ONLINE TRAINING COURSE ON DISASTER RISK REDUCTION AND CLIMATE CHANGE ADAPTATION FOR CARICOM AND SICA MEMBER COUNTRIES

General Information

The Ministry of Foreign Affairs of the Republic of Indonesia, the Non-Aligned Movement Centre for South-South Technical Cooperation, and Institut Teknologi Bandung will host an "Online Training Course on Disaster Risk Reduction and Climate Change Adaptation for CARICOM and SICA Member Countries" on August 8-12, 2022. The online training is also being carried out in collaboration with Indonesia's National Disaster Management Agency and the Meteorological, Climatological, and Geophysical Agency.

The training is designed to build capacity and train officer/staff in a national disaster management authority, officer/staff in the development and implementation of a methodological framework for disaster zone management, disaster management analyst/officer/staff, and academia from the following countries:

Caribbean Community (CARICOM) Member Countries

Antigua and Barbuda	The Bahamas	Barbados
Belize	Dominica	Grenada
Guyana	Haiti	Jamaica
Montserrat	Saint Kitts and Nevis	Saint Lucia
Saint Vincent and the Grenadines	Suriname	Trinidad and Tobago

Central American Integration System (SICA) Member Countries

Belize	Costa Rica	Dominican Republic
El Salvador	Guatemala	Honduras
Nicaragua	Panama	

PREFACE

The rise of global surface temperature has influenced changes in the weather patterns of the world. Consequently, the world now experiences an increasing intensity of climate disruptions which has affected the lives of millions of people worldwide and threatened the development progress in many countries. To combat this trend, the international community has agreed on a number of frameworks, including the Sustainable Development Goals (SDG).

Sustainable Development Goals listed 17 goals as an action plan for countries to promote prosperity while protecting the planet. Of the 17 goals, strategies to mitigate the changing climate are addressed on goals number 11 and number 13. Goals 11 and 13 advocate for resilient and sustainable cities and human settlements, while Goal 13 calls for immediate action to combat climate change and its consequences.

The Caribbean and Central American regions are among the most vulnerable to climate change on the planet. According to United Nations Office for the Coordination of Humanitarian Affairs (OCHA) report in 2020, 1.205 natural disasters happened between 2000 – 2019 which placed the Caribbean and Central America as the second vulnerable region in the world. Furthermore, CARICOM and SICA member countries are frequently hit by various natural disasters of increasing severity and impact, namely hurricanes, floods, intense drought, landslides, earthquakes, and volcanic eruptions.

In the Caribbean, the main environmental changes expected to happen are a rise in sea level, stronger hurricanes, longer dry seasons and shorter wet seasons. The changes are also expected to have a negative impact on the Caribbean's economy, environment and population. For instance, a temperature rise can increase the likelihood of extreme hurricane rainfall by four to five times in the region.

A rise in sea level could have a negative impact on Caribbean coastal communities if they are situated less than 3 metres (10 feet) above sea level. Because they live below this level, millions of people are expected to be affected by sea level rise. The Bahamas are expected to be the hardest because at least 80% of the total land is less than 3 metres (10 feet) above sea level.

In Central America, climate change has led to extreme weather events, flooding and drought. This situation is exacerbated further by the region's continued degradation and loss of soil cover on farmland, which is heavily reliant on agriculture for livelihoods, exports, and food security. These phenomena are especially noticeable in El Salvador, Guatemala, and Honduras, which form the Northern Triangle.

In addition, widespread drought across the Latin America and the Caribbean region has had significant impact on inland shipping routes, crop yields and food production, leading to worsening food insecurity in many areas (World Meteorological Organization, 2022).

According to the World Food Programme (2021), 2.2 million people in Guatemala, Honduras, El Salvador, and Nicaragua, have experienced crop failure due to excessive rain and droughts. The devastation has left millions in need of food assistance. In Honduras, 31% of the population is experiencing crisis levels of food insecurity, as is 23% in Guatemala and 10% in El Salvador.

Climate change is exacerbating socioeconomic vulnerabilities in Central America and will increasingly affect its economic progress, given that factors that depend on the climate are very important to a broad range of production activities, such as agriculture and generation of hydroelectric power (Economic Commission for Latin America and the Caribbean, 2018).

Negative impacts of climate change in Central America have also become an international issue since they are a key driver behind the mass border migration in the region. The World Bank report in 2022 estimated climate change could force 216 million people across six world regions to move within their countries by 2050, including in Central America. 10,000 people were recorded to have already attempted to migrate northward in November 2020 after Hurricane Eta and Hurricane Iota devastated communities across Honduras, Guatemala, and Nicaragua.

Indonesia, which is located in the tropical belt of maritime Southeast Asia, has also experienced moderate floods, storms, and droughts on its territory *(International Perspectives on Natural Disasters: Occurrence, Mitigation, and Consequences, 2007*). Indonesia's status as an archipelagic country also put its numerous islands and coastal communities in danger of rising sea level. Faced with these environmental challenges, Indonesia has continually sought to build its capacity to mitigate the risks of various natural disasters. In this regard, Indonesia has a large and growing community of scientists focusing on the issue of disaster mitigation and resilience. As a result, Indonesia is eager to foster collaboration with other countries in order to facilitate the exchange of knowledge and expertise in disaster management.

The Non-Aligned Movement Centre for South-South Technical Cooperation (NAM CSSTC), in collaboration with the Ministry of Foreign Affairs and the Faculty of Earth Science at Institut Teknologi Bandung, is committed to providing virtual training in disaster risk reduction and climate change adaptation to CARICOM and SICA member countries. The online training is also being carried out in collaboration with Indonesia's National Disaster Management Agency and Meteorological, Climatological, and Geophysical Agency. As a form of commitment by NAM CSSTC, training is provided to assist and support CARICOM and SICA member countries for the achievement of SDGs. Transfer of expertise is intended to assist CARICOM and SICA member countries in building capacity in disaster management.

For more information on the training, please send an email to:

The Organiser of Online Training Course on Disaster Risk Reduction and Climate Change Adaptation for CARICOM and SICA Member Countries

dit.kspi@kemlu.go.id (Directorate of International Development Cooperation, Ministry of Foreign Affairs of the Republic of Indonesia)

m.rais@itb.ac.id (Attn. Dr. M. Rais Abdillah)

adp@csstc.org (Attn. Ms. Niken Supraba)

THE TRAINING PROGRAMME

1. The intended audience

People from CARICOM and SICA member countries and territories are the intended audience. Capacity building and training officer/staff in a national disaster management authority; officer/staff in the development and implementation of a methodological framework for disaster zone management; disaster management analyst/officer/staff; academia are the programme's beneficiaries.

Participants should have a basic understanding of disaster risk reduction and climate change adaptation (e.g. hurricane, drought, and flood) in order to benefit from the course.

2. Objectives

To increase disaster mitigation capacity by implementing disaster risk reduction and climate change adaptation techniques and knowledge, as well as to strengthen disaster resilience and ensure sustainable social and economic development.

The aim of training is described as follows:

a. Improve disaster management authorities' and academia's disaster mitigation capacity;

b. Promote the adoption of disaster risk reduction techniques and knowledge;

c. Promote the adoption of climate change adaptation measures;

d. Build disaster resilience in disaster prone areas of CARICOM and SICA member countries;

e. Contribute in ensuring the achievement of sustainable social and economic development;

f. Disseminate the recent trends on climate change and disaster management.

3. The course instructor/trainer (*not in any particular order*)

The course's facilitators and trainers are lecturers from the Faculty of Earth Sciences and Technology, Institut Teknologi Bandung (ITB), and experts from Indonesia's National Disaster Management Agency and Meteorological, Climatological, and Geophysical Agency.

Dr Astyka Pamumpuni, S.T. M.T

Lecturer of ITB / Seismic Hazard Researcher of Medco E&P, Sulawesi

Dr. Astyka has over fourteen years of experience as a researcher in the fields of geological hazards' impact chain and mitigation measures. He specialises in neotectonics and mountain fracture. Dr. Astyka has been a Seismic Hazard Researcher for Medco E&P Sulawesi since September 2019. In 2021, he joined the PLN-LAPI-ITB project as a geomorphology evaluator, as well as an active fault, GPR, and resistivity surveyor. Dr. Astyka conducted research on structure geology for earthquake hazard for LAPI-ITB prior to joining the project. Dr. Astyka has a bachelor's and master's degree in geology, as well as a PhD in Earth Science. He has over 10 scientific journal publications.

Mr. Hamzah Latief, PhD (Eng), MS.

Lecturer of Faculty of Earth Sciences and Technology of ITB / Senior Researcher on Centre for Disaster Mitigation of ITB (Board for Tsunami)

Dr. Latief has more than 31 years of experience as a lecturer in the fields of coastal hazards caused by tsunamis and climate change. He is an expert in tsunami mitigation, nearshore waves, and shoreline changes. Since 1991, Dr. Latief has been a lecturer at ITB's Faculty of Earth Sciences and Technology. He was the head of the ITB's department of oceanography from 2001 to 2004. Dr. Latief has also worked as a researcher in disaster mitigation, climate change, and oceanography since 2005. Dr. Latief holds a bachelor's degree in oceanography, a master's degree in physical oceanography, and a PhD in Tsunami and Coastal Engineering. He has written over 80 scientific journal articles and books.

Dr. Muhammad Rais Abdillah, S.Si., M.Sc.

Lecturer of Faculty of Earth Sciences and Technology of ITB

Dr. Rais has more than four years of experience as a meteorology lecturer. He specialises in extreme weather. Dr. Rais has been a lecturer at ITB's Faculty of Earth Sciences and Technology since 2018. He began working as a risk analyst for meteorological hazards at PT. MAIPARK reinsurance Indonesia in 2013. Dr. Rais has also worked as a researcher for ITB, Tokyo Institute of Technology, and Tohoku University projects. Dr. Rais has a bachelor's degree in meteorology, a master's degree in geophysics, and a PhD in geophysics. He has over ten scientific journal articles to his credit.

Dr. Alfita Puspa Handayani, S.T., M.T.

Lecturer of Faculty of Earth Sciences and Technology of ITB

Dr. Alfita has worked as a lecturer at ITB's Faculty of Earth Sciences and Technology for over seven years. She specialises in geographic information systems and land administration. Since 2015, Dr. Alfita has been a lecturer at ITB's Faculty of Earth Sciences and Technology. In 2014, she began working as an Academic Assistant at ITB. Dr. Alfita has also worked on disaster risk management, tidal flood, and land degradation projects. Dr. Alfita holds a bachelor's, master's, and doctorate in geodesy and geomatics. She has more than five scientific journal articles to her name.

Dr. *rer. nat.* Armi Susandi, MT

Founder of PT. Inovastek Glomatra Indonesia/Co-founder and Commissioner of PT. Swarna Semesta Energi/Intelligent Team of Hydrometeorology Disaster at Indonesia's National Disaster Management Agency and Meteorological, Climatological, and Geophysical Agency

For the past three years, Dr. Armi has served as the Founder of PT. Inovastek Glomatra Indonesia. He also teaches at ITB's Faculty of Earth Sciences and Technology and the Indonesian State Intelligence College. He specialises in the multi-hazard early warning system and the climate change information system. He started working as a Senior Advisor at the United Nations Development Program (UNDP) Indonesia in 2017. Dr. Armi has also joined the Ministry of Environment of the Republic of Indonesia as a National Project Manager for UN Climate Change documents in 2007. Dr. Armi has a Bachelor of Science in Geophysics and Meteorology, a Master's degree in Development Studies, and a PhD in Meteorology. He holds over 10 patents and copyrights.

Dr. Agie Wandala Putra, Ah.MG, S.Si, M.Sc.

Weather Early Warning Sub Coordinator at Indonesia's Meteorological, Climatological, and Geophysical Agency

Dr. Agie has been the Weather Early Warning Sub Coordinator at Indonesia's Meteorological, Climatological, and Geophysical Agency for the past three years. He is also the Jakarta Tropical Cyclone Warning Centre's Coordinator and the South-eastern Asia-Oceania Flash Food Guidance System's Focal Point. He specialises in extreme weather forecasting. In 2013, he began working as a Researcher at Chulalongkorn University's Advanced Virtual and Intelligent Computing (AVIC) Laboratory Bangkok. Dr. Agie has also been promoted to the position of Senior Forecaster at Indonesia's Meteorological, Climatological, and Geophysical Agency in 2010. Dr. Agie holds a bachelor's degree in mathematics, a master's degree in mathematics and computer science, and a doctorate in environmental science. He has over ten scientific journal articles to his credit.

Mr. Udrekh, S.Si., S.E., M.Sc., Ph.D

Director of Risk Mapping and Evaluation of Indonesia's National Disaster Management Agency

Dr. Udrekh has a long record of contribution in Indonesia's disaster management. His first project in disaster management was as a Coordinator of BPPT project in Mentawai Megathrust Disaster Relief Exercise (MM-DIREX) 2014. After that, he has participated actively in several disaster management and hazard early warning system projects, including becoming a Coordinating Member of National Ocean Data Center of Indonesia (2018), Team leader of Land and Marine Survey Investigation of 2018 Palu Earthquake, and Project Leader of Tsunami Early Warning System of Sunda Strait (2019). In 2020, he was assigned to Indonesia's National Disaster Management Agency as Director of Disaster Management System. Currently, he is the Director of Risk Mapping and Evaluation of Indonesia's National Disaster Management Agency and Coordinator of Wireless Sensor Network System, Applied Technology for Flood Early Warning system. He holds a science degree from Institut Teknologi Sepuluh November of Surabaya and achieved his postgraduate degree from Earth and Planetary Science Department, Ocean Research Institute of the University of Tokyo. He has over five scientific journal articles to his credit.

4. The course module and content

The course module and materials will be available on the Learning Management System at https://edunex.itb.ac.id. Registered participants will have access to the website.

5. The course's structure and content

The course is divided into five topics, with two to three sessions dedicated to each. Any aspect of the programme may be given more or less time.

a. Topic 1 focuses on the basic framework of Disaster Risk Reduction (DRR), with presentations on the DRR Basic Framework and DRR Implementation based on real-world examples.

b. Topic 2 is about disaster risk reduction for geological hazards, which includes the impact chain of geological hazards and mitigation measures, as well as increasing community resilience through geospatial data and land administration.

c. Topic 3 is about disaster risk reduction for extreme weather and coastal hazards, which includes the basics of extreme weather, the impact chain of hydrometeorological hazards and their mitigation measures, and coastal hazards caused by tsunamis and climate change, as well as their mitigation.

d. Topic 4 is concerned with concept and demonstration of the Early Warning System (EWS) for extreme weather and multi-hazard; and the climate change information system that incorporates relevant climate change impact and adaptation strategies; and

e. Topic 5 focuses on hands-on activities. Participants will be encouraged to create an impact chain based on hazard characteristics and vulnerability in their countries.

6. Participants' essential checklists

Before the training begins, the participant must prepare a number of tools.

Participants must check to see if they have the following items:

- Laptop/Android tablet/iPad with effective speaker, web camera and microphone;
- Internet connection (Min. 5 Mbps);
- Zoom Meeting software/application;
- Web browser software/application;
- Software/application to access word and PDF document format.

7. Duration

The training will last about ten hours for five days, approximately two hours per day.

8. Training approach and methods

The programme consists of a number of activities:

a. Preliminary test for the initial capacity of participants/Pre-Test.

b. Module to encourage learning.

c. Virtual discussion and presentation via Zoom Meeting, on the topics of disaster risk reduction and climate change adaptation, with a focus on hurricane, drought, and flood.

Part of these activities will take place at the Institut Teknologi Bandung's edunext learning management system and Zoom Meeting, both of which will be delivered in English. Participants from countries where Spanish or other languages are the official language are expected to adjust.

9. Following the course

Participants will be expected to participate in a hands-on activity on how to make an impact chain based on hazard characteristics and vulnerability in their countries, and complete a final test/post-test.

a. Hands-on Activity

Participants will be expected to participate in a hands-on activity on how to make an impact chain based on hazard characteristics and vulnerability in their countries.

b. Final test/post-test

The final/post-test questions are identical to the pre-test questions. This method is used to determine whether or not the training has positive impacts on the participants by comparing pre-test and post-test scores.

To receive a certificate of completion, each participant must complete all sequences of the training.

SCHEDULE

The training will be held from August 8 to 12, 2022, under the following arrangements:

Day	Topic and description	Time (UTC+7)	Agenda	Speaker
1	Opening of the Online Course and Basic Framework of the Disaster Risk Reduction (DRR)	21:00 - 21:40	Remarks & Speech:	
			1) Acting Director for NAM CSSTC	Amb. Mr. Diar Nurbintoro
			2) Director of International Development Cooperation – the Ministry of Foreign Affairs of the Republic of Indonesia	Mrs. Maria Renata Hutagalung
			3) Director of American and European Intraregional and Interregional Cooperation	Mrs. Nidya Kartikasari
			4) Rector of ITB	Prof. Reini Wirahadikusumah, Ph.D.
			5) Virtual Photo Opportunity	All officials, speakers, and participants
		21:40 - 22:00	Pre test	Participants
		22:00 - 22:30	Presentation 1: Basic Framework of the Disaster Risk Reduction (DRR)	Dr. Irwan Meilano, ST, M.Sc. (ITB)
		22:30 - 23:00	Presentation 2: Implementation of the DRR (real case in Indonesia)	Dr. Ir. Udrekh, S.E., M.Sc. (BNPB)
2	DRR of geological hazards	21:00 - 22:00	Impact chain of geological hazards (earthquake, landslide, and volcanic eruptions) and their mitigation measures	Dr. Astyka Pamumpuni, S.T, M.T. (ITB)
		22:00 - 23:00	Increasing Community Resilience through Geospatial Data and Land Administration	Alfita Puspa Handayani, ST., MT (ITB)
3	DRR of extreme weather and coastal hazard	21:00 - 22:00	Basic of extreme weather, impact chain of hydrometeorological hazards and their mitigation measures	Dr. M. Rais Abdillah (ITB)
		22:00 - 23:00	Coastal hazard due to tsunami and induced by climate change and their Mitigation	Hamzah Latief, M.Si., Ph.D. (ITB)
4	Early warning system and climate change information system	21:00 - 22:00	Operational early warning system for extreme weather in Indonesia	Dr. Agie Wandala Putra, M.Sc (BMKG)
		22:00 - 23:00	Implementation of multi-hazard early warning system and climate change information system	Dr. rer. nat. Armi Susandi (ITB, BIN)
5	Hands on activities, final test, and closing	21:00 - 22:30	Hands on activities (make an impact chain based on hazard characteristics and vulnerability in participants' countries)	All speakers in Day 2-4
		22:30 - 22:50	Post-Test	
		22:50 - 23:00	Closing remarks by Dean of FITB	Dr. Irwan Meilano, ST, M.Sc. (ITB)

Converting Time Zones

Jakarta time zone (UTC+7)	**UTC-3** **(Suriname)**	**UTC-4** **(Antigua & Barbuda; Barbados; Dominica; Dominican Rep.; Grenada; Guyana; Haiti; Montserrat; St. Kitts & Nevis; St. Lucia; St. Vincent & the Grenadines; Trinidad & Tobago)**	**UTC-5** **(Jamaica; Panama)**	**UTC-6** **(Belize; Costa Rica; El Salvador; Guatemala; Honduras; Nicaragua)**
21:00	11:00	10:00	09:00	08:00
23:00	13:00	12:00	11:00	10:00

HOW TO USE THE LEARNING MANAGEMENT SYSTEM

Tutorial on how to use the learning management system can be accessed through:

https://bit.ly/lms-edunext

OPENING/INAUGURATION

Objective : To briefly introduce the implementing agency's profile, the purpose of the training, and the training outline.

Time : 40 minutes

Material :
- Laptop / Android Tablet/ iPad equipped with speaker, camera and microphone
- Zoom Meeting software/application
- List of participants

By the end of the opening/inauguration session there will be a virtual photo opportunity between the implementing agency actors and the participants. Participants will also be required to take a pre-test before proceeding to Topic 1.

TOPIC 1: BASIC FRAMEWORK OF THE DISASTER RISK REDUCTION (DRR)

Objective : To promote the adoption of DRR techniques and knowledge.

Time : 1 hour

Material :
- Laptop / Android Tablet/ iPad equipped with speaker, camera and microphone
- Zoom Meeting software/application

TOPIC 2: DRR OF GEOLOGICAL HAZARDS

Objective : Improve disaster mitigation capacity of disaster management authorities and academic institutions, promote DRR technique and knowledge adoption, build disaster resilience

in disaster-prone areas of CARICOM and SICA member countries, contribute to the achievement of social and economic development, and disseminate recent trends in climate change and disaster management.

Time : 2 hours

Material :
- Laptop / Android Tablet/ iPad equipped with speaker, camera and microphone
- Zoom Meeting software/application

TOPIC 3: DRR OF EXTREME WEATHER AND COASTAL HAZARD

Objective : Improving disaster management authorities' and academia's disaster mitigation capacity, promoting the adoption of climate change adaptation measures, building disaster resilience in disaster-prone areas of CARICOM and SICA member countries, and disseminating recent trends in climate change and disaster management

Time : 2 hours

Material :
- Laptop / Android Tablet/ iPad equipped with speaker, camera and microphone
- Zoom Meeting software/application

TOPIC 4: EARLY WARNING SYSTEM AND CLIMATE CHANGE INFORMATION SYSTEM

Objective : To encourage the use of disaster risk reduction techniques and knowledge, to encourage the use of climate change adaptation measures, to build disaster resilience in disaster-prone areas of CARICOM and SICA member countries, and to disseminate recent trends in climate change and disaster management.

Time : 2 hours

Material :
- Laptop / Android Tablet/ iPad equipped with speaker, camera and microphone
- Zoom Meeting software/application

HANDS ON ACTIVITIES AND FINAL TEST/POST TEST

Objective : To demonstrate how to create impact chains and how to complete post-test.

Time : 1 hour and 50 minutes

Material :
- Laptop / Android Tablet/ iPad equipped with speaker, camera and microphone
- Zoom Meeting software/application
- Software/application to access word document format
- Software/application to access PDF document format
- Learning Management System website

CLOSING

Objective : To bid farewell and thank you to the implementing agencies and participants.

Time : 10 minutes.

Material :
- Laptop / Android Tablet/ iPad equipped with speaker, camera and microphone
- Zoom Meeting software/application

REGISTRATION

Registration is available via the following link: **https://bit.ly/course-disaster-risk-reduction**

To register as a participant, candidates must meet the intended audience criteria.

Registration is open from June 27, 2022 to July 25, 2022 at 9 AM Jakarta time zone (GMT +7).