# ANNUAL REPORT
# FY 2016/2017




Improving the Quality of Science Teachers
and Education Personnel in Southeast Asia

SEAMEO
SEAMEO Regional Centre for QITEP IN SCIENCE

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# 8 YEARS OF SEAQIS:
# IMPROVING THE QUALITY OF SCIENCE TEACHERS AND EDUCATION PERSONNEL IN SOUTHEAST ASIA

## SEAMEO QITEP in Science
## ANNUAL REPORT
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# Message from

## THE DIRECTOR

*Prof Dr Triyanta*

## *Dear shareholders,*

*It is my great pleasure to present the Annual Report of SEAMEO QITEP in Science displaying our accomplishments and contributions from July 2016 to June 2017. During the said year, we continued to empower and enhance the capacity of science teachers and education personnel in Southeast Asia.*

*This past fiscal year, we intensified our efforts to develop our major programme thrusts to achieve our vision, mission, and goals. Among many beneficial programmes were annual training courses, workshops, seminars, and in-country trainings. Most of the programmes emphasised on dissemination of Science, Technology, Engineering, and Technology (STEM) Education since we realised the importance of sustaining science inquiry to innovate through technology. We advocated STEM to be practiced as an alternative learning model by collaborating with ATSE as well as AMINEF and MEXT Japan through their visiting scholar programmes. We also initiated training on science education for early childhood education and science knowledge enhancement for teachers. Our biennial programme, Ki Hajar Dewantara Award, was also conducted in 2016 to honour and appreciate outstanding and dedicated science teachers.*

*As my final words, I would like to give highest appreciation to all of the Centre staff, the members of our Governing Board, partner institutions, SEAMEO Member Countries, the Ministry of Education and Culture of the Republic of Indonesia, and stakeholders for their support and continued trust in us.*

*(Prof Dr Triyanta)*

# ANNUAL REPORT

**SEAMEO REGIONAL CENTRE FOR QITEP IN SCIENCE**
**FY 2016/2017**

# CHAPTER 1
# EXECUTIVE SUMMARY

## SUMMARY HIGHLIGHTS

SEAMEO Regional Centre for QITEP in Science is the SEAMEO Centre focusing on improving science competencies and quality of teachers and education personnel throughout the Southeast Asia region. This executive summary highlights the Centre's progress in three Key Result Areas (KRAs) including 1-Regional Leadership, 2-Regional Visibility, and 3-Solid Resource Based during the 2016-2017 period.

Trainings and workshops are the main activities of the Centre. Until June 2017, all training courses and workshops conducted since 2009 have attracted a total of 4,448 participants from the Southeast Asia region and beyond. The Chart 1.1 describes the distribution of participants joining the Centre's training courses and workshops to date.

Meanwhile, during the 2016-2017 period the Centre conducted four regular training courses, thirteen customised/in-country trainings and workshops, three online lectures, and one monitoring and evaluation. activities

For year 2016 – 2017, SEAMEO QITEP in Science has successfully trained 1973 participants comprised of teachers and educational person-

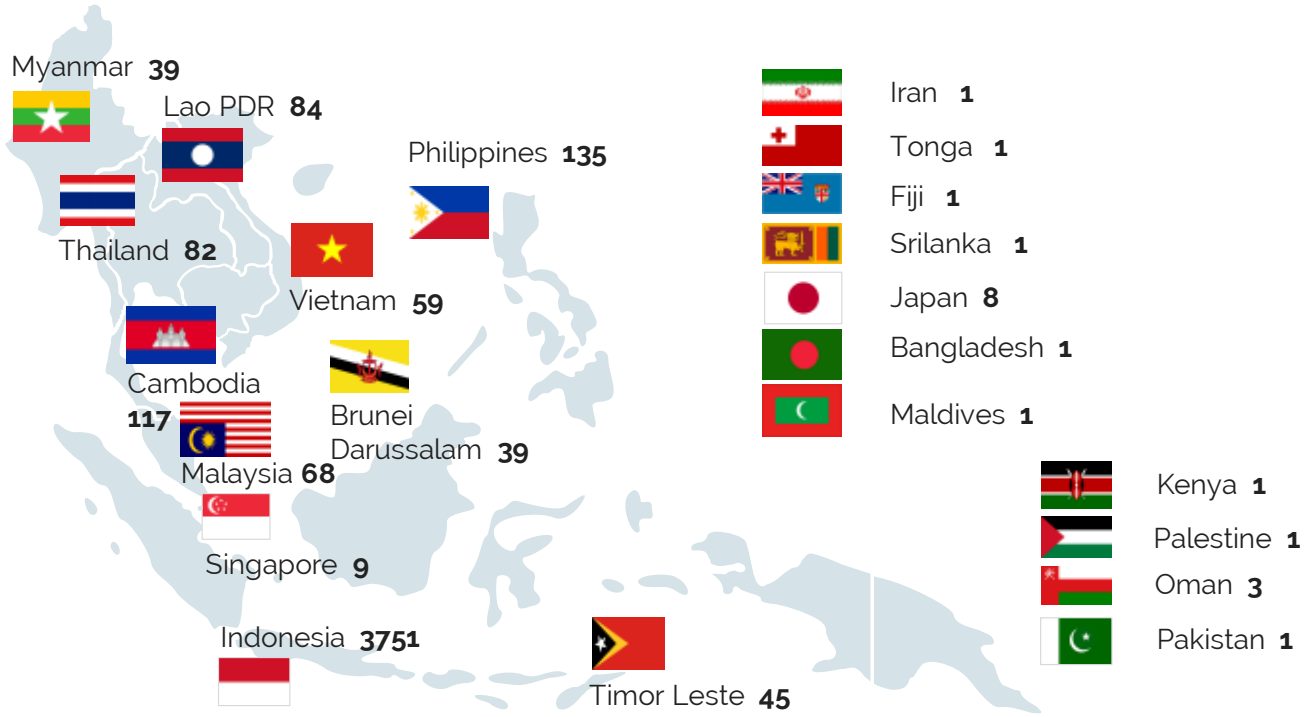



Chart 1.1 Training Course Participant Distributions from 2009-June 2017

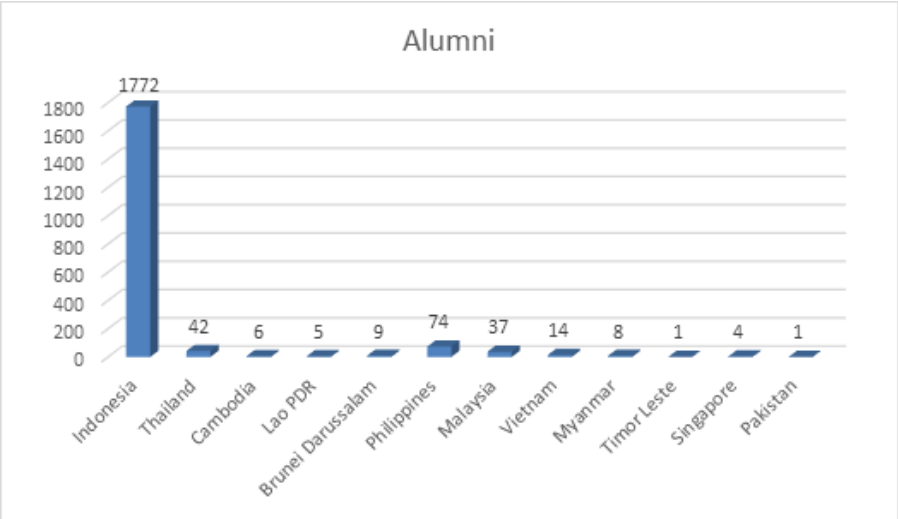



Chart 1.2 Training Course Participant Distributions from July 2016 - June 2017

nel's from various schools and institutions in SEAMEO Member countries. The Chart 1.2 shows the Training participant distributions according to their country origins for year 2016-2017.

Training courses and workshops clearly correspond to KRA 1 and KRA 2. However, some of them also correspond to the KRA 3 since in some of the training courses or workshops several Centre's staff joined the activities as participants.

In terms of Regional Visibility, there are various collaborative activities between SEAMEO QITEP in Science and regional and international institutions such as Training on STELR-STEM Programme, Training on STEM Education, Centre Director participation as a invited speaker at the Annual Seminar on Innovation and Learning of Science (SNIPS) led by the Faculty of Mathematics and Natural Science of Bandung Institute of Technology and and ASEM LLL Hub Conference: Lifelong Learning and Resilience in Disaster Management – Asian and European Perspectives.

In terms of Solid Resource Based, to strengthen the institution organisational structure, certain positions have been filled in and also a number of various staff capacity building activities were followed and those programmes have widened the knowledge and skill of the Centre's personnel.

In terms publication, the Centre has published semi-annually newsletter and a number of modules for regular training. The Centre has also published the proceedings of Research Grant 2016 and proceedings of the 6th International Conference on Science Education. This proceedings comprises of 30 presented papers from the conference that was taking place in Bandung on 13 – 16 October 2016, a joint programme named International Conference of Mathematics, Science and Computer Science Education (MSCEIS) 2016 between QITEP in Science and Indonesia University of Education. The Centre has also produced science learning materials such as a module for STEM lesson activities for elementary grades student, 12 simple science activities videos, and 6 science experiment kits from daily materials. The detailed activities couldbe seen in Chapters 2 and 3.

To undertake its programmes and activities during the fiscal year under review, the Centre augmented the funds coming from the Government of Republic Indonesia. It consisted of $222,643 operating fund, $11,479 capital fund, and $277,002 special fund.

# CHAPTER 2
# GENERAL INFORMATION


Southeast Asian Ministers of Education Organisation (SEAMEO) Regional Centre for Quality Improvement of Teachers and Education Personnel (QITEP) in Science.

The SEAMEO Regional Centre for QITEP in Science was established in 13 July 2009 through the approval of the 44th SEAMEO Council Conference in Phuket, Thailand. The establishment of SEAMEO QITEP in Science was the affirmation of the Government of Indonesia, through its Ministry of Education and Culture (MoEC), to actively contribute in science education development in the region.

## Vision

To be the centre of excellence in professional development of teachers and education personnel in science towards sustainable development in Southeast Asia.

## Mission

To provide relevant and quality programmes in professional development for science teachers and education personnel through capacity building, research and development, resource sharing, and collaboration.

# CORE VALUES

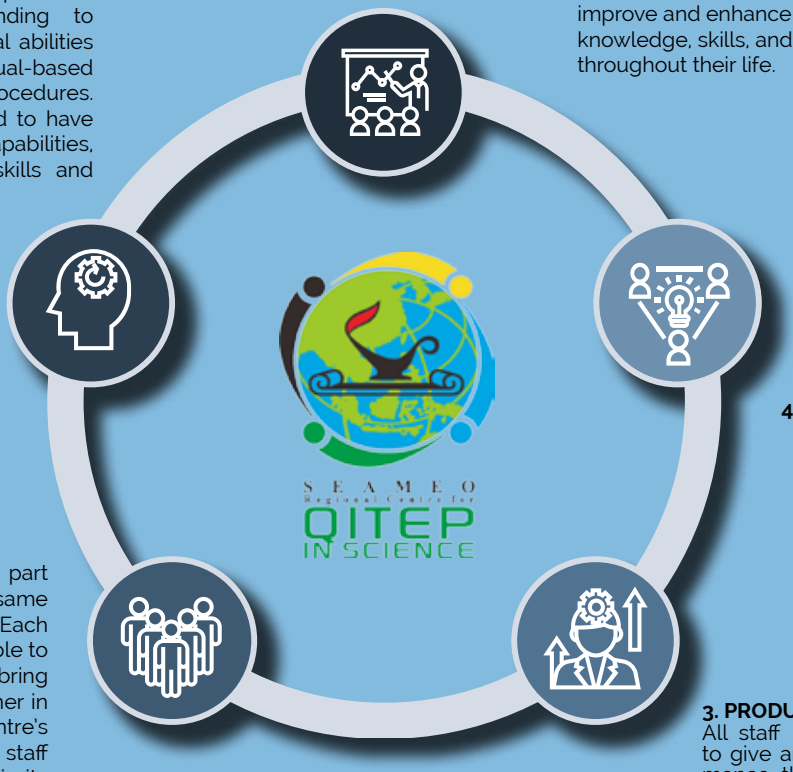
To realise the vision and carry out its mission, SEAMEO QITEP in Science strongly believes in the importance of values as principles for its staff members in executing their tasks. All SEAMEO QITEP in Science staff members should be aware of, comprehend and apply the Centre's core values as follows.

**1. PROFESSIONALISM**

Professionalism means that every staff member performs their job corresponding to their skills and special abilities as well as intellectual-based techniques and procedures. Every staff is required to have high integrity, capabilities, discipline, qualified skills and knowledge.

**5. LIFELONG LEARNING**

Centre's staff members should possess the eagerness to improve and enhance their knowledge, skills, and attitude throughout their life.




**4. INNOVATIVENESS**

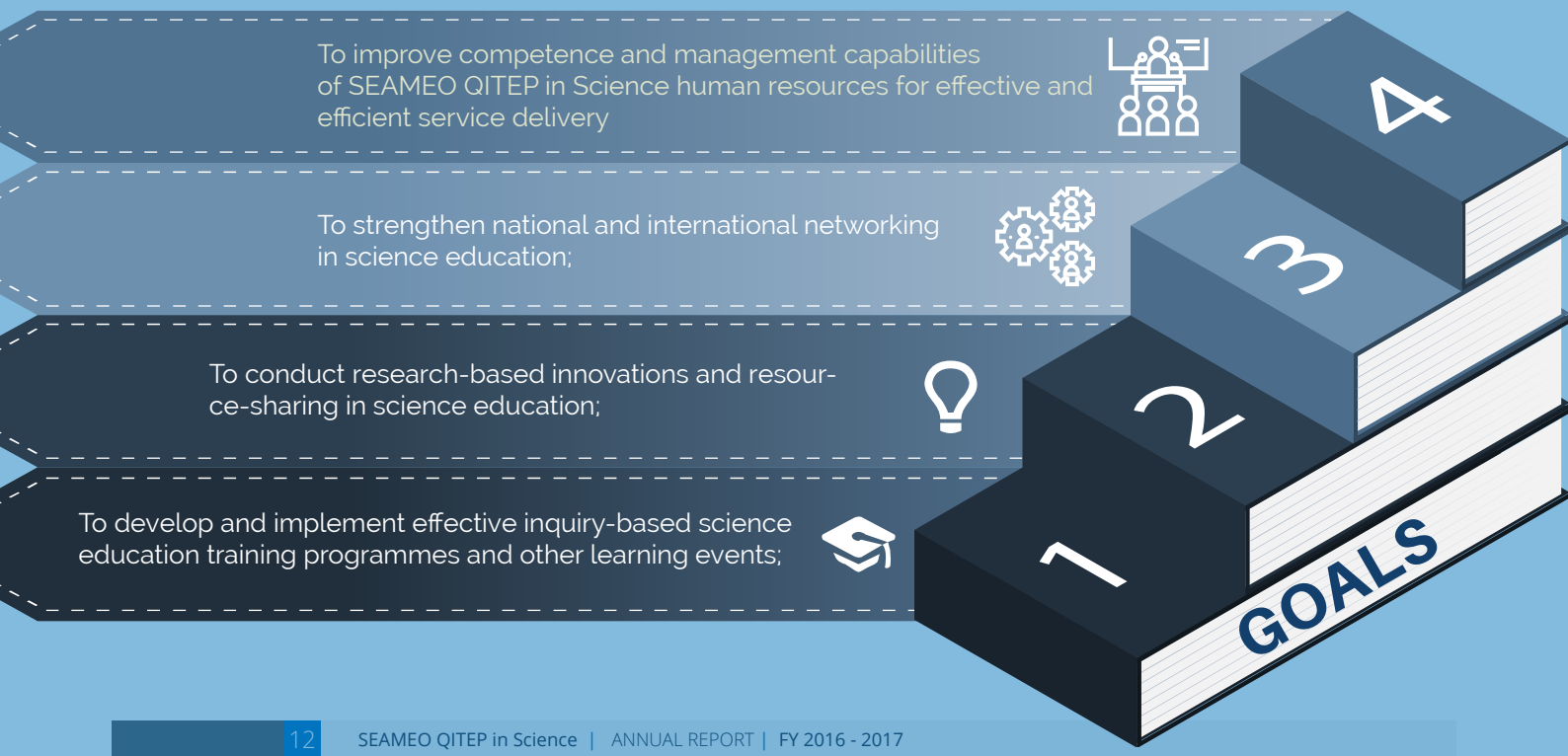
The Centre's staff members should possess and develop the ability to predict and respond to the changes, and generate new ideas

**2. TOGETHERNESS**

All the staff members are part of a big family that has the same vision, mission, and goals. Each staff member should be able to support, cooperate and bring mutual benefit to each other in order to achieve the Centre's vision and mission. The staff members should put as priority the principle of togetherness.

**3. PRODUCTIVITY**

All staff members are expected to give an optimum work performance through adopting an effective and efficient work system.



## NICHE AREA

SEAMEO QITEP in Science has decided that Inquiry-Based Science Education (IBSE) development to be the ultimate goal and focus for the Centre's second Five Year Development Plan (FYDP). IBSE shall also be the Centre's niche and thus the Centre's major philosophy to realise its vision and to be the centre of excellence in professional development of teachers and education personnel in science towards sustainable development in Southeast Asia. Thus, IBSE becomes the basic philosophy and major strategy of all training courses and activities to be conducted by SEAMEO QITEP in Science within the scope of professional teacher improvement. The Centre believes that producing quality science teachers in the region will contribute to development and growth in the region and thus contribute in the achievement of ASEAN Community.

## PROGRAMME THRUSTS

In carrying out its mandate and to achieve the goals to become a centre of excellence in IBSE, the Centre has identified the following three (3) Programme Thrusts for its 2nd FYDP:

1. Professional Teacher Development which will look into the total development of teachers in terms of knowledge, skill and attitude. It is considered as a critical part in education development because of its relationship to learning outcome and student achievement. Development of teacher professionalism requires a sustained policy and funding, carried out over time, and should be aligned with standard and assessment that are integrated with teacher goals.
2. Learning Resources Development which will identify best practices and gaps in IBSE with the intention of providing appropriate learning resources needed for effective teaching and learning. Provision of appropriate learning resources should be integrated, logical and ongoing experiences, content of prolonged facets of classroom instruction and backed up by the best research evidences.
3. Professional Learning Communities which will focus on enhancing the awareness and understanding of IBSE among education decision makers, education personnel and the general public towards its application and promoting collaboration among them.

All activities of the Centre shall be aligned along these 3 Programme Thrusts to achieve its vision, mission, and goals and, at the same time, maximise its resources and potentials. In addition, the Programme Thrusts of the Centre shall be considered as pillars in science education development.



# Governing Board

SEAMEO Regional Centre for QITEP in Science Governing Board (GB) is the Centre's highest policy-making body. The GB is composed of representatives from each SEAMEO Member Country who are nominated by their respective Ministers/Secretaries of Education and appointed by the SEAMEO Council President. The GB is responsible for operational policies, strategic planning, annual evaluation, and review of the Centre's programmes and budget. SEAMEO Secretariat (SEAMES) Director and the Director of the Centre serve as ex-officio members of the Board. SEAMEO Regional Centre for QITEP in Science Governing Board Members are:

## Mrs Sarimah Abu Bakar

Acting Assistant Director/Head
Science, Technology, and Environment Partnership (STEP) Centre

**BRUNEI DARUSSALAM**

## Mr Ngor Penglong

Director
Teacher Training Department, Ministry of Education, Youth and Sport

**CAMBODIA**

## Dr Indrawati

Head of Programme and Information Division
Centre for Development and Empowerment of Teachers and Education Personnel (CDETEP) in Science

**INDONESIA**

## Mr Keth Phanlack

Deputy Director General
Department of Teacher Training, Ministry of Education and Sports

**LAO PDR**

## Dr Azian TS Abdullah

Rector
Institute of Teacher Education

**MALAYSIA**

## Prof Dr Thura Oo

Rector
Sagaing University

**MYANMAR**

## Dr Lorna D Dino

Director IV
Bureau of Alternative Learning System, DepEd Region II

**PHILIPPINES**

## Mr Lau Chor Yam

Master Teacher (Chemistry)
Academy of Singapore Teachers
Ministry of Education

**REPUBLIC OF SINGAPORE**

## Dr. Pornpun Waitayangkoon

President
Institute for the Promotion of Teaching Science and Technology

**THAILAND**

## Ms Veronica Correia Moreira

Member
Centre for Mathematics and Science under the UNESCO, NATCOM, Ministry of Education

**TIMOR LESTE**

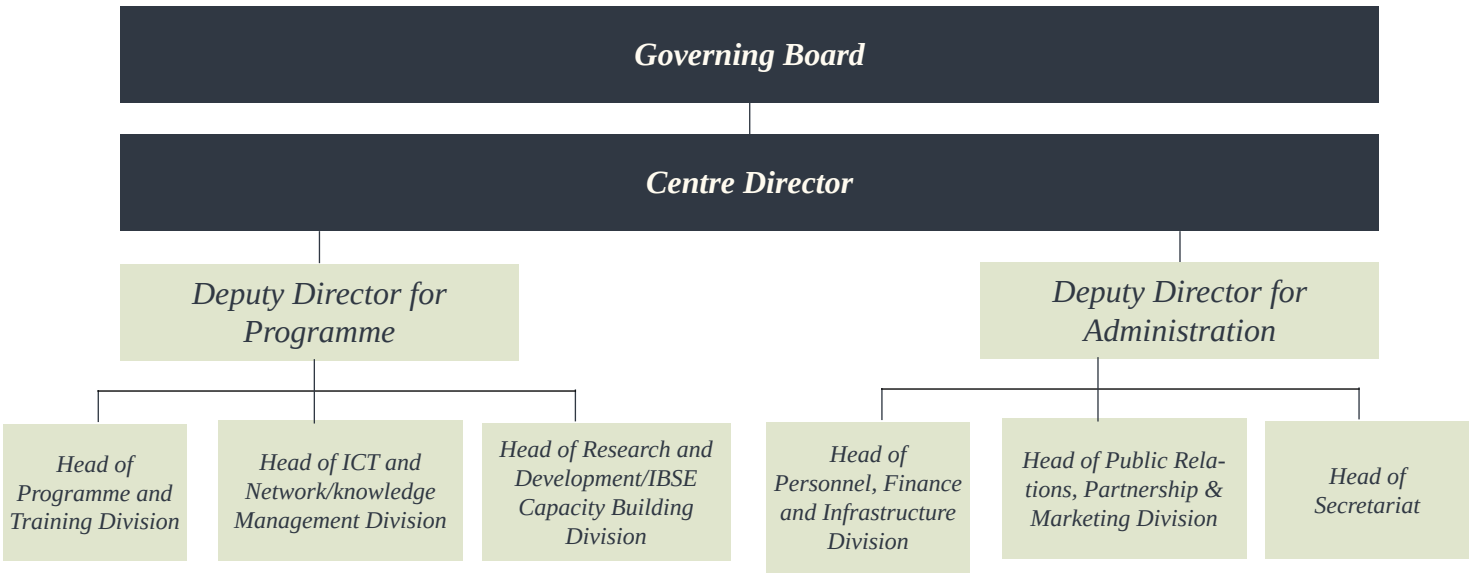
## Assoc Prof Dr Le Phuoc Minh

Vice Rector
Institute for Education Management (NIEM) Hanoi

**VIETNAM**

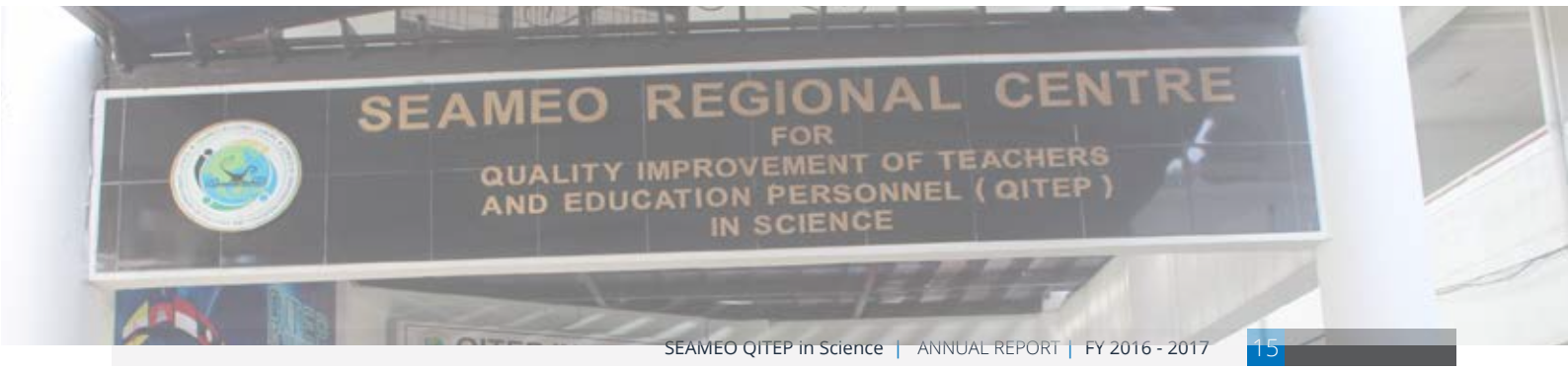
# ORGANISATIONAL STRUCTURE

In order to support the Centre's vision, mission and goals, an effective and efficient structure organisation is required. Thus, SEAMEO QITEP in Science adopts the organisational structure as shown below:




SEAMEO Regional Centre Govening Board Members have contributed effectively to promote regional cooperation-and in fulfilling the needs of member states in education, science, and culture. Owning to their experience, expertise, and indepth knowledge in the specialised fields of the SEAMEO Regional Unit on whose Boards they serve, they are, therefore, able to contribute effectively in the planning, implementation, and assessment of programmes and activities of their respective Centres and Projects in accordance with the board policy decisions set by the Organisation's Council of Ministers.

The Centre Director shall oversee the Centre operations. In carrying out the Centre's mandates and programmes and activities, the Centre Director is assisted by the Deputy Director for Programme and Deputy Director for Administration. As part of Centre's administration, the Centre secretariat is responsible in performing daily Centre's activities, communication and correspondence with other parties, including assisting the Centre Director, Deputies and Head of Divisions in carrying out their tasks. To ensure the quality of the programmes, the Centre's five (5) Divisions assist the Deputy Directors in the planning and implementation and in all other matters pertaining to the activities of the respective Divisions of the Centre. Heads of divisions are assisted by some staff or officers and posibility experts.



# CHAPTER 3
# PROGRAMMES AND ACTIVITIES

## KEY RESULT AREAS

Programmes and activities of the Centre can be grouped into 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:

**KRA-1: Regional Leadership**

1.1 Research and Development
1.2 Innovation Programme
1.3 Capacity Building
1.4 Recognition and Benchmarking

**KRA-2: Regional Visibility**

2.1 Strengthening linkages with inter-centre, national, regional, and international institutions
2.2 The increase means for stakeholders to access SEAMEO programmes.

**KRA-3: Solid Resource Base**

3.1 Financial Viability
3.2 Management efficiency
3.3 Human resource management
3.4 Facilities

Infact, grouping of the above sub-areas is not strict, that is the correspondence between activities and key result sub-areas is not a one-to-one correspondence. The table in the following pages shows this. In the table, all of activities conducting within the fiscal year 2016-2017 are mapped into related key result subareas.

# CENTRE ACTIVITIES FISCAL YEAR 2016-2017

| No | Activities | Time | Venue | KRA-Sub KRA |
|---|---|---|---|---|
| **Training Courses:** | | | | |
| 1 | Training Course on Earth and Space Science | 19-28 July 2016 | Marbella Suites Hotel, Bandung, Indonesia | KRA 1.3<br>KRA 2.1<br>KRA 3.3 |
| 2 | Training Course on Environmental Education for Sustainable Development | 19-28 July 2016 | Marbella Suites Hotel, Bandung, Indonesia | |
| 3 | Training Course on Science Classroom Supervision | 19-28 July 2016 | Marbella Suites Hotel, Bandung, Indonesia | |
| 4 | Training Course on Science Laboratory Management | 1-10 August 2016 | Isola Resort Bandung, Indonesia | |
| 5 | Training on STEM for Principal | 11-12 October 2016 | Atlantic City Hotel, Bandung, Indonesia | |
| 6 | Training on ICT-Based Learning Media Development | 11-12 October 2016 | Atlantic City Hotel, Bandung, Indonesia | |
| 7 | Training Course on STEM Education | 20-26 November 2016 | Atlantic City Hotel, Bandung, Indonesia | |
| 8 | Training on Subject Knowledge Enrichment in Physics | 29 November – 2 December 2016 | Topas Galeria Hotel, Bandung, Indonesia | |
| 9 | Training on Subject Knowledge Enrichment in Chemistry | 29 November – 2 December 2016 | Topas Galeria Hotel, Bandung, Indonesia | |
| 10 | Training on Subject Knowledge Enrichment in Biology | 29 November – 2 December 2016 | Topas Galeria Hotel, Bandung, Indonesia | |
| 11 | Training on Developing HOTS item Questions and Simple Science Experiments Training for Elementary School Teachers in Bandung Regency | 18,29 February 2017 | SD Widuri, Bandung Regency, West Java, Indonesia | |
| **Workshops on Curriculum and Material Development:** | | | | |
| 12 | Workshop on STEM Education Research Preparation | 3-5 October 2016 | SEAMEO QITEP in Science, Bandung, Indonesia | KRA 1.1<br>KRA 1.2<br>KRA 1.3<br>KRA 2.2 |
| 13 | STEM Implementation Research | 17 October – 5 November 2016 | SEAMEO QITEP in Science, Bandung, Indonesia | |
| 14 | Workshop on Development of Science Learning Video: Script development, Production, and evaluation. | 19-21 May 2016<br>15-19 November 2016<br>5-9 December 2016 | SEAMEO QITEP in Science, Bandung, Indonesia | |
| 15 | Workshop on Programme Evaluation 2016 | 6-9 December 2016 | Sari Ater Hotel and Resort, Subang, West Java, Indone-sia | |
| 16 | Workshop on Development of Higher Order Thinking Skills (HOTS), IBSE, and STEM Questions | 27-28 December 2016 | SEAMEO QITEP in Science, Bandung, Indonesia | |
| 17 | Workshop on Programme Development 2017 | 27 February – 2 March 2017 | SEAMEO QITEP in Science, Bandung, Indonesia | |
| 18 | Workshop on Working Paper Arrangement for 8th GBM | 20-23 March 2017 | SEAMEO QITEP in Science, Bandung, Indonesia | |

| No | Activities | Time | Venue | KRA-Sub KRA |
|---|---|---|---|---|
| **Staff Capacity Building:** | | | | |
| 19 | In-House Training on Edmodo Utilisation for Science Learning | 14-16 September 2016 | SEAMEO QITEP in Science, Bandung, Indonesia | KRA 1.3<br>KRA 1.4<br>KRA 3.3 |
| 20 | In-House Training on Scientific Paper | 6-8 October 2016 | SEAMEO QITEP in Science, Bandung, Indonesia | |
| 21 | In-House Training on STEM from Smitsonian Institution | 22,24,25 October 2016 | SEAMEO QITEP in Science, Bandung, Indonesia | |
| 22 | Training on Procurement of goods and services. | 25-28 October 2016 | SEAMEO QITEP in Science, Bandung, Indonesia | |
| 23 | Internship Programme in SEAMEO Secretariat | 8-18 November 2016 | SEAMEO Secretariat, Bangkok, Thai-land | |
| 24 | Training on Rasch Model Application for Educational Assessment | 13-15 November 2016 | Mitra Hotel, Bandung, Indonesia | |
| 25 | Development Evaluation Training Workshop, with SEAMEO TROPMED, Thailand | 5-8 December 2016 | The Centara Wa-tergate Pavillon Hotel, Bangkok, Thailand | |
| 26 | In-House Training on STEM Education from Japan | 6-8 February 2017 | SEAMEO QITEP in Science, Bandung, Indonesia | |
| 27 | Knowledge Sharing Day | July 2016-now | SEAMEO QITEP in Science, Bandung, Indonesia | |
| **Collaboration and Networking:** | | | | |
| 28 | Centre Director participation as a speaker at the Annual Seminar on Innovation and Learning of Science (SNIPS) 2016 leads by the Faculty of Mathematics and Science of Institut Teknologi Bandung. | 21-22 July 2016 | Institut Teknologi Bandung, Bandung, West Java, Indonesia | KRA 1.4<br>KRA 2.1 |
| 29 | Centre Director Meeting | 27-29 July 2016 | S31 Sukhumvit Hotel, Bangkok, Thai-land | |
| 30 | Training on STEM Education Collaboration with UPI | 16-17 July 2016<br>29-30 July 2016 | SEAMEO QITEP in Science, Bandung, Indonesia | KRA 1.3<br>KRA 2.1<br>KRA 3.3 |
| 31 | Centre Participation as a resource person at the 1st Young SEA-TVET Symposium 2016 | 29-31 August 2016 | Maritime Park & Spa Resort, Krabi Province, Thailand. | KRA 1.4<br>KRA 2.1 |
| 32 | Training Course on STELR-STEM Programme | 30 October-5 November 2016 | Atlantic City Hotel, Bandung, Indonesia | KRA 1.3<br>KRA 2.1<br>KRA 3.3 |
| 33 | Training on Teachers' Competency Improvement at Aceh Jaya | 7-11 November 2016 | SMPN Unggulan 1 Calang, Aceh Jaya Regency, Indonesia | KRA 1.3<br>KRA 1.4<br>KRA 2.1<br>KRA 3.3 |
| 34 | ASEM LLL Hub Conference: Lifelong Learning and Resilience in Disaster Management – Asian and European Perspectives | 8-10 November 2016 | Rex Hotel, Ho Chi Minh City, Vietnam | KRA 1.1<br>KRA 2.1<br>KRA 3.3 |

| No | Activities | Time | Venue | KRA-Sub KRA |
|---|---|---|---|---|
| 35 | In Country Training for Head of Science Laboratory Candidates: | | | |
| | In Aceh Jaya (2nd In Service) | 21-23 November 2016 | SMPN 1 Calang, Aceh Jaya Regency, Indonesia. | KRA 1.3<br>KRA 1.4<br>KRA 2.1<br>KRA 2.2<br>KRA 3.3 |
| | In Pekanbaru, Riau, Indonesia (2nd In Service) | 13-15 January 2017 | Pekanbaru, Riau, Indonesia | |
| | in Garut, Wes Java, Indonesia (2nd In Service) | 18-21 April 2017 | SMAN 11 Garut, West Java, Indonesia. | |
| | in Jayapura (1st In Service) | 25-29 April 2017 | Jayapura, Papua, Indonesia. | |
| | Gowa Regency (1st In Service) | 10-15 May 2017 | Sungguminasa, South Sulawesi, Indonesia. | |
| 36 | Workshop on Policy Review on Science, Technology, Engineering, and Mathematics (STEM) Content in Indonesia Curriculum | 18 – 20 October 2016 | Puskurbuk, Jakarta, Indonesia | KRA 1.1<br>KRA 2.1<br>KRA 2.2 |
| 37 | In-Country: Training on Subject Knowledge Enrichment in Medan (Karo) | 30 November-4 December 2016 | Karo, North Sumatra, Indonesia | KRA 1.3<br>KRA 1.4<br>KRA 2.1<br>KRA 2.2<br>KRA 3.3 |
| 38 | Workshop on Science Education Plan for Early Childhood, collaborated with Directorate of Early Childhood and Care Education, Nonformal and Informal Education of the Republic of Indonesia | 28-29 November 2016 | PGRI West Java office, Bandung. | |
| 39 | SEAMEO STAR Village Implementation Programme Year 2016: Training Course on Subject Knowledge Enrichment in Science for Science Teachers | 28-29 October 2016 | SMK Geo Informatika, Bogor Regency, Indonesia | KRA 1.2<br>KRA 2.1<br>KRA 2.2 |
| 40 | Customised Training on STEM Education and HOTS (Higher Order Thinking Skills) Test Question Items Development in Darul Hikam Elementary School and PGRI Cibinong Senior High School | 5-6 January 2017<br>4 March 2017 | Darul Hikam Elementary School and PGRI Cibinong Senior High School, West Java, Indone-sia | KRA 1.3<br>KRA 1.4<br>KRA 2.1<br>KRA 2.2<br>KRA 3.3 |
| 41 | IAP-SEP Global Council Meeting 2017 in Sudan | 7-8 February 2017 | Khartoum, Sudan | KRA 1.4<br>KRA 2.1 |
| 42 | APEC-Tsukuba and UNESCO (MGIEP) International Conference XI | 9-12 February 2017 | Tokyo Campus, University of Tsukuba, Japan | |
| 43 | Mangrove Sister Schools Initial Visit: Potential of Mangrove for Education and Conservation in Indonesia | 13-15 March 2017 | Demak Regency, Indonesia | KRA 1.2<br>KRA 2.1<br>KRA 2.2 |
| 44 | In-Country Training on Innovative Research and Scientific Publications in Demak Regency, Central Java. | 13-16 March 2017 | SDN Guntur 1, Demak Regency, Central Java, Indo-nesia | KRA 1.3<br>KRA 1.4<br>KRA 2.1<br>KRA 2.2<br>KRA 3.3 |

| No | Activities | Time | Venue | KRA-Sub KRA |
|---|---|---|---|---|
| 45 | Lecture Series and Online Training Course, collaborated with SEAMEO Secretariat and SEAMEO SEAMOLEC: Building Students' Characters through STEM and Scientific Literacy | 20-21 March 2017 | SEAMEO QITEP in Science, Bandung, Indonesia | KRA 1.2<br>KRA 2.1<br>KRA 2.2 |
| 46 | Improving Teachers Pedagogical Capacity through Training on Teachers' Competency Improvement in Science in Morowali, Central Sulawesi. | 3-9 April 2017 | PT. Indonesia Morowali Industrial Park (IMIP), Morowali, Central Sulawesi. | KRA 1.3<br>KRA 1.4<br>KRA 2.1<br>KRA 2.2<br>KRA 3.3 |
| 47 | SEAMEO Centres Indonesia in Inter Centre Collaboration Meeting | 17-18 April 2017 | Grand Pasundan Hotel, Bandung, West Java, Indonesia. | KRA 1.4<br>KRA 2.1 |
| 48 | Indonesia-Thailand Collaboration Programme: The Empowerment of Mangrove by Coastal Schools | 26-28 April 2017 | Hotel Amantis Demak, Central Java. | KRA 1.2<br>KRA 2.1<br>KRA 2.2 |
| 49 | SEAMEO STAR Village Programme implementation in Cihideung Ilir 2017 | 28-29 April 2017 | SMK Geo Informatika, Bogor Regency, Indonesia | |
| 50 | Deputy Director for programme participation as a speaker at the International Conference in Science Education in Philippines | 3-5 May 2017 | Skylight Convention Center, Puerto Pricessa City, Pala-wan,Philippines | KRA 1.4<br>KRA 2.1 |
| 51 | In-Country Training on School Based Management in Aceh Jaya Regency | 5-9 May 2017 | Calang, Aceh Jaya Regency, Indonesia | KRA 1.3<br>KRA 1.4<br>KRA 2.1<br>KRA 2.2<br>KRA 3.3 |
| **Seminar for Research and Development:** | | | | |
| 52 | 3rd Mathematics,Science, Computer Education International Seminar (MSCEIS) Collaboration with the Faculty of Indonesia University of Education (UPI) | 15 October 2016 | Indonesia University of Education (UPI) | KRA 1.3<br>KRA 1.4<br>KRA 2.1<br>KRA 2.2 |
| 53 | Ki Hajar Dewantara Award 2017 | 13-16 October 2016 | Park view Hotel, Bandung | |
| 54 | Seminar on STEM Education: Lesson Learnt from USA | 26 October 2016 | SEAMEO QITEP in Science, Bandung, Indonesia | |
| 55 | Seminar on Research Grants 2016: Competency Improvement of Science Teachers and Education Personnel in Inquiry-Based Science Education Implementation Supporting 21st Century Skills | 14 November 2016 | SEAMEO QITEP in Science, Bandung, Indonesia | |
| 56 | Seminar on STEM Implementation Research | 9-11 December 2016 | SEAMEO QITEP in Science, Bandung, Indonesia | |
| 57 | Seminar on Subject Knowledge Enrich-ment in Science for Science Teachers in Primary and Secondary Schools | 17 December 2016 | SD Widuri, Bandung Regency, West Java, Indonesia | |
| 58 | Seminar on Science, Technology, Engineering, and Mathematics (STEM) Education | 9 February 2017 | SEAMEO QITEP in Science, Bandung, Indonesia | |

| No | Activities | Time | Venue | KRA-Sub KRA |
|---|---|---|---|---|
| 59 | Online Lecture on Overview of STEM Education in Southeast Asia | 25 May 2017 | SEAMEO QITEP in Science, Bandung, Indonesia | KRA 1.3<br>KRA 1.4<br>KRA 2.1<br>KRA 2.2 |
| **Other:** | | | | |
| 60 | 7th Governing Board Meeting | 21 -23 September 2016 | Aryaduta Hotel, Bandung, West Java, Indonesia | KRA 1.4<br>KRA 2.1 |
| 61 | The 39th SEAMEO High Officials Meeting | 15-17 Novem-ber 2016 | Amari Watergate Hotel, Bangkok, Thailand | |

# REGULAR TRAINING

## TRAINING COURSE ON EARTH AND SPACE SCIENCE 2016

The regular Training Course on Earth and Space Science, held from 19 to 28 July 216, has ended. The participants from 8 countries attended the course and succesfully completed it. The countries that sent their teachers and education personnel were Brunei Darussalam, Cambodia, Lao PDR, Malaysia, Myanmar, Thailand, and Vietnam. Meanwhile the Indonesian teachers who participated in the course were those who have passed the selection process.

In this training course, the participants got new knowledge about earth and space science that could be implemented in their teaching. The resource persons in this training course were from Institut Teknologi Bandung (ITB) and Universitas Pendidikan Indonesia (UPI) who specialised in earth and space research. They were Prof Bambang Hidayat, Prof Taufiq Hidayat, and Dr Irwan Meilano.

Beside learning in the class, the participants also visited the Geology Museum and the Bosscha Observatory. In the Geology Museum, they observed the historical view of Indonesia, fossils, rocks, as well as simulated an earthquake. Then in their visit to the oldest observatory in Indonesia, the Bosscha Observatory, they got the chance not only to look around but also to get into the observatory. There, the observatory staff explained how to observe stars using the famous double telescope in Indonesia. Afterwards, they observed the sun shining brightly that day.

The participants visited the earth and space science laboratoty in Universitas Pendidikan Indonesia (UPI) too. In the laboratory, they were taught how to use earth and space science instruments. Interestingly, at night they also had the opportunities to observe stars using telescopes and counted the movement of the stars or planets.

Finally before they departed to their homelands, they arranged a cultural night. They performed their traditional cultures and invited other participants to join their performances. The night was full of joy and everyone would miss the moment.

As additional information, two participants of the Training Course on Earth and Space Science were actually the winners of the Innovation on Inquiry Based Learning through Solar Eclipse Observation competition organised by the Centre. They were Mr Suhadi who won the first prize and Mr Budi Sriyanto who won the second prize. Meanwhile the third winner, Mr M Miftakhul Falah, joined the Environmental Education for Sustainable Development Training Course held in the same time and same venue as the Eearth and Space Science Training Course. The winners were inaugurated in the opening ceremony of the Training Courses.

# THE TRAINING COURSE ON ENVIRONMENTAL EDUCATION FOR SUSTAINABLE DEVELOPMENT 2016

The most influential living creature on this Earth is human. Therefore, learning about all environment topics by discussing them as concepts won't be enough; we, as human being, must act to face them. From past achievements and future challenges related to education in Southeast Asia–particularly linked to the development of global development goals and ASEAN integration, one can identify a number of important driving forces which will necessarily influence the future development of education in the region. These include the environmental deterioration and sustainability as well as emergency conflicts and disasters.

The progression and depth of environmental concerns have prompted greater international interest in the need for education for sustainable development (ESD) at all levels. Since 2009, the Centre has been developing whole school approach in the promotion of environmental education. Through this, it helps to empower the science teachers and education personnel to integrate environmental education issues in schools and in community. One of the goals in this training is to improve the quality of science teaching and learning in schools with respect to environment, ecosystem conservation, and their support to sustainable development.

In addition, to continue this advocacy the Centre held a Training Course on Environmental Education for Sustainable Development at Marbella Suites Hotel, Bandung, Indonesia lasting for 10 days from 19 to 28 July 2016. It was attended by 30 teachers and education personnel from the SEAMEO member countries. There were seven participants from Cambodia, Lao PDR, Brunei Darrusalam, Malaysia, Myanmar, Thailand, Vietnam, and 23 participants from Indonesia. The Centre also invited 4 experts, namely, Professor Emil Salim from AIPI, Professor Shahbaz Khan from the UNESCO Regional Science Bureau for Asia and the Pacific, Professor Achmad Munandar from Indonesia University of Education and Dr Achmad Sjarmidi from the School of Life Sciences and Technology of ITB to share their expertise regarding the topics.

As the session continued, the speakers encouraged the participants to impart their knowledge to the students by giving activities such as making lesson plan related to Environmental Education for Sustainable Development topic, peer teaching and discussion activity, as well as group activities. Also the World Wildlife Fund (WWF) team emphasised the wilderness preservation and the reduction of humanity's footprint on the environment especially about endangered, vulnerable, and threatened animals in Southeast Asia. At the same time Panda Mobile was opened to selected elementary students at PPPTK IPA Bandung ground on 26 July 2016 as part of their advocacy. The Participants also had the out of the classroom activities like visiting the Saung Angklung "Mang Udjo", SEAMEO BIOTROP, SMK Wikrama Bogor, Taman Hutan Raya Ir H Djuanda, Bandung Geological Museum, and Pasar Baru Trade Centre. At the end of the training, they shared their talents in a cultural exchange programme with zest.

# The Strategy Persuading Public on Environmental Awareness, a lectured by Prof. Shabaz Khan

The Centre held a training course started on 19 July 2016. The participants were teachers and education personnel from the SEAMEO Member Countries. It provided many activities that led them to have a better understanding and knowledge through practicing and experiencing environmental education for sustainable development in a scientific way. The Centre also invited many great professors as the lecturers in the training course.

One of the lectures was about the Strategy Persuading Public Environmental Awareness, an excellent and fun presentation delivered by Prof Shahbaz Khan. He made the atmosphere during the lecture so comfortable and encouraged the participants to feel free to talk, share ideas, and ask questions.

At the beginning of his presentation, he gave the participants a brief explanation about the United Nations Educational, Scientific and Cultural Organisations (UNESCO) since he is the Director of the UNESCO regional science bureau for Asia and the Pacific. UNESCO is an agency of the United Nations (UN) that has many contributions to the world, namely the construction of peace, human development, and intercultural dialogue in globalisation era through education, science, culture, communication, and information. In general, the overarching objectives of the UNESCO are about the peace and sustainable development. UNESCO plays certain roles as a standard setter and a clearing house in every country it is established and these are the ways that show UNESCO contributions.

Prof Shabaz Khan is a good presenter because he told the participants some examples that occur and could be found in daily life in order to give a clearer picture about what he was explaining. His interesting statement was that people have been the main actors in ruining the environment all this time. He furthermore explained that using dark colours for clothing has been a big environmental issue. It is a simple thing people do because of their egos but it gives bad impact to the environment and to them as well. "We cannot make people change their lifestyles since it is very personal," he emphasised, "so we need to do a persuasive approach."

Hence, UNESCO has a big challenge to persuade country on environmental awareness. He then kept asking the participants whether they know or do not know how UNESCO persuades every country to realise how severe the environment is nowadays. He made it as clear as crystal that UN agenda by 2030 is to put people and wellbeing and planet at the centre so it needs effort to achieve it in time.

From his talk, it can be assumed that persuading public to change their vision about environment and their lifestyles is not easy to be done. It needs three main things, he explained. The first is information; it is an important thing because when one is going to give some groups of people an understanding of the structures, conditions, and cause-effect relationship, one will need valid, legal, and scientific information. The second is knowledge; it helps one to understand and analyse the complexity of phenomena and processes. The last is application of knowledge-wisdom; it is used to implement and apply the knowledge for problem solving with consideration of environmental potential and socio-cultural conditions.

The participants also got a loud and clear explanation from him that education is the first parameter of human development index (HDI) and also to build a bridge to create a public community who has high environment awareness. Hence, the teachers have important roles especially in persuading students due to the goal. Last thing, he said "be a rich-heart person" and it was a really touching saying to remind everyone about how beautiful and meaningful life is when everyone has a rich heart.

# Exoplanet and the Zone of Habitability: A Lecture by Prof Bambang Hidayat

Prof Bambang Hidayat was the Chairman of the Indonesian-Japan Astronomy Programme from 1980 until 1994 and the Vice-President of the International Astronomical Union from 1994-2000. One of remarkable appreciations to him was given by International Astronomical Union (IAU) in 2010 by naming Asteroid 12176 over his name.

The topic that he delivered was Exoplanet and the Zone of Habitability. Exoplanets are planets beyond our own solar system. There have been thousands of exoplanets discovered in the past two decades, some of these planets are gigantic, others are icy, and some rocky like the Earth. NASA and other agencies are looking for a special kind of planet: one that's the same size as Earth, orbiting a sun-like star in the habitable zone, or also called the Goldilocks zone, is the region around a star where orbiting planets similar to the Earth can support liquid water. It is neither too hot, nor too cold.

# Sustainable Development in Indonesia, a Lecture by Prof. Dr. Emil Salim

Prof Emil Salim gave a lecture to the teachers and education personnel from Southeast Asia participating in the Training Course on Environmental Education for Sustainable Development on 20 July 2016 at Marbella Suites Bandung, West Java, Indonesia. Prof Emil is one of the highlight speakers during the trainings; he shared his expertise by explaining the sustainable development in Indonesia. Prof Emil Salim can be seen as the pioneer initiating the institution for environmental management in Indonesia. He is well known as the former Minister of State for Population and the Environment for 3 periods (1978-1993). As for his international career, he was appointed as the Governing Council President of United Nations Environment Programme (UNEP) from 1984 to 1987. At the same period, he became the member of the World Commission on Environment and Development-UNEP. Meanwhile regionally, he was the Vice President Advisory Committee on Population of the Sea (ACOPS) for Southeast Asia. He has been a member of Advisory Group for the President Republic of Indonesia, on Environment and Sustainability Development since 2007. His knowledge and experience successfully attracted the participants' interest in attending this session.

He said that sustainable development is not only about economic development but also social development, cultural society development, as well as the nature of environment. On 25 September 2015, many countries adopted a set of goals to end poverty, protect the planet, and ensure prosperity for all as part of a new sustainable development agenda. Each goal has specific targets to be achieved over the next 15 years. To reach the goals, everyone governments, the private sector, civil society, and you needs to do their parts. If you want to get involved, you can start by telling everyone about them and making a list of actions that you can take in your everyday life to contribute to a sustainable future. Recognising that ending poverty must go hand-in-hand with strategies that build economic growth and address a range of social needs including education, health, social protection, and job opportunities, while tackling climate change and environmental protection is then considered important.

After this session, it is expected that the participants can develop conceptions in environmental education by using a range of strategies by Prof Emil Salim and implement the conception to enhance students' knowledge, build critical thinking skills with Science-Technology-Engineering-Mathematics-Social Science capacity, 'design driven culture' related with advanced technology development, and help students make responsible decision relating to environmental issues.

# TRAINING COURSE ON SCIENCE CLASSROOM SUPERVISION 2016

To improve the competencies of principals and supervisors in enhancing the quality of science teachers and education personnel, the Centre conducted a Training Course on Science Classroom Supervision attended by science teachers, school principals, and supervisors from seven SEAMEO member countries, such as Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Myanmar, Thailand, and Vietnam. The training was conducted from 19 to 28 July 2016 at Sheo Resort Hotel, Bandung.

The training was opened by Dra Poppy Dewi Puspitawati, M A, the Director of Primary Education Teacher Development, accompanied by Prof. Triyanta, the Director of SEAMEO QITEP in Science, Dr Indarjani, the Deputy Director for Programme, and Ms Tati Setiawati, the academic coordinator of the event. The subjects included in the training were School-Based Management, Principal and Supervisor Competencies, Models of Teaching, Inquiry-Based Science Education, Science Classroom Supervision, Action Research in Science Classroom Supervision, Country Report (Best Practice), School Visit, Motivation and Creativity Building, and Lesson Study. The resource persons of the training were experts and practitioners from LP2KS (Principal In-Service Training Centre), Indonesia University of Education, Benesse Corporation, the Director General of Primary and Secondary Education of Indonesia, and the Centre.

One of the agenda of the training was visiting Darul Hikam International School to implement the supervision techniques using instruments they developed during the training course. They also joined cultural programme by visiting Saung Angklung Udjo to watch Angklung performance. At the end of the programme, they were involved in Cultural Exchange programme by performing their traditional songs and dances.

REGULAR TRAINING

# Training Course on Science Laboratory Management

Twenty eight science teachers from a number of countries in Southeast Asia region participated in the Training Course on Science Laboratory Management conducted by SEAMEO QITEP in Science from 01 to 10 August 2016. The participants were representative teachers and education personnel from Cambodia, Indonesia, Malaysia, Myanmar, Thailand, and Vietnam.

The training, which was convened at Isola Resort Bandung, Indonesia, aimed to improve laboratory management competencies of science teachers in enhancing the quality of teaching and learning in secondary education.

The participants learned how to manage science laboratory effectively and efficiently from several experts from Bandung Institute of Technology, Indonesia University of Education, Centre for Development and Empowerment of Teachers and Education Personnel (CDETEP) in Science, and SEAMEO QITEP in Science.

In the training, the participants did not only gain theoretical knowledge about science laboratory management, but also conducted some practical works in science laboratory at Bandung Institute of Technology, study visit to science laboratory at Indonesia University of Education, and company visit to Pudak Scientific.

Another purpose of the training is to strengthen the connection between teachers in Southeast Asia. To reach this purpose, the participants were requested to perform traditional performances and introduce their countries. Nguyen Thi Thuy Ha, participant from Vietnam, said "this training improves my competency in laboratory management as well as broaden my network."

At the end of this training, the participants were encouraged to create and implement their action plans in managing science laboratory in their schools. The participants are expected to be able to create more interesting, well-managed, and safer science laboratory for students.

# CUSTOMISED TRAINING

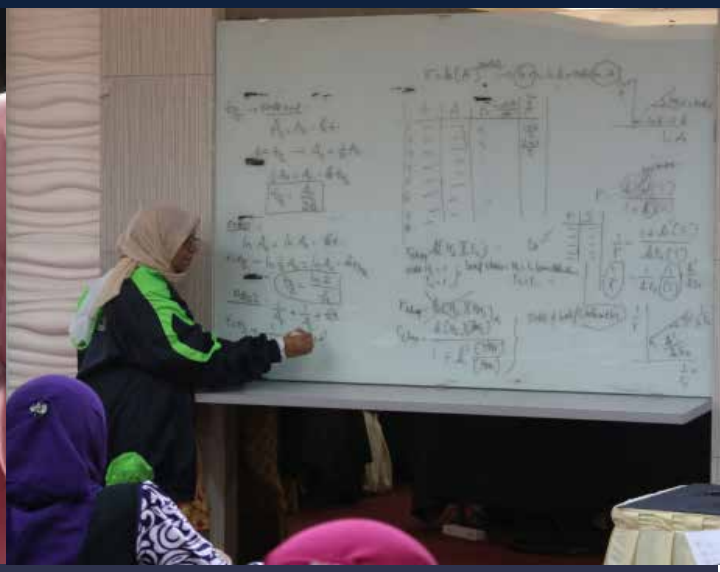
CUSTOMISED TRAINING

## Training on Subject Knowledge Enrichment in Chemistry

To enrich teachers' knowledge in subjects they teach, SEAMEO QITEP in Science (SEAQ-IS) conducted Training on Subject Knowledge Enrichment in Chemistry from 29 November-02 December 2016 at Topas Galeria Hotel, Bandung. The training was participated by 30 chemistry teachers from West Java and Banten Province.

The resource persons were Dra Lubna Bardja MSi and Dr Bambang Prijamboedi from Institut Teknologi Bandung, Dr Fitri Khoerunnisa from Universitas Pendidikan Indonesia, and Dr Ana Ratna Wulan from SEAMEO QITEP in Science. The resource persons delivered some topics about chemistry and a topic about Higher Order Thinking Skills (HOTS).

This training was able to enrich and also refresh the participants' knowledge on Chemistry. During the training, the participants showed positive attitude by having high interest in learning about chemistry even though some of the topics had been learned by the participants during their study at university. As the result, they could improve their understanding about chemistry. It showed that having a willingness to keep learning is very important as Albert Einstein said "Once you stop learning, you start dying".



# Training on Subject Knowledge Enrichment in Physics

Enrichment in physics participated by 27 teachers from several cities in West Java and Banten Province. The training was conducted at Topas Galeria Hotel, Bandung from 29 November-02 December 2016. The resource persons of the training were Prof Triyanta, Director of SEAMEO QITEP in Science; Dr Sparisoma Viridi, Dr Novitrian, and Dr Fiki Taufik, lecturers of Institut Teknologi Bandung; and Dr Setiya Utari and Dr Ana Ratna Wulan, lecturers of Universitas Pendidikan Indonesia.

As many institutions had convened trainings for Physics teachers focusing on teaching methodology, SEAQIS had an initiative to conduct a training intended to refresh and enrich teachers' knowledge in Physics. The resource persons delivered four main topics which were Relativity, Mechanics, Thermodynamics, and Waves. In addition, the participants also learned about how to create Higher Order Thinking Skills (HOTS) questions.

The resource persons who are experts in Physics really helped the participants in understanding many Physics concepts. Aziz, participant from Cendikia Vocational School, stated "many concepts, which seem to be very complicated before, become simpler after I participated in this training. I can understand the concepts much better now".
This training could fulfill teachers' needs in strengthening their knowledge in the subject they teach. Teaching methodology is a critical aspect that every teacher must comprehend, but having comprehensive understanding on the subject delivered to students is a must.

CUSTOMISED TRAINING

# Training on Subject Knowledge Enrichment in Biology


Realising the challenges biology teachers face in delivering some topics, the Centre held the Training on Subject Knowledge Enrichment in Biology on 29 November-02 December 2016 at the Topas Galeria Hotel. There were 28 biology teachers of high school level from West Java and Banten Province as well as Makassar who attended the training. The Centre invited resource persons such as Dr Ana Ratna Wulan from the Centre, Drs Dadang Machmudin, MSi from the Universitas Pendidikan Indonesia also Dr Anggraini and Dr Maelita R Moeis from the Institut Teknologi Bandung to teach the teachers.

The training focused on topics that are not easy to comprehend by students like metabolism, characteristics of cell and cellular biology application, molecular genetics, also application of animal and plant development. During the training, the teachers participated actively by asking questions and shared the problems they faced in teaching those topics. In addition, they also learnt to make good Higher Order Thinking Skills (HOTS) questions as the framework of the HOTS questions had been conveyed at the beginning of the training.

At the closing ceremony, the representative of all biology teachers, Mr Chandra Widhikrama from SMAN 1 Cibadak said that he hesitated at first since most of the participants were still young. However at second thought, he was grateful to be chosen since there were not many trainings discussing subject knowledge enrichment and thus he learnt many things at this training.
It was expected that after attending the training, all participants could understand the topics acquired better and transferred the knowledge to their students. The Centre also hoped that they could implement the HOTS questions that had been made.

CUSTOMISED TRAINING

# Training on Subject Knowledge Enrichment in Science for Elementary School Teachers in Bandung Regency

SEAMEO QITEP in Science in collaboration with the Technical Implementing Service Unit and the Indonesian Teachers' Association of Baleendah conducted a Training on Subject Knowledge Enrichment in Science for Science Teachers in Primary and Secondary Schools. This programme is planned to be implemented in three periods. The first period, attended by 75 science teachers in primary and secondary schools from Baleendah, was held on 17 December 2016 at SD Widuri, Baleendah, Bandung Regency. Meanwhile, the second and the third one were held in February 2017.

The purpose of the seminar was to train teachers to develop and enhance science process skills as well as to integrate the skills into science learning. In this training, the participants were invited to do some hands-on activities related to STEM education concept and High Order Thinking Skills.

The activity on the first period was successfully conducted through the great supports and cooperation of the Centre, the Technical Implementing Service Unit and the Indonesian Teachers' Association of Baleendah, also SD Widuri. The Centre expects through this activity, teachers can implement and apply science process skills in teaching and learning activities they have learnt in class.





# Training on STEM Education and HOTS (Higher Order Thinking Skills) Test Item Development for Elementary School Teachers


Today's students are tomorrow's leaders. Today's fast-changing world requires students not only to possess high-quality skills in the fields of science, technology, engineering, and mathematics (STEM), but also be adept at skills such as critical thinking, problem solving, persistence, collaboration, and curiosity. In line with the main focus of the institution and the importance of Science, Technology, Engineering, and Mathematics (STEM) education to develop learners' 21st Century skills, the SEAMEO QITEP in Science in collaboration with the Yayasan Darul Hikam conducted the Customised Training on STEM Education and HOTS (Higher Order Thinking Skills) Test Items from 5-6 January 2017 at the Darul Hikam Elementary school, Bandung, West Java. The programme was initiated by the school principal previously participating in trainings on STEM for School Principals.

The training was attended by sixty participants consisting of teachers, education personnel, school supervisors, and school principals. The aims of this training were to (1) introduce STEM Education to elementary teachers, (2) develop HOTS Test Question Items, and (3) try the experience of STEM lesson activity with simple tools. The training was facilitated by Ms Irma Rahma Suwarma PhD from Universitas Pendidikan Indonesia (UPI) as well as facilitators from the Centre represented by Dr Indarjani, Ms Tati Setiawati, Ms Eka Danti Agustiani, and Mr Heri Setiadi.

The programme was successfully conducted through the great supports and cooperation of the Yayasan Darul Hikam, the School principal of Darul Hikam Elementary School, and the Centre. It is expected that there will be more valuable enhancement programmes and more teachers trained to improve the quality of science education in the area in the future.

# SCIENCE ENHANCEMENT TRAINING FOR ELEMENTARY TEACHERS IN BALEENDAH, BANDUNG REGENCY

Science learning in elementary school level cannot be separated from hands-on activities in class. Those activities will help the students understand science concepts easier. Other than that, students will also get new and fun experiences to support their understanding on science.

To improve teachers' quality in teaching science, the Centre held a Science Enhancement Training for 70 teachers from elementary schools around Baleendah district. The training, held at SD Widuri on 18 February 2017, aimed to give lesson on hands-on activities. The teachers who were used to lecture teaching style were expected to implement hands-on activities in the classroom.

Materials covered in this training were physics, chemistry, and biology. For physics, the topics were related to force and energy also magnetism. During the session, teachers were given hands-on kit to make STEM-based 'renewable car' and simple electric motor using battery and magnet. Meanwhile, the biology topic delivered was about nutritional substance in food. The topic was learnt via food testing on 14 kinds of food using lugol solution, biuret test, and brown paper. These tests were done to determine carbohydrate, protein, and fat substances in food. During the chemistry session, teachers were introduced to acid-base test using natural indicator: red cabbage soultion. In the test, common household liquids, such as lemonade and soapy water, were mixed with red cabbage juice. Then the mix's changing colours were observed as indicators of acidic and basic content.

# Progress on STAR Village Programme 2016: Training Course on Subject Knowledge Enrichment in Science for Science Teachers

SEAMEO STAR Village is a collaborative programme of six SEAMEO Centres in Indonesia that has been initiated and conceptualised since the end of 2015 by SEAMEO BIOTROP. This programme is in line with the Centre's focus to improve the competence and quality of teachers and educational staff of science.

After conducting needs assessment survey in Desa Cihideung Ilir, Ciampea, Bogor in December 2015 to determine the needs of science teachers in terms of science's competence and skills development, this year SEAQIS focuses on the implementation of inquiry based science learning to support the 21st century skills. The realisation of the implementation is through the Training Course on Subject Knowledge Enrichment in Science for Science Teachers.

The training was held on 28-29 October 2016 in SMK Geo Informatika, Desa Cihideung Ilir, Kecamatan Ciampea, Bogor, Indonesia. The participants consisted of 15 junior high and vocational school teachers from Desa Cihideung Ilir. The outputs of this training were to produce (1) Lesson Plans, (2) Simple experiments and tools, and (3) Student worksheets in science teaching.

The programme aimed to introduce and enhance teachers' knowledge about the National Curriculum as well as to improve teacher's understanding about science contents. In addition, the other purpose was to implement the Inquiry-Based Science Education in teaching-learning process. The programme also intended to increase teachers' skill in developing simple science experiments and to perform hands-on science activities with simple tools.

This programme is in line with the main focus of the institution, stated in the 2nd FYDP 2015/2019, that SEAQIS proposes to provide a three-year programme. As a contribution to the SEAMEO STAR Village project, the programme that will be conducted by SEAQIS is related to the implementation of inquiry-based science learning consisting of Training Course on Subject Knowledge Enrichment in Science for Science Teachers in the first year, Applying Inquiry Based Science Eduction in the second year, and Workshop on Developing on High Order Thinking Skills (HOTS) Question for Science Subject in the third year.

# Training on Developing Thinking Skills through Inquiry-Based Science Education for Science Teachers in Cihideung Ilir

The Centre's contribution for the SEAMEO STAR Village programme on the second year focuses on the application of inquiry-based science learning to support 21st century skills. The realisation of the implementation is through the Training of Thinking Skills Development through Inquiry-Based Science Education for Secondary and Vocational Schools' Science Teachers. The training was held in two phases. The first phase, participated by 16 teachers of secondary and vocational schools from Cihideung Ilir, was conducted on 28-29 April 2017 at SMK Geo Informatika, Cihideung Ilir, Ciampea Subdistrict, Bogor, Indonesia. This training was facilitated by instructors from SEAQIS, namely Mrs Tati Setiawati and Mr Heri Setiadi. Meanwhile, the second phase is planned to be held in November 2017.

The target of this training was secondary school teachers. This training introduced and enhanced the teachers' knowledge on the National Curriculum, provided an understanding of the basic principles of inquiry-based science learning, created effective question items for students' skills in inquiry, designed learning activity using inquiry approach, and conducted suitable assessments in the inquiry learning process. In the last session, all participants were also trained to develop Higher Order Thinking Skills (HOTS) question items for science subjects.

Through this programme, it is expected that the Centre could enhance the quality of science education personnel in Cihideung Ilir and initiate other programmes to increase the competence of education personnel with support from other SEAMEO Centres in Indonesia.


# Training on Science Teachers' Innovative Works and Scientific Publications Competency Improvement in Aceh Jaya and Demak Regency

The SEAMEO QITEP in Science in collaboration with the Education, Youth, and Sports Office of Aceh Jaya Regency conducted the Training on Science Teachers' Innovative Works and Scientific Publications Competency Improvement from 7 to 11 November 2016. The training, held at SMAN 1 Calang and SMPN 1 Unggulan Calang, was attended by 105 participants consisting of 53 high school teachers, 31 senior high school teachers, and 21 elementary school teachers. The opening of the training was attended by the Director of the Centre.

In line with the main focus of the institution, the training aimed to enhance teachers' competency, utilise research and development process as well as scientific publication, also develop teaching aids and teaching innovation. The outputs of this training were to produce (1) classroom action research proposal, (2) scientific articles, and (3) report on design of science teaching aids with simple tools.



Learning does not end after a degree is awarded; this applies to everyone including teachers. Teachers should be able to develop their personal skills accordingly, gradually and continuously to increase their level of professionalism. Furthermore, teachers should keep learning and developing their competencies to keep up with technology and knowledge in their own respective fields. It becomes important in order to produce students with good competitiveness and problem-solving skills in encountering challenges of 21st century education.

To develop teachers' professionalism, the Centre, in collaboration with the Department of Education and Culture of Demak Regency, held a Training Course on Teachers' Competencies Development in Scientific Publications and Innovative Works for elementary school teachers in Demak Regency. The training was located in SDN Guntur 1, Guntur District, Demak Regency and was attended by 96 teachers. All participants were expected to continuously develop their personal skills and create innovative works as well as research proposals. Their works then can be submitted for research grants and other events which can improve the productivity of Demak Regency teachers.

CUSTOMISED TRAINING

# Training in Aceh Jaya, Pekanbaru, Garut, Jayapura, and Gowa: Training for Heads of Science Laboratory Candidates


During the 2016-2017 periode the Training for Candidates of Head of School Science laboratory (Physics, Chemistry, and Biology), was held in Aceh Jaya, Garut, Pekanbaru, Jayapura, and Gowa Regency.

The pattern implemented in this training was In-On-In pattern, consisting of 40 lesson hours of the 1st In Service Training, 70 lesson hours of On the Job Learning, and 40 lesson hours of the 2nd In Service Training. The training used andragogy approach and the methods implemented in the training were lectures, discussions, demonstrations, practice, and assignments.

The training aimed to develop managerial and professional competences of the participants so that by the end of the training the participants were hopefully capable to be heads of school science laboratory.






The Training for Candidates of Head of School Science Laboratory (Physics, Chemistry, and Biology) During the 2016-2017 Periods

| Location | Date | Venue |
|---|---|---|
| Aceh Jaya, Aceh (2nd In Service) | 21-23 November 2016 | SMPN 1 Calang, Aceh Jaya Regency, Indonesia. |
| Pekanbaru, Riau (2nd In Service) | 13-15 January 2017 | Pekanbaru, Riau, Indonesia |
| Garut, West Java (2nd In Service) | 18-21 April 2017 | SMAN 11 Garut, West Java, Indonesia. |
| Jayapura, Papua (1st In Service) | 25-29 April 2017 | Jayapura, Papua, Indonesia. |
| Sungguminasa, Gowa, South Sulawesi (1st In Service) | 10-15 May 2017 | Sungguminasa, South Sulawesi, Indonesia. |

# Training in Aceh Jaya: School-Based Management Training : Aceh Jaya Regency

## ACEH JAYA

Three SEAMEO centres that are SEAMEO QITEP in Language, SEAMEO QITEP in Mathematics, and SEAMEO QITEP in Science worked with the Education Office of Aceh Jaya Regency to hold School-Based Management training at SMPN 1 Unggul, Calang, Aceh Jaya Regency. The training was opened by the Acting Head of Education Office of Aceh Jaya Regency, Drs Edward SPd. Present were the Centre's representatives and all of the training's participants.

The training was attended by 300 participants consisting of principals, vice principals, laboratorium supervisors, and library supervisors from elementary and junior high schools across Aceh Jaya Regency. This training aimed to improve participants' competence in managing school based on different challenges and opportunities faced by each school. Hopefully by joining this training the participants would be able to apply the knowledge they got to compile and revise their school's work plan based on self-evaluation.

During the training, all participants focused on discussion, teamwork, and presentation of the result from their research on School-Based Management, Context Analysis, School Quality Improvement, Leadership Learning, School Work Plan, Academic Supervision, Character Building and Literation. Afterwards, they formulated a follow up plan after the training finished.

All SEAMEO Centres hosting this training also seized this chance to introduce SEAMEO Centres in Indonesia. Mesmerised by the presentation, there were a lot of participants who wanted to join other activities held by SEAMEO Centres in Indonesia to enhance their knowledge and skills related to their duties as teachers or education personnel. The participants were also very enthusiastic in opening their network with various parties in Indonesia and Southeast Asia.

With this training, hopefully all the activities held by SEAMEO Centres in Indonesia would strengthen the nation's effort to improve education quality in Indonesia and Southeast Asia region.

# Training in Karo and Morowali: Improving Teachers Pedagogical Capacity through Training on Teachers' Competency Improvement:

As an effort to support teachers' pedagogical capacity building, the Centre in collaboration with SEAMOLEC and Sinabung Community Forum (FORMASI) conducted a Training on Teachers' Competency Improvement (PKG) in Science in Karo, North Sumatra and Morowali, Central Sulawesi province. The general aim of this activity was to improve the pedagogical ability of the participants in delivering science learning in the classroom.

Located at PT. Indonesia Morowali Industrial Park (IMIP), this activity was done in 2 batches, for junior high school science teachers on 3-5 April 2017 and 7-9 April for high school science teachers. The total participants who joined this activity were 28 and 30 people from junior high and high school teachers respectively.

SEAQIS sent two representatives as resource persons in the PKG activities namely Mr Reza Setiawan and Mrs Lidiya Sinulingga. The training materials included introduction of inquiry-based science learning, science experiments using simple tools and materials, classroom action research, and the use of ICT in science learning. This training was the first of a series of PKG training activities for the Morowali region that would continue in July and October 2017.

# COLLABORATION TRAINING

## Training on ICT-Based Learning Media Development and STEM Education to Meet the 21st Century Challenges for School Principals

SEAMEO QITEP in Science has conducted two paralel training programmes entittled "Training on ICT-Based Learning Media Development" and "Training on STEM Education to Meet the 21st Century Challenges for School Prncipals" which were conducted on 11 -12 October 2016. A total of 80 science and ICT teachers and also school principals from Bandung joined the ocassion.

The purpose of these trainings were to enhance the capability of the teachers in using ICT to support their learning activities and to enhance school principals understanding on the importance of STEM-based learning to enhance learners' capacity to face 21st century challenges.

The training was opened by the head of Local Education Authority, Dr H Elih Sudiapermana and continued by the plenary presentation from keynote speaker, Margaret Schmiel, PhD, from Smithsonian Science Education Centre, USA, and also as the invited Fullbright Specialist for QITEP in Science.

The resource persons for these training courses included Dr Trevor Owens from Institute of Museum and Library Services, USA, Dr Setiya Utari and Dr Ana Ratna Wulan from Indonesia University of Education.


The plenary presentation from keynote speaker, Margaret Schmiel, PhD, from Smithsonian Science Education Centre, USA


COLLABORATION TRAINING

# Training on STEM Education

In line with the importance of Science, Technology, Engineering, and Mathematics (STEM) education to develop learners' 21st Century skills, the Centre had successfully conducted the Training on STEM Education on 20-26 November 2016 at the Atlantic City Hotel, Bandung. The Centre invited the experts from the Institute for the Promotion of Teaching Science and Technology (IPST) of Thailand to share STEM best-practices implemented in Thailand. In addition to the IPST experts, the Centre also invited lecturers from universities such as ITB and UPI as well as the former Director of the Centre, who is currently assigned as the Indonesian Education and Culture Attaché in Washington DC, to be the resource persons. Meanwhile, the participants of this training were teachers from various regions in Indonesia.

During the training, the participants learnt not only STEM-based activities but also science and technology for disaster risk reduction as it was expected that they could integrate disaster risk reduction into STEM lesson plan. Specifically, the Cen-

# Science, Technology, Engineering and Mathematics

tre believed that the awareness and knowledge related to disasters was better taught through STEM-based activities promoting competencies like critical thinking, imagining future scenarios, and making decisions in a collaborative way.

Moreover, at the end of the training the participants were expected to recognise the importance of STEM education to develop learners' 21st Century skills, develop knowledge and understanding how disasters happen and how these can be prevented and minimised, experience STEM lessons and activities, design and manage STEM learning activities, and produce a STEM-based lesson plan,

In addition to the training of STEM education conducted in 2016, SEAMEO QITEP in Science also successfully conducted a Training Course on STEM Education from 16-17 July and 29-30 July 2017 and attended by 23 mathematics and science teachers from Bandung and Bogor. The training was aimed to enhance teachers and education personnel skills and knowledge in STEM education.

Meanwhile, the resource persons of the training were lecturers from Indonesia University of Education. NGSS (Next Generation Science Standards) and its implementation in science education, STEM Education model, and STEM Project for Learning Activity were three of many exciting topics discussed.

It is expected that the training could result more skilled teacher and education personnel in implementing STEM education in schools. This training was also expected to produce a number of STEM projects which could be implemented for learning activity.


TEM


Pelatihan Pendidikan berbasis STEM
bagi Guru Pendidikan Dasar dan Menengah

# Training on STELR – STEM Education

In Collaboration with Australian Academy of Technology and Engineering (ATSE), the Charles Darwin University, the Australian Government Institute (Australia Indonesia Institute), the Southern Cross University, and ORICA

Science and technology have changed the world for the better. Not only they help most people to streamline daily activities, they also help improving the quality of economic progress. Thus, many countries have embarked on programmes to support the development of science in schools.

As a regional Centre, SEAMEO QITEP in Science takes part in this development effort by conducting a collaborative training, namely the Training Course on Science and Technology Education Leveraging Relevance (STELR) – Science Technology Engineering and Mathematics (STEM) Education that was conducted on 31 October – 4 November 2016 at the Atlantic City Hotel, Bandung. The training involved varied institutions such as the Australian Academy of Technology and Engineering (ATSE), the Charles Darwin University, the Australian Government Institute (Australia Indonesia Institute), the Southern Cross University, and was also supported by a private sector, ORICA. The participants were teachers, teacher trainers, lecturers, officers of Ministries of Education, and private company officers coming from Brunei Darussalam, Indonesia, Lao PDR, Malaysia, Thailand, and Timor Leste.

It was expected that after joining the training, the participants could recognise the importance of inquiry-based science education (IBSE) in teaching science, experience the process of inquiry-based science teaching and learning, experience STEM lessons and activities, be aware of the latest pedagogical research and effective instructional strategies, as well as produce a lesson schema to enable teachers to construct lessons which incorporate research-based instructional strategies.


Training on


TELR - STEM Educ


Training on
STELR - STEM Education
ATSE
Charles Darwin
Southern Cross

# WORKSHOP

## WORKSHOP ON PROGRAMME EVALUATION IN 2016

SEAMEO Regional Centre for QITEP in Science (SEAQIS) has successfully conducted a Workshop on Programme Evaluation 2016 at the Sari Ater Hotel & Resort, Subang, Jawa Barat from 20–23 December 2016. All staff of SEAQIS and some invited guests attended the workshop aimed to evaluate the Centre's programmes during 2016 and strengthen the planning programmes for year 2017.

The workshop was opened by Prof Triyanta as the Director of SEAQIS. Dr Sediono Abdullah, the director of CDETEP in Science (SEAQIS's host institute) described some of CDETEP programmes and gave some good advice to SEAQIS to run next year programmes. During the workshop, every division of SEAQIS presented their programmes evaluation conducted in 2016 and design of programmes for the next year as well.

One of invited resource persons, Stevie Lengkong, freshened the workshop with many interesting games. He also invigorated the SEAQIS's staff motivation to face the new challenges in 2017. At the end, to strengthen relationships among the staff, outbound, rafting and paint ball activities were held.

WORKSHOP

# Workshop on Science Education Plan for Early Childhood

SEAMEO QITEP in Science concerned on the strategic role of science education for early age children to promote science literacy. Based on this intention, SEAMEO QITEP in Science invited various parties related to early childhood education in Indonesia to jointly formulate the implementation plan for early childhood science education through a Workshop on Science Education Plan for Early Childhood. The workshop was conducted from 28-29 November 2016 at PGRI West Java office, Bandung.

Debriefing for the workshops delivered by Enah Suminah, representing the Directorate of Early Childhood and Public Education of the Ministry of Education and Culture, Indonesia; Anna Anggraini, senior practitioners of early childhood education; and Ai Sutriansih representing PGRI West Java Province. The workshop participants amounted to 51 persons, consisting of representatives of the Directorate of Early Childhood and Public Education of the Ministry of Education and Culture of Indonesia, representatives of the PP PAUD dan Dikmas West Java, representatives of teachers' organizations in West Java as well as teachers, principals, and supervisors of kindergarten schools in West Java. The results of the workshop were recommendations of needs as basis for organizing early childhood science education programmes, associated with reinforcement on science content needed to develop early childhood learning.

WORKSHOP

# Workshop on Policy Review on Science, Technology, Engineering, and Mathematics (STEM) Content in Indonesian Curriculum

SEAMEO QITEP in Science was invited by the Centre of Curriculum and Books (Puskurbuk), the Ministry of Education and Culture of Indonesia to conduct the Workshop on Policy Review on Science, Technology, Engineering, and Mathematics (STEM) Content in Indonesian Curriculum. This occasion was held from 18 – 20 October 2016 in Puskurbuk, Jakarta and participated by academicians, school principals, educators, book writers, and also the staff of Puskurbuk.

The Centre sent Dr Indarjani, the Deputy Director for Programme and Mr Reza Setiawan, the Head of Programme and Training Division as well as Dr Margaret Chmiel, the Fullbright Consultant, to join the workshop. Dr Chmiel presented the initiatives of STEM education and the practices in the US while Dr Indarjani presented the Centre's initiatives regarding STEM education and also the possible implementation of STEM in Indonesia. On 20th October 2016, Dr Chmiel also delivered her presentation to the policy maker in the Ministry of Education and Culture in order to promote STEM education to the ministerial level.

# Workshop on Working Paper Writing


In line with the preparation of the upcoming 8th Governing Board Meeting in September 2017, SEAMEO QITEP in Science (SEAQIS) held a workshop on working paper writing. The workshop was held in SEAMO QITEP in Science office from the 20th to 23rd of March 2017 with aim to write the working paper that will be examined during the 8th Governing Board Meeting. Participated in this workshop were all staff and management of SEAQIS.


Mrs Veronica Enda Wulandari MSc the Head of International Cooperation in Bureau of Planning and International Cooperation (BPKLN), was present as the resource person of the workshop. She delivered instruction regarding the role and policy of SEAMEO Centres under the Ministry of Education and Culture.

At the end of the workshop, 12 working papers that had been made were given feedbacks. All the working papers will later be presented during the Governing Board Meeting as a form of accountability report of the centre. Other than that, the meeting will also resulted in future policy direction of the Centre.

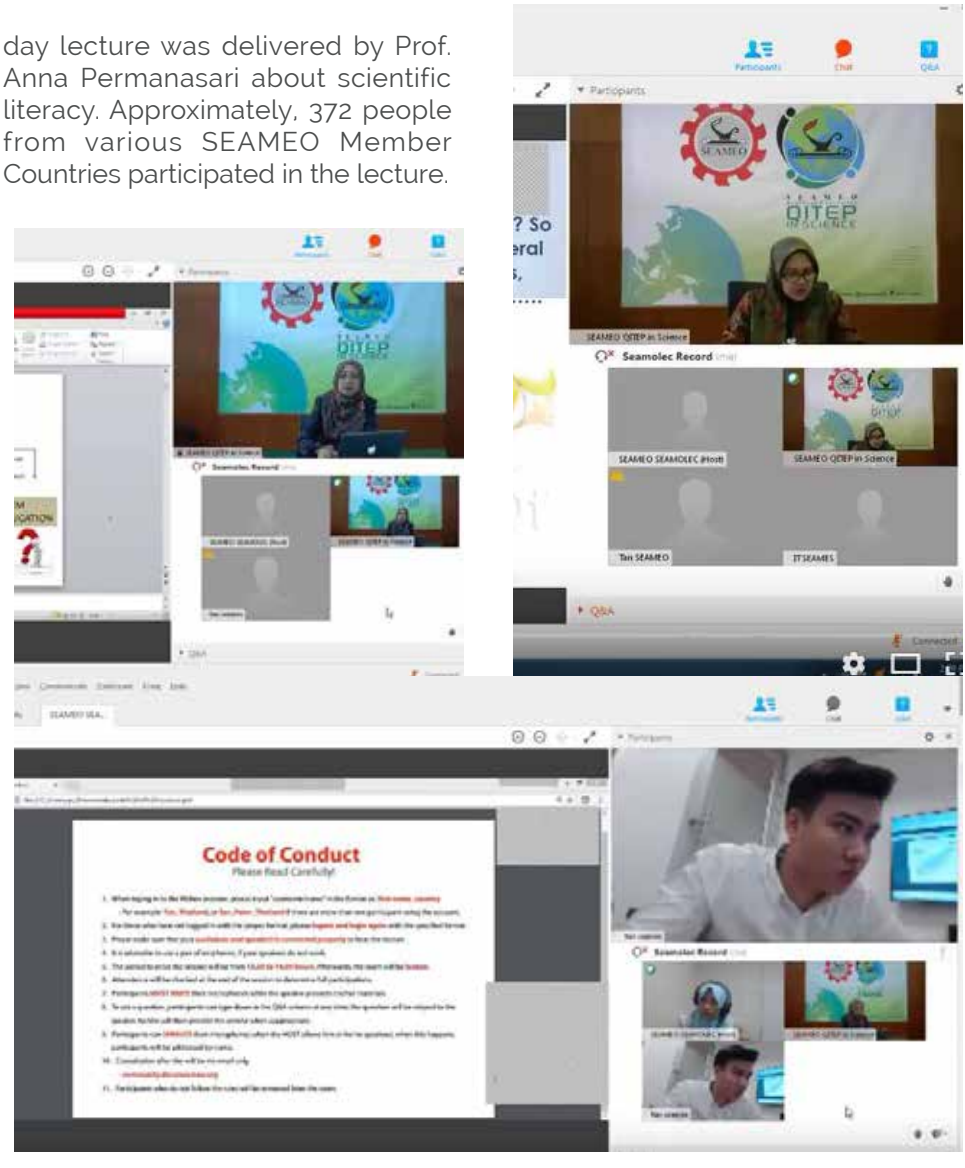
# ONLINE LECTURE, CONFERENCE, & SEMINAR

## Lecture Series and Online Training Course, collaborated with SEAMEO Secretariat and SEAMEO SEAMOLEC: Building

Ability to solve problem and think critically are two necessary skills in the 21st century. By thinking critically to solve a problem, students will be able to develop their creativity to innovate and solve the problem in the end.

STEM (Science, Technology, Engineering and Mathematics) education and scientific literacy are important knowledge that will motivate students to think critically and solve problems. Through STEM education, students are urged to develop their knowledge and critical thinking to face existing phenomena. Students will also be able to design advantageous technology as alternative solution. Through scientific literacy, other than gaining new knowledge, students will be also urged to identify problems, describe scientific phenomena, and able to draw conclusion from the empirical evidences they found. In the end, student will be more sympathetic towards their environment, especially the science related ones.

To improve students' character with 21st century competence, SEAMEO QITEP in Science collaborated with SEAMOLEC and SEAMEO Secretariat to hold an online lecture on the 20-21 March 2016. The first day lecture, an introduction of STEM Education in Japan and Indonesia, was delivered by Irma Rahma Suwarna, PhD. Meanwhile, the second day lecture was delivered by Prof. Anna Permanasari about scientific literacy. Approximately, 372 people from various SEAMEO Member Countries participated in the lecture.



# Seminar on STEM Education: Lesson Learnt from USA

Dr Margaret Chmiel, the Fullbright Specialist, for the Advancement of Science, Technology, Engineering, and Mathematics (STEM) Education in Indonesi

SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS

**Dr Margaret Chmiel,**
The Fullbright Specialist, for the Advancement of Science, Technology, Engineering, and Mathematics (STEM) Education in Indonesia

SEAMEO QITEP in Science with the support of AMINEF had great chance to have the visit of a Fullbright Specialist, Dr Margaret Chmiel, the Division Director of Curriculum and Communications at Smithsonian Institution. Her arrival became prominent as the Centre initiated to embed Science, Technology, Engineering, and Mathematics (STEM) Education, which is her specialisation, into Indonesian education system since STEM has nowadays been considered to be able to enhance the excellence and the competitiveness of future generation.

During her stay, she was benefitted to introduce STEM education. She provided lectures to teachers and students in the universities, involved in policy forum discussion with the Ministry of Education and Culture of the Republic Indonesia, and became the member of the board of judges for the Ki Hajar Dewantara Award convened by the Centre on 13-14 October 2016.

She started the first week by conducting a presentation entitled 'Developing a Strong STEM Teacher Workforce to Enhance Students' 21st Century Skills in a workshop for school principals. She continued the activities by becoming the member of judges for the Ki Hajar Dewantara Award and the keynote speaker in the Intenational Seminar on Mathematics, Science, and Computer Education conducted by the Centre in the collaboration with Universitas Pendidikan Indonesia (UPI), Bandung on 15 October 2016.

In the following week Dr Chmiel with the representatives of the Centre attended the Workshop on Policy Review on Science, Technology, Engineering, and Mathematics (STEM) Content in Indonesian Curriculum convened by the Ministry of Education and Culture of the Republic of Indonesia in Jakarta. This opportunity was used to elaborate more on the importance of STEM discussion. Another valuable activity was the visit to SMAN 1 Parongpong to observe STEM implementation in class. She was impressed by the teacher who gave the students the second even the third chance to make the terrarium. "It is", as she said, "somehing that is not common to be done by teachers in US".

In the last week of her stay, she shared her knowledge on STEM Education to the Centre staff in an in-house training. Teacher trainers from the Centre for Development and Empowerment of Teachers and Education Personnel (CDETEP) in Science or Pusat Pengembangan dan Pemberdayaan Pendidik dan Tenaga Kependidikan Ilmu Pengetahuan Alam (PPPPTK IPA) participated in the programme. Moreover, local science teachers came and showed their interests of learning more about STEM Education by attending the seminar held by SEAMEO QITEP in Science.

It is our great expectation that all lectures and discussion between Dr Chmiel and parties of the government as the stakeholder as well as science teachers can raise perople's awareness of the significance of STEM Education to improve science quality education in Indonesia.

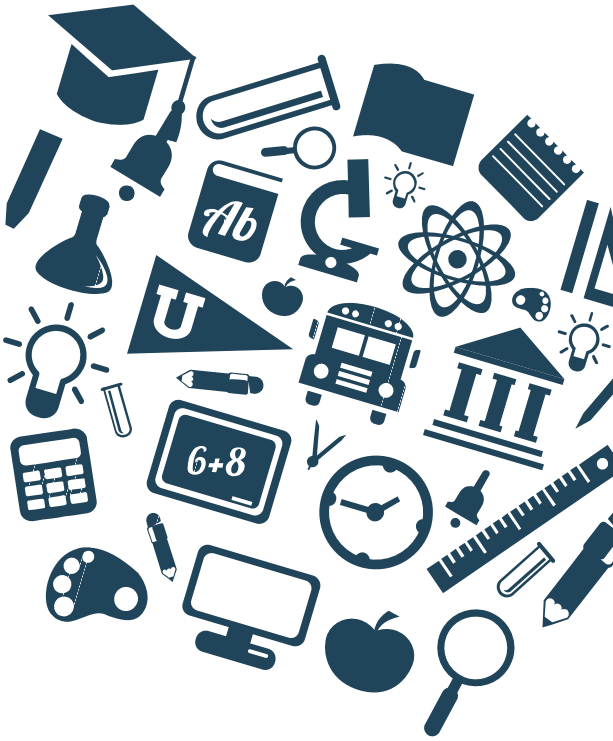
SEMINAR

## Seminar on Research Grants 2016: Competency Improvement of Science Teachers and Education Personnel in Inquiry-based Science Education Implementation Supporting 21st Century Skills


# SEMINAR

The Research, Development and IBSE Capacity Building Division of SEAMEO QITEP in Science had successfully conducted an annual research programme, namely Research Gants 2016, from March until November 2016. The theme of this year's programme was Competency Improvement of Science Teachers and Education Personnel in Inquiry-based Science Education Implementation Supporting 21st Century Skills. From nearly 300 proposals, the Centre only provided grants for 15 teachers and education personnel throughout Indonesia whose proposals had passed a rigorous selection process. Each of them was awarded 15 million rupiah to implement their research proposal.

The peak of the programme was the Seminar on Research Grants 2016: Competency Improvement of Science Teachers and Education Personnel in Inquiry-based Science Education Implementation Supporting 21st Century Skills. It was conducted on 14 November 2016 at the Plato Room of CDTEP in Science (PPPPTK IPA), Bandung, and attended by 15 researchers, where some of them came with their teams. At the seminar, they had to present their research reports before receiving feedback from the assessors from eligible institutions. The assessors were Prof Triyanta, the Director of the SEAMEO QITEP in Science; Dr Indrawati, the Deputy for Programme and Information of the CDTEP in Science (PPPPTK IPA); Dr Harry Firman and Dr Ana Ratna Wulan, senior lecturers of the Faculty of Science and Mathematics Education of the Indonesia University of Education (UPI).



SEMINAR

# Prof Yoshisuke Kumano's Visit: Introducing Japan's STEM

The Seminar on Science, Technology, Engineering, and Mathematics (STEM) Education was convened at PPPPTK IPA Hall, Bandung on 9 February 2017. The seminar was attended by 183 teachers, teacher instructors, lecturers, educational personnel, and university students. This national seminar was supported by the Ministry of Education, Culture, Sports, Science and Technology-Japan (MEXT) as one of the Centre's efforts to fulfill commitment in developing the competence of science teachers and education personnel in Indonesia and Southeast Asia. Prof Yoshisuke Kumano from Shizuoka University was selected as the keynote person based on his experiences and passion in developing STEM in Japan with international cooperation.

"Approximately 400 people have already registered online in just two days after the seminar announcement was published. Consequently, the registration has to be closed prior to the scheduled date and we have to reject half of the applicants to meet the only 200 persons for maximum quota," Mr Reza Setiawan, the Head of Programme and Training Division, explained. He also stated that the participants showed high enthusiasm because the STEM learning model is currently a popular topic among educators around the world.

This national seminar received positive responses from the participants. One of them was Ms Eko Susilowati, a participant from Banjarmasin, South Kalimantan. She said, "This seminar has expanded my knowledge regarding STEM education. This learning model is currently popular and has been influencing the education world. The seminar itself is excellent and fulfilling."

SEMINAR

# Participation as an invited speaker at the Annual Seminar on Innovation and Learning of Science (SNIPS) 2016 led by the Faculty of Mathematics and Science of Institut Teknologi Bandung.


Science, engineering, and technology have been developing so rapidly that effect to science teaching and learning. Without interlinking with the development of science, engineering, and technology, learning of science would be so insipid. Thus, innovation in science teaching by utilising technology such as ICT is of necessity. This leads the Faculty of Mathematics and Science of Institut Teknologi Bandung (Bandung Institute of Technology) to organise a yearly seminar on Innovation and Learning of Science (SNIPS). In 2016, SNIPS was held from 21 to 22 July at Aula Timur, Institut Teknologi Bandung. About 400 participants joined the seminar and presented their papers in various topics from pure science research to science learning methods development.

As SEAMEO Regional centre for QITEP in Science plays important roles in improving science teaching and learning in the Southeast Asia region, the seminar committee invited Prof Triyanta, the Director of the Centre, to give a plenary talk in the seminar. On this occasion Prof Triyanta introduced the Centre and shared his knowledge on inquiry based science education to the conference participants. He particularly introduced learning through an inquiry approach on the basic electromagnetic interaction.

SEMINAR

msceis 2016
Mathematics, Science, and Computer Science Education International Seminar
October 15, 2016
UNIVERSITAS PENDIDIKAN INDONESIA

15 October 2016

# The 3rd Mathematics,Science, Computer Education International Seminar (MSCEIS) Collaboration with the Faculty of Indonesia University of Education (UPI)


SEAMEO QITEP in Science, collaborated with the Faculty of Indonesia University of Education (UPI) convened the 3rd Mathematics,Science, Computer Education International Seminar (MSCEIS) on 15 September 2016. The theme of this seminar was "Harnessing Local Wisdom to Build Competencies of Excellence in Research and Collaboration in the New Era of The ASEAN Economic Community". The aims of the seminar were: (1) to bring together the scientists, education experts and practitioners, students, and civil society organization representatives in the scientific forum; (2) to share and discuss theoretical and practical knowledge about innovation in mathematics, science and education.

The seminar was attended by 138 participants, 270 oral presenters and 45 poster presenters. The keynote speakers were Margaret Chmiel, PhD (USA), Prof Hans-Dieter Barke (Germany), Prof. Tsukasa Hirashima (Japan), and Prof H Furqon MA PhD (Indonesia). In the plenary session, Prof Dr Triyanta from SEAMEO QITEP in Science was being one of the main speakers, as well as Dr Chong Kui Kian (Brunei Darussalam), Dr Sazali bin Yusoff (Malaysia), Dr Lorna D Dino (Philippines), and Madame Irene Tan (Singapore). After the plenary session, the seminar was continued to the parallel sessions where all nominees of the Ki Hajar Dewantara Award presented their papers. There were parallel forums with different theme namely Physics and Physics Education, Biology and Biology Education, Chemistry and Chemistry Education, Mathematics and Mathematics Education, and Computer Science.

# The 3rd Mathematics,Science, Computer Education International Seminar (MSCEIS) Collaboration with the Faculty of Indonesia University of Education (UPI)

SEAMEO QITEP in Science

# Research Grants 2017

The Science Research Grants 2017 was awarded to 30 winning research proposals submitted by 152 Indonesian science teachers and education personnel. Each of the winner was granted with the amount of 7,5 million rupiahs (USD 575) for conducting proposed research for 6 months. 30 grantees out of 152 grant proposers described high competitiveness of the research grant.

# List of the Grantees
# SEAQIS Research Grants 2017

| No | Name | Institution | Tittle |
|---|---|---|---|
| 1 | Arif Darmadiansyah | SMA Negeri Probur | The Implementation of Interactive HDPro Tens Media (Solar Power Digital Projector Hologram) based Discovery Inquiry Learning to Improve Biology Learning Quality in Grade X Tapal Batas Timur SMAN Probur |
| 2 | Cece Sutia | SMAN 1 Parongpong | The Implementation of Engineering Design Process Learning to Improve Students Learning Motivation and Skill on Environmental Problem Solving Design |
| 3 | Priya Santosa | SMAN 1 DOLOPO | 5E Model and UV Ray Box Media Implementation to Respond Students' Obstacle in Learning Photosyntesis |
| 4 | Dedy Iswanto | Yayasan Pendidikan islam Darul Khair, SMK Diponegoro Lebaksiu | The Implementation of Inquiry Learning System Assisted by Interactive TV Media in Regular Circular Motion Topic to Improve Physics Problem Solving Skill of X Grade Students in SMK Diponegoro Lebaksiu |
| 5 | Deasy Irawati | SMKN 3 Buduran Sidoarjo | Critical Thinking with PeDe Using ProRanSel |
| 6 | Bambang Setiawan | SMAN 5 Kota Bima | Utilization of Magnetic Pendulum Props in Inquiry Learning Model to Improve Physics Learning Outcome of Grade XII Students in SMAN 5 Kota Bima |
| 7 | Miftakhul Falah | MAN 2 Kudus | The Implementation of Inquiry Learning Model through Outdoor Activities with Tracker Software Media to Increase Physics Learning Motivation and Outcome of Grade XI Students on Equation of Motion Topic in MAN 2 Kudus |
| 8 | Nanik Yuniastuti | SMKN 1 Saptosari | The Effort of Liveliness and Archievement Improvement on Science Learning through Note-Taing Pairs Model Implementation Assisted by Log Book in SMKN 2 Saptosari |
| 9 | Nur Hayati | SMPN 36 Bandung | The Effort of Students Learning Outcome Improvement on Organism Survival Topic through Illustrated Story with Inquiry Based Science Learning in Grade XI SMP N 36 Bandung |
| 10 | Nita Novianti | SMP Negeri 6 Kota Sukabumi | The Improvement of Students Scientific Process Skills in Science Learning WEBBED Type with Inquiry Approach |
| 11 | Dani Setiawan | SMPN 1 Bulakamba | Blended Learning with Inquiry/ Discovery Learning to Improve ICT Literacy and Analytical Thinking Skill of Grade VIII Students SMPN 1 Bulukumba in Digestive System Topic |
| 12 | Karsilah | SMPN 2 Geyer | Junior High School Students Cognitive Skill Improvement through Guided Inquiry Learning Model Implementation Using Argumentation Activity Setting |

| | | | |
|---|---|---|---|
| 13 | Nur Miftahul Fuad | UPTD SMP Negeri 2 Puncu | Differentiated Science Inquiry Model Implementation Combined with Mind Map to Increase Critical Thinking Skill and Creativity in Grade VIIC Students SMPN 2 Puncu Kediri |
| 14 | Da'watul Khoiroh | SMPN 5 Bangkalan | Improving Mastery of Concepts and Skills of Student Critical Thinking through Implementation of Guided Inquiry Learning on Characteristic and Utilization of Matter Topic in Grade VIII SMPN 5 Bangkalan |
| 15 | Arna Fera | SMPN 30 Padang | Science Learning Improvement with Comic Learning Resources and PURZEL and MATCH Student Worksheet in Grade VIII SMPN 30 Padang |
| 16 | Arif Gumelar | SMPN 1 Soromandi | Creativity Improvement with Inquiry Approach Implementation through CONNECTED Model Integrated Science in Classs VII A SMPN 1 Soromandi |
| 17 | Hati Nurahayu | SMP Plus Al-Amanah | Kurikulum 2013 Implementation through Inquiry Model Learning of Skeletal Muscle and Simple-Plane Topic to Increase Students Activity and Learning Outome |
| 18 | Mira Restuti | Yayasan Bahtera Insani Kabupaten Bintan Kepulauan Riau | Improved Understanding of Class IX Junior High School Students on Nerve Cell and Reflex Movement Topics through Nerve Cell Media and 3 Dimensional Plus Reflex Movement Mechanism |
| 19 | Nixon Aylon Selly | SMA Negeri 2 Kupang | Apparatus (Atom Housing) Utilization to Increse Chemistry Learning Motivation in Atom Stucture and Periodic Sistem Topics |
| 20 | Hendri Kurniadi | SMK Terpadu Al-Ittihad Cianjur | 5E Cycle Implementation Based on Inquiry Approach Assited by Virtual Lab on Electrochemistry Topic to Increase Syudents' Concept Mastery and Critical Thinking Skill |
| 21 | Ika Budi Yuliastini | SMK Negeri 9 Malang | POGIL (Process Oriented Guided Inquiry Learning) Learning Model Implementation Assisted by Mind Mapping to Increase Grade X TSM Students' Creativity and Learning Outcome in SMKN 9 Malang |
| 22 | Yani Pinta | SMA ISLAM RAUDHATUL JANNAH PAYAKUMBUH | Chemoenterpreneurship-Oriented Guided Inquiry Learning to Increase Grade XI Students Learning Outcome and Life Skill |
| 23 | Zubaidah | SMK Negeri Amuntai | Guided Inquiry learning Model Implementation Using Video Project on reaction Rate Topic to Increase Grade XII MM 1 Students' Activity and Learning Outcome in SMKN Amuntai |
| 24 | Eko Agushening | SDN RRI Cisalak | Inquiry Based Learning Implementation Using Authentic Assessment to Increase Grade IV Students' Learning Process and Outcome in 'Care to Organism' Theme 'Let's Care the Environtment' Sub-Theme Topic in SDN RRI Cisalak |
| 25 | Ernawati Setyo Nugraheni | SDN Kemiri | Etnoinquiry Implementation Assisted by Scaffolding Technique in Heat Energy Topic Scientific Attitude and Science Literacy Skill |

| | | | |
|---|---|---|---|
| 26 | Fita Sukiyani | SDN Sumber 1 Berbah | Improvement of Grade 6 Students' Critical Thinking Skill and Science Learning Outcome through Inquiry based Learning Assisted by Flash Video |
| 27 | Galih Suci Pratama | UPTD Pendidikan Kecamatan Ngaliyan | "BASKOM" Media Utilization Assisted by "HP Ranking 1" Game and "Food Chain Puzzle" Apparatus to Increase Grade IV B Students' Science Learning Outcome and Activity on Care to Organism Topic in SDN Wonosari 03 |
| 28 | Eka Yudha Ardiyanto | SDN Rogomulyo 02 | Improvement Effort of Grade IV Students' Science Learning Outcome through PINTER with BUDI in SDN Rogomulyo 02 |
| 29 | Herry Soesanto | SMK Muhammadiyah Serui | Inquiry Learning Model to Improve Concept Understanding of Vocational Students in Coloid Topic |
| 30 | Ni Putu Ayu Hervina Sanjayati | PKBM Widya Aksara buleleng Bali | Local Wisdom 'Bali Tri Pramana' based Guided Inquiry Learning Model Implementation to Increase Science Learning Outcome in Non Formal Education |

# KI HAJAR DEWANTARA AWARD

## FOR THREE BEST SCIENCE TEACHERS IN SOUTHEAST ASIA

The Ki Hajar Dewantara Award was an initiative of the Southeast Asian Ministers of Education Organization (SEAMEO) for Quality Improvement of Teachers and Education Personnel (QITEP) in Science to bestow the best science teachers in Southeast Asia. The purpose of conferring the award was to honor and appreciate the outstanding and dedicated science teachers to advance science education, and increased the Science teachers' motivation of self-development. The First Ki Hajar Dewantara (KHD) Award was convened from 13-15 October 2016 in Bandung, Indonesia. Seven SEAMEO member Countries (Brunei Darussalam, Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam) sent representative teachers respectively, as the candidates of the Best Science Teacher in Southeast Asia in 2016. The candidates presented their papers to the judges whom are educational experts from SEAMEO Member Countries and the United States of America. The paper presentation session was also attended by 21 teachers as KHD Award nominees from Indonesia, teachers from several cities in Indonesia, and academic societies of Indonesia University of Education (UPI).

The Ki Hajar Dewantara Award 2016 concluded by conferring Ms Lee Saw Im from Malaysia as the Best Science Teacher in Southeast Asia 2106 for the 1st Place, followed by Mr Harman Johll from Singapore in the 2nd Place, and Ms Risa Haridza from Indonesia in the 3rd Place. The three Best Science Teachers received certificates, plaques, and grants to attend and participate in Science teacher improvement programmes. The 1st Place won grant which was worth USD 5.000, for the 2nd Place was USD 2.500, and for the 3rd Place was USD 1.000.

As the 1st Place in the Ki Hajar Dewantara Award, Ms. Lee Saw Im was acknowledged as the Best Science Teacher in Southeast Asia in the High Officials Meeting of Ministries of Education in the Southeast Asian countries conducted in Thailand.

**Ms Lee Saw Im** from Sekolah Menengah Kebang-saan Seri Bintang Utara, Kuala Lumpur, Malaysia as this year's winner in the Search for the Regional Best Science Teacher Award 2016.

**Mr Harman Dev Singh Johll** from National Junior College, Singapore as the 2nd Place in the Search for the Regional Best Science Teacher Award 2016.

**Ms Risa Haridza** from SMP Negeri 3 Pontianak, Indonesia as the the 3rd Place in the Search for the Regional Best Science Teacher Award 2016.

# COLLABORATION & NETWORKING

To reach the goal to enhance teachers and education personnel quality, SEAMEO QITEP in Science has successfully established mutual collaboration and networking with other institutions nationally, regionaly, and internationally.

**National:**

1. Ministry of Education and Culture of Indonesia
2. Education offices of Aceh Jaya, Siak, Demak, Garut, Jayapura, and Gowa
3. The Centre for book and Curriculum
4. Directorate of Early Childhood and Care Education, Nonformal and Informal Education of the Republic of Indonesia
5. Yayasan Darul Hikam
6. National University: Institut Teknologi Bandung, Universitas Padjajaran (UNPAD), Universitas Pendidikan Indonesia (UPI), Institut Pertanian Bogor (IPB)
7. YPBB (Yayasan Pengembangan Biosains dan Bioteknologi) Indonesia
8. WWF
9. AIPI (Akademi Ilmu Pengetahuan Indonesia)

**Regional:**

1. The Institute for the Promotion of Teaching Science and Technology (IPST) Thailand
2. Education Ministries of SEAMEO member countries
3. SEAMEO Centres

**International:**

1. Ministry of Education, Culture, Sports, Science and Technology (MEXT) Japan
2. Smithsonian Institution-USA
3. University of Tsukuba, Japan
4. Academy of Technology and Engineering (ATSE)- Australia
5. UNESCO
6. EDMODO

# 2016 SEAMEO Centre Directors' Meeting

## BANGKOK, THAILAND


SEAMEO is an international and intergovermental organisation established to promote regional cooperation in education, science, and culture.

The Member Contries include Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand, Timor Lete, and Vietnam. It embodies 8 Associate Members: Australia, Canada, France, Germany, Nethelands, New Zealand, Spain, and United Kingdom; and four Affiliate Members namely the International Council for Open and Distance Education (CDE), the University of Tsukuba, British Council, and China Education Association for International Exchnge (CEAIE).

SEAMEO now consists of 21 regional Centres. The Centres maintain SEAMEO's work and aspiration to nurture human capacities and explore the fullest potentials of people in the region through quality and equity in education, preventive health, culture and tradition, training, reserach, information and communications technology, languages property alleviation, and agricultural natural resources.

The Centre Directors Meeting (CDM) took place at S31 Sukhumvit Hotel, Bangkok, Thailand on 27-29 July 2016. It was mostly attended by Directors and Network Coordinator of the various SEAMEO Units. The representatives of SEAMEO QITEP in Science were Prof. Dr. Triyanta, the Director, Dr. Indarjani, the Deputy Director for Programme, and Ms. Lili Indarti, the Deputy Director for Administration.

The Centre Directors Meeting 2016 reviewed assessment of the activities of the SEAMEO Regional Ceentres and Network, planned future SEAMEO activities for further submission to High Official Meeting and SEAMEO Council Conference, and discussed with the Secretariat various internal problems and their solutions. It also opened the new cooperations and made new networks with the existing associate and affiliate members of SEAMEO.

# 1st Young SEA-TVET Symposium 2016

Leveraging the quality of Technical and Vocational Education and Training (TVET) is one focus of education collaboration among Ministry of Education of SEAMEO Member Countries as reflected through the Seven Priority Areas Agenda 2015-2035. In this regard, SEAMEO Secretariat in collaboration with the Office of Vocational Education Commission (OVEC), Ministry of Education Thailand conducted the 1st Young SEA-TVET Symposium on 29-31 August 2016 in Krabi, Thailand. Under the theme of "Learning and Sharing towards Internationalisation and Harmonisation", the symposium aimed to develop a networking platform through sharing of knowledge, skills, culture among TVET students in Southeast Asian countries besides also promote entrepreneurship and innovative thinking among them. In this event, Dr R Indarjani, Deputy Director of SEAMEO QITEP in Science has been asked to participate as resource person and give presentation in front of 362 students as well as 90 teachers that come from Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Thailand, Vietnam and China. The title of the presentation was **"EDUCATED TODAY FOR TOMORROW WORKFORCE : The Importance of STEM for Voccational Schools".** She affirmed the importance of STEM Education in Vocational Schools that could resolve unemployment issues since its emphasising in innovative skills, commercial and used by the public and connecting experiences and lesson on capacity development.

The symposium was run very much successful considering the number of participants and also the activities. During the symposium was 39 students' performances accompanying symposium's dinners. In addition, there were also student competition innovative projects bearing the theme "Better Life for Our Elderly People" in which the characteristics of elderly for having a convenience life should be incorporated in their product concepts. Referring to the theme to enhance collaboration, there was 48 action plans of School Networking Programs has been developed during Teacher Focus Group Discussion Session and agreed to be followed up after the symposium. In that stage, SEAQIS has been asked to take part to make it happen. It was suggested that SEAQIS initiated the Young SEA-TVET School Networking Programme by conducting online test on STEM participated by vocational schools across region. Having said that, SEAQIS conducted Policy Forum on STEM Education and teacher trainings related to STEM principles in teaching and learning process.

# ASEM LLL Hub Conference: Lifelong Learning and Resilience in Disaster Management – Asian and European Perspectives

**ASEM LLL Hub Conference:** Lifelong Learning and Resilience in Disaster Management – Asian and European Perspectives was convened on 8-10 November 2016 in Ho Chi Minh, Vietnam. It was conducted by the ASEM LLL Hub and SEAMEO CELLL.

The conference was to engage the representatives from all 32 European member states and 19 Asian countries under the auspices of the Asia Europe Meeting (ASEM) to discuss and construct concepts and practices for lifelong learning. At the conference, reserachers, policy makers, and practitioners had discussed contemporary possibilities of the need to renew the agenda of lifelong learning opportunities for all in Asia and Europe.

The conference was organised by the Danish School of Education, Aarhaus University (ASEM LLL Hub) in cooperation with the Danish Ministry of Foreign Affairs, the Danish Ministry for Children, Education and Gender Equality, Southeast Asian Ministers of Education Organisation – the Centre for Lifelong Learning (SEAMEO CELLL) and Asia Europe Foundation (ASEF).

Ms Lili Indarti as the representative of the Centre was fully funded by the ASEF to participate in the conference. After the academicians, practitioners, and researchers presented their papers continued by discussion comprised of four parallel workshop sessions with different themes, namely Workshop A: Risk Reduction and Preparedness, Workshop B: Restoring Heritage, Workshop C: Resilient Recovery, and Workshop D: Risk Reduction and Prevention.

Furthermore, the research-informed recommendations from the conference were in two main areas, that are recommendations for how to implement lifelong learning as a key to promote resiliency in disaster management as well as recommendations for how to strengthen network in, and among, countries which face disasters, and also involve more institutions related with disasters.

The sharing and final recommendation was really useful for all institutions concerning with lifelong learning and resilience in disaster management. More details of the conference and final recommendation as the result of the conference can be found at www.asemlllhub.org/events/vietnam2016.

# The 39th SEAMEO High Officials Meeting


The SEAMEO High Officials Meeting (SEAMEO HOM) is the forerunner of the annual SEAMEO Council Conference convened annually by the SEAMEO Secretariat. It is a preparatory meeting whereby senior education officials review and plan the programmes and operations of the organisation. Decisions and recommendations from this meeting will set the agenda and issues for discussion in the SEAMEO Council Conference, which is the meeting of the organisation's governing body consisting of all the education ministers of the Member States.

The delegates of the SEAMEO HOM are high-level officials or representatives from the Ministries of Education of SEAMEO Member States, Associate Members, and Affiliate Members; Directors of the SEAMEO Secretariat and the Regional Centre/Network; staff of the SEAMEO Units; and observers from partner organisations. As the SEAMEO Secretariat is located in Bangkok, Thailand, the city has been chosen as the meeting venue.

SEAMEO QITEP in Science delegates consisted of Prof Dr Triyanta, the Director; Dr Indarjani, the Deputy Director for Programme; Mrs Lili Indarti, the Deputy Director for Administration; and Mrs Lee Saw Im, the Ki Hajar Dewantara Awardee.

The 39th High Official Meeting conducted on 15-17 November 2016 at the Amari Watergate Hotel, Bangkok, Thailand was somewhat different from the previous ones because it was the very first time on the history of the meeting that there was an inauguration of an award innitiated by a SEAMEO Centre in the opening ceremony. It was the innauguration of the Ki Hajar Dewantara Award. All parties gave positive responses to the award and encourage other Centres to convene similar programmes.

# APEC-Tsukuba and UNESCO (MGIEP) International Conference XI

The Eleventh APEC-Tsukuba and UNESCO (MGIEP) International Conference was convened on 9-12 February 2017 at the Tokyo Campus, the University of Tsukuba, Japan. The topic for this year's conference, held in conjunction with the APEC lesson study projects, was related to energy efficiency. It focused on planning the development of the textbooks for energy efficiency by cross-border lesson study. The conference began with a lesson study meeting, claimed as the largest lesson study meeting in the world, at the University Tsukuba's affiliate elementary school. It was attended by more than 200 teachers and observed by participants of the conference. The main agenda of the conference was progress reports on the task development of energy related to mathematics education by those participated in the project. In this meeting, SEAMEO QITEP in Science, represented by Prof Triyanta as the Director, had a chance to highlight energy concepts related to some physical phenomena that were introduced in some STEM or IBSE trainings conducted by the Centre.

Back to back to the conference was a SEAMEO-University of Tsukuba Symposium. Here, participants learnt the educational reforms of the SEAMEO member countries. SEAMEO Secretariat, SEAMEO RECSAM, SEAMEO CELLL, SEAMEO QITEP in Mathematics and SEAMEO QITEP in Science participated in the symposium. Dr Ethel P Valenzuela, the SEAMEO Secretariat's Deputy Director for Programme, introduced the Seventh Priority Areas of the 2015-2035 SEAMEO while representatives of the three SEAMEO Centres introduced their own Centres. In addition to introducing the Centre, Prof Triyanta also pointed out the Centre's activities related to the seventh priority areas.

# IAP-SEP Global Council Meeting 2017 in Sudan


Inter-Academy Panel in Science Education Programme (IAP-SEP) was launched in 2003. Its main focus is the promotion of inquiry-based science education (IBSE) and also the improvement of science literacy among the general population. Indonesia was represented by Dr R Indarjani, Deputy Director for Programme of SEAMEO QITEP in Science. She was endorsed by President of Indonesia Academy of Science, Professor Sangkot Marzuki, to be a member of Global Council 2016-2019.

For 2017, sponsored by Sudanese National Commission for Science Education and Culture, the Global Council Member held its annual meeting in Corinthia Hotel, Khartoum, the Republic of Sudan from 7 to 8 February 2017. The meeting, which was attended by 20 members of academy and observers, was officially opened by the Ministry of Education of the Republic of Sudan, H E Dr Suad Abdul–Raziq. She praised the initiatives of IAP-SEP which showed how science/IBSE could offer solutions to the current world problems. In addition, she supported the implementation of STEM Education in Africa Educational System and requested to put priority to the girls' more involvement in STEM.

The agenda of IAP-SEP 2017 meeting consisted of Science Education Policy Forum that discussed two strategic topics. The first was Science Education and the Fusion of Civilisations and the second was Global Climate Change: Health and Regional Perspective. Both topics were highlighted the importance of student character building by bringing the wisdom from the past to the future perspective and cultivate the environmental wisdom to reduce the impact of climate change. Dr Indarjani suggested to the forum to integrate IBSE philosophy in parenting education to ensure the continuation of student character building after school hours. The foundation of La main à la pate (France) will follow up this suggestion by circulating their respective activities to the member of IAP-SEP around the globe.

Back to back with IAP-SEP Global Council meeting, the five days IBSE Training was carried out by facilitators of ISTIC-UNESCO, Malaysia for Sudanese science teachers.

The Global Council Meeting was discussed several topics that covered the 2017 projects funded by IAP-SEP in Science Curriculum Designs for Health (Zika and Mosquito Borne Diseases), Fusion of Civilisations and IBSE for Special Needs including refugees and disable students. In addition, there was a plan to conduct IBSE Workshop in ECOSOC Countries such as Tajikistan and Albania. During the meeting, the members reported their activities and Dr. R. Indarjani reported SEAMEO QITEP in Science's initiatives in introducing STEM Education in Indonesian Education Framework and requested support for further implementation in regional level. At the end of the meeting, there was a statement proposal in regard to the promotion of STEM Education through Inquiry-Based Science Education (IBSE) and Science Literacy (through science museums and science centres) which will be submitted further during the UN General Assembly in 2017.

# Indonesia-Thailand Collaboration Programme: The Empowerment of Mangrove by Coastal Schools

As a follow up to the initial visit held on 13-15 March 2017, three SEAMEO Centres, one of them was SEAMEO QITEP in Science (SEAQIS) and several related parties conducted a follow-up meeting of the Mangrove Education and Conservation programme. The activities involved in this coordination meeting were to discuss programmes as well as roles and cooperation agreements on 26-28 April 2017.

The participants of this programme were SEAMEO SPAFA from Thailand as the initiator, SEAMEO BIOTROP as the leading Centre in Indonesia, SEAQIS, SEAMOLEC, UNDIP, IKEMAT Foundation, the Demak Regent, the Education Office of Demak Regency, and schools such as SDN 01 Bedono and SMPN 03 Satu Atap Sayung in Demak Regency also two mangrove-based schools in Thailand. The meeting was held at the Hotel Amantis Demak, Central Java.

The result of this activity was the signing of a framework of cooperation, witnessed by the Regent of Demak Regency. This framework contained an agreement of the duties and responsibilities of each party in this collaborative programme in accordance with their respective fields and institutional specifications.

Particularly, SEAQIS has a role to play in the development and improvement of education capacity in science, especially in the utilisation of mangrove as a teaching material.

This programme was expected to increase public awareness towards the importance of maintaining good mangrove ecosystem for environmental sustainability, disaster resilience and the improvement of life skill and economy of society. This collaboration was one of SEAQIS's efforts to expand the network with various institutions in Indonesia and Southeast Asia supporting government efforts to enhance the quality of education and welfare of local communities.

# SEAMEO Centres Indonesia in Inter Centre Collaboration Meeting



Inter Center Collaboration Meeting (ICCM) is a meeting to discuss programmes of SEAMEO Centres in Indonesia. The meeting was held on 17-18 April 2017 at the Grand Pasundan Hotel Bandung, attended by the Board of Directors and staff of six SEAMEO Centres (BIOTROP, RECFON, SEAMOLEC, SEAQIM, SEAQIL, and SEAQIS), the representatives of the Bureau of Planning and International Cooperation of the Ministry of Education and Culture, the representatives of Education Youth and Sports Office of Aceh Jaya Regency, as well as the staff members of SEAMEO QITEP in Science.

Among many programmes the six Centres have, this meeting focused on SEAMEO Mangrove Education and Conservation Project, SEAMEO STAR Village, and SEA Digital Class. The SEAMEO Mangrove Education and Conservation Project and SEAMEO STAR Village were led by BIOTROP while SEA Digital Class was led by SEAMOLEC.

The agenda of the meeting also involved collaboration with other institutions, such as Forum Masyarakat Sinabung (FORMASI) and Education Youth and Sports Office of Aceh Jaya Regency. The collaboration emphasised on improvement on school quality, laboratory, library, competency of teachers and education personnel, and competency of education of early childhood. The trainings were expected to be able to cover 21 century skills.

# Deputy Director for programme participation as a speaker at the International Conference in Science Education in Philippines


Inquiry Based Science Education (IBSE) has been accepted worldwide as an effective approach in science teaching and learning. The implementation of proper IBSE in classroom will involve a process of exploring the natural or material world that leads to asking questions, making discoveries, and rigorously testing those discoveries in the search for new understanding. Considering that IBSE is strategic to enhance the quality of science teaching, the Education Department of MIMAROPA region conducted the 1st International Conference in Science Education under the theme Revitalising, Reinvigorating and Strengthening Science Instruction through Inquiry Based Science Education. It was convened from 3-5 May 2017 and held at the Skylight Convention Centre, Puerto Pricessa City, Palawan, Philippines. The conference was attended by 652 participants consisted mostly by teachers. However, there were also superintendents, academics, as well as local and provincial education officers. Present in the opening ceremony was the City Mayor of Puerto Princessa, Governor of Palawan.

Deputy Director for Programme, Dr R Indarjani, had been invited as one of plenary speakers to explain the development of IBSE in Southeast Asia nations. In her presentation, she elucidated how IBSE becomes a centre of principle of 21st century curriculum—one of priority areas in SEAMEO Education Agenda 2015-2035. Addressing the unemployment issues that become the regional concern, she proposed to integrate STEM principles in science teaching process. STEM Education has a close relationship with project based learning concept that most of teachers already familiar with. Other plenary speakers in this international conference came from Brunei Darussalam, Singapore, Australia, and University of Philippines.

Being invited as a speaker in an international forum would increase the regional visibility of the Centre. It was a sign of recognition and acknowledgment of SEAQIS' potential and one of indicator of the Centre's achievements.

# The 7th Governing Board Meeting

Southeast Asia Minister of Education Organisation (SEAMEO) Regional Centre for QITEP in Science (SEAQIS), found on 13 July 2009, together with other 20 SEAMEO Regional Centres proves the commitment of the Ministers of Education in Southeast Asia to education. It is in accordance with the main purpose of SEAMEO that is to enhance the prosperity of a nation through the awareness of the education role importance. In Indonesia, there are 6 SEAMEO Centres that have been established that are Regional Centre for Tropical Biology (BIOTROP), Regional Centre for Food and Nutrition (RECFON), Regional Open Learning Centre (SEAMOLEC), Quality Improvement for Teachers and Education Personnel (QITEP) in Language, QITEP in Mathematics, and QITEP in Science.

SEAQIS convened the 7th Governing Board Meeting from 21 to 23 September 2016 at Aryaduta Hotel, Bandung. It was attended by the Governing Board Member from SEAMEO Member Countries— Brunei Darussalam, Cambodia, Lao PDR, Malaysia, Philippines, Singapore, Thailand, Timor Leste, and Vietnam— as well as the delegation from SEAMEO Secretariat, Ministry of Education and Culture of the Republic of Indonesia, and the delegations from other relevant institutions. The meeting was opened by the Director of SEAMEO QITEP in Science, Prof. Dr. Triyanta.

Not only became the accountability forum of SEAQIS' achievement for the past fiscal year, the Governing Board Meeting also discussed the financial and programme plans for the following year. In the meeting, the governing board members gave their opinions and evaluations about the performance of SEAQIS, advised on the problems also the recommendation to improve SEAQIS' performance and achievement.

On the last day, the meeting conducted discussion, acceptance, and approval of the result of meeting to the governing board members. The meeting was closed by the Representative of SEAMEO Secretariat, Ms. Anti Rismayanti.

# The 7th Governing Board Meeting

# RESOURCES

This subchapter highlights SEAQIS financial status, products, human resource development activities and new staff

## Financial Viability

To undertake its programmes and activities during the fiscal year under review, The Centre augmented the funds coming from the Government of Republic of Indonesia. The budget system applied in Indonesia is based on Performance-Based Budgeting and Medium Term Expenditure Framework. The diagram below shows the finance distribution of SEAMEO QITEP in Science activities from July 2016 – June 2017.

| OPERATING FUNDS | CAPITAL FUNDS | SPECIAL FUNDS |
|---|---|---|
| *From July 2016 - June 2017* | *From July 2016 - June 2017* | *From July 2016 - June 2017* |
| **$222,643** | **$11,479** | **$277,002** |

# Products


The efforts to increase access to SEAQIS programmes, facilities and services to target client within and beyond the SEAMEO region were sustained. The Public Relations, Partnership, and Marketing and Programme and Training team continued to identify new market outlets for its programmes.

Advertising SEAQIS 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 newsblast, newsletters, hosting of regional and international seminars and conferences as well as the display of promotional materials at international or regional events and official visits by officers and academicians had helped the Centre's to publicise itself.

SEAQIS official webpage and social networking site such as Facebook/Twitter/Instagram supplemented the Centre's other information materials. Contents publication were updated regularly and reflected current and upcoming programmes and activities for all users across the region and beyond. Until June 2017, over 2,641 facebookers like the fanpage.

The Centre has also published the proceedings of Research Grants 2016 and republished the PRAISE project student and teacher books in English version, five regular training modules, and 18 science learning resources. SEAMEO QITEP in Science published the proceedings of 6th International Conference (ICon) on Science Education. To this proceedings comprised of 30 presented papers from the conference taking place in Bandung on 13-16 October 2016, a joint programme named International Conference of Mathematics, Science and Computer Science Education (MSCEIS) 2016 between SEAMEO QITEP in Science and Indonesia University of Education. In addition some staff members were invited to give talks in conferences and published their papers in conference proceedings.

# Human Resource Management

In the beginning of 2017, the Centre has assigned new staff members to take charge at the Centre. These new staff strengthen the capacity of the Centre. They come from various educational backgrounds and are expected to strengthen the Centre's capacity in taking part of developing the competence of science teachers and education personnel in the region. The Centre's new personnel are Ms Adella Anfidina Putri as the staff of Programme and Training Division, Mr Lukman Nulhakim as the staff of Research and Development Division, Mr Untung Saepuloh as the staff of ICT Division, Mr Girindra Adyapradana, Ms Lintang Ratri Prastika and Octo Litadiputra Reinaldy as the staff of Public Relation, Partnership and Marketing Division.

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In addition to adding new staff, the Centre also develops staff capacity through the following programmes. The Centre's staff development programmes in the Fiscal Year under review are as follows:

1. In-House Training on Edmodo Utilisation for Science Learning,
2. In-House Training on Scientific Paper,
3. In-House Training on STEM from Smithsonian Institution,
4. Training on Procurement of Goods and Services,
5. Internship Programme in SEAMEO Secretariat,
6. Training on Rasch Model Application for Educational Assessment,
7. Development Evaluation Training Workshop, with SEAMEO TROPMED, Thailand
8. In-House Training on STEM Education from Japan, and
9. Knowledge Sharing Day.

# Prof. Yoshisuke Kumano's Visit: Introducing Japan's STEM

Inquiry-Based Science Education (IBSE) as the Centre's niche area has the potential to be developed into Science Technology Engineering and Mathematics (STEM) education. This is due to the reason that the orientation of IBSE, which is to raise students' curiosity towards science, can be continued up to the stage of the creation of innovation through STEM.

Through cooperation schemes between SEAMEO and the Japanese Ministry of Education (MEXT), the Centre had a great chance to have the visit of Prof Yoshisuke Kumano of Shizuoka University on 13-17 February 2017. The purposes of the visit were to share knowledge, experiences and inspiration in STEM education. One of the accomplished agenda during his visit was In

House Training for the Centre's staff which specifically aimed to enhance the staff's understanding of STEM. Other activities were academic review on STEM-based research plans and public lecture at Indonesia University of Education (UPI), as well as review on examples of STEM's implementation in the classroom. Moreover, Prof Kumano also became the keynote speaker in the Seminar on STEM Education attended by 183 teachers, lecturers, education personnel, and students. not only did he introduce STEM in the Seminar, he also shared information regarding STEM Education in Japan.

At the end of the short visit, the Centre and Prof Yoshisuke Kumano agreed to arrange further meetings and discussions about STEM, directly or indirectly, for learning resources sharing and research collaboration

# Training on Rasch Model Application for Educational Assessment


# Knowledge Sharing Day (KSD)

Knowledge Sharing Day, as part of a knowledge management initiative, is a knowledge, information, and best practices sharing activity between SEAMEO QITEP in Science staff. This programme aims to provide an interactive forum to share knowledge, information, and best practices between the Centre staff which impacts to the improvement of staff competency. This activity covers several topics including Inquiry-based Science Education (IBSE), Higher Order Thinking Skills (HOTS), STEM Education, management and organisation, ICT skills, and language skills. The participants of the programme are SEAMEO QITEP in Science staff. The KSD has been started in early 2016 and conducted at SEAMEO QITEP in Science meeting room.

# Training on the Conduct of SEAMEO Official Meetings and SEAMES Admin System

As an effort to create effective and efficient administration system, SEAMEO QITEP in Science sent its staff, Rizwan Darmawan, to participate at Training on the Conduct of SEAMEO Official Meetings and SEAMES Admin System. The training was conducted at SEAMEO Secretariat office, Bangkok, Thailand from 10-18 November 2016. Mrs Natcha Kampiranond, Administrative Manager of SEAMES, and Ms Anti Rismayanti, Programme Officer III of SEAMES introduced how the administration system at SEAMES is. SEAMEO Secretariat implements well managed information system which could support its activities both in administration matters and programme matters. The combination between human touch and technology creates a powerful system at SEAMES. The technology becomes media of management information system which is operated by professional and discipline workers. In addition, Ms Anti also explained about strategies in preparing and conducting official meeting. The participant of this activity observed the conduct of the 39th SEAMEO High Officials Meeting at Amari Watergate Hotel, Bangkok.

By participating in this activity, the participant was expected to have more knowledge and experience about administration system and SEAMEO official meeting. The participant was encouraged to implement strategies in creating administration system and conducting official meeting to improve the performance of SEAMEO QITEP in Science.


# Training on Quantitative and Qualitative Methods in Designing Development Evaluation for SEAMEO Centres

SEAMEO as a regional development organisation in Southeast Asia recognises the increasing relevance and importance of evaluation. Thus, in enhancing the evaluation culture in the organisation, Training on Quantitative and Qualitative Methods in Designing Development Evaluation for SEAMEO Centres was organised by SEAMEO TROPMED Network from 4 to 8 December 2016 at The Centara Watergate Pavillon Hotel, Bangkok, Thailand. As a part of staff capacity building and centre development, SEAMEO QITEP in Science sent its staff, M Haidar Helmi, to participate on it.

This training was a follow up activity of development evaluation workshop conducted in 2015. It was being convened to further enhance the capacities developed during the first Workshop and to complement and supplement all efforts of SEAMEO in building the capacities of SEAMEO Centres to undertake the different research and evaluation designs.

The instructors on this training were Dr Ma Sandra B Tempongko and Dr Ophelia M Mendoza both from SEAMEO TROPMED Network. This training was participated by 31 participants from several SEAMEO Centres, universities, and organisations.

By the end of the training, the participants should be able to compare the different quantitative and qualitative methods used in designing development evaluation as well as develop the appropriate evaluation design corresponding to the evaluation objectives and logic of change.


SEAMEO REGIONAL CENTRE
FOR
QUALITY IMPROVEMENT OF TEACHERS
AND EDUCATION PERSONNEL (QITEP)
IN SCIENCE

## SEAMEO QITEP IN SCIENCE

Southeast Asian Ministers of Education Organization (SEAMEO) Regional Centre
for Quality Improvement of Teachers and Education Personnel (QITEP) in Science.

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