Every year millions of children around the world miss out on their right to a quality education due to displacement by climate change impacts, and to both intensive and extensive impacts of natural and man-made hazards. Hazard impacts on educational inequities and contribution to the global learning crisis are largely hidden. The Comprehensive Safe School (CSS) Assessment Suite developed by partners in the Global Alliance for Disaster Risk Reduction in the Education Sector, is a series of linked tools providing a holistic approach to enhance student, education and government staff awareness about school safety and to identify and reduce the negative impacts of recurring and intensifying disasters. The Suite provides a crowd-sourced smart phone "CSS First Step" app for students and communities, a full "CSS School Safety Self-Assessment Survey" tablet-based app for school level implementation, and the "VISUS CSS" "Lite" and “Pro” tablet-based forms for on-site inspection of schools flagged for facilities problems, to be conducted by construction/engineering experts. Two of these tools have recently been piloted in Lao PDR.
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I. WHAT IS THE CSS FRAMEWORK

The Comprehensive School Safety Framework (CSS), is the foundation for the collective work of the Global Alliance for Disaster Risk Reduction and Resilience in the Education Sector (GADRRRES), and the common approach of the Worldwide Initiative for School Safety (WISS).

CSS Framework aims to support the prevention of death and injury in schools, the assurance of educational continuity, the prevention of loss of education sector investments, and the development of a culture of safety. At the heart of a holistic approach is multi-hazard, child centered assessment for both awareness and education, as well as for planning and decision making.

The enabling framework emphasizes alignment between education sector and disaster management policies and plans, and the work is organized around three overlapping pillars: Safer School Facilities, School Disaster Management, and Risk Reduction and Resilience Education (Figure 1).

II. WHAT ARE THE CSS TARGETS & INDICATORS

GADRRRES has developed a template of targets and indicators to monitor and encourage progress towards school safety. Those draft Targets and Indicators for Comprehensive School Safety (CSS)
are the product of global consultative processes with subject matter experts\(^1\) in the various aspects of CSS. The Targets and Indicators are intended to guide policy and program development and stimulate monitoring and evaluation of progress towards risk reduction and resilience in the education sector.

A template of targets and indicators is expected to support national and sub-national education authorities to incorporate risk reduction into education sector strategies and plans, and to achieve and measure progress towards these goals.

\[
\text{Goals of Comprehensive School Safety:}
\]

- To protect learners and education workers from death, injury, and harm in schools
- To plan for educational continuity in the face of all expected hazards and threats
- To safeguard education sector investments
- To strengthen risk reduction and resilience through education

### III. WHAT NEED IS THE CSS ASSESSMENT SUITE DESIGNED TO MEET?

The CSS Assessment Suite tools are designed for:
- Salience (relevant to comprehensive school safety)
- Scalability (designed for universal application)
- Sustainability (with local capacity)
- Effectiveness (outputs usable for action-planning)
- Efficiency (and affordability)
- Empowerment (rather than extractive)

The tools use a triaged assessment approach with three main tools all of which can be prepopulated with existing school location data, and linked to Education Management Information Systems data as needed. Web-based portal permissions are intended to be managed by education authorities after initial pilot.

### IV. WHAT ARE THE FIRST THREE TOOLS?

1. CSS First Steps

CSS First Step is an Android and IOS smart-phone App for crowd-sourcing available data to support local interest and advocacy from students and community-members.

Users may download the app from Google Play or the Apple App Store. After downloading, the user registers and identifies the school to be assessed and answers about 15 survey questions covering: hazards exposure, learning facilities, school disaster management, and risk reduction and resilience education.

\(^1\) IGOs, INGOs, Government, Academic/Research, Private Sector & Others

Users can add photos of hazards, damage, and activities for risk reduction and response preparedness.

When there is Internet connection and the data is posted to the portal managed by the sponsor, the user receives immediate feedback, and an e-mail with presentation of the survey results along with recommendations for further inquiry and safety steps. Survey data can be shared automatically with education authorities.

Administrator can provide permissions to access to the Web-based portal where data may be examined and queried for programming, planning and response.

\[Figure 2: CSS First Steps\]
2. CSS School Self-Assessment Survey

The CSS Self-Assessment is a tool to enable district education and disaster management focal point at school level to assess by themselves. This is a tablet-based Android and iOS App for use by the school management committee.

Where few tablets are available, it may be used via the web portal or a visiting school advisor or monitor. A paper-based tool can be used in advance for preparation.

Users may download the App from Google Play or the Apple App Store. The user selects their language of preference and works with team to conducting the onsite assessment reporting on: School Demographics; Hazards and Risks Profile; Safe School Facilities and Access; School Disaster Management; and Risk Reduction and Resilience Education (Figure 3).

![CSS Self-Assessment domains](image)

Users are guided to provide photos of hazards, damage, and activities for risk reduction and response-preparedness. When there is Internet connection, data is posted to the Web portal. Algorithms are applied to determine safety ratings and recommendations.

Users may also email back reports with summary of their responses, preliminary safety ratings, and a summary of recommended for action. Authorized users may download School Reports as well as aggregated reports summarizing results by District or Province (Figure 4). Users with advance permissions may also access and query the raw school safety data for in-depth analysis and decision support.
3. VISUS CSS Pro and VISUS CSS Lite

Visual Inspection for defining the Safety Upgrading Strategies- VISUS is a tablet-based application for implementation of light technical visual assessment of school facilities by trained construction trades enumerators, available on pdf format.

‘VISUS is a methodology developed for the assessment of school facilities safety, which has been accommodated to fulfil the assessment requirements of the CSS framework, mainly but not restricted to pillar one. VISUS is based on a triage approach and exploiting expert judgment capacity in order to define strategies for knowledge transfer and capacity building, and for providing critical information to administrators and decision-makers of the education sector.’

So far the tool, focus on the pillar 1, has been adapted and tested in Lao PDR and Indonesia, but only Lao PDR has benefitted of a multi hazard VISUS tool. This tool is for assessment of existing buildings/facilities.

The user works with on-site team to conducting the onsite assessment of: hazards exposure; location in relation to hazards; school grounds; buildings – external; buildings – internal; and functionality. Users are guided to provide photos of hazards and risks identified in this process (Figure 5).

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<table>
<thead>
<tr>
<th>SITE</th>
<th>STRUCTURAL RESPONSE</th>
<th>NON-STRUCTURAL ELEMENTS</th>
<th>FUNCTIONALITY</th>
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</thead>
<tbody>
<tr>
<td>Water, Wind, Earth, Fire,</td>
<td>Foundation, Frame,</td>
<td>Doors / Windows, Stairs</td>
<td></td>
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<tr>
<td>Impacts</td>
<td>Columns / Beams,</td>
<td>/ Ceilings, HVAC,</td>
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<td>Site suitability and</td>
<td>Walls, Roof,</td>
<td>Equipment, Furnishing,</td>
<td></td>
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<tr>
<td>mitigation</td>
<td>Connections</td>
<td>Haz materials,</td>
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<td><strong>GLOBAL</strong></td>
<td>falling, overturning,</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Sliding, floating</td>
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<td>flammable destruction</td>
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<tr>
<td></td>
<td><strong>LOCAL</strong></td>
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</tbody>
</table>

Figure 5: VISUS Assessment domains

SAFE LEARNING FACILITIES

1. VISUAL INSPECTION FOR DEFINING
2. SAFETY UPGRADE STRATEGIES
V. HOW CAN COUNTRIES GO ABOUT ADAPTING AND ADOPTING THE TOOLS?

The CSS Assessment Suite tools are designed to support school-based risk assessment and planning, educational continuity planning, and development of response skills (such as standard operating procedures, incident command systems in case of hazards) and response provisions (such as temporary and locally built learning facilities) – all of which form the School Disaster Risk Management Plan. The tool is adaptable to different context of any countries. So far, Laos and Indonesia have field tested the CSS Assessment Suite. Questionnaires have been revised and adapted by the CSS local technical working group to fit the cultural, social, vulnerability of each country. As an example, VISUS was contextualised multi-hazard for Laos and only on earthquake for Indonesia.

Adoption and sustainability of the tool is crucial by having the CSS local technical working group as the forefront of all discussion around adaptation of the tool in the specific context of the country. Moreover, MoE Education Management Information Systems (EMIS) needs to invest time as strategic-planning with senior staff, provincial level management, INGOs staff and other key partner senior management staff in data use. This includes the opportunity to raise questions, mine and analyse data for decision-making purposes.

The sustainability of such high technology process requires IT systems in place with infrastructure and capacities in house. Some country might face availability of IT equipment limited in many district offices. Poor network connections in some district capitals are also a challenge for post-collection synchronisation of data on the central server. The limited infrastructure often adds up to low technical skills of government staff at this level, for which the use of even basic IT functionalities can be challenging. Selection of staff and capacity-building should therefore be at the very core of the implementation strategy.

VI. WHAT IS THE ROLE OF THE NATIONAL TECHNICAL WORKING GROUP?

In Lao the CSS technical working group composed chaired by the Ministry of Education and Sports (MoES) was composed of various government key stakeholders - Ministry of Education and Sports (MoES) division of Statistic, Education Management and Information System (EMIS), MoES – construction division, Disaster Management and Climate Change division under the MoES cabinet, Department of Disaster Management and Climate Change-Department of Disaster Management and Climate Change (DDMCC)/ Ministry Of Natural Resources and Environment (MONRE), UNESCO Lao, University of science, UNICEF, Plan and World Vision- as well as expert associated with the CSS Assessment Suite from the Global Alliance for Disaster Risk Reduction and Resilience in the Education Sector. The intention of the working group was to develop a sense of ownership, and seek inputs for adaptation and quality use of the tools in the Lao PDR.
The CSS technical Working Group played a great role throughout the project in:

- Identifying sources and providing hazards assessment information (hazard maps, topographical maps, and similar).
- Identifying sources and providing risk information regarding construction typologies and typical construction weaknesses.
- Reviewing and providing inputs into development, adaptation, and translation of assessment forms.
- Providing guidance for the implementation at field level and the next steps for endorsement
- Approving the tools
- Defining safe school priorities and strategy for the country

VII. WHAT HAS BEEN THE INITIAL EXPERIENCE AND LESSONS LEARNED IN LAO??

During the pilot test of the tool in Lao PDR in 2015, the MoES recognized the relevance, the efficiency of the tool, firstly because it is “faster, easier and more convenient” and it can support the decision making process at district and school level.

MoES is committed to become a safe school leader, the CSS Self-Assessment is available in Lao and English language will support the scale up of the data collection using technology.

MoES needs now to start the school data collection broadly in the country and linked those data with the existing Education Management and Information System (EMIS) for better analysis and budget allocation toward safe school.

Regarding VISUS, The VISUS CSS technical assessment of school facilities was piloted using a paper version of the tool in one province of Lao PDR. The tool has been substantially modified for the Lao context and reviewed by the Technical Working Group. The success of VISUS needs form the very beginning a full engagement engineers from the Ministry of Public Works as well as engineers student from University to make sure the knowledge and practice are rooted in the country and improved over the years. The pilot test in Lao PDR showed that the tool needs to be simplified and easier to use for local engineer. For all those reasons the migration of this tool to a digital version for the Lao PDR is considered premature.

VIII. HOW CAN THIS BE LINKED TO OTHER EDUCATION SECTOR TOOLS AND EMIS?

Data resulting from the CSS Assessment Suite tools are useful on their own. They can be even more useful when they can be overlaid or cross-analysed with other existing datasets, for example from the national census (population of the village, demographic structure, literacy rate, poverty

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3 Quotation from District Education, Bolikhamxay Province, Lao PDR
incidence, presence of other basic infrastructures, etc.). In this perspective, it is important that data are collected and stored in a format and using standards that allow compatibility with other national datasets. In order to do so, particular attention should be paid on the coding systems for schools and administrative levels, using the same unique identifiers as other national databases. Currently in Lao PDR, the Ministry of Education and Sports utilises different systems for coding village locations: one from Lao Info and one from DECIDE info. The DECIDE info system is the most accurate and up to date, since it was revised through a nationwide GPS data collection campaign as part of the 2011-2012 agricultural census. It is currently being updated based on the 2015 population and housing census and will be made available in 2016. If harmonised with DECIDE info, cross-sectoral analysis will be rendered easily, and integration of VISUS data directly in the DECIDE info Platform made possible for wider dissemination and outreach.

For the coding of schools, it is highly recommended to use the existing system used by MoES in their EMIS system.

As per now, Statistic Bureau in Lao PDR is updating the EMIS to capture, through specific indicators, safe school aspect for nationwide data collection.
REFERENCES:

a) CSS Framework:


b) CSS Targets & Indicators:


c) CSS Assessment Suite Backgrounder


GADERES (2016): Comprehensive School Safety Assessment Suite


UNESCO, Undine University (2015): Lao pilot project, VISUS multi-hazard training, 46 pages

d) ASSI Lao Case Study

Save the Children, Plan, World Vision, Mercy Malaysia (2015): ASEAN Safe Schools Initiative: A Compilation of Case Studies; Lao PDR showcase ASSI’s good practices and key learnings

e) ASSI Lao - Lessons Learned

Save the Children (2015): ASSI refection workshop in Lao PDR

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Geographer specialized in disaster risk management, with extensive experience in disaster risk management in both private sector company that INGOs. She has several experience working with Ministry of Education to integrate DRR in Education system in high vulnerable country. Prior joining SCI, she was working in Ethiopia and Haiti in Humanitarian responses as well as disaster risk reduction. She has the opportunity to run several DRR Education projects in which one was successful to have developed school based DRR tool for teachers approved and endorses by NDMO. Tools widely used finally in the country.
She is currently leading the dissemination of the CSS Self-Assessment in Lao PDR with the Ministry of Education Technical working group to ensure the questions are context based, the key Education staff are trained to collect data; as well as supporting the review of Education Management and Information System in Lao PDR to reflect the safe school priorities.

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Dr. Petal is Senior Advisor for Education and Risk Reduction for Save the Children. She holds a Ph.D. in urban planning from UCLA. Her thesis was on the evidence base for risk reduction education, and minor in education policy for full inclusion. Her Masters in Social Work is from the University of Houston in community organization, planning and administration. Marla's interests are in comprehensive school safety, evidence-based action-oriented key messaging, scalability, sustainability, social and behavior change communications, games/music for change, and participatory action research for risk reduction and resilience. She has worked in policy, programming, educational materials development, training and research in education sector and community-based risk reduction, for more than fifteen years. She has led large-scale urban risk education programs in Turkey and Central Asia and provides technical
support in Asia and the Pacific. Marla has researched the causes of deaths and injuries in urban earthquakes, household risk reduction, and the effectiveness of community-wide disaster drills. Her online self-study courses in school disaster management and family and household preparedness have reached 125,000 school-teachers and administrators (1.5 m. lessons and 75,000 course completions).

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Director of the Resilience Institute at Western Washington University. She has worked with community-based organizations in Turkey, India, Nepal and Central Asia to develop and implement disaster risk reduction education material. Specifically, she coordinated a project with the American Red Cross and the Disaster Preparedness Education Program to develop local non-structural mitigation guidelines for home and office seismic risk reduction in Turkey. This work involved participatory action research with Turkish engineers, entrepreneurs, handymen and residents and resulted in a training program for residents and local trade school students. In Turkey, she also coordinated the development of public education material to teach basic principles of seismic resistant construction. Working with academic and governmental representatives in Central Asia, Dr. Paci-Green also helped coordinate the development of guidelines for seismic resistant adobe construction and comprehensive school safety assessments.