



United Nations  
Educational, Scientific and  
Cultural Organization



# **E-TRAINING REPORT**

## TRAINING OF TRAINERS (TOT) ON THE INTRODUCTION OF GREEN SCHOOLS ACTIONS



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### TRAINING OF TRAINERS (TOT) ON THE INTRODUCTION OF GREEN SCHOOLS ACTIONS

3<sup>rd</sup> – 4<sup>th</sup> NOVEMBER 2020

THROUGH ZOOM WEBINAR PLATFORM



## United Nations Educational, Scientific and Cultural Organization (UNESCO)

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This publication is the report of Sub-Regional e-training on Green School Actions for Education for Sustainable Development (ESD) and response to COVID-19, which was held on November 3 - 4, 2020.

The assistance provided by the Universiti Kebangsaan Malaysia team led by Associate Prof. Dr. Marlia Mohd Hanafiah, Assof Prof. Dr. Rawshan Ara Begum and Dr. Wan Shafrina Wan Mohd Jaafar in completing this e-training report are also highly acknowledged.

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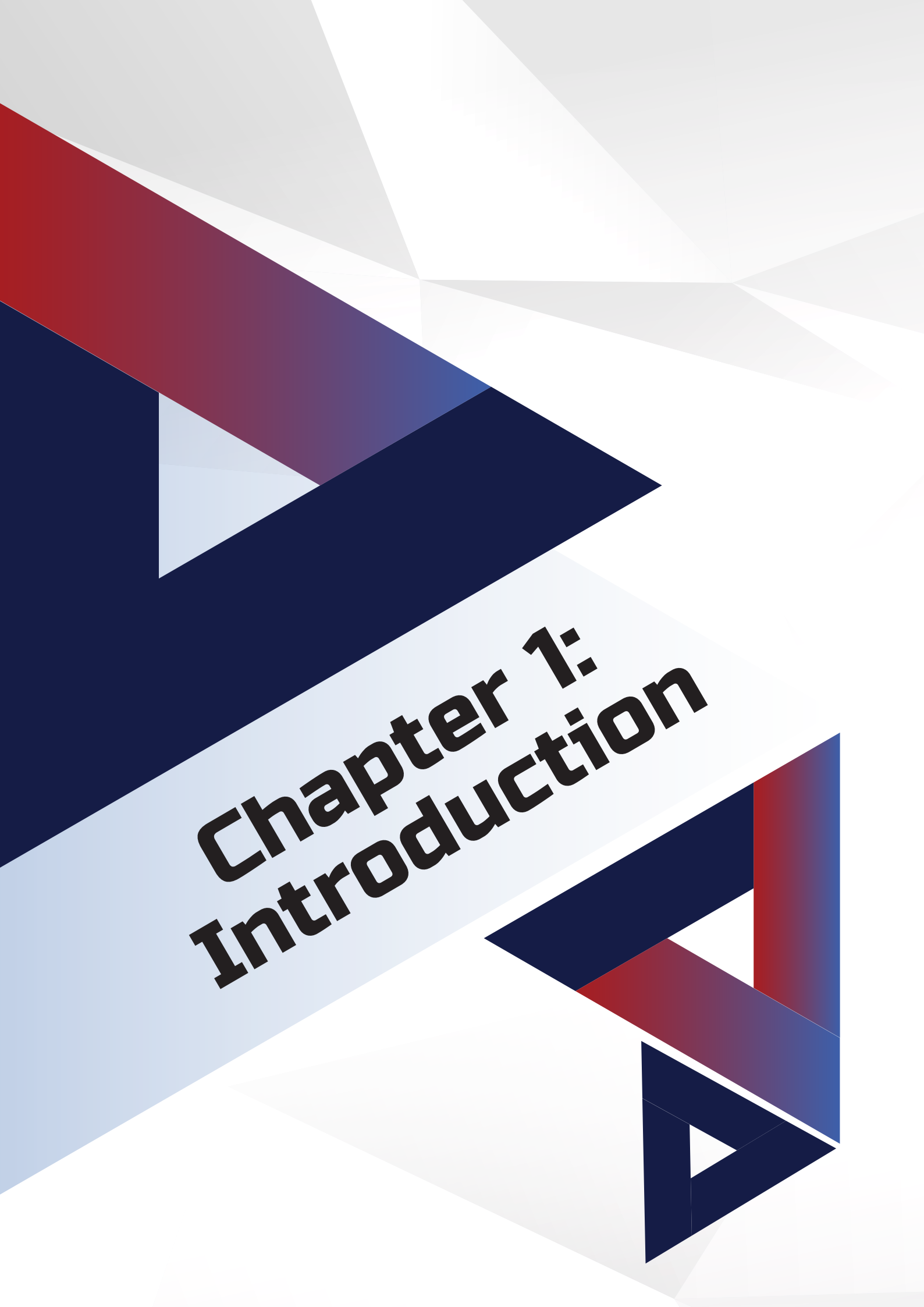
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# **Chapter 1: Introduction**

# Chapter 1: Introduction

## 1.1 BACKGROUND

Education has a vital role to play in extending the awareness of climate change, providing the necessary skills and knowledge to take action and developing positive attitudes towards the environment in general. Within the framework of the UNESCO Green Schools Action Project (GSAP) of UNESCO Jakarta implemented a few years ago, Climate Change Education (CCE) is now being integrated into the curriculum and operations of schools in UNESCO Jakarta's cluster countries. The integration of climate change education in school curricula aims to develop learners who acquire knowledge, behaviours, attitudes and skills that would equip them to respond to the environmental issues threatening their communities.

In 2012, UNESCO Jakarta has successfully implemented the Green Schools Project in Indonesia specifically in Banjarmasin, South Kalimantan targeting teachers and students from 21 schools. The Green School initiative uses an action-based approach that promotes investigation, evaluation, and action-oriented thinking that enable learners to make informed decisions for the benefit of themselves and others, now and in the future.

The implementation of the Green Schools Project in Indonesia by UNESCO Jakarta has encouraged other cluster countries in the region to seriously integrate climate change education in their respective curriculum. While integration is an excellent action, continuous promotion, implementation, expansion, discussion, and advocacy in advancing the Green Schools Actions and projects should be pursued within the context of education for sustainable development.

Amid the COVID-19 pandemic, UNESCO Jakarta has carry out an initiative called "Revitalizing Green School Actions for Education for Sustainable Development (ESD) for 2030 and as part of Education Response to COVID-19 to Build Sustainable, Peaceful, and Resilience in Southeast Asia". This new initiative aims at strengthening the sub-regional capacities to build sustainable, peaceful, and resilient Southeast Asia for ESD 2030 and Education Response to COVID-19 has been revitalized by conducting a Training for Trainers (ToT) program through Zoom webinar platform.

## 1.2 OBJECTIVES

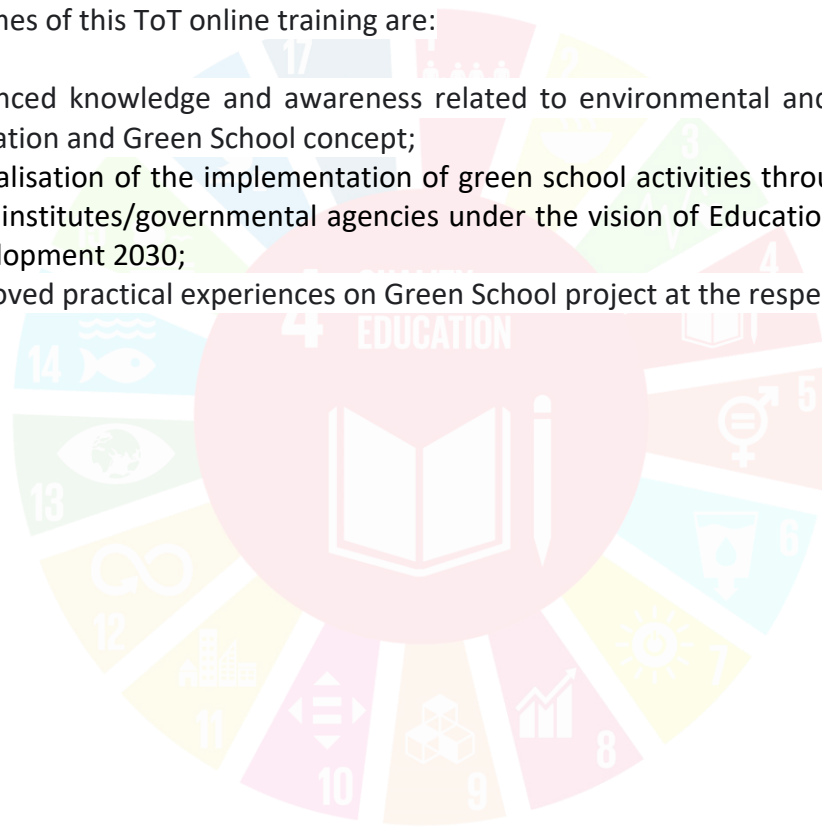
The main objective of the training is to revitalize green school actions for education for sustainable development (ESD) for 2030 focusing on climate change action as part of education response to COVID-19 to build sustainable, peaceful, and resilience in Southeast Asia. The specific objectives of this ToT online training are:

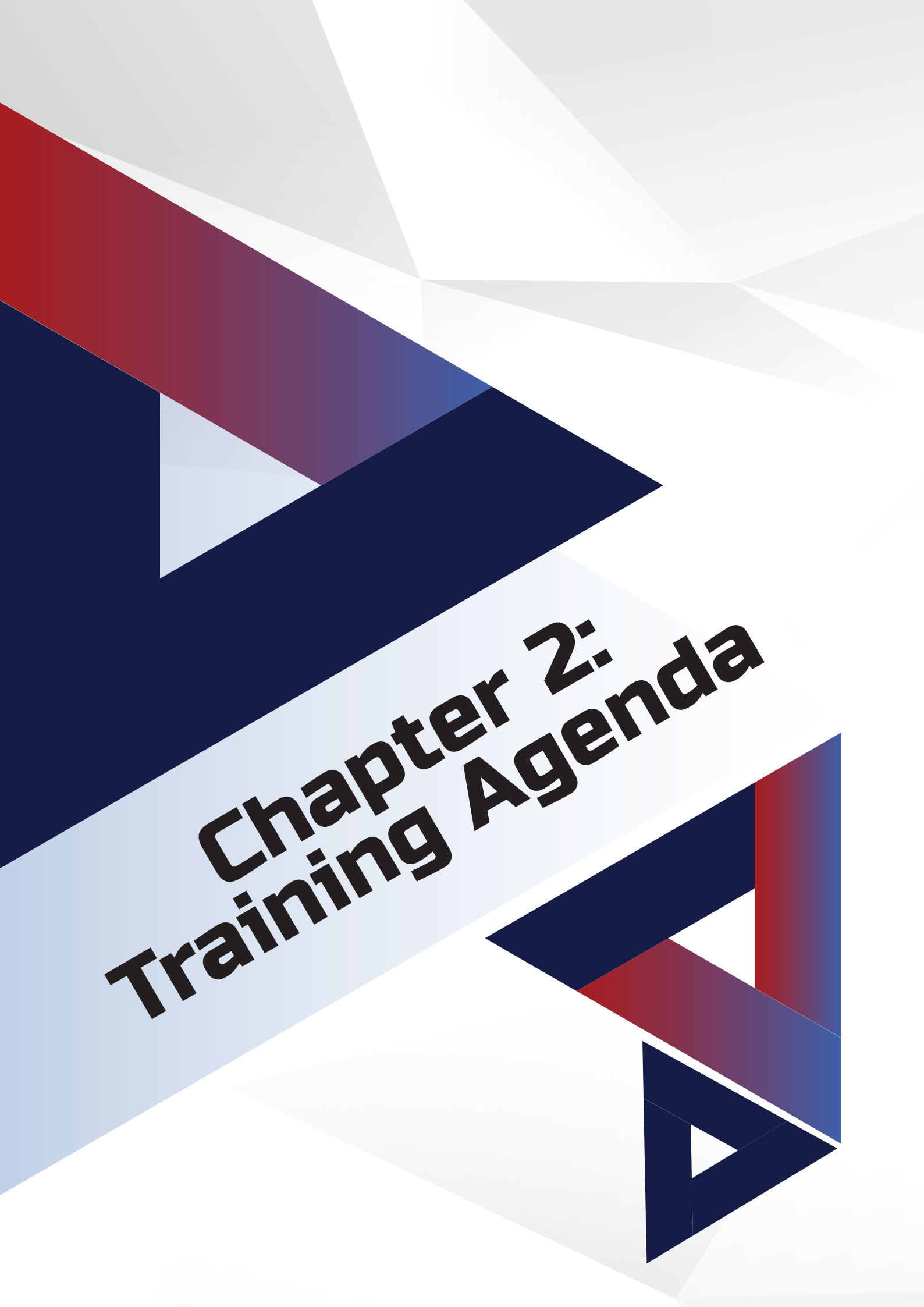
1. to enhance knowledge and awareness related to environmental and climate change education and Green School concept;
2. to revitalise and strengthen the implementation of green school activities through the national-wide institutes/governmental agencies under the vision of Education for Sustainable Development 2030;
3. to provide practical experiences and sharing session on Green School project at the respective countries.

### 1.3 OUTCOMES OF THE E-TRAINING

The outcomes of this ToT online training are:

1. Enhanced knowledge and awareness related to environmental and climate change education and Green School concept;
2. Revitalisation of the implementation of green school activities through the national-wide institutes/governmental agencies under the vision of Education for Sustainable Development 2030;
3. Improved practical experiences on Green School project at the respective countries.





# **Chapter 2: Training Agenda**

## Chapter 2: Training Agenda

### 2.1 DESCRIPTION OF THE E-TRAINING

The ToT training was conducted in two days, from 3 - 4 November 2020, with about two hours for each day from 9.00 am to 11.00 am. The training was delivered using an online platform through Zoom Webinar Platform. The 2-day agenda is provided in the Appendix 1. The list of trainers and organizers involved in delivering the sessions are as follows:

No.	Name	Role/ Organisation
1	Assoc. Prof. Dr. Marlia Mohd Hanafiah	Lead Trainer, UKM
2	Prof Dr. Mohd Nizam Mohd Said	Trainer, UKM
3	Dr. Wan Shafrina Wan Mohd Jaafar	Trainer, UKM
4	Assoc. Prof. Dr. Rawshan Ara Begum	Trainer, UKM
5	Dr. Mee Young Choi	Head of Education, UNESCO Jakarta
6	Mr. Zakki Gunawan	UNESCO Jakarta
7	Mrs. Rusyda Djamhur	UNESCO Jakarta
8	Ms. Ade Ayu Kurnia	UNESCO Jakarta

The lead trainer together with trainers developed the training content, prepared the presentations and materials and the materials were distributed to all participants who attended the e-Training. Pre and Post survey forms were developed and distributed to all participants before and after the e-training to assess their understanding on the e-training and the effectiveness of the e-training. The pre and post survey questionnaire forms are provided in the Appendix 2.



## 2.2 PARTICIPANTS

The training involved representatives of targeting school teachers, policy makers and Ministry of Education officials recommended by the five cluster countries under UNESCO Jakarta. 34 participants were participated in the e-training as shown in Table 1 below.

Table 1. List of Participants

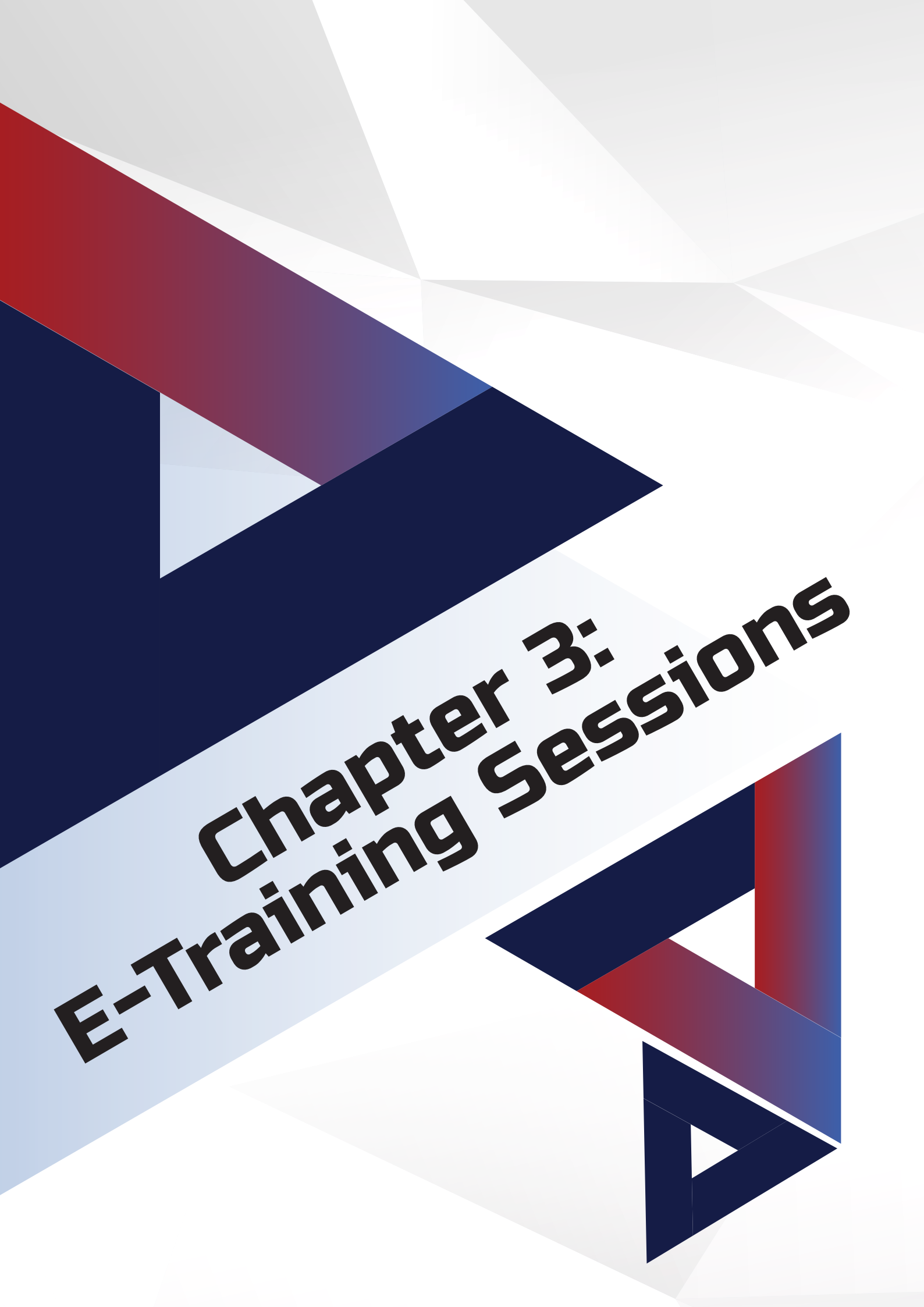
No.	Name	Gender	Institution	Position
<b>BRUNEI</b>				
1	Misli Moxsin	Male		
<b>INDONESIA</b>				
1	Nur Rofika Ayu Shinta	Female	MoE	Curriculum
2	Evionora	Female	MoE	Curriculum
3	Fendra Kus Nuryadi	Male	SMP Islam Amalina Tangsel	Principal
4	Tantin Indartini	Female	SMAN 27 Jakarta	Principal
5	Alexander Lajar	Male	SMP Garuda Cendekia Jakarta	Teacher
6	Saara Suaib	Male	SMP Islam Al Azhar 44 Bekasi	Teacher
7	Ira Fasa Damayanti	Female	SMA Labschool Cibubur	Teacher
8	Resi Yandi Timosia	Female	SMAN 81 Jakarta	Teacher
9	Madzkur Achmad	Male	SMKN 27 Jakarta	Teacher
10	Kiki Rizki Romadhoniayah	Female	SMK Wikrama Bogor	Teacher
<b>MALAYSIA</b>				
1	Siti Khadijah Binti Abdullah	Female	MoE	Assistant Director, Curriculum Development Division, Ministry of Education Malaysia
2	Nor Hisham Bin Ismail	Female	MoE	Principal Assistant Director, Education Planning and Research Division
3	Zuriani Mohd Zain	Female	SEKOLAH SERI PUTERI CYBERJAYA	Senior Assistant of Co-Curriculum
4	Chang Sook Min	Female	SJK (C) PULAI	Senior Assistant of Students' Affairs





5	Dr. Adzuhaidah M. Taha	Male	Sekolah Seri Puteri Cyberjaya	Teacher
6	Md. Ali Bin Osman	Male	KOLEJ TUNKU KURSHIAH	Cas Coordinator, International Baccalaureate Diploma Programme
7	Junaini Binti Jamirun	Female	Sekolah Tun Fatimah, Johor Bahru	Teacher
8	SITI HAJAR BT MPHD RAIS	Female	MoE	
9	Sharmani Devi a/p Subramaniam	Female	Kelab UNESCO dan Guru ASPnet	Ketua Guru Penasihat Kelab UNESCO dan Guru ASPnet
<b>PHILIPPINES</b>				
1	Margarita Consolacion Ballesteros	Female	DepEd	Director IV, International Cooperation Office
2	Gene Pangilinan	Male	Ramon Magsaysay High School	Principal
3	Lizabelle Gamboa	Female	Holy Angel University	Principal
4	Roberto R. Villena	Male	Ramon Magsaysay High School	Teacher III
5	Marilyn V. Gomez	Female	Holy Angel University	Teacher/Outreach Coordinator
6	Joeben M. Casabon	Male	Araullo High School	Teacher/ASPnet Adviser
7	Edgar Sarmiento	Male	Manila Science High School	Teacher I
<b>TIMOR-LESTE</b>				
1.	Tomas Gunda	Male	EBC das Flores, Aileu	Director
2.	Jacinto Mendonca	Female	EBC das Flores, Aileu	Profesor
3.	Alvaro dos Santos	Male	EBC 20 de Setembro Hatulia, Ermera	Director
4.	Agostinhos da Silva	Female	EBC 20 de Setembro Hatulia, Ermera	Profesor
5.	Geraldo Ribeiro Soares	Male	EBC Casait, Liquica	Director
6.	Joni Pereira	Male	EBC Casait, Liquica	Profesor
7.	Paulo da Silva Rangel	Male	CSIL, Liquica	Vice Director
8.	Adolfino Varelha	Male	CSIL, Liquica	Profesor





# **Chapter 3: E-Training Sessions**

## Chapter 3: E-Training Sessions

### 3.1 IMPLEMENTATION OF E-TRAINING

The TOT engages participants in a comprehensive, multi-session distributive learning process that builds the knowledge and skills required to effectively train educators to deliver evidence-green schools actions programs for students. The topics discussed in the e-training were divided into four sessions. The trainers team developed the e-training materials that are summarized as follow:

1. Session 1: Opening and Introduction  
Welcome and Opening remarks; Education for Sustainable Development for 2030; Overview of e-training for two days
2. Session 2: Climate Emergency  
Environmental and Climate Change Education; Energy and Carbon Footprint; Importance of Forests
3. Session 3: Lifestyle: Re-consumption and Reproduction during Covid-19 and Beyond  
Waste 3R (Reduce, Reuse and Recycling); Smart Water for Green School; Awareness and Behavior; Wrap-up for Day-1
4. Session 4: Knowledge & Skills for Practices  
Briefing on Development of Green School Project; Timor Leste National Strategies in Promoting Education for Sustainable Development (ESD): Climate Change Education; Good Country Best Practices on Green School Project: Focusing on the Proposal Actions; Discussion and Reflection; Wrap-up for Follow up Actions; Closing Remarks

#### **DAY-1 - SESSION 1: OPENING AND INTRODUCTION**

#### **WELCOME AND OPENING REMARKS; EDUCATION FOR SUSTAINABLE DEVELOPMENT FOR 2030; OVERVIEW OF E-TRAINING FOR TWO DAYS**

Date: 3 November 2020 (Tuesday)

Time: 9.05 am – 9.30 am

Venue: Zoom Webinar

Presenter: Dr. Mee Young Choi and Assoc. Prof. Dr. Marlia Mohd Hanafiah



## Remarks and Overview:

The ToT program on the introduction of green school actions was held through zoom webinar platform. The training started off with the opening remarks on Education for Sustainable Development for 2030 by Dr Mee Young Choi, the Head of Education at UNESCO Jakarta. The lead trainer, Assoc. Prof. Dr. Marlia Mohd Hanafiah explained the purposes, objectives and outcomes of the ToT training for the two-day training. The topics for all sessions and list of participants have been presented as well.

The lead trainer, Assoc. Prof. Dr. Marlia Mohd Hanafiah started the session by introducing her training team, who presented the training to the participants during the two-day ToT. She then briefed the participants about the programme agenda that started at 9.00 am and ended by 11.00 am, as shown in the Appendix 1.

The session was then continued with the selected topics. Also, pre-survey questionnaire forms were distributed to all participants and they were asked to fill the forms and returned the completed forms prior to the training. The survey was carried out with a view to gather information on participants' knowledge and experience related to environmental and climate change issues, of which the information is very useful for the trainers to conduct the training effectively.

## **DAY-1 - SESSION 2: CLIMATE EMERGENCY**

### **TOPIC 1: ENVIRONMENTAL AND CLIMATE CHANGE EDUCATION**

Date: 3 November 2020 (Tuesday)

Time: 9:30 am – 9.50 am

Venue: Zoom Webinar

Trainer: Assoc. Prof. Dr. Rawshan Ara Begum

#### Learning Outcomes:

1. Gain insight about Global Climate Policy and Climate Urgency.
2. Distinguish the concepts of climate, climate change, mitigation and adaptation measures.
3. Understand the importance of Environmental and CCE in the context of SD and gain insight about the CCE integration into course curriculum.

#### Lecture in Brief:

Education for Sustainable Development is a key enabler to achieve all 17 SDGs. UNESCO'S Education 2030 Framework for Action emphasizes to implement SDG 4: ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. The SDG 13 (take urgent action to combat climate change and its impacts) has 5 targets and 8 indicators



where target 13.3 focuses build knowledge and capacity to meet climate change and indicator 13.3.1 monitors the number of countries that have integrated mitigation, adaptation, impact reduction and early warning into primary, secondary and tertiary curricula. Hence, the trainer has explained the climate urgency by giving insights of global climate policy i.e. Paris Agreement, causes of CC due to human activities such as burning of fossil fuels, conversion of forest land/land use, agriculture and industry etc. and impacts of climate change on water resources, forestry, biodiversity and ecosystem including coastal areas, agriculture and food security, and human health, wellbeing and livelihoods. The trainer clarified the concepts of weather, climate and climate change and introduced climate change responses via mitigation and adaptation.

The trainer explained the importance of environmental and climate change education in the context of SD. Knowledge generation through education and training in addressing issues of environment and climate change is crucial. Teachers play an important role not only teaching their subject content but also to acquire ethical values, behaviors, attitudes and skills that would be useful to develop future citizens who are conscious of their actions towards the environment. Climate change can be integrated in curriculum & co-curriculum activities across different subjects such as geography, chemistry, biology, physics, mathematics, economy, sociology, sports and health, language such as English and communication. Informal education also plays crucial role for lifelong learning of environmental issues via study tour, exploration, experiences, mass media, internet, involved in youth and community organizations etc. The trainer concludes how ESD/CCESD plays a crucial role in promoting collaborative learning outcomes, encouraging inclusive learning in all context such as gender, location, socio-economic status etc. and empowering learners about Global Citizenship Education and to become active promoters of more peaceful, tolerant, inclusive, secure and sustainable societies.

Question and Answer: Mr. Nor Hisham Bin Ismail expressed his concerns on reduction of GHG emissions during COVID 19 while increasing energy usage as more household members living in house with more time spending using more television air conditioners etc.

Respond: Trainer agreed with the participant's concern and mentioned that despite facing challenges with COVID 19, it also shows that how by reducing human-caused activities can reduce energy consumption and global emissions.

## **TOPIC 2: ENERGY AND CARBON FOOTPRINT**

Date: 3 November 2020 (Tuesday)

Time: 10.10 am – 10.30 am

Venue: Zoom Webinar

Trainer: Assoc. Prof. Dr. Marlia Mohd Hanafiah



### Learning Outcomes:

1. Understand the concept of carbon footprint as a tool for measuring and quantifying greenhouse gas emissions and energy consumption;
2. Identify the causes and effects of greenhouse gas emissions on climate change;
3. Provide solutions to reduce carbon footprint through renewable energy utilization, eco-practices and green school initiatives

### Lecture in brief:

The trainer explained the carbon intensive industries and the total greenhouse gas emissions and energy produced by the ASEAN countries. The trainer also explained about the cause-effect pathway of greenhouse gas emissions. Further, the trainer defined the concept of carbon footprint and its relation to energy. The trainer also used a number of examples to help participants to get better understanding on the concept of carbon footprint and eco practices. Some examples on green school activities related to energy and carbon footprint have been given by the trainer as well.

### TOPIC 3: THE IMPORTANCE OF FORESTS

Date: 3 November 2020 (Tuesday)

Time: 10.30 am – 10.50 am

Venue: Zoom Webinar

Trainer: Dr. Wan Shafrina Wan Mohd Jaafar

### Learning Outcomes:

1. Understand the concept of sustainable forest management as a basis for mitigating and adapting to climate change in forest landscapes;
2. Identify the effects of climate change on forests and forest communities and;
3. Recognize the role of forests as global carbon sinks, and the need to mitigate global climate change by reducing deforestation and forest degradation

### Lecture in brief:

This lesson investigates the role of forests and trees in climate and other land use. It takes into consideration the ecosystem services and goods that forests provide and the importance of forests for the carbon cycle and to the food security of forest-dependent people. This lesson also looks into detail the relationship between climate change and forests, and the risks posed by climate change to forests and forest-dependent people. It explores the practice of sustainable forest management, including what measures are needed for forests to adapt to climate change, their role in buffering against disasters and mitigating climate change, and the synergies and trade-offs involved in climate-forest management.





## **DAY-1 – SESSION 3: LIFESTYLE: RE-CONSUMPTION AND REPRODUCTION DURING COVID-19 AND BEYOND**

### **TOPIC 4: WASTE 3R (REDUCE, REUSE AND RECYCLING)**

Date: 3 November 2020 (Tuesday)

Time: 10.50 am – 11.10 am

Venue: Zoom Webinar

Trainer: Assoc. Prof. Dr. Marlia Mohd Hanafiah

#### **Learning Outcomes:**

1. Understand the concept of 3R (Reduce, Reuse, Recycling) and waste management hierarchy;
2. Identify the types of wastes, causes and effects of improper waste disposal;
3. Provide solutions to manage waste through 3R practice (Reduce, Reuse, Recycling), and green school initiatives

#### **Lecture in brief:**

The trainer explained the sources and types of wastes. The trainer introduced the concept of waste management hierarchy and eco practices. Further, the trainer explained the causes and effects of improper waste disposal. The trainer also used a number of examples to help participants to get better understanding on the concept of 3R (Reduce, Reuse and Recycling). Some examples on green school activities related to the waste management based on 3R concept have been given by the trainer as well.

### **TOPIC 5: SMART WATER FOR GREEN SCHOOL**

Date: 3 November 2020 (Tuesday)

Time: 11.10 am– 11.30 am

Venue: Zoom Webinar

Trainer: Dr. Wan Shafrina Wan Mohd Jaafar

#### **Learning outcomes:**

1. Understand on global water crisis and activities for smart water for green school initiatives take places in several areas globally
2. Empowers knowledge on the smart water program at “water poverty” areas for the purpose to secure water supply and provides safe drinking water
3. Promotes the sustainable use of water resources

#### **Lecture in brief:**

The lesson starts by discussing the global water crisis with children on the front line as a focus. This lesson stresses the vital for communities to take practical action to secure their water supplies,

optimize their resources and educate young people in sustainable and responsible management before introducing the Smart Water for Green School Projects as the initiatives to address this problem. Smart water for green school projects is an initiative to put water and sanitation at the heart of community development, helping enhance young people's health, education, and aspirations. The program supports the practical realization of the universal Human Rights to Safe Drinking Water and Sanitation through four main activities (1) equipping schools with rainwater harvesting systems; (2) providing schools with ecological sanitation facilities; (3) Installing other water systems, such as wells and boreholes for the wider community and (4) developing environmental, hygiene and health education programmes. At the end of the lecture, the trainer shows a number of pictures and programs on smart water for green school projects in several areas globally including in Malaysia.

## **TOPIC 6: AWARENESS AND BEHAVIOR**

Date: 3 November 2020 (Tuesday)

Time: 11.30 am – 11.50 am

Venue: Zoom Webinar

Trainer: Assoc. Prof. Dr. Rawshan Ara Begum

### **Learning Outcomes:**

1. Gain insight about how human activities affect environmental and global warming;
2. Distinguish the examples of CC mitigation and adaptation measures;
3. Understand the importance of awareness and behavioural changes in the context of CCESD and gain insight about examples and practices for green school

### **Lecture in Brief:**

The trainer briefly explained how human activities caused environmental problems and produce GHGs which have caused global warming. Therefore, mitigating and adaptation measures are important. Trainers also share a wide range of sectoral examples of mitigation and adaptation measures that can be applied. Participants were introduced with the concept of disaster risk reduction and community-based adaptation or disaster management. Trainer explained that although governments and policy makers have been taking leadership in mitigating and adapting to climate change, however, how every individual can contribute in addressing climate change. GHG emissions are the direct result of our activities including energy use, transportation choices and shopping habits. Each of us can take actions and use our knowledge and awareness to reduce

emissions within different levels, such as household, workplace, leisure, recreational and street places.

The trainer also pointed out some key areas where teachers should be aware in addressing CCE in implementing ESD. These include willingness to take actions on environmental issues,

understanding teachers' role in teaching students about climate change, developing future leaders (their students) to lead in environmental issues and initiatives, enhancing awareness of the connections between global and local events, interpreting the causes and consequences of events related to climate change, pedagogies for teaching climate change in schools and knowledge of best practices in promoting green concept or SD in schools and so on. The trainer shared some examples for implementing Green School Concept that individual can provide efforts and take actions in responding CC and environmental impacts and problems. The trainer concludes that education and awareness are the first steps for behavioral change and children are an agent for behavioral change. Individual awareness and behavioral and lifestyle changes play important role in efforts and actions that can be part of the solution to the urgent problems of CC. Green school practices/actions would ultimately helpful for building sustainable, peaceful and resilience community.

## **DAY-2 - SESSION 4: KNOWLEDGE & SKILLS FOR PRACTICES**

### **TOPIC 1: BRIEFING ON DEVELOPMENT OF GREEN SCHOOL PROJECT**

Date: 4 November 2020 (Wednesday)

Time: 9.00 am – 9.10 am

Venue: Zoom Webinar

Trainer: Assoc. Prof. Dr. Marlia Mohd Hanafiah

Learning Outcomes:

1. Information on proposal design template for implementing green school project;
2. Understand the proposal preparation processes;
3. Able to identify key elements of proposal design

Lecture in brief:

This briefing was prepared to train participants on key elements for preparing a proposal for a green school project. The trainer explains the processes involved in preparing a proposal that consists of background, project goals and objectives, project methodology and design, outcomes of the project, references and appendixes.

### **TOPIC 2: TIMOR LESTE NATIONAL STRATEGIES IN PROMOTING EDUCATION FOR SUSTAINABLE DEVELOPMENT (ESD): CLIMATE CHANGE EDUCATION**

Date: 4 November 2020 (Wednesday)

Time: 9.10 am – 9.20 am

Venue: Zoom Webinar

Trainer: Prof. Dr. Mohd Nizam Mohd Said

Learning Outcomes:

1. Information on Timor Leste National Strategies in Promoting Education for Sustainable Development (ESD): Climate Change Education;



2. Introduce green school activities implemented in Timor-Leste;
3. Challenges and opportunities in implementing ESD in Timor-Leste

Lecture in brief:

The trainer explained the establishment of a Strategic Development Plan 2011-2030 of Timor-Leste to transform the country into a medium-high income country by 2030. With a vision by 2025, the population of Timor-Leste will be educated, knowledgeable and qualified to live a long and productive life, respectful of peace, family and positive traditional values. The trainer also shared the restructuring of school curriculum to improve quality of education for Timor-Leste in order to promote sustainable development, which is the main agenda in the ESD. The green school activities implemented in Timor-Leste have been presented by the trainer such as School Farming called Horta Eskolar as one of the ESD programs, focusing on environmental education and sustainable agriculture. Climate Change Education (CCE) has a crucial part to play in building capacities and attitudes for climate change mitigation and adaptation. However, integrating ESD into formal education curriculum is one of the challenges faced by the Government of Timor-Leste. The trainer highlighted the challenges such as lack of knowledge and skills, lack of initiative from teachers and students on extra-curricular activity, lack of awareness on significance of cultural heritage, lack of funding for environmental education. Regarding to education responses to COVID-19 pandemic, the challenges are related to the issue with conducting ESD school activities and poor access to internet and unavailability of reliable electricity supply. The trainer stated that in addressing CCE, teachers are encouraged to take actions on environmental issues, to build capacity to mitigate experience of the best practices from other countries in order to promote ESD and CCE to the students and communities in Timor-Leste.

### **TOPIC 3: GOOD COUNTRY BEST PRACTICES ON GREEN SCHOOL PROJECT: FOCUSING ON THE PROPOSAL ACTIONS**

Date: 4 November 2020 (Wednesday)

Time: 9.20 am – 10.10 am

Venue: Zoom Webinar

Trainer: Dr. Wan Shafrina Wan Mohd Jaafar, Mrs. RusydaDjamhur and Ms. Ade Kurnia

Learning Outcomes:

1. Understand the proposal writing process
2. Familiarise with the use of proper format for proposal writing
3. Able to determine clear project's goals, objectives, expected outcomes, and important components in the proposal application



Lecture in brief:

This lesson was designed to train participants on how to prepare a winning proposal for an educational program specifically for a green school project. This course demonstrates how to write clear objectives, determine specific time frames and reasonable budget, and set doable deliverables. The trainers provide guidelines by giving an example of a successful proposal on green school projects (Recycle for Life) conducted by the National University of Malaysia (UKM). Proposal template was introduced for managing proposal plan effectively as this will help participants to understand clearly how to start preparing a proposal from scratch by particularly following seven main elements in proposal writing. The proposal must contain (but not strictly) these elements namely: (1) Title page, (2) Project Background, (3) Project goals and objectives, (4) Project Methodology/design, (5) Project outcomes, (6) References and (7) Supporting documents (i.e. Cover letter and program agenda).

#### **TOPIC 4: DISCUSSION AND REFLECTION**

Date: 4 November 2020 (Wednesday)

Time: 10.10 am – 10.30 am

Venue: Zoom Webinar

Trainer: Assoc. Prof. Dr. Rawshan Ara Begum

Learning Outcomes:

1. Get feedback from participants
2. Share experiences, challenges, recommendations
3. Reflect feedback from trainers

Lecture in brief:

This session was very interactive where participants had shared their experiences, challenges and recommendations on green school projects and activities in implementing education for sustainable development. Several feedbacks from representatives from five cluster countries are given below:

#### **Brunei Darussalam**

Misli Moxsin (Senior Education Officer, Science, Technology and Environment Partnership/STEP Centre, Ministry of Education,) mentioned that the STEP Centre is implementing two programmes

involving schools such as GSG - Green School Gardening and Socialisation of the Guidebook. The guidebook aims to initiate Green Schools in Brunei Darussalam. This is for STEP Centre to guide the schools in conducting various green initiatives in their respective schools. ASEAN Eco-School Nomination for Brunei is following this guidebook. Regarding, training of school teachers, this type of training can share good practices on green school projects from the participated countries.





## **Indonesia**

Ms. Saaran Suaib (teacher, SMP Islam Al Azhar 44 Bekasi) shared her environmental and green school projects and activities at the school such as waste bank project, waste sorting activities. As an English teacher, she also mentioned that language teachers can play an important role in green school projects. She also mentioned the importance of cooperation between school's top management and teachers.

Fendra Kus Nuryadi (principal, SMP Islam Amalina Tangsel) mentioned that his school used Whole Institutional Approach for green school action. This is what they learnt from UNESCO Dakar and Adiwiyata Program.

## **Malaysia**

Dr. Adzuhaidah M. Taha (Teacher, Sekolah Seri Puteri Cyberjaya, Malaysia) shared that as part of ESD green school projects, every year, they go to different places like excursion for students' exposures. For instance, cave conservation site, forest for learning species and importance of flora and fauna, planting mangroves, hiking experiences to Mount Kota Kinabalu and soon. After the excursion, the school conduct slide presentation by the students to share their exposures and experiences to disseminate to other teachers, students and staffs who were not able to participate. The school also collaborate with universities, forestry department and local organization.

Md. Ali Bin Osman (Teacher Kolej Tunku Kurshiah, Malaysia) mentioned that he prefers his students initiate this Green Action by themselves under environmental project-based. Basically, he wants to guide the students how to do their proposal regarding the global issues as well as learning on how to investigate, planning & prepare, taking action, reflecting and demonstrating. The most important part is they aware on how to apply the UN SDG 17.

## **Philippines**

Marilyn V. Gomez (Teacher/Outreach Coordinator, Holy Angel University, Philippines) shared green school projects such as replanting, environmental and climate change education into curriculum. They have also poverty eradication program and provide basic education among poor people. The green school projects promote societal responsibility among local communities and NGOs and received good supports from administration.

Joseph Gutierrez (Teacher/ ASPnet Adviser, Araullo High School, Philippines) mentioned that in the case of the Philippine public schools, a school club named Youth for Environment in Schools Organization is mandated to establish endemic seed bank and nursery, participate in tree planting activities, conduct awareness campaigns on environmental issues and actions, spearhead clean up drives, and promote energy and water conservation, among others.

## **Timor-Leste**

One participant (Professor/School Principal) mentioned that replantation program has been initiated through active participations between teachers, students, parents supported by UNESCO and UNICEF.





Community level environmental project on irrigation is on-going but at present, the main challenge to implement these programs is COVID 19. Hope to receive support from UNESCO and UNICEF.

Another participant (Professor) shared that green school activities run between teachers and students supported by UNESCO and UNICEF. They conduct class event on how to recycle and sometimes also provide assignments. The challenge is to find out some time for environmental activities from students' main courses.

Another participant (National Director of Ministry of Education, MOE) mentioned that National Strategic Plan for Education is implementing by partnerships between MOE, UNESCO and UNICEF. Green school project such as school farming are going on conducted by collaboration with local schools, and non-government organisations (NGOs). One of the challenges is tenants around school grow their own agriculture or livestock without good protection, sometimes these caused to flooding. Another challenge is integrating GS education into class room education. He appreciated this type of training.

#### **TOPIC 5: WRAP-UP FOR FOLLOW UP ACTIONS; CLOSING REMARKS**

Date: 4 November 2020 (Wednesday)

Time: 10.30 am – 11.00 am

Venue: Zoom Webinar

Presenter: Assoc. Prof. Dr. Marlia Mohd Hanafiah and Mr. Zakki Gunawan

#### **Remarks and Closing:**

The team leader, Assoc. Prof. Dr. Marlia Mohd Hanafiah concluded the two-day training by summarizing all topics that have been delivered to the participants. Further, the closing remarks was given by Mr. Zakki Gunawan from UNESCO Jakarta. Also, post-survey questionnaire forms were distributed to all participants and they were asked to fill the forms and returned the completed forms immediately after the two-day training. The post survey was carried out with a view to compare information on participants' knowledge and experience related to environmental and climate change issues before and after the completion of the ToT program, of which the information is very useful for the trainers to conduct the training effectively in the future.





# Appendices

## APPENDIX 1

### AGENDA

**UNESCO Office, Jakarta**  
**Regional Science Bureau for Asia and the Pacific**  
**Cluster Office for Brunei Darussalam, Indonesia, Malaysia, Philippines and Timor-Leste**

#### TRAINING OF TRAINERS (TOT) ON THE INTRODUCTION OF GREEN SCHOOLS ACTIONS 3-4 November 2020

Date & Time	Topic Discussion	Presenter
<b>Day 1: Tuesday, 3 November 2020</b>		
<b>Session 1: Opening and Introduction Session</b>		<b>MC: UNESCO</b>
09:05 – 09:10	Welcome and Opening remarks	Mr. Zakki Gunawan
09:10 – 09:20	Education for Sustainable Development for 2030	Dr. Mee Young Choi
09:20 – 09:30	Overview of E-Training for Two Days	Marlia Mohd Hanafiah
<b>Session 2: Climate Emergency</b>		
09:30 – 09:50	Environmental and Climate Change Education	Rawshan Ara Begum
10:10 – 10:30	Energy and Carbon Footprint	Marlia Mohd Hanafiah
10:30 – 10:50	Importance of Forests	Wan Shafrina Wan Mohd Jaafar
<b>Session 3: Lifestyle: Re-consumption and Reproduction during Covid-19 and Beyond</b>		
10:50 – 11:10	Waste 3R (Reduce, Reuse and Recycling)	Marlia Mohd Hanafiah
11:10 – 11:30	Smart Water for Green School	Wan Shafrina Wan Mohd Jaafar
11:30 – 11:50	Awareness and Behavior	Rawshan Ara Begum
11:50 – 12:00	Wrap-up for Day-1	Marlia Mohd Hanafiah



**Day 2: Wednesday, 4 November 2020**

**Session 4: Knowledge & Skills for Practices**

09:00 – 09:10	Briefing on Development of Green School Project	Marlia Mohd Hanafiah
09:10 – 09:20	Timor Leste National Strategies in Promoting Education for Sustainable Development (ESD): Climate Change Education	Mohd Nizam Mohd Said
09:20 – 09:40	Good Country Best Practices on Green School Project: Focusing on the proposal for actions	Wan Shafrina Wan Mohd Jaafar
09:40 – 10:10	Good Country Best Practices on Green Schools Project: Focusing on the proposal for actions	Rusyda Djamhur and Ade Kurnia, UNESCO Jakarta
10:10 – 10:30	Discussion and Reflection	Rawshan Ara Begum
10:30 – 10:50	Wrap-up for Follow Up Actions	Marlia Mohd Hanafiah
10:50 – 11:00	Closing	Mr. Zakki Gunawan

**APPENDIX 2**

**SURVEY FORM**

**PRE AND POST-SURVEY ON TRAINING OF TRAINERS (TOT) ON THE INTRODUCTION OF GREEN SCHOOLS ACTIONS FOR ESD 2030 AND RESPONSE TO COVID-19**

Dear participants,

The aim of this pre and post-survey questionnaire is to obtain information about current knowledge and awareness of the participants related to environmental and climate change education as well as Green School concept. This survey is to help us revitalise and strengthen implementation of green school activities through the national-wide institutes/governmental agencies under the vision of Education for Sustainable Development (ESD) 2030. Each survey will take approximately 5-10 minutes to complete. The knowledge that you have contributed will be used to improve future trainings and exploring relevant and useful elements of green schools implementation.



Your opinions are very appreciated. Thank you!

### INSTRUCTIONS FOR COMPLETING THE QUESTIONNAIRE

This survey consists of FOUR sections (A: Demographic Profile; B: Awareness and Knowledge on Green School; C: School Curriculum; and D: Green School Implementation) to be completed by teachers only and ONE section (E: Representatives) to be completed by the representatives from the Ministry of Education and Policy Makers only. Please read carefully and answer ALL the questions. If you have any queries on how to answer this questionnaire, please contact UNESCO, Jakarta Office.

### PRE AND POST-SURVEY OF E-TRAINING

#### SECTION A: DEMOGRAPHIC PROFILE

Name : \_\_\_\_\_

Profession : Classroom Teacher/Educator/Educational Officer

(This information will only be used to match pre- and post- surveys)

Complete the following details:

4. Country

Brunei Darussalam  
Indonesia  
Malaysia  
Philippines  
Timor-Leste


5. Gender

Male  
Female


6. What level of school do you teach? (please tick, which appropriate)

Pre School  
Primary School  
Secondary School




Others (please specify):.....

7. What subject(s) do you teach? (please tick, which appropriate)

Mathematics	<input type="checkbox"/>	Environmental Science	<input type="checkbox"/>
General Science	<input type="checkbox"/>	Engineering	<input type="checkbox"/>
Biology	<input type="checkbox"/>	Social Studies	<input type="checkbox"/>
Chemistry	<input type="checkbox"/>	Arts	<input type="checkbox"/>
Music	<input type="checkbox"/>	Physical Education	<input type="checkbox"/>
Moral Studies	<input type="checkbox"/>	Economic and Business	<input type="checkbox"/>

Others (please specify):.....

8. Are you aware about environmental and climate change issues?

Yes  
No

☐  
☐

If yes, how long have you known about it?

Less than one year  
1-2 years  
3-5 years

<input type="checkbox"/>	6-10 years	<input type="checkbox"/>
<input type="checkbox"/>	11-20 years	<input type="checkbox"/>
<input type="checkbox"/>	More than 20 years	<input type="checkbox"/>

Sections B, C and D are to be completed by the teachers only.

## SECTION B: AWARENESS AND KNOWLEDGE ON GREEN SCHOOL

Please tick (✓) based on your opinion with each statement referring to the level of the agreement indicates as below:

- |   |   |                   |
|---|---|-------------------|
| 1 | : | Strongly Disagree |
| 2 | : | Disagree          |
| 3 | : | Unsure            |
| 4 | : | Agree             |
| 5 | : | Strongly Agree    |





No.	Statement	Level of Agreement				
		1	2	3	4	5
1	I am able to answer learners' questions about environment, climate change and ESD					
2	I feel confident when explaining climate change concept					
3	I am able to increase learners' interest in climate change and ESD					
4	I am able to anticipate learners' misconceptions related to climate change and ESD discussed in curriculum (e.g. importance of forest, renewable energy & carbon emissions).					
5	I have the necessary skills to conduct training on ESD and green school					
6	I am able to use examples and learning aids to conduct training on green school in response to COVID-19 pandemic.					
7	I have the opportunity to participate in designing green school initiatives at my school					

## SECTION C: SCHOOL CURRICULUM

No.	Statement	Level of Agreement				
		1	2	3	4	5
1	Curriculum emphasis on green school actions					
2	Co-curriculum emphasis on green school actions					
3	Issues related to climate change and ESD discussed in curriculum (e.g. importance of forest, renewable energy & carbon emissions).					
4	Green school action-based approach equipped in curriculum to respond to the environmental issues threatening their communities (e.g. COVID-19 pandemic)					
5	Sustainable consumption habits adopted in curriculum (e.g. waste management through 3R; Reduce, Reuse & Recycle)					
6	Environmental education curriculum implemented at all levels (e.g. takes place by individual classroom teachers,					



No.	Statement	Level of Agreement				
		1	2	3	4	5
	grade level or departmental collaboration and school-wide process)					

## SECTION D: GREEN SCHOOL IMPLEMENTATION

No.	Statement	Level of Agreement				
		1	2	3	4	5
1	Green school activities incorporated in curriculum cover topics related to climate change and ESD (e.g. carbon footprint, water, waste management, 3R, energy savings, renewable energy, forests and water resources)					
2	Lack of expert teacher on environmental and climate change education					
3	Sufficient funding/financial resources in conducting green school program					
4	Active engagement/participation/communication from governmental organisations					
5	Active engagement/participation/communication from non-governmental organisations (NGO) and private agencies					
6	Active engagement/participation/communication from public and communities					
7	Support from government by providing distance learning facilities (internet access/coverage/electronic devices) in response to COVID-19 pandemic					

## SECTION E: REPRESENTATIVES

This section is to be completed by the representatives from the Ministry of Education and Policy Makers only.

Please tick (✓) based on opinion the extent to which you agree or disagree with each statement referring to the level of the agreement indicates as below:

- 1 : Strongly Disagree  
2 : Disagree  
3 : Unsure



- 4 : Agree  
5 : Strongly Agree

No.	Statement	Level of Agreement				
		1	2	3	4	5
1	Active engagement/participation/communication from governmental organisations					
2	Active engagement/participation/communication from non-governmental organisations (NGO) and private agencies					
3	Active engagement/participation/communication from public and communities					
4	Active engagement/participation/communication from international agencies					
5	National initiatives introduced in relation to ESD and green school actions implementation					
6	Support from government by providing distance learning facilities (internet access/coverage/electronic devices) in response to COVID-19 pandemic					
7	My country sufficiently respond to the impact of COVID-19 pandemic on Education for Sustainable Development (ESD) (e.g. curriculum delivery, modification of curriculum, online resources, educator competencies in online platform, assessment)					

**Thank you for completing this survey!**



## APPENDIX 3

### SLIDE PRESENTATIONS OF THE SESSIONS

#### SESSION 1: OVERVIEW OF E-TRAINING FOR TWO DAYS



### TRAINING OF TRAINERS (TOT) ON THE INTRODUCTION OF GREEN SCHOOLS ACTIONS


Sub-Regional Green School Actions for ESD 2030 and Response to Covid-19



## Overview of E-Training for Two Days

**Marlia M. Hanafiah**

3<sup>rd</sup> – 4<sup>th</sup> NOVEMBER 2020



### Agenda and Topics of the E-Training

E-TRAINING DATE	AGENDA
<ol style="list-style-type: none"> <li>Date: 3<sup>rd</sup> - 4<sup>th</sup> November 2020</li> <li>Period of Training: 2 days (two hours each day)</li> <li>Platform: Online Zoom Webinar Platform</li> </ol>	<p><b>Session 1:</b> Opening and Introduction Session</p> <p><b>Session 2:</b> Climate Emergency</p> <p><b>Session 3:</b> Lifestyle: Re-consumption and Reproduction during Covid-19 and Beyond</p> <p><b>Session 4:</b> Knowledge &amp; Skills for Practices</p>

#### TOPICS OF THE E-TRAINING

- Environmental and Climate Change Education
- Energy and Carbon Footprint; Importance of Forests; Waste 3R (Reduce, Reuse and Recycling); Smart Water for Green School
- Awareness and Behavior
- Proposal Design for Development of Green School Project
- Good Country Best Practices on Green School Project
- Discussion and Reflection



## Objectives, Outcomes & Participants of the E-Training

### OBJECTIVES

1. To enhance knowledge & awareness related to environmental and CCE and Green School concept;
2. to revitalise and strengthen the implementation of green school activities through the national-wide institutes/governmental agencies;
3. to provide practical experiences and sharing session on Green School project at the respective countries.

### OUTCOMES OF THE E-TRAINING

1. Strengthening the sub-regional capacities to build sustainable, peaceful, and resilient Southeast Asia for ESD 2030 by revitalizing green school activities;
2. Engage participants in a comprehensive, multi-session distributive learning process that builds the knowledge and skills to deliver evidence-green schools actions programs for students.

### PARTICIPANTS

1. From five cluster countries: Brunei, Indonesia, Malaysia, Philippines & Timor Leste
2. Teachers / Educators / Classroom Teachers
3. Head of School
4. Principal
5. Director / Assist. Director MOE
6. Professor

## Trainers on the Introduction of Green School Actions



### Assoc. Prof. Dr. Marlia Mohd Hanafiah (Lead Trainer)

Head, IKLIM, Institute of Climate Change, UKM  
Expertise: LCA & Carbon Footprinting of green materials and energy



### Prof. Dr. Mohd Nizam Mohd Said

Director, Institute of Climate Change, UKM  
Expertise: Habitat specialization of tropical forest vegetation & Climate Change Education



### Dr. Wan Shafrina Wan Mohd Jaafar

Research Fellow, Institute of Climate Change, UKM  
Expertise: Remote Sensing; LiDAR Forest Carbon Modelling



### Assoc. Prof. Dr. Rawshan Ara Begum

Research Fellow, Institute of Climate Change, UKM  
Expertise: Environmental and Natural Resources Economics



**SESSION 2: CLIMATE EMERGENCY  
ENVIRONMENTAL AND CLIMATE CHANGE EDUCATION**

*Training of Trainers (TOT) on the Green School Actions for Education for Sustainable Development (ESD) and Response to COVID-19 in the Sub-region of Southeast Asia organized by UNESCO JAKARTA*

**ENVIRONMENTAL AND CLIMATE CHANGE  
EDUCATION**

**Rawshan Ara Begum\* (Ph.D)**

***Institute of Climate Change (IPi)  
Universiti Kebangsaan Malaysia (UKM)***

***\* Coordinating Lead Author (CLA), IPCC 6<sup>th</sup> Assessment Report***

***3<sup>rd</sup> November 2020***

**LEARNING OUTCOMES**

**Participants will be able to:**

- 1. Gain insight about Global Climate Policy and Climate Urgency**
- 2. Distinguish the concepts of climate, climate change, mitigation and adaptation measures**
- 3. Understand the importance of Environmental and CCE in the context of SD**
- 4. Gain insight about the CCE integration into course curriculum**



## SDGS - TRANSFORM THE WORLD BY 2030

25 September 2015



**TAKE URGENT ACTION TO COMBAT CLIMATE CHANGE AND ITS IMPACTS**

5 Targets & 8 Indicators

Target 13.3: Build knowledge & capacity to meet climate change

Indicator 13.3.1: number of countries that have integrated mitigation, adaptation, impact reduction and early warning into primary, secondary and tertiary curricula.

Education for Sustainable Development is a key enabler to achieve all 17 SDGs

## GLOBAL CC POLICY: PARIS AGREEMENT

Paris CC Conference, Nov 30-Dec 12, 2015: COP21; CMP11



- sets out a global action plan to put the world on track to avoid dangerous CC by **limiting global warming to well below 2°C**, and, if possible, below 1.5°C



## WEATHER VS. CLIMATE / CLIMATE CHANGE

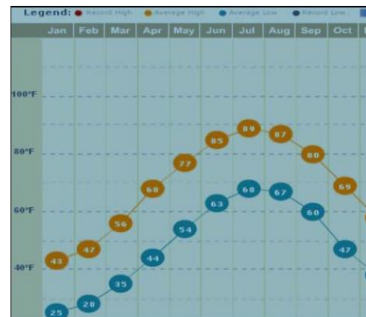
Actual state of the atmosphere at a given place  
Weather changes from hour to hour/day to day.

### Weather



Average weather pattern in a place over a period ranging from months to years

### Climate



When the average pattern of weather over many years changes i.e. a sign of changes climate

### UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE (UNFCCC):

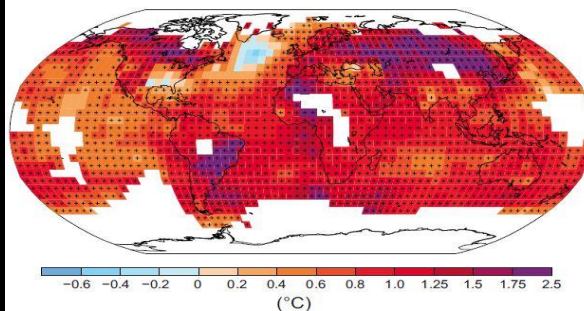
Climate change as 'a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods'.

## GLOBAL CLIMATE CHANGE

### INTER GOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC)

- Warming of the climate system - unequivocal; many of the observed changes - unprecedented.
- Atmosphere & ocean - warmed; amounts of snow & ice - diminished; sea level - risen, concentrations of GHGs - increased.

Almost the entire globe experienced surface warming



THE GLOBAL MEAN TEMPERATURE IN 2018 IS APPROXIMATELY **1°C ABOVE** THE PRE-INDUSTRIAL BASELINE



## HUMAN-INDUCED/CAUSED FACTORS TO CC

### Causes of CC due to human activities:

Burning of fossil fuels

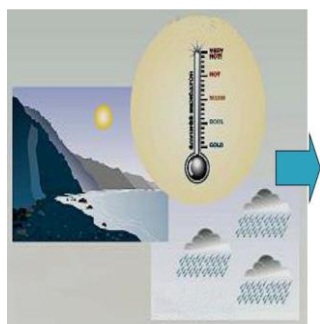
Conversion of forest land/  
Land use

Agriculture & Industry



## IMPACTS OF CC

### Consequences of CC



CLIMATE-RELATED AND GEOPHYSICAL DISASTERS  
CLAIMED AN ESTIMATED 1.3 MILLION LIVES  
BETWEEN 1998 AND 2017



#### Water resources

Water supply, water quality, water use, river flow, ground water...



#### Forests

Composition, health and productivity...



#### Agriculture & food security

Crop yields, irrigation demands...



#### Biodiversity & ecosystems

Species, natural areas, modification of ecosystems...



#### Coastal areas

Erosion, inundation, cost of prevention...

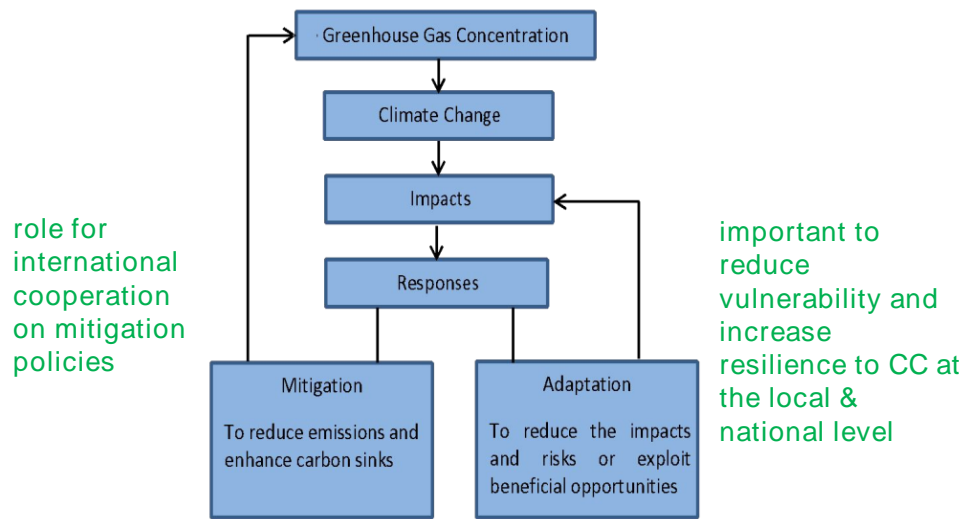


#### Human health

Health problem, Infectious diseases, human health settlements...



## CC RESPONSES: MITIGATION & ADAPTATION



COVID 19 – increases high risk & vulnerability of CC

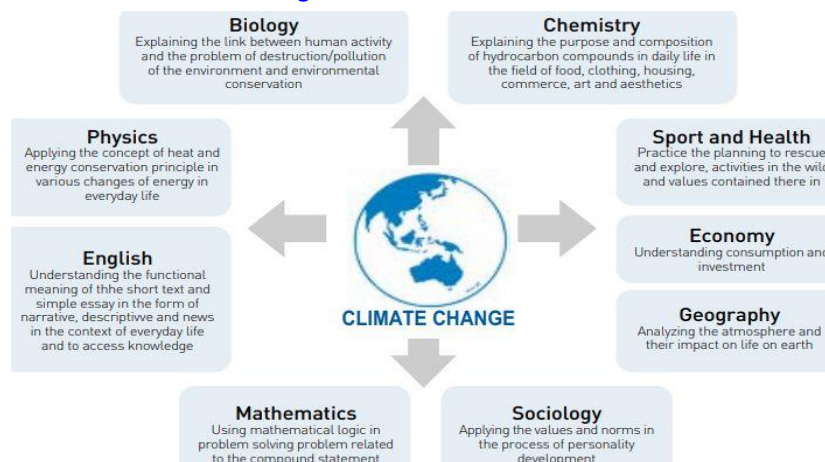
## ENVIRONMENTAL & CC EDUCATION

- ❑ Environmental & Climate Change becomes the main issues raised in the ESD
- ❑ Knowledge generation through education and training in addressing issues of environment and climate change is crucial.
- ❑ Acquire ethical values, behaviours, attitudes and skills that would be useful to respond to the environmental and climate change challenges threatening to all of us and our communities.
- ❑ **Teachers play an important role:**
  - in teaching and disseminating information on environment and climate change issues to their students.
  - not only teaching their subject content but also to develop future citizens who are conscious of their actions towards the environment.
  - to support Environmental & Climate Change Education for the new/future generation.



## INTEGRATION OF CLIMATE CHANGE ACROSS FIELDS OF STUDY

### Formal Education – integrated in curriculum & co-curriculum activities



**Informal Education** – study tour, exploration, experiences, mass media, internet, involved in youth and community organizations

### UNESCO Jakarta's Initiative "Revitalizing Green School Actions for Education for Sustainable Development (ESD) for 2030 and Education Response to COVID-19 to Build Sustainable, Peaceful, and Resilience in Southeast Asia".

- a Sub-Regional Forum on ESD: Revitalizing Green School Actions for CC to Build Sustainable, Peaceful and Resilient Southeast Asia, 22 Sept, 2020.

#### Country initiatives to incorporate ESD in the curriculum & co-curriculum:

##### Brunei Darussalam

National policy and strategy i.e. National Education System for the 21<sup>st</sup> century (SPN21)  
EcoSquad introduced as one of the green school activities

##### Indonesia

initiated Adiwiyata Green Schools (AGS) program since 2006

Schools under the AGS program are designed to obtain substantial science, norms, and ethics for the basis of human wellbeing and the models of SD.

##### Malaysia

Malaysia Education Blueprint 2013-2025, that are translated via curriculum & co-curriculum activities.

Sekolah Lestari Program

##### Philippine

Sustainable Green School Program "Gulayan Sa Paaralan" as National Greening Program.

##### Timor-Leste

National Education Strategic Plan 2018-2023

ESD via extra-curricular activities, namely School Farming "Horta Eskolar"



## CONCLUDING REMARKS

ESD/CCED plays a crucial role in:

Promoting collaborative learning outcomes

Encouraging teachers/students to work together

Increasing the awareness of environmental and climate change issues

include learning in all context, for all learners no matter the gender, location, socio-economic status or connection to the internet

Empowering learners about Global Citizenship Education and to become active promoters of more peaceful, tolerant, inclusive, secure and sustainable societies.

Developing positive attitudes towards the living environment and environment as a whole

Providing the knowledge and necessary skills to take action

Enable learners to make informed decisions to protect environment, lives and livelihoods.

## ENERGY AND CARBON FOOTPRINT



United Nations  
Educational, Scientific and  
Cultural Organization

### TRAINING OF TRAINERS (TOT) ON THE INTRODUCTION OF GREEN SCHOOL ACTIONS

Sub-Regional Green School Actions for ESD 2030 and Response to Covid-19



### Climate Emergency : Energy and Carbon Footprint

**Marlia M. Hanafiah**

3<sup>rd</sup> – 4<sup>th</sup> NOVEMBER 2020





## Training Outline

### Energy and Carbon Footprint

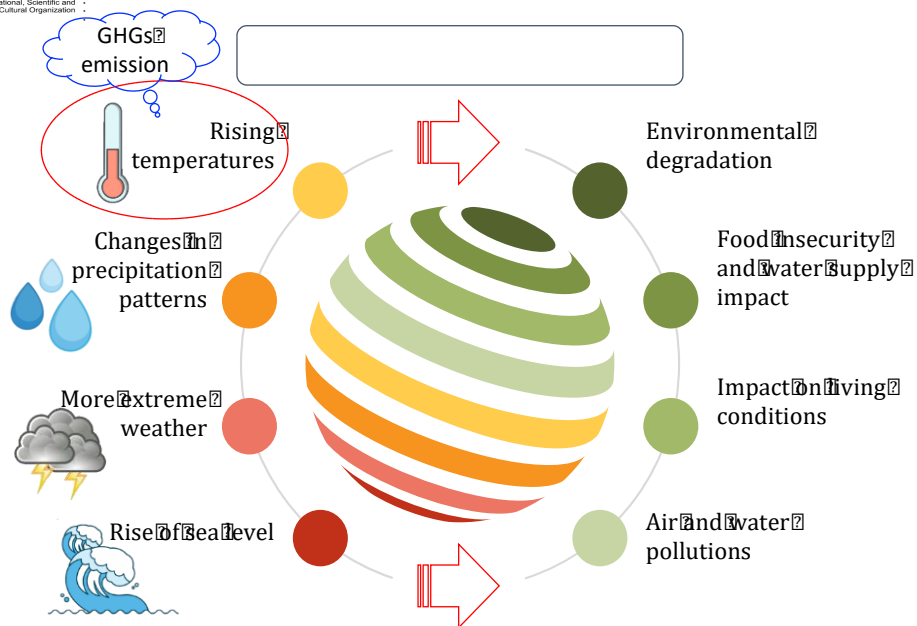
- What is Carbon Footprint and GHG-Energy Nexus?
- How to Measure Carbon Footprint?
- What are the Causes and Effects of GHG Emissions?
- What are the Solutions to Reduce Carbon Footprint?
- How to Implement Green School Initiatives?

14

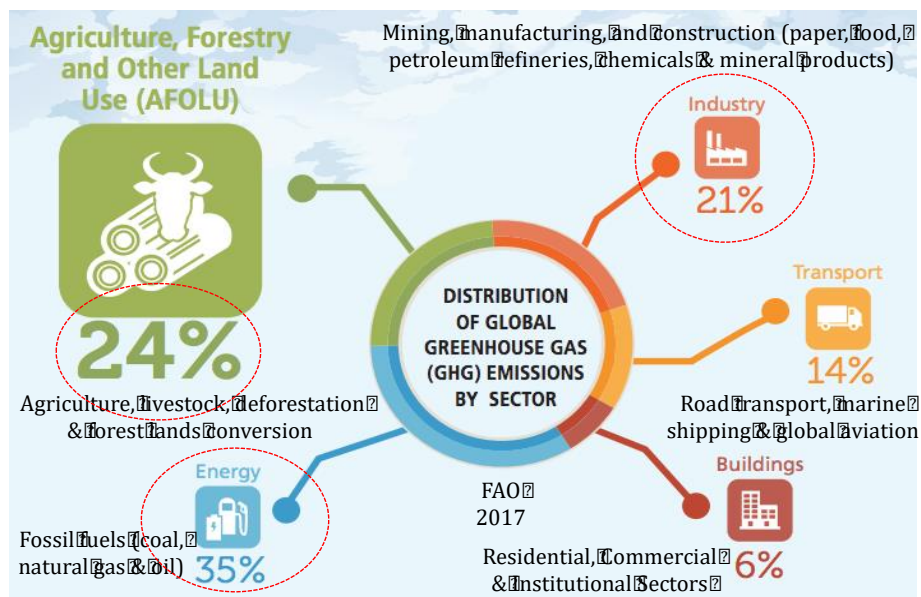
EDUCATION

5

## Effects of Climate Change



## Carbon Intensive Industries



## GHG Emissions - ASEAN Perspective

### ADB (2015): Southeast Asia & the Economics of Global Climate Stabilization

Indonesia, Malaysia, Philippines, Thailand & Vietnam

- 90% of GHG emissions in Southeast Asia
- Emissions growth in the region - as fast as economic growth, with nearly 5% annual increases over 1990–2010

2010 Emissions	Indonesia	Malaysia	Philippines	Thailand	Viet Nam	Total	Share (%)
Land use (MtCO <sub>2</sub> eq)	1,374.80	163.70	48.69	71.06	47.68	1,705.94	55.0
All transportation (MtCO <sub>2</sub> eq)	1,08.27	49.74	27.02	70.93	33.26	289.22	9.3
Electricity/heat (MtCO <sub>2</sub> )	150.16	105.25	34.33	97.30	42.37	429.41	13.9
Manufacturing/construction (MtCO <sub>2</sub> )	105.72	30.59	12.31	65.46	44.51	258.59	8.3
Other fuel combustion (MtCO <sub>2</sub> eq)	65.57	11.29	10.83	25.83	23.04	136.56	4.4
Fugitive emissions (MtCO <sub>2</sub> eq)	47.85	21.32	1.03	8.13	12.55	90.88	2.9
Others (MtCO <sub>2</sub> eq)	78.24	50.69	21.33	32.64	37.44	220.34	7.1
<b>Total GHG emissions (MtCO<sub>2</sub>eq)</b>	<b>1,928.02</b>	<b>425.32</b>	<b>152.02</b>	<b>355.77</b>	<b>237.82</b>	<b>3,098.95</b>	
Per capita GHG emissions (tCO <sub>2</sub> eq)	8.01	15.04	1.63	5.36	2.74	6.01	

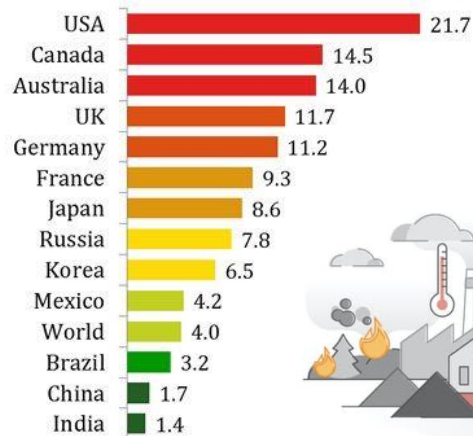
Source: ADB, 2015

Land-use emissions (all "agriculture" lumped here) - evident in Indonesia's emissions profile, where this accounts for nearly 3/4 of 2010 emissions  
Malaysia – 38%



## Individual Carbon Footprint

### Personal Carbon Footprints: t CO<sub>2</sub>e (2001)



Note: The personal carbon footprint represents the combined emissions from personal consumption, including housing, travel, food, product and service emissions. It excludes capital, government and land use emissions.

Sources: Hertwich & Peters 2009

Shrink That Footprint

11

## What is Carbon Footprint and how to measure it?

CF is the measure of carbon dioxide emissions directly and indirectly caused by an activity or accumulated over the life stages of a product

All GHGs combined into a cumulative, where non-CO<sub>2</sub> emissions such as CH<sub>4</sub> and N<sub>2</sub>O are converted to CO<sub>2</sub> equivalents (IPCC).

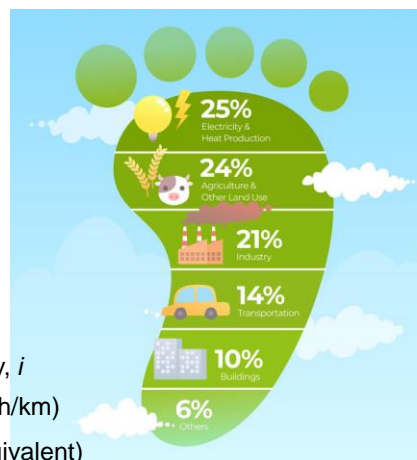
$$CF_i = P_x \cdot EF_{CO2eq}$$

Where:

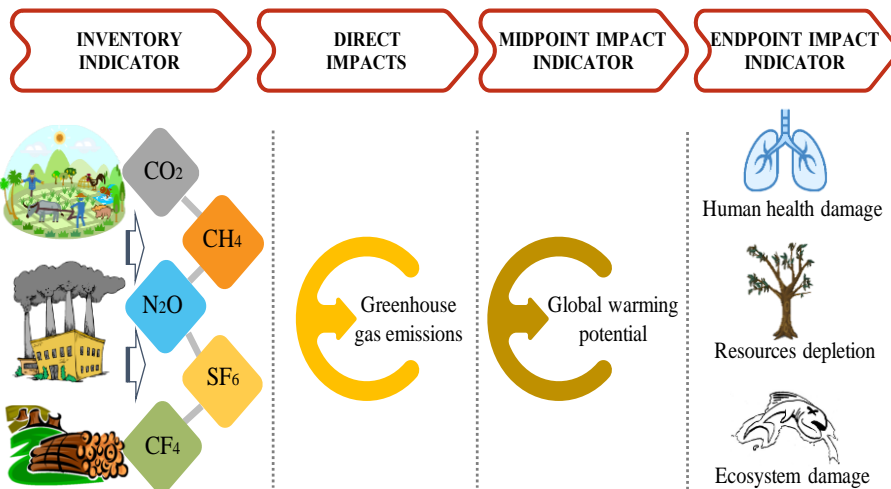
$CF_i$  = carbon footprint of a given activity,  $i$

$P_x$  = activity data,  $x$  (mass/volume/kWh/km)

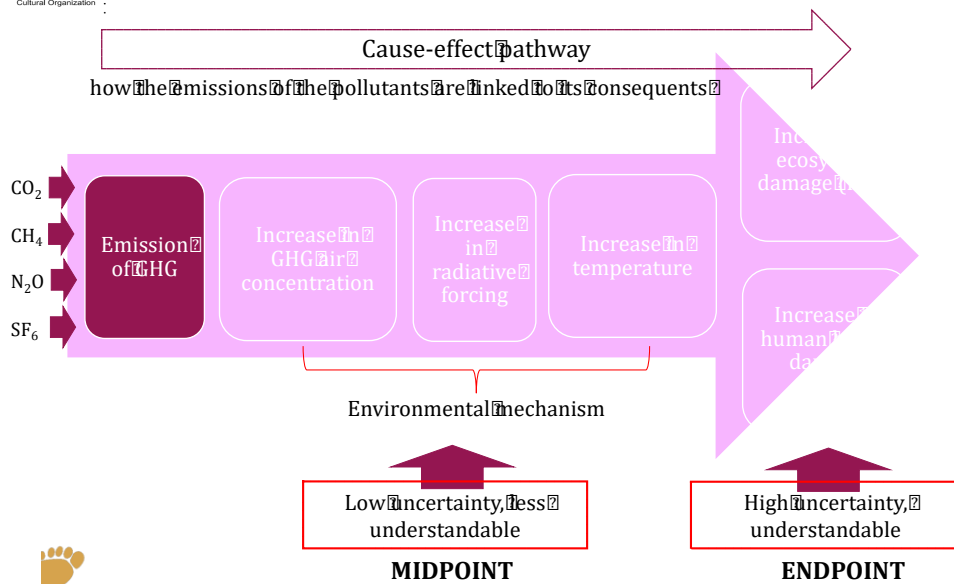
$EF_{CO2eq}$  = emission factor (per unit CO<sub>2</sub> equivalent)



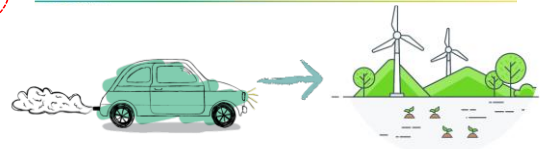
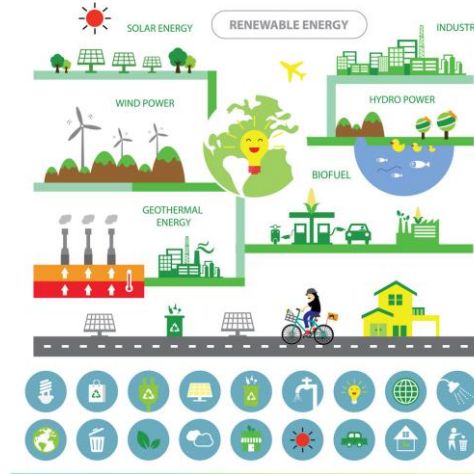
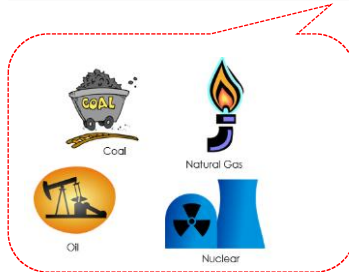
## What are the Causes and Effects of GHG emissions?



## What are the Causes and Effects of GHG emissions?

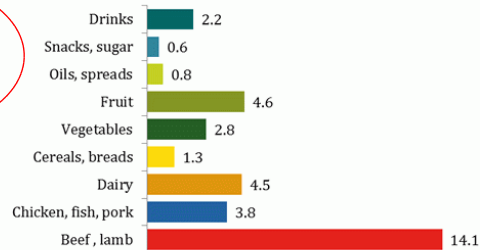


## Shifting from non renewable to renewable energy resources can reduce carbon footprint (Solution)



Which one is better for the environment?

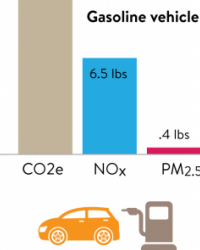
### Carbon Intensity of Eating: g CO<sub>2</sub>e/kcal



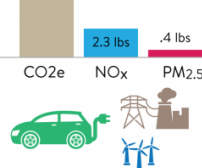
### Our Choices Matter



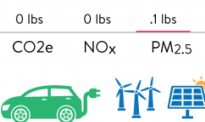
11,000 lbs



EV charged on grid  
Mix of sources:  
coal, nuclear,  
wind, gas, etc.



EV charged with renewables



## Green School Activities related to Energy and Carbon Footprint

### Activity 1- Renewable or Not

Students often do not know which resources are renewable and which are nonrenewable. In this activity, students will learn what these terms mean and discover why sustainable use of natural resources is so important

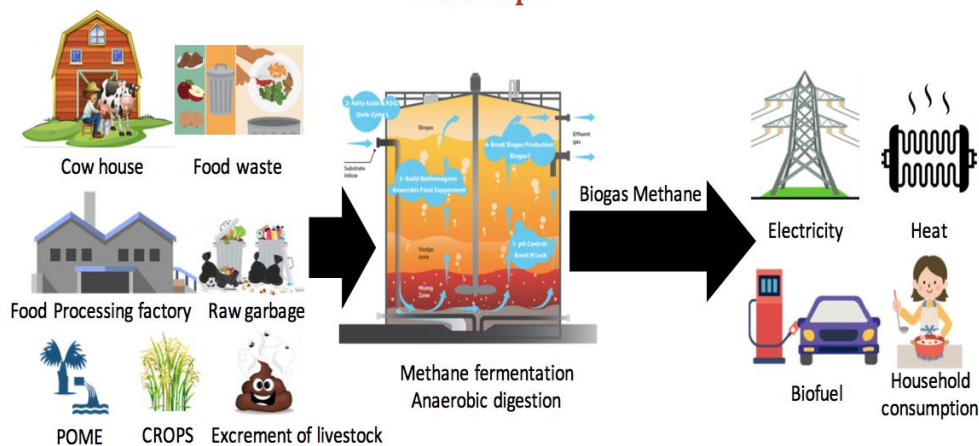
Through activities, interactive models, group challenges, and experiments, students will:

- Learn about the science behind climate change
- Examine the role of renewable energy sources in reducing carbon emissions
- Participate in hands-on experiments to model sun, wind, hydro, biofuels, and wave power
- Develop critical decision-making skills through hands-on teamwork



## Green School Activities related to Energy and Carbon Footprint

### BIOGAS: From Waste to Wealth Concept

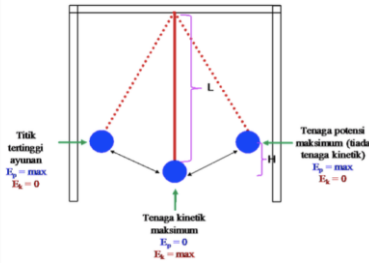




## Green School Activities related to Energy and Carbon Footprint

### Activity #2 - Energy Transfer

Using pendulum to explain the concept of energy transfer



## Green School Activities related to Energy and Carbon Footprint

### 10 TIPS FOR REDUCING YOUR CARBON FOOTPRINT

1. Carpooling at least once a week.

2. Go one week without using disposable cups given to you at coffee shops.

3. Try turning off the lights in an empty room at home or in your dorm.

4. Instead of eating lunch on campus try packing a waste-free (meaning no plastic) lunch.

5. Unplug your computer every night for one month if you have a computer.

6. Use only cold water to do your laundry for one month.

7. Try skipping a trip to the store and shop online.

8. Try reducing your printing a little bit each day and only print what is absolutely necessary.

9. Cut your shower time by two minutes for one month.

10. Reduce your bottled water consumption for seven days.

### Activity #3 - Save Energy

There are different sources of energy. Some are renewable; some are nonrenewable. In this activity, your students will learn about the different sources, advantages, and disadvantages of their use, and how energy is used in their daily lives.

## IMPORTANCE OF FORESTS





# The Importance of Forests

Wan Shafrina Wan Mohd Jaafar  
ToT on Green School Actions for  
ESD and Response to COVID-19  
3<sup>rd</sup> November 2020  
Zoom Webinar



3<sup>rd</sup> November 2020

## Introduction to Climate - Forestry

### What is forest?

UNFCCC: Forest is a minimum area of land of 0.05-1.0 hectares with tree crown cover of more than 10-30 per cent with trees having the potential to reach a minimum height of 2-5 metres.

The livelihoods and food security of many of the world's poorest people depend on forests and trees.



Around 40% of the extreme poor-  
Some 250 million people – live in  
forest and savannah areas



Around 1/3 of the global population-  
About 2.4 billion people – used wood to  
Provide basic energy services such as  
Cooking, boiling water & heating



Forests supply about 40% of global  
Renewable energy in the form of  
Woodfuel- as much as solar,  
Hydroelectric and wind power combined



## FORESTS ARE IMPORTANT CARBON SINKS

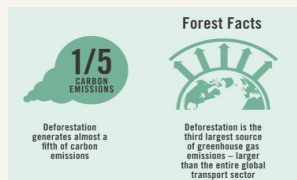
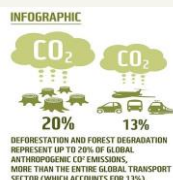
- Forests play an important role in the concentration of Green House Gas (GHG) in the atmosphere. They absorb 2.6 billion tonnes of carbon dioxide each year – roughly one-third of the carbon dioxide released by the burning of fossil fuels (CIFOR 2017)



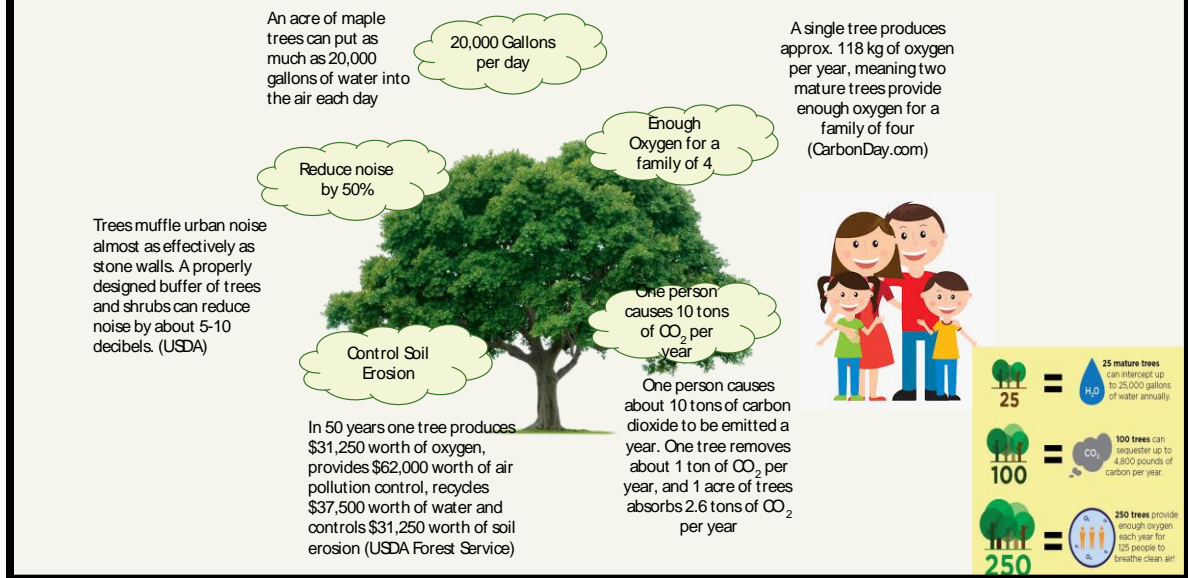
## 4 QUALITY EDUCATION

### FORESTS ARE IMPORTANT CARBON SINKS

- Natural forests account for 93% of total forest area (FAO 2015).
- Globally, natural forest is decreasing and planted forest area is increasing
- The pace of this loss is slowing. In 1990s, the annual net loss of natural forests was 10.6 million ha. Between 2010 and 2015, this rate declined to 6.5 million ha.
- Deforestation causes nearly 20% of global emission
- Progress towards more sustainable forest management- 96% of world's forests are now covered by both policies and legislation

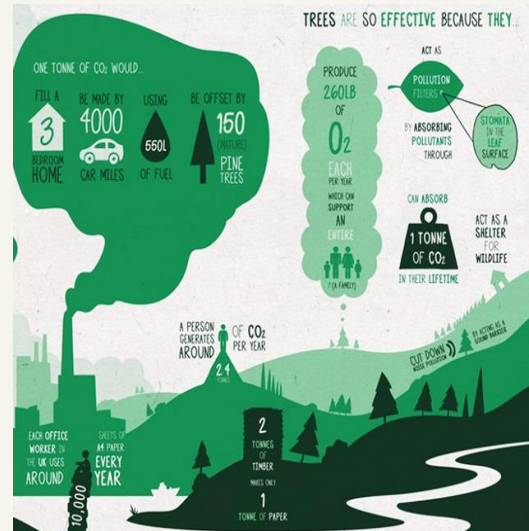
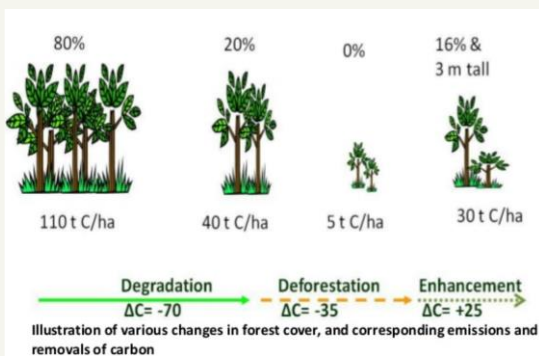


## Scenario on how importance is Tree and Forest



## 4 QUALITY EDUCATION

### Forest Facts



## ECOSYSTEM GOODS AND SERVICES PROVIDED FORESTS

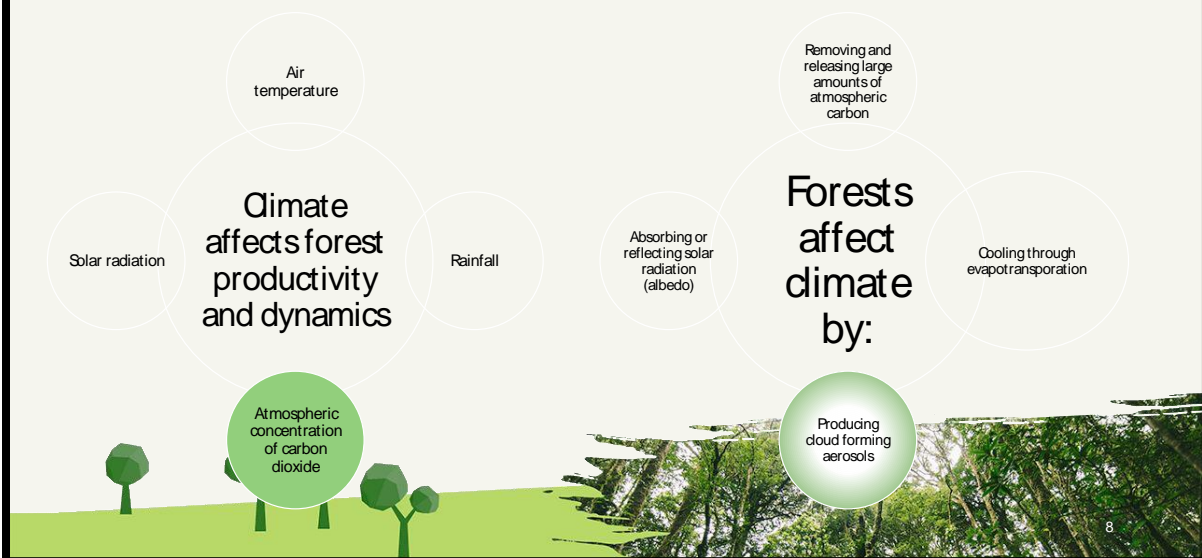
- Forests and Trees deliver important ecosystem good and services, as well as economic opportunities for forest-dependent communities. These fall into 6 areas:

1. Biodiversity
2. Ecological Services
3. Cultural Vitality
4. Food Security and Nutrition
5. Forest Products
6. Livelihoods.



## Relationship between Climate Change and Forests

- There is a close interrelationship between climate change and forests





## SUSTAINABLE FOREST MANAGEMENT

- Sustainable Forest Management (SFM) is a universally accepted concept that guides forest policies and practices worldwide.
- Aims to maintain and enhance economic, social and environmental values of all types of forests (UN resolution 62/98).
- SFM has seven thematic elements:
  1. Extent of forest resources
  2. Forest Biodiversity
  3. Forest health and vitality
  4. Productive functions of forest resources
  5. Socio-economic functions of forests
  6. Protective functions of forest resources
  7. Legal policy and institutional framework



## 4 QUALITY EDUCATION

### The Impacts of Climate Change on Forests

- There are two main ways that forests contribute to climate change adaptation:
  1. By providing ecosystem services that reduce the vulnerability of local communities and broader societies to climate change
  2. By providing the choice of climate change adaptation measures to overcome the negative effects of climate change on forests and to maintain forest ecosystem functions.



### The impacts of Forests on Climate Change

- Forests play in important roles as both sinks and sources of carbon dioxide

1. Through respiration, decomposition and combustion, forest release carbon dioxide
2. Deforestation and Forest Degradation account for an estimated 11% of global GHGs, mainly carbon dioxide, methane and nitrous oxide
3. Through photosynthesis forests absorb carbon dioxide and store it as carbon
4. Forest vegetation and soils contain about half the planet's terrestrial carbon, and terrestrial ecosystems have the potential to sequester more carbon dioxide than they currently do
5. Forest's capacity as a carbon sink increases with its rate of growth and its ability to retain the carbon on a permanent basis.



4 QUALITY EDUCATION

### The need for mitigation

Climate change mitigation measures are urgently needed to help reduce anthropogenic effects on climate. To achieve this, requires:

1. Coordinated actions across crop, livestock and forestry production systems
2. Addressing context-specific drivers causing deforestation and conversion such as infrastructure development
3. Comprehensive approach supported by sound policies and appropriate legislative and governance frameworks.

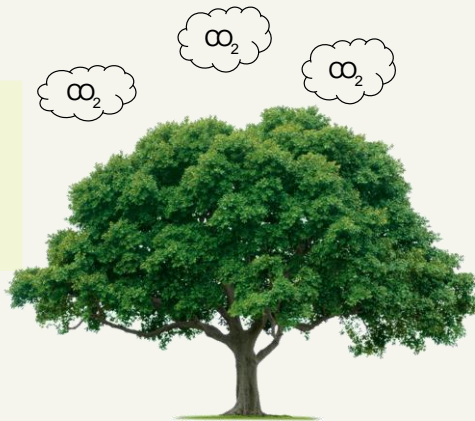


## Recognition of the carbon storage services of forests

Changes in temperature and precipitation affect the potential of forests to store and sequester carbon.

The more carbon that is stored in forests, the less there is in the atmosphere

Thus increasing stocks of forest carbon will help to reduce the rate of global warming



The capacity of forests to store and sequester likely to be reduced by longer dry season and increasing temperatures and atmospheric carbon dioxide concentrations. Forest may become carbon sources rather than sinks.

4 QUALITY EDUCATION

## Forest sector mitigation strategies

IPOC's Fifth Assessment Report states that the most cost-effective mitigation options for forestry are: afforestation, sustainable forest management and reducing deforestation (IPOC, 2014).

There are four main categories of mitigation options in the forest sector:



Reduce Deforestation



Reduce Forest Degradation



Increase carbon density Of forests



Increase Wood Products





## Green School Activities/ Programs related to Forests



Tree Planting at school level



Tree Planting – Mangrove species



Sekolah Lestari – Anugerah Alam Sekitar Sustainable School – Environmental Award

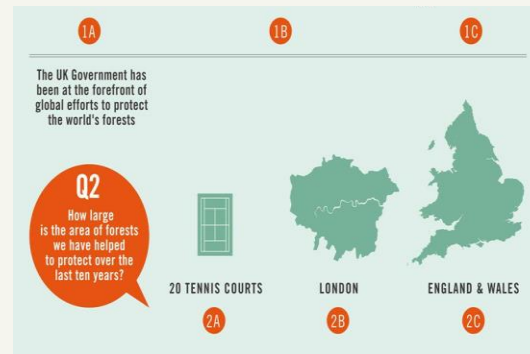
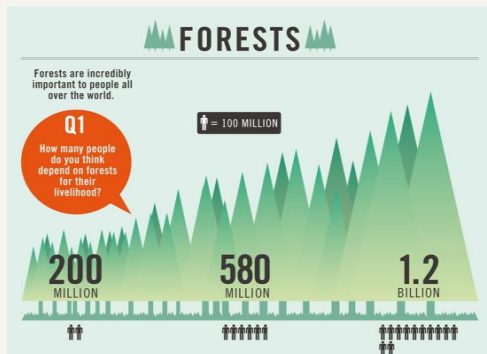


School Herbs Garden



4 QUALITY EDUCATION

## Brain Exercise



## SESSION 3: LIFESTYLE: RE-CONSUMPTION AND REPRODUCTION DURING COVID-19 AND BEYOND WASTE 3R (REDUCE, REUSE AND RECYCLING)



**TRAINING OF TRAINERS (TOT) ON THE INTRODUCTION OF GREEN SCHOOL ACTIONS**

United Nations Educational, Scientific and Cultural Organization


Sub-Regional Green School Actions for ESD 2030 and Response to Covid-19




*Lifestyle: Re-consumption and Reproduction during Covid-19 and Beyond : Waste 3R (Reduce, Reuse and Recycling)*

**Marlia M. Hanafiah**

**3<sup>rd</sup> – 4<sup>th</sup> NOVEMBER 2020**



### Training Outline



**Waste 3R (Reduce, Reuse and Recycling)**

- What is Waste and its Types?
- What is Meant by Waste Management Hierarchy?
- What are the Causes and Effects of waste disposal?
- How to Manage Waste during Covid-19 and Beyond?
- How to Implement Green School Initiatives?





United Nations Educational, Scientific and Cultural Organization

## What is Waste and its Types?

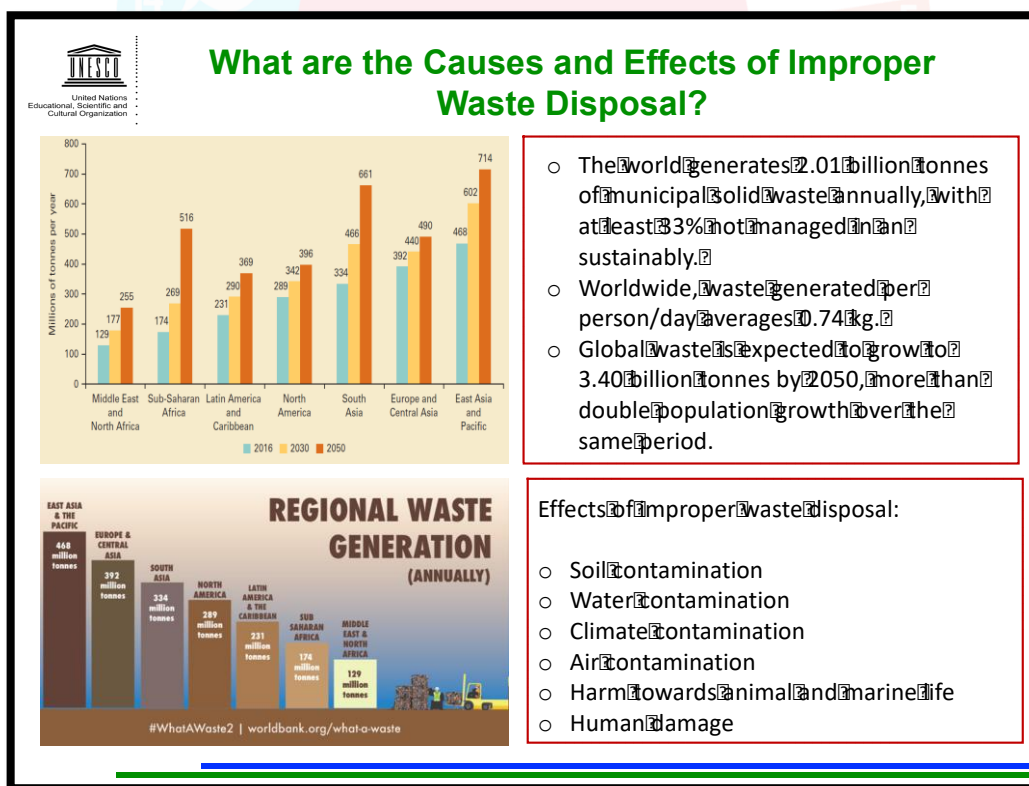
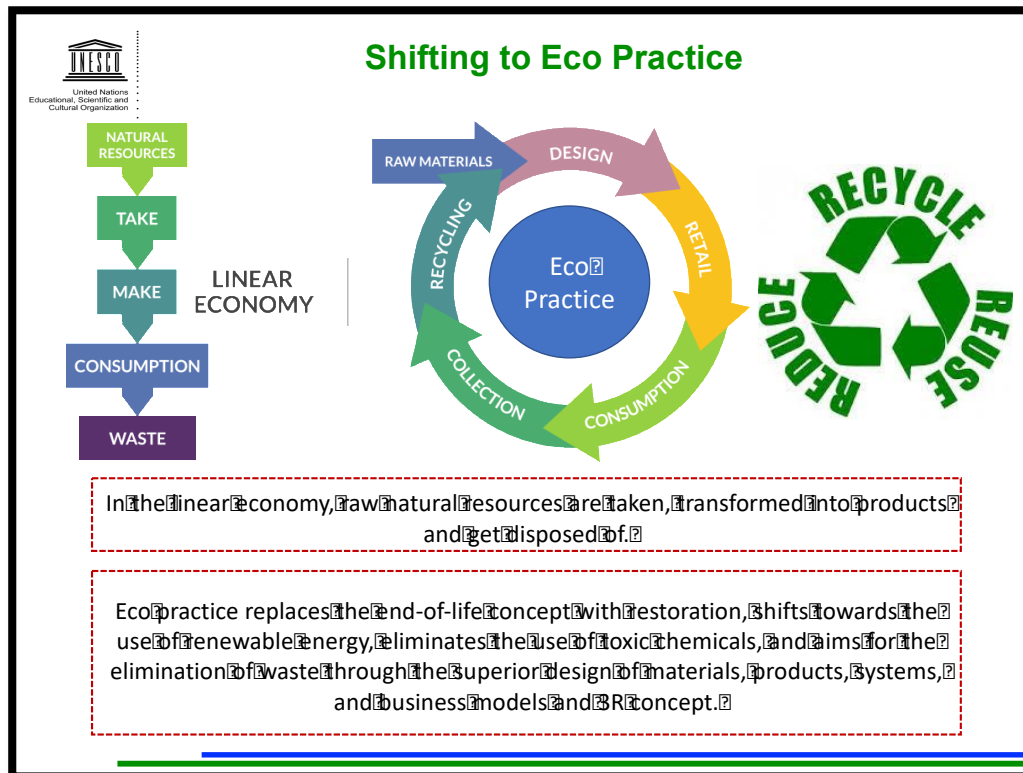
Unwanted/unusable materials, regarded as substance which is of no use.

### Sources and Types of Waste

Industrial, Commercial, Domestic, and Agricultural. Biodegradable waste/Non-biodegradable waste

ORGANIC PAPER GLASS PLASTIC METAL







## Green School Activities related to 3R



### Activity #1 - Recycle or Not

Students often do not know which materials are recyclable or reusable. In this activity, students will learn what these terms mean and discover why sustainable use of natural resources is so important.

- Having a mini recycling center.
- Initiate an annual environment week.
- Perform manageable waste managements.
- Have monthly competition for recycling creative innovation.
- Allow students to take part at national level events on recycling.
- Collaboration with companies that have big green initiative plans.



## Green School Activities related to 3R

Among the subjects discussed were issues such as:

- How much solid waste are we generating everyday?
- What type of solid waste are we producing?
- Where does the solid waste go after we discard them?
- What materials can and cannot be recycled?
- Why is it important to have a proper solid waste management practice?
- What are the impacts of solid waste on the environment, human health and the economy?
- What is 3R (Reduce, Reuse, Recycle)?
- What are the roles of students in contributing towards a sustainable environment?



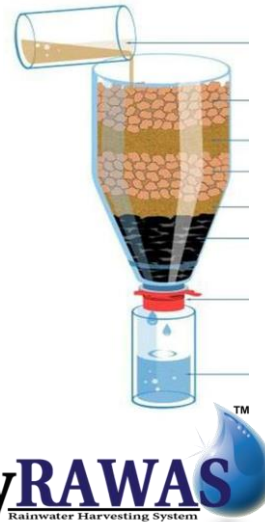
## Other Green School Activities



## Other Green School Activities



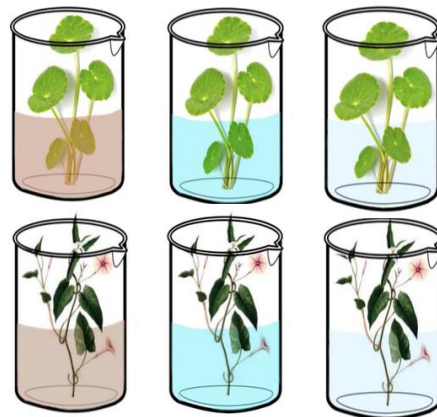
## Other Green School Activities



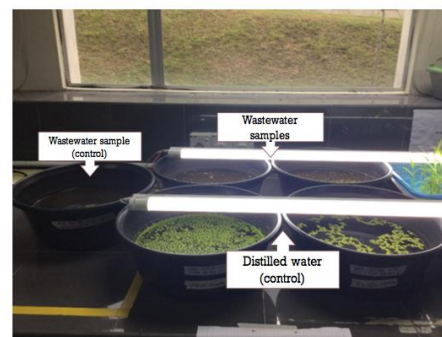
**MyRAWAS**  
 Rainwater Harvesting System

## Other Green School Activities

### PHYTOREMEDIATION: From Contamination to Purification Concept




Before treatment → After treatment



## SMART WATER FOR GREEN SCHOOL





## The Global Water Crisis

- The world is gripped by major water crisis.
- Nearly 3 out of 4 people affected by water stress globally live in Asia.
- Up to 2 billion people throughout the region will face severe water scarcity by 2050. Countries in the ASEAN bloc are on the frontlines with Thailand, Philippines, Vietnam and Indonesia facing water shortages with an increasing frequency.
- Countries in the region must priorities water innovation and develop efficient, affordable ways to manage water before it's too late.





## What is Smart Water for Green Schools?

- A program offers concrete solutions to improving the lives of people affected by “water poverty” through equipping schools with water facilities and systems.
- A practical measure for helping realise the universal Human Right to Safe Drinking Water and Sanitation through four main activities:
  1. Equipping Schools with rainwater harvesting systems
  2. Providing schools with ecological sanitation facilities
  3. Installing other water systems, such as wells and boreholes, for wider community; and
  4. Developing environmental, hygiene and health education programmes.



## Smart Water Green Schools – The Benefit

- There are a few smart water green schools program have launched successfully worldwide (e.g. Ghana, Bolivia, China, Ukraine, Brazil, Argentina and Mexico). Targeted to:
  1. Empowers communities to secure their own water supply
  2. Reduce the risk of deadly waterborne diseases
  3. Promotes the sustainable use of water resources
  4. Increases school attendance, girls education and gender equality





## Smart Water Green Schools Program

- Central component of the initiatives are providing training and employment of local people to build, maintain and repair new facilities as well as education and awareness-raising.
- This is usually done by work **with local authorities, teachers and experts** to promote **importance of sustainable water management** and **good hygiene** amongst students at schools involved.
- Providing water and sanitation services to schools engages **children**, their **parents** and other community members in **improving water security** and maintaining their role as guardians of transformational change.

### Smart Water for Green Schools: Four Areas of Activity

Smart Water for Green Schools works with local partners to identify communities struggling with water poverty and, through simple and sustainable actions, transforms their schools into a source of pride and hope in the eyes of students, teachers, parents and the entire community

#### 1) Capturing rainwater

Smart system for optimizing available water resources. Children and teachers use the captured water for washing hands. Regular hand washing – reduce the risk of diarrhea and having clean water keeps children safely in school

#### 2) Providing Privacy, dignity and security (Ecological Latrines)

In Ghana e.g. builds ecological latrines in schools. The latrines keep human waste away for immediate environment and to be used for agricultural purposes. Separate latrines according to gender helps increase enrolment of female students.

#### 3) Providing more water by building additional water systems

Smart water for green school programs equips schools and villages with additional water supply systems such as boreholes and wells.

#### 4) Educational Programmes: water and hygiene awareness-raising

Implements hygiene and sanitation education and provide environmental awareness programmes in schools.





## Smart water activities for Green School

Water Conservation Program for Schools in Malaysia – Initiated by Global Environment Centre and HSBC Bank in partnership with Malaysia Ministry of Education. Project name: DRH20 under RIVER Ranger Program



Water saving



Sg. Kinta River Clean Up and

## Smart water activities for Green School

Tun Syed Sheh Shahabudin Sc Secondary School launched Green School Projects since 2010

(D) Resource Management

This school harvesting the rainwater used for flushing the toilet, Replenish fish pond and for Watering plants



We collect 160 gallons of rain water per full harvest through our Rain Water Harvesting System  
Rain water is used for flushing the toilet, replenish the fish pond and for watering the plants.



## AWARENESS AND BEHAVIOR

*Training of Trainers (TOT) on the Green School Actions for Education for Sustainable Development (ESD) and Response to COVID-19 in the Sub-region of Southeast Asia organized by UNESCO JAKARTA*

## AWARENESS AND BEHAVIOR

**Rawshan Ara Begum\* (Ph.D)**

***Institute of Climate Change (IPi)  
Universiti Kebangsaan Malaysia (UKM)***

***\* Coordinating Lead Author (CLA), IPCC 6<sup>th</sup> Assessment Report***

***3<sup>rd</sup> November 2020***

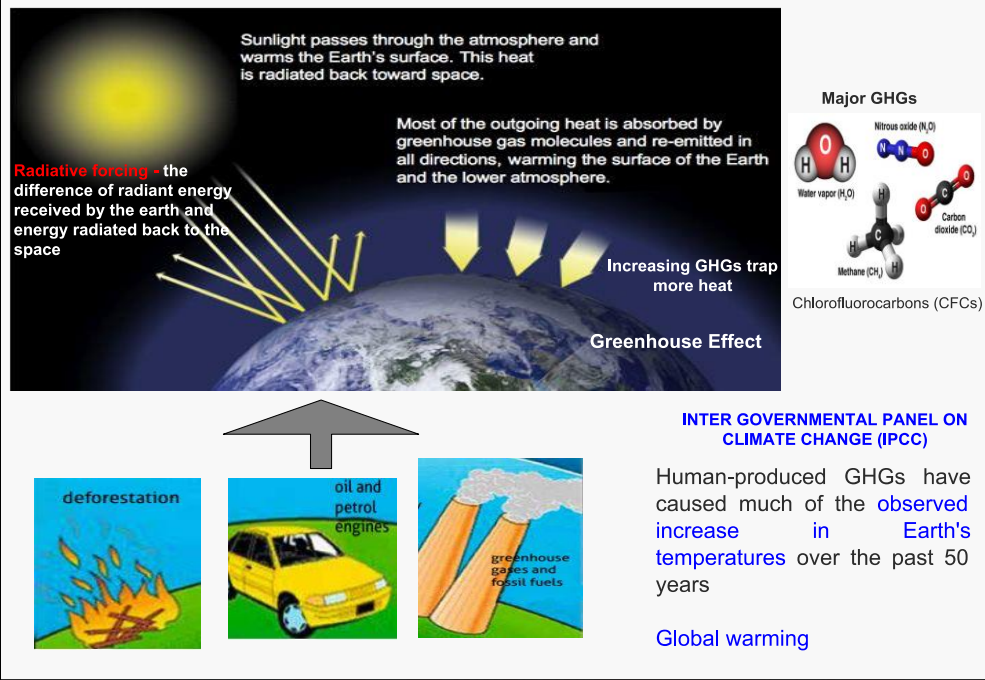
## LEARNING OUTCOMES

**Participants will be able to:**

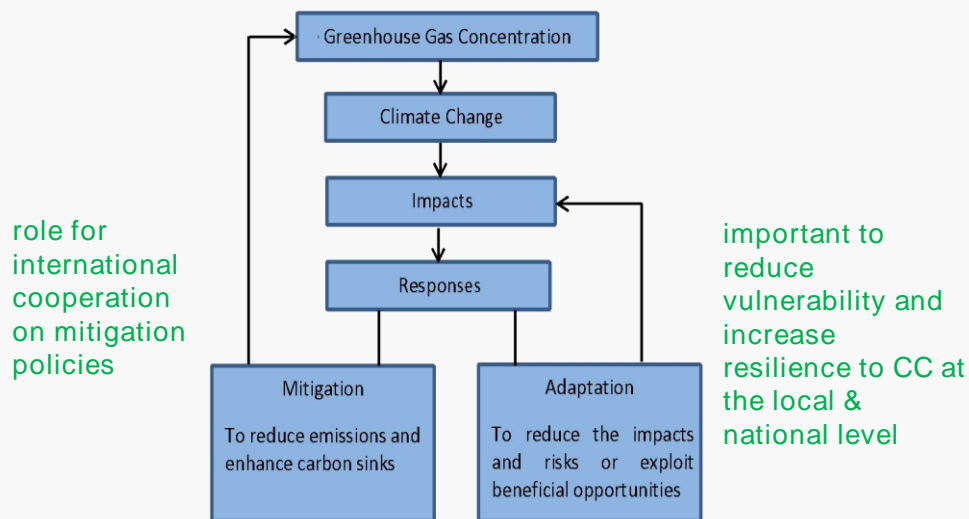
- 1. Gain insight about how human activities caused to environmental and global warming**
- 2. Distinguish the examples of CC mitigation and adaptation measures**
- 3. Understand the importance of awareness and behavioural changes in the context of CCESD**
- 4. Gain insight about examples and practices for green school**



## Human activities caused to Environment / Global Warming



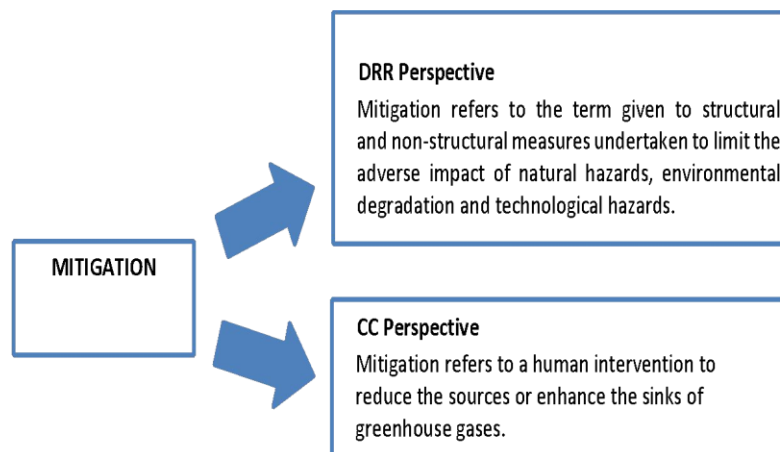
## CC RESPONSES: MITIGATION & ADAPTATION



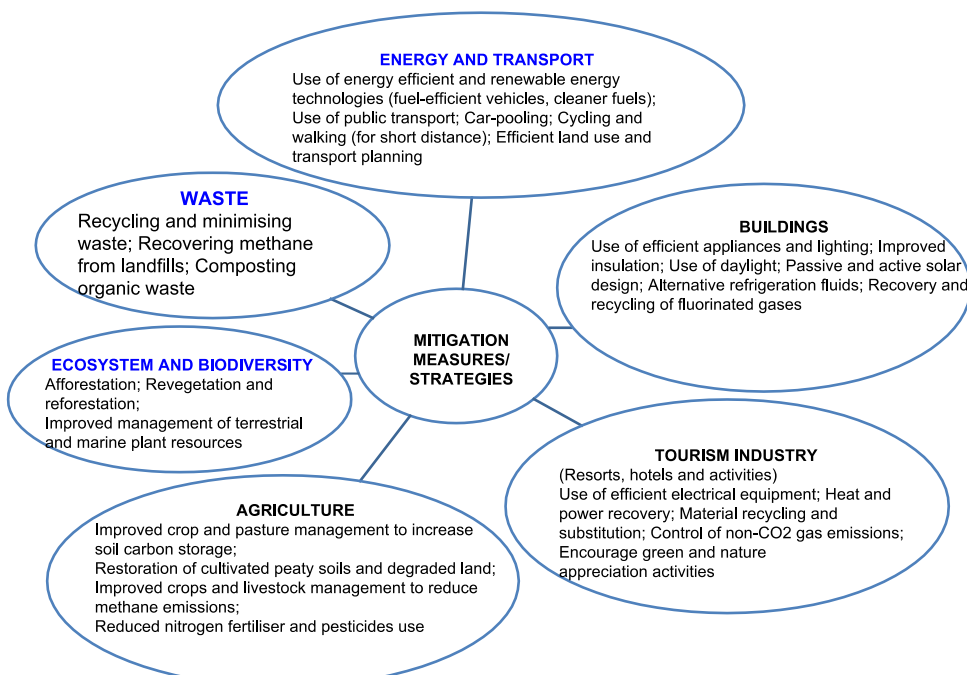
COVID 19 – increases high risk & vulnerability of CC



## THE WORD 'MITIGATION' USED FOR DIFFERENT MEANING

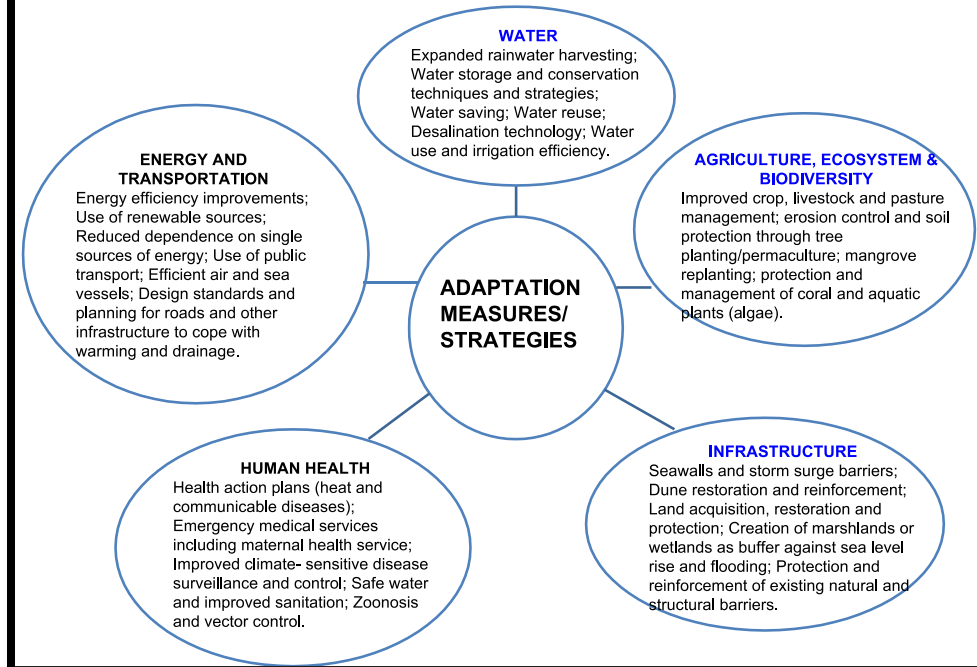


## EXAMPLES OF MITIGATION MEASURES





## EXAMPLES OF ADAPTATION MEASURES



## Disaster Risk Reduction

DRR - a systematic approach to identifying, assessing and reducing the effects and risks of natural disasters such as floods, earthquakes, landslides, storms, cyclones, volcanic eruptions on people and communities.

### Community-based adaptation

Community-based adaptation to CC is a community-led process, based on communities' priorities, needs, knowledge, and capacities, which should empower people to plan for and cope with the impacts of CC.

Planned and proactive community based adaptation is gaining acceptance and support as an approach to enabling communities to build resilience to the impacts of CC.



## AWARENESS

- ☐ Although Governments and policy makers have been taking leadership in mitigating and adapting to climate change, however, addressing climate change requires contributions from all of us.
- ☐ Individual awareness, efforts and actions can be part of the solution to the urgent problems of CC.
- ☐ Share individual's (your) ideas and knowledge with community members including family, friends, students and colleagues to promote environmentally friendly actions and behaviors.

## BEHAVIORAL AND LIFESTYLE CHANGES

- ☐ GHG emissions are the direct result of our activities including energy use, transportation choices and shopping habits.
- ☐ Each of us can take actions and use our knowledge and awareness to reduce emissions within different levels, such as household, workplace, leisure, recreational and street places.



## ADDRESSING CC EDUCATION / ESD

Teachers should be aware on the key areas such as:

Willingness to take actions on environmental issues;

Understanding their role as teachers in teaching students about climate change;

Developing future leaders (their students) to lead in environmental issues and initiatives;

Awareness of the connections between global and local events;

Interpreting the causes and consequences of events related to climate change;

Pedagogies for teaching climate change in schools;

Knowledge of best practices in promoting green concept or SD in schools.

## INDIVIDUAL EFFORTS & ACTIONS FOR GREEN SCHOOL CONCEPT IN RESPONDING CC & E IMPACTS



Cut down on paper use and printing. Paper is made from wood, which stock carbon and keep our air fresh. When more paper is wasted, more forests will be cut. Currently, paper accounts for 70% of office waste.  
Only print if necessary / Encourage double-sided print or photocopy.

Zero polystyrene campaign and reducing plastics usage  
Recycling & Waste management



Saving electricity, energy & water.  
Use signage reminding people to save water and electricity in classrooms, workplaces & washrooms

Put Carbon Footprint fact. Let people know how much energy and water they can save through these simple changes

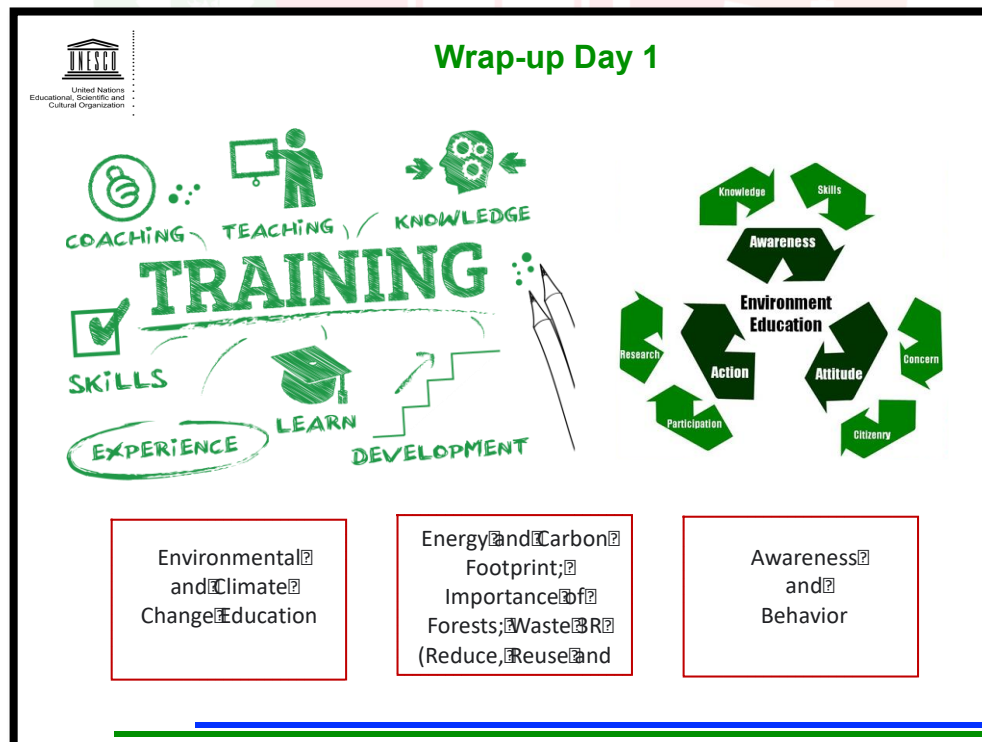
Practice green cultures & green campus (planting, gardening, composting etc.)  
Healthy lifestyle & character building program  
Community service  
Promotion and dissemination



## CONCLUDING REMARKS

- ❑ Education and Awareness are the first steps for behavioral change.
- ❑ Children are an agent for behavioral change.
- ❑ Proper education (CCESD) and information policy responses (awareness & education; early warning system; sharing of best practices) - required to fortify the nation & community resilience in addressing CC and disasters.
- ❑ Green School Practices/Actions would ultimately helpful for building sustainable, peaceful and resilience community.

### SESSION 3: KNOWLEDGE & SKILLS FOR PRACTICES BRIEFING ON DEVELOPMENT OF GREEN SCHOOL PROJECT





United Nations  
Educational, Scientific and  
Cultural Organization

## TRAINING OF TRAINERS (TOT) ON THE INTRODUCTION OF GREEN SCHOOL ACTIONS

Sub-Regional Green School Actions for ESD 2030 and Response to Covid-19



**Knowledge and Skills  
for Practices**

**Marlia M. Hanafiah**

3<sup>rd</sup> – 4<sup>th</sup> NOVEMBER 2020



United Nations  
Educational, Scientific and  
Cultural Organization

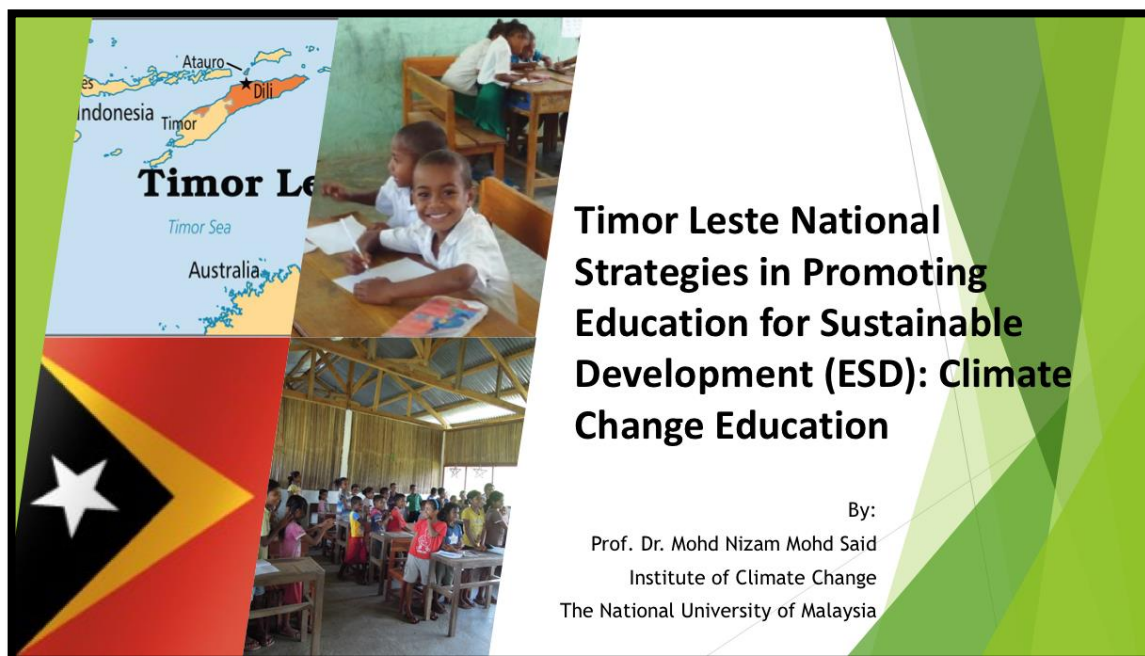
### PROPOSAL DESIGN FOR IMPLEMENTING GREEN SCHOOL PROJECT

Name of Organization	<insert school name or organisation>
Title of Proposed Project	<insert project title>
Budget	<insert amount allocation>
Location of Implementation	<insert the program location>
Point of Contact, Phone, Address	<insert focal point details>

PROPOSAL	
1. BACKGROUND	
- Description of the Project and Statement of the Problem	
- Purpose/Justification of the Grant Proposal	
2. PROJECT GOALS AND OBJECTIVES	
- Define the Project Objectives (at least 2)	
- Should be feasible, achievable and measurable	
3. PROJECT METHODOLOGY/DESIGN	
- Target Participants, Time/Duration	
- Action Plan/Activities and Timeline	
- Evaluation/Assessment Plan and Tools/Methods	
- Dissemination Plan	
- Budget for materials, honorarium, allowance, equipment, meals, rental, transportation, service	
4. OUTCOMES OF THE PROJECT	
- Outputs from the project activities	
- Outcomes in terms of the impact of the proposed project	
- Benefits from the project	
- Reflect ESD roadmap	
5. REFERENCES	
6. APPENDICES	
- Cover Letter	
- Program Agenda	



## TIMOR LESTE NATIONAL STRATEGIES IN PROMOTING EDUCATION FOR SUSTAINABLE DEVELOPMENT (ESD): CLIMATE CHANGE EDUCATION



### Introduction

- ▶ Timor-Leste's government has established a long-term **Strategic Development Plan 2011-2030** to transform the country into a medium-high income country by 2030.
  - ▶ Highlights a healthy, educated, and safe population that is prosperous and self-sufficient
- ▶ The **National Education Strategic Plan 2011-2030**
  - ▶ The vision: 'by 2025 the population of Timor-Leste will be educated, knowledgeable, and qualified to live a long and productive life, respectful of peace, family and positive traditional values.'
  - ▶ In 2017, the Inclusive Education Policy was launched to ensuring equal access to education for all.







- Restructuring school curricula to improve the quality of education is needed (Republica Democratica de Timor-Leste (RDTL), 2011)
- to improve quality and equity in subjects such as science, mathematics, languages, communication and creativity; quality and relevance of the curriculum to community needs; and quality and equitable governance
- The restructuring is crucial for delivering the changes required to promote sustainable development, which is the main agenda in the ESD
- The existence of the problems such as poverty, unemployment, etc., essentially contribute to effectively promoting the ESD

## ESD in Timor-Leste

- The ESD strengths in Timor-Leste are focused on “literacy and sustainable development” and “climate change and biodiversity policy” (UNESCO 2011)
  - Many programmes exist in line with these strengths.
  - E.g. the Ministry of Education and Culture led to develop a national biodiversity education strategy with inputs from national ministries involved in biodiversity conservation and environmental management, which will lead the development of modules to be integrated in the school curriculum.





- ESD has not been yet integrated formally into schooling system, university curriculum or currently available courses.
- Timor-Leste has established School Farming called **Horta Eskolar** as one of the ESD programs, focusing on environmental education and sustainable agriculture.



## Premaculture activity

Training to prepare the organic garden and organic fertilizer



## Vegetables Planting



## Reusing of Trash



## Climate Change Education (CCE) in Timor-Leste


- ▶ Climate change impacts felt by the Timorese such as long dry seasons - have caused many food shortages in the agriculture sectors.
- ▶ Timor-Leste Government has set up policy and action plans in regards to Climate Change.
  - ▶ State Secretary for Environment , in cooperation with MoE, Ministry of Health, Ministry of Agriculture, and Ministry of Social and Solidarity has implemented many activities through symposiums, seminars, workshops, and trainings on the issues of Climate Change including its impacts, preventive, and curative actions on the referred issue



## Climate Change Education (CCE) in Timor-Leste

- ▶ The MoE in cooperation with UNICEF and UNESCO established a unit called **Education Emergency and Social Inclusiveness Unit** which is under the Social Action Directorate at the MoE
  - ▶ Main tasks to promote campaigns on Climate Change issues to students, teachers, admin staff, students' parents, and communities, liaising with other stakeholders and ministries to address the same issues.
- ▶ CCE has a crucial part to play in building capacities and attitudes for climate change mitigation and adaptation
- ▶ MoE is to integrate the CCE concepts into the teaching materials for Teachers Training





## Challenges in ESD Implementation

- ▶ Integrating ESD into formal education curriculum is one of the challenges faced by the Government of Timor-Leste
- ▶ Lack of knowledge and skills, lack of initiative from teachers and students on extra-curricular activity, lack of awareness on significance of cultural heritage, lack of funding for environmental education
- ▶ Education responses to COVID-19 pandemic: challenges related to the issue with conducting ESD school activities, and poor access to internet and unavailability of reliable electricity supply

### In addressing CCE, several issues are very important for teachers to take note:

- ▶ Willingness and motivation to take actions on environmental issues;
- ▶ Possessing an understanding that they are not only subject-specific teachers, but also, as disseminators of information on environmental issues which affect the lives of students and communities;
- ▶ Becoming the stimulant for students to take a lead to be future policy makers on environmental and educational sectors;
- ▶ Understanding both global and local environmental issues and its relationship
- ▶ Possessing an understanding and capacity to explain to students and communities on the evolution of climate changes and its consequences in TL;
- ▶ Possessing a capacity to mitigate the experience of best practices from other countries in order to promote the ESD, CCE, to the students and communities in TL.







## Concluding Remarks

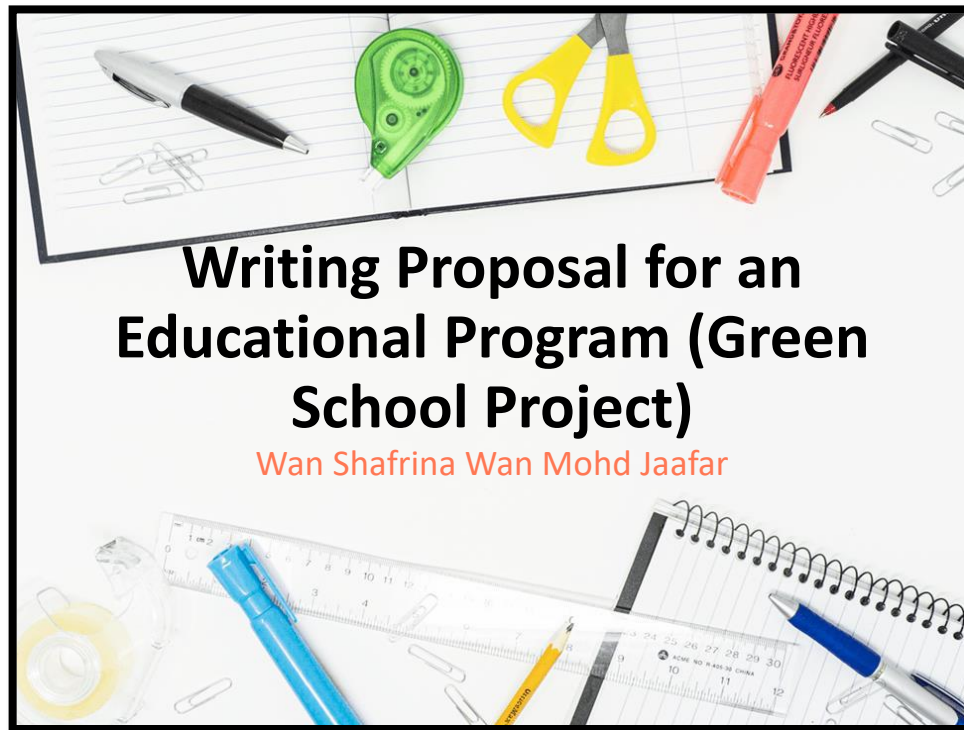
- The MoE of Timor Leste has been restructuring the school curricula so that it can enable quality of education to be achieved.
- ESD is recognized as an opportunity for enhancing the overall quality of education.



**THANK YOU**



## GOOD COUNTRY BEST PRACTICES ON GREEN SCHOOL PROJECT: FOCUSING ON THE PROPOSAL FOR ACTIONS



### 2. Background/Executive Summary : Program or project description, problem statement, introduce and justify program propose, why the programs unique, how programs relates to the identified learner's need.

**Program Title:**  
**Sustainable**  
**School Project**  
**– Recycle for**  
**Life**

**Background of the project (max 500 words)**

Please provide a brief situation and problem analysis of  
i) the relevant sector; and  
ii) the stakeholders involved

If this project is a part of a larger on-going programme, please explain at which phase this project fits and what are the expected outputs at the end of the project.

This project will combine STEM educational expert from UKM and sustainability application from E-Idaman. Government has spent a cost of RM2.9 billion spent in 2016 with the exponential increase in cost at an average rate of 26% per annum; current practice of the Solid Waste Management in Malaysia is not sustainable. The Government has the aspiration of achieving a recycling rate of 30% by the year 2030 with waste diversion anticipated to be at 40% on the same year (PENANGDU, 2015). Effective recycling is one of the key aspects towards achieving the government's target. Many approaches require private intervention as much as the government supports to inculcate a 'green' culture through public awareness and realization of the need to Reduce, Reuse and Recycle. Public encouragement on recycling activities could be achieved by using a rewarding system where the recycling benefits are returned to the public. Therefore, by engaging and providing a secure medium to the public through technological innovation and smart systems, the reward could enhance the progress of recycling (Survey on SW Composition, Characteristics & Existing Practice of SW Recycling in Malaysia, 2012).

A recycling program using a smartcard base reward system known as 'Recycle for Life' (RFL) program was implemented by E-Idaman Sdn Bhd (EISB) in September 2017, with the support from its parent company CENVIRO to encourage the people in the northern region of Malaysia to recycle and to promote higher recycling and recovery rate of 30% by the year 2030. The RFL program focuses on target groups such as schools, government agencies, public institutions, commercial partners and the general public. The smartcard used is registered uniquely to individuals, department unit or organization participating in the program. The recyclables collected is weighed and credited as cash into the RFL smart card and available to be used for purchasing goods in selected merchants in Kedah. The smartcard is also able to be reloaded its value manually for purchasing, contribution or donation purposes which simplifies the process of rewarding and transferring money to a third party.

Apart from that, the company has also been actively engaging and implementing a food waste recovery program using the Anaerobic Digester technology which could further reduce the amount of waste disposed at the landfills.

In conclusion, direct engagement with the use of creative technology innovation makes recycling activity more attractive, better participation and sustainable with the correct strategy and implementation to the focus groups. Coupled with the right merchants and partners, this program will enable a continuous implementation of the recycling activities while ensuring a consistent returns and rewards that benefitted all stakeholders. We believe that this initiative must be inculcated at the early stage of the community which are the schools and its students and at our own backyard which is the community.

Problem Statement

Program Propose

Program Description

Program Uniqueness

Program Deliverables to  
Learner's needs





# What elements should be in the proposal?

1. Title Page [Proposed title of project/program, contact details, Institution and department details, Location of the proposed project, amount budget requested (optional)]

Name of organisation:	PINTAR Foundation (in collaboration with Universiti Kebangsaan Malaysia (UKM))	Institution Details
Title of the proposal:	PINTAR-UKM Sustainability and Green Technology through iG-HOME Module (iG-HOME)	Project Title
Location (address) of organisation HQ:	A16-8, Menara UOA Bangsar No. 5, Jalan Bangsar Utama 1 59000 Kuala Lumpur	Part of Institution Details
Location(s) of the proposed project (Please specify villages / towns, district, state / region(s))	30 selected PINTAR secondary schools throughout Kedah	Project Location
Contact person:	Norzatul 'Ezzah Hasan Designation: Research Officer Contact no: 603 - 8921 6798 Email: norzatul ezzah@ukm.edu.my	Contact Person
Requested budget (RM):	<input checked="" type="checkbox"/> Organisational Development Fund; RM60,000.00 <input checked="" type="checkbox"/> Programme Management Fund; RM240,000.00 Based on 24 months (April 2017 - March 2019) project period	Budget Requested

2. Background/Executive Summary : Program or project description, problem statement, introduce and justify program propose, why the programs unique, how programs relates to the identified learner's need.

<p><b>Program Title:</b> Sustainable School Project – Recycle for Life</p>	<p>This project will combine STEM educational expert from UKM and sustainability application from E-Idaman. Government has spent a cost of RM2.9 billion spent in 2016 with the exponential increase in cost at an average rate of 26% per annum; current practice of the Solid Waste Management in Malaysia is not sustainable. The Government has the aspiration of achieving a recycling rate of 30% by the year 2030 with waste diversion anticipated to be at 40% on the same year (PEMANDU, 2015). Effective recycling is one of the key aspects towards achieving the government's target. Many approaches require private intervention as much as the government supports to inculcate a 'green' culture through public awareness and realization of the need to Reduce, Reuse and Recycle. Public encouragement on recycling activities could be achieved by using a rewarding system where the recycling benefits are returned to the public. Therefore, by engaging and providing a secure medium to the public through technological innovation and smart systems, the reward could enhance the progress of recycling (Survey on SW Composition, Characteristics &amp; Existing Practice of SW Recycling in Malaysia, 2012).</p> <p>A recycling program using a smartcard base reward system known as Recycle for Life (RFL) program was implemented by E-Idaman Sdn Bhd (EISB) in September 2017, with the support from its parent company CENVIRO to encourage the people in the northern region of Malaysia to recycle and to promote higher recycling and recovery rate of 30% by the year 2030. The RFL program focuses on target groups such as schools, government agencies, public institutions, commercial partners and the general public. The smartcard used is registered uniquely to individuals, department unit or organization participating in the program. The recyclables collected is weighed and credited as cash into the RFL smart card and available to be used for purchasing goods in selected merchants in Kedah. The smartcard is also able to be reloaded its value manually for purchasing, contribution or donation purposes which simplifies the process of rewarding and transferring money to a third party.</p> <p>Apart from that, the company has also be actively engaging and implementing a food waste recovery program using the Anaerobic Digester technology which could further reduce the amount of waste disposed at the landfills.</p> <p>In conclusion, direct engagement with the use of creative technology innovation makes recycling activity more attractive, better participation and sustainable with the correct strategy and implementation to the focus groups. Coupled with the right merchants and partners, this program will enable a continuous implementation of the recycling activities while ensuring a consistent returns and rewards that benefitted all stakeholders. We believe that this initiative must be inculcated at the early stage of the community which are the schools and its students and at our own backyard which is the community.</p>	<p>Problem Statement</p> <p>Program Propose</p> <p>Program Description</p> <p>Program Uniqueness</p> <p>Program Deliverables to Learner's needs</p>
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**3. Project Goals and Objectives: Define project aim and objectives (at least 2). Must be feasible, achievable and measurable.**

**2.2 Project goal (max 50 words)**

(Please indicate the long-term goal that your organisation would like to achieve/contribute to in 5-10 years)

The “Sustainable School Project: Recycle for Life” is a Science Technology Engineering Mathematic (STEM) education programme through reduce, reuse & recycle activities.

The project aims to expose students (namely Forms 1 and 2 students from 50 selected YSB secondary schools throughout Kedah) to be aware of environmental friendly and sustainable production and consumption concepts and practices at school via classroom and school's activities, as well as local communities and family of students involved (in directly) to be aware of environmental friendly and sustainable production and consumption practices and living through the given concepts.

The project also aims:

- To attract and expose the project beneficiaries, namely Forms 1 and 2 students from 50 selected YSB secondary schools throughout Kedah, their teachers, school staff and communities (where applicable) to science, technology, engineering and mathematics (STEM) education via the Sustainable School Project: Recycle for Life module and approach;
- To help targeted beneficiaries explore and enhance their own interests and self-development through exposure to the range of hands-on and minds-on activities readily available in the project;
- To engage targeted beneficiaries, namely students and teachers, to develop researching and higher order thinking skills (HOTS) in them;
- To support students' engagement in learning and encourage their education and career aspirations;
- For teachers to apply strategies and methods learned in the programme in order to ascertain better and effective similar programmes in their respective schools;
- To enhance the quality of life and living of all targeted beneficiaries upon completion of the programme.
- To maximise the recycling activities and recycling rate in the state of Kedah by approaching schools as the focus group. Ultimately, this will minimise the amount of wastes disposed at the landfills and contribute towards the waste diversion of 40% aspired by the Government of Malaysia by the year 2020.

Main aim

Additional aim (bonus)

**3. CONT...Project Goals and Objectives: Define project aim and objectives (at least 2). Must be feasible, achievable and measurable.**

**Project objective 1:** Sustainable School Project: RFL: Training of Trainers (ToT)

**Project objective 2:** Sustainable School Project: RFL: Student's Involvement School-Based Activities



## Time Duration

<b>Total duration of the proposed project (months)</b>	9 months (April 2019 – December 2019)
<b>Requested funding (RM)</b>	<p>☑ Organizational Development Fund<sup>2</sup>; RM 20,000.00</p> <p>☑ Programme Management Fund<sup>2</sup>; RM 130,000.00</p> <p><b>Total = RM 150,000.00</b></p>
<p><b>Final beneficiaries<sup>3</sup> (max 300 words)</b></p> <p>i) Please list and present an estimated number</p> <p>ii) Please describe if and how they will be involved in the implementation of the project activities</p> <p>iii) Please demonstrate how they will directly benefit from the result of this project</p>	<p>Approximately, a total of 1900 final beneficiaries based on the following estimate:</p> <p>a) Students: 1500 beneficiaries (30 student / school x 50 schools)</p> <p>b) Teachers: 100 beneficiaries (2 teacher / school x 50 schools)</p> <p>c) School staff : 300 beneficiaries (6 support staff / school x 50 schools)</p>
<b>Number of team members implementing project</b>	<p><b>UKM – 15 members</b></p> <p><b>E-Idaman - 17 members</b></p> <p>– Recycle for Life (RFL) Program: 8 members</p> <p>– Anaerobic Digester Facility (ADF) Program: 9 members</p>
<b>Number of volunteers, if any, that might directly support the implementation of the project</b>	

Budget

### Target Participants

Resource persons involved: Trainers, Expert domain, administration, stakeholders

### Plan activities and timeline

## Dissemination

The ten months program will include a total number of 100 teachers from 50 selected YSB secondary schools. Training of Trainers (ToT) will be based on a day workshop, and teachers will be coached on Sustainable School Project: Recycle for Life modules by a team of UKM lecturers who developed the modules. This is based on the Sustainable School Project: Recycle for Life worksheet. The Sustainable School Project: Recycle for Life worksheet provides the theoretical understanding and activities of the Sustainable School Project: Recycle for Life topics to be implemented by the students, which consists of 7 main topics, namely:

- Introduction
- Solid Waste Management
- 5R (Refuse, Reduce, Reuse, Recycle, Rot)
- Recycle for Life
- School Activities
- Conclusion

Please list in detail, all project activities that will be implemented throughout the proposed project duration (including how beneficiaries and stakeholders will be involved)

1. ToT will be conducted for 100 teachers from schools
2. Each teacher will get a teachers copy of Sustainable School Project: RFL worksheet and a 38 copy Sustainable School Project: RFL worksheet for the students
3. Each school will design a holistic waste management system at their school

Please list all the expected outputs which will be achieved by the end of the project and will contribute to your project objective

- Teacher will gain knowledge about Sustainable School Project: RFL
- One-day workshop for ToT
- 38 copies of Sustainable School Project: Recycle for Life worksheet will be distribute to 30 selected students, 2 teachers and 6 support staffs
- Teacher will setup a holistic waste management system at their school

#### 2.4 Monitoring and evaluation (M&E) (max 300 words)

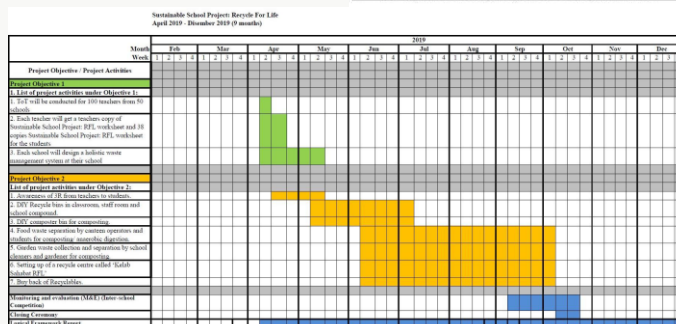
- i) Please present the type of information you plan to collect in order to monitor the progress of your project activities
- ii) Please describe how you will collect information of the progress of your project activities, and how frequently you plan to do this (e.g. conducting site visits to project site; meeting with beneficiaries, etc)

For an effective project implementation, Yayasan Sultanah Bahiyah, E-Idaman Sdn. Bhd. and UKM will be conducting several M&E Session to ensure that project is able to meet the purpose and objectives of the programme.

Example of rubric forms/templates to be used as part of the evaluation process is as below:

1. For monitoring (by UKM) of ToT Workshop/Seminar conducted (refer Attachment 1).
2. For monitoring (by teachers) of classroom-based activities implemented (refer Attachment 2).
3. For monitoring (by teachers) of School Main Project (refer Attachment 3).
4. For evaluation (by YSB-E-Iddman UKM) of School Main Project prior to inter-school competition (refer Attachment 4).
5. For obtaining feedback from teachers and students on Sustainable School Project: RFL programme during community-sharing session (by YSB-E-Iddman/UKM) (refer Attachment 5 & Attachment 6).
6. For final report on inter-school competition by YSB-E-Iddman UKM (refer Attachment 7).

## Evaluation / Assessment Plan



## Project Timeline



5. Outcomes of the Project: Output from project activities, impacts, benefits from the project, reflect ESD roadmap

**Project objective 1:** Sustainable School Project: RFL: Training of Trainers (ToT)

**Estimated output**

Please list all the expected outputs which will be achieved by the end of the project and will contribute to your project objective

- Teacher will gain knowledge about Sustainable School Project: RFL
- One-day workshop for ToT
- 38 copies of Sustainable School Project: Recycle for Life worksheet will be distribute to 30 selected students, 2 teachers and 6 support staffs
- Teacher will setup a holistic waste management system at their school

Reflect ESD roadmap: building capacity of trainers.

Impacts, benefits

**Project objective 2:** Sustainable School Project: RFL: Student's Involvement School-Based Activities

**Estimated output**

Please list all the expected outputs which will be achieved by the end of the project and will contribute to your project objective

- Teacher will disseminate the Sustainable School Project: RFL knowledge & students will complete the worksheet
- Each class will be having recycle bins
- Canteen will have food waste separation bins
- Each school will have DIY composter bin
- A Kelab Sahabat RFL (school recycling centre) and recycle craft gallery and/or park established

Reflect ESD roadmap: transforming learning and training environments

Impacts, benefits



6. References : Suggested the latest 5 years references.

7. Appendices: Cover Letter and Program Agenda




## DISCUSSION AND REFLECTION


*Training of Trainers (TOT) on the Green School Actions for Education for Sustainable Development (ESD) and Response to COVID-19 in the Sub-region of Southeast Asia organized by UNESCO JAKARTA, November 4, 2020*

### SESSION3: KNOWLEDGE & SKILLS FOR PRACTICES DISCUSSION AND REFLECTION

- ❑ Share your reflection
- Proposal templates
- Issues for proposal preparation
- Implementing Green School Projects/ Activities
  - Sharing experiences
  - Challenges
  - Recommendations

## WRAP-UP FOR FOLLOW UP ACTIONS

 **Wrap-up Day 2**



Proposal Design on Green School Project

Good Country Best Practices on Green School Project

Discussion and Reflection

**For further information, please contact:**

Mrs. Rusyda Djamhur

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