

SOUTHEAST ASIAN MINISTERS OF EDUCATION ORGANIZATION (SEAMEO) & UNITED NATIONS CHILDREN'S FUND (UNICEF) WITH THE CONTRIBUTION OF THE AUSTRALIAN COUNCIL FOR EDUCATIONAL RESEARCH (ACER)

The Southeast Asia Primary Learning Metrics Program: Thinking Globally in a Regional Context

A program focused on building government capacities to monitor student learning in order to better inform policy and practice of education systems across ASEAN countries

Centre for Global Education Monitoring



Bangkok Office
Asia and Pacific Regional Bureau
for Education



FROM THE EDITORS

The right to education quality – enshrined in Sustainable Development Goal (SDG) 4 – is a goal of the United Nations 2030 Agenda for Sustainable Development. This goal takes a broad view of how to view, interpret and monitor education, one that places much more emphasis on learning and learning outcomes. As part of this broad goal, member states agreed to ‘commit to quality education and to improve learning outcomes, which requires strengthening inputs, processes and evaluation of outcomes and mechanisms to measure progress’ (UNESCO, 2016).

As a result, much emphasis has been placed on monitoring SDG 4 targets – particularly on quality and learning outcomes. This emphasis is shown by the increasing participation in international, regional or national learning assessments. In the Asia-Pacific region, many countries have national-level learning assessment systems; however, the performance of these systems varies widely. Challenges include organizational coordination, capacity, and effective use of results. It is with these challenges, and the SDG 4 agenda in mind, that the Southeast Asia Primary Learning Metrics (SEA-PLM) program was established, with the aim to help Southeast Asian countries monitor quality education.

SEA-PLM is an important initiative, as it is the first cross-national assessment program for the countries in Southeast Asia. It has not only been designed for countries to participate or join the assessment, but allows countries to actively develop, implement, monitor and report on the quality of learning in their countries. This has tremendous potential. It builds the capacity to overcome the large gaps in assessment systems. It allows countries to better understand and utilise the data and results, particularly to improve evidence-based policy to address education shortfalls or challenges in national systems – in assessments and learning outcomes – and to better align curriculum and pedagogy to ensure effective, relevant and quality education.

This publication is the third in a series of topical case studies initiated jointly by the Network on Education Quality Monitoring in the Asia-Pacific (NEQMAP) at UNESCO Bangkok and the Australian Council for Educational Research, Centre for Global Education Monitoring (ACER-GEM). It provides a detailed overview of the efforts and progress made by SEAMEO, UNICEF and the countries involved in the development, capacity building and implementation of the SEA-PLM program.

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CONTENTS

From the editors	2
Acknowledgements	3
Abbreviations	5
1 Introduction	6
2 What is SEA-PLM?	6
2.1 <i>Background</i>	6
2.2 <i>SEA-PLM objectives</i>	6
2.3 <i>Assessment framework and design</i>	8
2.4 <i>SEA-PLM field trial</i>	9
3 SEA-PLM – Owned and governed by the region	10
3.1 <i>Domain technical review panels</i>	10
3.2 <i>National technical teams</i>	10
4 SEA-PLM – A focus on capacity development	11
4.1 <i>Findings from the capacity development program</i>	11
4.2 <i>Summary of training programs for country-level teams</i>	11
5 SEA-PLM – Beyond assessment	12
5.1 <i>Building 21st-century skills</i>	12
5.2 <i>Common metrics for the ASEAN region</i>	13
5.3 <i>National education sector plans, assessment frameworks and SDG 4 reporting</i>	13
6 Conclusion	14
7 References	14

ABBREVIATIONS

ACER	Australian Council for Educational Research
ASEAN	Association of Southeast Asian Nations
DTRP	Domain Technical Review Panels
EAPRO	East Asia and Pacific Regional Office
IRT	Item Response Theory
NEQMAP	Network on Education Quality Monitoring in the Asia-Pacific
NESP	National Education Sector Plans
NTT	National Technical Teams
SDG	Sustainable Development Goal
SEAMEO	Southeast Asian Ministers of Education Organization
UNICEF	United Nations Children's Fund

1 INTRODUCTION

The Southeast Asia Primary Learning Metrics (SEA-PLM) program is a regional assessment that aims to set a common approach to assessing the learning outcomes of students at primary Grade 5. As an alternative to international large-scale assessments and national assessments, SEA-PLM has developed a **set of assessment and survey instruments for the Southeast Asian region**. Designed to be a system-level monitoring tool of educational quality and equity, SEA-PLM covers four domains: mathematics, reading, writing and global citizenship. The assessment also includes questionnaires that gather important contextual information from students, parents, teachers and school principals. A key feature of the SEA-PLM assessment is that it has been developed on the basis of an assessment framework (UNICEF & SEAMEO, 2017) that was specially designed to suit the context of ASEAN and Southeast Asian Ministers of Education Organization (SEAMEO) member countries.

The purpose of this paper is to share information on SEA-PLM regional- and country- level capacity development activities, which are a defining feature of the SEA-PLM initiative. It provides a record of program activities to date and describes the program's distinguishing features, goals and objectives as it moves into its first cycle of data with reporting planned for 2020. Key lessons learnt from the program's activities are examined, which may have important applications for other countries involved in developing large-scale assessment programs. The paper concludes with a reflection of how the SEA-PLM program constitutes a critical component of participating countries' SDG reporting requirements and offers a new regional tool to better respond to the changing needs of students in the 21st century.

2 WHAT IS SEA-PLM?

2.1 Background

In 2012, SEAMEO and UNICEF initiated the Southeast Asia Primary Learning Metrics (SEA-PLM)¹ in an effort to assess and monitor students' acquisition of knowledge and skills and to further improve the quality of primary education in Southeast Asia.

Southeast Asia has significantly expanded education opportunities in the past decades. Today more than 90 per cent of children of primary school age are enrolled in school. However, improvements in learning outcomes have not kept

pace with increases in school enrolment. In fact, in the East and Southeast Asia regions, one in three pupils enrolled at primary school, or 70 million children, do not meet the minimum levels of proficiency in reading and mathematics according to international estimations (UIS, 2017). These children often progress into higher levels of education without the necessary foundational skills, or leave school before completion. This ultimately hinders their pursuit of healthy living and participation in 21st century societies and economies.

To improve learning outcomes, countries in the region have committed to strengthening their education systems and improve the design and delivery of education. One of the first steps in doing this is to build better systems for measuring and monitoring students' performance. Yet many ASEAN countries do not have in place systematic large-scale assessments to measure learning outcomes over time, assess specific domains such as global citizenship (UNICEF & SEAMEO, 2017b), and/or the mechanisms to transform findings into effective actions for better learning. The SEA-PLM program is a response to this challenge and will provide outputs to track learning progress toward SDG 4. Indeed, in 2019, systems will have the possibility to locate, on common metrics, how close they are in achieving these international goals. As part of the Education 2030 agenda, cyclic assessments will be conducted periodically until 2030 and will offer a more data to identify trends in learning outcomes.

2.2 SEA-PLM objectives

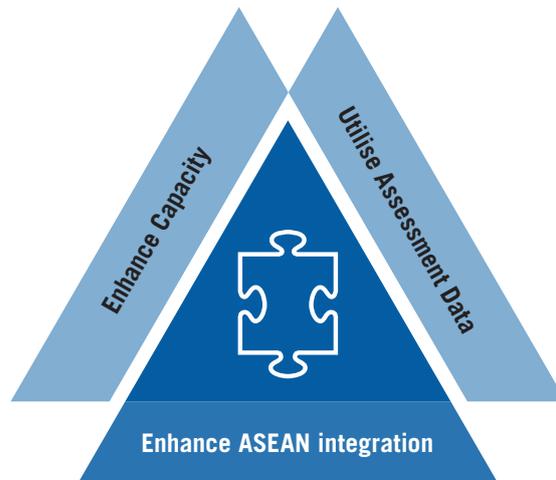
SEA-PLM focuses on supporting ASEAN and SEAMEO member countries to **better understand the status of student learning achievement and thereby improve the quality of their education systems**. The program's key focus is to support member countries to build their capacity to develop robust learning assessment systems, enabling them to monitor student learning outcomes across subpopulations and over time.

SEA-PLM expects to achieve three key outcomes, which include:

- ▶ **Enhanced capacity** to generate and analyse assessment data at regional, national and sub-national levels.
- ▶ Enhanced capacity to **utilise assessment data** for education improvement and more equitable learning outcomes at regional, national and sub-national levels.
- ▶ Enhanced **ASEAN integration** in terms of approaches to assessment, with an initial focus on primary Grade 5 in the learning areas of numeracy (mathematics), literacy (reading and writing), and global citizenship.

¹ For further information on SEA-PLM see: www.seaplm.org.

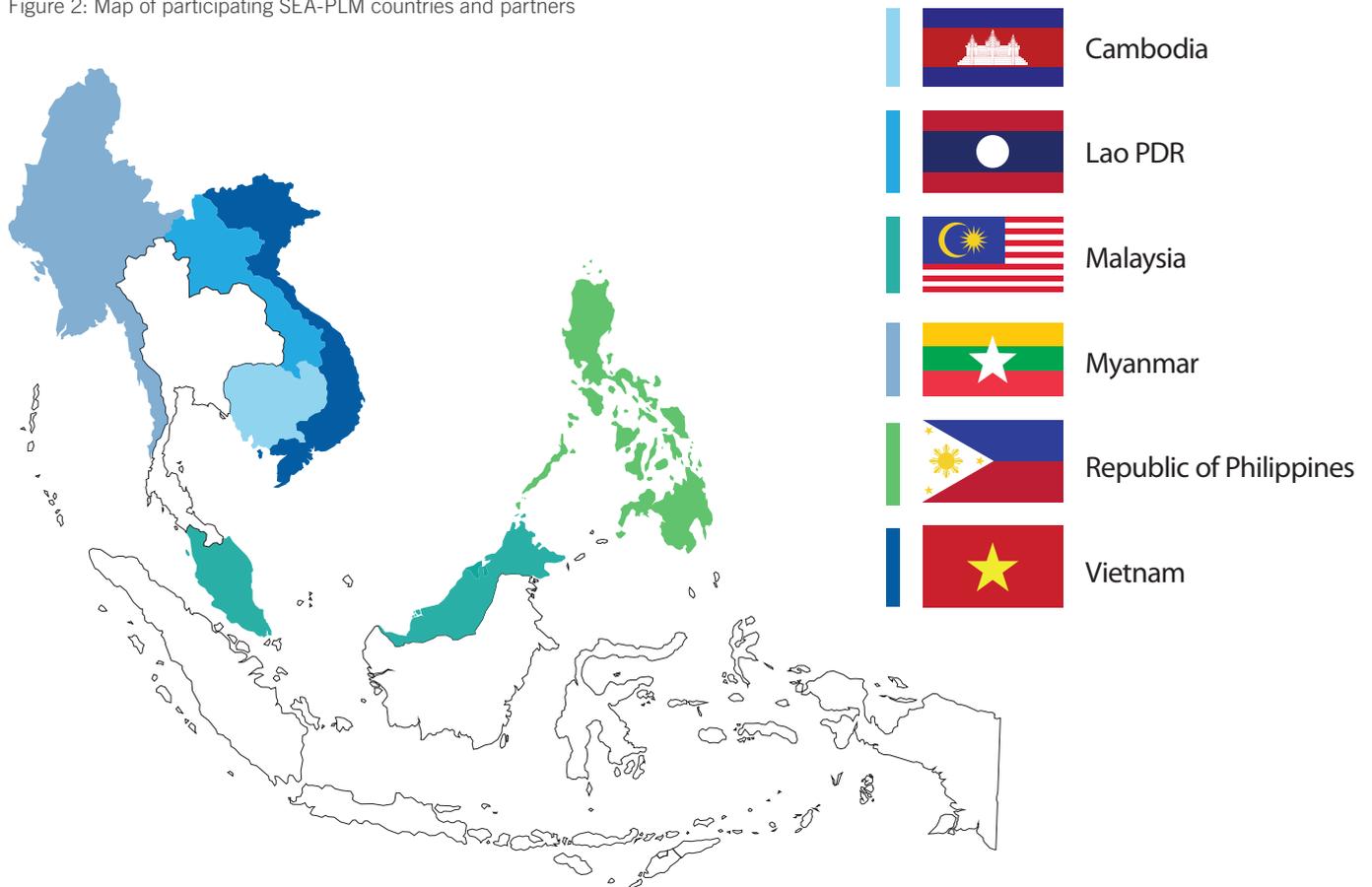
Figure 1: Key outcomes of SEA-PLM



The SEA-PLM program targets students in Grade 5. In some ASEAN countries, this level marks the completion of primary education, providing a meaningful point of measurement across the region.

Countries that participated in the first cycle of SEA-PLM (referred to as SEA-PLM 2019) are Cambodia, Lao PDR, Malaysia, Myanmar, the Republic of the Philippines, and Vietnam (Figure 2).²

Figure 2: Map of participating SEA-PLM countries and partners



² Brunei Darussalam participated in the conception phase but withdrew from the main survey.

2.3 Assessment framework and design

SEA-PLM has been designed to deliver high-quality data and meet the technical standards common to international large-scale assessments. Best practices have been adopted in areas related to framework and item development, translation and verification, standardised test administration, data management, technical analysis, and scaling and reporting of results (UNICEF & SEAMEO, 2019a). This is to ensure the SEA-PLM Assessment Framework and tools, as well as the resulting proficiency scales of student achievement provide countries and the region with high-quality data that are reliable, valid and meaningful. Further, the framework, tools and resulting scales can be aligned to other international assessments or metrics, for example for SDG 4 reporting purposes. Box 1 presents a summary of the Assessment Framework and outlines some major definitions of the domains measured.

SEA-PLM has a number of key design elements relating to the concepts, approaches and development of the assessment. The following points illustrate the specifics of this in the conception of the assessment framework and in the development of the assessment instruments.

The assessment framework:

- ▶ is contextualised to the ASEAN cultural environment
- ▶ is referenced to the curriculum of all ASEAN countries in the region
- ▶ targets Grade 5 students at the completion of primary school education, using the classroom as the sampling unit
- ▶ includes four domains (reading, writing, mathematics and global citizenship) and four questionnaires for students, teachers, schools, parents
- ▶ adopts a literacy orientation, which means the focus of the assessment is to go beyond mastery of knowledge and attainment of current learning objectives to focus on broader long-term development.

The assessment instruments:

- ▶ are developed using a common source language (English) to ensure consistency of item intent from one language to another
- ▶ are completed using paper and pencil
- ▶ use a rotated booklet design (total of 18 cognitive booklets) with an allocated time of 30 minutes for each of the three learning areas (reading, writing and numeracy)
- ▶ report scaled student data using the Rasch model of item response theory (IRT)
- ▶ have a full set of operational manuals to assist countries at each stage of their program implementation.

BOX 1 SEA-PLM 2019 Assessment Framework overview

The SEA-PLM Assessment Framework outlines an approach to assessing mathematical literacy, reading literacy, writing literacy and global citizenship. It provides a description of the constructs to be measured, and puts forward a conceptual framework for the contextual questionnaires. It outlines the design and content of the assessment instruments and describes how measures generated by those instruments relate to the constructs.

The framework:

- ▶ gives a common language to stakeholders for discussion of the domain areas
- ▶ guides test development, ensuring that the instruments serve the intended purposes and cover the domains in the way agreed at the outset
- ▶ ensures that, where continuity from one year or one grade level to another is of concern, there is an articulated plan for the assessment. This provides stability or, where change is desired, it can be made explicit and implemented deliberately communicates the purpose and features of the assessment program beyond the immediate stakeholders and, consequently, helps in public interpretation of the results.

The assessment includes the following domains:

- ▶ **SEA-PLM Mathematical Literacy** is a person's capacity, given a problem in a context that is of interest or importance to them, to translate it into a suitable mathematical formulation, to apply mathematical knowledge and skills to find a solution, and to interpret the mathematical results in relation to the context and to review the merits or limitations of those results.
- ▶ **SEA-PLM Reading Literacy** is a person's capacity to understand, use and respond to a range of written texts, in order to meet personal, societal, economic and civic needs.
- ▶ **SEA-PLM Writing Literacy** is a person's capacity to construct meaning by generating a range of written texts to express oneself and communicate with others, in order to meet personal, societal, economic and civic needs.
- ▶ **SEA-PLM Global Citizenship** is a person's attitude towards appreciating and understanding the interconnectedness of all life on the planet, to act and relate to others with this understanding to make the world a more peaceful, just, safe and sustainable place.

Table 1: Summary of SEA-PLM field trial activities by country

Country	Schools in survey	Students with valid test data	Number of teachers	Number of parents
Brunei Darussalam	38	1796	314	1703
Kingdom of Cambodia	35	1722	131	1680
Lao People's Democratic Republic	35	1787	66	1572
Malaysia	63*	3849	1502	3835
Republic of the Philippines	36	1889	111	1794
Republic of the Union of Myanmar	35	2089	117	2089
Socialist Republic of Vietnam	35	2260	317	1806
Total	277	15 392	2558	14 479

*Schools in Malaysia are categorised as National Primary School, Chinese Vernacular Primary School, Tamil Vernacular School so a larger number of schools participated in the SEA-PLM field trial than other countries.

2.4 SEA-PLM field trial

SEA-PLM has been designed so that it meets international best practice in student assessment. Indeed, as is common in the development or update of large-scale assessments, SEA-PLM led a field trial on small samples of schools to test new instruments and procedures to ensure that the items developed for SEA-PLM functioned well across the different ASEAN countries. The field trial also tested the consistency and reliability of the test administration procedures by undertaking the data collection process and quality assurance procedures. The SEA-PLM 2019 field trial was conducted in all six participating countries and in Brunei Darussalam between 2015 to 2018. For these operations, almost 700 new test and questionnaire items were developed and administered using 18 test booklets and six questionnaires in nine different languages.

The field trial was delivered to 15 392 students, 14 479 parents and 2558 teachers in 277 primary schools across all countries. Table 1 provides a summary of the field trial activities by country.

In addition to the test items, a set of operational manuals and technical standards have been developed for SEA-PLM. The operational manuals outline the test administration procedures for each stage of SEA-PLM, from initial planning through to data entry. All manuals and standards were revised and refined during the field trial activities to ensure applicability and relevance to the ASEAN region.

A code of practice (UNICEF & SEAMEO, 2019b) document has also been developed for SEA-PLM, which outlines the principles for data collection, data storage and data sharing across participating SEA-PLM countries.

The trial testing report (UNICEF & SEAMEO, 2018) demonstrated that the SEA-PLM 2019 test items were well targeted for Grade 5 students across the ASEAN region and that a full set of items and operational procedures were ready for the implementation of the main survey in 2019.

While it is not possible to generalise student-level findings from the SEA-PLM field trial due to sampling limitations and the specific goal of the trial testing, some interesting trends have emerged. One exciting and somewhat ground-breaking finding is that the SEA-PLM field trial data demonstrated that it is possible to assess writing ability across different scripts and to report students' writing performance against a common metric of measurement. Another important finding is the significant positive association between students' foundational language skills prior to starting school and students' overall performance. These two findings highlight the important regional and national information that can be drawn from SEA-PLM. Finally, the SEA-PLM field trial showed that there is significant country-level commitment to building on the training already offered under SEA-PLM in order to further develop and strengthen national systems of student assessment.

3 SEA-PLM – OWNED AND GOVERNED BY THE REGION

The SEA-PLM program was designed so that it can be governed and owned by national and regional bodies within the ASEAN context. The governance structures established for SEA-PLM, while still evolving, have been a critical factor in the program's success. SEA-PLM has been forged out of the existing SEAMEO political framework and ministry of education counterparts feel a strong sense of belonging and program ownership. Underpinned by UNICEF's in-country mechanisms of support with education ministries, SEA-PLM has provided a solid basis of support at the country level. This success has also been backed by the technical expertise of ACER and ACER's in-country presence during the implementation of each stage of the field trial and start-up of the main survey activities.

A distinguishing factor of SEA-PLM is that it is entirely embedded into existing national and regional systems and structures. At the outset, the SEA-PLM program established a regional body responsible for its strategic direction. Members of the Regional Steering Committee for SEA-PLM comprises all SEAMEO member countries regardless of whether or not they are SEA-PLM participants. The Steering Committee is supported by the SEA-PLM Secretariat, which is a role jointly shared between UNICEF and SEAMEO.

3.1 Domain technical review panels

In addition to the political level of engagement, domain technical review panels (DTRP) were established at the regional level to provide advice on the development of the SEA-PLM Assessment Framework. One DTRP was established for each domain (reading, writing, mathematics and global citizenship). Each DTRP comprised approximately 10 experts, drawn from the region and internationally. Each domain has a framework that describes sub-domains, defines competencies, indicators and test items, and reviews stimuli and themes. The DTRPs have provided ongoing input for the support and guidance of the development and implementation of SEA-PLM test materials. Advice from each DTRP has been oriented by a preliminary curriculum mapping of ASEAN member countries (UNICEF & SEAMEO, 2016). The DTRPs recommended that a 'literacy oriented' approach be adopted, meaning that the SEA-PLM Assessment Framework was informed by the curriculum of ASEAN member countries but focused on measuring students' abilities to apply relevant skills and knowledge. This approach was important given that SEA-PLM is a regional initiative where there are significant variations in curriculum content across the participating countries. This also ensured that the SEA-PLM Assessment Framework reflected the

cultural identity of the ASEAN region, while integrating it into a global framework of learning under the SDGs.

3.2 National technical teams

At the country level, national technical teams (NTTs) were established to ensure that the foundation and priorities of the SEA-PLM program were defined by the participating countries. This institutional and technical anchorage aims to foster national engagement, commitment and consistency of program implementation activities. NTT members are appointed by the participating ministries of education and are responsible for the management of the SEA-PLM process at the national level and ensure that all key partners are aware of SEA-PLM activities and its implications.

The NTTs cover a range of specialisations and functions. Each has a team manager, a sampling expert, a data manager, and logistics and administration officers, each of whom act as the core support mechanisms for SEA-PLM. The NTTs report at key milestones to the National Steering Committee who have been set up to guide and approve the implementation of SEA-PLM. The National Steering Committee is in turn responsible for reporting country-level outcomes to the SEA-PLM Regional Steering Committee.

At the heart of SEA-PLM is the priority of working hand-in-hand with government counterparts and to building the capacity of national systems.

The NTTs responsible for implementing SEA-PLM are the same teams who coordinate the participation in national and international large-scale assessments at the country level. This integration has reinforced government capacity to maintain high standards in the implementation of large-scale student assessment programs. In addition, various technical training in the development and implementation of the regional assessment provide support to existing in-country assessment programs through a long-term capacity development strategy of system-level support. To date, four large-scale regional and 37 in-country capacity development workshops on the design and implementation of SEA-PLM assessment and general techniques in large-scale assessment have taken place. The project has united educators and policymakers in understanding the SEA-PLM tools and its administration according to best practice in assessment. The SEA-PLM program provides opportunities for national experts who are responsible for implementing learning assessment reforms to benefit from intense training and capacity development through their participation in SEA-PLM. The program aims to build a regional cadre of experts in areas such as test development, sampling, scaling, test administration standards and procedures, and data management and reporting.

4 SEA-PLM – A FOCUS ON CAPACITY DEVELOPMENT

A comprehensive capacity development program was developed during the outset of SEA-PLM. This has been integral to the objectives of the SEA-PLM initiative.

4.1 Findings from the capacity development program

Working alongside national teams over several years allows countries and stakeholders (SEAMEO, UNICEF and ACER) to have unprecedented insights into the specific context of each national assessment system and the people behind it. This provides a unique opportunity to deliver support, guidance and encourage horizontal peer-learning for optimised structures and approaches for assessment of learning at the national level.

As a result of the focus of strengthening national assessment systems for participating SEA-PLM 2019 countries and to ensure the effective implementation of the main survey activities, capacity building plans were developed for Cambodia, Lao PDR, Myanmar, Malaysia, Philippines and Vietnam.³ Using the concept of the 14 key areas of a robust assessment program as a reference point (ACER & UIS, 2017), the capacity development plans were categorised into three levels: 1) environmental, 2) organisational, and 3) individual.

Each country had its own unique characteristics and contexts, yet there were a number of similarities across the countries where support was needed.

In each country at the **environmental** level, it was highlighted that there was a need to articulate a comprehensive assessment strategy that brought together the various assessment initiatives taking place in-country and to understand the interconnectedness of these assessments. It was also found that there was a need to appoint a National Steering Committee in each country, which was underpinned by strong political leadership and goodwill. It was also important to develop processes to strengthen countries' capacities to more effectively integrate the SEA-PLM initiative into their National Education Sector Plans (NESP) and national planning processes.

At the **organisational** level, common themes emerged, which included the need for an in-country communication strategy around SEA-PLM, as well as ensuring predictable funding streams to support the program. During the field trial, many countries found it difficult to properly allocate staff, as SEA-PLM-appointed staff often had other full-time responsibilities.

This challenge has mostly been addressed by including SEA-PLM into the national work plans and securing internal budgets and/or requesting extra financial support to implement activities.

At the **individual** level, NTTs identified a series of common areas that needed improvement before implementing the main survey and/or preparing and implementing the next round of the assessment. These included:

- ▶ skills in sampling methodologies, including incorporating different population sub-groups, such as children with special needs into the survey sample
- ▶ capacities in framework construction
- ▶ item development
- ▶ item coding (especially for writing)
- ▶ data entry and data cleaning procedures
- ▶ scaling of student response data
- ▶ ensuring standardised test administration procedures were followed
- ▶ maintaining confidentiality and security of test materials
- ▶ the capacity to undertake translation and booklet development.

4.2 Summary of training programs for country-level teams

Training activities were undertaken at regional and country levels and supported national level teams at different key stages during the implementation of the program. These activities followed a range of different implementation strategies including in-person training at the regional and country level, pre-recorded webinars on specific topics that the countries identified as challenging, or remote ongoing support with a specialist from ACER through email and telephone exchange. Training programs were designed to support countries at each stage of program implementation and ensure hands-on, practical support for each of the NTTs when needed.

1 Regional capacity development training for NTT

This first regional-level training session brought together different national teams to highlight the regional nature of the assessment, with the aim of promoting a common understanding of the way the project would unfold, understanding the tasks and roles at different levels of involvement in the project, mapping out resource needs, designing timelines, and assisting national personnel to prepare for their role in leading project implementation.

2 National orientation meetings

These initial meetings were held in each country to outline details of the program, implications for national counterparts, defining responsibilities and the financial and technical resource requirements throughout the program. The outcome

³ Copies of these country-level capacity development plans are available by direct request to the resident Technical Team Manager from each country.

of these meetings was a finalised project implementation plan with agreed tasks, responsibilities and dates between the NTT and the technical partner, ACER.

3 Test development training for country teams

A regional training program on test development for the NTTs was undertaken at the start of the field trial phase in 2015. The aim of the training was to build national-level skills to develop valid and reliable tests and marking systems. Training took place by domain, and involved working with draft materials for the regional assessment.

4 Regional-level operational field trial training

This training included all members of the NTTs and focused on building participating countries' joint understanding of the quality assurance processes for large-scale assessments, and to draft the initial outline of the SEA-PLM technical standards and operational manuals. This training covered areas such as sampling, translation, adaptation, response coding, print quality, test administration procedures and data submission.

5 Country-level test administration training for NTTs

Training was carried out in all of the seven participating countries just prior to each country's field trial test administration. ACER supported the NTTs to train test administrators, quality monitors and school observers to ensure a standardised set of procedures was adopted across all countries. This training was also implemented for both the field trial and main survey activities.

6 Regional-level coder training

In order to develop common metrics that all SEA-PLM countries could use, it was necessary to trial the coding standards jointly in order to ensure that they could be applied consistently across languages and countries. Two regional-level coder training workshops gave representatives of each of the participating SEA-PLM countries the opportunity to finalise the coding guides and be trained to undertake coding validly and reliably. Training activities focused on introducing the coding guides, clarifying terminology, determining code categories for each of the three cognitive domains, developing category response descriptions and providing sample responses. This training was implemented for the field trial and main survey, as the coding structures for the items changed between program phases.

7 Data entry and data cleaning

Upon the completion of the field trials, ACER supported in-country data entry and data cleaning workshops with the in-country data management teams. The result of the training was a finalised data set from each country ready to be analysed at

the regional level. This training was implemented for the field trial and will also be implemented for the main survey.

8 Field trial observation missions

Field trial observation missions to each of the seven participating countries were conducted jointly by SEAMEO and ACER. The SEAMEO-ACER team was supported in-country where possible by the UNICEF country office and the participating ministry of education representatives from the NTT. The purpose was to document the implementation process and collect feedback from project stakeholders with the aim of identifying lessons learnt and areas for improvement, and to formulate recommendations for a capacity support strategy needed to assist the preparations for the SEA-PLM main survey. Field trial observations have been conducted by the SEA-PLM Secretariat members during the main survey test administrations.

5 SEA-PLM – BEYOND ASSESSMENT

SEA-PLM is working towards a comprehensive quality improvement strategy for education systems in the region. With a greater focus of integrating SEA-PLM into countries' NESP, the program will, in time, help governments identify how they can improve their education systems, including teacher training, curriculum implementation and school management. The common means of reporting on student performance will enable ASEAN member governments to report against SDG targets on student performance within countries and across the region over time.

As countries conclude their main survey data collection for SEA-PLM 2019, it is important to examine how **SEA-PLM can be best used to positively influence teaching and learning practices** across the ASEAN region.

5.1 Building 21st-century skills

Building and strengthening 21st-century skills is a key priority of all ASEAN member countries and of all countries participating in SEA-PLM. Adopting a 21st-century curriculum is articulated as one of the seven priority areas outlined by SEAMEO's Action Agenda for 2016–2020. Specifically, SEAMEO member countries are committed to designing a common framework for a 21st-century curriculum with 21st-century characteristics/ skills adopted (Priority Area 7.10). SEA-PLM is a means of achieving this result and to building a common framework of student assessment in this field across all SEAMEO member countries (Priority Area 7.15). Critical thinking, communication, collaboration and creativity provide the foundations for a 21st-century curriculum. These skills are both complimentary to, as

well as providing the foundations for, creating more learning and teaching opportunities in literacy and numeracy.

The Assessment Framework for SEA-PLM takes, as its starting point, a literacy orientation to traditional cognitive domains, and highlights the importance of being able to apply knowledge to everyday life. The ways in which students can transform language and texts to convey ideas and information, how they analyse information and break complex aspects into component parts to recombine and create new knowledge, how students solve problems and make decisions on more complex issues are all critical components of building 21st-century skills. This, combined with the innovative development and possible extension of the global citizenship domain for SEA-PLM, which explores students' understanding of self-awareness, sense of belonging and empathy of others, are all important contributors to this common regional objective. SEA-PLM therefore provides a critical part of the ASEAN member countries commitment to building students' 21st-century skills. It provides the means to understand how students apply knowledge and how they connect with others. The principles outlined in the SEA-PLM Assessment Framework therefore provide a foundation for collective regional reform of curricula and teaching practices across the region.

5.2 Common metrics for the ASEAN region

The implementation of the SEA-PLM main study will provide the necessary student performance data to build a common set of metrics (scales) in mathematics, reading and writing for primary school Grade 5 students across the ASEAN region. These empirical scales have the potential of being linked to other internationally recognised metrics. However, measuring student performance must be for the purpose of diagnosis, rather than for comparison, and a set of performance-level descriptors could be developed to support the measurement of student performance. The descriptors would work alongside the empirical scales to provide common descriptions of learning progressions in the three learning areas of SEA-PLM. The development of performance-level descriptors will provide an important tool for countries to locate students on a learning continuum, which can in turn meaningfully inform curriculum and teacher education programs.

5.3 National education sector plans, assessment frameworks and SDG 4 reporting

A NESP that is based on valid and reliable evidence provides a strong stimulus for positive change. The implementation of assessment should therefore be deeply integrated with all other elements of an education system in order for the system to be effective in improving learning outcomes. NESPs, in turn, reflect a country's commitment to achieving the targets

outlined in the Education SDGs. SEA-PLM data can provide countries the means to report progress, especially under SDG 4.1.1 for reading and mathematics at the end of primary school education.

Use of SEA-PLM data for international reporting will be one important function of the program. An even more important one will be to ensure that the results of SEA-PLM are well understood by education stakeholders and that key recommendations for national sector reform can be drawn from the SEA-PLM findings. This will give countries the opportunity to support their education system to develop national assessment strategies that generate meaningful and periodic data and assist the system with the improvement of learning outcomes. In addition, for countries that do not implement national completion of primary education student assessments, SEA-PLM can help to inform participating countries of their own student performance in mathematics, reading, writing and global citizenship.

Significant gains may also be achieved through the development of a national student assessment strategy, embedding SEA-PLM into national student assessment objectives and ensuring that these objectives are linked back into curriculum and teacher competency frameworks. By reviewing documentation related to curriculum frameworks, teacher guides, assessment policy, examination frameworks, teacher training syllabi and examination report cards, a detailed insight into a country's assessment system can be obtained. This coupled with an in-depth mapping of relevant stakeholders involved in national assessment processes will ensure synergies are formed between system-level assessment activities, national examination practices and classroom-based student assessment.

Another key point is that the SEA-PLM Assessment Framework adopts a 'literacy orientation', which means it can be extended down to early primary years and up into lower secondary. So, with the possibility of developing a single progressive scale for each of the learning domains associated with SEA-PLM, especially the global citizenship domain as an innovative measurement, opportunities exist for SEA-PLM member countries to extend SEA-PLM for an expanded reporting regime to cover the early primary years and the early secondary years as per the requirements of the global SDG indicators.

6 CONCLUSION

The completion of the field trials for SEA-PLM is a milestone in the evolution of SEA-PLM, and in the development and construction of this new regional assessment for Southeast Asia. SEA-PLM now has a full set of tools and protocols to support the implementation of the main survey. There is considerable regional- and country-level ownership of this important initiative and a significant achievement of SEA-PLM has been in the relationships forged across the ASEAN region of ministries of education assessment departments. SEA-PLM stands alone in many aspects: it is the only assessment globally to measure global citizenship across a region for primary school students; it is the only assessment to measure writing across languages and scripts; and is the only cross-national assessment in the region that has an associated extensive capacity development and support strategy implemented at the country level. Further, given the robust technical standards adopted for SEA-PLM, the results from the assessment will provide vital data for countries of the SEAMEO and ASEAN region to report against the global SDG indicators to determine the proportions of students who meet minimum proficiency levels in reading and mathematics at the end of primary education.

SEA-PLM is a new program and there is still considerable work to be done in order to deliver the first regional and national results from the main survey. Yet if successful and cyclic over time, SEA-PLM has the potential to provide countries with the means to critically examine national policy objectives periodically, based on real-time empirical data, while keeping children's learning at the centre of the ASEAN agenda.

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