were used to produce country specific dashboards on Children with Disabilities (CWD) and Out of School Children (OOSC) to inform inclusive education policy dialogue at

country level and foster enhancement of national EMIS through strengthening of data capture and reporting capacities in the area of inclusive education.

EMIS Diagnostic Studies

Detailed reports are provided in annexes for reference.

Indonesia

Context

Total Indonesia population reaching 257 million people, in which approximately 56 million or 22% of them are school ages children (7-18 years old). Indonesia is a wide archipelago country with more than 17,000 islands spread between the Pacific and India ocean (approx. 9.011 km²); which administratively comprises of 34 provinces, 514 Districts and Municipalities, and almost 75,000 villages. More than 53 million school aged children enrolled to primary and junior secondary education system in more than 169,000 schools across Indonesia. The government enacted National Education System Law (NESL) in 2003, and stipulates the education structure as follow: the compulsory primary to junior secondary schools are decentralized into the respective Districts and Provinces. Whereas, the policy framework still centralized at national level (under the MoEC); which covers curriculum, national assessment, and data management. The law also stipulates that Madrasa (Islamic Schools) from primary and junior secondary schools are centralized and managed by MoRA; including the data management.

Education sector in Indonesia is managed by two main ministries, the Ministry of Education and Culture (MoEC) and the Ministry of Religious Affairs (MoRA) for particularly Madrasa (Islamic Schools) and Pesantren (Islamic boarding schools). The Ministry of Education has developed an Education Management Information System (EMIS) called DAPODIK since 2011. Both ministries are accountable in managing EMIS for primary and junior secondary schools in Indonesia (MoEC and MoRA).

The EMIS-DAPODIK system allows for digital data input at school level. Education Office at district, provincial and national level can access the data immediately and directly. EMIS-DAPODIK focuses on children in schools. Coverage of EMIS-DAPODIK includes number of schools, number of students, number of children with special needs, and school facilities. There is no link in the EMIS-DAPODIK between data of children in school and children out of school. Only small numbers of Children with Disabilities (CWD) who enrolled in schools are detected. EMIS-DAPODIK from both MoEC & MoRA only reported 172,130 students enrolled to primary up to junior secondary schools. Gov estimated that 2,5% of children aged 7-18 years old have a form a disability (1,4millions). Out of School Children (OOSC) are mainly undetected.

Methodology

The EMIS assessment started by a review Indonesia education system context. It reflected from previous efforts to mainstream inclusive education and social inclusion in policy and regulation contextualizing factors that facilitate or obstruct CWD and OOSC. The study then examined how both MoEC and MoRA are handling assessment of CWD and how they record information about disability and inclusive education into their data collection system. The study not only looked at how CWD are assessed and recorded but also how this information is used for planning and reporting by line ministries to inform policies. Main inclusive education initiatives at country level were analysed, such as the UNICEF work on OOSC and

Exclusion of Adolescent in Upper Secondary Initiative (EAUSI) done in 2011 and 2013 respectively. Finally, policies and regulations context for CWD measurement and data collection system were analyzed.

Main Findings

- DAPODIK and EMIS CWD measurement uses medical diagnosis instead of a social model;
- Government Strategic Plan and Education Sector Indicators Performance Report doesn't use CWD indicators disaggregated into access, quality and learning outcomes;
- A lack of coordination was observed between MoEC and MoRA for classification of children with disabilities. For instance, MoEC classifies CWD into 18 categories, while 9 only are used by MoRA.
- Government introduced inclusive education in 2009 by issuing Ministry of Education regulation 70/2009 (MoE-70/2009). Inclusive schools adapted special school CWDs classification which was not fit due to: 1) segregation of learning group, where in special school classrooms are grouped based on CWD classification, whereas inclusive principle against segregation. 2) The medical diagnosis classification apparently doesn't mean much to support teaching and learning activities and are mainly for individual health treatment.

Recommendations

Institution	Time Scale		Risk Level - Assumption
	Short Term	Medium and long Term	
School / Community / Village	School starts screening CWD using functioning approach. SAVE may be provides technical assistance adapting student and school profiles as starting point	SAVE may be provides capacity building program such as curriculum adjustment and learning method, learning materials and infrastructure accessibility design.	School may be reluctant to use functioning screen without proper legal framework and capacity support; If only teachers do screening without a proper cross-sector professional diagnosis, all children that teachers find difficult to teach or manage, may be labeled as having a disability (over-labeling)
Local Governments	Supporting schools to adapt functioning screen and develop student and school profiles to support CWD learning needs. Supporting teachers, principals and supervisor's capacity	Starting utilize available CWD data for planning and financing to improve access of CWD to school and learning. Develop or update local legislation for CWD data management	Local governments reluctant to comply without imposing the law. Subject to local capacities

	building to implement functioning screen.		
Central Government	<p>EMIS-DAPODIK adapts functioning approach to screen CWD.</p> <p>Develop KPI to be included in reporting and data analysis for MoEC / MoRA planning and financing which use CWD disaggregation.</p> <p>Bappenas and BPS adapts all WG-UNICEF short set of questions to enable KPI assessment aggregated by CWD and PwD.</p>	<p>Align inclusive education as learning principle instead of inclusive school label on all regulations.</p> <p>Centre for Education Assessment align assessment instrument for different types and severity of disability in children including regulation for classroom assessment (formative and summative)</p> <p>Developing policy, financial and institution framework to address OOSC using DAPODIK and National ID Card.</p> <p>Integration between DAPODIK and OOSC either with DG-ECCD or CBIS at village level.</p>	<p>National Education System Law (SISDIKNAS) locks other laws and regulation, including hinder functioning screen.</p> <p>Policies and laws discuss and decide about children with disabilities as one group of learners, while children with disability are very diverse with various individual needs depending on the types of disability and its severity</p>

Kosovo

Context

The Scoping Mission comprised a Needs Assessment and Gap Analysis and was conducted with the Ministry of Education, Science and Technology (“The Ministry”) in conjunction with Save the Children Kosovo in Pristina and Save the Children Sweden. The initial goal of this activity was to evaluate ways in which OpenEMIS can address and streamline current processes, with the assumption that Kosovo would be the country among the three where OpenEMIS revised data collection modules on inclusive education would be tested. A dedicated instance of the OpenEMIS toolkit has been setup for Kosovo in that regard, but the country finally preferred to improve its own EMIS due to the recent World Bank loan accepted by the MEST to improve the Education Management Information System (EMIS). As a consequence, the analysis focused on describing gaps which should be filled by the new EMIS in order to better capture data on children with disabilities and inclusive education.

The Ministry is working towards the improvement of its education sector and is committed to achieving the goals set in its new Strategic Plan. The changes being implemented and the plans forward will benefit from the successful implementation of a new EMIS in Kosovo.

The new EMIS should support the Ministry through the building of a solid and reliable Education Management Information System (EMIS) and strengthening of national capacities in the management and provision of reliable information for the planning, monitoring and evaluation of education in Kosovo. The tool should be easily flexible and evolve as the education sector in Kosovo evolves, without a significant financial burden on the Ministry.

The key underlying implementation principles of any effective, efficient EMIS are:

- An evidence based approach, which uses reliable data to inform the education planning and policy-decision processes through the strengthening of existing national information systems;
- National leadership with full participation and engagement of national stakeholders in diagnosis, formulation and implementation of a plan;
- Alignment of the EMIS within the overall national education development goals and objectives;
- Support to the government in developing effective and robust information systems and data collection tools, through the use of open source, generic and cost-effective IT tools;
- Use of international standards for data exchange on education in the country for improved access to and use of information;
- Government-owned EMIS integrated with a robust education decision-support system with the management of the system transferred to key government institutions without dependencies on external technical support.

Methodology

The overall methodology of the initial activity was to engage all key education stakeholders in mapping processes and needs, identifying gaps in the data collection processes in order to support improved long-term planning in the education sector. The scoping mission looked at an approach to strengthening data collection tools and strengthen the education information system, with a special focus on children with disabilities.

The team covered the following key topics:

1. Current state of EMIS
2. Plan for the development on the new EMIS based on the understanding by each unit
3. Data collection processes and tools for each unit
4. Use of additional data to fill current gaps
5. Reporting tools requirements
6. Functional and data requirements for the new EMIS.
7. Connectivity and data redundancy issues with sub and external systems

During the time in country, the OpenEMIS team had the opportunity to speak with education stakeholders from the EMIS Division, The Inspectorates, The Inclusive Education Team, Sylejman Vokshi School, Directorate of Education, Student Assembly, Ministry of Labour and Social Welfare (MLSW), Statistics Division, as well as, Infrastructure and Education Facilities.

Strengths and Gaps of the current EMIS

Strengths of current system

The Ministry currently manages an EMIS system that collects aggregate level data from all public institutions in Kosovo. It is important to note the following strengths:

- Capacity within the Ministry in the use of database tools and digital data collection formats is quite advanced and will be a positive factor in the implementation of the revised tool.
- The current EMIS collects information on the name of the school, address, physical infrastructure of the school, access to drinking water and hygiene, electricity, total attendance, violence incidences and an early warning system. They also collect information on student gender, race, ethnicity, distance travelled to school, socio economic status and family composition. For staff, individual information is collected on date of birth, position, race, gender, subjects taught, qualifications and licenses. The Ministry has a separate tool that keep track of licensing process. This license number is then used in the EMIS system to track the staff.
- The Directorate of Education at district level, uses the data collected through the EMIS system in order to inform its projects and processes. The Chief is able to extract information from the system and run reports needed for this own reporting and assessments.
- KAS plays an important role in providing a complete picture of education in Kosovo, since they are the only unit that collects data from the Serbian Schools and the universities.
- The Infrastructure unit has their own Access database that they use to keep information on the structure and composition of all the institutions
- There is a solid team available to carry forward the implementation of a new EMIS.
- Schools are well equipped with the hardware necessary to support OpenEMIS including internet connection.
- Principals are well equipped to carry out the activities related to the EMIS.
- Due to the success of the current EMIS system and protocols, Kosovo MEST is well positioned to take on data collection for individual students and staff.

Challenges in current system

The use of the current system is encouraging for the above mentioned reasons; however, there are limitations to the system which should be considered. Among them:

- Currently, digital access is available for recent education data at an aggregate level; however, there is no access to data on an individual level. Data is available at the aggregate level in the EMIS office and other units within the Ministry have their own unique database, but there is no robust learner level data management system.
- Different units and ministries have different databases and data collection processes.
- There is little communication between units and Ministries in regard to data sharing.
- The current system does not provide comprehensive relevant information to the Ministry in regards to priority areas, including but not limited to, individual attendance and behavior, the state of literacy, examinations, repetition and dropout rates, textbooks as well as assessments that outline in the Education Sector Plan.
- The currently EMIS was developed by a Macedonian company in 2011 and they began using it in 2013. The tool is a proprietary tool developed specifically for Kosovo. Not all members of the Ministry have access to the tool and the service agreement with the company has now expired, so access cannot be given anymore.
- The inspectorates are responsible for the supervision of schools as it pertains to curriculum, infrastructure, data collection, registrations, staff, and overall delivery of quality services. After each field visit education

inspector compiles a charge sheet in which the factual state is presented and proposes measures for avoiding failures. The reports compiled by the inspectorate are shared in paper copy thus makes it cumbersome to track information and follow up.

- Schools have a thorough data collection process for their institutions; however, this data is being kept in several different books and the process is quite tedious for both the teachers and the principals.
- Requests for only aggregate data provides little incentive for principals to collect data at the individual level.

Reporting on CWD

Kosovo Education Strategic Plan defines Inclusive Education as its first objective. The creation of an integrated system for the collection, processing and use of data which will also enable monitoring of children with disabilities, dropout and never enrolled is key for realization of this objective.

Challenges:

- Related to Inclusive Education the only information gathered through the EMIS related to this topic is total number of children with disabilities.
- The infrastructure unit does not collect information on CWD, although they do collect information on whether the institution has ramps, bathroom facilities and classrooms that are accessible. Essentially, they collect information on whether a building is accessible or not; however, it was unclear from our conversations what it means for a building to be accessible.
- As it relates to CWD, the MEST is solely responsible for collecting data on CWD. The last time KAS conducted a survey on this topic was in 2011.
- In order for this objective to be met it is imperative that the Inclusive Education team play an important role in the development of the TOR which will define the parameters for the new EMIS system. At the time of the scoping mission, it was unclear what was included in the TOR and how the requirements of this unit were to be included.
- The Inspectorate does not collect any data on Inclusive Education nor are there special inspections as it pertains to accessibility or services provided for children with disabilities.
- Due to lack of proper information on CWD there are instances where disabilities are being over reported; for example, due to improper definitions children with eye glasses were being reported as having a disability.
- Lack of diagnosis of the child disability or impairment
- The total number of CWD is only reliable for Resource Centres since the IE team oversees the data collection. It is difficult to have a total number of CWD in all of Kosovo
- In many municipalities they do not have the total number of CWD that require transportation nor the number of beneficiaries from transportation programs.
- They are currently missing the information of the education plan of CWD.

Observations and Recommendations

During the in-country mission and the numerous meetings with The Ministry stakeholders the OpenEMIS team can make the following observations and recommendations.

Observations

- The Ministry of Labour and Social Welfare (MLSW) is currently developing a beneficiary database that will allow them to collect the necessary data to improve their projects and that is connected seamlessly from the national level to the Municipality providing an easier data collection and reporting mechanism.

- The Ministry is making significant investments towards the improvement of the education sector. Ministry officials are committed to improving education data in the hope of formulating evidence-based policies.
- The Ministry has secured a loan from the World Bank in order to re-develop their EMIS.

Recommendations

- The success of the new EMIS system will depend on the process and capacity of The Ministry to *clearly define the requirements and needs of each unit for the new tool*. Data processes and needs must be sound and clearly defined and staff must possess the knowledge and skills to execute their assigned roles within these mechanisms.
- As the MEST moves to a new financing formula, the resources allotted to IE will be based on the number of CWD needing services. If CWD remain uncounted and marginalized the resources allocated by the MEST will never be sufficient to cover the needs of these children.
- As the Ministry of Labour and Social Welfare (MLSW) works to develop their new database it is highly encouraged that a clear link and cooperation protocol is established between the MLSW and the MEST. The Ministry of Labour and Social Welfare will be a good entry and identification point for CWD, since it is very likely that families with children with disabilities will apply for financial support. It is often the case that most families will request money from social affairs but will not send the children to school by linking the two databases the MEST will be able to identify children that are out of school
- If the MEST is looking to keep track on performance and improvements, it will be helpful for the EMIS system to integrate with examination and allow for the MEST to conduct deeper analysis into the status of education in Kosovo.
- The Inclusive Education team would like to collect data on the following:
 - Name and Last name
 - Level of education
 - Total number of children with a disability
 - Type of disability per child and severity
 - Services provided by the school
 - Services provided by the municipality
 - Transportation services and the beneficiaries
 - Teacher qualifications, especially those that have qualifications for teaching CWD
 - Students receiving individual learning plans
 - Data from Municipalities on the Evaluations Teams and how many students the evaluate and the reports
 - Data from Itinerant teachers
 - Children out of school
 - Transition rates from resource centers to regular schools
 - Dropout rates and retention rates
 - Teacher training – being able to identify teachers who have receive IE training
 - Accessibility of schools
- **Involving communities** in the process of identifying out of school children and CWD has proven successful in many contexts. During meeting with Children Council in Mitrovica South it was evident that Local civil society organisations can play a signification role in Kosovo to identifying CWD and reporting the issues they encounter and identifying the factors that keep children out of school.
- **Technological solution** as example a mobile app that can provide platform to children for sending information to relevant stakeholders regarding OOSC or problems towards inclusion of CWDs in regular schools can use children as valuable resource in process of reforms towards inclusion.

- **Government-owned EMIS integrated with a robust education decision-support system** with the management of the system transferred to key government institutions without dependencies on external technical support.

Bangladesh

Background

The EMIS diagnostic study in Bangladesh reviewed and analyzed the EMIS system of Government of Bangladesh EMIS (e-primary school system of DPE/MoPME along with other government student database, mainly Ministry of Education and Ministry of Social Welfare) and looked at gaps and identification of context specific indicators for children with disabilities in and out of school;

Methodology

The study involved the review of data collection forms, national statistical yearbooks and other data products, as well as an analysis of current processes and work flows for data collection, management and production of education statistics by the MoPME. The review considered the current situation as well as the desired change the MoPME would like to see through enhancement of its national EMIS. A participatory approach was followed, which involved triangulation of findings from desk review and interviews.

Main Findings

MoPME's EMIS is at a turning point in the context of the release of the new education sector plan PEDP4 2018-2022. Save the Children Bangladesh (SCiBD) and DPE have put lot of efforts to test and scale-up a system called E-Primary School System for government schools:

- E-Primary School System contains a directory of 65,293 Government Primary Schools with infrastructure and teacher modules with a relatively good national coverage
- E-Primary School System includes a school visits (e-monitoring) system, with a strong ownership from DPE and a wish to scale it up quickly.
- A set of modules are currently piloted: student module with attendance, results etc.
- E-Primary School System offers real-time reporting capabilities;
- E-Primary School System is useful at local level for school management
- E-Primary School System remains difficult to scale-up at national level in the short term because of the volume of information it intends to collect and lack of internet connectivity in many schools.
- Overall, E-Primary School System contains lots of good ideas to be widely shared as lessons learned and good practices for scaling of EMIS.

The official sector-wide EMIS data come from APSC, which is an online questionnaire administered every year in all schools. There is however no integration across systems, and APSC captures very limited information about inclusive education and children with disabilities. PEDP4 is now calling for **rationalization and integration** of all systems under a shared, standardized referential able to growth in a sustainable and systemic manner

The review of existing EMIS components highlights a high level of fragmentation coupled with the absence of a systematic data integration policy leading to duplication of information across EMIS subsystems.

SCiBD Sponsorship Program intervention and particularly its component on teacher performance assessment (e-Monitoring), as well as the later e-Primary School System intervention, both appear to have made a significant contribution to the EMIS transition in DPE.

The study also insisted on the need for SCiBD to further communicate on the achievement of its EMIS support programme and to use this momentum as an opportunity to lead EMIS discussions with DPE and to embed lessons learned into the EMIS road map currently under preparation.

The study then focused on the issue of disability statistics in education and examined available sources in Bangladesh and their quality. Based on a review of international best practices and trends for capturing children with disabilities statistics and for monitoring and management of inclusive education programmes, a framework for collecting and analysing data on children with disabilities was proposed.

Key Recommendations

Short Term

1. Sharing **good practices/lessons learned** from working on E-Primary School System with key Gov. Stakeholders (DPE, A2I) and International Organizations (UNESCO, UNICEF, World Bank) supporting PEDP-4
2. Play an active role in **EMIS PEDP-4 roadmap** design
3. **Distinguish** E-Primary Student Management System from other components of the EPSS application.
4. Promote name/brand rather than underlying technology
5. Decide on a **scale-up strategy** based on:
 1. SCB readiness to provide additional TA in the coming years
 2. Availability of funding to scale-up the system to the requirements of PEDP-4

Medium Term

1. **Strengthen the underlying software components**, focus on scalability, data reporting and data use, normalization and integration;
2. **Link-up** E-Primary School System with other PEDP-4 mainstreamed EMIS components (APSC, UID, reporting system and feedback loops);

Indicator for CWD in and out of school:

Indicator improvement on CWD can occur at 4 levels:

1. **Student:** disability classification based on practical identification, level of severity, and resulting handicap for learning
2. **School:** better capture infrastructures and assets supporting inclusiveness
3. **Teacher:** Practices, Pre-service and in-services trainings on inclusive education, Teacher inspections, school supervision
4. **National/Global:** % CWD in schools, % CWD in OOSC, % OOSC, SDG4 indicators, PEDP4 indicators

Conceptual Framework for Monitoring Children with Disabilities

Background

In support of the goals of equitable inclusive learning of Education Agenda 2030 of the Sustainable Development Goals, the overall objective of this project is to enhance and transform the existing school-based Education Management Information System (EMIS) into an Inclusive EMIS capable of providing reliable and valid information for evidence-based policy formulation and management of its implementation. The specific objective is the inclusion of children with disabilities (CWD) in this Disability Inclusive EMIS.

Whereas we have relied upon the work of the Washington Group on Disability Statistics and the MICS6 Questionnaire on Child Functioning (age 5-17) update December 2019, which is the consensus instrument for the measurement of disabilities following the international standards and norms, this project is not a replication of UNICEF's survey. It has different objectives, focus, and therefore different content.

This Save the Children project in partnership with Community Systems Foundation has the potential of making valuable contributions in its focus on the relationship between the learning environments of the out-of-school children and children with disabilities, their home, community, and the local school.

Bangladesh, Indonesia, and Kosovo countries have completed the data collection of in-school surveys that covered the school learning environment especially from the viewpoint of children with disabilities. The results of this in-school information would be useful for initiating or strengthening the development of student management information system (S-EMIS) in all three country.

The survey of the children attending school, as expected, revealed a relatively small proportion of students with disabilities in the participating schools. School survey has no data on their home background. Analysis of the selectivity of school attendance and participation requires comparative data on children who are not attending school. Moreover, children with disabilities are especially high among those who are out-of-school and those who are at the risk of dropping out of school. Therefore, for both in-school as well as out-of-school children with disabilities, information on their home background, wellbeing and learning environment are necessary for making informed decisions for formulating evidence-based policy and management of Inclusive Education following the current Education Agenda 2030 of the Sustainable Development Goal 4.

Hence, a second phase of the study was designed as a household survey of the home background and the learning environments of both the in-school and the out-of-school children and their neighborhood, including their relation to the local school. The content of the pilot survey focused on identifying and evaluating the information for initiating the development of a Disability Inclusion Policy and planning specific outreach activities for the inclusion of out-of-school children with disabilities, in line with the national Education Agenda for Sustainable Development Goals 2030. As it is school-district based, it is tentatively called a School District Inclusive EMIS.

The inclusive education policy and management in general, as well as Disability Inclusion Policy in particular, pertain to both the inclusion of the out-of-school children (OOSC) as well as the prevention of dropping out of school among those who are having difficulties in school. Therefore, the content coverage includes the relationship between school and home as well as education and learning environment at school and at home, both of which are especially important for children with disabilities.

These are the objectives, focus, and content of the Household Survey and the Questionnaire on Children Functioning and Home Learning Environment.

The challenges of missing data on the excluded population

The core content of the existing Education Management Information (EMIS) is school administrative data on school facilities and resources, teachers, and students. Hence, the existing EMIS has no data on children's functional disabilities and children not enrolled in the school.

Within this context, therefore, this paper shall illuminate both the information content, data collection and systems for managing the information:

- a) review and propose appropriate indicators of
 - a. education participation,
 - b. learning status, and
 - c. the wellbeing of children with disabilities in- and out-of-school, and
- b) propose data collection and information management systems
 - a. the school-based indicators into the existing EMIS and
 - b. household-survey based indicators into a to-be-developed school-district Community EMIS.

Proposing the relevant indicators and pilot testing the data collection instruments and methods are the first necessary steps. The great challenge is the absence of an institutional framework for the regular data collection on children outside the school system and especially information on their functional disabilities.

Moreover, to incorporate the new indicators into the to-be-modified EMIS, the most important challenge, therefore, is the development of the institutional and human capacity and operational routine at the level of the school districts to manage periodic data collection outside the administrative routine on out-of-school children's functional disabilities, education participation, learning status and wellbeing. Lack of capacity development strategy and resources for going to scale are the common causes of lack of sustainability beyond the pilot project phase.

Now, nearly three decades after the Declaration of Education of All children and the explicit incorporation of this goal in the Education Agenda 2030 of the Sustainable Development Goals, mobilization of serious "political will" and sufficient resources is necessary to incorporate the necessary information on these children in the new Inclusive EMIS for targeted education reforms and practice.

The NSO's of Bangladesh, Indonesia, and Kosovo are participating in MICS6 scheduled for 2019, now engaged in Survey Design phase. Therefore, for complementarity, it is highly recommended that this School-based Inclusive EMIS project establish a working partnership with the MICS6 group at UNICEF and NSO in these countries.

The Purpose of the Proposed Indicators

Right to Education is guaranteed to citizens and residents in most countries, accompanied by compulsory basic education, covering both primary and lower secondary education. It is compulsory for all rights-holders, children of school age, usually between 5 and 17 years old, regardless of differences in individual attributes and abilities. It is also compulsory for all duty-bearers, schools and education authorities, to include all children of school age, regardless of their background and abilities. Hence, schools and education authorities are duty-bound to maintain all-Inclusive EMIS for the age-bracket that are subject to compulsory education.

Five Dimensions of Exclusion

To understand the significance of this project, it would be useful to review first the context and the international conceptual framework for addressing the issues related to the inclusion of the out-of-school children. After all the efforts of the Education for All (EFA) movement in the two decades since the 1990 Jomtien Declaration, the assessment of EFA progress showed that:

68 million children of primary school age and 74 million of lower secondary school age were still out of school in 2008, despite sizeable reductions in the out-of-school population over the past 10 years (UIS Data Centre, October 2010). Furthermore, based on current trends an estimated 56 million children of primary school age will not be in school in 2015 (UNESCO 2010). Participation in pre-primary education, although on the increase, also remains very low (UNESCO 2010). In addition, out-of-school children (OOSC) often face deep-rooted structural inequalities and disparities linked to income-poverty, exposure to child labour, conflict and natural disasters, location (urban or rural area, geographic sub-national regions), gender, HIV and AIDS, disability, ethnicity, language, religion, and caste. These represent major barriers to schooling and put even those countries able to improve access to and completion of education at risk of not achieving universal primary education (UPE)¹.

Hence, this present project is a follow-up to address the issues raised in the Global Out-of-School Children Initiative Conceptual and Methodological Framework (CMF), that the underlying the problem of OOSC are key data, analysis and policy gaps. It states, "There is a general lack of adequate tools and methodologies to identify OOSC, to measure the scope and describe the complexity of exclusion and disparities, to assess the reasons for exclusion, and to inform policy and planning. There is a need to acquire a better overview of existing data, utilize the range of data collected through administrative records and household surveys and make more effective use of such data sources."

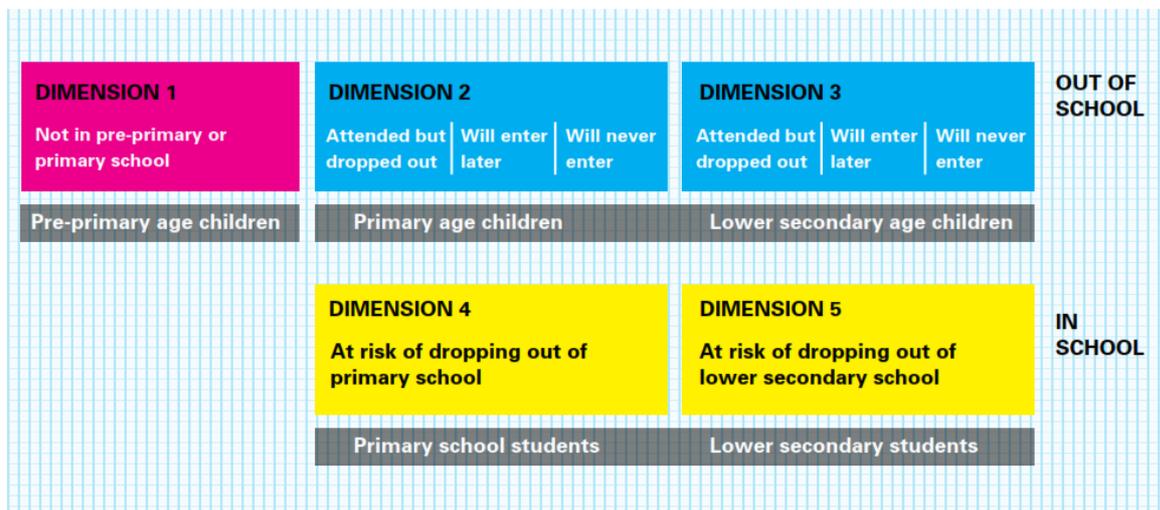
To address these issues, the CMF introduced "[the] Five Dimensions of Exclusion (5DE) that capture excluded children from pre-primary to lower secondary school age and various degrees of exposure to education. It also supports a more systematic linkage and leveraging between three main components:

¹ Global Out-of-School Children Initiative Conceptual and Methodological Framework. UNICEF and UIS 16 MARCH 2011, p.7

- **PROFILES** of excluded children capturing the complexity of the problem of OOSC in terms of magnitude, inequalities and multiple disparities around the Five Dimensions of Exclusion.
- **BARRIERS AND BOTTLENECKS** to clarify the dynamic and causal processes related to the Five Dimensions of Exclusion.
- **POLICIES AND STRATEGIES** to address the barriers and bottlenecks related to the Five Dimensions of Exclusion within education and beyond (looking at social protection systems).²

Indicators of the Five Dimensions of Exclusion

As most of the discussion in this paper concerns indicators on out-of-school children (OOSC) and children with disabilities (CWD), it is important to bear in mind that the proposed Five Dimensions of Exclusion (5DE)³ are central for presenting groups of children for analysis and interventions:



1. Pre-primary school-age children who are not in pre-primary or primary school
2. Primary school-age children who are not in primary or secondary school
3. Lower secondary school-age children who are not in primary or secondary school
4. Primary school enrolled children but at risk of dropping out
5. Lower secondary school enrolled children but at risk of dropping out

The indicators measuring all the five dimensions are derived from the Net Enrolment Rate (NER) in school and, for the out-of-school children, Net Attendance Rate (NAR) from the Household survey equivalent of Net Enrolment Rate; and adjusted NAR including children who are attending school at a level above or

² Global Out-of-School Children Initiative Conceptual and Methodological Framework. UNICEF and UIS 16 MARCH 2011, p.7

³ Source: Appendix L: Tracking Disability and Out-of-School Children (pp139-144). Global Out-of-School Children initiative Operational Manual. Global Initiative on Out-of-School Children. UNICEF. April 2015

below the official age-range to which s/he belongs. For example, a 10-year old attending a Lower Secondary School or a 17-year old attending a Primary School.

However, the great challenge is that the data on all the above-mentioned aspects of out-of-school is NOT available in the routine recordkeeping, registries, and regular school administration in most countries. Hence, proposing indicators where there is no data is futile without a corresponding feasible data collection strategy and capacity.

Note that Dimensions 2 and 3 on out-of-school children require follow-up information on “attended but dropped out”, “will enter later”, as well as “will never enter”. Whereas “dropout” information is commonly estimated in a standard Household Survey, the indicators of the probability of entering “later” or “never” remain to be developed.

Moreover, the indicators measuring dimension 4 and 5 refer to the in-school children who are “at risk of dropping out”. This requires measurable indicators of the severity of various forms of functional disabilities about their performance in school.

Indicators for identifying OOSC and CWD

Concerning the indicators to be suggested, the first set is the indicators for identification of children of primary school age who are not enrolled in school and have various types and degrees of functional and/or learning disabilities. As they are not registered and enrolled in any school, identification of these individuals would have to be based on information outside the school-based EMIS. For the presumed purpose of inclusion in school, identification would necessitate collection of information on at least their names, age, sex and current address (school district) as well as the level of previous education and the reasons for their current non-inclusion, as some dropped out and some never attended school. If available, some sort of standardized ID code utilized in national civil registration would be useful.

Conventional EMIS is based on school administrative registries and records management of school facilities, employed teachers and enrolled pupils. Out-of-School Children are not present and not enrolled in any particular school, although they may be physically present outside, in the catchment area of the schools. However, in most countries, there are civil registries of the households and their residents, maintained by local governments and administration. These registries contain some data on names, address, birthplace, and dates, but not health and education. Therefore, a collaboration between the schools, local/district education authorities and local governments is suggested in this proposal.

As the referenced year for the most recent available Population and Housing Census is 2010 and the next one will not be taken until 2020, the project will have to rely on interim sample surveys or conduct its Census of the relevant school district concerning the overall Out-of-School children. Therefore, the MICS6 Household Survey with the module on the child functioning is recommended.

Identification in terms of types and degrees of functional and learning disabilities would require some sort of diagnostics based on observable and measurable means that yield reliable and valid classification and measurement. There is a long history of past attempts and frustration, which have been recently solved pragmatically after many consultations and field pilot-testing and herein recommended.

The second set of indicators are for monitoring of these children's participation in schools, learning status and well-being. As in the case of learning disabilities, these likewise behavioral and psychological

phenomena need to be defined and operationalized in terms of observable and measurable means that yield reliable and valid classification and measurement. Moreover, as the unit of analysis is young children between the age of 5 and 11, the appropriate respondents would have to be their parents or care providers.

These two sets of indicators would enable an analysis of the relationship between various categories of OOSC-CWD and various levels of participation in schools, learning status, and well-being. This would yield descriptive statistics describing the situation of the various categories of children, the bearers of the right to education.

Presumably, there are also heretofore unidentified In-School CWD and the purpose of identifying and monitoring Out-of-School CWD is presumably to facilitate their integration and improvement of their learning in the school system. Assuming that is the case, the existing school-based EMIS would accordingly require further expansion and improvement with additional modules for this purpose. Therefore, such EMIS modules designed specially for providing information will be recommended herein for this purpose.

Furthermore, perhaps most importantly, if the ultimate purpose of identifying and monitoring OOSC-CWD are recommendations for a reformulation of the future targeted policy and practices based on the assessment and analysis of the impact of current policy and practices, then, data pertaining to

- a) the current policy and practices as well as
- b) the contextual conditions for
- c) the respective perceived reasons for their exclusion and
- d) other objective barriers to their participation would need to be specified, collected and analyzed.

This would enable identification of critical factors of success and failures in duty-bearers' response and yield lessons in "what works" and "what does not" in response to the respective targets for policy reform.

A Brief Review of OOSC-CWD indicators

Shortcomings of previous indicators

In connection with Education for All (EFA) monitoring, evaluation and assessment, the demographic census and household surveys, internationally standardized and comparable, have been used relatively successfully. As Demographic Census and Household Surveys, as well as sample surveys, include standardized questions on the education of the household members, it has been relatively easy to identify and measure educational attainment and non-attainment, as evidenced by UIS and UNICEF publications as well as UNESCO EFA Global Monitoring Reports.

However, concerning the children with disabilities, there have been many failures and less successful attempts at designing data collection for internationally comparable and standardized statistics and indicators for measuring the prevalence of different types and degrees of disabilities, among adults, youth and children.

As briefly summarized by Natasha Graham of UNICEF in her presentation “Inclusive Education for Children with Disabilities”⁴, the following features characterized the historical context of the situation of the children disabilities:

- History of exclusion and institutionalization
- Lack of common definitions of disability and therefore inadequate data on the prevalence
- High levels of stigma and discrimination
- Rigid medicalized systems of assessment and labeling
- Limited access to education

All the conclusions from the lessons of the past attempts point to certain significant critical factors of failure: difficulties arising from the complexity of interactions with the environment, socio-cultural sensitiveness of the subject and the dependence on medical, cognitive and clinical diagnoses for different types of disabilities.

Promises of proposed OOSC-CWD indicators of the Washington Group

The Washington Group on Disability Statistics, a working group of representatives of over 100 National Statistical Offices and international, non-governmental and disability organizations, was organized under the aegis of the United Nations Statistical Division. As described by the leading experts, Jennifer H Madans, Mitchell E Loeb and Barbara M Altman, in their article “Measuring disability and monitoring the UN Convention on the Rights of Persons with Disabilities: the work of the Washington Group on Disability Statistics” in BMC Public Health journal⁵,

“The purpose of the Washington Group is to deal with the challenge of disability definition and measurement in a way that is culturally neutral and reasonably standardized among the UN member states. The work, which began in 2001, took on added importance with the passage and ratification of the UN Convention on the Rights of Persons with Disabilities since the Convention includes a provision for monitoring whether those with and without disabilities have equal opportunities to participate in society and this will require the identification of persons with disabilities in each nation. The International Classification of Functioning, Disability and Health (ICF) developed by the World Health Organization provided a framework for conceptualizing disability. Operationalizing an ICF-based approach to disability has required the development of new measurement tools for use in both censuses and surveys.”

After many pilot-testing Census-style survey questionnaires on the observable and measurable degree of difficulty in performing basic functions, "a short set of six disability-related questions suitable for use in national censuses has been developed and adopted by the Washington Group and incorporated by the United Nations in their Principles and Recommendations for Population and Housing Censuses."

⁴ Natasha Graham, “Inclusive Education for Children with Disabilities”. UNICEF, 2018.

https://globalreadingnetwork.net/sites/default/files/resource_files/01.%20Presentation%20Natasha%20Graham%20-%20Copy.pdf

⁵ Jennifer H Madans, Mitchell E Loeb and Barbara M Altman (31 May 2011), “Measuring disability and monitoring the UN Convention on the Rights of Persons with Disabilities: the work of the Washington Group on Disability Statistics”. BMC Public Health 2011:111 (Suppl 4):S4. <https://doi.org/10.1186/1471-2458-11-S4-S4>. BioMed Central Ltd. 2011.

Moreover, there were special considerations for measuring disability among the very young children (under 5 years old) as well as school-age children (5-17 years old), involving cognitive testing in multiple languages and locations. Of particular relevance to our work are the recommendations of the Washington Group on the design of module on children of the school-age group 5-17 have been incorporated into the latest version of UNICEF's Multiple Indicators Cluster Survey, MICS6. This will be presented below.

UIS Recommendations on education and disability data

It would be useful and necessary for collaboration with national and international partners to consider the recommendations of the UNESCO Institute for Statistics. Following a comprehensive review and evaluation of available data on education and disability, UIS issued recommendations to improve the evidence base for future analytical work and for policy guidance in support of efforts to achieve SDG 4 (UIS 2018, Education and Disability: Analysis of Data from 49 Countries):

- A comprehensive inventory of currently available data should be undertaken to establish national baselines for SDG 4 monitoring with regard to disability.
- Data collection on disability must be increased to fill gaps in current data coverage.
- To ensure that data on disability are comparable across countries and between years, all surveys and censuses should use the sets of question developed by the Washington Group on Disability Statistics and UNICEF.
- If possible, the sample sizes of household surveys should be increased so that the collected data can be more representative of small sub-groups of the population, including persons with disabilities.
- Censuses, which are not subject to sampling error and can provide detailed information about small population groups, should always include questions on disability.
- Administrative data on disability should be improved.
- To allow periodic monitoring of progress towards SDG 4 as well as other national and international goals, data collection must be undertaken regularly.
- National statistical capacity for disability measurement must be strengthened, in particular in developing countries.
- The availability of internationally-comparable data on disability, education and other areas must be improved (for example in the database of the UNESCO Institute for Statistics), through the compilation and standardization of data collected in past and future surveys, following internationally-agreed standards.)
- Analysis of the indicators must take into account the limitations of available data and all findings should be carefully documented to avoid misinterpretation.
- Coordination of activities by national and international agencies in the area of disability statistics should be improved.
- Funding by international donors and foundations for collection and analysis of data on disability must be increased.)

Functional and Learning Disabilities

Operational Definition of Functional Disabilities

Among the many reviews and evaluations of the past attempts at identifying children with disability through surveys, the major obstacles pertained to the definition of disability conceptually and operationally. Finally, however, there is an international consensus, a breakthrough. "There has been

considerable progress in recent years in developing internationally-recognised approaches to identifying people with disabilities in surveys based on approaches that do not involve medical diagnosis,” as University of Cambridge Faculty of Education tells the story in its 2018 study on “Identifying disability in household surveys: Evidence on education access and learning for children with disabilities in Pakistan”⁶

“These have been developed by the Washington Group on Disability Statistics, established under the United Nations Statistical Commission to “...Address the urgent need for cross-nationally comparable population based measures of disability.”

Questions on disability developed by the Washington Group represents the most recent thinking around disability and draw support from the United Nations Convention on the Rights of Persons with Disabilities. Here disability is defined more broadly as, “Persons with disabilities include those who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others” (UNCRPD, 2007, p.4).

To go directly to the specification of indicators of disabilities for data collection, let us focus on the most recent international consensus among experts on the operational definition of the concept that yields most reliable and valid internationally standardized and comparable measure. It is succinctly summarized by the UNESCO Institute for Statistics (UIS):

“Identification of persons with disabilities in household surveys has long been a challenge because of the lack of a uniform definition of “disability” (UIS, 2017). To address the need for globally-comparable measures of disability, the Washington Group on Disability Statistics was established in 2001. The Washington Group developed a short set and an extended set of questions for use in household surveys and censuses to identify persons with a disability. The short set asks about the presence of difficulties in six core functional domains: seeing, hearing, walking, cognition, self-care, and communication (Washington Group, 2016).

During data collection, respondents to a survey answer on a four-category scale: no difficulty, some difficulty, a lot of difficulty, cannot do at all. According to the Washington Group standard, a person is considered to have a disability if the answer is “a lot of difficulty” or “cannot do at all” for at least one of the six functional areas. This method of data collection was found to be easy to implement for interviewers without medical expertise, can be translated easily in many languages, and ensures comparability of collected data across different surveys. For these reasons, the short set on functioning by the Washington Group has been endorsed by the United Nations for the collection of data on disability characteristics in the 2015 round of population censuses (UN, 2015). However, many surveys and censuses have collected data with questions that do not follow the Washington Group approach to identify persons with disabilities and the results may therefore be less reliable”

⁶ F., Malik, R., Kamran, S., Rose, P., Singal, N., Bari, 2018. Identifying disability in household surveys:

Evidence on education access and learning for children with disabilities in Pakistan. Policy Paper No. 18/1. REAL

Centre, University of Cambridge. <https://doi.org/10.5281/zenodo.1247087>

[MICS6 Module on Child Functioning \(5-17 year-old\)](#)

Although the data collected by UNICEF-Washington Group's new method were not yet available for the above-cited UIS data analysis, UIS review noted:

"In 2016, the Washington Group and UNICEF finalised a new Module on Child Functioning, which saw its first widespread use in the sixth round of Multiple Indicator Cluster Surveys (MICS) that began in 2017. The new module is the recommended tool for collection of information on disability among children between 2 and 17 years of age, especially in surveys that also collect data on education (Loeb et al., 2017). The module covers more functional domains than the short set of questions developed by the Washington Group, including learning and relationships. The Washington Group short set is likely to underestimate the proportion of children with functional difficulties ..."

Over the years, the Washington Group has developed three sets of questions:

- 1) The Washington Group Short Set of Questions on Disability: a short set of questions focused on assessing the functioning of adults.
- 2) The Extended Set of Questions on Functioning: a long set of questions focused on assessing the functioning of adults.
- 3) Child Functioning Questions: these are for two different age categories (i) for children under 5 years (ii) for children 5 to 17 years. All questions are asked of a child's parents/ primary caregivers. To focus the respondent on the functioning of their child concerning that child's cohort, where appropriate, questions are prefaced with the clause: "Compared with children of the same age."

A full set of questions listed in the MICS6 'Child Functioning' for children aged 5 to 17 years' contains the following 14 items:

1. Seeing
2. Hearing
3. Walking
4. Self-care
5. Understanding of child's speech (within and outside the household)
6. Learning general
7. Learning specific
8. Remembering
9. Controlling behaviour
10. Focusing
11. Routine (accepting changes)
12. Making Friends
13. Worry (frequency ...)
14. Sad (frequency of ...)

In their article "Measuring child functioning: the Unicef/ Washington Group Module"⁷, the leading experts themselves, Mitchell Loeb, Claudia Cappa, Roberta Cialesi, and Elena de Palma say that "it was

⁷ *salud pública de méxico / vol. 59, no. 4, julio-agosto de 2017*. This special note is based on the working documents of the Unicef/WG Child Functioning workgroup and work that has been previously published in *International Measurement of Disability: Purpose, Method and Application— The work of the Washington Group on Disability Statistics*. B. Altman (Ed).

determined that questions would be directed to a proxy respondent, the child’s mother or primary caregiver. In order to standardize the expectations of the proxy-respondents to focus their attention on the functioning of their own child in relation to the child’s age, the questions, where appropriate, are prefaced with the clause: “Compared with children of the same age...” Here are some illustrative examples:

FCF5. Check FCF1: Child wears glasses or contact lenses?	YES, FCF1=1..... 1 NO, FCF1=2 2	1 ⇒ FCF6A 2 ⇒ FCF6B
FCF6A. When wearing (his/her) glasses or contact lenses, does (name) have difficulty seeing?	NO DIFFICULTY 1 SOME DIFFICULTY 2	
FCF6B. Does (name) have difficulty seeing?	A LOT OF DIFFICULTY 3 CANNOT SEE AT ALL 4	

FCF19. Compared with children of the same age, does (name) have difficulty learning things?	NO DIFFICULTY 1 SOME DIFFICULTY 2 A LOT OF DIFFICULTY 3 CANNOT LEARN THINGS AT ALL 4
FCF20. Compared with children of the same age, does (name) have difficulty remembering things?	NO DIFFICULTY 1 SOME DIFFICULTY 2 A LOT OF DIFFICULTY 3 CANNOT REMEMBER THINGS AT ALL 4

Following their evaluation of the findings of successive pilot-testing and revisions in various countries, they report that the most recent version of the UNICEF/WG Child Functioning Module is relatively easy and reliable and “allow for the generation of several thresholds or cut-offs for determining disability in a population. It is possible to determine the proportion of those who have mild difficulties (at least some difficulty on one or more domain of functioning), or moderate levels of difficulty (those who respond at least a lot of difficulty) or those with severe difficulties (those who respond cannot do at all). Since disability is not a simple, single yes/no dichotomy, guidance is provided on producing several disability indicators based on the above cut-offs. In addition it is the recommendation of the UNICEF/WG collaboration that the cut-off at the level of a lot of difficulty be operationalized for reporting data internationally, and for the disaggregation of outcome indicators (like school attendance) by disability status.”

In conclusion, “The work of the UNICEF/WG collaboration provides a standard way to identify, at the population level (censuses and surveys), the prevalence of functional difficulties among children aged 2 to 17 years, and to use this information to monitor participation (for example, access to education) in accordance to the Convention on the Rights of the Child and the UN Convention on the Rights of Persons

with Disabilities. These data may help countries and governments plan and develop better practices to improve the living conditions and wellbeing of children with disabilities around the world.” Finally, an important consideration is “The finalized UNICEF/WG Module on Child Functioning is available on the WG website: <http://www.washingtongroup-disability.com/washington-group-question-sets/child-disability/> and on the UNICEF website: <https://data.unicef.org/topic/child-disability/child-functioning-module/>.

MICS6 Module on Foundational Learning

The module on Foundational Learning is designed for direct interview with the child (age 7-14 – relevant age range determined by country counterparts), whereas the mother or caregivers responded to the questions on the type and severity of disabilities. It takes approximately 20 minutes duration, assessed in the language of instruction. Module is aligned to national curriculum in consultation with Ministry of Education. The structure of Foundational Learning Skills, in which the child is presented with a series of problems to be solved in the following subjects:

1. Learning environment – Reading, languages
2. Reading skills
3. Oral reading accuracy (>=90% words correct)
4. Literal comprehension (2/3 questions)
5. Inferential comprehension (1/2 questions)
6. Number skills
7. Number reading (6 items)
8. Number discrimination (5 items)
9. Addition (5 items)
10. Pattern recognition & completion (5 items)

Here’s an example of reading and comprehension test:

<p>FL13. Give the child the <i>READING & NUMBERS BOOK</i>.</p> <p>Open the page showing the reading practice item and say:</p> <p>■ Now we are going to do some reading. <i>Point to the sentence.</i> I would like you to read this aloud. Then I may ask you a question.</p> <p><i>Sam is a cat. Tina is a dog. Sam is 5. Tina is 6.</i></p>		
<p>FL14. Did the child read every word in the practice correctly?</p>	<p>YES1 NO2</p>	<p>2 ⇒FL23</p>
<p>FL15. Once the reading is done, ask: <i>How old is Sam?</i></p>	<p>SAM IS 5 YEARS OLD1 OTHER ANSWERS2 NO ANSWER AFTER 5 SECONDS.....3</p>	<p>1 ⇒FL17</p>
<p>FL16. Say: <i>Sam is 5 years old.</i> <i>and go to FL23.</i></p>		<p>⇒FL23</p>
<p>FL17. Here is another question: <i>Who is older: Sam or Tina?</i></p>	<p>TINA IS OLDER (THAN SAM) .1 OTHER ANSWERS2 NO ANSWER AFTER 5 SECONDS.....3</p>	<p>1 ⇒FL19</p>
<p>FL18. Say: <i>Tina is older than Sam. Tina is 6 and Sam is 5.</i> <i>and go to FL23.</i></p>		<p>⇒FL23</p>

For the complete set of questions on both child functioning and foundational learning, see appendix on MICS6 questionnaire for children age 5-17.

Note: At the time of planning the pilot-testing of the Household Survey of out of school children, the project country teams decided to drop this module for lack of enumerators who could administer these test items.

[An Example Illustrating the Use of Washington Group’s Child Functioning Questions \(5-17 year-old\): MICS6](#)

For an insight into how MICS6 Survey was designed and implemented to measure human functional disabilities, the experience of the University of Cambridge’s 2018 study⁸ would provide useful lessons. “Overall, questions developed by the Washington Group provide a simple, sensitive and nuanced way of capturing disability, even in contexts where there are concerns that stigma could prevent direct reporting of disability. The questions provide the opportunity for international comparability, and have been developed using a rigorous methodology.” Here are the approaches employed in the Annual Status of Education Report (ASER) Pakistan and Cambridge TEACH studies.

Table 1: ASER Pakistan and TEACH approaches to identifying disability

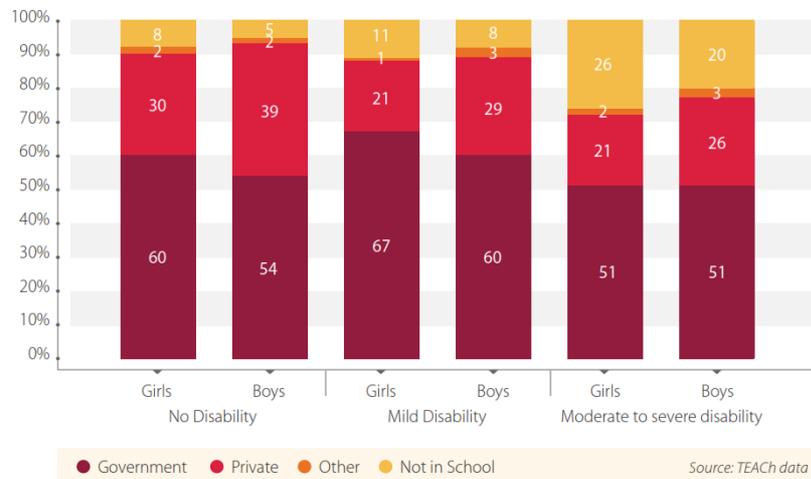
	ASER	TEACH
Source for the Questions on disability	Uses the set of the 'Short questions' developed by the Washington Group, together with questions on 'understanding' and 'remembering' taken from an earlier version of the Washington Group's child functioning set of questions.	Uses the full set of questions listed in the 'Child Functioning' for children aged 5 to 17 years.
Respondents	Parents/ carers are the respondents.	Parents/ carers are the respondents.
Types of questions asked for one type of functioning difficulty/disability	Does your child have difficulty seeing, compared to children of the same age a. No difficulty in seeing b. Yes- some difficulty c. Yes- a lot of difficulty d. Cannot see at all	Does [NAME] wear glasses? Yes-1, No-0. When wearing glasses, does [NAME] have difficulty seeing? 1. No Difficulty 2. Some Difficulty 3. A lot of difficulty 4. Cannot do at all Does [NAME] have difficulty seeing? 5. No Difficulty 6. Some Difficulty 7. A lot of difficulty 8. Cannot do at all
Sample (children aged 8-12) ⁶	22,000 children across Punjab province	1,549 children in 3 districts in Central Punjab

⁸ F., Malik, R., Kamran, S., Rose, P., Singal, N., Bari, 2018. Identifying disability in household surveys: Evidence on education access and learning for children with disabilities in Pakistan. Policy Paper No. 18/1. REAL

Centre, University of Cambridge. <https://doi.org/10.5281/zenodo.1247087>

They were able to analyze the relationship between learning and severity of disability (none, moderate and severe) and valid their results with a comparison between ASER and TEACH. Their presentations provide a good illustration of the usefulness and applicability of the MICS6 Module on Child Functioning. Here are some examples. The figure below shows the relationship between the type of school attendance and severity of disability for girls and boys respectively, showing that girls (26%) and boys (20%) with severe disability are least likely to attend any school.

Figure 3: Type of school attended by disability and gender



Using the ASER cognitive test in combination with the MICS6 Module 3 Child Functioning questions, the contrast between In- and Out-of-School children with various degree of severity in disabilities are well evidenced in the following results:

Figure 4b: Learning of children by severity of disability using ASER test (children in school)

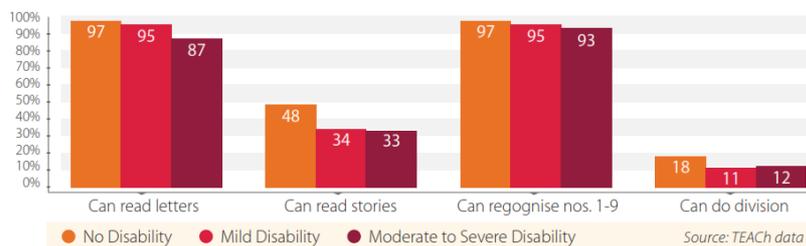
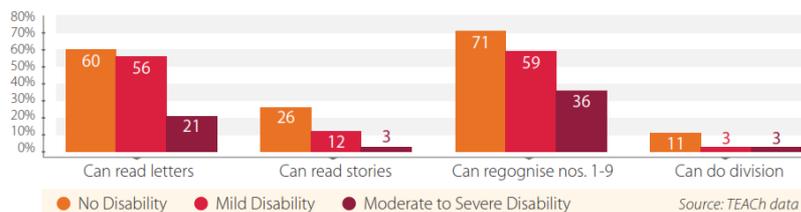


Figure 4c: Learning of children by severity of disability using ASER test (out of school)



In conclusion, the Cambridge study issued the following Key Messages based on their results:

1. It is vital and feasible to adopt approaches that identify children with different types and severity of disability in surveys to understand the challenges they face in their schooling experiences and identify strategies to support them.
2. Inclusive education in a context like Pakistan needs to be understood broadly, taking into account disadvantages arising from the intersection of disability, poverty, gender, location, and other factors.
3. Evidence from our new data shows that children with disabilities are attending mainstream (government and private) schools. It is important to identify strategies to support their learning in these settings.

Inclusive EMIS

Monitoring Out-of-School or at-Risk-of-Dropping-Out Children

An Inclusive EMIS must be capable of dealing with both out-of-school children and within-school children at risk of dropping out. For creating such a system, UNESCO Institute for Statistics and UNICEF (December 2016) issued step-by-step guidelines in "Monitoring Education Participation: Framework for Monitoring Children and Adolescents who are Out of School or at Risk of Dropping Out".

It discusses such subjects as technical barriers to the extension of the conventional EMIS to incorporate new OOSC indicators and methodologies. For example, it takes up explicitly (p. 35-36) the "drawbacks of having only aggregated EMIS data recorded electronically (at the school level or typically a higher level of aggregation such as the regional level), as opposed to person-level data:

- It limits the kinds of analysis which can be carried out. For example, it would typically not be possible to disaggregate and analyse data based on characteristics associated with the risk of exclusion from education (such as absenteeism, disability, etc.).
- It is not possible to identify Semi-invisible OOSC who are missing in school enrolment records but can be found through other databases. This requires person-level data for the databases to be cross-referenced.
- It is not possible to (automatically) calculate the exact age of all enrolled children from their dates of birth. This is needed to accurately determine if a child is of compulsory school age, and hence can be considered as 'out of school'. This also affects the reliability of OOSC rates, ..."

To overcome these barriers, it recommends for example (p. 37): The implementation of a School/Student Management Information System (SMIS) that "makes data on individual students accessible at the national level, as well as any other administrative levels if permission is granted and the data are made accessible via the web. It also ensures that data are more up-to-date, in particular, if the SMIS is web-based, in which case the EMIS always reflects the current situation as far as schools themselves keep their records up to date."

In such an SMIS, the following is a proposed minimum set of data fields for recording information on each student in the EMIS, which would enable the calculation of key education indicators as described in its Appendix:

1. Name.
2. Student/Education ID.
3. National/Person ID (this would be an ID which is also used in other databases, e.g. a birth certificate number).
4. Date of birth.
5. Sex.
6. Contact details (for example address, phone number).
7. Grade (for each year enrolled, in order to track grade repetition).
8. Daily attendance register.
9. Previous enrolment in pre-primary or early learning/childhood development programmes: none, < 1 year, 1 year, 2 years, > 2 years.
10. Academic records (test/exam results).
11. Additional fields such as dropout risk and disability indicators (see Step 6).

In its Appendix, it provides detailed technical specifications on Indicators, definitions and benchmarks:

- Indicators and definitions
- Principal EMIS indicators
- Enrolment indicators and definitions
- OOSC indicators and definitions
- Levels of disaggregation
- Disaggregating Disability Data
- School-level indicators
 - Monitoring schools' ability to accommodate the needs of children with disabilities
 - Special considerations for monitoring children with disabilities
 - Student-level disability indicators aggregated at the school-level
 - Quality of education indicators Community participation indicators
- Benchmarks

To identify Semi-invisible OOSC, as well as better, identify children at risk of dropping out, the EMIS would need to incorporate data from other sources (or a separate database system could incorporate data from EMIS as well as other sources). ... When databases are linked, many kinds of previously unanswerable questions can be answered, such as:

- How many and what proportion of children with disabilities are out of school?
- What kinds of disability are most common for children out of school?
- How are dropout risk factors related to actual dropout?
- How is the school environment related to learning achievement?
- Identifying *Semi-invisible OOSC*: How many compulsory-school-age children recorded in non-EMIS databases (such as the civil registry or health database) are not in the EMIS, and are therefore potentially out of school? In Georgia, for example, the EMIS is linked to the civil registry database, which enables one to cross-reference the list of children in each database.

[EMIS for In-School Children with Disability Using Washington Group's Recommendations](#)

By far, heretofore, the best and most concise introduction and guidelines with application templates for school-based EMIS is UNICEF's *Education Management Information Systems and Children with Disabilities, Webinar 6 Companion Technical Booklet* (2014)⁹:

This workbook presents recommendations on how to include data on children with disabilities and their school environments in an EMIS. It recommends using an approach to disability identification consistent with international trends in conceptualizing disability – namely, identifying children who are having difficulty with particular activities and to record those difficulties on a scale. The type and degree of disability can have a large impact on the effect of disability on schooling and so should be recorded. The workbook also suggests a minimum set of questions that should be included in all EMISs, and also ideas for how to expand that information if more information can be collected.

The answer to the question, “What Data on Disability Should be in an EMIS?” is summarized thus:

“Successful implementation of Article 24 of the CRPD (Convention on the Rights of Persons with Disabilities) requires high-quality data useful for developing policies and then monitoring and evaluating their implementation. These data fall into several categories:

1. **Identification of Children with Disabilities.** According to Article 1 of the CRPD, these include “those who have long-term physical, mental, intellectual, or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others”.
2. **Physical and Material Barriers to Learning.** These include physical access to school buildings, but also to the use of furniture, equipment, learning materials and communication supports (e.g., Braille and audiobooks, signage, etc.) for delivering information. For more information, please see Booklets 10 and 11 of this series.
3. **Human Resources and Services.** These include the training of teachers, their access to support services to assist their teaching, and also support services designed to assist students. Those services could include things such as speech, physical and occupational therapy, or the presence of classroom aids. For more information, please see Booklets 11 and 12 of this series.
4. **Measures of Student Success.** These include standard educational outcome measures that are used for all students, such as enrolment, attendance, repeating, dropping out, transition, test scores and graduation.

In its sequel, the 2016 edition of the *Technical Guidance: Guide for Including Disability in Education Management Information Systems*¹⁰ presented a summary of the results of a review of EMIS data forms from forty countries for formulating the guidance note. It reported that the review provided a broad

⁹ UNICEF, 2014. *Education Management Information Systems and Children with Disabilities, Webinar 6 Companion Technical Booklet* (2014). UNICEF, NYC, NY.

¹⁰ UNICEF, 2016. *Technical Guidance: Guide for Including Disability in Education Management Information Systems*, UNICEF Education Section, Programme Division

range of approaches to measuring the concepts. Examples from these forms were used to illustrate how they address collecting data on children with disabilities and with aspects of the environment.

Best way to illustrate their recommendation is the EMIS Forms that the teachers are asked to fill in, for example, Forms on CWD. They look like the typical school-based EMIS Forms that require teachers to fill in the aggregated frequency numbers in the multi-dimensional matrices, assuming classification and calculation of subtotals to be first conducted using lists of students and tally-sheets.

Table 2a: Recommended questions for EMIS form for children with disabilities

Compared with children of the same age, how many children enrolled in school have difficulties in the following areas (a child can be counted in more than one area):

	Vision		Hearing		Gross Motor (e.g., walking or climbing steps)		Fine Motor (e.g., writing or fastening clothes)		Intellectual		Communication (understanding and being understood by others)		Behaviour and socialization		
	Some difficulty	A lot of difficulty	Some difficulty	A lot of difficulty	Some difficulty	A lot of difficulty	Some difficulty	A lot of difficulty	Some difficulty	A lot of difficulty	Some difficulty	A lot of difficulty	Some difficulty	A lot of difficulty	
Boys															
Girls															
TOTAL															
How many children enrolled in school have difficulties in the following number of areas, as recorded above															
	1 area		2 areas		3 areas		4 areas		5 areas		6 areas		All 7 areas		TOTAL
Boys															
Girls															
TOTAL															

For the entire set of specific recommendations, guidelines and templates on these aspects (Children with Disabilities, Physical and Material Barriers to Learning, Human Resources and Services, and Measures of Student Success), see Appendix UNICEF’s Education Management Information Systems and Children with Disabilities, Webinar 6 Companion Technical Booklet (2014).

These EMIS questions were formulated before 2014 and tested in 2016, which were improved later in the reformulations of the 2018 MICS6. They had not benefitted yet from the lessons from the interview surveys of the out-of-school-children-with-disability. For the present exercise, the classification system of the type of disabilities and the method of measuring the severity of the disabilities are recommended to follow the example of the most recent version of the MICS6 Module 3 Child Functioning.

The proposed data collection instruments

Project decision-making workshop on In-School and Household Surveys

A workshop with the SCS Task Group (Sweden, Kosovo, Bangladesh and Indonesia) discussed the above-reported review of the existing and proposed indicators and data collection instruments on Children with Disabilities (CWDs) and Out of School Children (OOSC) in existing recognized survey tools, notably from Washington Group on Disability Statistics and UNICEF Multiple Indicators Cluster Survey (MICS). Following the workshop, it was proposed and adopted a set of indicators that can support the government in the identification of CWDs and OOSC and monitoring of these children's

- a. functional disabilities
- b. participation in schools
- c. learning status and

d. wellbeing.

The MICS6 Child Functioning module is an operationalization of the international, inter-agencies and experts' work of the Washington Group. All three project countries, Bangladesh, Indonesia and Kosovo, are participating in MICS6 scheduled for 2019, now engaged in Survey Design phase. Indonesia has participated in the past and updating the Child Functioning Module. Therefore, it was proposed that this CWD-EMIS project establish a working partnership with the MICS6 group at UNICEF and NSO in these countries. This is to guarantee that the project is in line with the common objective and guidelines on the definition and the measurement.

Both Save the Children, as well as the CSF-OpenEMIS, are part of the joint cooperative efforts of the Washington Group that include UNICEF as well as over 100 agencies. The organizations are not competing with each other, but supporting this common enterprise in their respective areas. The MICS6 Survey designed by UNICEF and Washington Group and conducted by the NSO is a national sample survey of households in the respective participating countries. Notably, it has no school component.

Save the Children's project is a pilot study on developing school-based EMIS covering the within as well as out-of-school children with disabilities within the school district/catchment area. The results of this pilot-test will contribute to improving the outreach function of the schools toward Inclusive Education, by identifying and monitoring children with disabilities.

To this effect, by adopting the heretofore best practices and suggestions, the Excel-sheet based data collection instruments and the SPSS database are recommended for the Student Monitoring Information System (SMIS) component of the school-based EMIS for teachers to complete within the school environment and, with some orientation and training, to be managed by the school EMIS staff.

School-based EMIS data collection instruments

For the school-based EMIS, three-part questionnaires and corresponding data-entry forms in Excel worksheet format were developed and pilot-tested in all three project countries (see digital appendix). The questionnaires address the three levels of the unit of analysis: the individual, the class and the school levels.

- Questionnaire 1: Class profile to be filled in by the class teacher
- Questionnaire 2: Student learning profile to be filled in by the teacher, specialist, and parent
- Questionnaire 3: School inclusive education policy, accessibility, and infrastructure, to be filled in by school administrator or school designated person.

As the project team members were not familiar with the SPSS, the data-entry worksheets were designed to facilitate data-entry at the respective unit levels and to link in a multi-level relational database.

- Excel worksheet 1 School ID & Access from Questionnaire 3
- Excel worksheet 2 Class Teachers from Questionnaire 1 Class Profile
- Excel worksheet 3 Student data from Q1 Class Master list & Q2 Student Learning Profile.

For statistical data processing and analysis, the data were migrated to SPSS-formatted database.

- SPSS data file 1 School ID & Access from Questionnaire 3
- SPSS data file 2 Class Teachers from Questionnaire 1 Class Profile
- SPSS data file 3 Student data from Q1 Class Master list & Q2 Student Learning Profile.

We have modeled our school survey instruments (see Annex xx) on a highly recommended example of a school-based EMIS, namely the Fiji Education Management Information System (FEMIS). It provides a Disability Disaggregation Package to primary and secondary schools with a standardised means of recording and analysing information in FEMIS related to:

1. disability in children (including type and severity of disability)
2. accessibility of school infrastructure and transport
3. qualifications and training of school staff concerning disability-inclusive education.

It is the most recent addition to the Toolkit for Disability-Inclusive Education.

Student Learning Profile “identifying children with functional difficulties and those at risk of disability” section includes information on filling out the Student Learning Profile form which captures:

- a. Information to identify disability type and severity (based on Washington Group),
- b. Information to identify learning support needs (including assistive devices such as wheelchairs, hearing aids, etc; reasonable accommodations such as additional time or a note-taker during assessments), and
- c. Information on clinical diagnosis, treatment and referral services.

Information from the Student Learning Profile (SLP) form is the basis of the data entered into FEMIS. This section includes the SLP Guidance matrix, which provides information to ensure accurate completion of the form.

School accessibility and inclusion assessment section provide information related to the School Accessibility and Inclusion Form, which captures information on the accessibility of school infrastructure and transport as well as activities undertaken and/or supports provided by schools to improve inclusion.

Qualifications and professional development of school staff section provide a standardised list of special/inclusive education qualifications and professional development for monitoring and evaluation of human resource development in relation to disability-inclusive education.

The school survey instruments cover the necessary data for the analysis of the situation of the children with disabilities in the school, not those who are not in school. Moreover, to understand the situation of all students with some form of disabilities and risk dropping out, it is necessary to analyze their situation at home.

Household survey of school-age (5-17) children

For the school-district Community EMIS, three-part questionnaires and corresponding data-entry forms in Excel worksheet format were developed and pilot-tested in all three project countries (see digital appendix xx). The questionnaires address the three levels of the unit of analysis: the individual child age 5-17, the family/household members, and the household levels.

- HHS Interview Questionnaires
 - a. Questionnaire 1 Household Characteristics,
 - b. Questionnaire 2 Members educational background, and

- c. Questionnaire 3 Children's home learning and well-being.

Excel worksheet for Data entry and multi-level relational database

- d. Worksheet 1 Household Characteristics,
- e. Worksheet 2 Members educational background, and
- f. Worksheet 3 Children's home learning and well-being.

SPSS data files

- g. SPSS data files 1 Household Characteristics,
 - a. SPSS data files 2 Members educational background, and
 - b. SPSS data files 3 Children's home learning and well-being.

In concluding the review of indicators on children's functional disabilities, we recommended the most recent version of the MICS6 Module on Child Functioning (see Annex xx). All three SC country representatives opted to carry out household interviews, by teachers in Bangladesh and Indonesia and by hired researcher-consultants in Kosovo.

The latest version of MICS6 (January 2019) is the source for the indicators on household members' education profile as in the internationally standardized Census and Household Survey and the Washington Group's children's functional disabilities. Thus, all five Dimensions of Exclusion are covered in our household surveys and Dimensions 4 and 5 pertaining to children attending school are also covered in the school survey.

A full set of questions listed in the MICS6 'Child Functioning' for children aged 5 to 17 years' contains the following 14 items:

1. Seeing
2. Hearing
3. Walking
4. Self-care
5. Understanding of child's speech (within and outside the household)
6. Learning general
7. Learning specific
8. Remembering
9. Controlling behaviour
10. Focusing
11. Routine (accepting changes)
12. Making Friends
13. Worry (frequency ...)
14. Sad (frequency of ...)

At the time of our review, UNICEF-Washington Group reported that since 2013 the module on measuring school environment and participation “has undergone several rounds of revision and cognitive testing. Further cognitive testing will take place in 2018 and will be followed by field testing of the module.” The module covers the following aspects:

- Attitudes
 - Parents Perceptions
 - Their Perceptions of Other’s Attitudes
 - Societal and Cultural Norms - Other Children’s Attitudes
 - School Staff Perceptions
- Getting To School
 - Transportation (Characteristics of All Aspects of the System and the Need For Assistance)
 - Environmental and Social Safety - Weather/Seasonality
- Accessibility within the School
 - Physical Accessibility (Entryway, Corridors, Bathrooms, Lunch Room, Classroom, Common Areas Etc.)
 - Information Accessibility
 - Communication Accessibility
 - Programmatic Accessibility/Adaptability
 - Teacher and School Attitudes towards Disability
- Affordability
 - Fees, Costs, and Competition for Resources Associated With Attendance
 - Availability of Types of Assistance (Financial, Assistive Devices, Rehabilitation)
 - Non-Educational Benefits (E.G., Meals)
- Reasons for Out-Of-School
 - To Develop A Separate Section of The Questionnaire Aimed at Getting Information on Reasons Why a Child May Be Out Of School.

However, the results of the testing were not available at the time of our design of the data collection instruments. Nevertheless, our final household survey instruments have formulated new questionnaire items measuring all these aspects.

- Household members’ educational profile
- Household wealth and affordability
- Home learning support and activities
- Parental attitudes and norms on education and disabilities
- Children’s functional disabilities
- Children’s perception and reaction to discrimination
- Children’s perception and emotional state

The household survey instruments were designed to provide SMIS-compatible Excel worksheets, which would have the additional advantage of the compatibility and ease of integration with the SMIS-EMIS.

By extending the school-based SMIS to include household visits by teachers, this approach would lead to the UNESCO-UIS and UNICEF recommended Community-based EMIS (C-EMIS) which was introduced in the review section of this paper; and endorsed by UNESCO (“Re-orienting EMIS towards inclusive and equitable quality education and lifelong learning”. UNESCO Working Papers on Education Policy 05, 2018).

Sampling of Household Survey of OOSC and CWD for Inclusive EMIS

In all three project countries, UNICEF MICS6 national sample survey, including the Child Functioning module, are conducted in 2019 by the respective National Statistics Office (NSO). As it is based on a nationally representative sample, this will produce relatively reliable estimates of the proportion of the population with different types of disabilities for children between the ages of 5 to 17 years old.

The Save the Children project is focused on piloting school-based Inclusive Education EMIS with an extension to include information on out-of-school children and children with disabilities (OOSC and CWD) within the school district catchment area.

Options

During the workshop in Stockholm on indicators for identifying and monitoring out-of-school children and children with disabilities, Bangladesh and Indonesia country project representatives said that their teachers will conduct household surveys, but Kosovo representative said that some external organization(s) would conduct the household interviews, as their teachers would not. Discussions did not get further than this brief “decisions”. Subsequently, due to time constraints, sampling questions were raised online. In reply, six different strategies for data collection were considered:

- A. All households within the school district
- B. A representative sample of households within the school district
- C. All out-of-school-children-siblings of enrolled students at the school
- D. A representative sample of out-of-school-children-siblings of enrolled students at the school
- E. All school-aged children in targeted places of a high density of OOSC
- F. A representative sample of school-aged children in targeted places of a high density of OOSC.

The first two (A and B) options focus on households within the school district, as briefly discussed amongst the project country representatives. The second two options (C and D) focus on the out-of-school-children-siblings of the enrolled students. The last two options seek directly the places/ institutions where OOSC-CWD are known to be concentrated.

Criteria

An ideal data collection method would yield the highest concentration of the most relevant information in the most cost effective way in terms of relevance, time, cost and sustainability.

1. Relevance concerns the concentration of the relevant information (i.e., in this case, OOSC-CWD) relative to irrelevant information.
2. Time concerns both the time to organize, initiate, accelerate, and duration of the data collection process. It is already very limited. It must be conducted with a month or two.
3. Cost concerns mainly the cost of (a) the human resources with relevant knowledge and skills for interview and data processing, (b) the printing of the interview forms, and (c) the logistics and the transport for conducting the interviews.
4. Sustainability concerns the ability of the school to regularly, at least annually, maintain the EMIS and update the relevant data content, beyond the project time and budget frame.

Evaluation

Even a sampling method requires a “population” from which a representative sample can be drawn “randomly” or systematically. Drafting/obtaining a general sampling frame (i.e., the “population” list of all those within a population who can be sampled, and may include individuals, households or institutions) for the school catchment area may be very difficult, especially in an urban area, without the assistance of the NSO. However, the critical problem is the absence of such a list of all out-of-school children and children with disabilities.

Even if an up-to-date list of all households, organizations or individuals were available, designing and conducting a reliable sample survey of all households in the school catchment area may be well beyond the capacity of school teaching staff. A representative random sample of the population, even if the sample size were more than 1000 at a great cost, would yield only a small subpopulation of children with disabilities (perhaps, 3-7%), depending on the availability of early childhood and emergency healthcare, surgery and assistive technology. The number of CWD within a random sample is likely to be too few for statistically reliable analysis. Finally, even if a concerted effort of a campaign-style survey were successful, would it be possible to repeat it every year to update the EMIS?

A purposeful sample may be conducted within the school catchment area to identify these children and the types of barriers and reasons for their non-attendance. It would produce information to support the development of a Disability Inclusion Policy and planning specific outreach activities for the inclusion of out-of-school children with disabilities, in line with the national Education Agenda for Sustainable Development Goals 2030.

As a first step, a school and its teachers may ask the parents and the students to name any school-aged children not attending school among their own families (often their siblings), households (often relatives) and neighborhoods (often friends) in the school district catchment area. Using this list as a sampling frame, a class teacher can interview the relevant parents or guardians at school or at their homes. This is feasible and sustainable within the normally available resources and would most likely yield the highest concentration of the most relevant information in the most cost-effective way in terms of relevance, time, cost and sustainability.

However, school accessibility is very selective toward different segments of the population, especially those who are often “hidden” -- the very poor, the children with disabilities, the marginalized, etc. Therefore, in the future, along a later developmental phase of the OOSC-CWD EMIS, a more comprehensive seeking approach is recommended. It would require extensive consultation with relevant authorities and organizations to first identify and map the types of communities/ institutions where out-of-school children and children with disabilities are typically hidden/found within the school catchment areas. Some examples of such places for the purposeful sampling may be the following:

1. Family household
2. Boarding school for Children with Disabilities
3. Orphanage/foster home for orphans
4. Dormitory/lodging for itinerant workers
5. Hospital/healthcare center
6. Institution for psychological/emotional therapy
7. Rehabilitation Center for physically handicapped

8. Workplaces where children/youth are employed
9. Places for homeless people
10. Slums/poor sections of the community where the very poor reside
11. Ghettos where ethnic minorities reside
12. Prison/Reform Center
13. Other

This strategy would more effectively identify the target groups of out-of-school children and thereof, children with disabilities. This would require extensive involvement of researchers and specialists that would be more appropriate in a research project.

Decision on pilot survey

Finally, however, the country teams decided that the pilot survey would be limited to the ordinary households, as they lack the capacity to conduct such search for “invisible” OOSC. As for sampling, it was decided to conduct a snowball method in two steps: first, conduct a household survey of all households of the in-school children with "a lot of difficulty" or "cannot do at all" on any one or more functional disabilities. Within the interview with these households the interviewer solicited at least three names and addresses of any children they know that are not in school.

Sampling of Households for OOSC-CWD

To capture the necessary data fulfilling the information needs of the project objectives, here is the sampling design. The following four-fold table illustrates the variety of possible comparative analyses.

School attendance?	Difficulties (“a lot of difficulties/cannot do at all”)	
	No	Yes (CWD)
Yes (School Survey)	1. No difficulties in school	2. In school CWD
No (Household Survey)	3. No difficulties OOSC	4. OOSC-CWD

Among them is the possibility of comparative and correlation analyses of the distinctive situation of the children with difficulties, in terms of the relative contribution of their home and school environment respectively toward their learning and wellbeing.

In the absence of any reliable statistics or well-documented sampling frame for selecting households with Out-of-School Children and thereof Children with Difficulties, the following “purposeful multiplier sampling” or “snowball” sampling steps are recommended:

Sample A: List of In-School Children with Difficulties (CWD)

1. For each class/teacher who participated in the In-School Survey, list the students who had at least one “very difficult” or “cannot do at all” in response to the Child Functioning questions in the school survey. This list of students was produced from the database of the in-school survey.

2. Add to this list also former students who were enrolled last year but attending infrequently or not at all during the current year.
3. Sample size would be a subset of the school survey, the proportion who have “a lot of difficulty” and “cannot do at all” and the proportion who dropped out and the proportion with extremely low attendance.
4. Visit the households of these students to conduct the Household and Child 5-17 interview survey to collect additional data on their background and home learning environment.

NOTE: Indonesia opted to conduct household interview with all students with or without disabilities to avoid discrimination.

Sample B: List of Out-of-School Children (OOSC)

1. The last item of the “Child 5-17 years old” interview asks the children and their mother/caretaker whether they know whereabouts of other school-aged (5-17) children who are not going to school, in their neighborhood, among their relatives and friends, or workplaces or such places as hospitals, health clinics, or associations and services for social assistance. They are asked to name at least 2-3 suggestions. List these suggestions from the Sample A interviews.
2. Supplement this list with additional suggestions from a working group/committee of teachers, volunteers, and persons who know whereabouts of children with difficulties and who are not going to school. Their task is to compile this information from associations, institutions, and agencies dealing with the healthcare welfare of children with difficulties.
3. Using the attached Sample B form, assemble information from steps 2-5 and list whereabouts of children (age 5-17 years) who are not attending school this year, including children with disabilities and former students who dropped out of school in the school district. This consolidated list of suggestions will serve as Sample B for the Household Survey.
4. Visit the households and locations and conduct the Household and Child 5-17 Surveys.
5. The sample size of Sample B depends on the rolling/multiplier/snowball sampling, which requires each household visited to name at least 2-3 additional households with out-of-school children and, if known, children with disabilities. To the extent feasible, given time and resources, this process should continue until the achieved size of Sample B approximates at least three times that of Sample A, to approach closer to the actual proportion in reality.

Note carefully, the household samples are not a random sample representative of the “normal” population. Instead, they are the households with at least one out-of-school child, some of whom may have some form of disabilities that hinder them from attending school. The purposeful 2-step sampling design focused first on selecting children in school with disabilities and their “normal” siblings and, in the next step, a snowball sampling of their neighbors and social circles with children of school age (5-17) who are not attending school for any reason. As in a quasi-experimental design, this enables comparative analysis of children with functional disabilities and their siblings without disabilities, thus minimizing the effects of socio-economic differences and other selection-bias that may confound the analysis.

School EMIS and household-survey data collection

The participation countries approached data collection differently, as available time for data-collection in school was limited toward the end of year 2018. Whereas Bangladesh (17 schools, 685 students) and Kosovo (13 schools, 770 students) designed their sampling to cover wide range of schools, Indonesia focused on 2 schools (74 students) known to have children with disabilities.

Achieved school sample size:

Country	Schools	Students
Bangladesh	17	685
Indonesia	2	74
Kosovo	13	770

In the second phase, a household survey was conducted, mainly to include the out-of-school children by snowball sampling. This would enable comparison of functional disabilities, home learning and well-being of in- and out-of-school children in the respective school districts.

The number of school districts covered by the household interview survey differs again. In the two districts sampled in Indonesia, 343 children were interviewed, thereof, 280 (82%) were in-school students and only 63 (18%) were out-of-school children. In contrast, as many as 46% of Bangladesh sample, and 64% of Kosovo sample were out-of-school children.

Household Survey Response rates, as recorded by the interviewers

Response categories	Count/ percentage	Bangladesh	Indonesia	Kosovo
COMPLETED	Count	171	357	121
	% within Sample	95.5%	90.4%	84.0%
NOT AT HOME	Count	0	14	2
	% within Sample	0.0%	3.5%	1.4%
REFUSED	Count	0	10	3
	% within Sample	0.0%	2.5%	2.1%
PARTLY COMPLETED	Count	8	12	8
	% within Sample	4.5%	3.0%	5.6%
INCAPACITATED (specify below)	Count	0	2	5
	% within Sample	0.0%	.5%	3.5%
	Count	0	0	5

NO ADULT CONSENT FOR MOTHER/CARETAKER AGE 15-17	% within Sample	0.0%	0.0%	3.5%
	Count	179	395	144
	% within Sample	100.0%	100.0%	100.0%

Achieved Household interview survey sample size, as in the dataset

Country	School districts	In-school children	Out-of-School children	Total children
Bangladesh	1	97	82	179
Indonesia	2	280	63	343
Kosovo	7	52	92	144

How do they differ in terms of the proportion of children with functional disabilities? A quick cross-tabulation of children with no difficulty or much difficulty (“a lot of difficulty” or “cannot do at all”) shows the following results:

Country	Total No. children	% No difficulty	% Much difficulty
Bangladesh	179	30%	70%
Indonesia	398	76%	24%
Kosovo	139	58%	42%

For detailed information and indicators of their learning status, home learning environment and activities, and well-being see appendix.

[Final Results: Indicators Tables with Data](#)

The data collected through the School EMIS and Household Survey Interview Questionnaires were entered into SPSS database. Using the SPSS Custom Table production facility, the tables of indicators of the Five Dimensions of Exclusion as well as indicators of Inclusion were related to the indicators of functional disabilities, school performance, home learning environment and activities, and well-being. For ease of access and analysis, these tables are available in Excel format (see appendix “Indicator Tables Excel Templates and DATA.zip”)

-  All countries-Dimension 4&5 Performance Teaching Learning Assistance.xlsx
-  All countries-Inclusive School Policy and Measures.xlsx
-  All countries-School Age Level n %Disabilities.xlsx
-  BAN HHS 5 Dimensions of Exclusion tables.xlsx
-  BAN Home Learning School Rel Wellbing.xlsx
-  IND HHS 5 Dimensions of Exclusion tables.xlsx
-  IND Home Learning School Rel Wellbing.xlsx
-  KOS HHS 5 Dimensions of Exclusion tables.xlsx
-  KOS Home Learning School Rel Wellbing.xlsx

NOTE: These tables were produced using the submitted data, after many rounds of cleaning data-entry errors and corrections of discrepancies and inconsistencies. Where errors and discrepancies could not be corrected in time, they were discarded tentatively as missing data. Unfortunately, at the time of this writing, individual children could not be linked with their respective parents' and household data files, due to inconsistencies in the ID fields in many cases. When these discrepancies are corrected, the most important analysis of the contextual relationship between children, parents, home, community, and the local school may proceed in the future.

Indicator Framework

This section describes the indicator framework elaborated and pilot tested under the study

[Indicators of Exclusion from School Participation, Functional Disabilities, Home Learning and Well-being](#)

Data coverage: School & Household Surveys of students and Household Surveys of OOSC

A: School survey and Households of students from the school-enrolled sample

B: Household survey of Out-of-School Children (OOSC) from snowball sample of known OOSC

Note: 2 different/comparative "populations", the denominator for the calculation of proportions and percentages.

Household Survey Response rates

1. %Completed
2. %Not At Home
3. %Refused
4. %Partly Completed
5. %Incapacitated

6. %No Adult Consent For Mother/
7. %Caretaker Age 15-17
8. %Other

The Indicators for the 4 Domains

The SCF TOR specified 4 Domains for indicators proposal:

1. School Participation rates: i.e. % in school and % out-of-school
2. Children with various forms and severity of functional disabilities
3. Learning status
4. Well-being

OOSC: Five Dimensions of Exclusion/SCS: participation in schools

1. %Pre-primary school age children (ISCED 0) who are/not in pre-primary or primary school
2. %Primary School age children (ISCED 1) who attended previously but dropped out of school
3. %Lower Secondary children (ISCED 2)- who attended previously but dropped out of school
4. %Primary school age children in school at risk of dropping out (i.e., CWD: children with disabilities)
5. %Lower secondary school age children in school at risk of dropping out (i.e., CWD: children with disabilities)

* All the five dimensions are derived from NAR: Net Attendance Rate (Household survey equivalent of Net Enrolment Rate); and adjusted NAR which includes children who are attending school at a level above or below the official age-range to which s/he belongs.

ISCED levels and age structure

Country	ISCED 1: Primary	ISCED 2: Lower Secondary	ISCED 3: Upper Secondary
Bangladesh	6-10	11-13	14+
Indonesia	7-12	13-15	16+
Kosovo	6-10	11-14	15+

CFC: Child Functional disabilities: % having “a lot of difficulty” or “cannot do at all” on a 4-pt scale of severity

(1= no difficulty, 2=some difficulty, 3=lot of difficulty, 4=cannot do at all)

1. Seeing
2. Hearing
3. Walking

4. Self-care
5. Understanding of child's speech (within and outside the household)
6. Learning general
7. Learning specific
8. Remembering
9. Controlling behaviour
10. Focusing
11. Routine (accepting changes)
12. Making Friends
13. Worry (frequency ...)
14. Sad (frequency of ...)

Summary indicators:

15. No disability or at least one disability
16. Multiple number of disabilities

Learning status (instead of test of knowledge and skills)

1. CB5/ED5. Highest level of school ever attended
2. CB6/ED6. Completion rate of Highest level of school ever attended
3. CB8/ED10. Highest level of school currently attending
4. CB10/ED16I. Level and grade-year attended during previous school year
5. Promotion, repetition and dropout rates, if the grade-year data is correct (some misinterpreted as calendar year of attendance)

Added by Ko-Chih Tung

6. School GPA (School Survey, sample A)
7. PR10. received school or student report card
8. PR10A. report card result satisfactory/unsatisfactory
9. FCF27. Reading: age-relative level of competence
10. FCF28. Writing: age-relative level of competence
11. FCF29. Math: age-relative level of competence

Home Learning Environment and Activities (domain added by Ko-Chih Tung)

1. Mother's education level
2. Father's education level
3. Primary caretaker's education level
4. PR6. Receive homework assistance by family member
5. PR7. Primary caretaker able to help learning at home
6. PR3A number of books for the child to read at home
7. PR3C. used specially adapted books in braille, video, or audio at home
8. LA6A. read books at home
9. LA6B. someone read to child at home

10. LA7. language spoken at home
11. FCF30.Learning activities: frequency
12. FCF30.Learning activities: enjoyment
13. FCF30.Reading: frequency
14. FCF30.Writing: frequency
15. FCF30.Math: frequency
16. Access to learning media (radio, TV, Internet, computer/tablet)
17. LA8b. played learning games and activities
 - A. play games with others
 - B. listen to stories
 - C. tell stories to others
 - D. read comic books
 - E. solve quizzes & puzzles
 - F. question & answer games
 - G. counting & doing math
 - H. drawing pictures
 - I. writing letters & stories
 - J. chat on telephone
 - K. watch film or youtube
 - L. play computer games
 - M. listen to the radio
 - N. listen educational radio
 - O. watch educational TV

Relation to School (domain added by Ko-Chih Tung)

1. LA9A/B. Language used by teachers when teaching you in class
2. LA10. Aspects of school that child likes/liked
3. LA11. Aspects of school that child disliked, hates/hated, fears/feared
4. LA10. School subjects or learning activities likes
5. LA11. School subjects or learning activities child fears/feared, hates or dislike very much
6. LA12A.Would like/not like to continue studying next year
7. F12B. Reasons why continue or discontinue studying
8. LA13. Kind of work like to do when child grows up

OOSC's relation to the local school (domain added by Ko-Chih Tung)

1. PR12. OOSC: reasons why child not attending school
2. PR13. OOSC: applied for school admission but reasons not admitted
3. PR14. OOSC: school response to visit for advice and help with regard to child's education and study
4. PR15. OOSC: school teacher or counsellor visit the child

Well-being

1. Household wealth index (added by Ko-Chih Tung)
2. CB11/12. Health insurance

3. ED12. received school tuition support
4. ED14. received material support or cash to buy shoes, exercise books, notebooks, school uniforms or other school supplies
5. CL3. Hours engage in gainful (income) labour last week
6. CL13. Hours did engaged household chores last week
7. FCD5. Primary caretaker believes in the need for physical punishment
8. PR2. Emotional state (as observed primary caretaker, added by Ko-Chih Tung)
 - a. Happy
 - b. Self-Confident
 - c. Fear Of Being Bullied
 - d. Lonely
 - e. Optimistic
 - f. Easy Going
 - g. Shy Seen By Strangers
 - h. Ashamed Self-Appearance
 - i. Sickly
 - j. Complains A Lot
 - k. Demands Much Attention
 - l. Silent

[Indicators of Inclusive School Policies and Practices for Children with Disabilities](#)

Indicators for School/Community-based CWD Inclusive EMIS

In the design of the content of the in-school data collection instruments for the proposed CWD Inclusive EMIS, the following four categories of data for developing policies, monitoring, and evaluating have been considered, as recommended in the document *Education Management Information Systems and Children with Disabilities*¹¹:

- 1. Identification of Children with Disabilities.** According to Article 1 of the CRPD, these include “those who have long-term physical, mental, intellectual, or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others”.
- 2. Physical and Material Barriers to Learning.** These include physical access to school buildings, but also to the use of furniture, equipment, learning materials and communication supports (e.g., Braille and audio books, signage, etc.) for delivering information. For more information, please see Booklets 10 and 11 of this series.
- 3. Human Resources and Services.** These include the training of teachers, their access to support services to assist their teaching, and also support services designed to assist

¹¹ *Education Management Information Systems and Children with Disabilities*. United Nations Children’s Fund (UNICEF) 2014

students. Those services could include things such as speech, physical and occupational therapy, or the presence of classroom aids.

- 4. Measures of Student Success.** These include standard educational outcome measures that are used for all students, such as enrollment, attendance, repeating, dropping out, transition, test scores and graduation. (The in-school survey covers only the current attendance. These indicators are computed from the school attendance records in the household interview survey.)

The content of the school-administered data collection instruments is modeled mainly on the Fiji Education Management Information System (FEMIS)¹², which adopted the Washington Group’s approach to measuring child functional disabilities and the CWD-Inclusive EMIS recommendations. Our addition of three more standardized and comparable countries would thereby promote cross-validation and comparative generalization of the findings.

This document lists indicators for three domains of CWD inclusive policy, teacher education and training and student learning profile:

- Domain 1: Indicators of CWD inclusive policy, measures, access, and assistive supports
- Domain 2: Indicators of class teachers and class student composition, including indicators of teachers’ education and training in teaching CWD
- Domain 3: Indicators of student learning profile, including indicators of risk of dropping out and functional disabilities

Domain 1: Indicators of CWD Inclusive Policy and Measures

1.1 Basic school profile

SCHID8	Students' socioeconomic background: mainly 1=Upper well-to-do, 2=Middle, 3=Mixed, 4=Lower, 5=Bottom/very poor, 6=Uninterpretable, 7=NA, 8=DK 9=MD
SCHID9	Primary school? 0=no, 1=yes
SCHID10	Lower secondary school? 0=no, 1=yes
SCHID11	Upper Secondary? 0=no, 1=yes
SCHID12	Total number of teachers
SCHID13	Total number of student enrolment

1.2 CWD Inclusive Policy and Measures

¹² Fiji Education Management Information System (FEMIS), Disability Disaggregation Package Guidelines and Forms. Access to Quality Education Program: managed by Palladium on behalf of the Australian Government and in collaboration with the Fiji Ministry of Education, year?

SCHAI3	Does the School have a Disability Inclusion Policy that specifies actions for including children with disability? 0=no, 1=yes
SCHAI4	What is the date of the most recent update/revision of the Policy? Write Year/Month/Date
SCHAI5	Does the school undertake the following activities to engage out-of-school children with disabilities? * Teachers visit the children's home at least monthly to provide school work and teaching? 0=no, 1=yes
SCHAI6	* Teachers meet with parents to discuss options for attending school? 0=no, 1=yes
SCHAI7	* Other?: please describe as many actions as are undertaken:
SCHAI8	Has the whole school undergone disability screening programs run by external agencies within the last 12 months (e.g. Ministry of Health)? 0=no, 1=yes
SCHAI9	... for vision? 0=no, 1=yes
SCHAI10	... for hearing? 0=no, 1=yes
SCHAI11	... for other disabilities? 0=no, 1=yes
SCHAI12	To raise disability awareness, has the school conducted within the last 12 months: ... Parent education sessions at the school? 0=no, 1=yes
SCHAI13	... Student awareness activities (general student body)? 0=no, 1=yes
SCHAI14	... Community awareness activities in the village / community? 0=no, 1=yes
SCHAI15	... Awareness / training for teaching staff at the school ? 0=no, 1=yes
SCHAI16	Other? 0=no, 1=yes
SCHAI17	Does the school use Individual Education Plans (IEPs) for students with disabilities? 0=no, 1=yes

1.3 CWD Inclusive Representation in the School Management Committee

SCHAI18	Does the School Management Committee include at least one parent of a student with disability? 0=no, 1=yes
SCHSP1	Braille specialist 0=no, 1=yes

SCHSP2	Sign language interpreter 0=no, 1=yes
SCHSP3	Physiotherapist 0=no, 1=yes
SCHSP4	Speech therapist 0=no, 1=yes
SCHSP5	Occupational therapist 0=no, 1=yes
SCHSP6	Audiologist / audiometrist 0=no, 1=yes
SCHSP7	Educational psychologist 0=no, 1=yes
SCHSP8	Special education visiting specialist 0=no, 1=yes
SCHSP9	Maternal child health (ECE age children) 0=no, 1=yes
SCHSP10	Other: describe in text and indicate frequency
SCHSP11	Other: describe in text and indicate frequency

1.4 School Accessibility for CWD

SCHIT1	Is the road leading to the school accessible to a student in a wheelchair, including during the rainy season?
SCHIT1plan	If not, what plans? Explain:
SCHIT2	Are there steps leading up to the main entrance?
SCHI2plan	... plans? Explain:
SCHIT3	If yes, is there a proper ramp in good condition usable by a person in a wheelchair?
SCHIT3plan	... plans? Explain:
SCHIT4	Is the main entrance to the school wide enough for a person in a wheelchair to enter?
SCHIT4plan	... plans? Explain:
SCHIT5	Is the main assembly area accessible to students with disabilities?
SCHIT5plan	... plans? Explain:
SCHIT6	Is the first aid / sick room accessible to students with disabilities?

SCHIT6plan	... plans? Explain:
SCHIT7	Is the library accessible to students with disabilities?
SCHIT7plan	... plans? Explain:
SCHIT8	Are recreational areas accessible to students with disabilities?
SCHIT8plan	... plans? Explain:
SCHIT9	Signage (tactile markers, clear signs): Are children with seeing and hearing difficulties able to navigate independently and safely around the school?
SCHIT9plan	... plans? Explain:
SCHIT10	Emergency situations: In the school policy and procedures, are students and staff with disabilities specifically considered?
SCHIT10plan	... plans? Explain:

1.5 Availability & Accessibility of Facilities for CWD Hygiene and Transport

SCHIT11	HYGIENE: Are toilets accessible to boys and girls with physical disabilities? (ramp access, hand rails) 0=No, 1=Yes
SCHIT11plan	... plans? Explain:
SCHIT12	Are hand-washing facilities accessible for boys and girls with physical disabilities? (taps & soap within reach)
SCHIT12plan	... plans? Explain:
SCHIT13	Is drinking water accessible to boys and girls with disabilities?
SCHIT13plan	... plans? Explain:
SCHIT14	TRANSPORT: How do children with physical or sensory disabilities get to and from school? ... School bus that is adapted and accessible?
SCHIT14plan	... plans? Explain:
SCHIT15	...School bus is not adapted, but physical assistance is provided by other people?

SCHIT15plan	... plans? Explain:
SCHIT16	... Private vehicle or taxi
SCHIT16plan	... plans? Explain:
SCHIT17	... Other
SCHIT17plan	... plans? Explain:

1.6 Availability of Learning Assistive Materials and Equipment

SCHIT18	SPECIAL MATERIALS OR EQUIPMENT Does your school have a sufficient quantity of these materials for the students who need them? ... Braille books?
SCHIT18plan	... plans? Explain:
SCHIT19	... Audio books (child listens to CD, tape, etc.)?
SCHIT19plan	... plans? Explain:
SCHIT20	... Hearing loop (for people with hearing aids)?
SCHIT20plan	... plans? Explain:
SCHIT21	... Modified furniture?
SCHIT21plan	... plans? Explain:
SCHIT22	... Assistive devices for gripping (e.g. for pencils)?
SCHIT22plan	... plans? Explain:
SCHIT23	... Computer screen readers?
SCHIT23plan	... plans? Explain:
SCHIT24	... Large, easy-to-read signage?
SCHIT24plan	... plans? Explain:

Domain 2: Indicators of Teachers Education and Training and Class Student Composition

2.1 Class Teacher qualification profile

TEACH3	Class level taught 1 primary, 2 lower secondary, 3 upper secondary
TEACH4	Class name/code

TEACH5	Subject taught
TEACH6	Years teaching experience
TEACH7	Highest level education attained: 1 Lower Secondary, 2 Upper Secondary, 3 BA, 4 MA, 5 PhD
TEACH8	Pre-Service Teacher Training? 0 No, 1 Yes
TEACH9	In-Service Teacher Training? 0 No, 1 Yes
TEACH10	Training in teaching/counselling children with disabilities: 0 none, 1 few days, 2 few weeks, 3 months, 4 years:

2.2 Class student composition

CLASS1	Class size: Total number of students in the class
CLASS2	Criteria of class grouping by 1 Performance level, 2 Special needs, 3 Disabilities, 4 No criteria, 6 Other, explain
CLASS3	Describe the composition of the class by the criteria of grouping
CLASS4	Number of Boys
CLASS5	Number of Girls
CLASS6	Number of over-aged Boys relative to grade-level
CLASS7	Number of over-aged Girls relative to grade-level

Domain 3: Indicators of Student Learning Profile

3.1 Basic profile: Grade, Age, Sex, GPA

GRADE/YR	Grade level: (1=1st grade/1st year student, 2=2nd grade, 3=3rd grade, ...)
AGE	Age
SEX	Sex F=Female, M=Male
GPA	Grade point average

3.2 Functional difficulties: 1 No difficulty, 2 Little difficulty, 3 A lot of difficulty, 4 cannot do at all

FCF1	Function: Seeing	Difficulty seeing things close up or far away, like objects, faces or pictures. If the child wears glasses, does the child have difficulty seeing even when wearing the glasses?
FCF2	Hearing	Difficulty hearing sounds like peoples' voices or music. <i>If the child wears hearing aids, does the child have difficulty hearing even when using hearing aids?</i>
FCF3	Walking/ climbing	Difficulty walking or climbing stairs.
FCF4	Writing/ drawing	Difficulty using hands and fingers, such as picking up small objects, for example, a button or pencil, or opening and closing containers or bottles?
FCF5	Self-care	Difficulty putting on clothes, shoes, brushing teeth, etc.
FCF6	Understandable speech	Difficulty being understood when speaking (in the language that is most usual for the child)
FCF7	Understanding language used in school	Difficulty understanding the language of instruction in the school (as it may not be not the child's mother tongue)
FCF8	Learning in general	Difficulty learning in general <i>related to school learning activities</i>
FCF9	Learning specific tasks	Difficulties in specific learning areas within literacy or numeracy, e.g. dyslexia or dyscalculia. <i>Child learns most other things normally or above average.</i>
FCF10	Remembering	Difficulty in remembering a range of things related to school, play, tasks at home, etc.
FCF11	Controlling behaviour	Difficulty controlling his/her own behavior
FCF12	Focusing, attention	Difficulty focusing and concentrating
FCF13	Routine, accepting changes	Difficulty accepting changes
FCF14	Making Friends	Difficulty making friends, playing with other children

FCF15	Attendance	Difficulty maintaining regular class attendance
FCF16	Other difficulties unmentioned above	If the child has difficulties in areas that are not listed above, or if the child's functional status has changed, please write additional information in the text column=>
FCF16txt	Explain Other difficulties	explain other difficulties not mentioned above
FCF17	Worry, how often?	How often does the child seem: Very worried and anxious? <i>Rarely = never or just a few times/year</i>
FCF18	Sad, how often?	How often does the child seem: Very sad and depressed? <i>Rarely = never or just a few times/year</i>
FCA1	Need Personal assistance: Moving around the classroom	
FCA2	Moving around outside in the school grounds	
FCA3	Getting to and from school	
FCA4	Communication	
FCA5	Cognitive / learning activities	
FCA6	Self-care (eating, toileting)	
FCA7	Socialising with other children	
FCA8	Managing own behavior	
FCA9	If more, describe the kind of assistance required, in the text column:	

3.3 Assistive adaptations in teaching and learning

FCB1	Child sits close to the board or teacher
FCB2	Printed materials are enlarged
FCB3	Printed materials are provided in Braille
FCB4	Physical education (sport) activities and games are modified
FCB5	Modifying the lesson, or reducing the complexity of the lesson for the child
FCB6	Sign language interpreters are available for learning and other school activities
FCB7	Additional time provided for assessments (exams, tests)
FCB8	Assistance during assessments (e.g. note taker, sign language interpreter)
FCB9	Child receives support from a Teacher Aide
FCB10	School staff provide education to the child at home
FCB11	Other: (describe in text column)
FCB11txt	describe other difficulties
FCB12	Other adaptations? (if so, describe below)
FCB12txt	describe other adaptations
FCB13	Does the student have an Individual Education Plan (IEP)? 1= No, or 2= Not yet, but we plan to develop one, or 3=Yes, 9=Don't know
FCB14	Other comments on child's disability, or required supports required.
FCB15	What are the student's strengths/capabilities and interests?
FCB16	Recommendations and follow-up actions required, including any referrals required and who is responsible for the action.

3.4 Use of Assistive Devices

FCD1	Glasses/contact lenses? (Use: 0 No, 1 Yes)
FCD2	Hearing aid?
FCD3	Wheelchair?
FCD4	Crutches, walking stick or walking frame?
FCD5	Other mobility aid, please specify:
FCD6	Braille machine (child reads by touching the bumps on the machine or page)?

FCD7	Screen reading software (computer program reads the text out loud)?
FCD8	White cane (for low-vision or blind children)?
FCD9	Orthotic devices (to support legs, arms or spine)?
FCD10	Artificial limbs (prosthetics)?
FCD11	Modified furniture (e.g. special chair or desk; modified height of desk)?
FCD12	Communication boards (e.g. a board with pictures children point to and express themselves)
FCD13	Others :
FCD13txt	(Please specify in text column)
FCD14	No Assistive Device:(0=None, 1=use some device)
FCD15	Does the child receive any human assistance for walking or moving?
FCD16	If receive human assistance, describe in the text column:

3.5 Financial and material assistance

FA1	Receive financial support for tuition ? ... From Government?
FA1txt	Government agency:
FA2	... Religious/faith organization?
FA2txt	Religious Who?
FA3	... Private?
FA3txt	Privat who?
FA4	... Other? Who?
FA4txt	other who?
FA5	Received any material support or cash to buy shoes, exercise books, notebooks, school uniforms or other school supplies? ... From Government?
FA5txt	Which Government agency?
FA6	... Religious/faith organization? Who?
FA6txt	Religious agency:
FA7	... Private agency?
FA7txt	Private agency, who?

FA8	... Other agency?
FA8txt	other agency, who?

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Development of OpenEMIS Modules on Inclusive Education

As part of this project, the generic OpenEMIS toolkit has been revised to embed best practices for data collection and reporting on inclusive education.

The OpenEMIS initiative is designed to build on existing systems, and to move forward with practical solutions, one step at a time. In one country context, the system can be configured to automate the paper-based annual census, while in another country, the system can be configured to monitor the daily progress of individual students: their attendance, behaviour, and performance. OpenEMIS can be connected to existing data collection tools to provide data analytics to decision-makers for improved education policy monitoring. In other country contexts, where quality key performance indicators are already produced, the system can be used as a platform for reporting and monitoring on Education Sector Plan implementation.

There are high expectations that technology-enabled education management information systems (EMIS) will be the key to positive changes in the education system. In reality, a strong EMIS is only part of the solution. The new technology must be supported by new approaches to organizational behaviour and change management. Each level of the education system must be supported with capacity development to be able to effectively manage and use these new IT tools. Feedback loops need to ensure the data are in the hands of decision-makers at the right time and place.

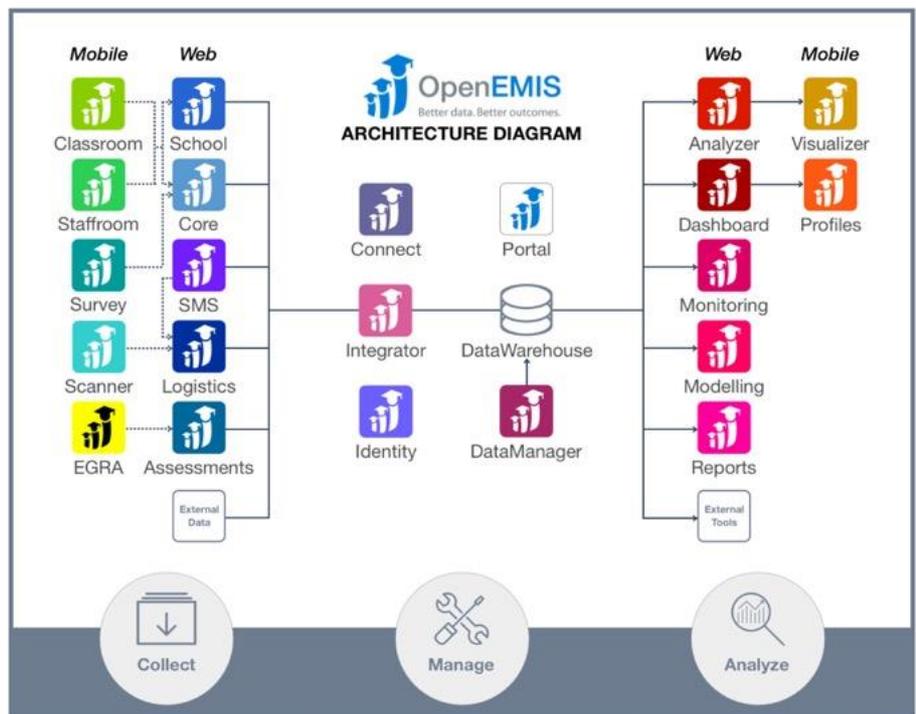
OpenEMIS has been designed as a loosely coupled, tightly integrated suite of applications, to be deployed to meet the needs of the Education Authority. Depending on strengths and weaknesses identified in the existing EMIS, a number of OpenEMIS applications can be collectively or independently integrated to strengthen specific aspects of the national EMIS implementation. The **OpenEMIS Analyzer** and **OpenEMIS Dashboard** applications can be used to extract data from an existing EMIS to generate a data dashboard with tables, graphs and maps. The **OpenEMIS Monitoring** application can be used to track progress against the goals and objectives of the national education development plan – drawing from indicators produced from the EMIS.

OpenEMIS can be adapted to country-specific contexts, requirements and available ICT infrastructure, for example:

- In countries where data collection is largely **paper-based**, OpenEMIS can facilitate the process of digitization of paper-based data collected from schools at different administrative levels, as well as facilitate and improve the processes of data integration, aggregation, reporting, visualization and analysis.
- In countries seeking to gradually **transition to electronic data collection** from education institutions, OpenEMIS can facilitate this process through a hybrid solution of offline and cloud-based data collection and management, while still benefiting from OpenEMIS data analytics.
- In countries with an **existing cloud-based EMIS** which collects detailed information from education institutions, individual OpenEMIS modules can be integrated with the existing EMIS to complement existing functionality. Solutions provided by OpenEMIS modules include

identification of out-of-school children by cross-checking enrolment records with other government databases, monitoring of children at risk of dropping out, administration and management functions for education institutions, human resources management including teacher professional development, automated generation of national and SDG 4 indicators, tracking of textbook deliveries, monitoring of inclusive education, and automated generation of dashboards and visualizations. Inclusion in the OpenEMIS network also has the added benefit of access to updates (new modules and innovations), which are made available for free.

- In countries with operational data collection systems, OpenEMIS technology can be used to improve data storage, archiving and retrieval through the deployment of standardized data warehouses and support to the automation of statistical indicators. The OpenEMIS toolkit also offers powerful features specifically designed to strengthen strategic planning and promote results-based management approaches in ministries, such as qualitative and quantitative monitoring of education strategic and operational plans.



The generic OpenEMIS disability data capture module has been adjusted for compliance with international frameworks on inclusive education and recommendations stemming from this study. It was notably adapted to better tracks level of impairment for special need students (e.g. vision, hearing, gross motor, fine motor, intellectual, communication, and behavior and socialization), with the ability to set tailored criteria so as to conduct risk assessments by student.

In addition, the Student, Teacher and School Infrastructure data collection modules were also enhanced to enable tracking of inclusive education indicators.

Revision of the OpenEMIS generic indicator framework was also initiated to include the following new dimensions:

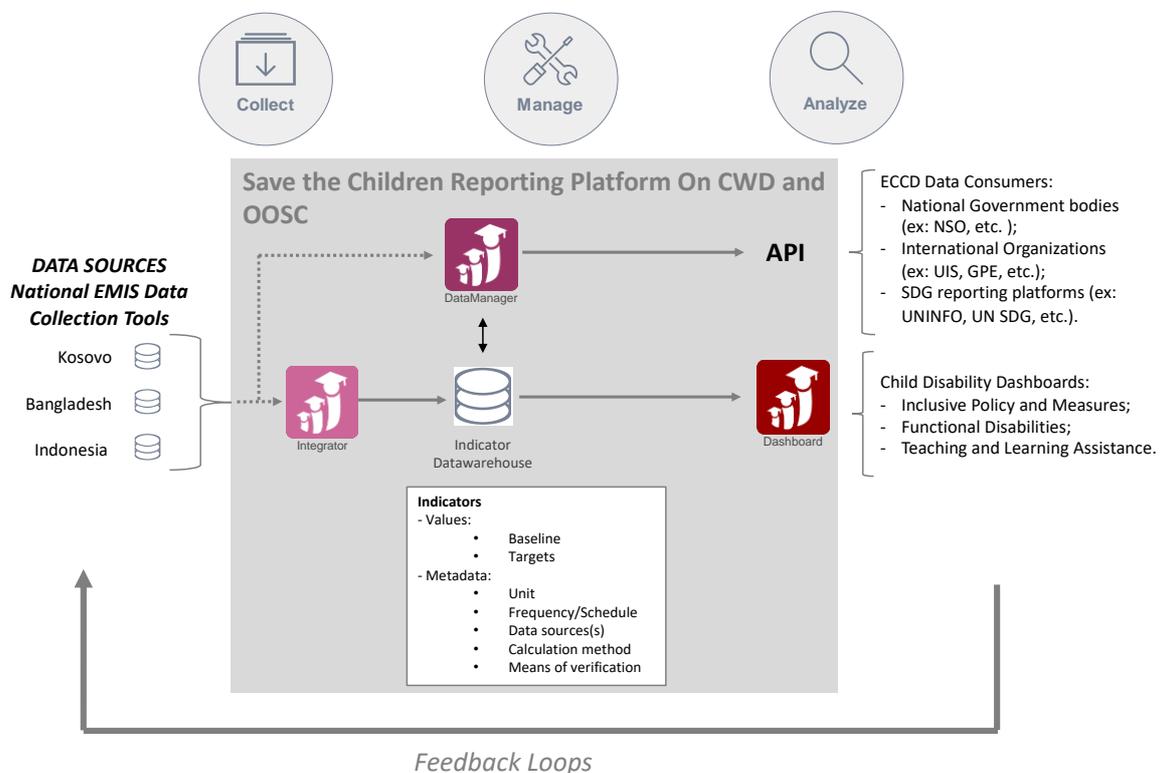
- Children with disabilities enrolled in school
- Dropouts with disability
- Students with disability and support needs (e.g. vision, hearing, gross motor, fine motor, intellectual, communication, and behavioral and social impairment)
- Accessibility of physical structures and materials (e.g. physical structure, institution facilities, toilets by designation, student toilets by types, general materials, special materials, and quality of special materials)
- Teachers trained on teaching children with disabilities
- Children with disabilities receiving special services

Details of the user interfaces are provided in Annex.

Data collection interfaces could not be used in the three target countries, as ministries were already using their own data collection tools. The inclusive education modules is however available for all countries using OpenEMIS, among which the following are identified as using the new features: Belize, Jordan, Uzbekistan, Barbados.

Country Dashboards

Based on School EMIS and Household Survey Interview Questionnaires datasets, indicators were calculated for the three countries and stored into a data warehouse.



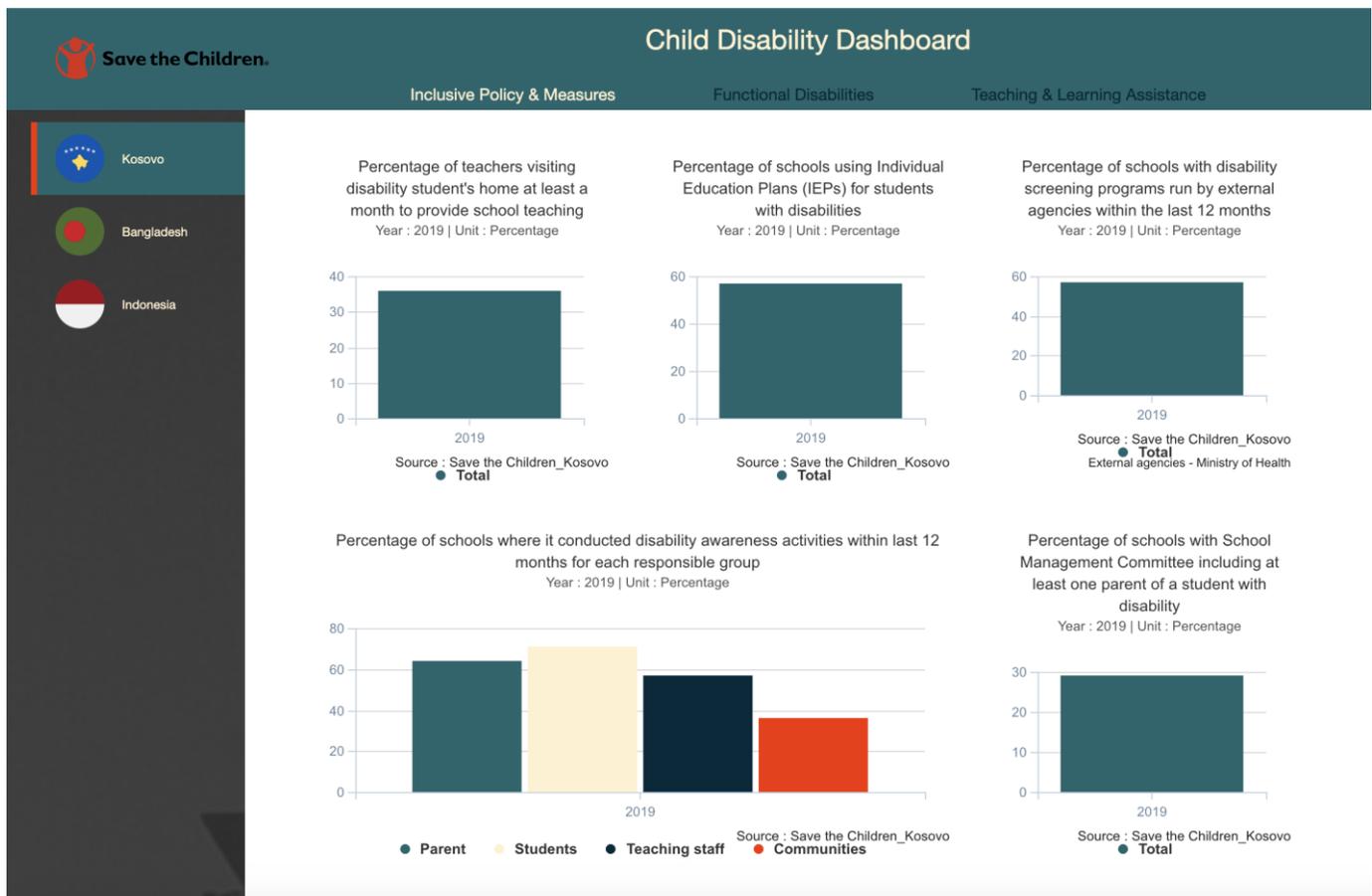
Following is the URL for OpenEMIS Portal Save the Children: <https://se-scs.openemis.org/>

One OpenEMIS online interactive dashboard was produced for each country, displaying indicators classified under three categories:

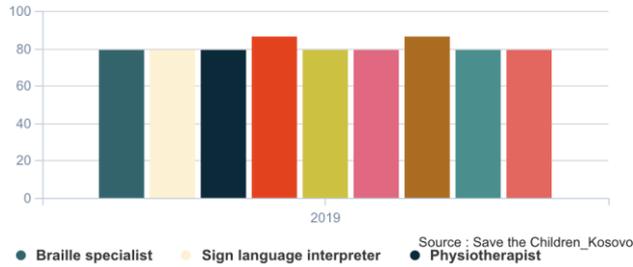
- Inclusive Policy and Measures
- Functionnal Disabilities
- Teaching and Learning Assisstance

The dashboards are available online at the below URL:

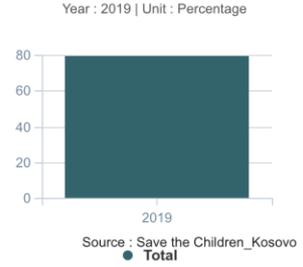
https://se-scs.openemis.org/dashboard/user/admin/kosovo_1/index.html



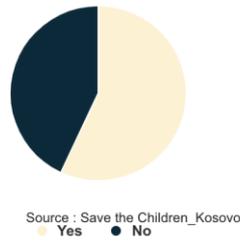
Percentage of schools where disability specialists are available at least once a term
Year : 2019 | Unit : Percentage



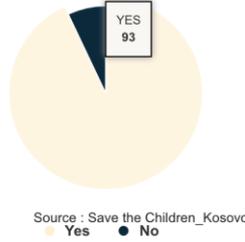
Percentage of teachers meeting with parents to discuss options for attending school
Year : 2019 | Unit : Percentage



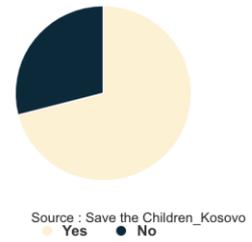
Availability of road for disability students with wheelchair
Year : 2019 | Unit : Percentage



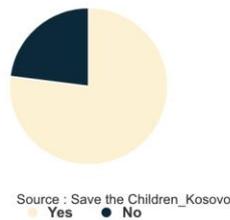
Availability of steps leading up to the main entrance
Year : 2019 | Unit : Percentage



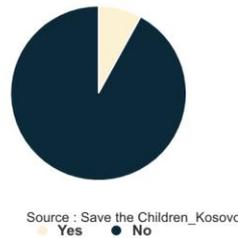
Availability of proper ramp usable by a person in a wheelchair
Year : 2019 | Unit : Percentage



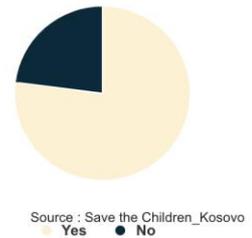
Whether the main entrance to the school wide enough for a person in a wheel chair to enter
Year : 2019 | Unit : Percentage



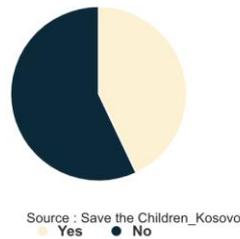
Whether the first aid/sick room accessible to students with disabilities
Year : 2019 | Unit : Percentage



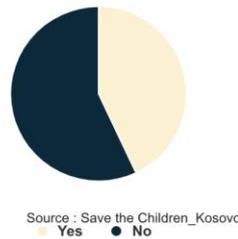
Whether the main assembly area accessible to students with disabilities
Year : 2019 | Unit : Percentage



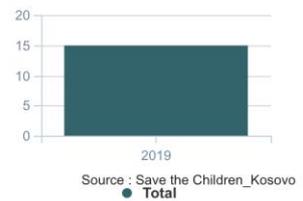
Whether the library is accessible to students with disabilities
Year : 2019 | Unit : Percentage



Whether recreational areas are accessible to students with disabilities
Year : 2019 | Unit : Percentage

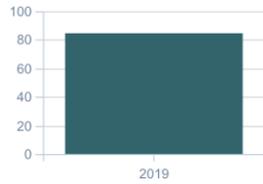


Percentage of schools whose children with seeing and hearing difficulties able to navigate independently and safely around school
Year : 2019 | Unit : Percentage



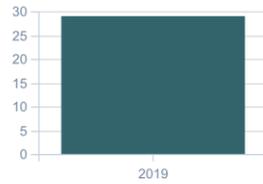


Percentage of schools having policy and procedures considering for students and staff with disabilities
Year : 2019 | Unit : Percentage



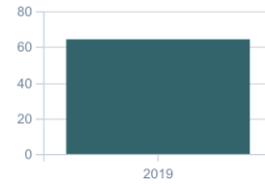
Source : Save the Children_Kosovo
● Total

Percentage of schools with accessible hygiene facilities in ramp access (e.g. Hand rails)
Year : 2019 | Unit : Percentage



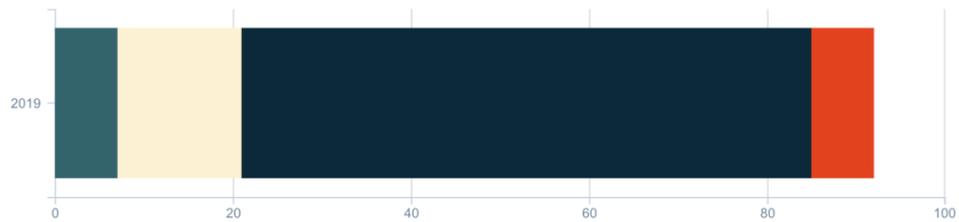
Source : Save the Children_Kosovo
● Total

Percentage of schools with accessible hygiene facilities in hand washing (e.g. Taps and soaps)
Year : 2019 | Unit : Percentage



Source : Save the Children_Kosovo
● Total

Percentage of transportations available for children with disabilities by types of assistance
Year : 2019 | Unit : Percentage



● School bus that is adapted and accessible

Source : Save the Children_Kosovo

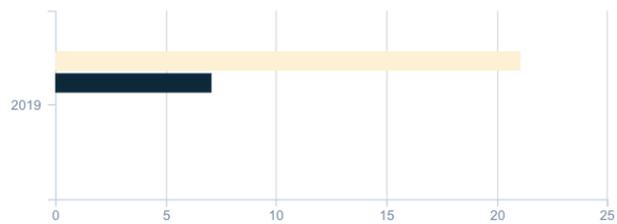


Percentage of schools with accessible hygiene facilities in drinking water
Year : 2019 | Unit : Percentage



Source : Save the Children_Kosovo
● Total

Percentage of schools with special equipments
Year : 2019 | Unit : Percentage



● Assistive devices for gripping ● Audio books ● Braille books

Source : Save the Children_Kosovo



Child Disability Dashboard

Inclusive Policy & Measures

Functional Disabilities

Teaching & Learning Assistance



Kosovo

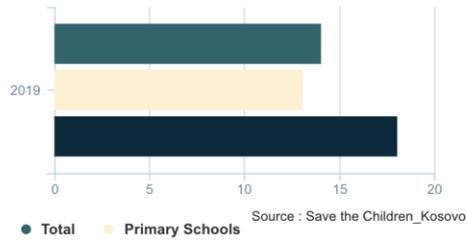


Bangladesh

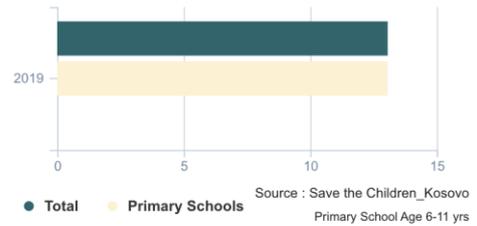


Indonesia

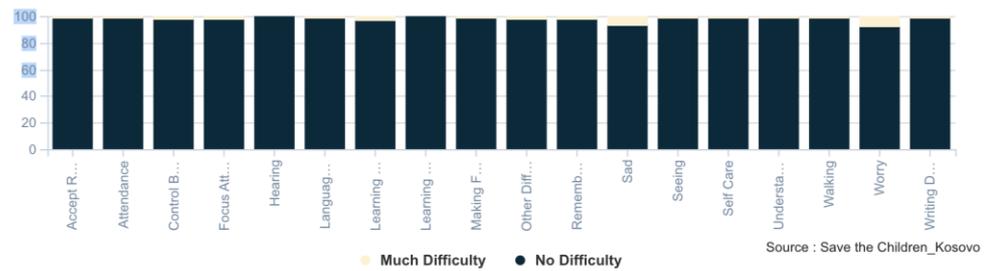
Percentage of Students with Functional Disabilities ("a lot of difficulties" or "cannot do at all")
Year : 2019 | Unit : Percentage



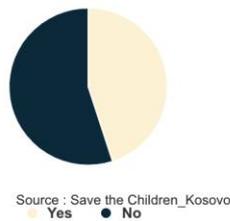
Percentage of Students in Primary School Age with Functional Disabilities
Year : 2019 | Unit : Percentage



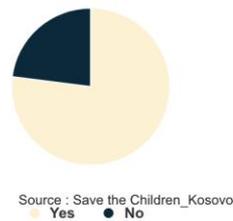
Severity of Difficulties
Year : 2019 | Unit : Percentage



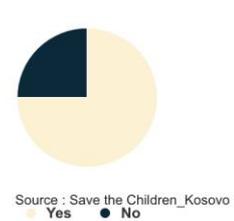
Availability of Assistance for Students with Functional Disability Sitting Close to the Board or Teacher
Year : 2019 | Unit : Percentage



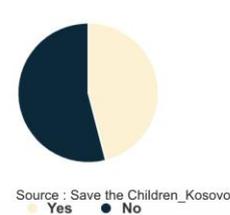
Availability of Assistance for Students with Functional Disability whose Printed Materials are Enlarged
Year : 2019 | Unit : Percentage



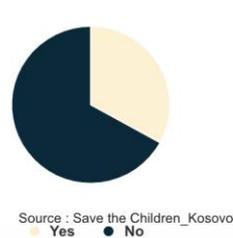
Availability of Assistance for Students with Functional Disability whose Physical Education (Sport) Activities and Games are Modified
Year : 2019 | Unit : Percentage



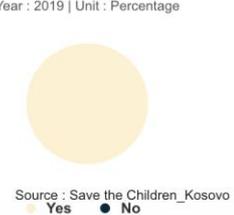
Availability of Assistance for Students with Functional Disability who Modified the Lesson or Reduced Complexity of Lesson
Year : 2019 | Unit : Percentage



Availability of Assistance for Students with Functional Disability Receiving Education at Home from School Staff
Year : 2019 | Unit : Percentage



Availability of Assistance for Students with Functional Disability who goes to Schools where Sign Language Interpreters are available for Learning and other School Activities
Year : 2019 | Unit : Percentage

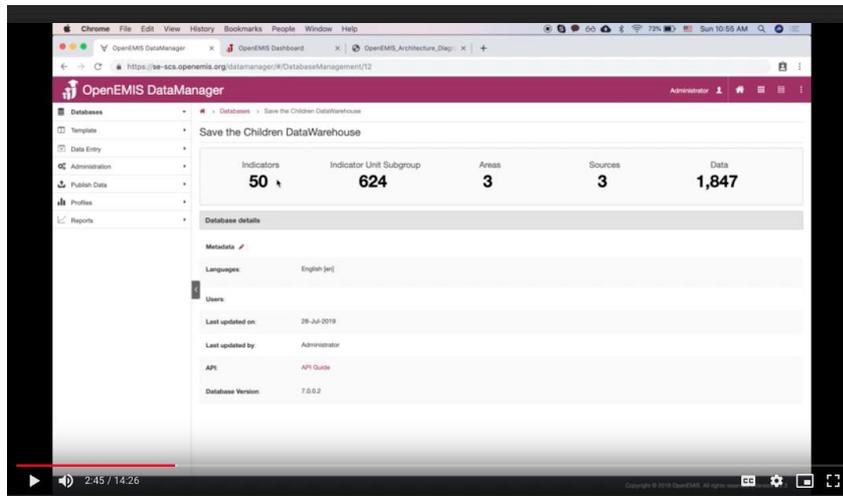




A set of online articles and video tutorials were also developed to allow Save the Children to further edit and improve the dashboards.

Online videos:

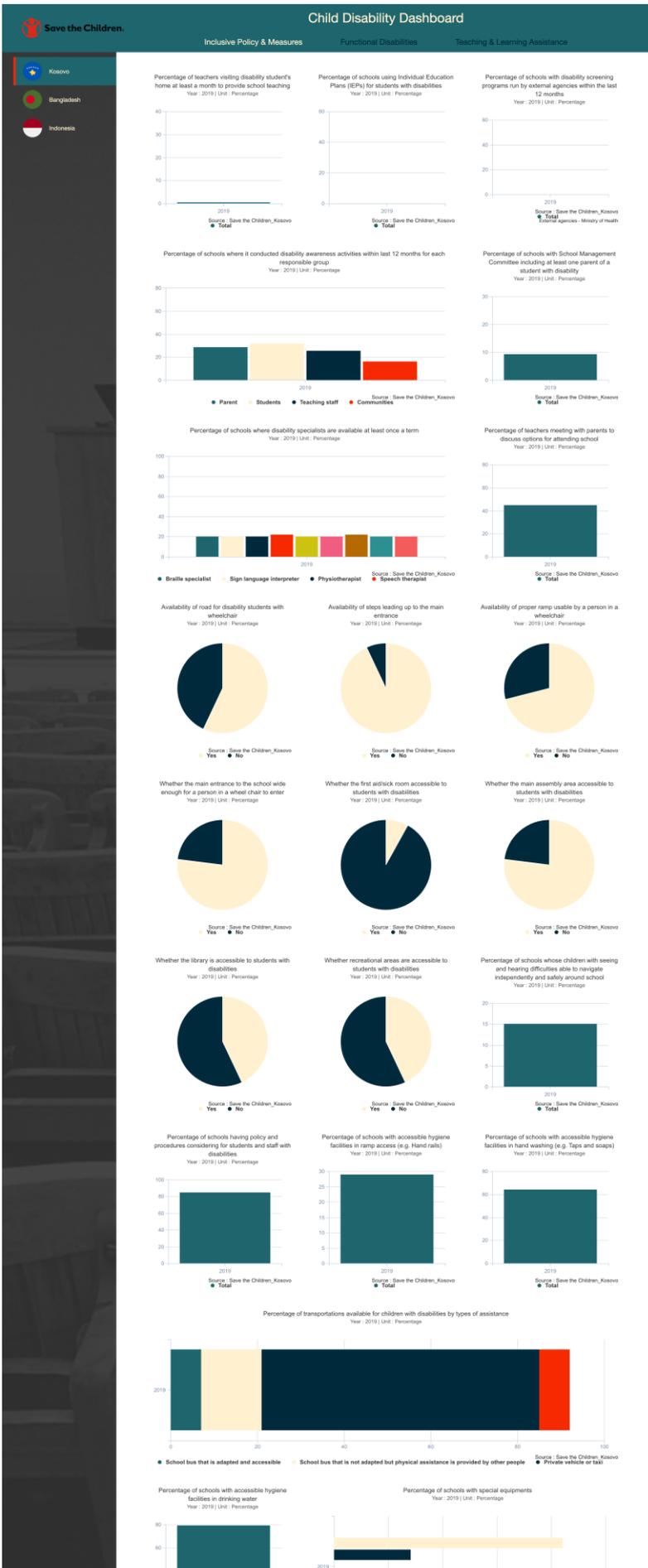
- Managing Indicator datasets in the OpenEMIS datawarehouse:
 - o <https://drive.google.com/drive/folders/1LbiCy73vpgzvwucjX-UvhGFmxI5BE1Fo?usp=sharing>
- Managing indicator visualizations in OpenEMIS Dashboards:
 - o <https://drive.google.com/drive/folders/1LbiCy73vpgzvwucjX-UvhGFmxI5BE1Fo?usp=sharing>

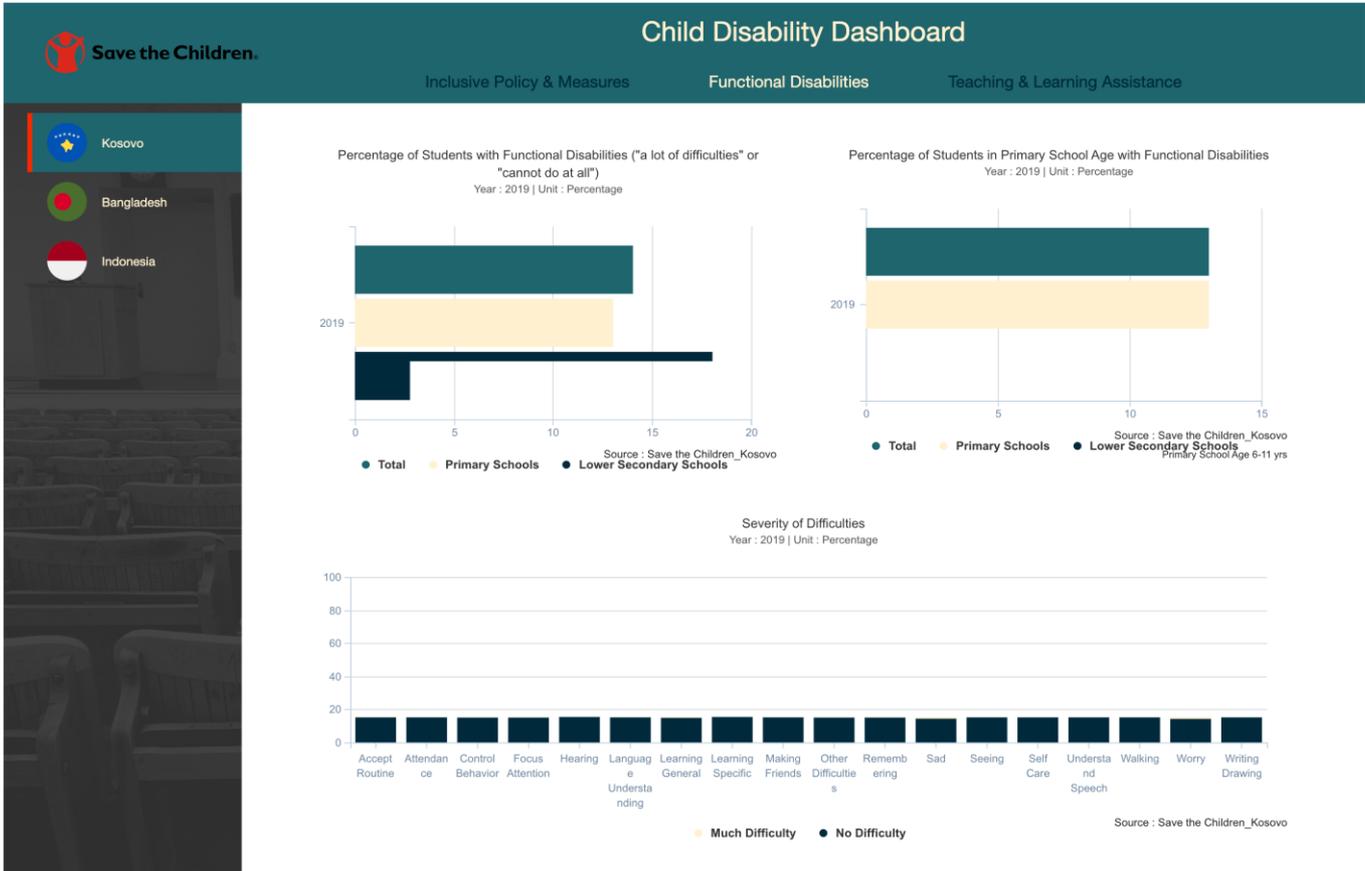


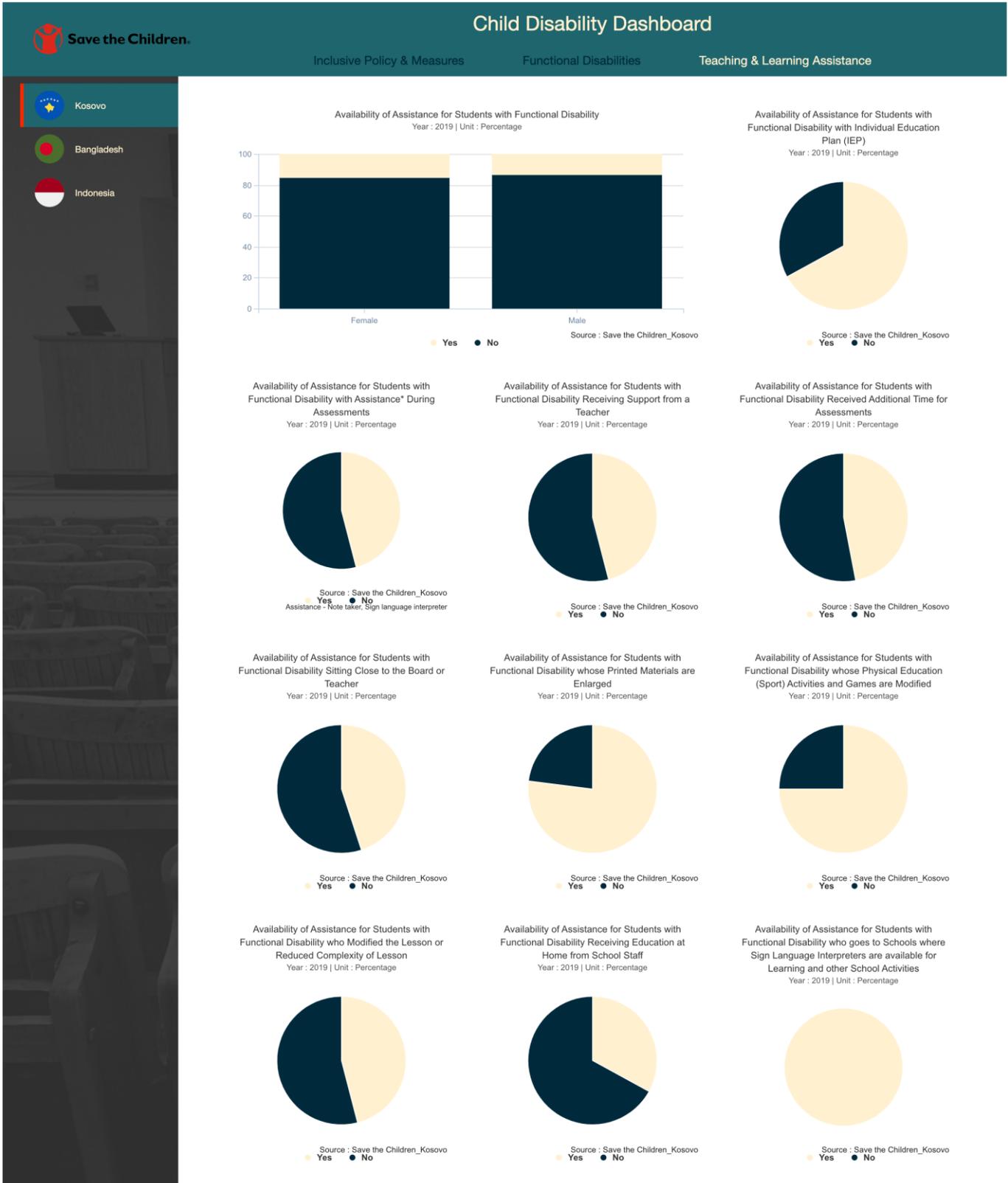
OpenEMIS Knowledge Base:

- Using DataManager to handle indicator datasets:
 - o <https://support.openemis.org/datamanager/en/home-en/>
- Using OpenEMIS Dashboard to manage indicator visualizations:
 - o <https://support.openemis.org/dashboard/en/home-en/>

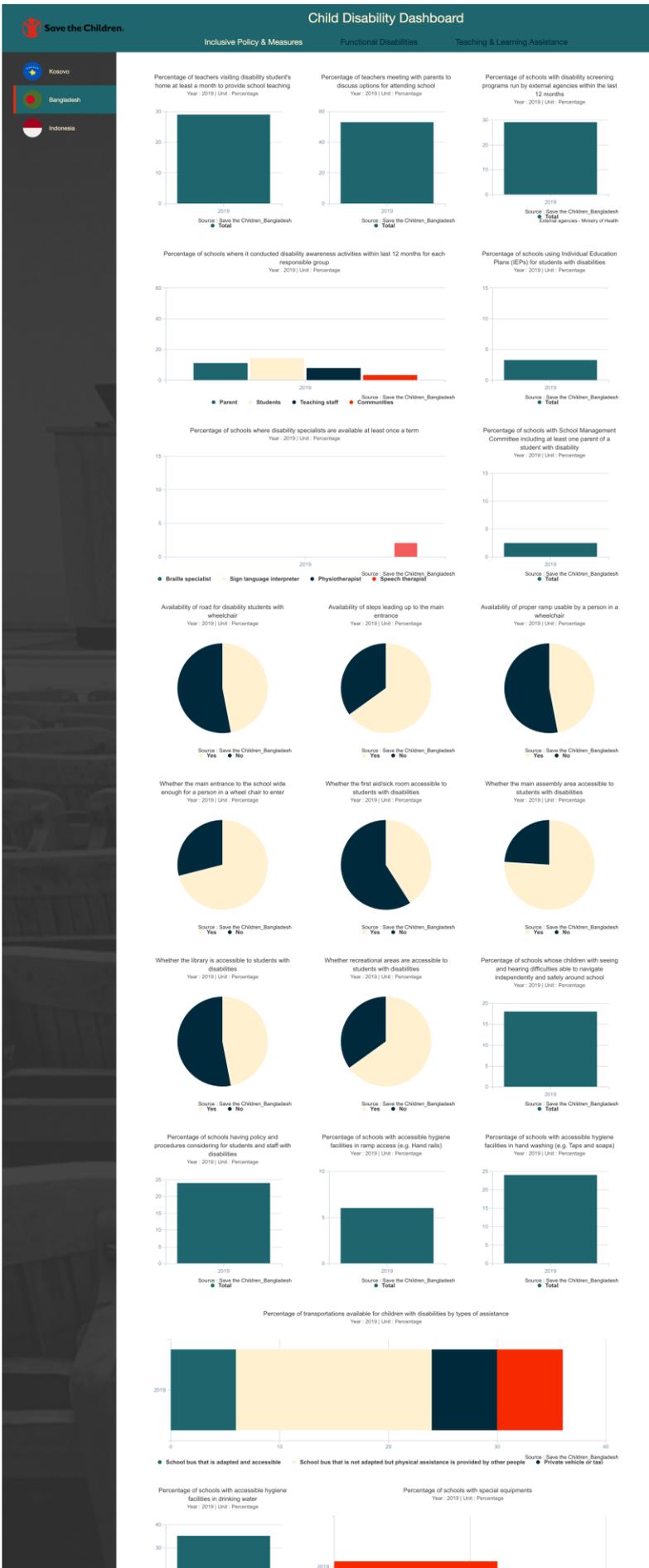
Kosovo

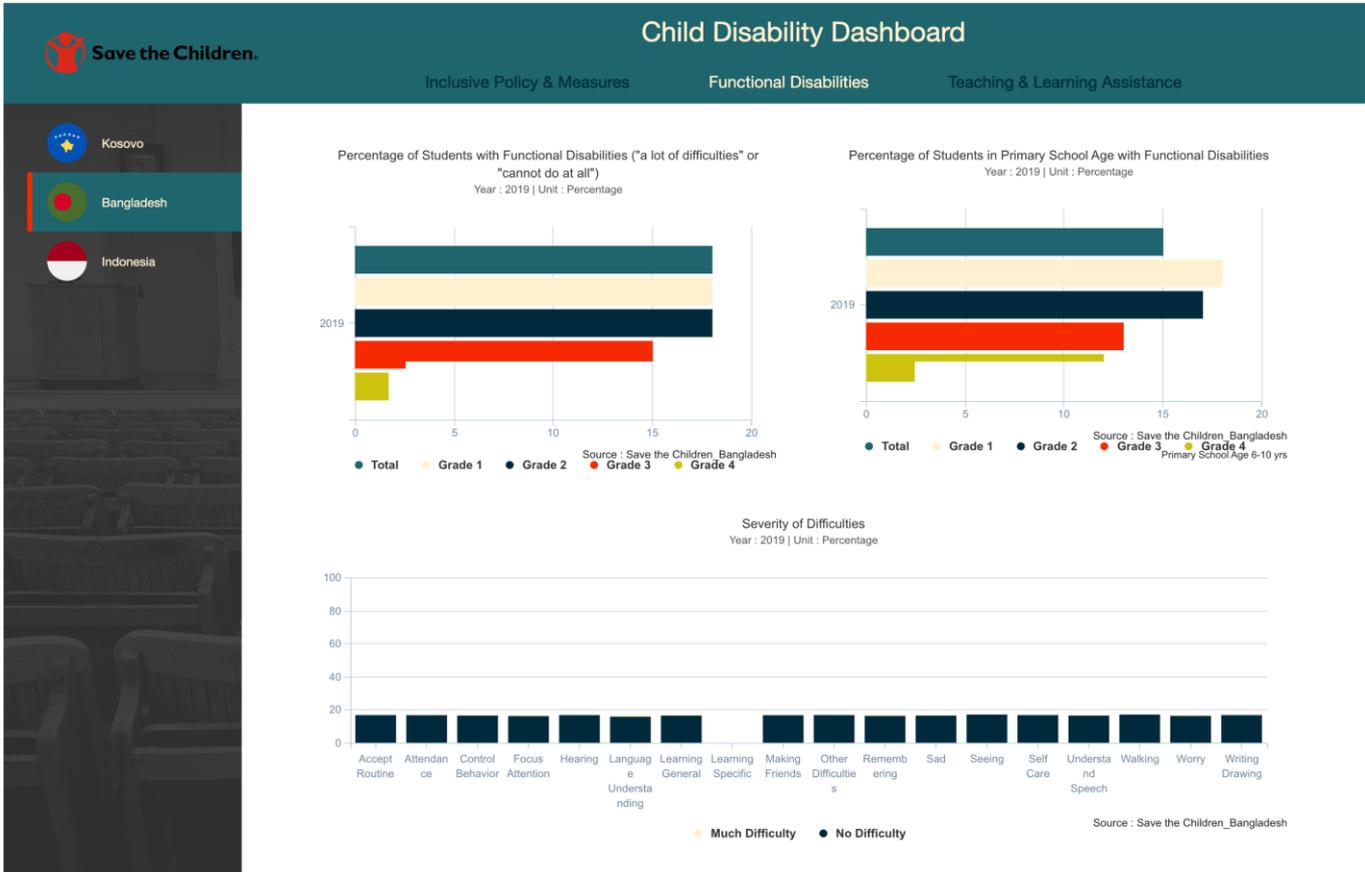


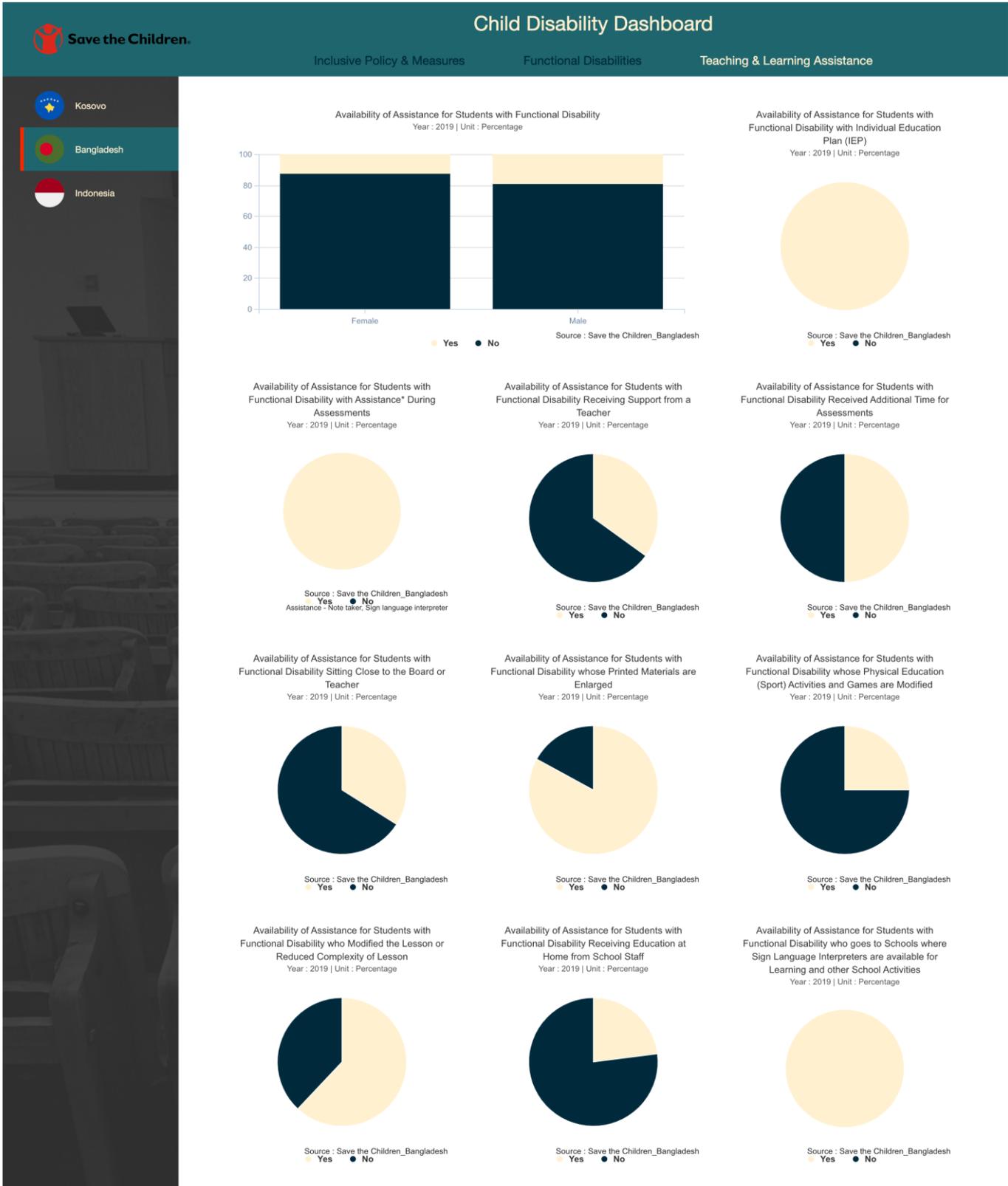




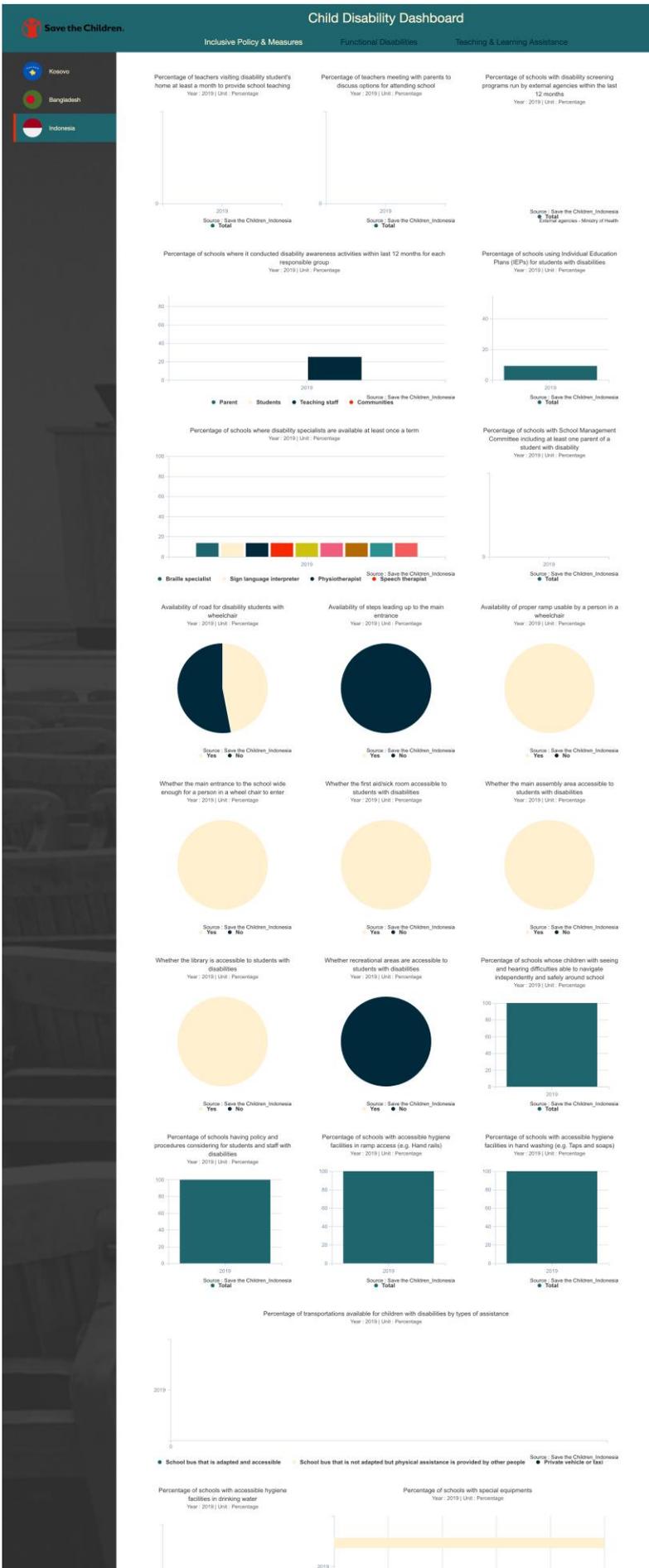
Bangladesh

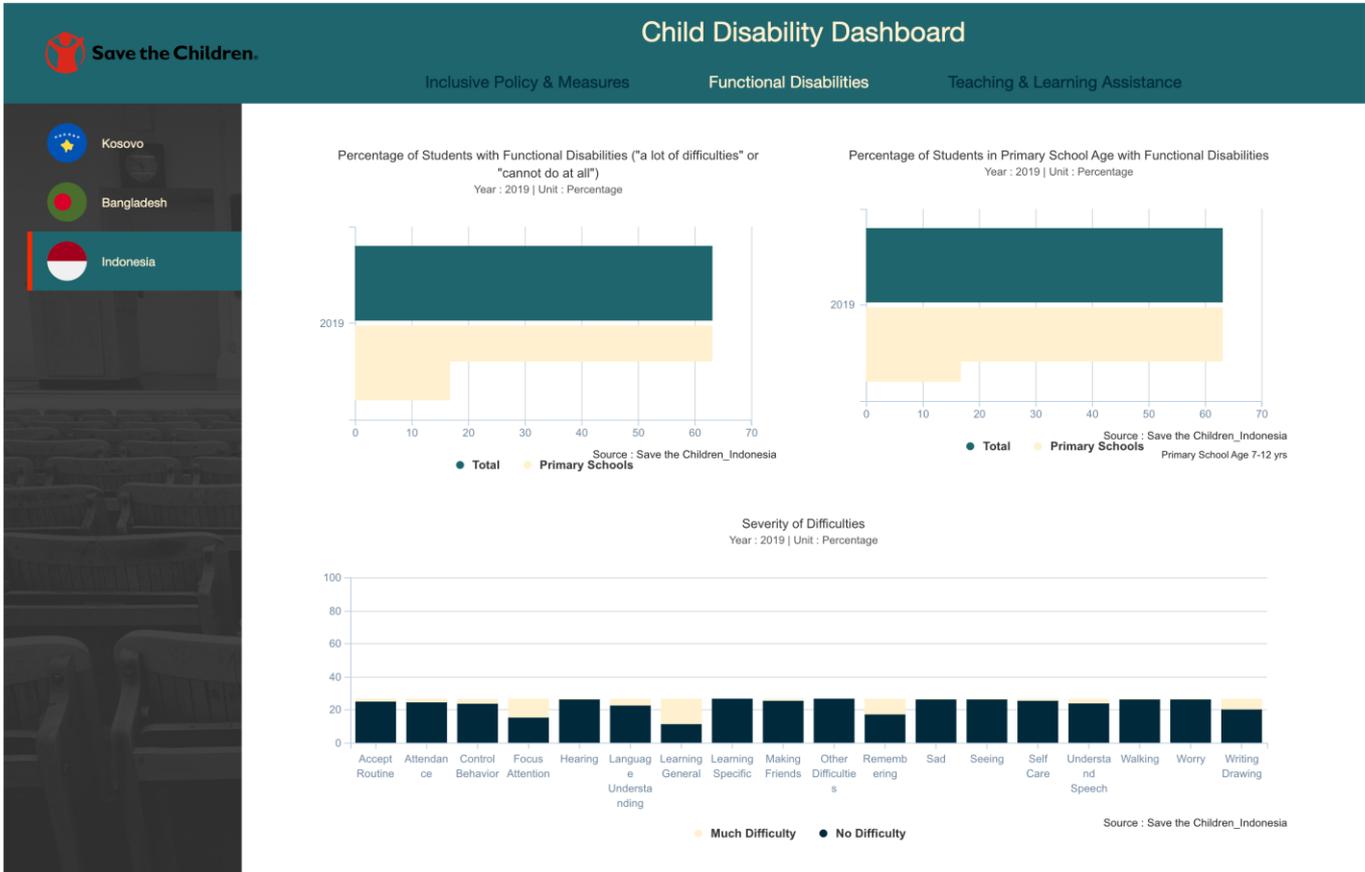






Indonesia:





Child Disability Dashboard

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Save the Children.

Kosovo

Bangladesh

Indonesia

