



# Annual Report

SEAMEO QITEP In Science  
**2020 - 2021**

Southeast Asian Ministers of  
Education Organization (SEAMEO)

Regional Centre for Quality  
Improvement of Teachers and  
Education Personnel (QITEP)  
in Science





# Annual Report

SEAMEO QITEP In Science  
**2020 - 2021**



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QITEP  
IN SCIENCE

# INTERNATIONAL JOINT CONFERENCE ON STEM EDUCATION

18 - 19 November 2020



**INTRODUCTION**

Dear shareholders,

With pleasure, I hereby present the Annual Report of SEAMEO QITEP in Science from July 2020 to June 2021. It reports our accomplishments and contribution during the said period as we continued to strive for being the Centre of excellence in empowering and enhancing the quality of science teachers and education personnel in Southeast Asia.

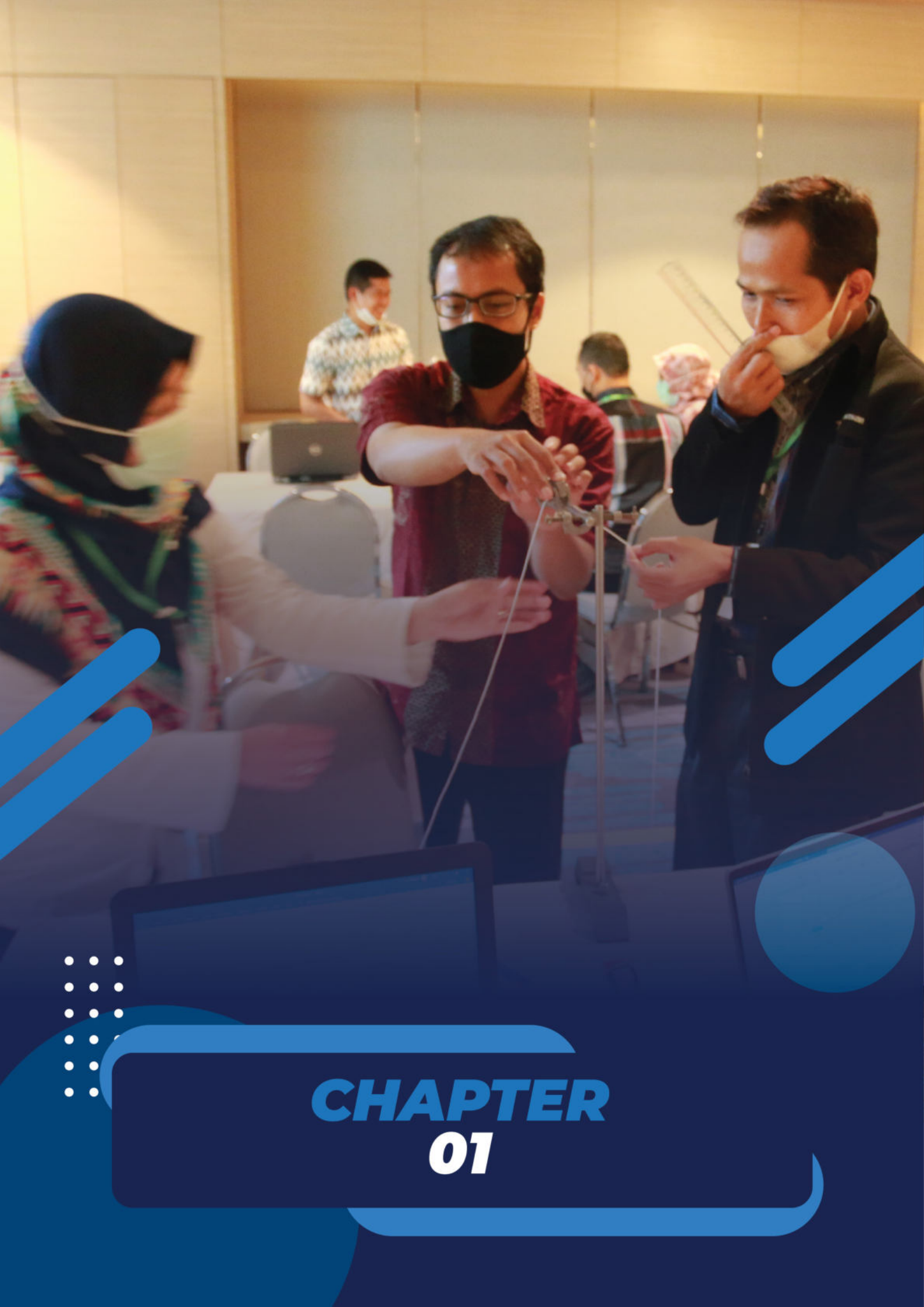
In line with our vision and missions, our programmes in this fiscal year have been designed to be relevant with the current issues in education. They consist of innovation programme, research and development, capacity building for teachers and educational personnel, customized and collaboration training, workshops, webinars, conference and others. Furthermore, our programmes focused on STEM education and computational thinking. Collaboration and partnership with relevant institutions and organization that emphasize STEM education and computational thinking have been made to strengthen our content quality and dissemination.

SEAMEO QITEP in Science has been supported by many parties. Therefore, I would like to give my sincerest gratitude to all parties who have supported and trusted us. I would also like to give my highest appreciation to all Centre staffs, 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.

## Message from the Director







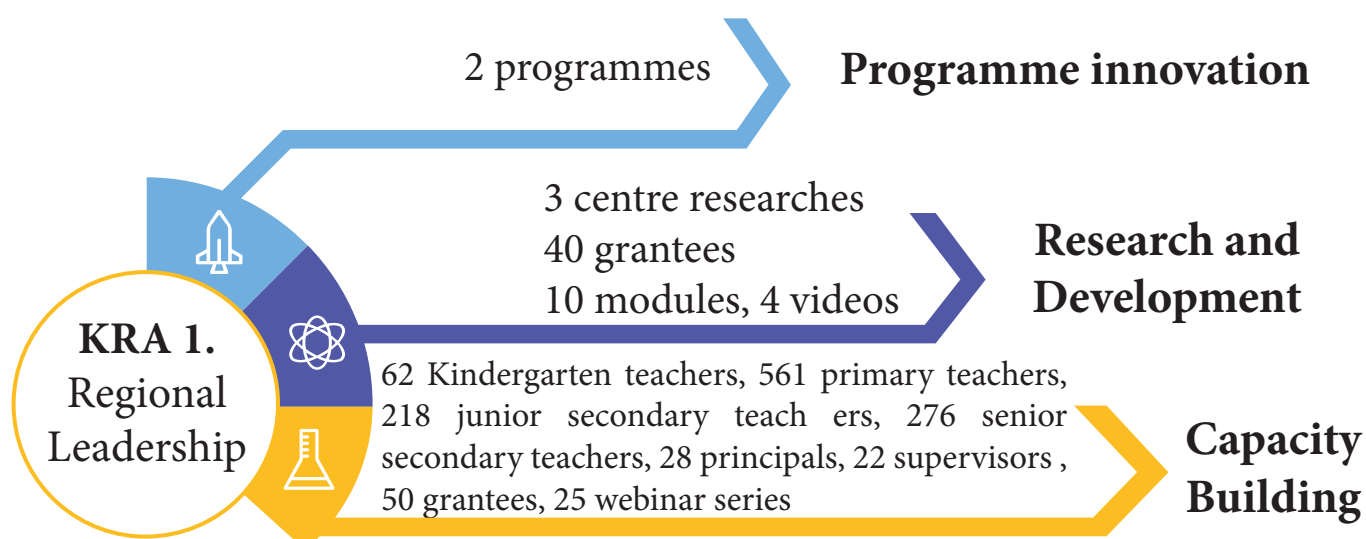
# **CHAPTER** **01**



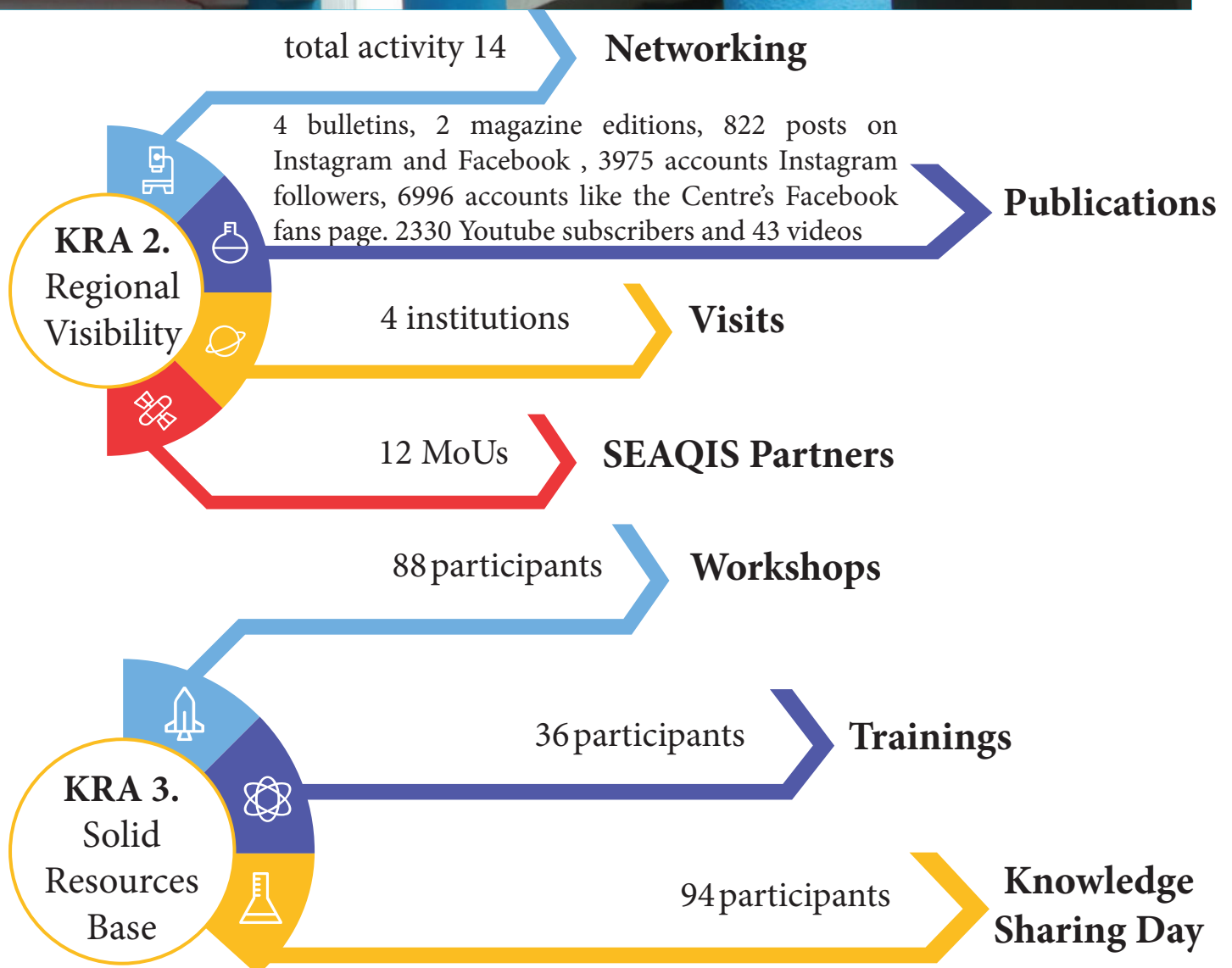
# Executive Summary

SEAMEO Regional Centre for QITEP in Science (SEAQIS), one of the SEAMEO Centres in Southeast Asia, has been mandated to improve the quality of science teachers and education personnel in Southeast Asian countries. This executive summary highlights the Centre's achievement in three Key Result Areas (KRAs)

including 1) Regional Leadership, 2) Regional Visibility, and 3) Solid Resource Base from July 2020 to June 2021. The COVID-19 pandemic has prompted the Centre to change its approach and strategy in conducting activities. The Centre applies online and blended activities besides face-to-face strategy.









## **CHAPTER** **02**



## General Information



SEAMEO Regional Centre for QITEP in Science was established on 13 July 2009 through the approval of the 44th SEAMEO Council Conference in Phuket, Thailand. SEAQIS carries out mandate to improve the quality of teachers and education personnel in science in Southeast Asia which will contribute to the development and reinforcement of education quality in the region; carry out research and development, conduct training, provide information; develop network; and provide up-to-date, accurate, and consistent information for policy makers in science education 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.





## Professionalism

Professionalism means that every staff performs their job corresponding to their skills and special abilities and using intellectual-based techniques and procedures. Every staff is required to have high integrity, capabilities, discipline, qualified skills, and knowledge to implement the Centre's vision and missions.

## Quality

Quality is the first and the main consideration for the Centre's staff in carrying out their duty.

## Together

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

# Missions

The missions of the Centre are as follows.

**01**

Providing relevant and quality programmes in professional development for science teachers and education personnel in Southeast Asia.

**02**

Conducting research and development on science education, school management, public policy, and other relevant fields.

**03**

Broadening and strengthening network through resource and information sharing to support the Centre's visibility and leadership.

## Core Values

The Centre's success in achieving its vision will be critically determined by the values of the Centre with standard measurement and targets with measured performance indicator. The values are criteria of the truth believed and decided as norms followed by employees of the Centre which include organisational behaviour as work culture in decision making and implementation of missions to achieve its vision. The values of the Centre are as follows.

### Innovativeness

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

### Empowerment

All staff are expected to be able to make themselves empowered and become lifelong learners so they can empower others.

**04**

Providing the current, excellent, and relevant data and information in science education as reference for policy makers.

**05**

Improving the quality of the Centre's resource management to provide service excellence.



## Governing Board Members



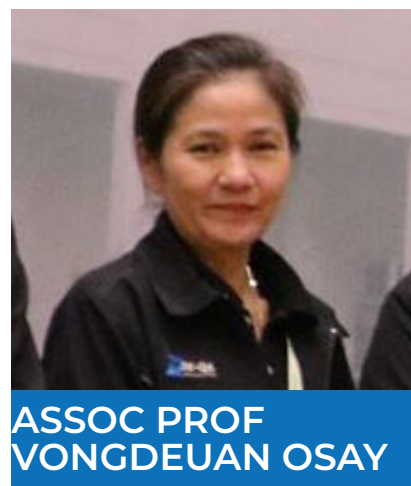
CAMBODIA

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



INDONESIA

Educational Technology  
Developer Centre for  
Data and Information  
Technology Ministry of  
Education and Culture,  
Indonesia



LAO PDR

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





**DR YAZID BIN  
ABDUL MANAP**

MALAYSIA

Deputy Rector

Training Development  
Centre Malaysian  
Institute of Teacher  
Education



**PROF NI NI THAN**

MYANMAR

Professor

Department of  
Chemistry Yangon,  
University

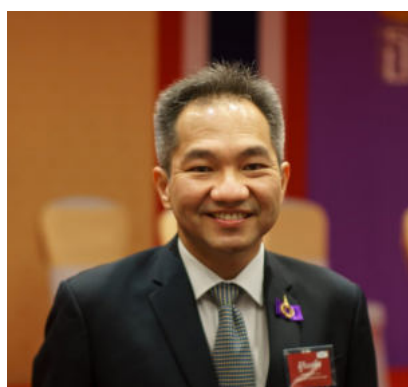


**MR LAU CHOR YAM**

SINGAPORE

Master Teacher/ Physics

Pedagogical Excellence  
Branch Academy of  
Singapore Teachers

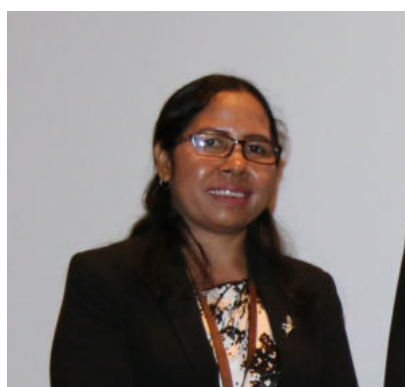


**PROF SUKIT  
LIMPIJUMNONG, PH D**

THAILAND

President

The Institute for the  
Promotion of Teaching  
Science and Technology



**MS VERONICA  
MOREIRA CORREIRA  
VIEIRA**

TIMOR-LESTE

Science Teacher Trainer

National Commission for  
UNESCO Timor-Leste,  
c/o Ministry of Education  
and Culture



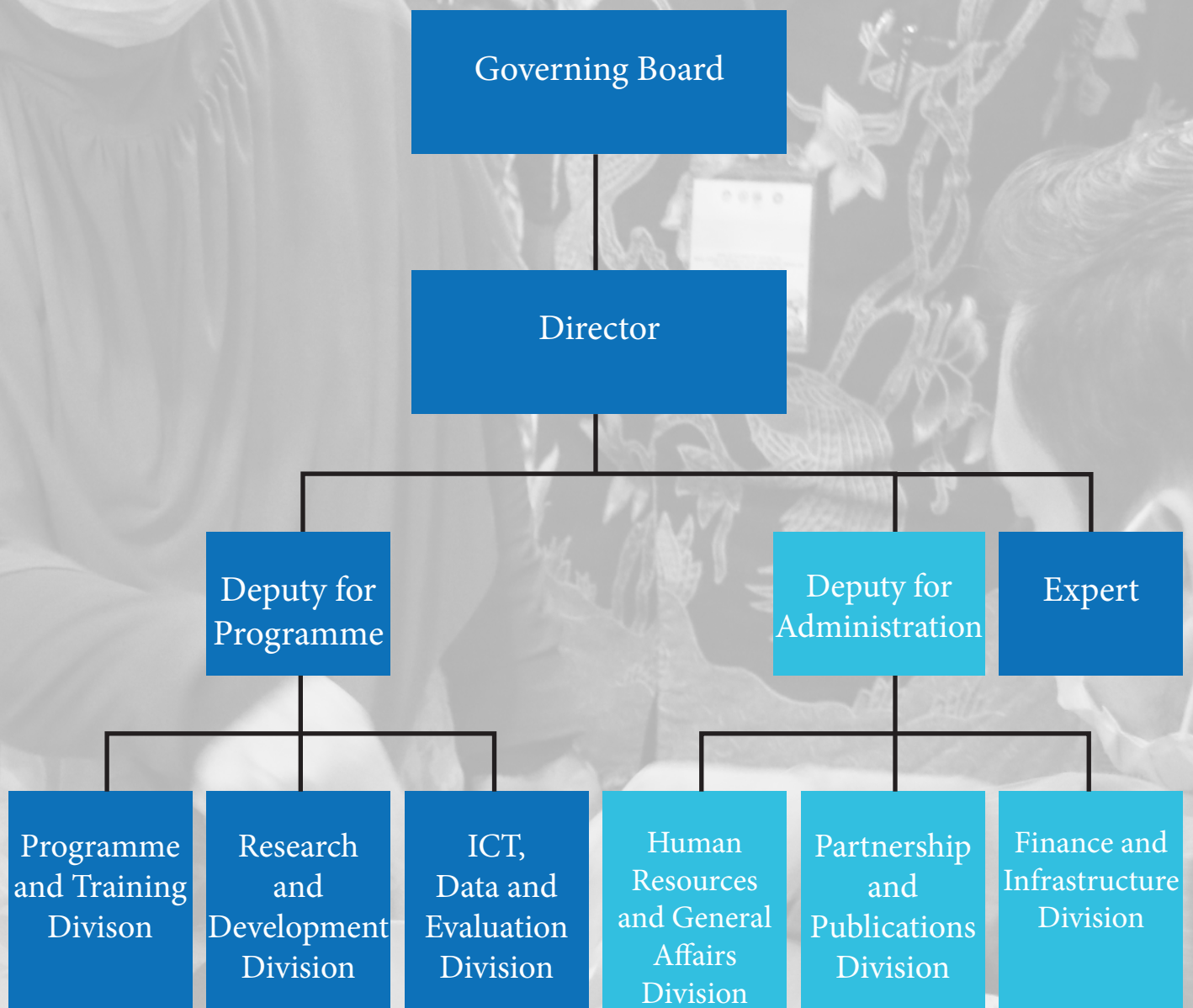
**PROF DR PHAM  
QUANG TRUNG**

VIETNAM

President

National Academy of  
Education Management

# Organizational Structure







## **CHAPTER** **03**



# A. KRA 1

## Regional Leadership

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### Activities

- Innovation on integrating computational thinking into science learning
- Innovation on STEM immersion

### Innovation programme

3 CT learning units (Physics, Biology, Chemistry)



### Research and Development

2 modules, 3 research reports,  
40 research reports, 10  
modules, 4 learning videos

### Activities

- Centre research
- SEAQIS Research Grants 2020
- Teaching and learning materials development

### Activities

- Customized training
- Webinar
- Workshops

### Capacity building

17 trainings  
25 Webinar series  
2 workshops

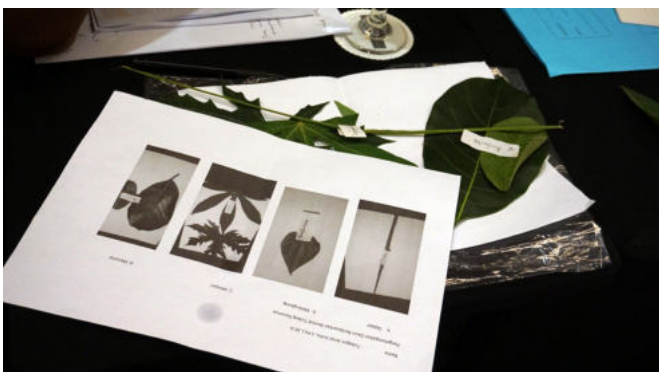


## PEMBELAJARAN IPA

Proses Transfer ilmu tentang  
Mahluk hidup yaitu alam  
secara Biologis dengan di  
tambahkan praktek.

# 1. Programme Innovation

SEAQIS has an important role to improve teachers and education personnel in Southeast Asia. As a centre of excellence, during the fiscal year 2020/2021, SEAQIS has developed two innovative programmes namely Integrating Computational Thinking into Science Learning Programme and Innovation on STEM Immersion. These two programmes are relevant with SEAMEO priority number 7 indicator 7.3, Adoption of 21st Century Curriculum. Computational thinking is believed as another 21st century skill besides critical thinking, creative thinking, collaboration, and communication. Thus, science teachers should be equipped with knowledge and practice on integrating computational thinking into science learning. Meanwhile, innovation on STEM immersion is a programme to implement STEM based school. There are two selected immersion models to immerse STEM into curriculum; exploratory model and partial immersion model. The innovation on STEM immersion is adapted from STEM immersion guide developed by STEM Arizona Network.





## 2. Research and Development

### Centre Research

SEAMEO QITEO in Science completed three research activities in fiscal year 2020/2021. The researches focus on STEM learning development and remote learning implementation in pandemic situation. The three researches are:

**01**

Implementation of STEM Local Context in Indonesia

**02**

Pilot Study: Remote Learning in the New Normal Era

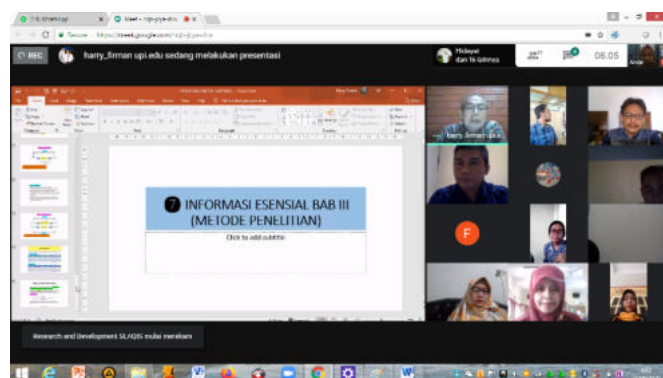
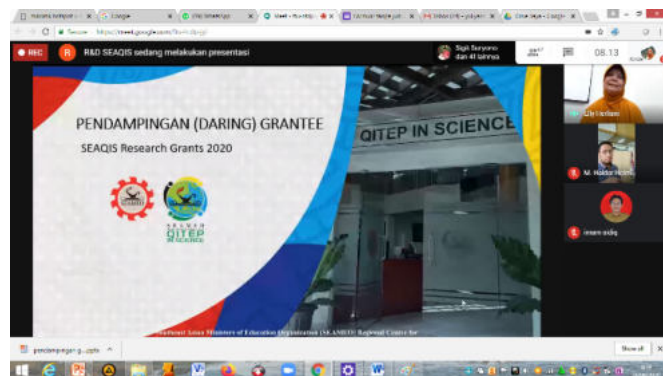
**03**

Teachers Resilience toward Science Learning During Pandemic.



# SEAQIS Research Grants 2020

SEAQIS Research Grants 2020 was held as an effort to improve competency of Primary to Secondary Science teachers in Southeast Asia countries, especially in research field. The improvement of the competency is expected to have positive impact to the teachers and the quality of education. Due to COVID-19 Pandemic, in 2020, SEAQIS Research Grants was held online. There were more than 150 proposals submitted to SEAQIS and 40 proposals were accepted as SRG 2020 grantees.

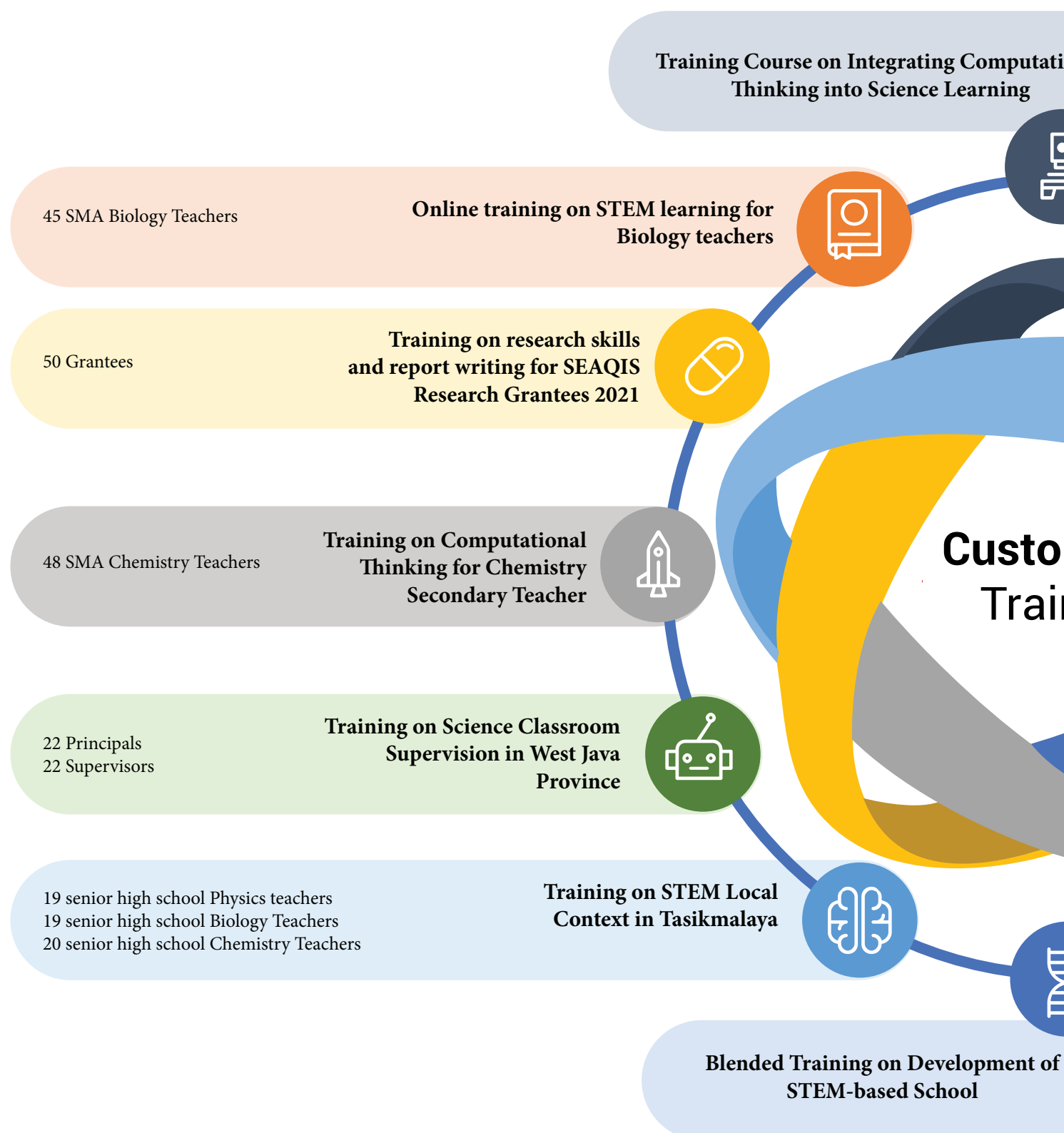


## Teaching and Learning Materials Development

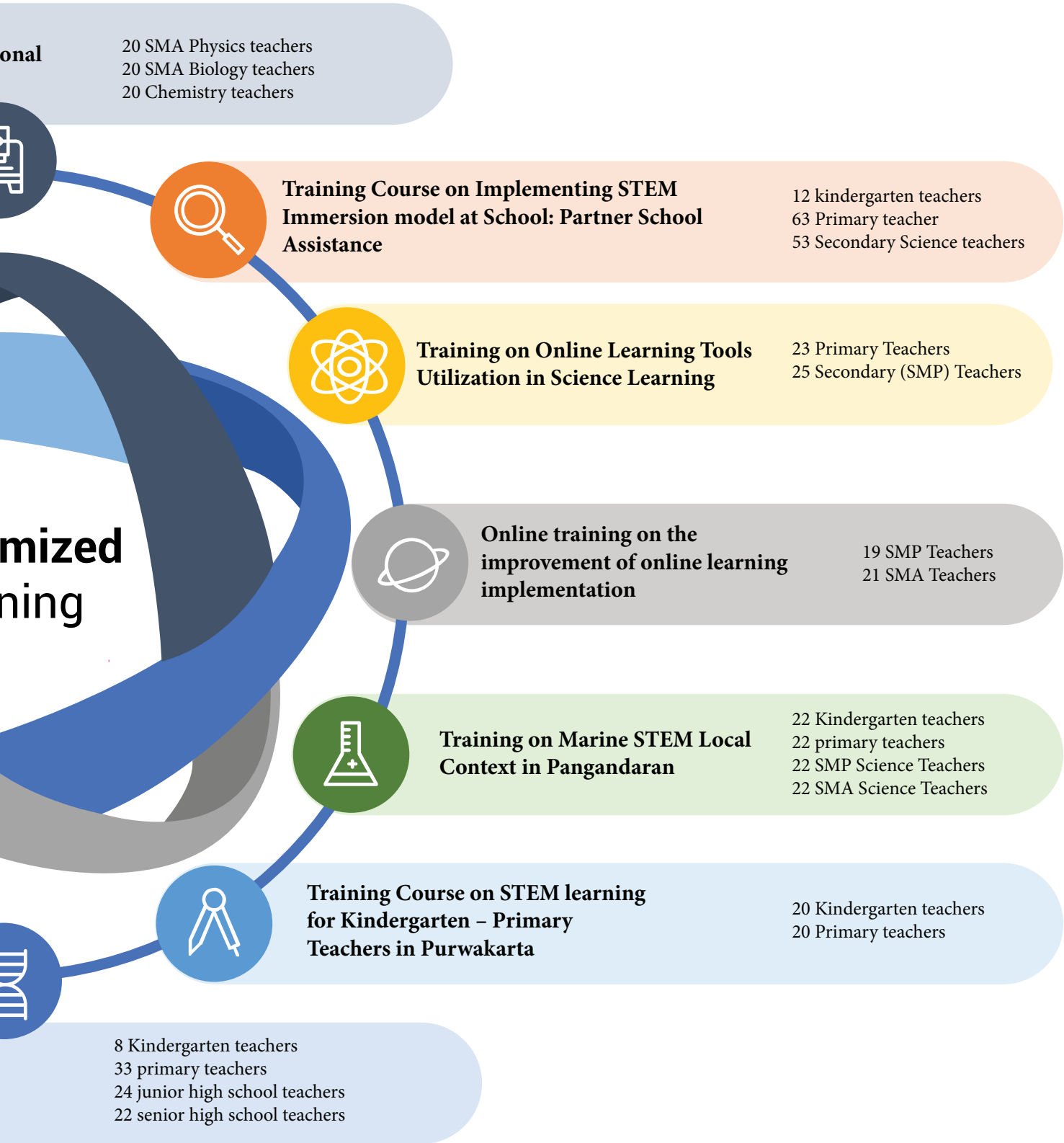


To support training course and remote learning implementation, SEAQIS produced teaching and learning materials. There are 10 modules and four learning video that can be used as learning resources.

# Capacity



# Building





# Training Course on Integrating Computational Thinking into Science Learning

Referring to SEAMEO Seven Priorities number 7, indicator 7.3, Adopting 21st Century curriculum, SEAMEO QITEP in Science has developed a programme on integrating computational thinking into science learning. Computational Thinking (CT) is believed as another essential 21st century skills that students should possess to solve real-world problems. In order to support this achievement, SEAQIS has conducted Training Course on Integrating Computational Thinking into Science Learning for Physics, Biology and Chemistry secondary teachers. This training is not a one-shot training programme, but a continuous training programme named in-service & on-the job learning modes. There are two in-service trainings and two on-the job learnings. The in-services are conducted offline while the on-the job learnings are conducted online. The in-service training 1 was successfully conducted from 15 – 20 March 2021 at Yello Hotel, Bandung. The training was participated by 20 Physics secondary teachers, 20 Biology secondary teachers, and 20 Chemistry teachers. Whilst, the on-the job learning 1 already conducted online in June 2021.



# Training Course on Implementing STEM Immersion model at School: Partner School Assistance Programme

In 2021, SEAMEO QITEP in Science developed an innovation on STEM immersion programme. This innovation is adopted from STEM immersion guide developed by STEM Arizona Network.



The implementation of this programme is a collaboration on conducting training course on implementing STEM immersion model at school: partner school assistance. SEAQIS collaborate with two foundations which are Yayasan Baiturahman Indonesia (YBRI) located in Bandung regency and Yayasan Pembinaan Sumber Daya Insani (YASRI) located in Purwakarta regency, West Java, Indonesia. This is a one-year programme which divided into two semesters. Activities in semester 1 are focusing on preparation that teachers are trained with series of in-house training (IHT) to produce STEM learning resources such as worksheets, lesson plan, and learning media. The In-house Training series were

successfully conducted offline from February – July 2021 and attended by 12 kindergarten teachers, 63 Primary teacher, and 53 Secondary Science teachers. Meanwhile, in semester 2 (August – December 2021), teacher will implement the STEM learning.





# Workshops & Webinars



## Workshops

SEAMEO QITEP in Science conducted two workshops in fiscal year 2020/2021. The workshops were robotic workshop and workshop on partner school assistance. Robotic workshop was held in Yogyakarta, Central Java, Indonesia, on 17 November 2020 back-to-back with International Joint Conference on STEM Education. The workshop was facilitated by experts from Robotic Explorer. The workshop aimed to introduce the participants how robotic can be used for STEM education. The activities started with the introduction of robotic, its functions and how to use robot in science learning. Workshop on partner school assistance was held in Bandung, West Java, Indonesia from 03 – 05 December 2020. The workshop aimed to build same perception and understanding on partner school assistance programme among SEAQIS, Yayasan







# Webinars

In response to COVID-19 pandemic situation, SEAQIS adapted a popular activity called the webinar, in order to improve Science teachers and education personnel competences in Southeast Asia. There are 25 webinar series with various theme that conducted by SEAQIS from July 2020 until June 2021. The webinar attended by more than 5000 Participants.



## B. KRA 2 Regional Visibility



In the FY 2020/2021 SEAQIS focused on its networking and publications to improve regional visibility. The detailed information of KRA 2 Regional Visibility is described as follow.

### 1. Networking

#### Collaboration Training

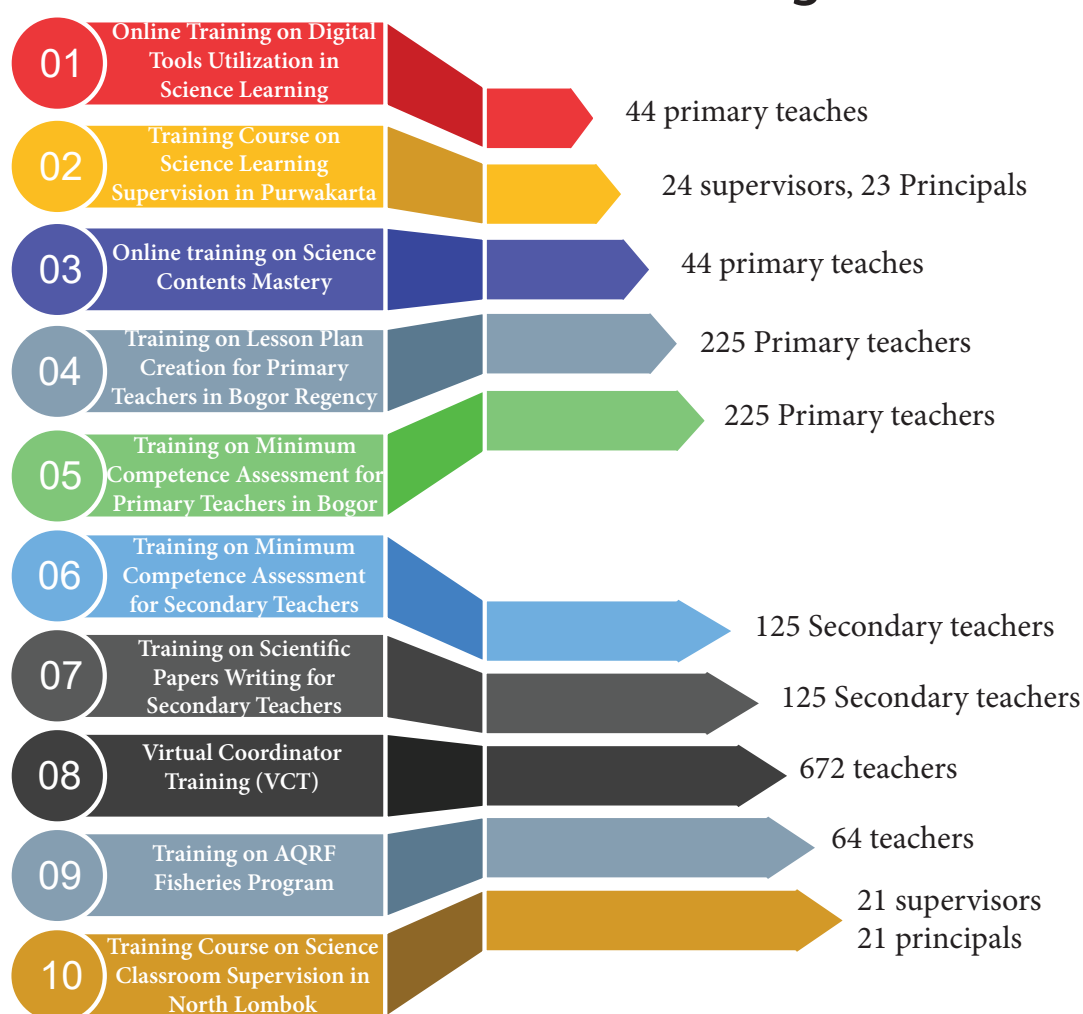


Table 3.3. Achievement on Networking



# International Conference & Visits

## International Joint Conference on STEM Education

47 paper presenters,  
18 poster presenters,  
638 online and  
offline participants.

## STEM 2nd Summit

1 presenter



## Visits

Visits from:

1. Sampoerna University
2. Yayasan Taruna Bakti
3. SEAMEO QITEP in Language
4. SMK LPPM 2 Majalaya

## SEAMEO Congress

2 presenters

## Collaboration Training with Bogor Regency Education Office



Following the MoU that was signed by SEAQIS and Bogor Regency Education Office, collaboration between the two in the form of training was held again in 2021. Two training programmes were successfully conducted, they were minimum competence assessment for primary and secondary teachers, and training on scientific papers writing. The two programmes reached 550 primary teachers and 600 secondary teachers in Bogor Regency.







## International Joint Conference on STEM Education 2020

on November 2020, SEAQIS, SEAQIM and IPST conducted the International Joint Conference on STEM Education (IJCSE). The IJCSE 2020 aimed to provide an international platform for educators to share ideas and experiences, learn new knowledge and best practices, and disseminate recent research results in the field of STEM Education. it is conducted successfully through blended mode, online and offline. IJCSE diikuti oleh 47 paper presenter, 18 poster presenters, 638 online and offline participants.



# SEAQIS Partners

In this KRA, SEAQIS accomplished two main activities, including cooperation and publication. In the fiscal year 2020/2021, SEAQIS established cooperation with 12 institutions. This collaboration was marked by the signing of the Memorandum of Understanding (MoU). Generally, the MoU aims at improving the competence of science teachers and education personnel in the region. Apart from the signing of the MoU, SEAQIS also received visits from various institutions, including schools and universities. The followings are the institutions which collaborated with SEAQIS in the fiscal year 2020/2021



Yayasan  
Baiturrahman



Disdik Pemuda  
dan Olahraga Kab.  
Pangandaran



KCD Wil. XIII  
Disdik Prov. Jabar



KOTA BEKASI

Badan Musyawarah  
Perguruan Swasta  
Kab. Purwakarta



SMK 2 LPPM RI  
Majalaya



Yayasan YASRI



KOPERTIP  
Indonesia



KCD Cabang  
Wonosobo



Perkumpulan  
Pendidik Sains  
Indonesia



Perpustakaan  
Universitas  
Pendidikan Indonesia

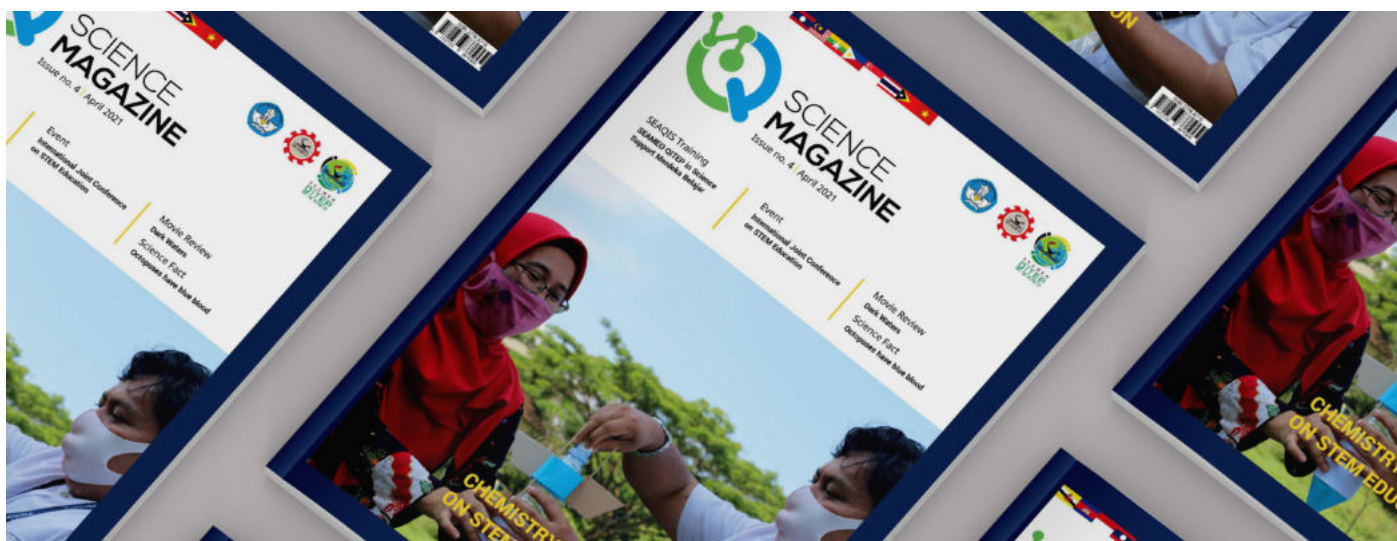


Disdik Kab.  
Purwakarta,



Yayasan Taruna  
Bakti





## Publications

In terms of publication, SEAQIS' publication consists of printed and digital publications. The printed publication includes a bulletin, a three-monthly issue, and a magazine, a biannual publication. The bulletin contains information and news regarding the Centre's activities. Meanwhile, the magazine includes features such as the Centre's special programmes, Science Fact, Event, Movie Review, Research Paper, Alumni, and SEAQIS' Corner.

From July 2020 until June 2021, SEAQIS has published four volumes of the bulletin and two magazine editions. The four volumes of the bulletin are as follows.

1. Issue no. 7 was published in September 2020. It covered news from June to August 2020. This issue was putting the SEAQIS Webinar Series as its main topic.

2. Issue no. 8 covered news from September to November 2020. This issue was published in early January 2021. In addition, this volume put International Joint Conference on STEM Education as its cover photo. This volume also took up the Training on the Use of Online Learning Application for Primary and Junior Secondary School Teachers. Merdeka Belajar and Guru Penggerak.





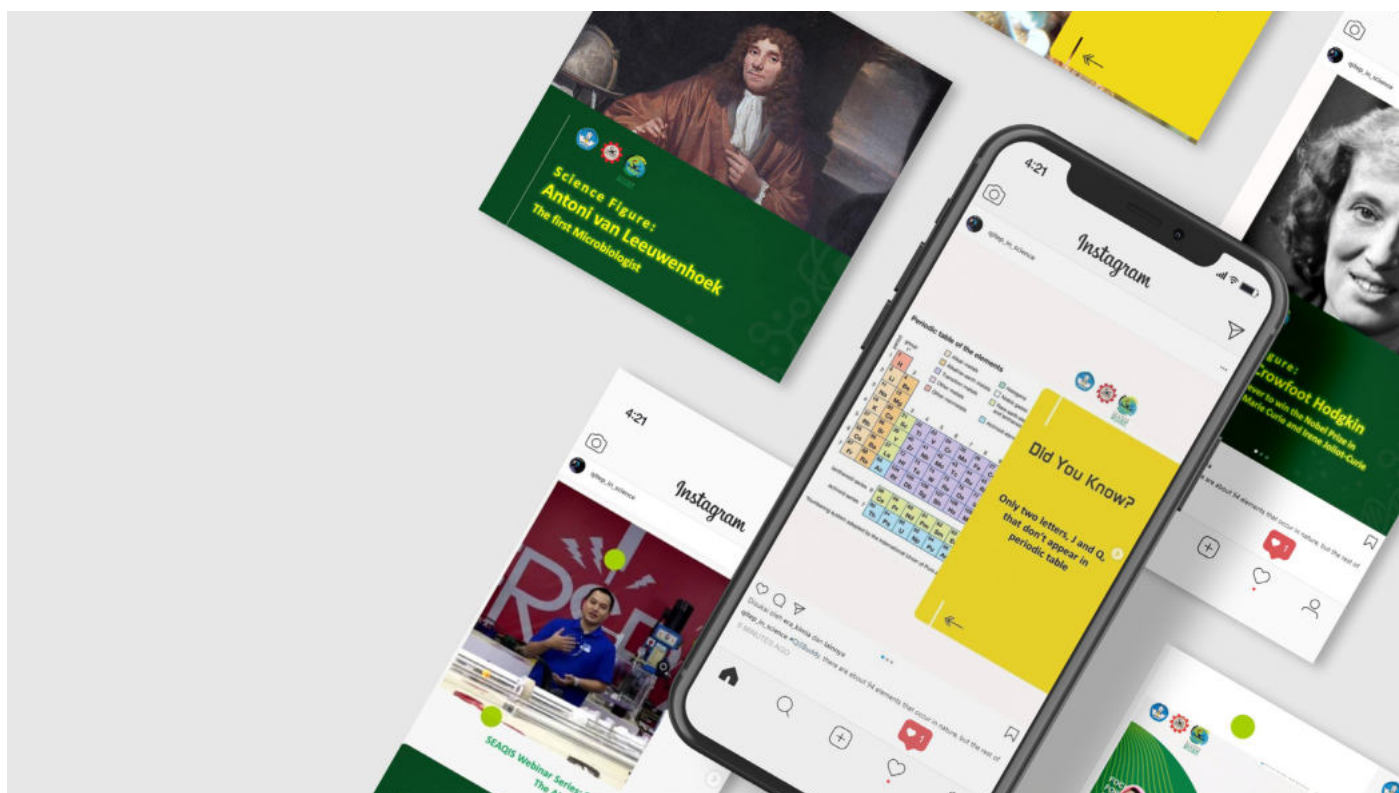


3. Issue no. 9 covered news from December 2020 to February 2021. The information loaded in this volume supported SEAQIS for implementing Merdeka Belajar (Freedom to Learn) in the Kampus Merdeka (Free Campus) Programme.

4. Issue no. 10 was the latest volume published in this period. This volume covered news from March to May 2021 and was issued in the last week of June 2021. The information loaded in this volume was the Training on Integrating Computational Thinking into Science Learning to Support

During this Fiscal Year, SEAQIS also published two editions of Q Science Magazine, the third and fourth editions. The third edition put the photo from the first winner of the SEAQIS Photography Competition as its cover. The Training Course on Marine-Based STEM Learning for Kindergarten, Primary, and Secondary Teachers from Pangandaran Regency, West Java, Indonesia, was featured in the in-depth report. This edition also contained the 11th SEAQIS Governing Board Meeting. It also featured articles from the alumni entitled Modification of a Simple Crossword Puzzle Based on Ethnobotany Study of a garden as Joyful Learning Resources for Students.





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The fourth edition of the magazine was published in April 2021. It explored more about the Training on

Computational Thinking for Senior Secondary Teachers conducted from 15 – 20 March 2021. This issue also covered The International Joint Conference on STEM Education conducted in Yogyakarta, Indonesia. This edition also contained Science facts about camel's hump, and Octopuses have blue blood. It also featured articles from three teachers. Apart from digitalizing the printed publications, SEAQIS also utilizes social media as media for publication. SEAQIS possesses accounts on Instagram, Facebook, Twitter, and YouTube. In FY 2020/2021, SEAQIS has posted 822 posts on Instagram and Facebook, and the posts were varied. The Instagram account is followed by 3975 accounts, and 6996 accounts like the Centre's Facebook fans page.

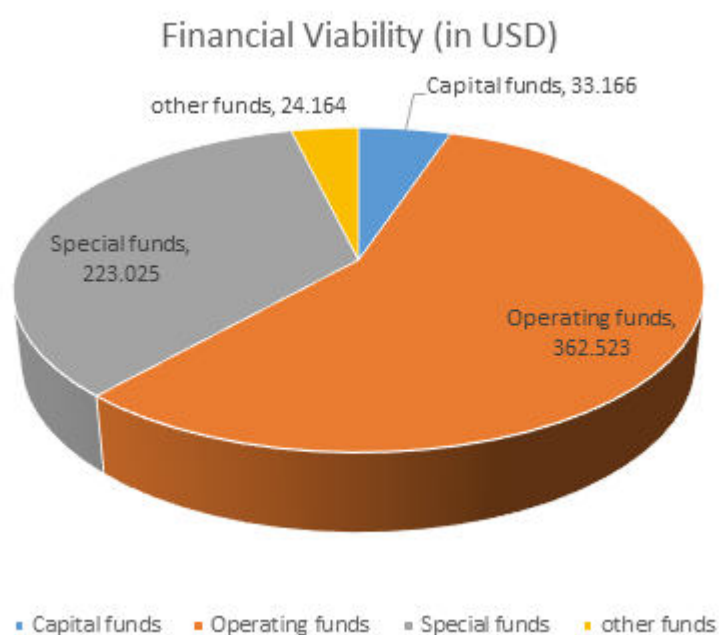




## C. KRA 3 Solid Resource Base

### Financial Viability

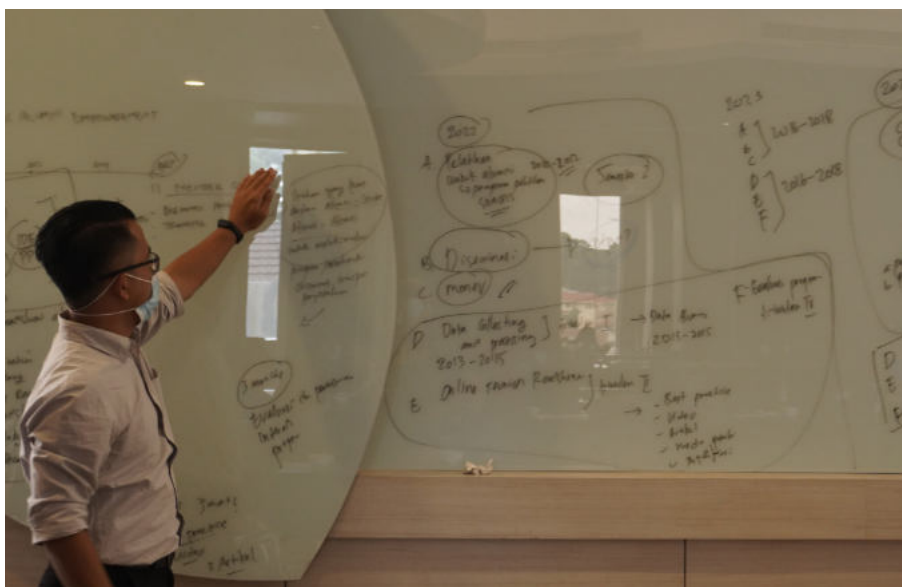
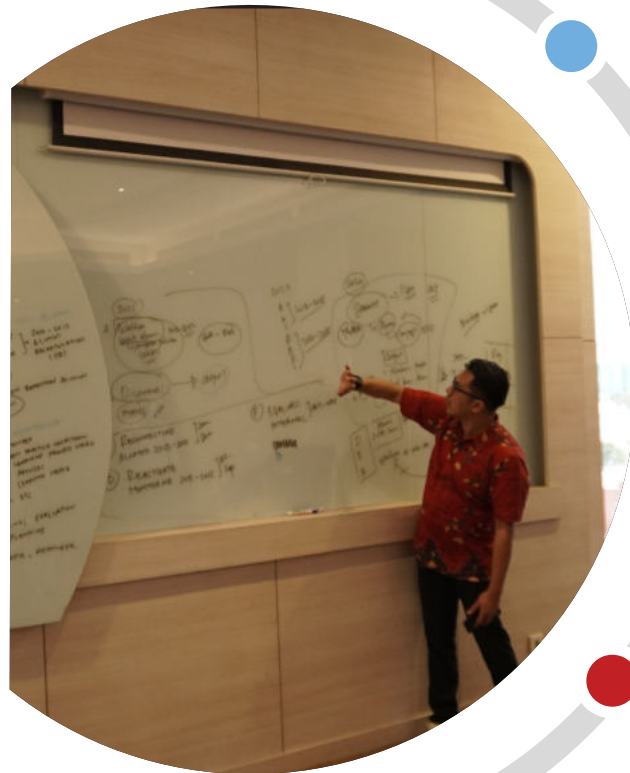
To undertake its programmes and activities during the fiscal year under review, the Centre augmented the funds from the Government of the Republic of Indonesia. It consisted of Capital Funds, 33.166 USD; Operating Funds, 362.523 USD; Special Funds, 223.025 USD; Other funds, 24.614 USD





## Staff Development

To enhance the efficiency and effectiveness of Centre management, the Centre has strengthening human resource management by conducting staff development programmes. The Centre held staff development programmes by conducting in-house training and assigning the staff to participate in several activities conducted by other institution.



# nt on Staff Development Programme

01

## Workshops

Workshop on Open Journal System Management  
Workshop on SEAQIS Strategic Plan  
Workshop on Programme Creation  
Workshop on the Third Ki Hadjar Dewantara  
Award Assessment

02

## Training

In-house Training on Video Editing  
Training of Trainers PISA

03

## Knowledge Sharing Day

K-12 science and engineering during crisis chapter 1,2  
SEAQIS Course Information System  
SEAQIS Programme Evaluation  
Publication Media and News Making  
Podcast  
Ceremony Protocol, SEAMEO Indonesia e-SKP





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