

RECSAM  
ANNUAL REPORT  
F.Y. 2018/2019

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Highlights of the Annual Report for F.Y. 2018/2019

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# SEAMEO RECSAM

## Vision

Leading centre for quality science and  
mathematics education

## Mission

To promote and enhance science and  
mathematics education in the SEAMEO  
member countries

## Strategic Goals

Conduct research and development activities to inform pedagogy and policy;

Design and implement high quality professional development programmes;

Ensure strong collaboration and active networking with experts,  
institutions and the community;

Serve as an effective clearinghouse for information;

Strengthen quality assurance in the management of resources and services  
rendered.

## HIGHLIGHTS OF THE ANNUAL REPORT FOR F.Y.2018/2019

SEAMEO RECSAM continued to conduct its training courses and research & development (R&D) activities with emphasis on STEM education, problem-based learning, inquiry-based education, skills for the 21st century and teaching higher order thinking skills to improve science and mathematics teaching in primary and secondary schools in the SEAMEO region.

During this fiscal year, Research & Development (R&D) efforts focused on the main strategic issues of regional importance as planned in the 10th Five-Year Development Plan of the Centre. National and regional projects aimed to improve the quality of science and mathematics education in the SEAMEO Member Countries include: (i) SEAMEO Basic Education Standards (SEA-BES) and (ii) SEAMEO 'Learning Science and Mathematics Together' in a borderless world. The Centre also involved in various research projects and activities in collaboration with national and foreign educational institutions, namely; (a) "Investigating Year 9 and 10 Students' Beliefs and Attitudes towards Science and Science Education" with the Faculty of Education, University Technology Sydney, Australia; (b) Development of Mathematics Teachers Guidebook in support for the CCRLS in Mathematics with CRICED, University of Tsukuba, Japan, (c) Teaching to Transform: 21<sup>st</sup> Century Skills and Design Thinking in STEM Contexts with the Faculty of Education, Monash University, Australia and (d) "Assessing Secondary School Students' Understanding on Socio-Scientific Issues (SSI)" with Penang State Education Department, Ministry of Education Malaysia.

In addition to conducting research activities, RECSAM also played major role in providing in-service training for teachers / educators across the SEAMEO region. Over 2,164 SEAMEO educators have benefited from all of these activities and programmes. For the fiscal year in review, RECSAM successfully conducted four (4) regular courses for the SEAMEO Member Countries. The Centre's regular courses had a participation of 59 (fifty nine) educators and all ten (10) SEAMEO member countries were represented.

To compensate for the limited number of participants who are offered places in the regular courses at RECSAM, customised courses, training workshops and seminar-workshops were offered to the SEAMEO member countries. For this fiscal year, the Centre successfully conducted four in-country training courses 254 teachers / educators from Indonesia, Lao PDR, Malaysia and Thailand. Four customised courses were successfully offered during this fiscal year and 87 (eighty seven) educators benefited from these courses.

There was a marked increase in training workshops as projected. There were 19 training workshops conducted by RECSAM in partnership with international and regional institutions and consultants this fiscal year and attracted 1,267 participations.

The Centre had also successfully hosted the first SEAMEO Science Olympiad (SEASO) from 5 to 8 March 2019 at RECSAM and this event had attracted 118 students and teachers across the Southeast Asia region.

In addition, academic publications were widely produced and distributed. SEAMEO Basic Education (SEA-BES): Common Core Regional Learning Standards (CCRLS) in Science and Mathematics project output was successfully published.

Staffing strength stood at 82 as of 30 June 2019. There were five staff that left the Centre during this fiscal year. In its bid to streamline work procedures and enhance the specialization as well as replace the vacated posts, RECSAM employed six (6) new Specialists, and one (1) Senior Volunteer from JICA (Japan International Cooperation Agency). The new Centre Director and Deputy Director for Administration also reported for duty during this fiscal year.

Several infrastructure developments were carried out which included the completion of renovation works, improvement of facilities of the Centre, upgrading of equipment needed in the conduct of training, seminars and conferences.

The total revenue for fiscal year 2018/2019 has increased by 3.0% from RM1,835,702.30 in the past fiscal year to a current standing of RM1,858,488.35. The increase in revenue was primarily due to the conduct of long duration courses, rental of facilities as well as interest income. This was also due to the increased number of customised courses during this reporting period such as the Capacity Development in Gender-Responsive Pedagogy in STEM Education for Lao PDR course awarded by UNESCO Bangkok as well as customised training courses for Indonesian and Thai teachers / educators.

In spite of the financial constraints, the Centre was able to perform to its maximum capacity on a limited budget. The Centre had successfully accomplished all mandated programmes and projects for the year under review and had reported improvement in its overall performance.

We are immensely grateful to the Ministry of Education of Malaysia, our Governing Board members, SEAMEO Secretariat and our stakeholders and linkages partners, without whom we could not have achieved as much.

The Centre will relentlessly continue to pursue its mandated programmes and activities to further enhance its proclaimed status as a centre of excellence for science and mathematics education in the Southeast Asian region and beyond.

**<< Followed by 5 pages info graphic (presented during GBM)>>**

## 1.0 INTRODUCTION

The highlights of the annual report for F.Y. 2018/2019 will be presented according to three Key Result Areas (KRAs), namely, (i) Regional Leadership, (ii) Regional Visibility and (iii) Solid Resource Base. The sub-areas under each KRA are as follows:

- I. KRA1: Regional Leadership
  - 1) Research and Development (R&D)
  - 2) Capacity Building
  - 3) Recognition and Benchmarking
  
- II. KRA2: Regional Visibility
  - 1) Strengthening Linkages with Inter-Centre, National, Regional, and International Institutions
  - 2) Increase Means for Stakeholders to Access SEAMEO Programmes
  
- III. KRA3: Solid Resource Base
  - 1) Financial Viability
  - 2) Management Efficiency
  - 3) Human Resource Management
  - 4) Facilities

## **2.0 KEY RESULT AREAS (KRAs)**

### **2.1 KRA 1: REGIONAL LEADERSHIP**

#### **a) Research and Development (R&D)**

During F.Y. 2018/2019, research and development (R&D) efforts focused on the main strategic issues of regional importance as planned in the 10th Five-Year Development Plan of the Centre. National and regional projects aimed to improve the quality of science and mathematics education in the SEAMEO Member Countries include: (i) SEAMEO Basic Education Standards (SEA-BES) and (ii) SEAMEO ‘Learning Science and Mathematics Together’ in a borderless world. The Centre also published the “SEAMEO Basic Education Standards Common Core Regional Learning Standards in Mathematics and Science (2017)” and the “Malaysian Science Teachers Quality Standards (MSTQS, 2017)” as project outputs. The Centre is also involved in various research projects and activities in collaboration with national and foreign educational institutions, namely; (a) “Investigating Year 9 and 10 Students’ Beliefs and Attitudes towards Science and Science Education” with the Faculty of Education, University Technology Sydney, Australia; (b) Development of Mathematics Teachers Guidebook in support for the CCRLS in Mathematics with CRICED, University of Tsukuba, Japan, (c) Teaching to Transform: 21<sup>st</sup> Century Skills and Design Thinking in STEM Contexts with the Faculty of Education, Monash University, Australia, (d) “Assessing Secondary School Students’ Understanding on Socio-Scientific Issues (SSI)” with Penang State Education Department, Ministry of Education Malaysia, and (e) “Examining Linguistics Characteristics as a Source of Gender Differential Performance for Science Items in Secondary Schools” with Universiti Utara Malaysia, Kedah, Malaysia.

#### **(1) SEAMEO Education Standards and Student Networking**

This is one of the 12 initiatives by SEAMEO Secretariat under the Golden SEAMEO (2011-2020) led by SEAMEO RECSAM. This initiative consists of two separate but complementary projects, namely; (a) SEAMEO Basic Education Standards (SEA-BES) and (b) SEAMEO ‘Learning Science and Mathematics Together’ (LeSMaT) in the Borderless World].

##### **(a) SEAMEO Basic Education Standards (SEA-BES)**

SEAMEO Basic Education Standards (SEA-BES) project is aligned with SEAMEO Education Agenda (2015-2035) Seven Priority Areas specifically Priority #7 “Adopting a 21st Century Curriculum” which states “*to pursue a radical reform through systematic analysis of knowledge, skills, and values needed to effectively respond to changing global contexts, particularly to the ever-increasing complexity of the Southeast Asian economic, socio-cultural, and political environment, developing teacher imbued with ASEAN ideals in building ASEAN community.*”

This project is being implemented with the following activities:

- (i) SEA-BES Phase 2 (a) - Online Research Survey on Year 9 and 10 Students’ Beliefs and Attitudes towards Science and Science Education is an on-going activity aimed to elicit similarities and differences, including gender differences between students from various SEA countries and Australia in collaboration with University

Technology Sydney, Australia. Specifically, this research has the following objectives: (i) to determine similarities and differences in beliefs or views and attitudes of year 9 and 10 students across SEAMEO region and Australia, including gender differences; (ii) to inform teachers and teacher educators of how practices could be better aligned with students' thinking that could lead to better learning outcomes and; (iii) to expand the research into students' success in science performance, for example investigating pedagogical implications and curriculum development.

There were seven (7) SEAMEO Member Countries participating in this project, namely; Brunei Darussalam, Indonesia, Malaysia, Myanmar, Philippines, Thailand, and Vietnam. Partial results of the survey were shared to the participating Ministries of Education and to the academic staff of the Centre as well as educators and teachers from Penang Island and nearby states via a Colloquium in January 10, 2019 at the Centre. Complete data from the survey will be published and disseminated by December 2019.

(ii) Development of Mathematics Teachers Guidebook is an-going activity aimed to assist teachers in interpreting and translating the SEA-BES Common Core Regional Learning Standards in Mathematics into effective teaching and learning curriculum practices and resources in collaboration with CRICED, University of Tsukuba, Japan. This educational resource will be published by December 2019.

b. Teaching to transform: 21<sup>st</sup> Century Skills and Design Thinking in STEM Contexts is an on-going two-pronged activity – a capacity building component and research component aimed to further utilise the CCRLS in science and Mathematics in collaboration with the Faculty of Education, Monash University, Australia. A regional workshop on STEM Education and 21<sup>st</sup> Century Skills was convened last 13-16 November 2018 and participated in by a total of 67 delegates comprised of 18 MOE-RECSAM-sponsored participants (Brunei Darussalam, Cambodia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam); 40 fee-paying participants; 7 RECSAM staff and 2 participants from SEAMEO QITEP in Science. The participants were expected to develop “STEM Planning and Design Learning (PaDL) Framework” for teachers and students accompanied with STEM lesson sequences. Likewise, a research component was conducted which revolved on the question: What curiosity and inquiry, collaboration and STEM practices are valued when subject experts/teachers/student teachers from different STEM domains engage in STEM curriculum design? How do their self-determination and drive to solve STEM problems vary? The output will be published and disseminated by December 2019.

**(b) SEAMEO LeSMaT (Borderless)**

SEAMEO LeSMaT in a borderless world initiative will support SEAMEO Member Countries to fulfill Priority Areas # 3, 5 and 7 in the following ways:

- promotion of student networking with the strengthening of SEAMEO collaboration through teaching, learning and assessment across educational systems;
- enhancement of thinking, technology, life (work/ entrepreneurial/ survival) skills;
- development of enriched cross-cultural/interdisciplinary curricula with emphasis on values education, global citizenship, Education for Sustainable Development (ESD), Education for Sustainable Living (ESL) as well as Sustainable Development Goals (SDGs); and
- gathering of critical mass or pool of educators who are trained through structured LeSMaT curriculum that will be prepared in the form of d-book or blended-mode ODL module to be the expert and/or advocate for the promotion of ESD, ESL and SDGs.

The LeSMaT (Borderless) project initiative was continued in F.Y. 2018/2019 with the following activities:

- (i) The CSF5 events in August 27-30, 2018 included (a) Workshop on Enhancing Creativity through Transdisciplinary Mathematics Education, (b) Colloquium on LeSMaT (Borderless) including the following topics: (i) current trends in technology: Gamification and games, (b) current trends in science and a journey to successful publication, (c) RECSAM's roles and involvement in responding to currents trends in Science, Mathematics and Technology: LearnT-SMArET through Championing use of Digital Tools and e-Platforms' online course as part of SEAMES's Education Agenda and Virtual programme.
- (ii) The project outcomes and outputs included (a) four e-books (including promotional videos) for the 4 topics – CADRED, ConWUR, SE4ALL and TeleHeal and 5 essay titles published in Media 8 platform.
- (iii) Official portals of LeSMaT are hyperlinked to the official website in SEARCH South East Asia Regional Capacity-enhancement Hub' (SEARCH) for science and mathematics researchers [<http://www.recsam.edu.my/search/Forums.html>], also disseminated as follows: <http://www.bit.ly/lesmatborderlessfbgroup> (one-stop information dissemination centre with information on **Join Code** that will be updated every two weeks);(b) <http://www.bit.ly/lesmatetcupdates> (link to all updates and resources);

## **(2) Other Research Projects and Workshops**

### **(a) Understanding of selected Socio-Scientific Issues among Malaysian Students**

Socio-scientific issues are controversial, socially relevant, real-world problems that are informed by science and often include some ethical components. Examples include issues on global warming, health and diet, prevention of diseases, technology, energy and many others. These kinds of socio-scientific issues inevitably are related to science, technology, environment and society. A socio-scientific issue teaching and learning approach is different in that students are challenged to explore the controversy around an issue which is informed by science, integrate the social aspects (moral, ethical, economic etc.) and other individuals' or groups' perspectives, and develop a position based upon their investigations.

This on-going study embarks on the following objectives:

- (i) To construct SSI exemplar questions (bilingual) for the educators to assess students' understanding related to current socio-scientific issues. These include issues related to the environment, human health, technology, and energy among others bigger issues.
- (ii) To validate the SSI exemplar questions constructed
- (iii) To assess secondary school students' understanding related to SSI issues.

The items will be administered among lower secondary school students in Malaysia to determine the test items' validity and reliability. A large scale data collection will be conducted after the validation and reliability check process. Report will be produced from the data collected and will be published in 2019. Eventually it is hoped that the instrument items could be piloted online among the SEAMEO Member Countries.

### **(b) Examining Linguistics Characteristics as a Source of Gender Differential Performance for Science Items in Secondary Schools**

The rise in gender gap for science achievement is conspicuous. Boys have found to be doing better in science than girls not due to their academic ability, but due to the way the items are designed. With the emerging trend of girls doing relatively better in science than boys in Malaysia and the practical relevance of addressing the issue of gender difference in science achievement, this study takes a novel approach in examining gender difference in science from the perspective of item-type by conducting Differential Item Functioning (DIF) and followed by substantial analysis of examining the sources of DIF. This is because in studies that explore gender differences, it is a difficult to determine whether the significant differences is due to true differences of scientific ability or the nature of the item as students are not matched according to their scientific proficiency as done in DIF analyses. Therefore, this study will bridge the gap in knowledge by highlighting the nature of test items and improve principles on test item construction.

This on-going research project is at the stage where the science items for the test had been identified and constructed based on TIMSS released items. A large scale data collection will be conducted in the northern region of Malaysia (States of Kedah and Penang). The data will be further analysed to explore the gender difference. Report will be produced based on the output from the data collected and will be published in 2019.

**(c) Enhancing Critical and Computational Thinking through Design-based Approach in STEM Context: Challenge to Transform STEM Education to Artificial Intelligence-Generation Education Workshop**

This workshop was conducted at the Centre on 26-28 March 2019 in collaboration with the Ministry of Education, Culture, Sports, Science and Technology, Japan, Saitama University, Japan and SEAMEO Secretariat, Bangkok, Thailand. Assoc. Professor Dr. Tairo Nomura from the Faculty of Education, Clinical Study of Education, Saitama University, Japan served as workshop facilitator. The workshop has the following objectives:

- Acquire understanding that critical thinking and computational thinking are two essential skills in 21<sup>st</sup> century competence that can be enhanced in STEM Project-based Learning;
- Develop skills in engineering design process, model, coding and product development through practical work and hands-on activities; and
- Develop confidence in using technology to enhance students' problem-solving skills, creativity and critical thinking in STEM lessons.

**b) Capacity Building**

For fiscal year 2018/2019, two thousand one hundred and sixty four (2,164) participants across the SEAMEO region and beyond attended several training programmes, courses, seminars, workshops, and colloquia organised / offered / conducted by RECSAM.

*(i) Regular Courses*

RECSAM successfully conducted its 4 (four) regular courses for a total of fifty nine (59) educators from 10 (ten) SEAMEO member countries. The duration of the courses was for a period of four weeks. Details of the regular courses conducted for F.Y. 2018/2019 from 2 to 27 July 2018 (Batch 1) and 1 to 26 April 2019 (Batch 2):

- RC-SS-143-1:Fostering Higher Order Thinking Skills in Secondary Science Education
- RC-PM-143-2:Enhancing Primary Mathematics Teaching and Learning through Professional Learning Community
- RC-SS-143-3:Purposeful Assessment in Secondary Science Classrooms
- RC-PM-143-4:Enhancing Primary Mathematics Learning in the STEM Environment

Fiscal Year	Courses	Number of Participants		Total
		Fee-Paying	On Scholarship	
2014/2015	4	1	57	58
2015/2016	4	0	76	76
2016/2017	4	3	58	61
2017/2018	4	0	64	64
2018/2019	4	0	59	59

SEAMEO Member Countries	Number of Participants for Fiscal Year 2018/2019				Total
	Batch 1		Batch 2		
	Fee-Paying	On-Scholarship	Fee-Paying	On-Scholarship	
Brunei Darussalam		2		3	5
Cambodia		0		3	3
Indonesia		4		4	8
Lao PDR		4		4	8
Malaysia		3		9	12
Myanmar		4		3	7
Philippines		4		2	6
Singapore		2		0	2
Thailand		4		2	6
Timor-Leste		2		0	2
Vietnam		0		0	0
<b>Total</b>		<b>29</b>		<b>30</b>	<b>59</b>

(ii) *In-Country Training Programmes / Courses*

RECSAM conducted 4 (four) in-country training courses during this fiscal year for a total of 254 (two hundred and fifty four) educators.

- The in-country training course for teachers and educators from Lao PDR on “*Purposeful Assessment in Primary Mathematics Classrooms*” was held at Khangkhai Teacher Training College (KKTTC), Xiengkhuong Province, Laos PDR from 14 to 17 August 2018. This training course was aimed to equip participants with the knowledge, attitude, skills and habits to operationalise the important role of purposeful assessment in the teaching and learning process of mathematics. Through this training course, participants gained exposure to current and effective research-based assessment strategies and practices that are aligned with established educational theories and routine classroom practices. Throughout the four-day duration of the course, participants were exposed to the various types, and practices of assessment, current active mathematics teaching and learning approaches that promote higher-order thinking, creative thinking and critical thinking skills, classroom assessment methods and assessment tools such as Rating Scale, Grading and Rubrics. This training course was organised by Teacher Education Division, Ministry Education of Lao PDR with collaboration of Khangkhai Teacher Training College (TTC) and was conducted by RECSAM’s Mathematics Specialists, Ms. Teh Kim Hong and Dr. Warabhorn Preechaporn. A total of thirty one (31) mathematics teacher educators and teachers attended the training course.

- The in-country training course for teachers and educators from Malaysia on “*21st Century Learning in Science / Mathematics*” was held at SMK Ranche-Ranche, Labuan, Malaysia from 24 to 28 September 2018. This training course was aimed to equip participants with STEM instruction as an integrative and interdisciplinary pedagogical approach for enhancing teaching and learning of science/mathematics to strengthen scientific literacy/mathematical thinking, and developing classroom instructional skills to prepare students for post-secondary study and the 21st century workforce. Throughout the duration of the course, participants were exposed to STEM approach in teaching and learning of science/mathematics; basic pedagogical content knowledge and skills to conduct typical STEM lessons in participants’ own classrooms and various strategies to engage students in problem/project-based learning exploration to appreciate the integrative and interdisciplinary use STEM approach for problem solving in daily life. All the sessions involved hands-on activities of science and mathematics teaching with special focus on problem-based, project-based and inquiry-based learning approaches. This training course was organised by the Teacher Training Division, Ministry of Education Malaysia with collaboration with the State Education Department and SMK Ranche-Ranche and was conducted by RECSAM’s Specialists, Mr. Lee Shok Mee and Dr. Warabhorn Preechaporn. These courses were conducted in two batches on 24-26 September 2018 and 26-28 September 2018 and there were 66 (Batch A) and 67 (Batch B) mathematics / science teacher educators in attendance.
- The in-country training course for a group of Thai science teachers and educators on “*Enhancing Scientific Literacy through Socio-Scientific Issues-Based Learning*” was recently held at Riverside Bangkok Hotel, Bangkok, Thailand from 26 to 30 November 2018. The main goal of this course was to adopt Socio-Scientific Issue-Based Instruction (SIBI) approach for enhancing learning of science to strengthen scientific literacy, and developing classroom instructional skills to conduct active learner-centred inquiry science lessons. This course also equipped the participants with the socio-scientific model and skills to incorporate ill-structured and open-ended science-related issues and problems for students to carry out investigations as a strategy to conduct active learner-centred inquiry lessons. Course participants were guided to design low-cost teaching materials to conduct scientific investigations relating to socio-scientific issues (SSI) and produce a 5E lesson plan to conduct an active learner-centred inquiry lesson. This 5-day in-country course was conducted by RECSAM’s Training Programme Specialists, Mr. Lee Shok Mee and Mr. Yuji Otsuka. The course was organised by the Office of the Basic Education Commission (OBEC), Ministry of Education, Thailand. A total of 40 (forty) primary and secondary science teachers or educators participated in this training course.
- The in-country training courses on “*Going Back to the Fundamentals: Models and Heuristics for Mathematics Educators*” and “*Going Back to the Fundamentals: Context-based Learning and Science Process Skills for Science Educators*” were held concurrently at SMA Negeri 1 Tenggarang, Bondowoso, East Java, Indonesia from 22 to 25 April 2019. A total of 24 mathematics and 26 science teachers from the District of Bondowoso-Situbondo, East Java, Indonesia attended the four-day courses. These training courses were aimed at enhancing secondary mathematics and science teachers’ skill competency and build their confidence and capability

in improving performance in mathematics and science teaching. Through these training courses, participants were exposed to varied interactive activities to model the active teaching and learning approaches in teaching mathematics and science. They were given the opportunity to be engaged in various activities such as constructing 21st Century lesson and teaching the lesson using low cost and locally available materials to make them interesting by using heuristics for mathematics learning. Activities for the science course include discrepant events, fair test investigations, concept cartoons, planning and investigation template, STEM projects and developing science lessons focusing on science process skills. These training courses were coordinated by Ms Marta Mila Sughesti and organised by Drs. Mahrus Syamsul, head of Cabang Dinas Pendidikan, Wilayah Kabupaten Bondowoso with Dr. Saiful Rachman, head of Ministry of Education and Culture Provincial Education Office, Surabaya, Indonesia. Dr. Murugan A/L Rajoo, Mathematics Education Specialist and Mr. Dominador D. Mangao, Science Education Specialist cum Acting Deputy Director from R&D Division of RECSAM served as course facilitators.

*(iii) Customised Course / Short Course*

During fiscal year 2018/2019, 4 (four) customised courses were offered and 87 (eighty seven) educators benefited from these programmes.

- Science, Technology Engineering and Mathematics (STEM) play a key role in realizing the 2030 Agenda for Sustainable Development. While much progress has been made in the past decades, countries are still suffering from lack of professionals in STEM-related fields and, among them; women exceptionally are still underrepresented even with this mounting demand. In this rapidly changing, knowledge-based world and in light of the dawn of the fourth industrial revolution, equipping girls and women with STEM competencies will be a driver of development and contribute to their development as equally empowered, proactive and responsible citizens. In light of promoting the participation of girls in STEM-related fields, UNESCO Bangkok (Asia and Pacific Regional Bureau for Education) and RECSAM, partnered to develop training materials and conduct in-service teacher training on gender-responsive pedagogy in STEM education for 16 (sixteen) key national trainers for secondary school teachers from Lao PDR from 11 to 22 February 2019. With the overall goal of equipping these key national trainers with the knowledge and skills necessary to be future resource trainers in the subject of gender-responsiveness pedagogy in STEM education and to guide them on the development of training materials to be used in in-service training to enable secondary school teachers of STEM subjects to use gender-responsive pedagogy effectively, the course walked the participants through the theoretical underpinnings of the theory and practice of gender-responsive STEM education, in order to support its effective development at the school and classroom levels. Through collaborative work, field-study and hands-on activities, course participants were introduced to pedagogical techniques and pointers on how to develop gender-responsive educational activity, which incorporates the fundamental elements of current trends and issues in science, mathematics and technology education (gender-biased, 21st century learning skills), principles of developing gender-sensitive STEM teaching and learning resources, gender inclusive STEM pedagogy: IBSE instruction and the roles of trainers

and teacher educators to promote STEM Education. Through this effort, RECSAM believes that building the capacity of teachers on strengthening and mainstreaming gender and gender responsiveness in STEM teaching and learning practices is a leap forward towards achieving the 2030 Sustainable Development Goals. The project is funded and supported UNESCO Bangkok (Asia and Pacific Regional Bureau for Education) and RECSAM was the implementing agency for this project.

- A short training course for teachers and educators from the Centre for Development and Empowerment of Educators and Education Personnel Mathematics (PPPPTK Matematika), Indonesia on “*Enhancing Primary Mathematics Learning in the STEM Environment*” was held at RECSAM from 11 to 29 March 2019. This training course was aimed to equip participants with pedagogical knowledge and skills on how to help students integrate mathematics with other STEM subjects in appropriate contexts and real world issues. The learning in real world context would help to develop student thinking and problem solving skills through inquiry-based learning and problem solving. Course participants experienced various instructional models and were engaged collaboratively to facilitate creativity and inquiry learning. Throughout the duration of the course, participants were also engaged in discourse, shaping arguments, solving problems, experimenting, designing, creating, and gathering supporting evidence. All the sessions involved hands-on activities of mathematics teaching and learning with special focus on problem-based and inquiry-based learning approaches. A total of 26 (twenty six) teachers /educators participated in this training course. Ms Teh Kim Hong was the course supervisor and was assisted by Mr. Gan Teck Hock as the co-supervisor.
- A two-week customised course on “*Enhancing Competencies of Mathematics Teaching*” for 24 (twenty four) Mathematics student teachers from Kamphaeng Phet Rajabhat University, Thailand was held at RECSAM from 6 to 17 May 2019. The aim of this programme was to expose participants to effective pedagogical content knowledge and develop skills in using technology-enhanced learning applications and tools to improve teaching and learning of mathematics. Through this workshop, participants were exposed to various effective mathematics teaching and learning approaches that involve creative problem solving, Inquiry-based Mathematics Education, development of Mathematical processes, Mathematical thinking and Mathematical processes as well as digital Apps to up-skill 21st Century Mathematics teachers. Course participants were also exposed to various hands-on activities to improvise teaching aids as well as to obtain practical skills and knowledge to create effective teaching materials in their own lessons. A total of 25 (twenty five) students participated in this training course.
- A customised course on “*Strengthening Competencies of English Language for Mathematics Teaching and Learning*” was held at RECSAM for students from Khon Kaen University, Thailand from 17 June 2019 to 28 June 2019. Through this training course, participants were exposed to various learning context to provide opportunities for them to speak using English language. The participants also gained deeper understanding of some selected topics of mathematics through exploration activities and problem-based learning. In addition, they were engaged in different learning strategies to plan an effective and meaningful mathematics lesson using English that can be

related to 21st century learning skills. The course was essentially activity-oriented with active involvement of participants in group discussions, demonstrations and presentations. Twenty (20) participants benefitted from this training course.

(iv) *Workshops / Camps*

Workshops are enrichment activities organised by RECSAM for teachers, teacher educators and students from the SEAMEO member countries. The workshops' content are leading-edge developments in the teaching and learning techniques, approaches and strategies relevant to science and mathematics education. The workshops are facilitated by RECSAM's Specialists, local and foreign consultants, or RECSAM's specialists in partnership with invited consultants. A total of 19 (nineteen) training workshops were held in this fiscal year with a total number of 1,267 (one thousand and two hundred sixty seven) participants.

- A four-day workshop on “*Creative Writing and Publishing Output of LeSMaT (Borderless): Critical Success Factor (CSF) Workshop Series 5 in Support of SEAMEO Education Agenda and Virtual Programme*” was conducted by RECSAM from 27 to 30 August 2018. The purpose of the workshop was to expose workshop participants with comprehensive knowledge and skills to publish the output of LeSMaT (Borderless) and preparing e-resources in support of subsequent LearnT-SMArET online training programme that will be conducted from October to December 2018. Various methodology of implementation includes collaborative inquiry incorporating student-centred active learning and MI using mixed-method research involving documentary analysis of output were discussed in this workshop. The participants were divided into small groups to extract and publish the output from the previous LeSMaT (Borderless) curriculum development workshops in the forms of essays, videos or digital posters and e-books to be shared as OERs in SEAMEO MOOCs or as resources with entrepreneurship venture and to prepare PowerPoints that will be pre-recorded for online course using digital tools such as Screencast-O-Matic (SOM) or CamStudio or other video recording tools. The draft outputs were presented followed by the revision after critique and suggestions were given. This workshop received 31 (thirty one) participants.
- A training workshop on “*Enhancing Teaching and Learning through Lesson Study*” was conducted by Ms. Teh Kim Hong, Specialist from Training Programme Division on 11 and 12 July 2018. Workshop participants were introduced to the basic fundamentals of Lesson Study and were taught how to carry out a Japanese lesson study using collaborative lesson research (CLR) model and prepare a lesson study research proposal based on the mathematics curriculum through *kyouzai kenkyuu*. Through this workshop, participants were also able to discuss the outcome and impact of lesson study for teaching and learning improvement and misconceptions and challenges of lesson study. The two-day training was conducted in a workshop format which covers some input of interactive talks and hands-on activities. At the end of the workshop, participants worked collaboratively in small groups to prepare research proposals. A total of fifteen (15) participants attended the two-day workshop.
- A training workshop on “*Creative Teaching Aids Using Local Materials*” for science and mathematics teachers and educators was held at RECSAM on 9

& 10 July 2018 by Mr. Yuji Otsuka, JICA (Japan International Cooperation Agency) Senior Volunteer based at RECSAM. The aim of this workshop was to introduce participants to a number of individual and group hands-on science activities based on “STEM education”. Workshop participants were taught how to conduct effective experiments in science lessons and design simple and inexpensive teaching materials such as assorted recyclable plastic products, paper, sticky tape, and common stationery to suit their classroom science lessons. The two-day training was conducted in a workshop format with 5 to 6 participants in a group. The participants were exposed to using common and affordable daily items to redesign and modify these inexpensive educational materials to suit their classroom lessons. Fifty six (56), 41 fee-paying and 15 on-scholarship / in-house participants participated in this workshop.

- A workshop on “*Enhancing Active learning through STEM (Science, Technology, Engineering and Mathematics)*” was conducted by RECSAM on 16 & 17 July 2018 for teachers / educators from MRSM Pengkalan Hulu. The main objective of this workshop was to provide participants the necessary knowledge and skills in conducting STEM education activities and to enhance active learning in their own classrooms. The course was designed to familiarise and orient participants with STEM education approach in teaching & learning in the science and mathematics classrooms and centered on exposing the participants on various teaching and learning approaches in science / mathematics such as inquiry-based learning, problem-based learning and project-based learning. This workshop was conducted for two days with a combination of hands-on experience, minds-on sharing and active involvement on relevant topics facilitated by experienced facilitators. A total of forty three (43) students and teachers had benefited from this training workshop.
- RECSAM conducted a workshop on “*Enhancing Creativity through Transdisciplinary Mathematics Education*” on 27 & 28 August 2018. The workshop was facilitated by Dr. Ryohei Miyadera from Kwansai Gakuin High School, Japan with the support of Mr. Daisuke Minematsu, Mr. Masanori Fukui and six (6) senior high school students from Japan. The aim of this workshop was to expose participants to exemplary methods that cultivate creative/critical thinking of high school students through mathematical problem-solving and research activities and to enhance essential (thinking / technology / life) skills through student-centred mathematical learning approaches supported by digital tools and e-platforms. Through this workshop, Dr. Miyadera presented various exemplary methods to cultivate creative / critical thinking of high school students as well as methods to promote their essential skills with exemplars on how these students became young mathematicians, engineers and entrepreneurs. Workshop participants were also exposed to various hands-on activities with sharing supported by technology and blended learning platforms such as Wolfram Programming Lab, Facebook and Edmodo social learning platforms. This workshop was participated in by a total of seventy three (73) educators including Dr. Ihsan Ismail and Ms Salbiah Hasim (EPRD) and Ms Siti Yusnida Mohd Junus (Teacher Training Division) of the Ministry of Education Malaysia together with RECSAM staff.
- A two-day workshop on “*Developing 21st Century Skills through Science and Mathematics*” was conducted by RECSAM on 1 and 2 October 2018 for 132

(one hundred and thirty two) students and teachers from Benjamarachutit School, Nakhon Si Thammarat Province, Thailand. This workshop was aimed to expose the participants with active teaching and learning strategies that can be used in secondary science classrooms to cultivate an interest and to gain deeper understanding of science and mathematics content. Various meaningful science and mathematics topics and activities were conducted during the two-day workshop for the participants such as; (i) exploring the Science of Toy Designing; (ii) problem-based learning in Science; (iii) exploring Mathematics through Games; (iv) exploring STEM; (v) ICT-based science and mathematics learning and; (vi) experiential learning through educational visit.

- RECSAM recently conducted a “*Science and Mathematics Camp*” from 3 to 5 October 2018 for a group of students from Assumption Convent Lopburi School, Assumption Convent Lamnarai and Saint Joseph Sri-Petchabun, Thailand. The main purpose of this camp was to spark the interests of young children in the field of science, mathematics and technology and inspire them to subsequently pursue studies and careers in these fields. The camp showcased various science, mathematics and technology-related hands-on activities and interactive classes for children up to 17 years of age. Children gained broad views and understanding of science and mathematics through activities such “Science out of the Box”, “Magnets attract you!”, “Fun & Interactive Electricity Activities” “Exploring Math through Games” and “Science and Mathematics Challenges with ICT”. Children participated in various interesting hands-on interactive activities conducted by RECSAM’s Training Programme Specialist; Mr. Yuji Otsuka. The 2-day long camp exposed these young children to various hands-on experience like gaining knowledge on the effectiveness and flexibility of using low-cost educational materials in learning science, creating new design in learning science concept, understand the concept of electricity and magnetic in daily lives and using online ICT tools to understand mathematics and science. A total of 40 (fourty) students and teachers participated in this camp.
- A two-day workshop on “*Enhancing Communication English through STEM*” was held at RECSAM on 22 & 23 October 2018 for a group of students from Hatyaiwittayalai School, Thailand. Through this workshop, participants were exposed to various learning context to provide opportunities for them to speak using English language. The participants also gained deeper understanding of science and mathematics through STEM exploration and problem-based learning. In addition, they were engaged in different learning strategies to develop important 21st century learning skills and were taught to design simple toys and models to aid understanding of abstract concepts in science and mathematics. This workshop was essentially activity-oriented with active involvement of participants in group discussions, outdoor learning, demonstrations and presentations. A total of 103 (one hundred and three) students and teachers participated in this two-day workshop.
- A training workshop on “*Enhancing Secondary Science/Mathematics Learning in the STEM Environment*” was conducted from 29 to 31 October 2018 for teachers / educators from the Teacher Education Division, Ministry of Education Malaysia. The main objective of this workshop was to provide participants the necessary knowledge and skills in conducting STEM in their own classrooms. The course was designed to familiarise and orient participants with STEM approach in teaching & learning in the science and

mathematics classrooms and centered on exposing the participants on various teaching and learning approaches in science / mathematics such as inquiry-based learning, problem-based learning and project-based learning. This workshop was conducted for two and a half days with a combination of hands-on experience, minds-on sharing and active involvement on relevant topics facilitated by experienced facilitators. A total of 60 (sixty) teachers had benefited from this training workshop.

- A five-day programme on “*Enhancing 21st Century Skills through Science and Mathematics Ability*” was held at RECSAM from 26 to 30 November 2018 for 131 students and teachers from Hatyaiwittayalai School, Thailand. This workshop was aimed to enhance 21st century skills through learning of science, mathematics and technology among secondary school students. The programme also aimed to expose the participants with a few active teaching and learning strategies that can be used in science classrooms to cultivate an interest in science and technology as well as to gain deeper understanding of science and mathematics content through varied active learning strategies such as problem-based learning in science and mathematics, ICT-based science and mathematics learning through exploration such as toy making in addition to exploring mathematics through games. Various meaningful STEM activities were also conducted during the five-day programme for these participants besides experiential learning through educational visit. This programme also provided the participants with demonstrations, group activities and individual activities to let the participants acquire ideas and skills of 21st century.
- A regional training workshop on “*Teaching to Transform: 21st Century Skills and Design Thinking in STEM Contexts*” was organised by RECSAM in collaboration with the Faculty of Education, Monash University, Victoria, Australia from 13 to 16 November 2018. The workshop was facilitated by Assoc. Prof. Dr. Gillian Kidman, Mr. Roland Johannes Gesthuizen and Dr. Hazel Tan from Monash University, Australia. The objective of this workshop was to expose participants to inquiry- based practices, 21st century skills, design thinking, and transdisciplinary inquiry-based learning and how these relate to STEM. Through this workshop, participants acquired knowledge, skills and values in the areas of STEM theory, STEM models, STEM planning framework and transdisciplinary inquiry-based learning sequences to design and develop STEM-based curriculum. Workshop participants also had the opportunity to use scientific and mathematical thinking skills in performing challenging tasks and exercises and apply these approaches and strategies in developing learning sequences following STEM planning framework. The four-day training was conducted in a workshop format which covers some input of interactive talks and small group canvas design and presentation activities. A total of 67 participants attended this four-day workshop comprised of science and mathematics specialists from the nine (9) Ministries of Education of SEAMEO, namely Brunei Darussalam, Cambodia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam; science and mathematics teachers and teacher-educators from across Malaysia, Philippines, Thailand and Vietnam; and specialists from SEAMEO QITEP in Science, Indonesia. Mr. Prasert Tepanart, Deputy Director (Administration & Communication), representing the Director of SEAMEO Secretariat, graced this event and delivered inspirational message to the participants.

- Two (2) batches of four-day workshop on “*Enhancing Communication English through Science and Mathematics*” was held at RECSAM for students from Benchamaracharungsarit School, Thailand. The first batch involved a total of 73 (seventy three) students and teachers from 15 to 18 January 2019. The second batch involved 74 (seventy four) students and teachers from 22 to 25 January 2019. Both batches of students went through the same programme. Through this workshop, participants were exposed to various learning context to provide opportunities for them to speak using English language. The participants also gained deeper understanding of some selected topics of science and mathematics through exploration activities and problem-based learning. In addition, they were engaged in different learning strategies to develop important 21st century learning skills through designing simple toys and models to aid understanding of abstract concepts in science and mathematics. This workshop was essentially activity-oriented with active involvement of participants in group discussions, demonstrations and presentations.
- A workshop on “*Enhancing Critical and Computational Thinking through Design-Based Approach in STEM Context: Challenge to Transform STEM Education in Artificial Intelligence (AI) Generation Education*” by Assoc. Professor Dr. Tairo Nomura, Director of STEM Education from the Faculty of Education, Saitama University, Japan was held at RECSAM from 26 to 28 March 2019. Dr. Tairo highlighted the importance of Computational Thinking (CT) as one of the important elements of STEM fields. This workshop was aimed to expose participants to hands-on teaching based from Japanese way of STEM education using points of view (PoV) and ways of thinking (WoT) in the area of CT. More specifically, participants were exposed to knowledge and skills related to (i) critical thinking and computational thinking to enhance STEM Project-based Learning, (ii) engineering design process, model and product development and (iii) the use of technology to enhance students’ problem-solving skills, creativity and critical thinking in STEM lessons via various hands-on activities. A total of 24 participants registered for this workshop. RECSAM organised this workshop in collaboration with the Ministry of Education, Culture, Sports, Science & Technology (MEXT), Japan and SEAMEO Secretariat, Bangkok, Thailand.
- A training workshop on “*Introducing STEM Learning in Preschools*” was held at RECSAM on 23 and 24 March 2019 for a group of preschool teachers. The aim of this workshop was to expose participants to STEM learning in preschools and to discuss ways to introduce STEM learning in preschools. The workshop covered discussions about STEM learning and activities on how the four disciplines can be integrated as an approach for meaningful learning of real world problems that arouse interest and also for cognitive development among preschoolers. Participants were taught how to carry out STEM lessons, and most importantly on ways to design STEM learning lessons for future use. The participants were also exposed to some interesting hands-on STEM related activities, presentations and sharing of ideas on relevant topics by the peers. This workshop was conducted by Datin Dr Ng Soo Boon and her team from the Curriculum Development Division, Ministry of Education Malaysia. A total of 52 (fifty two) pre-school teachers had benefited from this training workshop.

- A training workshop on “*10 Minutes Teaching Aids Using Local Materials for Effective Teaching and Learning of Science*” for science and mathematics teachers and educators was held at RECSAM on 8 & 9 April 2019 by Mr. Yuji Otsuka, Science Education Specialist based at RECSAM. The aim of this workshop was to introduce participants to a number of individual and group hands-on science activities based on “STEM Education”. Workshop participants were taught how to redesign and modify the materials to suit their needs in classroom science lessons and obtain practical science skills and knowledge to create effective teaching materials in their own lessons. Through this workshop, participants were able to conduct effective experiments in science lessons and design low cost teaching materials which can be used in actual lessons at schools through step by step guide. The two-day training was conducted in a workshop format with 5 to 6 participants in a group. Fifty four (54) teachers and educators participated in this workshop.
- A two-day workshop on “*Enhancing Science and Mathematics Learning in a STEM Environment*” for 66 (sixty six) science and mathematics students and 13 (thirteen) teachers from Triam Udom Suksa School, Nakhon Si Thammarat Province, Thailand was held at RECSAM on 2 & 3 May 2019. This workshop was aimed to engage the students with the various active learning strategies to make sense of science, mathematics, technology and engineering so as to cultivate interest in these disciplines and develop scientific and mathematical knowledge as well as to motivate them to pursue careers in STEM related fields. This two-day workshop was activity-oriented and stressed on active involvement of participants in group discussions and demonstrations on various active learning strategies. Some major topics conducted in the workshop included Exploring Science and Engineering through activities such as egg-drop with parachutes, exploring electricity flow, toy making and exploring patterns and design in Mathematics.
- A training workshop on “*Active Learning through STEM using Low Cost Materials*” for students from MARA Junior Science College, Pengkalan Hulu, Perak was held at RECSAM on 20 & 21 June 2019 and was conducted by Mr. Yuji Otsuka, Science Education Specialist and Mr. Hiroshi, Senior Volunteer from JICA (*Japan International Cooperation Agency*) based at RECSAM. The aim of this workshop was to introduce participants to a number of individual and group hands-on science activities based on “STEM Education”. Workshop participants were taught how to conduct effective experiments in science lessons and design useful and simple teaching materials using very common and affordable daily items. This workshop was conducted with a combination of hands-on experience, minds-on sharing and active involvement in a meaningful STEM environment. The two-day training was conducted in a workshop format with 5 to 6 participants in a group. Fifty five (55) participants joined this workshop.
- RECSAM recently organised a one-day workshop on “*Teaching Methods in Promoting 21st Century Education*” on 26 June 2019. More than 105 teachers and educators from the Penang state as well as from the other states in Malaysia participated in these workshops. There were 4 different workshops conducted simultaneously at different venues at RECSAM. The workshops also served as a venue to deepen teachers’ understanding of STEM (Science, Technology, Engineering and Mathematics), as well as to

share good practices on various teaching methods in promoting 21st century education in an integrated manner. Dr. Murugan Rajoo, Specialist from Research & Development Division introduced the participants to models and heuristics in mathematics in order to increase the students' engagement level in the classroom. Mr. Liman Anthony, Specialist from Training Programme Division exposed participants on the types of digital tools and resources in enhancing teaching and learning as well as strategies such as active learning, online collaborative learning and flipped learning to promote effective technology-enabled learning. Mr. Yuji Otsuka, Specialist from Training Programme Division & Mr. Hiroshi Onishi, Senior Volunteer from JICA (Japan International Cooperation Agency) shared the importance of inquiry based activities in actual lesson at schools via practical experiments using handmade low cost teaching materials. Finally, Dr. Izwan, a lecturer and researcher at the Department of Decision Science, School of Quantitative Sciences, Universiti Utara Malaysia provided hands-on experience on utilising and applying Web 2.0 interactive tools to enhance students learning experiences to the workshop participants.

(v) *Conferences / Congress / Seminars / Seminar-Workshops / Symposiums*

To provide more opportunities for science mathematics educators in the SEAMEO region to disseminate their research findings, RECSAM has also been organising its own conferences, congresses and seminars. This fiscal year, these events organised by RECSAM attracted more than 107 (one hundred and seven) participants. Among the conferences, congress, seminars, seminar-workshops and symposium held at RECSAM during this fiscal year were:

- A five-day seminar-workshop on “*Developing 21st Century Skills through Science, Mathematics and Technology*” was held at RECSAM from 8 to 12 October 2018 for 69 (sixty nine) participants students and teachers from Datdaruni School, Chachoengsao, Thailand. This seminar-workshop was aimed to engage the participants with the various active learning strategies to make sense of science, mathematics and technology so as to cultivate interest in these disciplines and develop scientific, mathematical/quantitative and technological literacy as well as to motivate them to pursue careers in science, mathematics and technology. This seminar-workshop was activity-oriented and stressed on active involvement of participants in group discussions and demonstrations on various active learning strategies as well as ICT skills. Some major topics conducted in the workshop included hands-on activities in Chemistry, Physics and Biology, Problem-based learning in Mathematics and ICT-based Science and Mathematics learning.
- A five-day seminar-workshop on “*Developing 21st Century Skills through Science, Technology, Engineering and Mathematics (STEM)*” was held at RECSAM from 15 to 19 October 2018 for 38 (thirty eight) students and teachers from Benchamaratrungsarit 2 School, Chachoengsao, Thailand. This seminar-workshop was aimed to engage the participants with the various active learning strategies to make sense of science, mathematics, technology and engineering so as to cultivate interest in these disciplines and develop scientific and mathematical/quantitative literacy as well as to motivate them to pursue careers in science, mathematics, technology and engineering. This seminar-workshop was activity-oriented and stressed on active involvement of participants in group discussions and demonstrations on various active learning strategies as well as ICT skills. Some major topics

conducted in the workshop included Problem-based learning in Science and Mathematics, Exploring Science and Technology through toy making, Exploring Mathematics through hands-on activities and ICT-based Science and Mathematics learning.

(v) *SEAMEO Olympiad*

- The first SEAMEO Science Olympiad (SEASO) was recently held from 5 to 8 March 2019 at RECSAM, Penang Malaysia. Aimed at bringing science to life and developing teamwork and project-based learning (PBL) among students, about 118 next generation young teenage students and teachers across the Southeast Asia region participated in this event. In the student category, the students went through four levels of competition that comprised of paper and pencil test as well as hands-on Science, Technology, Engineering and Mathematics (STEM) challenge. Each level tested the students' understanding of science, technology, engineering and mathematics. The competition required every team to complete four levels of problem-solving science related activities namely; Paper and pencil test (Level 1), Egg Drop Challenge (Level 2), Impromptu Presentation (Level 3) and Water Rocket Challenge (Level 4). Twenty eight teams participated in the event, with the team from Philippines finally emerging as the overall champion, followed by the Malaysian team in second place and the Thailand team in third. They took home a gold medal, a challenge trophy, an individual trophy, certificate of achievement and RM1000 cash prize. Both teams from Malaysia and Thailand also picked up medals, trophies, certificates of achievement and RM700 and RM500 each respectively. This year, students Kyle Nathan G. Naranjo, representing the Philippines and Elmeeza Bazillah binti Abdullah Muhammad Yasrinal Eddy Abdullah from Brunei Darussalam garnered the Science Ambassador. For their efforts, both students received certificates of achievement, trophies and cash prize of RM200 each. Competing against 92 student contestants from Brunei Darussalam, Cambodia, Malaysia, Philippines, Singapore, Thailand and Vietnam, students Kyle Nathan and Elmeeza Bazillah topped the Level 1 individual category with the highest accumulated points by answering 100 questions, which were a mix of multiple choice and subjective questions. In the teacher category, there were two levels. Level 1 involved recording, editing and creating a video/static presentation based on the students' activity in Levels 2 and 4. While in Level 2, teachers were required to answer 100 questions in up to 60 minutes using an answer sheet. Under the teacher's category, teacher Marjorie A. Nariz and Ayra Patricia from the Philippines emerged as Champion followed by followed by Thailand (Phanbupha Jinawong & Temsiri Sirisombat) as 1st runner-up and Malaysia (Muazam Mokhtar) as 2nd runner-up. The teacher's category team from the Philippines won a gold medal, RM800 cash prize and certificates of achievement. Meantime, the teams from Thailand and Malaysia secured the silver and bronze medals, RM600 and RM400 cash prizes and certificates of achievement respectively. The panel of judges for the STEM Challenge and teachers' category competition were Ms. Mary Jane O'Callaghan (Curtin College, Australia), Mr. Yuji Otsuka (Science Education Specialist, SEAMEO RECSAM), Mr. Lee Shok Mee (Consultant, SEAMEO RECSAM) and Mr. Gan Teck Hock (Mathematics Education Specialist, SEAMEO RECSAM). All well-deserved winners were given recognition and received their awards on 8 March 2019 from the Guest of Honour, Dr. Gatot

Hari Priowirjanto, the Director of SEAMEO Secretariat based in Bangkok, Thailand. The SEAMEO Science Olympiad is a unique platform of inspiration and scientific knowledge simulation of future scientists and science academicians all over Southeast Asia and beyond. SEASO is also a venue for sharing and dissemination of information on all fields of science studies, namely physical science, life science, social science, formal science and applied science. The programme plays a strong role in encouraging and involving young learners in pursuing science knowledge as well as to increase their awareness about the relationship between various science fields in daily lives.

(vi) *Colloquium*

- A colloquium on “*Learning Science and Mathematics Together’ in a borderless world [LeSMaT (Borderless)]*” was also held on 28 August 2018 in conjunction with the workshop on “Creative Writing and Publishing Output of LeSMaT (Borderless). The essence of the topic was based on disseminating/publishing work related to gamification in various internationally renowned platforms and Current trends in science education and a journey to successful publication were shared during the talk. Invited speakers were (i) Ms. Anm Pek from Gamification Solutions Asia Pte. Ltd. and Game for Life Academy, Singapore, (ii) Associate Professor Dr. Lay Yoon Fah from the Faculty of Psychology and Education (FPE), Universiti Malaysia Sabah (UMS), and (iii) Dr. Ng Khar Thoe, Specialist from Research & Development (R&D Division), RECSAM shared their views during the colloquium. This activity was participated in by forty eight (48) teachers from nearby schools in Penang state.
- A colloquium was held on 12 November 2018 in conjunction with the regional workshop on “*Teaching to Transform: 21st Century Skills and Design Thinking in STEM Contexts*”. The two topics discussed were “*Design of a Transdisciplinary Inquiry-Based Learning Sequence*” and “*Where is Math, Engineering, Arts?*” successfully facilitated by experts from Monash University, Australia composed of Assoc. Prof. Dr. Gillian Kidman, Mr. Roland Gesthuizen, Dr. Hazel Tan and Ms. Simone McDonald. Almost 110 teachers from nearby schools in Penang state attended this event.
- A Colloquium on “*Integrated STEM and Science Beliefs and Attitudes of SEAMEO Students*” was held at RECSAM on 10 January 2019. The topics discussed during the session were “*Integrated STEM Workshop*” and “*Beliefs and Attitudes towards Science and Science Education of SEAMEO Grade 9 and 10 Students: A Research Report*”. The talks were facilitated by Assoc. Prof. Dr. Wan Ng and Dr. Jennifer Fergusson from STEM Education Futures Research Centre, University of Technology Sydney, NSW, Australia. Almost 90 teachers from primary and secondary schools as well as lecturers from Teacher Training Institutes (IPGs) in Penang and neighboring States participated in this event.

### **c) Recognition and Benchmarking**

#### **(i) Engagement in Consultancy Services**

RECSAM Specialists have also been invited to provide consultancy services to local and international institutions. In this fiscal year, RECSAM's Specialists have been commissioned to take part in programmes and projects of mutual interest organised by the Education Ministries and leading agencies from the SEAMEO region and beyond.

- Dr. Ng Khar Thoe, Specialist from Research & Development Division was invited as a Co-Chair to the “*International Conference on Recent Trends in Science, Technology, Management and Social Development (ICRTSTMSD-18)*” organised by the Society for Research Development, India at Hotel Kuta Central Park, Bali, Indonesia on 4 and 5 August 2018.
- Mr. Lee Shok Mee, Specialist from Training Programme Division conducted a training workshop for a group of primary school science/physics teachers entitled “*Inquiry-based learning using problem solving strategies in line with 21st century learning skills*” organised by Guangxi Normal University, Guilin and funded by the Ministry Education of China from 18 to 20 September 2018.
- Ms. Teh Kim Hong, Specialist from Training Programme Division was invited by Kangaroo Math Malaysia Secretariat, Kuala Lumpur as a workshop facilitator in the “*Teachers’ Conference 2018 on Mathematics*” organised by Kangaroo Math Malaysia Secretariat at Ancasa Hotel & Spa Kuala Lumpur on 14 October 2018.
- Mr. Dominador D. Mangao, Acting Deputy Director cum Specialist from Research & Development Division was invited as a Resource Speaker at the “*International Seminar Workshop for Science Teaching*” organised by the Philippine Association for the Career Advancement of Education (PACAE) at Cooyeesan Hotel Plaza, Baguio City, Philippines from 7 to 9 December 2018.
- Ms. Teh Kim Hong, Acting Deputy Director (Training Programme) attended the meeting of “*Content Preparation for Inquiry-based Mathematics Education (IBME) Workshop for master teachers*” at the National STEM Learning Centre organised by the Ministry of Education Malaysia at IPG (*Institut Pendidikan Guru*) Kampus Pendidikan Teknik, Negeri Sembilan on 12 February 2019.
- Mr. Mohd Hazlie bin Muhamad, Specialist (Research & Development) was involved as a competition judge in the “*Novel Research and Innovation Competition 2019 and e-Novel Research and Innovation Competition*” organised by Student Development Affairs & Alumni, Universiti Sains Malaysia (USM) from 19 to 21 April 2019.
- Mr. Dominador D. Mangao, Acting Deputy Director (Research & Development) attended the meeting was involved as a Resource Speaker in the “*International Seminar Workshop for Science Teachers*” organised by the Philippine Association for the Career Advancement of Education (PACAE), PHILIPPINES at Sta. Fe Resort, Bacolod City, Philippines from 2 to 4 May 2019.
- Dr. Ng Khar Thoe, Specialist from Research & Development Division was involved in the evaluation panel of the “*Pertandingan Inovasi Pedagogi IPG Kampus Pulau Pinang 2019*” organised by Institut Pendidikan Guru, Kampus Pulau Pinang on 19 & 20 June 2019.

(ii) *Centre's Involvement in the Development and Implementation of Policy/Strategy/ Programme/Activities by the Education Ministries and Agencies from the SEAMEO Region and Beyond*

- Ms. Khor Sim Suan, Acting Centre Director, Ms. Rashidah Othman, Acting Deputy Director (Administration) and Mr. Dominador D. Mangao, Acting Deputy Director (Research & Development) attended the “49<sup>th</sup> SEAMEO RECSAM Governing Board Meeting 2018 Pre-Council Meeting” organised by the Policy and International Relation Division, Ministry of Education of Malaysia on 15 August 2018.
- Ms. Khor Sim Suan, Acting Centre Director, attended “73<sup>th</sup> Anniversary of the Independent Day of the Republic on Indonesia Reception” organised by the Consulate General of the Republic of Indonesia at G Hotel, Penang on 20 August 2018.
- Ms. Bhavani Ramasamy, Programme Officer from Training Programme Division attended the “Third Country Training Programme (TCTP) 2018 Workshop” organised by Malaysian Technical Cooperation Programme (MTCP) and Japan International Cooperation Agency (JICA) at Wisma Putra, Putrajaya on 29 August 2018.
- Ms. Khor Sim Suan, Acting Centre Director, Mr. Dominador D. Mangao, Acting Deputy Director (Research & Development), Ms. Teh Kim Hong, Specialist (Training Programme) and Dr. Chua Kah Heng, Specialist (Research & Development) participated in an online-Skype meeting organised by UNESCO Bangkok to explore the possibility of collaborating with UNESCO Bangkok in the Capacity Development on Gender-Responsive Pedagogy in STEM education project for key trainers of Lao PDR on 21 August 2018.
- Ms. Teh Kim Hong, Specialist from Training Programme Division, attended the “Stakeholder Consultation Workshop Series of National Policy on Science, Technology and Innovation (NPSTI) 2021 - 2030 Formulation Study” organised by the Academy of Sciences Malaysia on 26 October 2018.
- Mr. Liman Anthony, Specialist from Training Programme Division attended the “Curriculum Meeting for Penang State” organised by Penang State Education Department on 13 December 2018.
- Dr. Chua Kah Heng, Specialist from Research & Development Division attended the “Penyelarasan Pemeriksaan Tempatan Peperiksaan Sijil Pelajaran Malaysia 2018” meeting organised by the Examination Syndicate, Ministry of Education, Malaysia from 19 to 21 December 2018 at Pokok Sena, Kedah.
- Ms. Bhavani Ramasamy, Programme Officer from Training Programme Division attended the “Pelaksanaan Kursus Program Kerjasama Teknikal Malaysia (MTCP) Tahun 2019 dan Proses Permohonan Visa Dengan Rujukan (VDR) dan Pas Lawatan Ikhtisas (PLIK)” Briefing organised by the Malaysian Technical Cooperation Programme, Ministry of Foreign Affairs, Malaysia at Wisma Putra 1, Kuala Lumpur on 4 February 2019.
- Mr. Liman Anthony, Specialist from Training Programme Division attended the officiating ceremony of the “Karnival STEAM 3.0 Bersama Komuniti 2019” organised by SMK Kampong Selamat, Penang on 9 March 2019.

- Mr. Gan Teck Hock, Specialist (Training Programme), Mr. Hazlie bin Muhamad, Specialist (Research & Development) and Ms. Nur Ezdiani Yusof, Assistant Librarian attended the “*Kuala Lumpur International Book Fair 2019*” at PWTC (Putra World Trade Centre), Kuala Lumpur on 31 March 2019 and 1 April 2019.
- Mr. Mohd Hazlie bin Muhamad, Specialist (Research & Development) attended a meeting discussion organised by Biro STEM Jawatan Kuasa Kajian Dasar Pendidikan Negara (JKDPN) at Institut Pendidikan Guru Malaysia, Cyberjaya on 15 January 2019.
- Mr. Liman Anthony, Specialist from Training Programme Division attended “*Modul Intervensi Pembangunan Profesionalisme Berterusan (PPB) Guru STEM KPM*” meeting organised by the Teacher Training Division, Ministry of Education Malaysia at Putrajaya on 21 June 2019.
- Dr. Suhaidah Tahir, Centre Director and Mr. Dominador D. Mangao, Acting Deputy Director (Research & Development) attended the the “*Regional Workshop on SEAMEO Strategic Plan (SSP) (2011 – 2020)*” organised by SEAMEO Secretariat, Bangkok at Four Wings Hotel on 17 & 18 June 2019.

## 2.2 KRA 2: REGIONAL VISIBILITY

### a) Strengthening Linkages with Inter-Centre, National, Regional, and International Institutions

#### (i) Collaborative Activities Conducted With Inter-Centre/Regional/International Institutions and Community Involvement

Apart from the mainstream linkages with the ministries of education of the member and associate member countries, collaboration with other institutions and organisations had enabled the Centre to stay in the mainstream of global educational developments. During the period in review, the Centre established and/or renewed formal agreements with various institutions and carried out activities to foster closer relationships with them.

- RECSAM and Kamphaeng Phet Rajabhat University, Thailand recently signed a Memorandum of Understanding (MoU) to facilitate academic cooperation between the two institutions. The MoU was signed by Ms. Khor Sim Suan, Acting Centre Director of SEAMEO RECSAM and Assoc. Prof. Dr. Wachira Wichuwaran, Dean of Faculty of Education and representative of KPRU President, Kamphaeng Phet Rajabhat University, Thailand on 2 August 2018 at RECSAM, Penang. Through this partnership, both institutions will conduct joint educational-related research activities, training programmes, staff exchange programmes, partnership on implementation of joint programmes and activities as well as other educational projects in areas of mutual interest. The signing ceremony was witnessed by the management and professional team of RECSAM.
- RECSAM recently organised a STEM Study Contest 2018 on 11 August 2018 for students of Penang. A total of 325 primary and secondary students from Penang took part in this activity, which was under the “*Program Penggalakan Sains & Teknologi (PPST) Pulau Pinang 2018*”, an initiative funded by the Penang Education Council. The one-day programme seeks to spur primary and secondary school students’ interest in science, technology, engineering and mathematics (STEM).

This annual programme is aimed to develop the interest in STEM learning among school students and promote the relevance of real world issues in classroom learning. The study contest was divided into two categories, primary and secondary; and opened to all students in Penang, ranging from Year 3 in primary schools to Form 4 in secondary schools. This project enables students to experience for themselves about STEM learning and teachers alike to experience how STEM activities can be carried out in schools. Fun and meaningful activities such as water rocket, slowest moving object and rubber band car race were specially designed for the contest. SMKA Al-Mashoor Lelaki was the overall champion for the Water Rocket competition, SMJK Chung Ling emerged as winner for the Slowest Moving Object competition while SMK Alma was the winner for Rubber Band Car Race under the secondary school category. For the primary school category, SK Seri Penanti emerged champion for the Water Rocket competition while SJKT Ladang Changkat was the winner of the Rubber Band Car Race. This year's programme received huge participation from 46 schools across the Penang state. All deserving winners were given recognition and received their prizes from Ms. Khor Sim Suan, Acting Centre Director of RECSAM.

- RECSAM and PPPPTK MATEMATIKA (Centre for Development and Empowerment of Mathematics Teacher and Education Personnel), Indonesia recently signed a Memorandum of Understanding (MoU) to facilitate academic cooperation between the two institutions. The MoU was signed by Mr. Taufek Bin Muhamad, Acting Centre Director of SEAMEO RECSAM and representative, Ms Anna Tri Lestari, Head of Programme Section on behalf of Dr. Dra Daswatia Astuty, Head of Centre, PPPPTK MATEMATIKA on 12 March 2019 at RECSAM, Penang. Through this partnership, both institutions will conduct joint educational-related research activities, training programmes, partnership on implementation of joint programmes and activities in the form of short course for Indonesian mathematics teachers as well as other educational projects in areas of mutual interest. The signing ceremony was witnessed by the 26 course participants from PPPPTK and the management and professional team of RECSAM.
- SEAMEO RECSAM and Kanchanapisekwiththayalai Nakhonpathom (Pratumnang Suankulab Matthayom), Thailand recently signed a Memorandum of Understanding (MoU) to facilitate academic cooperation between the two institutions. The MoU was signed by Dr. Suhaidah Tahir, Centre Director of SEAMEO RECSAM and Mr. Suriya Chainaphong, Principal of Kanchanapisekwiththayalai Nakhonpathom on 29 July 2019 at RECSAM, Penang. Through this partnership, both institutions will conduct joint educational-related research activities, training programmes, staff exchange programmes, partnership on implementation of joint programmes and activities as well as other educational projects in areas of mutual interest. The signing ceremony was witnessed by Ms. Teh Kim Hong, Acting Deputy Director (Training Programme) of SEAMEO RECSAM and Mrs. Suyada Hengchaiyo. Also present at the event was the management and professional team of RECSAM.

(ii) *Visitors to RECSAM*

RECSAM also organised and served as host to many groups of visitors. During this fiscal year, various personages from different local and international agencies, institutions, government and non-government organisations, visited RECSAM. They were briefed on the Centre's programmes and activities, given a tour of RECSAM facilities, or oriented to a particular project of RECSAM. Through these visits, the Centre established and developed working relationships with other organisations and institutions for programmes and activities that are of mutual interest. The list below shows the organisations and its details that visited RECSAM in the fiscal year 2017/2018.

- Dr. Noraishah Spahat, Undersecretary, International Relation Division, MOE Malaysia, 27 July 2018
- Ms. Shahira Nur Zolkepli, Deputy Undersecretary, International Relation Division, MOE Malaysia, 27 July 2018
- Assoc. Prof. Wachira Wichuwaran, Faculty of Education, Kam Phaeng Phet Rajabhat University, Thailand, 2 August 2018
- Lam Shenn Yuh, Lecturer, IPGK Batu Lintang, Sarawak, 30 October 2018
- Minoru Ikegami, JICA Malaysia, 19 November 2018
- Kaew Sakulsormkraisri, Matthayon Watnairong School, Thailand, 10 December 2018
- Datin Era Zaffura Md Sin, Admin Exec/Accountant, SEAMEO SEN, 30 January 2019
- Ms. Noor Addlina Oshman, Asst. Accountant, SEAMEO SEN, 30 January 2019
- Ms. Siti Nadia Sahak, Personal Assistant to the Director, SEAMEO SEN, 30 January 2019
- Ms. Noor Adila Ab. Khalim, Office Admin, SEAMEO SEN, 30 January 2019
- Ms. Siti Zuraidah Md Noor, Finance Assistant, SEAMEO SEN, 30 January 2019
- Ms. Jayanthi Arumugam, Chief Administrative Assistant, SEAMEO SEN, 30 January 2019
- Mr. Rusnedy Ruslan, Computer Technician, SEAMEO SEN, 30 January 2019
- Mr. Mohamad Shabilullah Abd Hamid, IT Officer, SEAMEO SEN, 30 January 2019
- Mr. Amiruddin Abu Samah, Assistant Administrative Executive, SEAMEO SEN, 30 January 2019
- Mr. Aris Mamat, SEAMEO SEN, 30 January 2019
- Dr. Sabani Bari, Acting Centre Director, SEAMEO SEN, 26 February 2019
- Ms. Monishah Md Shah, Training Coordinator, SEAMEO SEN, 26 February 2019
- Mr. Mohd Zulkarnain Abd. Wahab, Training Coordinator, SEAMEO SEN, 26 February 2019
- Dr. Ailin, Research Officer, SEAMEO SEN, 26 February 2019
- Mr. Mohd Anis Abdul Razak, Research Officer, SEAMEO SEN, 26 February 2019

- Mr. Hazzlan Sam, Research Officer, SEAMEO SEN, 26 February 2019
- Ms Nur Masturah Ibrahim, Training Assistant, SEAMEO SEN, 26 February 2019
- Mr. Heikmal Hamzan, International Relation Officer, SEAMEO SEN, 26 February 2019
- Mr. Muhammad Asyraf Maarif, Assistant Research Officer, SEAMEO SEN, 26 February 2019
- Mr. Mohd Khairul Johar, Office General Assistant, SEAMEO SEN, 26 February 2019
- Mr. Zul Ashraf Abu Bakar, General Assistant, SEAMEO SEN, 26 February 2019
- Assoc. Professor Tairo Nomura, Saitama University, Japan, 21 March 2019
- Dr. Gatot hari Priowirjanto, Director, SEAMEO Secretariat, 29 March 2019
- Dr. Mohammad Naim Yaakub, Deputy-Director General (Planning), Office of Deputy-Director General (Planning), Department of Polytechnic and Community College Education, MOE, 19 April 2019
- Prof. Dr. Khalid Hasnan, Ketua Pusat, Pusat Kecemerlangan Industri - Rel (ICOE-REL), Institut Kejuruteraan Integrasi, Faculty of Engineering Technology, Universiti Tun Hussein Onn Malaysia, 19 April 2019
- Prof Madya Ts Dr Hj Mohd Ezree Abdullah, Special Officer (Development) from Office of the Minister of Education Malaysia, 21 April 2019
- Mr. Mohammad Razlan, AIA Public Takaful, 25 April 2019
- Ms. Fazilawati Jamaludin, Academic Management Sector, Penang State Education, 26 April 2019
- Ms. Shanthi a/p Thayagarajan, Customer Assistant Manager, Al Rajhi Bank, 13 May 2019
- Dr. Aidi Zulkarnain Md Nor, NBA Sdn. Bhd., 13 May 2019
- Ms. Sharmila a/p Subramaniam, NBA Sdn. Bhd. 13 May 2019
- Ms. Noor Azimah Abdul Ghani, Politeknik Tuanku Sultanah Bahiyah, 23 May 2019
- Ms. Maziah Omar, Politeknik Tuanku Sultanah Bahiyah, 23 May 2019
- Ms. Masniza Musa, Politeknik Tuanku Sultanah Bahiyah, 23 May 2019
- Ms. Sachi Watanabe, JICA Malaysia, 23 May 2019
- Mr. Makoto Watanabe, JICA Malaysia, 23 May 2019
- Prof. Masami Isoda, University of Tsukuba, Japan, 25 June 2019

(a) *Other Centres/ Existing Partners or Organizations/ New Contacts/ Individuals:*

- RECSAM recently welcomed a group of delegates from Matthayom Watnairong School, Bangkok, Thailand on 10 December 2018. The delegation was led by Mrs. Wanthana Chuchai, Principal of Matthayom Watnairong School. After receiving a warm welcome from the Marketing Manager, Mr. Baharulnizam Baharum, an in-house “*RECSAM Forges Ahead*” video presentation was played. This was then followed by a brief presentation of the Center’s activities & programmes by the Marketing team. The delegation was briefed on the Center’s activities of F.Y.

2017/2018 and plans for action in the next coming fiscal year. Dr. Warabhorn Preechaporn, Specialist from Training Programme Division also gave her input on 21st Century Learning in Mathematics Education as part of the agenda of the visit. The delegates also spent time with the Specialist in a question & answer (Q&A) session, discussing ideas as well as best practices in areas including programme design & evaluation and RECSAM's role in training and research & development. The discussion session lasted one and a half hour and ended with token presentation and group photo session. The visit helped strengthen the linkages between RECSAM and Matthayom Watnairong School to promote science and mathematics education through educational collaboration.

- On 30 and 31 January 2019, RECSAM played host to a group of delegates from SEAMEO SEN (SEAMEO Regional Centre for Special Education), Malacca. The delegation was led by Datin Era Zaffura binti Md Sin, Administration/Finance Executive of SEAMEO SEN. These delegates were received by RECSAM's management team led by Mr. Taufek Bin Muhamad, the Acting Centre Director. After receiving a warm welcome from the Acting Centre Director, an in-house "*RECSAM Forges Ahead*" corporate video presentation was shown. This was then followed by a brief presentation of the Center's activities & programmes by the management team. The delegation was briefed on the Center's programmes and activities and plans for action in the next coming fiscal year. The delegates also spent time with RECSAM's management team in a question & answer (Q&A) session, discussing ideas as well as best practices in areas including programme design & evaluation and RECSAM's role in training and research & development on the first day of the visit. On the second day, RECSAM carried out the MyPortfolio workshop for all the delegates which was facilitated by Mr. Taufek. During the workshop, Mr. Taufek discussed about function chart, activities of functions and work processes and workflow. The two-day sessions ended with token presentations, a group photo session and a simple luncheon for all the delegates.

(b) *Centre/Network's Partners*

During this fiscal year, the Centre also conducted collaborative programmes and activities with the support of the following institutions and agencies below:

- Academy of Science, France
- Academy of Science Malaysia
- Association for the Development of Education in Africa (ADEA)
- Association for Science Education, United Kingdom
- Association of Science and Mathematics Teachers of Penang
- Association of Science and Mathematics Coaches of the Philippines (ASMaC Philippines)
- Bahagian Pendidikan Menengah, Majlis Amanah Rakyat (MARA)
- Brawijaya Smart School, Universitas Brawijaya, Indonesia
- British Council, Kuala Lumpur
- Colombo Plan Secretariat
- CRICED (Center for Research on International Cooperation in Educational Development) University of Tsukuba, Japan
- Datdaruni School, Chachoengsao, Thailand

- Deakin University, Australia
- Iloilo Science & Technology University, Philippines and Department of Education (DepED), Philippines
- Institute of Teacher Education (IPG), Malaysia
- Institute for the Promotion of Teaching Science and Technology (IPST), Thailand
- Institut Kimia Malaysia (IKM)
- International Council of Associations for Science Education (ICASE)
- International GeoGebra Institute
- International Science Technology and Innovation Centre for South-South Cooperation under the Auspices of UNESCO (ISTIC)
- Japan International Cooperation Agency (JICA)
- Kamphaeng Phet Rajabhat University, Thailand
- Kanchanaburi Rajabhat University, Thailand
- Khon Kaen University, Thailand
- Malaysian Technical Cooperation Programme (MTCP)
- Mathematics Education Department, Sriwijaya University, Indonesia
- Ministry of Education, Malaysia
- Ministry of Education, Culture, Sports, Science and Technology, Japan
- Ministry of Foreign Affairs, Malaysia
- Ministry of Higher Education, Malaysia (Polytechnic Education Dept)
- Nakhon Si Thammarat Rajabhat University (NSTRU), Thailand
- Persatuan Melayu Pulau Pinang (PEMENANG)
- Persatuan Pendidikan Sains dan Matematik Pulau Pinang (ASMEP)
- Petrosains Malaysia
- Politeknik Sultanah Bahiyah
- Rajabhat Maha Sarakham University, Thailand
- Regional Centre of Expertise (RCE) on Education for Sustainable Development (ESD), Universiti Sains Malaysia
- SEAMEO Ministries of Education
- SEAMEO Sister Centres
- SEAMEO Secretariat, Thailand
- Sriwijaya University, Indonesia
- State Education Department, Penang
- Thepsatri Rajabhat University, Thailand
- UNESCO
- UNESCO IBE (International Bureau of Education)
- UNECSO MGEIP (Mahatma Gandhi Institute of Education for Peace and Sustainable Development)
- University of the Philippines National Institute for Science and Mathematics Education Development (UP NISMED), Philippines
- Universiti Kebangsaan Malaysia (UKM)
- Universiti Malaya (UM)
- Universiti Malaysia Sabah (UMS)
- Universiti Pendidikan Sultan Idris (UPSI), Malaysia
- Universiti Sains Malaysia (USM)
- Universiti Teknologi Malaysia (UTM)
- Universiti Utara Malaysia (UUM)

- University of Canterbury, New Zealand
- University of Monash, Australia
- University of New South Wales, Australia
- University of the Philippines National Institute for Science and Mathematics Education Development (UP NISMED)
- University of South Australia
- University Technology Sydney, Australia
- University of Western Sydney, Australia
- Valaya Alongkorn Rajabhat University, Thailand

## **b) Increase Means for Stakeholders to Access SEAMEO Programmes**

### *(i) Marketing of RECSAM's Programmes, Facilities and Services*

The efforts to increase access to RECSAM's programmes, facilities and services to markets within and beyond the SEAMEO region were sustained. The Marketing Unit continued to identify new market outlets for its programmes and International House, amidst a very competitive environment prevailing in the region. Last year, one of the identified medium was through the Penang Convention & Exhibition Bureau (PCEB); a local-based organisation established in 2016 to develop business events, meetings, incentives and exhibition (MICE) industry in Penang. PCEB serves as a platform to promote the Centre globally through its network and marketing initiatives. This year, the Marketing Unit has been accepted as an official Industry Partner Programme (IPP) of PCEB and SEAMEO RECSAM has been officially listed as one of MICE industry player in Penang. The IPP listing period obtained is for two years; 2018 and 2019. This was a major accomplishment of the unit as it would promote the Centre in the international level in MICE industry.

Advertising the Centre's events and activities in the local media, distribution of promotional brochures and flyers to prospective clients, wider circulation of the Centre's publications such as the Journal of Science and Mathematics Education in Southeast Asia and RECSAM newsletters, hosting of regional and international seminars, congress and conferences as well as the display of banners and posters at international events outside RECSAM and official visits by officers and academicians had helped to publicise the Centre's programmes and facilities widely.

The regular practice of RECSAM's managerial and academic staff meetings with leading educationists and experts at regional and international events had helped the Centre expand contacts and strengthen its international links. The quality of the Centre's programmes and support facilities had also impressed visitors to the Centre.

RECSAM staff also went all out to support the Merdeka Day celebration on 31 August 2018. In Penang, the state-level Merdeka celebration was held at Padang Kota Lama, where over 150 contingents from government departments and agencies, schools, institutions of higher learning, uniformed and non-governmental organisations took part in the Merdeka parade. This time, RECSAM's contingent comprised of twenty four (24) staff representing Managers, Technical Assistants, Administrative Assistants as well as General Assistants. Mr. Baharulnizam Baharum, Marketing Manager was the head of the contingent while Mr. Azwan Hanafi Abu Hashan from the Administration Unit, was the commander. The celebration was

graced by His Excellency, Tuan Yang Terutama Tun Dato' Seri Utama (Dr.) Haji Abdul Rahman Bin Haji Abbas, the Governor of Penang and Y.B. Tuan Chow Kon Yeow, Chief Minister of Penang.

(ii) *Publications Produced by the Centre*

Several publications were produced at RECSAM to compliment the workshops and conferences as well as to continue running the biannual Journal. Brochures and flyers with promotional information and newsletters were distributed widely from time to time. The lists of publications are as follows:

- Journal of Science and Mathematics Education in Southeast Asia Volume 41 (December 2018)
- SEAMEO RECSAM Mid-Term Review of the 10th Five Year Development Plan
- SEAMEO RECSAM Annual Report F.Y. 2017/2018
- SEAMEO RECSAM 49th Governing Board Meeting Proceedings
- Periodical newsletters Volume 49, Number 1,2,3
- Executive Summaries of Programmes and Activities in F.Y. 2017/2018 for Centre Directors' Meeting and High Officials' Meeting
- Brochures and programme books for courses/ workshops/ seminars/congress and conferences

(iii) *Centre's Presentation in Regional and International Conferences / Congress/ Seminars / Workshops / Professional Visits*

Professional development of our staff had been central and vital in the growth of RECSAM's services to educators of this region and beyond. In this fiscal year, to date, about 20 (twenty) human resource development programmes were provided to the academic staff members:

- Mr. Dominador D. Mangao, Acting Deputy Director (Research & Development) and Dr. Ng Khar Thoe, Specialist (Research & Development) attended the Evidence-Based Strategies for Journal Improvement Workshop organised by Malaysian Citation Centre, Higher Education Division, Ministry of Education, Malaysia at Putrajaya on 11 July 2018.
- Dr. Warabhorn Preechaporn, Specialist from Training Programme Division attended the "*Excellent Teaching and Learning Seminar Series 3/2018*" organised by the Centre for Development of Academic Excellence (CDAE), Universiti Sains Malaysia (USM) at USM on 27 July 2018.
- Ms. Khor Sim Suan, Acting Centre Director, attended a training workshop for "*IBSE Master Trainers on Climate Change Education*" organised by the International Science, Technology and Innovation Centre (ISTIC) at TAMU Hotel & Suites Kuala Lumpur from 27 to 30 August 2018.
- Ms. Khor Sim Suan, Deputy Director (Training Programme) attended the "*APEC-Khon Kaen International Symposium 2018: 12 years of Lesson Study (Jugyo Kenkyu) on APEC project network*" and the "*11th International Conference on Educational Research (ICER)*" organised by Khon Kaen University, Thailand at Khon Kaen University from 8 to 11 September 2018.
- Dr. Chua Kah Heng, Specialist from Research & Development Division attended the "*Pemurnian Elemen Model Guru Futuristik Malaysia (GFM) 2018 Zon Utara*" workshop organised by the Institute of Teacher Education Malaysia, Ministry of Education Malaysia at Olive Tree Hotel from 18 to 20 September 2018.

- Dr. Ng Khar Thoe, Specialist from Research & Development Division attended the “*6th Union of International Associations (UIA) Round Table Asia-Pacific Conference*” organised by the Union of International Associations (UIA), Belgium at Kuala Lumpur Convention Centre from 25 to 27 September 2018.
- Mr. Dominador D. Mangao, Acting Deputy Director cum Specialist from Research & Development Division attended the “*4th International Science, Mathematics and Technology Education Conference (ISMTEC 2018)*” organised by The Institute for the Promotion of Teaching Science and Technology (IPST) and SEAMEO Secretariat at Ambassador Hotel, Bangkok from 18 to 20 October 2018.
- Dr. Warabhorn Preechaporn, Specialist from Training Programme Division attended the “*GeoGebra Workshop and Activities*” organised by Sakdibhornssup Foundation in Bangkok, Thailand on 21 October 2018.
- Ms. Teh Kim Hong, Specialist from Training Programme Division traveled to Japan as a *Visiting Foreign Research Fellow*, hosted by the Center for Research on International Cooperation in Educational Development, University of Tsukuba, Japan from 1 November to 15 December 2018. The research on teaching materials, particularly the Japanese mathematics text books were for better preparation of a guidebook for mathematics lessons based on the SEAMEO Common Core Regional Learning Standards in mathematics.
- Ms. Teh Kim Hong, Specialist from Training Programme Division attended the “*International Commission on Mathematical Instruction Study Conference (ICMI Study 24) on School Mathematics Curriculum Reforms: Challenges, Changes and Opportunities*” from 26 to 30 November 2018 organised by the University of Tsukuba, Japan and presented a paper entitled “*Challenges for the Development of Regional Mathematics Curriculum Standards in the Case of Southeast Asia Ministers of Education Organisation (SEAMEO)*”.
- Fourteen (14) staff from RECSAM attended an in-house training workshop on “*Scopus Indexing and Journal Management System*” facilitated by staff from the Malaysian Citation Centre, Department of Higher Education, Ministry of Education, Malaysia on 22 November 2018.
- Dr. Chua Kah Heng, Specialist from Research & Development Division attended the “*International Conference of East-Asian Association for Science Education*” organised by East Asian Science Education Association (EASE) at National Dong Hwa University, Hualien, Taiwan from 28 November to 3 December 2018.
- Mr. Taufek Muhamad, Deputy Director from Administration Division and Mr. Liman Anthony, Specialist from Training Programme Division attended the “*APEC Tsukuba International Conference XIII and SEAMEO-University of Tsukuba Symposium VII*” organised by Centre for Research on International Cooperation in Educational Development (CRICED) University of Tsukuba, Japan at University of Tsukuba, Tokyo, Japan from 7 to 10 February 2019. Both was also involved in presenting a paper on “*Bridging the STEM skills gap both education and industry commitments*”.
- Mr. Liman Anthony, Specialist from Training Programme Division participated in the “*Mixed Method Research Design Workshop*” organised by School of Educational Studies, Universiti Sains Malaysia (USM) at USM on 26 & 27 April 2019.

- Specialists from Research & Development Division, Mr. Dominador D. Mangao, Dr. Ng Khar Thoe, Dr. Mohd. Nor Syahrir bin Abdullah and Dr. Murugan A/L Rajoo participated in the “1<sup>st</sup> International Conference on STEM Education (ISTEM 2019)” organised by School of Educational Studies, Universiti Sains Malaysia (USM) from 22 to 24 January 2019.
- Dr. Mohd. Nor Syahrir bin Abdullah, Specialist from Research & Development Division attended the SEAMEO Centres Policy Research Network (CPRN) Workshop 2019 organised by SEAMEO Secretariat, Bangkok at Four Wings Hotel in Bangkok from 29 to 31 January 2019.
- Dr. Ng Khar Thoe, Specialist from Research & Development Division participated as a co-researcher in a workshop organised by School of Education & Psychology, Universiti Malaysia Sabah on “*The Integration of 5E Instructional Materials to Enhance Rural Primary Pupils’ Knowledge and Attitudes towards Learning STEM*” from 25 to 28 February 2019.
- Mr. Mohd. Hazlie bin Muhamad, Research & Development Specialist traveled to Jakarta, Indonesia to attend the “School-Based Nutrition Promotion (SBNP) in Southeast Asia Workshop” organised by SEAMEO RECFON on 14 & 15 March 2019 at the Holiday Inn Express Hotel Matraman, Jakarta, Indonesia.
- Mr. Taufek Muhamad, Deputy Director (Administration) and Dr. Mohd Nor Syahrir bin Abdullah, Specialist (Research & Development) traveled to Ho Chi Minh City, Vietnam to participate in a regional workshop on “*Southeast Asia Teachers Competency Framework, Teachers’ Satisfaction and Motivation*” organised by SEAMEO RETRAC on 18 & 19 April 2019.
- Dr. Murugan A/L Rajoo, Specialist from Research & Development Division attended “4<sup>th</sup> International Conference on Business and Entrepreneurship Education 2019” organised by Integrated Physician Network (IPN) Organization at Phuket, Thailand from 14 to 16 June 2019.

## 2.3 KRA 3: SOLID RESOURCE BASE

### a) Financial Viability

The total revenue for fiscal year 2018/2019 has increased by 3.0% from RM1,835,702.30 in the past fiscal year to a current standing of RM1,858,488.35. The increase in revenue was primarily due to the conduct of long duration courses, rental of facilities as well as interest income. This was also due to the increased number of customised courses during this reporting period such as the Capacity Development in Gender-Responsive Pedagogy in STEM Education for Lao PDR course awarded by UNESCO Bangkok as well as customised training courses for Indonesian and Thai teachers / educators.

The Centre’s Reserve Fund as of 30 June 2019 decreased to RM8,449,408.46 as compared to RM10,119,085.51 in F.Y 2017/2018. The amount transferred from the Reserve Fund was intended to finance the purchase of software, licenses and computer & multimedia peripherals.

There was a decrease in expenditure from the operating funds by 2.0% from RM6,662,261.36 in the last fiscal year to RM6,544,108.78. This was due to the cost saving measures taken by the Centre to reduce in daily operating costs.

There was a decreased in expenditure from the Special Funds by 28.0%. This was due to the decreased number of participants of Regular Courses during this fiscal year.

## **b) Management Efficiency**

In addition to attending the SEAMEO Council Conference (SEAMEC), High Officials' Meeting (HOM), Centre Directors' Meeting (CDM), and Governing Board Meeting (GBM), in-house meetings were also conducted by the Centre to provide more opportunities for the Centre Director, academic and management staff towards managerial competence and to discuss the progress of on-going projects. Experiences and advanced knowledge gained from the meetings and workshops were shared through existing communication media within the Centre.

### *(i) In-House Meeting*

At RECSAM, in-house meetings and workshops were regularly held to ensure all activities ran smoothly and efficiently. The primary meetings, all chaired by the Centre Director, were those that included the academic staff in their pursuit of executing all programmes for our clients, while the management meetings comprised all Deputy Directors and Executives. The Personnel Advisory (PAC) Committee Meetings were conducted once in two months to discuss service and other matters relating to staff. Other meetings, of equal importance, were held within a period of time to facilitate the organising of conferences/ congress, for example, CoSMEd and SSYS organising and working committee meetings.

- A Management Retreat for the management and academic team members of RECSAM was held from 17 to 19 December 2018 at Grand Baron Hotel, Taiping, Perak with the objective of bridging thoughts within the Centre to consciously and collectively recommend the way forward for the Centre's upcoming plan. The Meeting was chaired by Ms. Khor Sim Suan, Deputy Director of Training Programme representing the Centre Director. Respective heads from each division (Administration, Training Programme and Research & Development) presented their 2019 annual plans which had been determined based on the Centre's strategic goals and key results areas (KRAs). Each division was required to set individual key performance indicators (KPIs) based on its job scope and responsibilities in line with the Centre's strategic goals. This was followed by discussion of other issues & concerns and setting of calendar of events for 2019. With this alignment, the staff will have a clearer vision of the Centre's direction and what is expected of them.

### *(ii) 49<sup>th</sup> Governing Board Meeting (GBM) 2018*

- SEAMEO RECSAM Governing Board Members of the eleven SEAMEO Member Countries and the SEAMEO Secretariat convened the 49th Governing Board Meeting (GBM) at Ho Chi Minh City, Vietnam from 25 to 26 September 2018. The Governing Board Members in attendance were Mr. Khambay Khamsy (Cambodia), Datin Dr. Ng Soo Boon (Malaysia), Mrs. Ma. Gemma M. Ledesma (Philippines), Mr. Chua Chor Huat (Singapore), Dr Phuriwat Khamaikawin (Thailand), Mr. Luis Nivio Soares (Timor Leste) and Assoc. Prof. Dr. Le Anh Vinh (Vietnam). The Centre also welcomed Mr. Prasert Tepanart, [Ex-Officio representing Dr. Gatot Hari Priowirjanto, Director of SEAMEO Secretariat (SEAMES)] and Mr.

Teerawat Luanrit, Observer from the Ministry of Education, Thailand to the meeting. The Vice-Chairman of the Board, Mrs. Ma. Gemma M. Ledesma from the Philippines, presided the meeting on behalf of the Chairman, Mr. Shamsulbahri bin Haji Muhammad from Brunei Darussalam. In this year's Governing Board Meeting, the Centre tabled a total of nine (9) working papers and six (6) information papers for the deliberation of the board members. Among other key working papers submitted for considerations were: (i) Matters Arising from the Resolutions of the 48th Governing Board Meeting 2017, (ii) Strategic and Operational Plans, Programmes and Proposed Budgets for Three Fiscal Years 2019/2020, 2020/2021 and 2021/2022 and Personnel Strength Budget for Fiscal Year Ending 30th June 2020, (iii) Proposal to Utilise Reserve Funds to Upgrade ICT and Multimedia Facilities in SEAMEO RECSAM, and (iv) Proposal of SEAMEO RECSAM Financial Instructions Manual 2018. After lengthy deliberations, the working papers were adopted with recommendations that RECSAM continues to keep its programmes flexible and relevant to the changing times and devise ways to increase the impact of its programmes and activities in the region. Other information papers reported the updates of the (i) Impact Evaluation Study of SEAMEO RECSAM's Training Programme on Science and Mathematics Education for Southeast Asian Countries for FY2016/2017, (ii) 11th Regional Congress on Search for SEAMEO Young Scientists (SSYS) 2018, (iii) 7th International Conference on Science and Mathematics Education (CoSMEd) 2017, (iv) Southeast Asia Basic Education Standards (SEA-BES) Phase 2, (v) SEAMEO Learning Science and Mathematics Together (LeSMaT) in a Borderless World, and (vi) Selected Research Projects and Workshops. The annual Governing Board Meeting is an important platform for Governing Board Members nominated by the eleven SEAMEO Member Countries to discuss the policy, management and administration of SEAMEO RECSAM, as well as to review the Centre's achievements in the last fiscal year and planned activities and programmes. The 50th SEAMEO RECSAM Governing Board Meeting next year will be held on 24 - 26 September 2019 in Kuala Lumpur, Malaysia.

*(iii) Centre Directors' Meeting (CDM) 2018*

- The SEAMEO Centre Directors' Meeting (CDM) 2018 was successfully held in Arnoma Grand Hotel in Bangkok, Thailand from 17 to 19 July 2018. The meeting was organized by SEAMEO Secretariat and chaired by Dr. Gatot Hari Priowirjanto, SEAMEO Secretariat Director. A total of 92 participants attended the meeting representing 26 SEAMEO Centres/Network and the SEAMEO Secretariat, one SEAMEO Associate Member Country, three SEAMEO Affiliate Members, eleven Partners and Observers. There were 20 working papers submitted to SEAMEO Secretariat for deliberation, including RECSAM's proposal for SEA-BES Phase 2 (b) – Teaching to Transform: 21st Century Skills and Design Thinking in STEM Contexts. The Directors of SEAMEO Centres and their representatives gave interesting presentations on their proposals and working papers aligned with the SEAMEO Education Agenda and Seven Priority Areas as well important flagship projects for the incoming years. Representing RECSAM in the conference and meeting were Ms. Khor

Sim Suan, Acting Centre Director and Mr. Dominador D. Mangao, Acting Deputy Director (Research & Development).

*(iv) Mid-Term Review of the 10<sup>th</sup> Five-Year Development Plan Workshop*

- The Mid-Term Review of the 10<sup>th</sup> Five-Year Development Plan is important to enable the Centre to document the new programmes and activities that it will continue to embark on for the next two fiscal years before the start of the 11<sup>th</sup> Five-Year Development Plan in July 2020. The review is also important to ensure that the training programmes and research activities that the Centre plans to implement meet the current and future trends in science and mathematics education and thus continue to be relevant to the needs of the SEAMEO Member Countries. The three-day workshop was conducted from 2 to 4 May 2018 and aimed to (i) report on the Centre's programme and project accomplishments in the first-half (F.Y.2015-2017) of the 10<sup>th</sup> Five-Year Development Plan (ii) identify the SWOT of the Centre, and (iii) review the Centre's plan and propose new programmes and activities for Fiscal Years 2018/2019 and 2019/2020. The workshop was attended by the management and professional staff from RECSAM. Officials from the Ministry of Education, Dr. Ihsan Bin Ismail from the Educational Planning and Research Division (EPRD), Mrs. Zainon binti Abd Majid and Ms. Alyenda binti Ab Aziz from the Curriculum Development Division, Ministry of Education Malaysia were also invited for this workshop as resource persons. Mrs. Zainon binti Abd Majid shared the current and Future National and Global Trends in Education, particularly in Science and Mathematics while Dr. Ihsan Bin Ismail delivered a presentation on the topic "Current and Future National and Global Trends of Educational Research and Policy Directions with Emphasis on Science and Mathematics Education or STEM Education-related Programmes and Research Activities". This final draft output of the Centre's proposed programmes and activities for Fiscal Years 2018/2019 and 2019/2020 was presented to the 49<sup>th</sup> Governing Board Meeting for consideration and approval in September 2018.

*(v) First 11th Five-Year Development Plan Workshop*

- The First 11th Five-Year Development Plan Workshop was organised by RECSAM on 24 & 25 June 2019. Dr. Suhaidah Tahir, Centre Director officially preceded the workshop on the formulation of the first 11th Five-Year Development Plan for SEAMEO RECSAM. Others present during the workshop were the management and professional staff, as well as consultants; Prof. Dr. Ong Eng Tek from Universiti Pendidikan Sultan Idris (UPSI) and Dr. Masami Isoda from University of Tsukuba. The workshop was held for two days at RECSAM, Penang. Each Division (Training Programme, Research & Development and Administrative Division) was given the opportunity to propose the draft of programmes and activities of the 11th Five-Year Development Plan based on five strategic goals for the upcoming five fiscal years. The recommendations and inputs gained from the two-day workshop will then serve as a basis for RECSAM to devise way and means in order to remain relevant by increasing the impact of its programmes and activities while maintaining its regional visibility in the Southeast Asia region and beyond.

## **c) Human Resource Management**

### *(i) Staffing*

Staffing strength stood at 82 (eighty two) as of 30 June 2019. There was five (5) staff that left the Centre during this fiscal year. The departure of staff included one (1) Deputy Director, one (1) Specialist based at Research & Development Division, one (1) Librarian, one (1) Administrative Assistant (International House) and one (1) General Assistant (International House).

Ms. Khor Sim Suan, Deputy Director (Training Programme) completed her secondment term at RECSAM and returned to home service on 31 December 2018 while Dr. Chua Kah Heng, Specialist from Research & Development Division resigned and left the Centre on 30 December 2018.

Hj. Zamani Tajudin Bin Yusoff Tajudin, Librarian retired and left the Centre on 5 September 2018. Ms. Siti Fatimah binti Mohd Kassim, Administrative Assistant (International House) resigned and left on 10 April 2019 and Mr. Devendran A/L Sive Selvam, General Assistant (International House) ended his contract with RECSAM and left the Centre on 8 October 2018.

In its bid to streamline work procedures and enhance the specialization as well as replace the vacated posts, RECSAM employed six (6) new Specialists, and one (1) Senior Volunteer from JICA (Japan International Cooperation Agency). The new Centre Director and Deputy Director for Administration also reported for duty during this fiscal year.

Dr. Suhaidah Binti Tahir, the new Centre Director reported for duty on 16 April 2019. Mr. Taufek Bin Muhamad, the new Deputy Director of Administration joined RECSAM on 16 November 2018.

RECSAM hired six (6) new Specialists during this fiscal year. Mr. Mohd Hazlie Bin Muhamad, Specialist based at Research & Development Division, Dr. Mohd Nor Syahrir Bin Abdullah, Specialist based at Research & Development Division, Dr. Murugan A/L Rajoo, Specialist based at Research & Development Division, and Mr. Liman Anak Anthony, Specialist based at Training Programme Division reported for duty on 16 November 2018. Mr. Yuji Otsuka previously served as a Senior Volunteer from JICA (Japan International Cooperation Agency) and Mr. Gan Teck Hock joined the rank as Specialists based at Training Programme Division on contract basis on 1 March 2019.

Mr. Hiroshi Onishi from JICA (Japan International Cooperation Agency) joined RECSAM as a Senior Volunteer on 3 April 2019.

Table 1: Staff Strength for fiscal year 2018/2019 (ending 30 June 2019)

Category	Non-Malaysian	Malaysian
Director		1
Deputy Director		1
Senior Specialist		0
Specialist	3	7
Consultant / JICA Senior	1	1
Volunteer		
Manager		5
Programme Officer		2
Research Officer		1
Officer / Technical Officer		8
Technical Assistant		10
Administrative Assistant		14
General Assistant		28
<i>Sub-Total</i>	<i>4</i>	<i>78</i>
<b>Total</b>	<b>4</b>	<b>82</b>

(ii) *Staff Welfare*

Financial assistance had been a mainstay in RECSAM's role of being a caring organisation towards the well-being of its staff members. Staff members enjoyed the continuous support in terms of medical insurance, welfare loan, housing loan interest subsidy, vehicle loan interest subsidy, computer loan and gratuity payment upon retirement.

Type of Welfare Assistance	Number of Staff
Welfare Loan	35 staff
Housing Loan Interest Subsidy	-
Vehicle Loan Interest Subsidy	-
Computer Loan	-
Gratuity Payment Upon Retirement	-

(iii) *Social Activities*

(a) *Family Day*

- On 27 & 28 October 2018, 155 staff and family members of RECSAM gathered for a two-day of fun amidst good food, entertaining activities and lucky draws! This year's family day held at AB Motel and Sandy Beach Resort, Pantai Cenang, Langkawi Island was a fitting finale to a year of hard work, and had the staff looking forward to the New Year with renewed vigour and enthusiasm. This year's family day amidst heavy downpour did nothing to dampen the high spirits of the crowd! Organised by the RECSAM's Family Day 2018 Committee members, it began with an early trip from RECSAM at 6.30a.m. in the morning heading to Kuala Perlis Jetty. All staff and their family members then took a joyful ferry ride to reach the Langkawi Island where they were taken by buses to the resort hotel. Staff also took part in snorkeling and island hopping later in the afternoon. The night was followed by a dinner at the seaside themed "*Don't Worry Beach Happy*". The Acting Centre Director, Ms. Khor Sim Suan welcomed the staff and their family members in her opening speech

during dinner. Prizes for games were given away immediately followed by lucky draws where all staff were given the chance of getting the lucky draw prizes stored for them at the Centre. Staff and their families continued to enjoy the event the next day with games by the beach. They were again served lunch in the afternoon and were treated with a round island tour and shopping spree before departing for home in the evening. It was a fun weekend for all! Overall, the staff enjoyed the two-day event and look forward to a happy Family Day 2019!

*(b) Festive Celebrations at RECSAM*

The work culture and environment at RECSAM is one that promotes a healthy work-life balance. Therefore, it is the norm every year for the centre to organise various staff events and activities that are not only fun and memorable, but help to build closer camaraderie among colleagues as well. These celebrations usually go hand in hand with major festivals that go a long way in forging a spirit of unity.

- To further enhance the spirit of Hari Raya, RECSAM held its festive gathering for all staff and its vendors on 5 July 2018. All RECSAM staff attended the gathering which commenced from 12.30pm and were entertained with lively “Raya” songs. It also created an opportunity for the foreign staff to understand our Malaysian culture of “Unity in Diversity” of races and religions in Malaysia a little better. Overall, it fulfilled the objective to promote a healthy and harmonious working relationship and culture at RECSAM. Everyone had a delightful feast and it was a great festive gathering to be remembered!
- Christmas season is a jolly good time to spread warmth, love and hope. On 11 January 2019, RECSAM brought Christmas cheer to its staff in appreciation of another successful year and to celebrate the holiday season. RECSAM’s Acting Centre Director, Mr. Taufek Bin Muhamad was present to grace the happy occasion along with the rest of the staff. The Acting Centre Director set the ball rolling with a brief heart-warming message. Staff were also entertained with special Christmas presentation and were invited to feast on the Christmas hi-tea offerings. There was a widespread of delectable food choices that included whole roast lamb, spaghetti, international selections and a great dessert island. It was indeed heart-warming to see the smiles and joy on the staff’s faces as they dined and mingled among each other.
- During the monthly assembly on 1 March 2019, RECSAM organised a Chinese New Year celebration gathering for all staff members. All Chinese colleagues were dressed in their best costumes and dished out oranges for wealth and good fortune. There were specially ordered cookies, cakes and snacks and the favourite was certainly the symbolic and mouth-watering “love letters” or “*kuih kapit*”. Everyone had a delightful feast and it was a great festive gathering to be remembered!
- RECSAM’s staff & their family members together with some course participants were recently feted to a Hari Raya Aidilfitri Dinner on 26 June 2019 at JEN Hotel, Penang. RECSAM’s Centre Director, Dr. Suhaidah Tahir hosted the event. This Hari Raya gathering was not only to celebrate Eid Ul-Fitr after a month of fasting but also as part of the Centre’s maiden Corporate Social Responsibility (CSR) programme

initiative whereby it provided an excellent opportunity for RECSAM staff and their family members to celebrate Hari Raya Aidilfitri in a warm and friendly atmosphere filled with a sense of goodwill with some of our courses participants. Some 170 guests attended this festive event. Apart from fostering relationships, guests were also treated with scrumptious delicacies such as 'ketupat', 'lemang' and 'and 'kuih rayas' – there's no mention of the word "diet" during the celebration – everybody's out and had a great time in the presence of good food and greater company. The Centre Director, as the host, along with other RECSAM management and professional staff greeted and entertained all guests. Towards the later part of the evening, several guests took to the floor to exhibit their vocal capability. The guests were entertained!

*(iv) Staff Development Programmes*

The Centre is committed to the development of our human resources through emphasis on training programmes to upgrade their knowledge and skills. During this fiscal year, all staff at RECSAM were provided opportunities to further develop their knowledge and skills. This included both managerial and support staff.

- Thirty one (31) staff from various divisions participated in a one-day "*English Communication Course*" facilitated by Ms. Teh Kim Hong, Specialist from Training Programme Division, organised by RECSAM Union Association and supported by RECSAM on 1 August 2018 at RECSAM.
- RECSAM's Information & Documentation team recently conducted an in-house training workshop on "*Managing Microsoft Outlook - Easy Way to Make Sure Your Mailbox Never Full*" on 3 August 2018. Seventeen (17) professional and support staff attended the workshop.
- Thirty four (34) professional and support staff attend a "*Fire Prevention*" talk organised by FPC Fire Prevention Centre Malaysia on 6 August 2018 at RECSAM.
- Thirty staff from RECSAM were selected for a two-day teambuilding camp organised by Administration Division on 24 and 25 November 2018 at Gurney Hotel, Penang. Staff were put through a series of outdoor and experiential activities that required them to work as a team. The challenges were also aimed at cultivating good team spirit through effective communication and understanding towards one another. Activities that challenged the group included Sighted and Unseen, Drops and Drips and the improvised Amazing Race. The games incorporated in the programme were aimed at fostering the sense of belonging and inter-dependence among the participants which is crucial for overall teambuilding. At the end of the programme, the participants got to know each other better, learnt to gain trust and were definitely up for greater challenges to realise their full potential in becoming a great RECSAM team!

**d) Facilities**

*(i) Infrastructure, Assets and Equipment*

The infrastructure and support facilities were always in constant need of change or improvements. Towards the end of this fiscal year 2018/2019, a number of improvements and ICT equipment purchases were made. Summary of the projects are as follows:

- Purchase of one (1) unit of Hewlett Packard DL380 G10 Proliant Server at ICT server room
- Purchase of one (1) unit of vSAN Storage Server at ICT server room
- Installation of submersible pump at the sewage tank
- Installation of "I" beam motor at RECSAM Apartment
- Pipping repair work at RECSAM International House
- Installation of copper tape from ground floor outside to PABX room at Administration building
- Refilling of dry powder type fire extinguisher type ABC - 9 kg around RECSAM building
- Renovation work at RECSAM International House reception
- Renovation work at RECSAM International House guest rooms
- Purchase of 15 (fifteen) units of mini bar fridge for RECSAM International House
- Renovation and repainting work at SEAMEO Hall ceiling
- Renovation work at RECSAM Cafeteria

## **ACKNOWLEDGEMENTS**

SEAMEO RECSAM wishes to place on record its sincere appreciation to the Chairman and members of the Governing Board for their constant support and professional guidance. RECSAM is also greatly indebted to the Government of Malaysia for its benevolence and funding support that ensure its continued growth in the region. RECSAM also wishes to thank the following for their continued patronage of its programmes and activities:

The SEAMEO Council

•

The SEAMEO Secretariat

•

The Ministers of Education of the Member Countries

•

The Associate Member Countries

•

The Donor Governments and Agencies

•

The SEAMEO Centres and Network

•

The Centre's Generous Benefactors

•

The Centre's Linkage Partners

# APPENDIX 1

## Appendix 1

Management, Academic & Support Staff in fiscal year 2018/2019 (ending 30 June 2019)

### Management and Professionals

Dr. Suhaidah Binti Tahir <i>(joined 16 April 2019)</i>	Centre Director
Ms. Khor Sim Suan <i>(left 31 December 2018)</i>	Deputy Director (Training Programme)
Mr. Taufek Bin Muhamad <i>(joined 16 November 2018)</i>	Deputy Director (Administration)
Ms. Teh Kim Hong	Specialist (Training Programme)
Mr. Lee Shok Mee	Specialist (Training Programme)
Dr. Warabhorn Preechaporn	Specialist (Training Programme)
Dr. Ng Khar Thoe	Specialist (Research & Development)
Mr. Dominador Dizon Mangao	Specialist (Research & Development)
Dr. Chua Kah Heng <i>(left 30 December 2018)</i>	Specialist (Research & Development)
Mr. Mohd Hazlie Bin Muhamad <i>(joined 16 November 2018)</i>	Specialist (Research & Development)
Dr. Mohd Nor Syahrir Bin Abdullah <i>(joined 16 November 2018)</i>	Specialist (Research & Development)
Dr. Murugan A/L Rajoo <i>(joined 16 November 2018)</i>	Specialist (Research & Development)
Mr. Liman Anak Anthony <i>(joined 16 November 2018)</i>	Specialist (Training Programme)
Mr. Gan Teck Hock <i>(joined 1 March 2019)</i>	Specialist (Training Programme)
Mr. Yuji Otsuka <i>(joined 1 March 2019)</i>	Specialist (Training Programme)
Mr. Hiroshi Onishi <i>(joined 3 April 2019)</i>	Senior Volunteer (JICA) (Training Programme)
Ms. Rashidah Othman	Accountant
Hj. Zamani Tajudin Yusoff Tajudin <i>(left 5 September 2018)</i>	Librarian
Ms. Wong Lai Cheng	Publication Manager
Mr. Mohd Faizal bin Zainoldin	ICT Manager
Mr. Baharulnizam bin Baharum	Marketing Manager
Ms. Nur Farahdina binti Omar	Administration Manager
Ms. Bhavani Ramasamy	Programme Officer (Training Programme)
Ms. Ong Mei Yean	Research Officer (Research & Development)
Ms. Tiana Mohamad	Programme Officer (Research & Development)

### **Officers & Technical Officers**

Ms. Kogilavani Nadarajan	Officer (International House)
Ms. Nur Ezdiani Yusoff	Assistant Librarian
Ms. Rosnita bt Abdul Wab	Assistant Accountant
Mr. Muhammad Hanif b. Amir Hamzah	Technical Officer (Multimedia)
Ms. Norafizah binti Sharudin	Technical Officer (ICT)
Mr. Ahmad Fuad bin Mohd Isa	Technical Officer (ICT)
Ms. Hasdiana Bt Mohd Hassan	Technical Officer (ICT)
Mr. Mohamad Hilal Bin Zulkifli	Officer (Administration)

### **Technical Assistants**

Mr. Imran Rosley Ismail (ICT)  
Mr. Kok Yip Weng (Training Programme)  
Ms. Oh Swee Si (Training Programme)  
Mr. Mohd Yusof b. Abu (Printery)  
Mr. Azwan Hanafi b. Abu Hashan (Maintenance)  
Mr. Mohd Tahir Hj. Derani (Maintenance)  
Mr. Azmi Sulaiman (Maintenance)  
Mr. Muhammad Nazri Mat Disa (Maintenance)  
Ms. Nur Syafiyah binti Mohd Kassim (Creative Design and Graphics)  
Mr. Muhammad Nadzrul Syafiq bin Zulkefli (Creative Design and Graphics)

### **Administrative Assistants**

Ms. Faridah Bt. Abdul Hamid (PA to Centre Director)  
Ms. Noor Suzilawati Ibrahim (Finance)  
Ms. Ong Lay Sim (Research & Development)  
Ms. Deng Mee Cheng (Administration)  
Ms. Nor Aiza Abdul Halim (Administration)  
Ms. Noraini Daud (Training Programme)  
Ms. Wan Norfizah Hanim (International House)  
Ms. Nor Bayzura binti Mohd Suib (Marketing)  
Ms. Shaneem Kamarudin (Publication)  
Ms. Suhaili binti Md. Suid (Library)  
Ms. Siti Fatimah binti Mohd Kassim (International House) (*left 10 April 2019*)  
Ms. Ummi Kalsum binti Abd Aziz (Library)  
Ms. Nur Masidayu bt Marzuki (Finance)  
Ms. Suhaila Binti Ismail (Administration)  
Mr. Hasrisaufee Bin Mohd Hassan (International House)

### **General Assistants**

Mr. Loh Miin Tze (Driver)  
Mr. Ahmad Basrah bin Awang (Driver)  
Mr. Maheswaran a/l Tayang (Driver)  
Mr. Azizan Abdullah (Administration)  
Ms. Renuka Selvaraju (Housekeeper)  
Ms. Latifah Mohd Koya (Library)  
Mr. Roslan Akob (Printery)  
Mr. Bohari Sharif (Housekeeper)  
Ms. Mahabuyah Yaacob (Housekeeper)  
Ms. Rabuah Hashim (Housekeeper)  
Mr. Roslee Che Rose (Housekeeper)

Ms. Siti Fatimah Abdullah (Housekeeper)  
 Ms. Siti Hajar Abdul Mutalib (Housekeeper)  
 Ms. Rusnah binti Ahmed (Housekeeper)  
 Mr. Mazelan Mohamed Amin (Security)  
 Mr. Mohamad Zaini bin Hashim (Security)  
 Mr. Noorlia bt Mohamad Noor (Security)  
 Mr. Ramesh Supramaniam (Security)  
 Ms. Pakiavathy P. Subramaniam (Facilities)  
 Mr. Rajendran Velloo (Facilities)  
 Ms. Rostati Idris (Facilities)  
 Mr. Devendran A/L Sive Selvam (Facilities) (*left 8 October 2018*)  
 Mr. Amir bin Hamzah (Security)  
 Mr. Muhammad Ashraf bin Akashah (Housekeeper)  
 Mr. Senggol Sathanantham (Housekeeper)  
 Mr. Muhammad Firdaus bin Roslan (Housekeeper)  
 Ms. Norihan binti Ramli (Housekeeper)  
 Mr. Aznan Bin Sudin (Gardening)

**Staff who left the Centre during the course of the fiscal year:**

Ms. Khor Sim Suan <i>(since 1 Jan 2016 – 31 Dec 2018)</i> <i>Returned to home service</i>	Deputy Director (Training Programme)
Dr. Chua Kah Heng <i>(since 7 Aug 2017 – 30 Dec 2018)</i> <i>Resigned</i>	Specialist (Research & Development)
Hj. Zamani Tajudin Bin Yusoff Tajudin <i>(since 1 Dec 1992 – 5 Sept 2018)</i> <i>Retired</i>	Librarian
Ms. Siti Fatimah binti Mohd Kassim <i>(since 19 Aug 2013 – 10 April 2019)</i> <i>Resigned</i>	Administrative Assistant (International House)
Mr. Devendran A/L Sive Selvam <i>(since 9 Oct 2017 – 8 Oct 2018)</i> <i>Completion of Contract</i>	General Assistant (International House)