

SUMMARY

MOU AND IMPLEMENTATION AGREEMENT (IA)

PICES - INSTITUT TEKNOLOGI INDONESIA (ITI)

ON BUILDING LOCAL WARNING NETWORKS FOR THE DETECTION

AND HUMAN DIMENSION OF CIGUATERA FISH POISONING IN

INDONESIA

CIGUATERA TEAM PICES-INDONESIA

Mitsutaku MAKINO¹ and Suhendar I SACHOEMAR²

1. AORI-Tokyo University, Japan

2. Research Center for Environment and Clean Technology, National Research and Innovation Agency (BRIN) Indonesia



PICES PST MEETING
Yokohama, 16 Maret 2023

WHY CIGUATERA RESEARCH IS IMPORTANT FOR INDONESIA

We must be concerned about the dangers of CFP to human safety and security



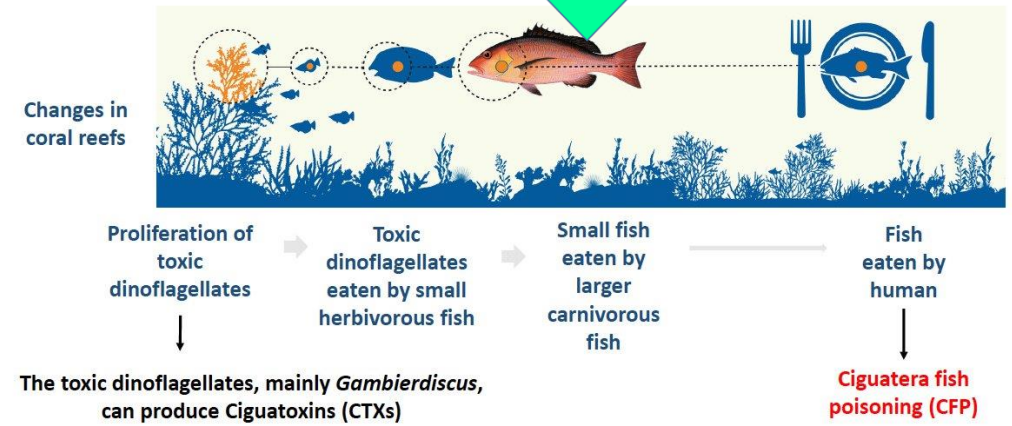
Area Statistics Value

Marine area	<u>2,915,000</u>	km ²
Shelf area	<u>1,847,700</u>	km ²
Coastline	<u>95,181</u>	km
Land area	<u>1,826,440</u>	km ²
Reef area	<u>51,020</u>	km ²
Mangrove area	<u>42,550</u>	km ²
Reefs At Risk	<u>82</u>	%

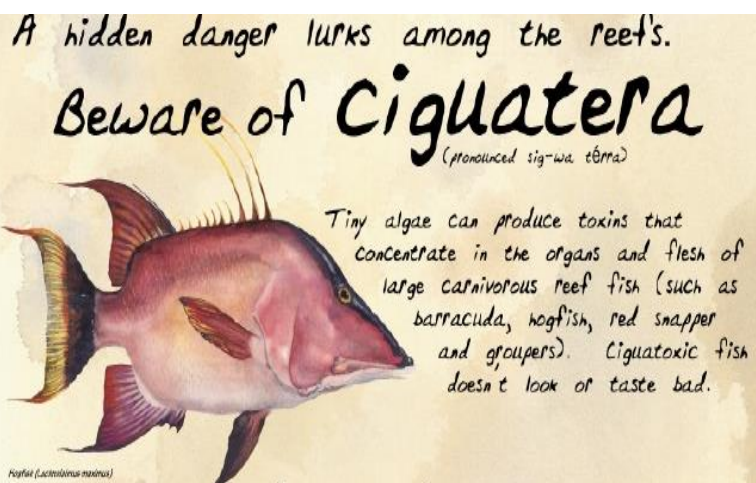
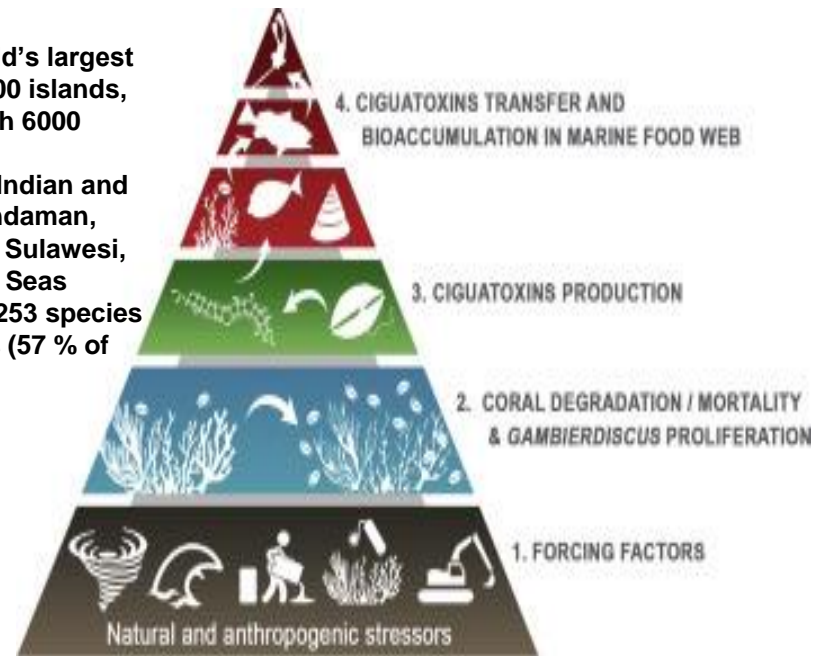
Socioeconomic Statistics 273.879.750

Population	<u>273.879.750</u>	(BPS, 2022)
Coastal Population	<u>96</u>	%

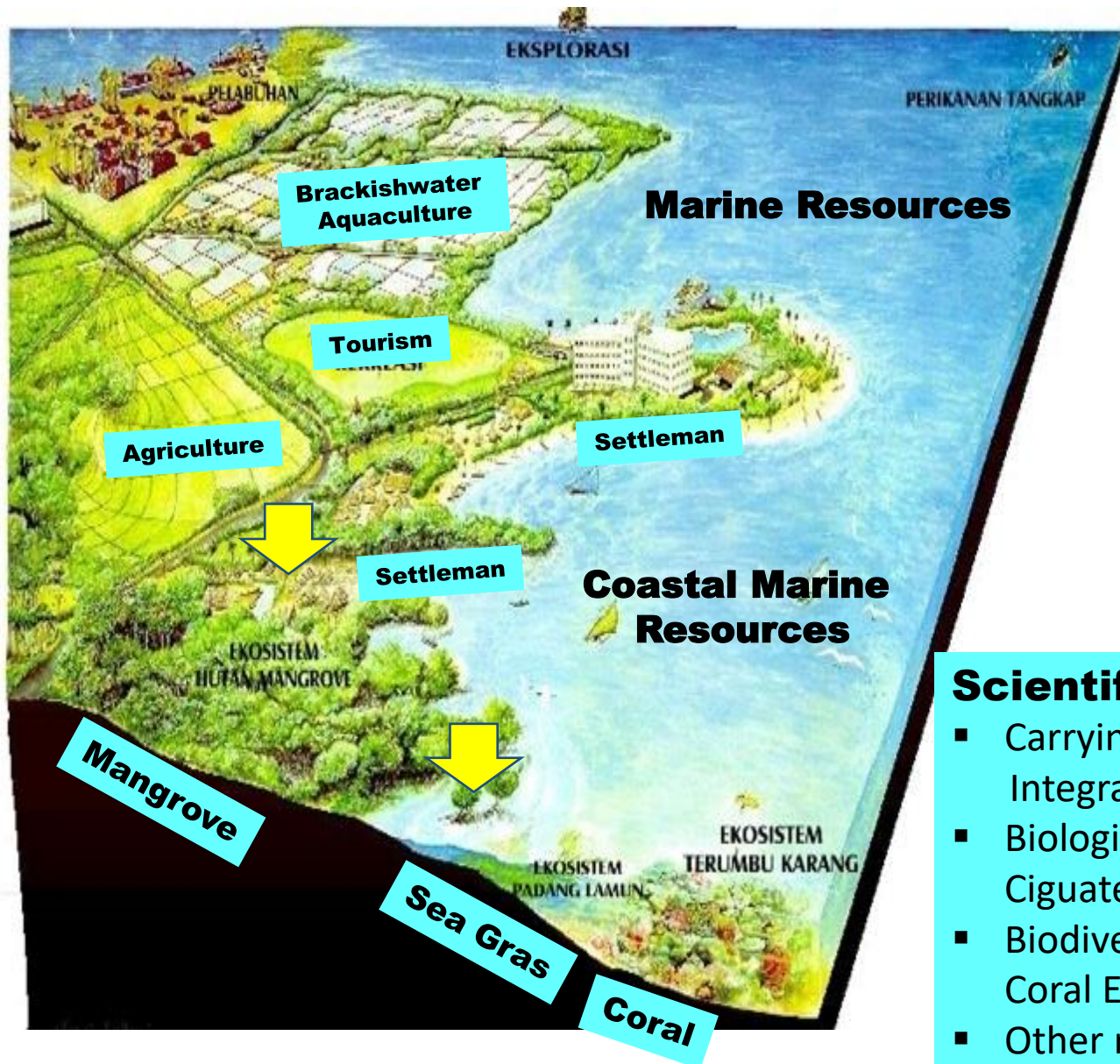
Source : Spalding, M.D., C. Ravilious and E.P. Green (2001) and MMF (2006) and BPS, 2022



- Indonesia, the world's largest archipelago : 18,000 islands, 17,000 islands with 6000 inhabited
- Covering both the Indian and Pacific Oceans, Andaman, Java, South China, Sulawesi, Banda and Arafura Seas
- Ornamental Fish : 253 species
- Coral : 400 species (57 % of the world)



SPACE SUSTAINABLE UTILIZATION OF COASTAL AND MARINE RESOURCES BASED ON SCIENTIFIC POLICY



Fishing :

- Small Pelagic and Oceanic Fish : (Tuna, Skipjak, Mackerel, Sardine, etc)
- Demersal Fish : Shrimp, Red Snaper, Halibut
- Coral Fish : Grouper, trevally, rabbit fishes

Aquaculture :

- Brackishwater : Shrimp, Milk Fish, Saline Tilapia
Seaweed (*Gracillaria*), Crab
- Marine Culture : Grouper, Red Snaper, Saline Tilapia
Seaweed (*E. Cottonii*), Milk Fish, Sea Cucumber

Tourism :

- Sport Fishing, Snorkeling, Diving

Scientific Base Policy : Integrated Research

- Carrying Capacity and Sustainable Utilization Concept : Integrated Multi Tropic Aquaculture (IMTA), Ecofriendly Fishing
- Biological Disaster Mitigation : Eutrophication, Hypoxic, HAB, Ciguatera, Pollution and Transport Pollutant, Ecosystem Modelling,
- Biodiversity and Water Quality study of Mangrove, Seagrass and Coral Ecosystem.
- Other relevant studies to support sustainable Development



SUSTAINABLE DEVELOPMENT GOALS

1 NO POVERTY 	2 ZERO HUNGER 	3 GOOD HEALTH AND WELL BEING 	4 QUALITY EDUCATION 	5 GENDER EQUALITY 	6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY 	8 DECENT WORK AND ECONOMIC GROWTH 	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE 	10 REDUCED INEQUALITIES 	11 SUSTAINABLE CITIES AND COMMUNITIES 	12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION 	14 LIFE BELOW WATER 	15 LIFE ON LAND 	16 PEACE, JUSTICE AND STRONG INSTITUTIONS 	17 PARTNERSHIPS FOR THE GOALS 	

SUSTAINABLE DEVELOPMENT GOALS

Previous Project

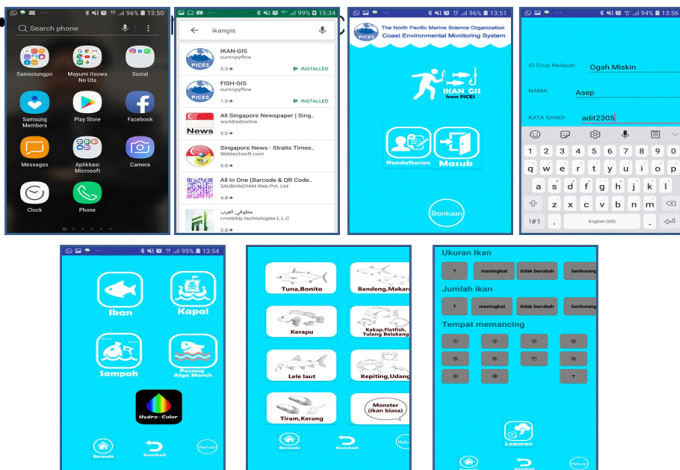
A New PICES-MAFF Project

“Building Capacity for Coastal Monitoring by Local Small-scale Fishers”

What we are going to do?

- Introduce the mobile phone-based technology for ecosystem monitoring and fisheries monitoring by the small-scale coastal fishers in Indonesia.
- The objective is to achieve better enforcement of local fisheries rules (decrease of domestic IUU), and to increase understandings about ecosystem changes by local people (e.g., HAB, new invasive species, etc.)

IKAN GIS-FISH GIS



Monitoring Item No. 1: Coastal Water Quality by HydroColor App



- Water turbidity (TNU), suspended particulate matter (g/cm³), chlorophyll concentrations, etc.

Monitoring Item No. 2: phytoplankton by Foldscope



- Magnification of 140x, resolution of 2 microns, to be used with automatic phytoplankton species identification software, etc.

Monitoring Item No. 3: IUU Vessels by your Mobile Phone Camera



- Your community has many regulations and local rules for fisheries management.
- If you find any suspicious vessels or IUU vessels that violate the regulations/rules, take photos, and share with government and neighbors. (your ID will be protected)



WORKSHOP AND TRAINING



RESEARCH OBJECTIVE-FUNDING SOURCES (PICES-BRIN)

First : The overall project goal is to build the capacity of local small-scale fishers and community members to monitor their coastal ecosystems and coastal fisheries to benefit human health in Pacific Rim developing countries. The focus of this project is Ciguatera Fish Poisoning (CFP) in tropical reef fisheries, which globally has the greatest human health and economic impacts of any algal-based poisoning syndromes. The key question, and aim of the project is: How to best foster the use of smartphone-based citizen-science technologies, developed in the 2017–2020 PICES/MAFF project on “Building Capacity for Coastal Monitoring by Local Small-scale Fishers” (FishGIS), to empower Indonesian coastal communities to assess, detect, and minimize their exposure to CFP in community-scale fisheries?

Second : To study benthic dinoflagellate communities that have the potential to cause CFP, with target genera namely *Gambierdiscus*, *Prorocentrum*, *Coolia*, *Ostreopsis*, and *Amphidinium*, and their relation to habitat conditions and water quality on Gili Matra. Second, studying the level of pressure from human activities and potential economic losses due to the abundance of harmful Algae / CFP in the Gili Matra area

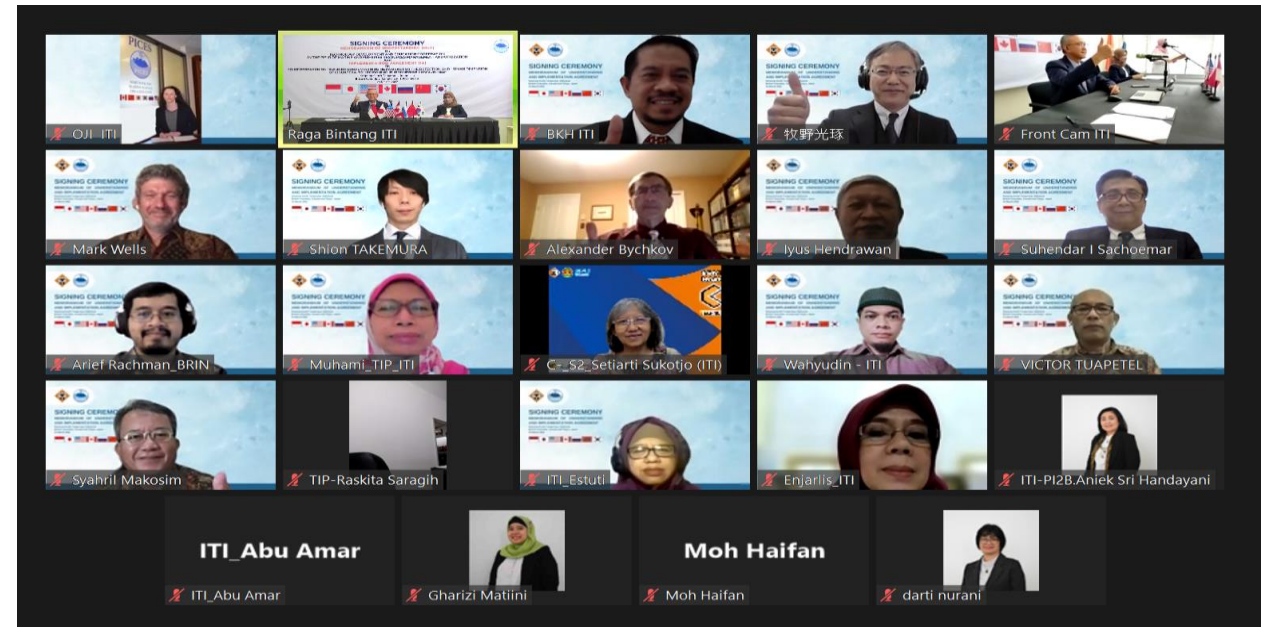
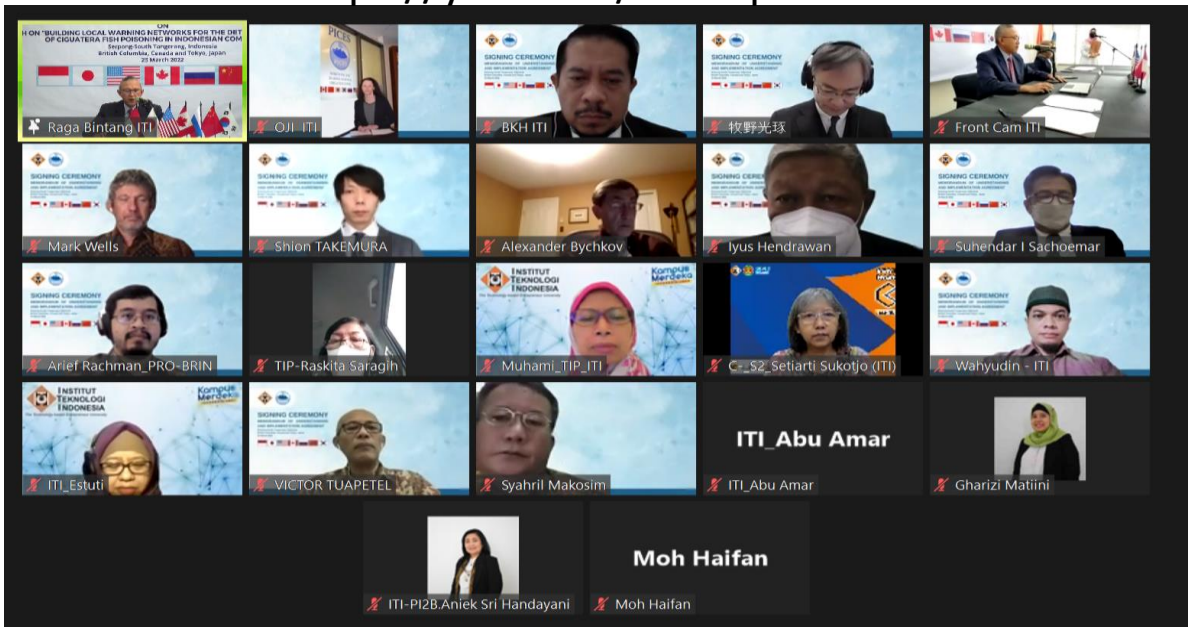
Third : Disseminate information and increase public awareness of the potential dangers of MAB and CFP in the Gili Matra area and the coast of West Lombok through Capacity Building activities (workshops and training). Dangerous Algae Marak (MAB) is one of 10 outbreaks that occur in sea waters (Plagues of the Seas) whose presence can threaten the balance of ecosystems and people's lives in coastal areas.

IMPLEMENTED AGENDA

MOU AND IA PICES-ITI SIGNING CEREMONY

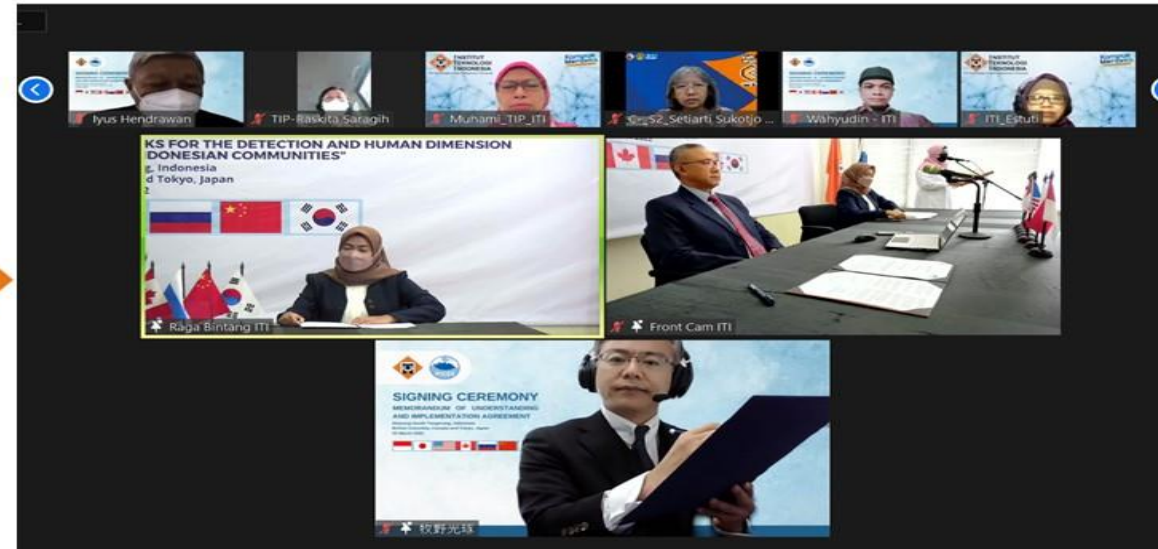
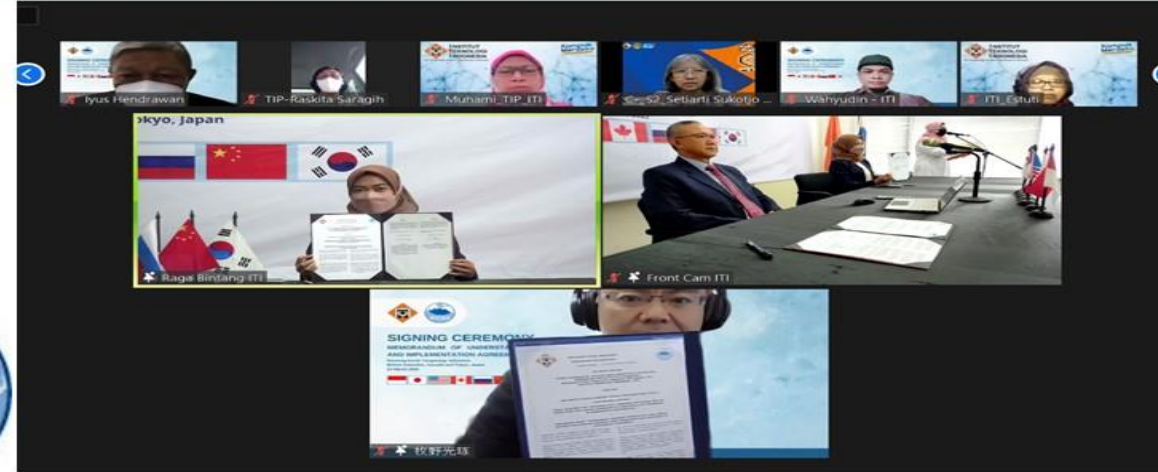
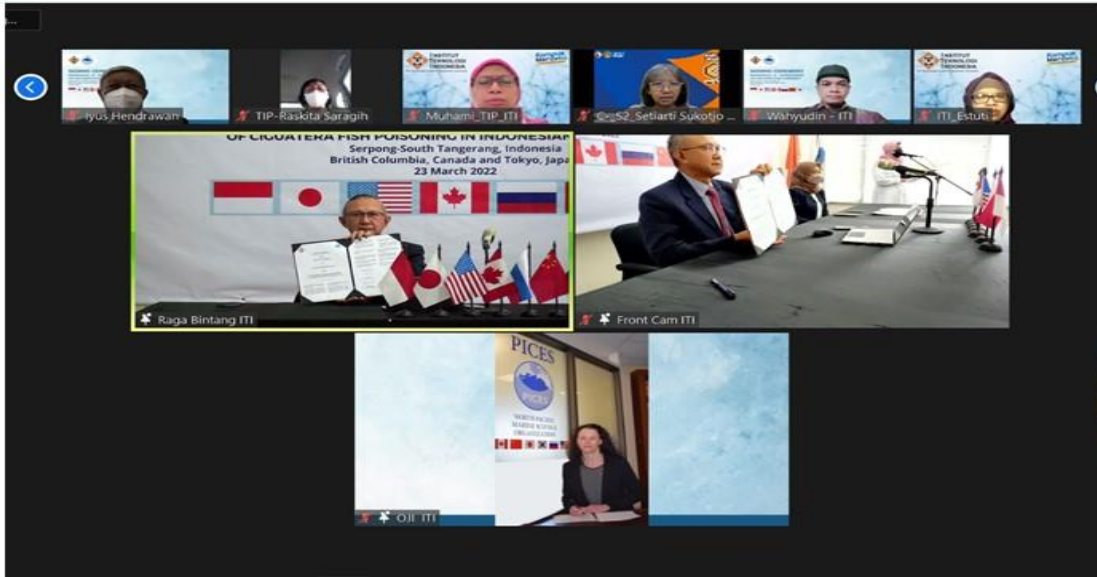


<https://youtu.be/8YNKlpXbYGo>



IMPLEMENTED AGENDA

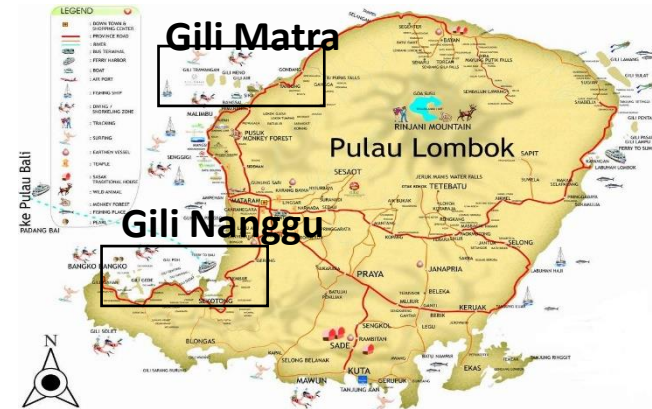
MOU AND IA PICES-ITI SIGNING CEREMONY



IMPLEMENTED AGENDA

I. SURVEY ACTIVITY (GILI MATRA)

1. 23-28 May (Transition from Wet to Dry Season)-PICES
2. 1-5 August (Dry Season) – BRIN
3. 10-16 October (Transition from Dry to Wet Season)-BRIN
4. 12-18 December (Wet Season) - PICES
5. 20-25 February (Wet Season) - PICES



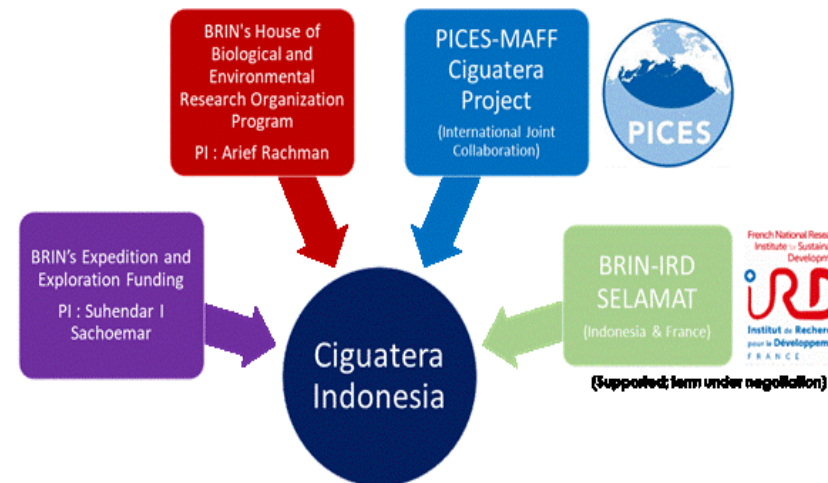
Gili Matra



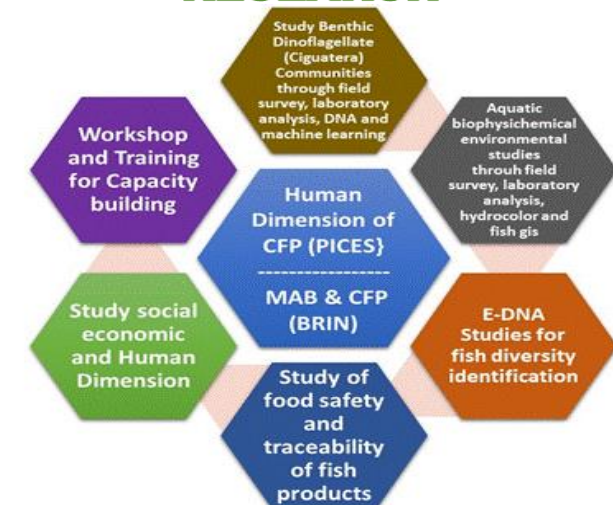
II. WORKSHOP AND TRAINING (January 22-27)

- PICES Delegation Arrival
- Field Orientation Gili Matra : January 23
- Field Orientation South Lombok Bay : January 24
- Audience to Secretary Governor West Nusa Tenggara
- Workshop and Training : January 25-27

FUNDING AND SCIENTIFIC SUPPORT



SCOPE OF CFP RESEARCH



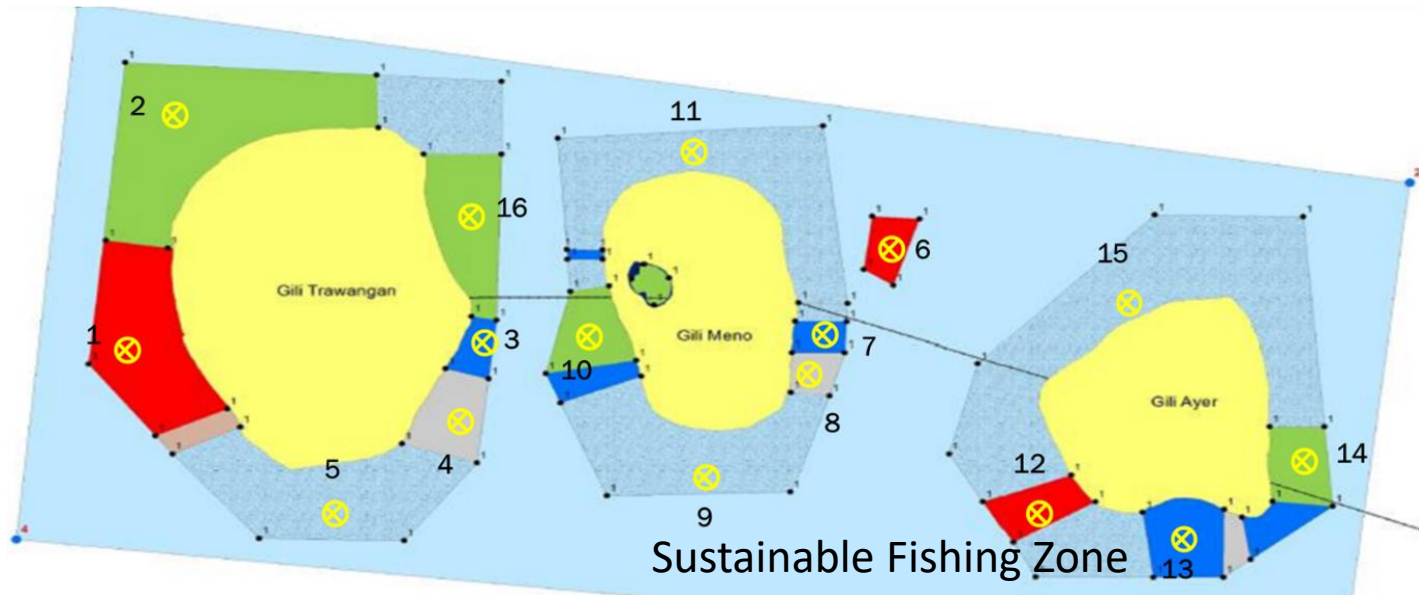
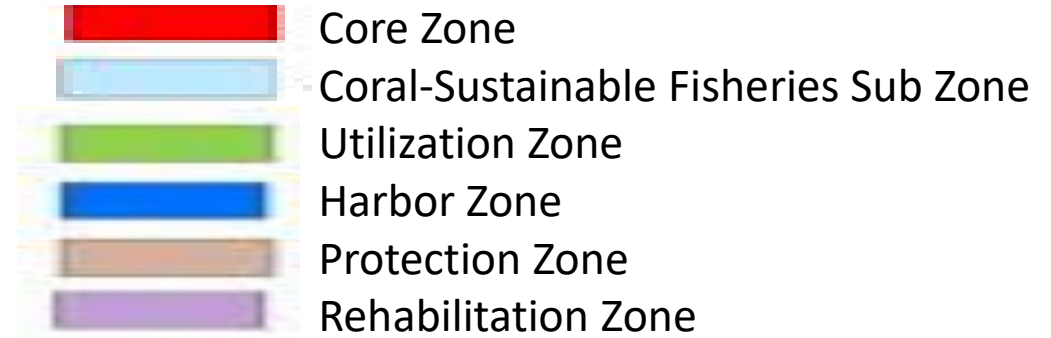
III. CIGUATERA ADVANCED SURVEY (2023-2026)

- Deep Benthic Algae Observation- Gil Matra
- Ciguatera at Gili Nanggu

IV. PST and Scientific Meeting

- The end of June 2023 (Offline) : PST Meeting at Lombok and Seminar on Ciguatera, Coastal Marine Environment, Marine Food Safety and Marine Agroindustrial Development at Research Center for Science and Technology (Puspipstek), Serpong, Jakarta, the day before.
- The end of September 2023 (Hybrid) : The First International Joint Seminar on Ciguatera and Sustainable Coastal Marine Resources Management (Iscom), Advanced Technology In Chemical Engineering (Icatce) And Green Technology For Value Chains (Green Vc)

SITE LOCATION OF GILI MATRA ISLAND AT LOMBOK, WEST NUSA TENGGARA, INDONESIA



- ⊗ Water column sampling sites → 16 Sites
- Plankton (phytoplankton + zooplankton) → 32 sample
- Water quality (Temperature, pH, Salinity, DO, TDS, TSS) → 16 dataset
- Nutrient concentration → 16 sampel
- Chlorophyll-a
- e-DNA for fish identification



SITE LOCATION OF GILI NAGGU ISLAND AT LOMBOK, WEST NUSA TENGGARA, INDONESIA



GILI NANGGU LOMBOK - A Complete Guide to this Secret Gili Island



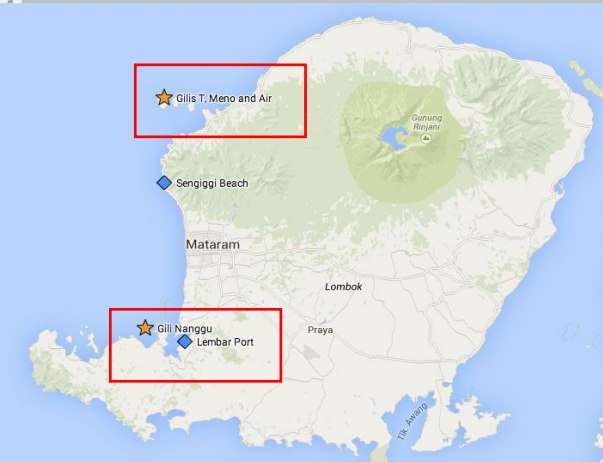
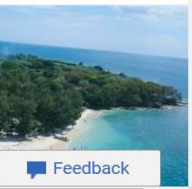
Top Spot Snorkeling In Lombok For Nice Holiday | Fast Boat from Bali t...



Gili Nanggu review ~ South Gilis, Indonesia | 2021 Edition



Gili Nanggu - the slightly different Gili Island



Gili Nanggu is one of the so called “Secret Gili’s” of Lombok. This beautiful tiny tropical paradise island has a lovely beach and perfect snorkel circumstances. The serene, untouched vibes of this island makes it so special. A day trip to Gili Nanggu is like being transported to a completely different Indonesia! No traffic, no crowds, no vendors. Only unexploited nature and plenty of marine life. If you want to enjoy the beauty of Gili Nanggu for a bit longer than only a few hours during a day trip, you can even book a night at the Gili Nanggu cottages. But mainly, this island is part of a one day [“Secret Gili’s snorkel tour”](#). Read in this blog about Gili Nanggu and everything you need to know before you go!



RESEARCH TOPIC AND FUNDING OF PICES
 RESEARCH ON THE DETECTION AND HUMAN DIMENSION OF CIGUATERA FISH POISONING IN INDONESIA

RESEARCH TOPIC AND FUNDING OF BRIN
 POTENSI ANCAMAN FENOMENA CIGUATERA FISH POISONING (CFP) DAN MARAK ALGA BERBAHAYA (MAB) DALAM KAITANNYA DENGAN AKTIVITAS MANUSIA DI KAWASAN TAMAN WISATA PERAIRAN (TWP) KEPULAUAN GILI MATRA



RESEARCH ORGANIZATION PICES-INDONESIAN TEAM

Participation Research Institute and Univ (Researcher and Student)
 1. PICES; 2. ITI; 3. BRIN ; 4. Univ of Indonesia; 5. Mataram Univ; 6. Padjadjaran Univ

RESPONSIBLE FOR ACTIVITIES
 Mitsutaku Makino

RESPONSIBLE FOR ACTIVITIES
 Shinta Leonita

ACTIVITY COORDINATOR
 Alex Bychkov

ACTIVITY COORDINATOR
 Suhendar I Sachoemar

IMPLEMENTING TEAM LEADER
 Marks Well

IMPLEMENTING TEAM LEADER
 Arief Rachman

Activities
 1. Research :
 Survey (3 x PICES, 2 x BRIN and data analysis).
 2. Workshop and Dissemination

Output
 1. Report for PICES and BRIN
 2. Scientific Publications
 3. Report of Result Survey (PEE)



CIGUATERA CHARACTERISTIC

- 1. Ciguatera Identification & DNA
 Mark san, Arief, Riani Faza, Aryo, Emily, Widia
- 2. Machine Learning and AI
 Setiarti Sukotjo, Arief

COASTAL MARINE ENVIRONMENT

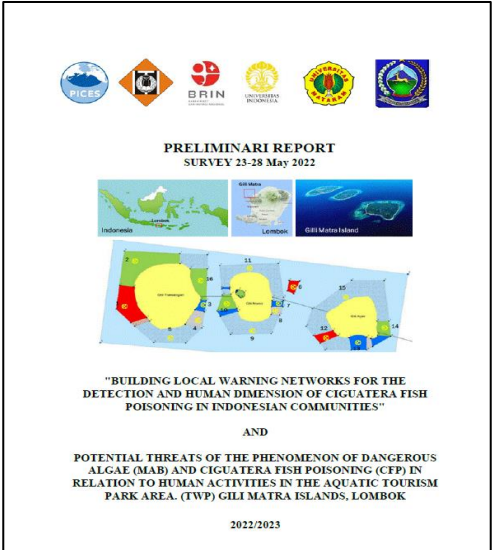
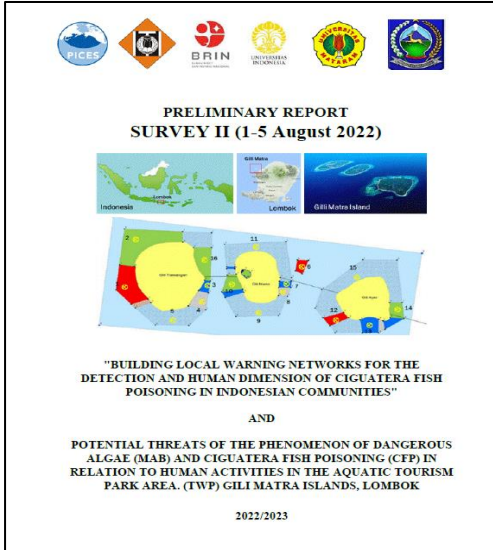
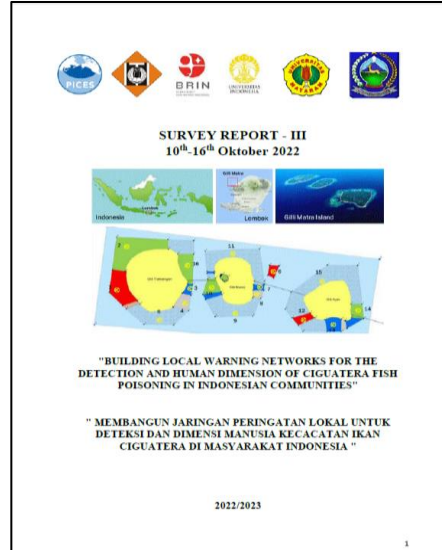
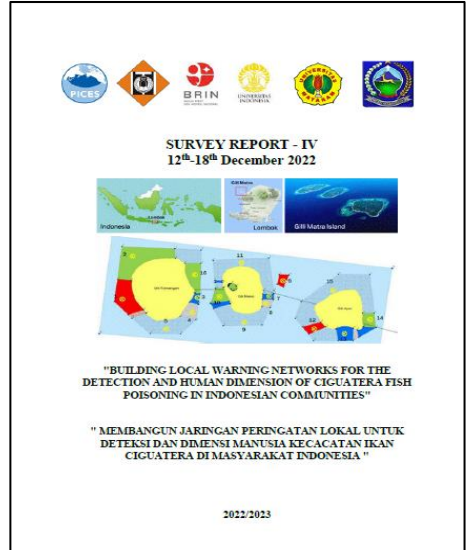
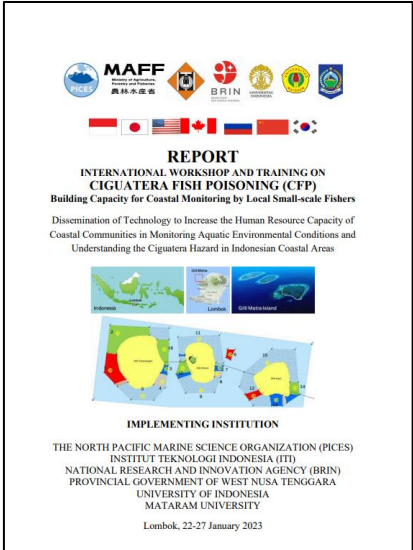
- 1. Fish-GIs, Hydrocolor Tech. Env. Mon
 Shion san , Suhendar, Ekky, Hanny
- 2. Water Quality
 Suhendar Hanny, Suci, Eky
- 3. Environmental-DNA
 Ratu Siti Aliah, Novi, Ekky

HUMAN DIMENSION, SOCIAL ECONOMIC TREACIBILITY AND FOOD A-SAFETY

- 1. Human Dimension and Social Economic
 Makino san, Tojo san, Trick san, Suhendar, Haryanti, Andi
- 2. Treacibility and Foof Safety
 Shinta, Muhami, Farah, Suhendar

IMPLEMENTED AGENDA

I. SURVEY ACTIVITY (GILI MATRA)

 <p>PRELIMINARI REPORT SURVEY 23-28 May 2022</p> <p>"BUILDING LOCAL WARNING NETWORKS FOR THE DETECTION AND HUMAN DIMENSION OF CIGUATERA FISH POISONING IN INDONESIAN COMMUNITIES"</p> <p>AND</p> <p>POTENTIAL THREATS OF THE PHENOMENON OF DANGEROUS ALGAE (MAB) AND CIGUATERA FISH POISONING (CFP) IN RELATION TO HUMAN ACTIVITIES IN THE AQUATIC TOURISM PARK AREA. (TWP) GILI MATRA ISLANDS, LOMBOK</p> <p>2022/2023</p>	 <p>PRELIMINARY REPORT SURVEY II (1-5 August 2022)</p> <p>"BUILDING LOCAL WARNING NETWORKS FOR THE DETECTION AND HUMAN DIMENSION OF CIGUATERA FISH POISONING IN INDONESIAN COMMUNITIES"</p> <p>AND</p> <p>POTENTIAL THREATS OF THE PHENOMENON OF DANGEROUS ALGAE (MAB) AND CIGUATERA FISH POISONING (CFP) IN RELATION TO HUMAN ACTIVITIES IN THE AQUATIC TOURISM PARK AREA. (TWP) GILI MATRA ISLANDS, LOMBOK</p> <p>2022/2023</p>	 <p>SURVEY REPORT - III 10th-16th Oktober 2022</p> <p>"BUILDING LOCAL WARNING NETWORKS FOR THE DETECTION AND HUMAN DIMENSION OF CIGUATERA FISH POISONING IN INDONESIAN COMMUNITIES"</p> <p>"MEMBANGUN JARINGAN PERINGATAN LOKAL UNTUK DETEKSI DAN DIMENSI MANUSIA KECAKATAN IKAN CIGUATERA DI MASYARAKAT INDONESIA "</p> <p>2022/2023</p>	 <p>SURVEY REPORT - IV 12th-18th December 2022</p> <p>"BUILDING LOCAL WARNING NETWORKS FOR THE DETECTION AND HUMAN DIMENSION OF CIGUATERA FISH POISONING IN INDONESIAN COMMUNITIES"</p> <p>"MEMBANGUN JARINGAN PERINGATAN LOKAL UNTUK DETEKSI DAN DIMENSI MANUSIA KECAKATAN IKAN CIGUATERA DI MASYARAKAT INDONESIA "</p> <p>2022/2023</p>	 <p>REPORT INTERNATIONAL WORKSHOP AND TRAINING ON CIGUATERA FISH POISONING (CFP) Building Capacity for Coastal Monitoring by Local Small-scale Fishers</p> <p>Dissemination of Technology to Increase the Human Resource Capacity of Coastal Communities in Monitoring Aquatic Environmental Conditions and Understanding the Ciguatera Hazard in Indonesian Coastal Areas</p> <p>IMPLEMENTING INSTITUTION THE NORTH PACIFIC MARINE SCIENCE ORGANIZATION (PICES) INSTITUT TEKNOLOGI INDONESIA (ITI) NATIONAL RESEARCH AND INNOVATION AGENCY (BRIN) PROVINCIAL GOVERNMENT OF WEST NUSA TENGGARA UNIVERSITY OF INDONESIA MATARAM UNIVERSITY Lombok, 22-27 January 2023</p>
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II. WORKSHOP AND TRAINING

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https://drive.google.com/drive/folders/1-lKpM_Jmu_VoGZTXyD509jP6YI6Ggg1u?usp=share_link

IMPLEMENTED AGENDA

I. SURVEY ACTIVITY (GILI MATRA)

AUDIENCE WITH THE GOVERNOR OF WEST NUSA TENGGARA (NTB) PROVINCE AND PUBLICATIONS



<https://www.suarantb.com/gubernur-ntb-dukung-penelitian-tim-riiset-iti-di-gili-matra/>

<https://www.mandalikapost.com/2022/05/iti-dan-pices-berencana-riiset-ciguatera.html>

<https://wartajakarta.com/governor-of-ntb-supports-synergy-of-ciguatera-indonesia-and-pices/>

<https://jejakprofil.com/2022/06/03/governor-of-ntb-supports-synergy-of-ciguatera-indonesia-and-pices/>

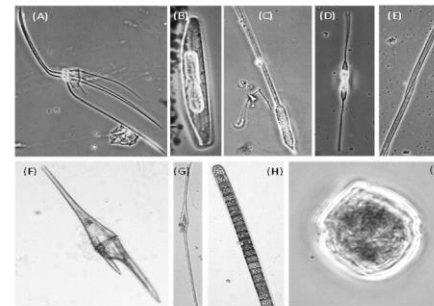
<https://lomboktimur.pikiran-rakyat.com/ntb-rama/pr-2554548483/gubernur-ntb-memperbolehkan-tim-riiset-iti-meneliti-di-3-gili-dengan-catatan-kerjasama>

RESULT PLANKTON SAMPLING AT GILLI MATRA ISLAND-LOMBOK, WEST NUSA TENGGARA, INDONESIA



Phytoplankton Sampling at TWP Gilli Matra, Lombok

Phytoplankton images of some notable species from Gilli Matra. (A) *Chaetoceros dadayi*, (B) *Trachyneis* sp., (C) Unusual form/anomalous growth in *Proboscia alata*, (D) *Nitzschia rectilonga*, (E) *Pseudo-nitzschia* spp., (F) *Tripos* (*Ceratium*) *furca*, (G) *Tripos fusus*, (H) *Trichodesmium erythraeum*, (I) *Scrippsiella trochoidea*. (A-D) unusual species or anomaly; (E-I) potentially harmful species with recorded blooms in Indonesia. Images without scale.



Cyanobacteria

Trichodesmium erythraeum

Diatoms

Asterionellopsis glacialis
Bacetrastrium delicatulum
Bacillaria paxillifera
Bacetrastrium elongatum
Bacetrastrium furcatum
Chaetoceros affinis
Chaetoceros atlanticus
Chaetoceros coarctatus
Chaetoceros compressus
Chaetoceros curviretus
Chaetoceros dadayi
Chaetoceros didymus

Unusual

Lioloma pacificum

Navicula directa

Nitzschia lorentiana

Nitzschia rectilonga

Nitzschia sp.

Odontella sinensis

Pleurosigma sp.

Proboscia alata

Pseudo-nitzschia spp.

Pseudo-nitzschia calcar-avis

Rhizosolenia bergerii

Rhizosolenia decipiens

Rhizosolenia hebetata f. *semispina*

Rhizosolenia imbricata

Rhizosolenia setigera

Skeletonema costatum

Thalassionema javanicum

Thalassiosira spp.

Chaetoceros didymus var. *protuberans*

Chaetoceros distans

Chaetoceros diversus

Chaetoceros lacinosus

Chaetoceros lorentianus

Chaetoceros messanensis

Chaetoceros peruvianus

Chaetoceros tenuissimus

Coscinodiscus radiatus

Cylindrotheca closterium

Ditylum sol

Guinardia cylindrus

Guinardia striata

Hemiaulus indicus

Hemiaulus membranaceus

Leptocylindrus danicus

Thalassiosira longissima

Trachyneis sp.

Dinoflagellates

Amphisolenia schauslandii

Ceratium furca

Ceratium furca

Ceratium macroceros

Ceratium trichoceros

Ceratium tripos

Rhizosolenia armata

Ceratocoryx squarretti

Ceratocoryx horrida

Diplopalis lenticula

Ornithocercus thumii

Pyropachus horologium

Pyrocystis fusiformis

Scrippsiella trochoidea

POTENTIALLY TOXIC BENTHIC DINOFLAGELLATES WHICH CAUSING CIGUATERA FISH POISONING (CFP) IN GILI MATRA WATERS, NORTH LOMBOK



Conditions of some BHABs habitats

Sampling with Artificial Substrate

WATER QUALITY AQUATIC ENVIRONMENT ASSESSMENT

- Indonesia's coastal and marine areas are very vulnerable to various pollution threats, both originating from human domestic activities (marine debris), industry, tourism, transportation (oil spill), and other activities, one of which is the Gili Matra Aquatic Tourism Park (TWP). TWP Gili Matra is one of the marine tourism parks located in North Lombok Regency. TWP and consists of a group of small islands, namely Gili Ayer, Gili Meno, and Gili Trawangan.
- To determine the quality of the aquatic environment, monitoring has been carried out by measuring several biophysical and chemical parameters of the aquatic environment, both in situ in the field and through analysis in the laboratory.

Physical Water Properties

Temperature, Salinity, DO, pH, Turbidity, TDS, were measured by water quality checker Horiba U-5000 and Hydrochlor (TSS, SPM and Chlorophyll-a). Brightness by seichi. disk into the water column until the slab is not visible. TSS by calculating the difference weight of 0.45 m filter paper before and after the water was filtered according to SNI 06-6989.3-2004.

Physical Water Properties

Phosphate (PO₄), nitrite (NO₂), nitrate (NO₃), ammonia (NH₄), and silicate (SiO₃) were measured using the spectrophotometric method by reacting a sample of water that had been filtered using 45 m filter paper with each kit and then read with the Hach DR 900 Spectrophotometer.



FOOD SAFETY AND TRACEABILITY OF REEF FISH



Location of the Tanjung and Bintaro fish markets, North Lombok

Fish market of the Tanjung and Bintaro-North Lombok

Fish Sampling at Fish Landing and Fish Market



No.	Local Name of Fish	Sampling Location (Fish Market)	Fish Photos	Method	Result
1.	Ikan Pogot Blackbelly triggerfish	Tanjung		Mouse Bioassay	Not detected
2.	Ikan Karang 1 Unidentified	Tanjung		Mouse Bioassay	Not detected
3.	Ikan Karang 2 Unidentified	Tanjung		Mouse Bioassay	Not detected
4.	Ikan Karang 4 (Signan sp)	Tanjung		Mouse Bioassay	Not detected
5.	Ikan Karang 5 Unidentified	Tanjung		Mouse Bioassay	Not detected
6.	Ikan Karang 6 Unidentified	Tanjung		Mouse Bioassay	Not detected
7.	Ikan Tuna	Bintaro		Mouse Bioassay	Not detected
8.	Ikan Karang 2 (Kakatua)	Bintaro		Mouse Bioassay	Not detected
9.	Ikan Karang 3 Unidentified	Bintaro		Mouse Bioassay	Not detected
10.	Ikan Barakuda	Bintaro		Mouse Bioassay	Not detected
11.	Ikan Karang 4 Unidentified	Bintaro		Mouse Bioassay	Not detected
12.	Ikan Karang 5 (Grouper)	Bintaro		Mouse Bioassay	Not detected
13.	Ikan Karang 6 (Signan sp)	Bintaro		Mouse Bioassay	Not detected

The abundance of benthic dinoflagellates (cells/mL) in Gili Matra waters

No.	Dinoflagellates	Gili Air			Gili Meno			Gili Trawangan					
		MA	SG	CR	AS	MA	SG	CR	AS	MA	SG	CR	AS
1	Ostreopsis	0	0	0	-	2	1	0	2	0	0	0	-
2	Prorocentrum	2	3	0	-	6	2	0	-	4	2	0	-
3	Sinophysis	0	0	0	-	1	0	0	-	2	0	0	-

SURVEY GALLERY



IMPLEMENTED AGENDA

II. WORKSHOP AND TRAINING



IMPLEMENTED AGENDA

II. WORKSHOP AND TRAINING



Figure 3. 4. Regional Secretary, Head of BRIDA, WNT Pem.Prov Staff, PICES Delegation and Workshop Committee, WNT Governor's Office, Lombok , 24 January 2023.



Report of the chairman of the committee,
Prof. Suhendar I Sachoemar BRIN-ITI



Speech of Chancellor of Institut Teknologi
Indonesia, Dr.Ir.Marzan A Iskandar, IPU



Speech of PICES representative,
Prof. Mitsutaku Makino



Speech of Chancellor of the University of
Mataram, Prof. Ir. Bambang Hari Kusumo,
M. Agr. Sc., Ph.D.



Speech of Head of Center for Environmental
Research and Clean Technology, BRIN, Dr.
Sasa Sofyan Munawar, S.Hut., M.P



Speech of Regional Secretary of
Governor WNT Province, Drs.H. Lalu
Gita Ariadi, MSi



Opening by Regional Secretary of
Governor WNT Province, Drs.H. Lalu
Gita Ariadi, MSi



Signing MoU ITI with WNT Government



Signing MoU ITI with Mataram



Figure 3.15. Group photo of Institution Leaders, PICES Delegates, Workshop Par Ciguatera Fish Poisoning Training, Lombok, January 25 2023.



Figure 3.17. Training Hydrocolor and Fish GIS



IMPLEMENTED AGENDA

II. WORKSHOP AND TRAINING



Figure 3.18. Training Planktoscope



Delegation and Committee at Gili Matra Beach



Prof. Mitsutaku Makino is chatting with the locals



1.2. Organizing Committee

International Organizing Committee

1. Prof. Dr. Mitsutaku Makino (PICES-Tokyo University, Japan)
2. Prof. Dr. Mark Wells (PICES-Maine University, USA)
3. Dr. Charlie Trick (PICES-Western University, Canada)
4. Dr. Shion TAKEMURA (PICES-FRA-MAFF, Japan)
5. Dr. Naoki Tojo (PICES-Hokkaido University, Japan)
6. Dr. Daisuke Ambe (PICES-FRA-MAFF, Japan)
7. Dr. Manu Prakash (Maine University, USA)
8. Drajad Seto (Maine University, USA)
9. Ethan Li (Maine University, USA)

Local Organizing Committee

Advisor

1. Dr. Zulkieffimangay, SE., MSc (Governor of West Nusa Tenggara Province)
2. Drs. H. Lahu Gita Ariadi, MSI (The Regional Governor of West Nusa Tenggara Province)
3. Dr. Ir. Marzan A Iskandar, MSc, IPU., Asen Eng. (Chancellor of Institut Teknologi Indonesia/ITI)
4. Prof. Dr. Bambang Hari Kusumo, M.Agr.St., Ph.D (Chancellor of Mataram University)
5. Dr. Sasa Sofyan Munawar, S. Hut., MSI (Head of Research Center for Environment and Clean Technology, National Research and Innovation Agency-BRIN and Dept. of Agricultural Industry-ITI)

Organizing Committee

1. Prof. Dr. Ir. Suhendar I Sachoemar, MSI (Research Center for Environment and Clean Technology, National Research and Innovation Agency-BRIN and Dept. of Agricultural Industry-ITI)
2. Ir. Shinta Leonita, MSI (Dept. of Agricultural Industry-ITI)
3. Arief Rachman, M.Bio.Sc. (Research Center for Oceanography)
4. Ir. Syahril Makosim, MSI (Dept. of Agricultural Industry-ITI)
5. Dra. Setiari Soekotjo, MSc (Dept. of Agricultural Industry-ITI)
6. Ir. Muhami, MSI (Dept. of Agricultural Industry-ITI)
7. Mohamad Ramli, ST (Dept of Informatika-ITI)
8. Ir. Darti Nurani, MSI (Dept. of Agricultural Industry-ITI)
9. Diowardi, SE, M.Sc., PhD (FEB-Mataram University)
10. Rahman, S.E., M.Par. (FEB-Mataram University)
11. Eko Kris Henriyawan
12. Wik Satriya Gunawan

1.3. Invitation and Participant International Organizations

1. Prof. Dr. Mitsutaku MAKINO (PICES-Tokyo University, Japan)
2. Prof. Dr. Mark Wells (PICES-Maine University, USA)
3. Dr. Charlie Trick (PICES-Western University, Canada)
4. Dr. Shion TAKEMURA (PICES-FRA-MAFF, Japan)
5. Dr. Naoki Tojo (PICES-Hokkaido University, Japan)
6. Dr. Daisuke Ambe (PICES-FRA-MAFF, Japan)
7. Dr. Manu Prakash (Maine University, USA)
8. Drajad Seto (Maine University, USA)
9. Ethan Li (Maine University, USA)

Provincial Government of West Nusa Tenggara (WNT) and BKKPN

10. Governor of West Nusa Tenggara Province (NTB)
11. Regional Secretary of West Nusa Tenggara Province (NTB)
12. Regent of North Lombok Regency
13. Secretary of North Lombok Regency
14. Head of the Regional Research and Innovation Agency (BRIDA) of NTB Provint NTB Province
15. Secretary to the Head of the Regional Research and Innovation Agency (BRIDA) NTB Province
16. Head of the Regional Development Planning Agency (Bappeda) of NTB Province
17. Secretary to the Head of the Regional Development Planning Agency (Bappeda) NTB Province
18. Head of the West Nusa Tenggara Province Environment and Forestry Office
19. Head of the North Lombok Regency Environment and Forestry Service
20. Head of Fisheries and Maritime Affairs Office of NTB Province
21. Head of Maritime Affairs and Fisheries Service of North Lombok Regency
22. Head of the NTB Provincial Tourism Office
23. Head of North Lombok Regency Tourism Office
24. Head of the National Water Area Conservation Center (BKKPN)

Institut Teknologi Indonesia (ITI)

25. Chancellor : Dr. Ir. Marzan A Iskandar, M.Sc. IPU., ASEAN Eng
26. Vice Chancellor : Prof. Dr. Ir. Davita Susantiyanti, MSI., IPM
27. Head of Cooperation Bureau: Dr. Ir. Iyus Hendrawan, M.Sc. IPU., ASEAN Eng
28. Ir. Syahril Makosim, ST, M.Sc., IPM,
29. Ir. Shinta Leonita, ST, M.Sc., IPM
30. Dr. Setiari Soekotjo, M.Sc
31. Ir. Muhami, M.Si, IPM
32. Mohamad Ramli, ST (IPS, IF)
33. Ir. Darti Nurani, MSI (PS TIP)

National Research And Innovation Agency (BRIN)

34. Head of Research Organization for Environmental and Biological Resources : Dr. Inan Hidayat
35. Head of Research Center for Environment and Clean Technology : Dr. Sasa Sofyan Munawar, S.Hut., M.P

Workshop and Training Agenda

Saturday, 21 January 2023

Afternoon the Chair of the Committee (Prof Dr. Ir. Suhendar, MSI) and Arief Rachman, M.Bio.Sc arrived in Lombok

Sunday, 22 January 2023

The PICES delegation arrives in Lombok
Ir. Shinta Leonita, STP MSI and Ir. Syahril Makosim, MSI IPM arrives in Lombok.
Dinner PICES Delegate and Committee

Monday, 23 January 2023

08.00 – 16.00 Field trip of the PICES delegation with the committee to Gili Trawangan, Gili Air and Gili Meno

Tuesday, 24 January 2023

The Research Team, the committee along with the Jakarta invitees arrived in Lombok
18.30 – 21.00 Audience of the PICES delegation, Chancellor of ITI, BRIN and the committee with the Governor of WNT

20.00 - selesai Finished Ballroom preparations Dress rehearsal

Wednesday, 25 January 2023

08.30 – 09.00 Registration
09.00 – 10.00 Opening of the Workshop
10.15 – 10.25 Internal Institution Signing of MoU and IA
10.30 – 11.20 Dissemination of Ciguatera Research Results and the Pices Program
11.20 – 12.40 Discussion
12.30 – 13.30 Lunch Break
13.30 – 17.00 First day training
19.30 – 21.00 Gala Dinner

Thursday, 26 January 2023

08.30 – 09.00 Registration
09.00 – 17.00 Second day training, divided into two groups
1. Coastal community participants take part in the Hydrocolor and Fish GIS training
2. Representatives from the service participate in Closure of Hydrocolor and Fish GIS training
16.00 – 17.00 Giving souvenirs from the committee to the PICES delegates
Distribution of certificates for training participant

Friday, 27 January 2023

08.30 – 09.00 Registration
09.00 – 10.00 Planktoscope Training
10.00 – 10.30 Closing and awarding of certificates
11.00 PICES Delegation to Zaimuddin Abdul Madjid International Airport, Lombok



Figure 3.19. Issuance of Certificates



Figure 3.20. Evaluation and Discussion at Senggigi Beach, Merumatta Hotel, Lombok January 2023

65. Representative of North Lombok Regency Ministry of Fish Office : Khairuddin
66. Representative of the NTB Provincial Tourism Office : Lal
67. Representative Tourism Office of North Lombok Regency
68. Representative of NGO 1 Head of LCC KLU
69. Representative of North Lombok : Chess
70. Representative of Central Lombok : Kariadi
71. West Lombok Representative: Ratnawe
72. Representative of East Lombok
73. Head of Gili Indah Village :
74. Head of Gili Trawangan Hamlet : M. Husni
75. Head of Gili Air Hamlet : Masrun
76. Head of Gili Air Hamlet : Sukding)
77. Representative Gili Trawangan 1 : H. Malik
78. Representative Gili Trawangan 2 : Amir Daeng
79. Representative Gili Trawangan 3 : Sirwadi
80. Representative Gili Trawangan 4 : Anto
81. Representative Gili Trawangan 5 : Indy
82. Representative Gili Meno 1 : Sutarmo
83. Representative Gili Meno 2 : Rofi handika
84. Representative Gili Meno 3 : Zakaria
85. Representative Gili Meno 4 : Iskandar
86. Representative Gili Meno 5 : Sabarudin
87. Representative of Gili Air 1 : H.M. Taufik
88. Representative of Gili Air 2 : H. Budiman
89. Representative of Gili Air 3 : Karina
90. Representative of Gili Air 4 : Zakaria (BPD)
91. Representative of Gili Air 5 : Safri Mutahid
92. Representative of North Lombok : Eko Kris Henriyawan :
93. Representative of North Lombok Raka Akriani
94. Student University of Mataram : Wik Satria Gunawan
95. Student University of Mataram : Widya Kupang
96. Sawitri : BRIN

IMPLEMENTED AGENDA



IMPLEMENTED AGENDA

SUBMISSION OF PLANKTOSCOPE TO UNIVERSITY OF MATARAM



THANK YOU

