



# PROGRAMME BOOK

## MANGROVE MONITORING INTERNATIONAL TRAINING October 29<sup>th</sup> – November 6<sup>th</sup> 2021

Sponsored by  
**COREMAP CTI Programme**  
**United Nations Development Programme**

Hosted by  
**National Research & Innovation Agency (BRIN)**  
**Archipelagic & Island States (AIS) Forum**

2021



## CONTENT

### **1. Training Schedule**

#### **1. Information**

- 1.1. Training purpose
- 1.2. Training Curriculum
- 1.3. Training Methods
- 1.4. Lectures and resource person

#### **2. Mandatory Training Requirements**

#### **3. List of Trainees**

#### **4. Acknowledgements**

Dear Participants,

Congratulations on becoming participants of Mangrove Monitoring International Training which will be held by the Regional Training and Research Centre-Marine Biodiversity and Ecosystem Health (RTRC MarBEST) collaborated with Archipelagic & Island States (AIS) Forum from October 29<sup>th</sup> to November 6<sup>th</sup> 2021. To facilitate your activities throughout all sessions, please find below the information on training arrangements.

## 1. Training Schedule

Time (GMT+7)	Agenda	PIC
<b>Friday, October 29th 2021</b>		
13:30 - 15:30	Opening Ceremony	Committee
15:30 - 16:30	LMS Introduction	Committee
<b>Monday, November 1st 2021</b>		
08:00 - 09:30	Remote Sensing (Teory)	Bayu Brayudha
09:30 - 12:30	Remote Sensing (Practices)	Remote Sensing Trainers
12:30 - 13:00	Break	Committee
13:00 - 15.30	Invited Speaker 1	Dr. Thomas Worthington
18:00 - 21:00	Self-learning ( <i>Asynchronous</i> )	Participants
<b>Tuesday, November 2nd 2021</b>		
08:00 - 10:15	Invited Speaker 2	Prof. Ryo Kohsaka
10:15 - 12:00	Remote Sensing (Practices)	Remote Sensing Trainers
12:00 - 13:00	Break	Committee
13:00 - 15.30	Remote Sensing (Practices)	Remote Sensing Trainers
18:00 - 21:00	Self-learning ( <i>Asynchronous</i> )	Participants
<b>Wednesday, November 3rd 2021</b>		
08:00 - 09:30	Google Earth Engine (Teory)	Safran Yusri, M.Si.
09:30 - 12:00	Google Earth Engine (Practice)	Remote Sensing Trainers
12:00 - 13:00	Break	Committee
13:00 - 15.30	Invited Speaker 3	Dr. Severino G. Salmo III
18:00 - 21:00	Self-learning ( <i>Asynchronous</i> )	Participants
<b>Thursday, November 4th 2021</b>		
08:00 - 10:15	Invited Speaker 4	Dr. Carlyne Lundquist
10:15 - 12:00	Google Earth Engine (Practice)	Remote Sensing Trainers
12:00 - 13:00	Break	Committee
13:00 - 15.30	Google Earth Engine (Practice)	Remote Sensing Trainers
18:00 - 21:00	Self-learning ( <i>Asynchronous</i> )	Participants
<b>Friday, November 5th 2021</b>		
08:00 - 10:15	Data Collection & MonMang 2.0	I Wayan Eka D
10:15 - 12:00	MonMang 2.0 (Practice)	Ecology Trainers
12:00 - 13:00	Break	Committee
13:00 - 15.30	MonMang 2.0 (Practice)	Ecology Trainers
18:00 - 21:00	Self-learning ( <i>Asynchronous</i> )	Ecology Trainers
<b>Saturday, November 6th 2021</b>		
08:00 - 10:15	MHI Interpretation	Yaya Ihya Ulumuddin
10:15 - 12:00	MHI Interpretation (Practice)	Ecology Trainers
12:00 - 13:00	Break	Committee
13:00 - 15.30	MHI Interpretation (Practice)	Ecology Trainers
15:30 - 16:00	Closing Ceremony	Committee

## 2. Information

Mangrove health index (MHI) has been developed to propose a single metric for estimating forest community healthiness based on three main stand structure parameters, i.e. diameter, canopy coverage and density. The index was considered for representing mangrove ecosystems on an ecosystem scale since mangrove plant communities have an important role in ecosystem productivity and stabilized food chain. The value of MHI was significantly correlated to several vegetation indices based on remote sensing analysis. MHI could be estimated from multiple indices such as GCI, SIPI, NBR and ARVI. The model is the potential to be applied in other areas and various temporal settings. The development of MHI could be encouraged as a new approach for assessing mangrove forest during managing mangrove in international scale.

In addition, a smartphone-based app, namely MonMang, has been released in October 2020 which has a functionality to record, analyze, and interpret data simultaneously on the field site, so that parameter information could be completed real-time (Dharmawan, 2020). On the initial version, MonMang facilitates some basic information such as parameters in mangrove community structure for forest monitoring, a robust canopy coverage value based on hemispherical photography method, a single metric of mangrove health index (MHI) and threat quantification. Recently, MonMang has been significantly upgraded with some features which is not only used for monitoring activities but also enhancing young generation awareness in mangrove existence.

## 3. Training Purposes

- To develop and strengthen the capacity and capability of human resources, especially young researchers and lecturers from member states in the Indo West Pacific through training activities in the field of mangrove ecosystem.
- To apply methods on mangrove Health Index on regional Protocol
- To promote collaborations among scientists within and outside the region on the long-term monitoring of mangrove ecosystem.
- To facilitate access and dissemination of information related to mangrove ecosystem are widely distributed, transferred and applied within WESTPAC region and beyond.

## 4. Training Curriculum

Curriculum	Agenda	Learning Durations (LD)*
Introduction for training system	Introduction	3
Remote Sensing		11
Google Earth Engine	Core	11
Field Survey and Data Collection (MonMang)	Substances	8
Mangrove Health Index (MHI) Analysis and Interpolation		8
Training Program Evaluation	Evaluation	3
Invited Speakers	Valuable Topics	12
<b>TOTAL</b>		<b>56</b>

## 5. Training Methods

Due to the pandemic crisis, the training will be conducted online through LMS (Learning Management System). A learning management system is a software application for the administration, documentation, tracking, reporting, automation and delivery of educational courses, training programs, or learning and development programs. The learning management system concept emerged directly from e-Learning. Organizing committee will give each participant an individual account to log on <http://elearning.lipi.go.id>.

As for the interactive part between Instructors/Invited Speakers and participants, a webinar will be used to optimise the course (**Synchronous**). To replace the field session that usually a classical training needs, we will use video tutorial to guide participants (**Asynchronous**)

## 6. Lecturers and Resource Persons

<b>Severino G. Salmo III, Ph.D</b> Univ. of the Philippines Diliman, Philippines	<b>Prof. Ryo Kohsaka</b> Nagoya University, Japan
<b>Dr. Carolyne Lundquist</b> University of Auckland, New Zealand	<b>Dr Thomas Worthington</b> University of Cambridge, UK
<b>Safran Yusri, M.Si</b> Terangi NGO	<b>Bayu Prayudha</b> Research Center for Oceanography, BRIN
<b>Dr. Yaya Ihya Ulumuddin</b> Research Center for Oceanography, BRIN	<b>Suyarso</b> Research Center for Oceanography, BRIN
<b>Muhammad Hafizt, M.Sc</b> Research Center for Oceanography, BRIN	<b>Seno Adji</b> Research Center for Oceanography, BRIN
<b>I Wayan Eka Dharmawan</b> Research Center for Oceanography, BRIN	<b>Doni Nurdiansah</b> Research Center for Oceanography, BRIN
<b>Jeverson Renyaan</b> Research Center for Oceanography, BRIN	

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## 7. Mandatory Training Requirements

- Being on time in learning through the Learning Management System (LMS) while paying attention to the training agenda day by day.
- Reading and following all learning instructions and guides at the Learning Management System (LMS) in accordance with the stipulated time setting.
- Downloading all kinds of material at the Learning Management System (LMS).
- Filling in the attendance list day by day at the Learning Management System (LMS).
- Completing the task of each training subject without exceeding the specified time limit.
- Filling out all kinds of evaluation at the Learning Management System (LMS).
- Preparing own self to take part in Virtual Class sessions through Zoom Meeting (synchronous learning) on each training material at least 15 minutes before the session starts.
- Enabling video features during each Virtual Class session.
- Following each instructor's rules during the Virtual Class session.
- Preparing additional needs to support and expedite the learning process during the training, such as laptop / computer, stable internet connection, and stationery if necessary.

## 8. List of Trainees

No	Full Name	Country	Affiliation
1	Ruleo Camacho	Antigua & Barbuda	Marine Ecologist, National Park Authority, Antigua
2	Tara Mackey	Bahama	Centre for Resource Management and Environmental Studies (CERMES) - UWI
3	Layla Jassim Hazeem	Bahrain	University of Bahrain
4	Thuraya A. Al-Mansoori	Bahrain	
5	Ebtisam Essa Bin Butti	Bahrain	
6	Narjes Khalil	Bahrain	
7	Mohammed Hasan Abdulla Sayah	Bahrain	Supreme Council for Environment-Special Envoy for Climate Affairs (Kingdom of Bahrain)
8	Mahmood Ali Hasan Ahmed Shuaib	Bahrain	
9	Husain Hameed Mansoor	Bahrain	
10	Md. Al-amin Mollah	Bangladesh	Khulna University
11	S. M. Rubaiot Abdullah	Bangladesh	PhD or Doctorate Degree Student
12	David O Yawson	Ghana	The University of the West Indies
13	Patrice Antoinette Francis	Jamaica	The UWI- Centre for Marine Sciences
14	Yamina Beebee Elaheebocus	Mauritius	MISS
15	Tolulope Samuel Oyikeke	Nigeria	West African Science Service Centre on Climate Change and Adapted Land Use (WASCAL)
16	Aneela Shaheen	Pakistani	National Institute of Oceanography, Ministry of Science & Technology, Government of Pakistan
17	Dampal Ranawaka	Sri Lanka	University of Ruhuna
18	Gaitrie Usha Mac Andrew-Satnarain	Suriname	Scientist at the Anton de Kom University of Suriname
19	A. A. Md. Ananda Putra Suardana	Indonesia	Remote Sensing Applications Center, OR PA BRIN
20	Akhzan Nur Iman	Indonesia	Blue Forests (Yayasan Hutan Biru)
21	Anggia Rivani	Indonesia	Ministry of Marine Affairs and Fisheries Republic of Indonesia
22	Jeriels Matatula	Indonesia	Politeknik Pertanian Negeri Kupang
23	Fihri Bachmid	Indonesia	Sam Ratulangi University
24	Jamaludin	Indonesia	National Marine Protected Area (MPA) Authority of Kupang
25	Kaisar Parti Hasudungan	Indonesia	Centre for Marine & Coastal Resource Management of Pontianak MMAF
26	Kholqi Azam Rizaldi	Indonesia	MMAF Republic of Indonesia
27	Kuswadi Bin Bunadi	Indonesia	Karimunjawa National Park
28	Merlin Renny Sitanala	Indonesia	Pattimura University
29	Mohammad Sumiran Paputungan	Indonesia	Mulawarman University
30	Muammar Gomareuzzaman	Indonesia	Universitas Pembangunan Nasional Veteran Yogyakarta
31	Muhammad Hilmi	Indonesia	BKKPN Kupang, MMAF
32	Nabil Zurba	Indonesia	Teuku Umar University
33	Nanin Anggraini	Indonesia	OR PA BRIN
34	Ni Putu Diana Mahayani	Indonesia	Faculty of Forestry, Gadjah Mada University
35	Ratri Ma'rifatun Nisaa'	Indonesia	Balai Besar Penelitian dan Pengembangan Ekosistem Hutan Dipterokarpa
36	Sigit Febrianto	Indonesia	FPIK Diponegoro University
37	Topik Hidayat	Indonesia	Yayasan Konservasi Alam Nusantara (YKAN)
38	Wanda Laras Farahdita	Indonesia	Titian Lestari Foundation
39	Wiwid Andriyani Lestariningsih	Indonesia	IPB University
40	Zulham Apandy Harahap	Indonesia	University of North Sumatera

## 9. Acknowledgements

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- Ministry of Research and Technology-Indonesian Research and Innovation Board
- UNESCO International Oceanographic Commission (IOC)
- UNESCO Indonesia Office
- Indonesian National Commission for UNESCO (KNIU-UNESCO)
- Coordinating Ministry for Maritime Affairs and Investment for the Republic of Indonesia
- Ministry for Foreign Affairs for the Republic of Indonesia
- United Nation Development Program (UNDP)
- The Archipelagic and Islands States (AIS) Forum
- The World Bank
- Coral Reef Rehabilitation and Management Program-Coral Triangle Initiative (COREMAP CTI) project