



DATA COLLECTION (PHYTOPLANKTON, HYDROCOLOUR, AND FISHERIES)

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**Research Center for Environmental and Clean Technology (RCECT),
National Research and Innovation Agency (BRIN), Indonesia**



**PICES PST MEETING
Seattle, 20 October 2023**

RESEARCH OBJECTIVE

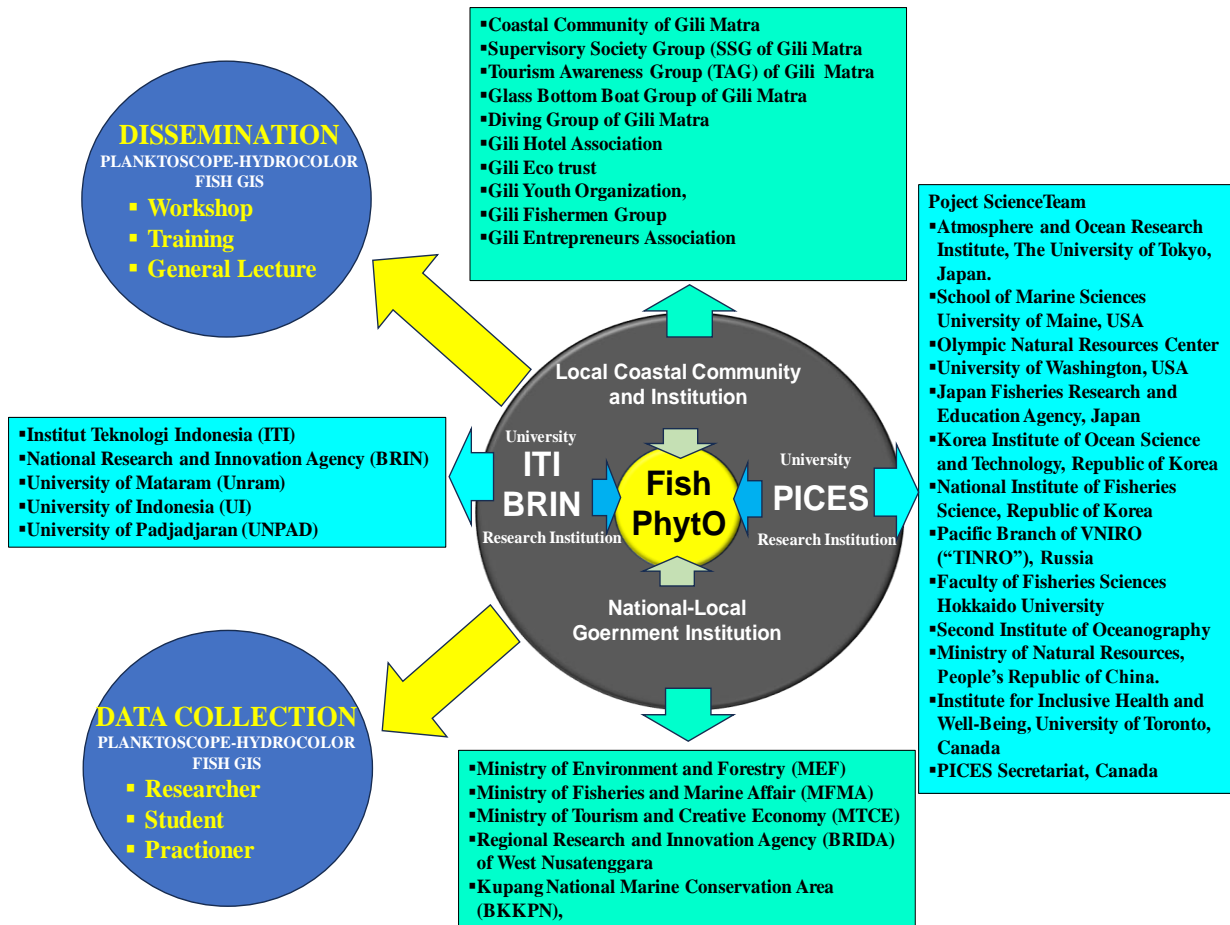
The overall objective of the new PICES-MAFF project, entitled “**Creating a phytoplankton-fishery observing program for sustaining local communities in Indonesian coastal waters**” (**FishPhytO**), is :

To establish, in collaboration with local fishers, research institutes and universities, a phytoplankton-fishery observing program in the Lombok Island region (Indonesia) using tools developed and modified/refined during the previous two PICES-MAFF projects (2017–2023) to enable the detection of toxic benthic Harmful Algal Bloom (HAB) species that can threaten tropical reef fisheries, and to record images of the fishery catches for enumeration of fish species and sizes.

The long-term objectives are to:

- (1) provide local communities with the capacity and knowledge to sustainably manage their fisheries resources and ensure seafood safety, and
- (1) identify research needs for deploying these tools in PICES member countries.

IMPLEMENTATION PROGRAM

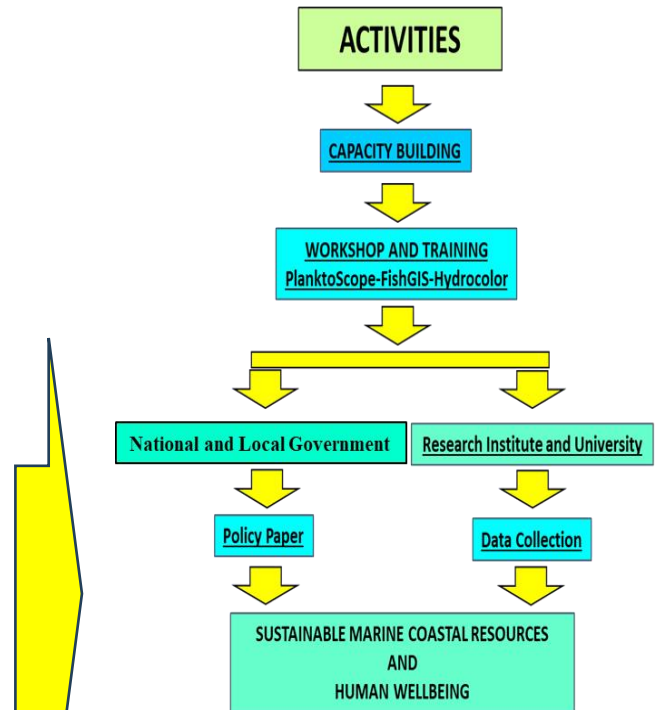


DISSEMINATION
PLANKTOSCOPE-HYDROCOLOR FISH GIS

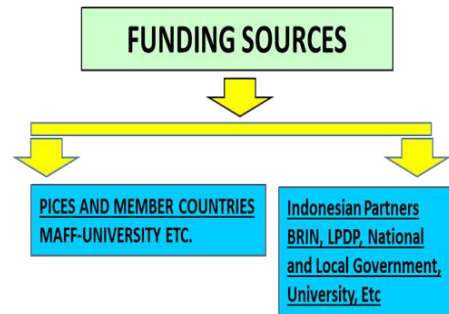
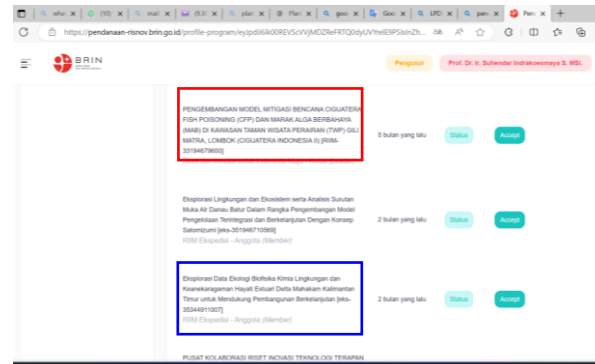
- Workshop
- Training
- General Lecture

DATA COLLECTION
PLANKTOSCOPE-HYDROCOLOR FISH GIS

- Researcher
- Student
- Practitioner



Research and Innovation Funding - BRIN



LPDP-Education Fund Management Institution, Ministry of Finance

Development of a Disaster Mitigation Model for Ciguatera Fish Poisoning (CFP) and Harmful Algae (MAB) In The Gili Matra Water Tourism Park (WTP) Area, Lombok (Ciguatera Indonesia Ii) [Riim-33194679600]

- Exploration of Ecology, Biophysics, Environmental Chemistry and Biodiversity Data from the Mahakam Delta Estuary, East Kalimantan to Support Sustainable Development [ex-35344911007]
- Workshop and Training on PlanktoScope, Fish GIS, Hydrocolor propose to Belitung Local Government.

Bottom-up and top-down approach strategic model of FishPhyto Dissemination Program by involving various stakeholders at local, national and international levels to the coastal community of Gili Matra Lombok, Indonesia

PROSPECT OF IMPLEMENTATION PROGRAM



Gili Matra Lombok-Mataram Univ



Seribu Island-Local Government



East Borneo-Mulawarman Univ



Belitung Island-Local Government

Progress on FishPhytO

Usage of Planktoscope and Hydrocolor in Field Sampling in Belitung

Arief Rachman

Research Center for Oceanography
National Research and Innovation Agency
Indonesia
2023

PROPOSAL
RISET DAN INOVASI UNTUK INDONESIA MAJU



BIDANG FOKUS: INFORMATIKA

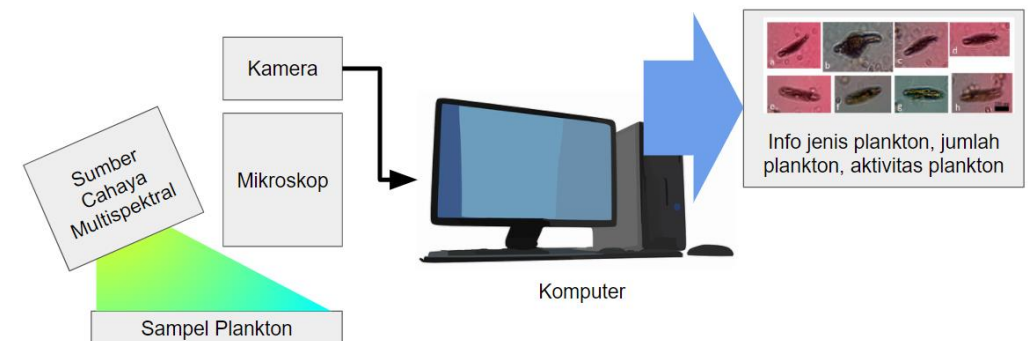
PENGEMBANGAN SISTEM IDENTIFIKASI FITOPLANKTON PERAIRAN
INDONESIA DENGAN MENGGUNAKAN COMPUTER VISION

Dr. Esa Prakasa, ST, MT

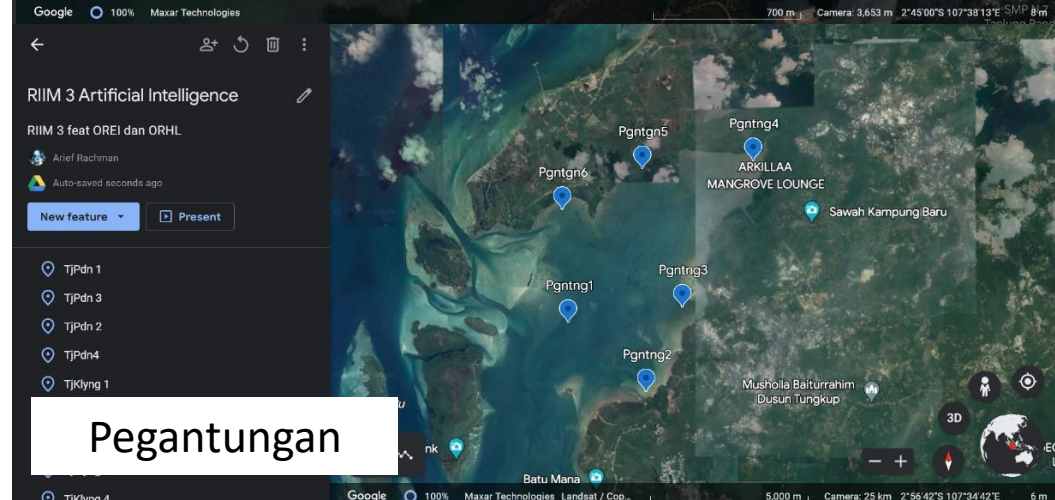
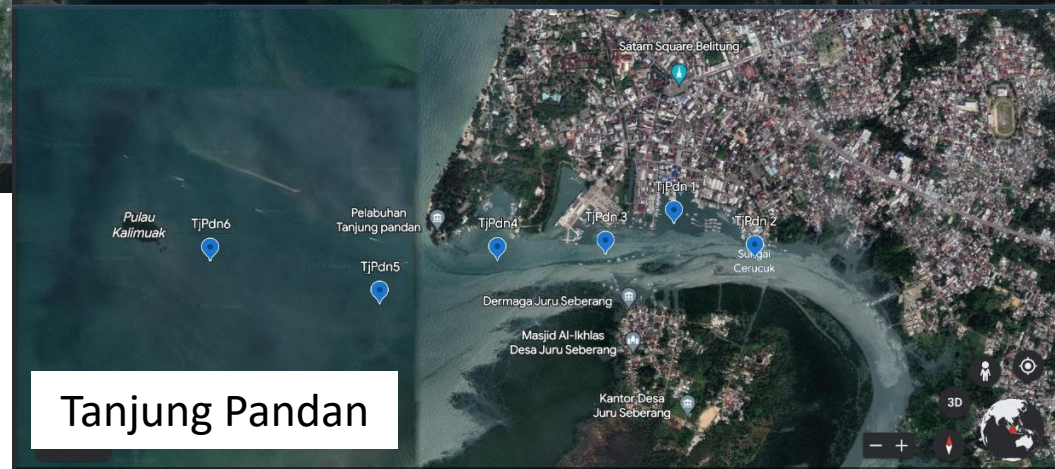
Pusat Riset Sains Data dan Informasi,
Organisasi Riset Elektronika dan Informatika,
BADAN RISET INOVASI NASIONAL
TAHUN 2022

Field Sampling In Belitung in September 2023

Part of the research project of Riset dan Inovasi untuk Indonesia Maju / *Research and Innovation for Indonesian Development* (RIIM) funded by LPDP → “**Development of phytoplankton identification system in Indonesian waters using computer vision**”



General schematic of data collection and application

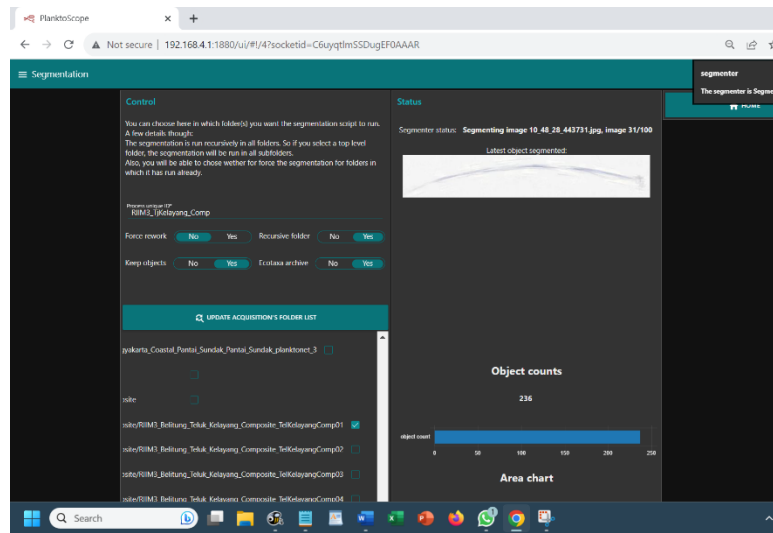
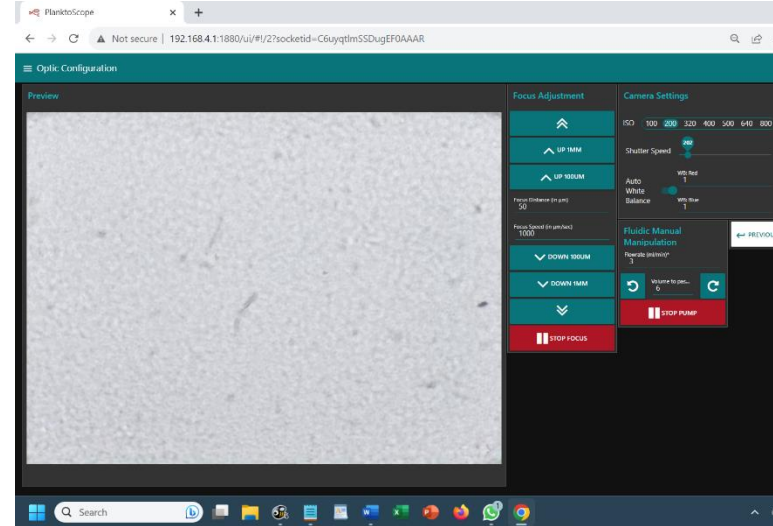


Sampling Sites

- There were 3 study areas in the coast of Belitung Island:
 - Tanjung Kelayang (north) → coral reefs and seagrass area → tourism area
 - Tanjung Pandan → near the river mouth → heavily influenced by city and harbour
 - Pegantungan (south) → mangrove forest → there are some kaolin mining near the shore



Example of Hydrocolor data from three study areas collected from the field



Using the new version of **Planktoscope** to collect phytoplankton images from the net-haul samples

Next planned field works

- Planktoscope, Hydrocolor, and FishGIS will be used in a field work in the scheme of **International Joint Laboratory - SEntinel LABoratory of the Indonesian MARine BiodiversiTy (IJL – SELAMAT)** → October – November 2023
- There will be 3 study areas:
 - Lembeh Strait (North Sulawesi)
 - Lampung Bay (South Sumatera)
 - Seribu Island (Off Jakarta Bay)





Report on PlanktoScope, Hydrocolor and Fish GIS uses in University of Mataram

PlanktoScope

- ❖ The first introduction of PlanktoScope to University of Mataram (Unram) staff at Indonesian Ciguatera Workshop at Merumatta Hotel, Senggigi on 25-27 January 2023
- ❖ The two staff of Unram who attend the Indonesian Ciguatera training were Yuliadi Zamroni and AA Ngurah Nara Kusuma
- ❖ In January 27th 2023, workshop committee (ITI and BRIN) hand over one unit of PlanktoScope to University of Mataram



PlanktoScope

- ❖ In 20 – 25 February 2023, Indonesian Ciguatera team had the last sampling of ciguatera on Gili. In this moment, the university of mataram staff (Yuliadi Zamroni) had second touch on PlanktoScope and first introduced on Hydrocolor and Fish GIS.
- ❖ On March 20th 2023, Yuliadi Zamroni and AA Ngurah Nara introduced the PlanktoScope, Hydrocolor and Fish GIS to Animal Biosystematic students

PlanktoScope, Hydrocolor and FIS GIS

❖ During April to June, two students of Biology study programme had used PlanktoScope for their research.

1. Tisanianti (G1A019077) with research title: Phytoplankton diversity as a bioindicator for water quality of Tanjung Aan SEZ Mandalika, Central Lombok
2. Izma Paryantini (G1A019089) with research title: Phytoplankton diversity as a bioindicator for water quality of Siwak Bay SEZ Mandalika, Central Lombok

PlanktoScope, Hydrocolor and FIS GIS

- ❖ The Tisanianti article has been submitted to Jurnal Pijar MIPA in University of Mataram and still under review

J. Pijar MIPA, Vol. XX No. X, Month Year: Page Number
DOI:

ISSN 1907-1744 (Cetak)
ISSN 2460-1500 (Online)

PHYTOPLANKTON DIVERSITY AS A BIOINDICATOR FOR WATER QUALITY OF TANJUNG AAN, SEZ MANDALIKA CENTRAL LOMBOK

Tisanianti¹, Dining Aidil Candri², Lalu Japa³

^{1,2} Biology Department, Faculty of Mathematics and Natural Sciences, University of Mataram, Mataram, Indonesia;

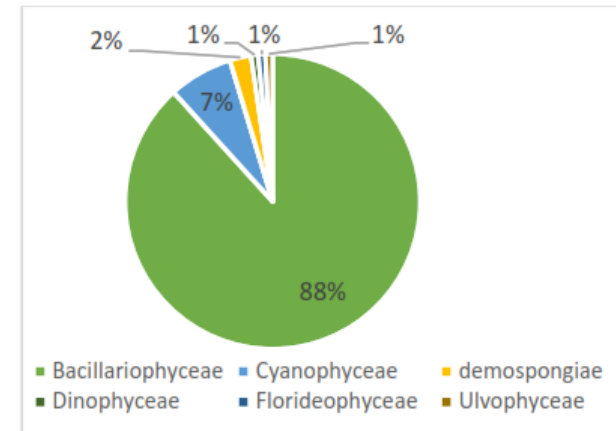
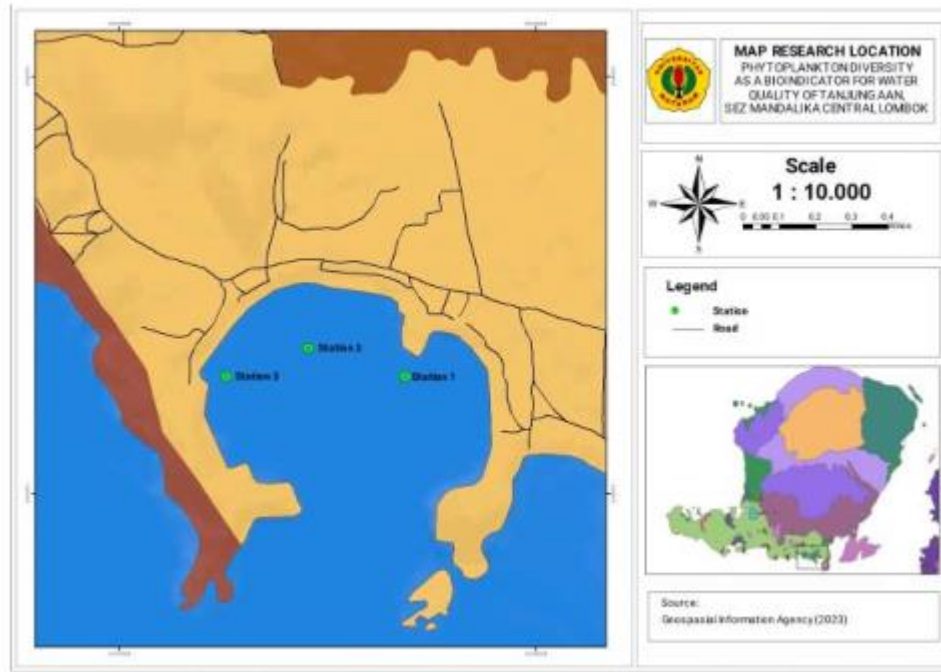
³Biology Education Department, Faculty of Teacher Training and Education,
University of Mataram, Mataram, Indonesia

*E-mail: aidilch@unram.ac.id

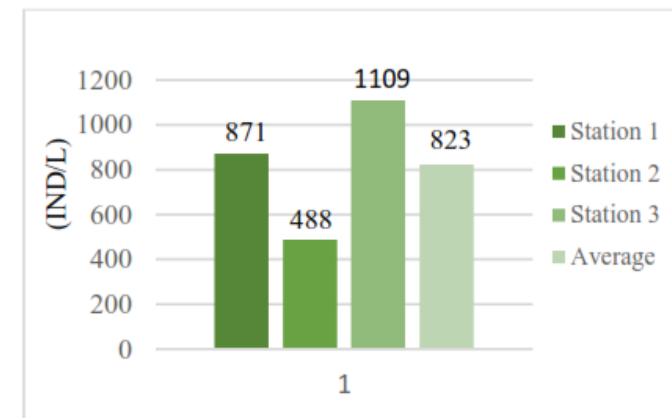
Abstract: Coastal waters of the special economic zone (SEZ) Mandalika must be given more attention as it the center of tourism activities including the International GP motor circuit on the island of Lombok. One of the bioindicators used in determining water quality is phytoplankton. Phytoplankton are tiny organisms that float on the water, have very weak swimming abilities, and their movements are heavily influenced by water flow. The purpose of this research was to determine the diversity of phytoplankton as a bioindicator in the waters of Tanjung Aan, Central Lombok. Sampling sites is Tanjung Aan were determined by purposive sampling. This research was conducted from March to June 2023. The research results showed the community of phytoplankton there were 6 classes, 56 families, 56 genera with 128 species. Species 113 were members of class Bacillariophyceae. The abundance of phytoplankton in three sampling sites ranged from 488 ind/L to 1109 ind/L. The species diversity indexes of phytoplankton in the three sampling sites were ranged from 2.4 to 2.9 which means that the diversity is in the low category and the species dominance index ranges from 0.12 to 0.15. This indicates that the condition of the waters of Tanjung Aan is slightly polluted.

PlanktoScope, Hydrocolor and FIS GIS

❖ Sampling location and result in Tanjung Aan



Prosentase of each phytoplankton classes



Density of phytolankton in each station

PlanktoScope, Hydrocolor and FIS GIS

- ❖ The Izma Pariantini article has been submitted to Jurnal Pijar MIPA in University of Mataram and still under review

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ISSN 2460-1500 (Online)

Phytoplankton Diversity as A Bioindicator for Water Quality of Siwak Bay, SEZ Mandalika Central Lombok

Izma Paryantini¹, Dining Aidil Candri¹, Lalu Japa²

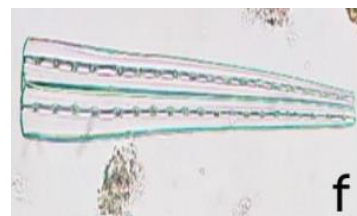
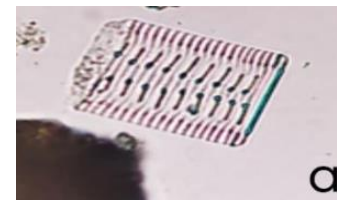
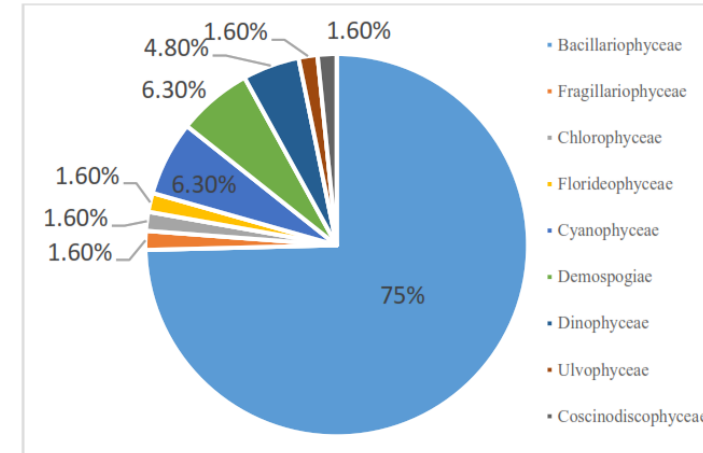
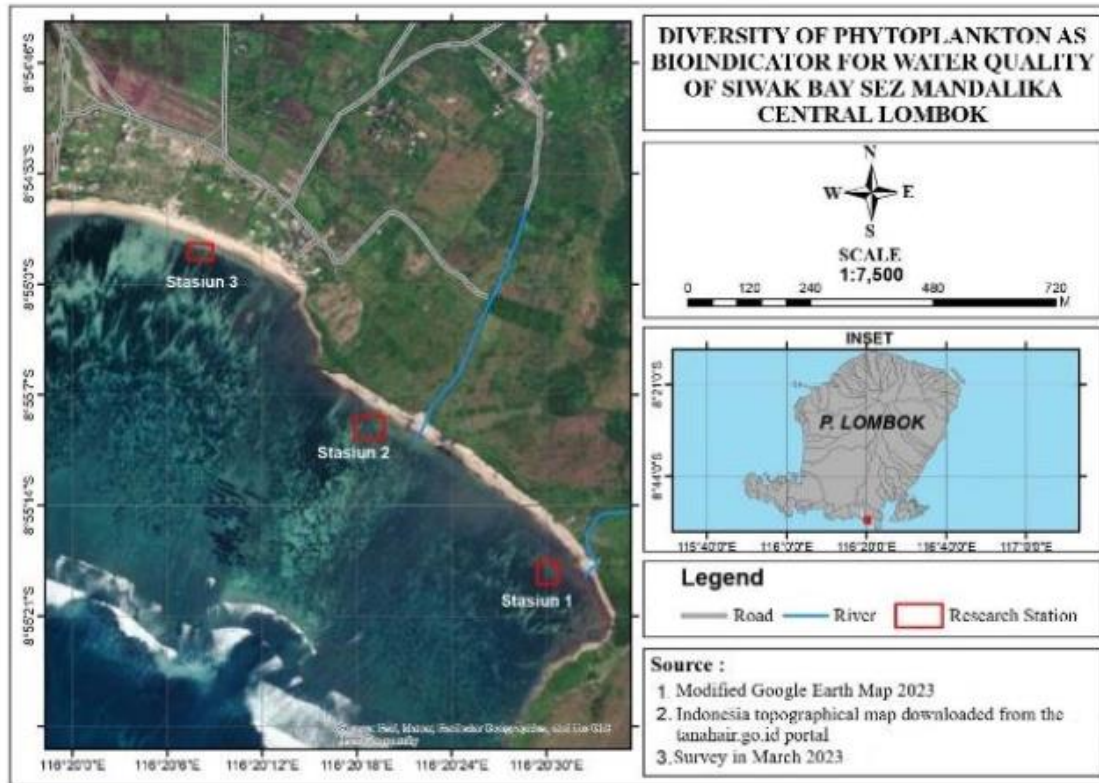
- [1] Program Studi Biologi, Fakultas Matematika dan Ilmu Pengetahuan Alam, Universitas Mataram,
Mataram, Nusa Tenggara Barat, Indonesia
[2] Program Studi Pendidikan Biologi, Fakultas Keguruan dan Ilmu Pendidikan, Universitas
Mataram, Mataram, Nusa Tenggara Barat, Indonesia
*E-mail: aidilch@unram.ac.id

Abstract: The Mandalika SEZ is a potential tourism industry for the province of West Nusa Tenggara which has recently received very high attention due to the construction of the international MotoGP circuit. The construction of the MotoGP circuit has become an attraction for domestic and foreign tourists and has resulted in an increase in the number of tourists. The increasing in tourism activity has had a negative impact on the coastal waters of the Mandalika SEZ such as a decrease in water quality, including the water of Siwak Bay. Water quality monitoring can be done by using phytoplankton as a bioindicator. The study of phytoplankton species diversity as a bioindicator of water quality has never been carried out in the Siwak Bay waters. This research was conducted to analyze the status of Siwak Bay waters based on the phytoplankton diversity index. The sampling technique was carried out using purposive sampling method. This research was conducted for three months, from March to June 2023. The results of the study found 7 classes, 62 genera, and 132 species of phytoplankton. The abundance of phytoplankton in Siwak Bay was 1031,481 ind/L. The highest abundance was the genus of Trichodesmium. The species diversity index was 3,353. Based on the species diversity index, it can be said that the waters of Siwak Bay not polluted.

Keywords: *Siwak Bay, Phytoplankton, Bioindicator, Water Quality*

PlanktoScope, Hydrocolor and FIS GIS

❖ Sampling location and result in Siwak bay



PlanktoScope, Hydrocolor and FIS GIS

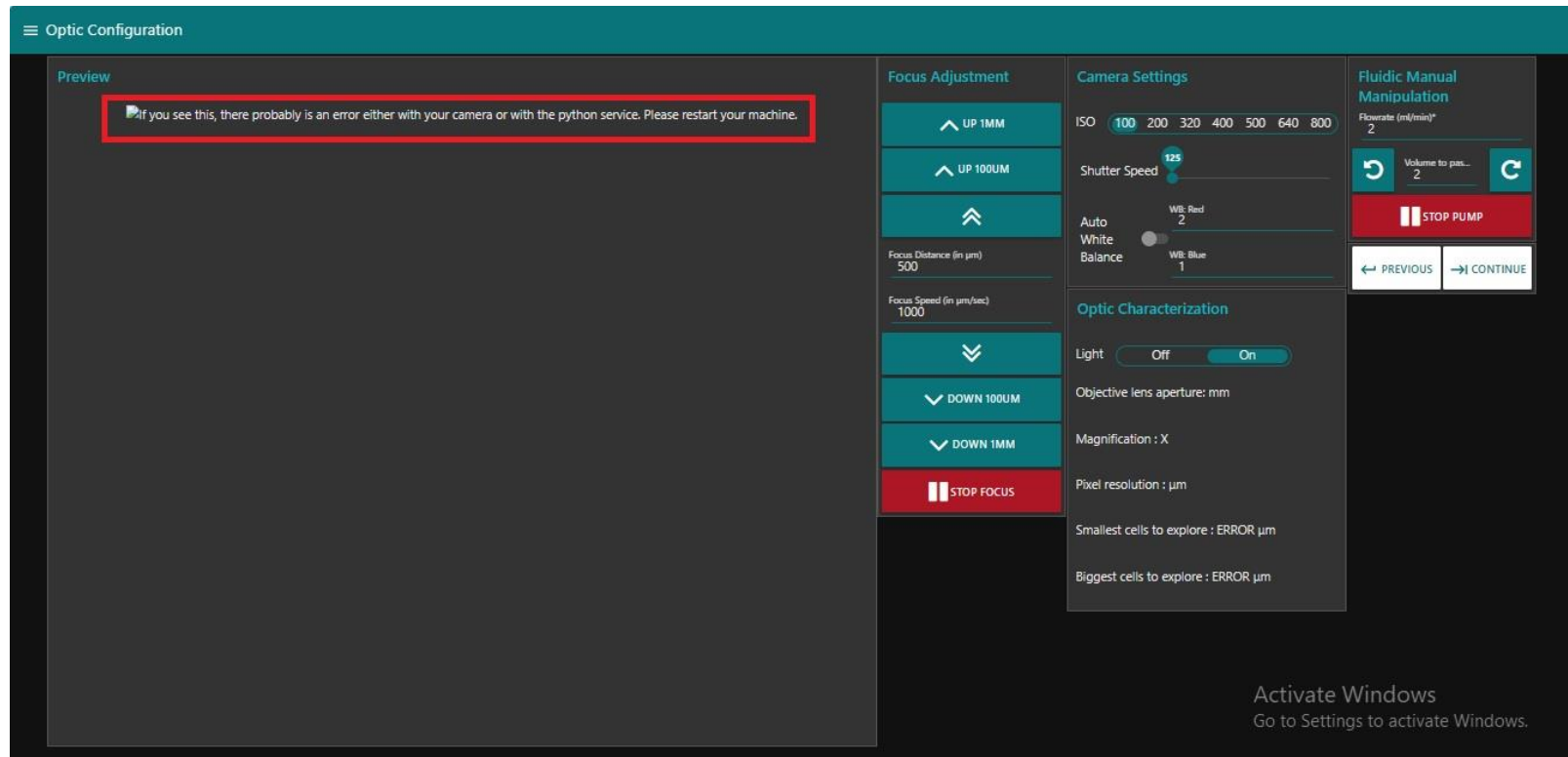
- ❖ For Hydrocolor, we had been introduce it to the students for collect the water quality data, including to the student who research plankton in Tanjung Aan and Siwak Bay. But unfortunately, the student and their supervisor still unfamiliar to interpreted the data from hydrocolor. So the student had been recommended to use the other laboratory tool to get the water quality data
- ❖ Whereas, for the Fish GIS, we had been introduced it to ichthyology student in this semester. After the mid-semester exam (the end of , the ichthyology students will collect the fish data in Mataram use Fish GIS.

PlanktoScope, Hydrocolor and FIS GIS

- ❖ In July 5th to 7th 2023, Indonesian Ciguatera team had workshop on PlanktoScope, Hydrocolor and Fish GIS in Lombok Garden Hotel
- ❖ This workshop aimed to more practices of PlanktoScope, Hydrocolor and Fish GIS used.
- ❖ In September 2023, the doctoral student of Universitas Diponegoro (staff of University of 45, Mataram) wish to use PlanktoScope for her dosctoral research, unfortunately, the PlanktoScope in Unram have error in OS

PlanktoScope, Hydrocolor and FIS GIS

- ❖ We have discussed the problem with Mr. Arief from BRIN but still not solve yet.



The error probably in phyton service

PlanktoScope, Hydrocolor and FIS GIS

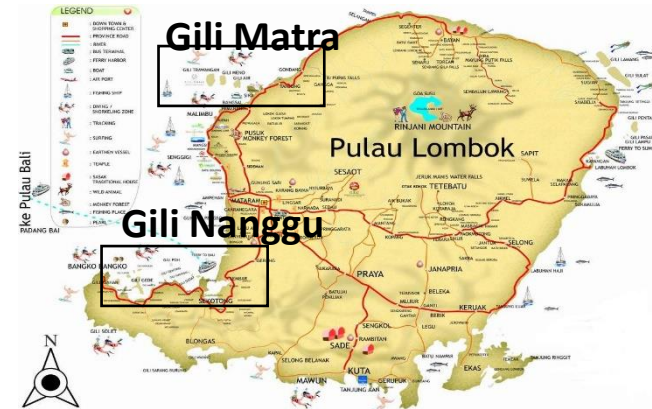


The wifi name does not appear in planktoscope

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



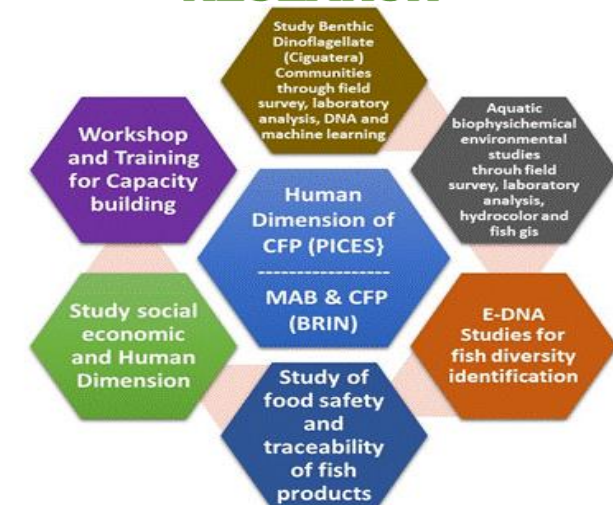
II. WORKSHOP AND TRAINING (January 22-27)

- 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 (Puspiptek), 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)

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</p> <p>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> |
|---|---|---|---|--|

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/>

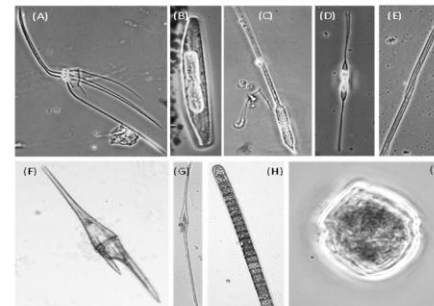
<https://lomboktimur.pikiran-rakyat.com/ntb-roya/pr-2554548483/gubernur-ntb-memperbolehkan-tim-riiset-iti-meneliti-di-3-gili-dengan-catatan-kerjasama>

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 bergonii

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

Ditythium sol

Guinardia cylindrus

Guinardia striata

Hemiaulus indicus

Hemiaulus membranaceus

Leptocylindrus danicus

Thalassiosira longissima

Trachyneis sp.

Dinoflagellates

Amphiolecia 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



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

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

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



| 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 |

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, M.Si (Research Center for Environment and Clean Technology, National Research and Innovation Agency-BRIN and Dept. of Agricultural Industry-ITI)
2. Ir. Shinta Leonita, M.Si (Dept. of Agricultural Industry-ITI)
3. Arief Rachman, M.Bio.Sc. (Research Center for Oceanography)
4. Ir. Syahril Makosim, M.Si (Dept. of Agricultural Industry-ITI)
5. Dra. Setiari Soekotjo, MSc (Dept. of Agricultural Industry-ITI)
6. Ir. Muhami, M.Si (Dept. of Agricultural Industry-ITI)
7. Mohamad Ramli, ST (Dept of Informatika-ITI)
8. Ir. Darti Nurani, M.Si (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) 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, M.Si., IPM
27. Head of Cooperation Bureau: Dr.Ir.Iyus Hendrawan, M.Sc, IPU., ASEAN Eng
28. Ir. Syahril Makosim, S.T., M.Sc., IPM,
29. Ir. Shinta Leonita, S.TP., M.Sc.
30. Dr. Setiari Soekotjo, M.Sc
31. Ir. Muhami, M.Si., IPM
32. Mohamad Ramli, ST (IPS, IF)
33. Ir. Darti Nurani, M.Si (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, M.Si) 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, M.Si 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

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

36. Head of Marine and Land Bioindustry Research Center : Dr. Fahrurrozi
37. Prof. Dr. Ir. Suhendar I Sachoemar, M.Si
38. Arief Rachman, M.Bio.Sc
39. Dr. Ratu Siti Aliah, M.Sc
40. Amisa Firi Larasagita, S.P., M.Si
41. Hanny Martinawati, M.Sc
42. Dr. Ir. Joko Prayitno Soesanto, M.Sc
43. Dr. Agung Riadi, M.Sc

University of Indonesia (UI)

44. Dr. Riani Widarti, M.Sc

Universitas Padjadjaran (UNPAD)

45. Dr. Ir. Iskandar, M.Sc

Mataram University (UNRAM)

46. Chancellor : Prof. Ir. Bambang Hari Kusumo, M.Agr.St., Ph.D
47. Vice Chancellor 1 : Dr. Ir. Siti Hidayana, M.Sc
48. Dean of the Faculty of Food Technology : Basri Handayani, S.P., M.Sc., P
49. Head of Agricultural Industrial Technology Study Program : Dr. Satrijo Saloko
50. Dean of the Faculty of Economics and Business (FEB) : Dr. Muaidy Yana
51. Head of the Economics and Tourism Study Program-FEB: Dr. Lutak Fadlyanti M.Sc. Diwandu, SE, M.Sc, PhD
52. Rahman

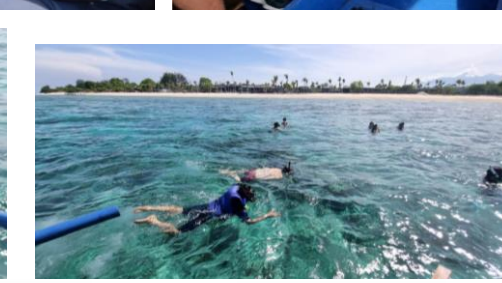
Non-Governmental Institutions Under The Governor

53. Chairman of BHPD (Regional Tourism Promotion Agency) WNT Province : Ik

Agency Representative

54. Representative Regional Research and Innovation Agency (BRIDA) : Irvan
55. Representative of Kupang National Waters Conservation Area Center (BKKPN Eko Setio Purnomo
56. Representative of Kupang National Waters Conservation Area Center (BKKPN Martiana
57. Representative of Kupang National Waters Conservation Area Center (BKKPN Muhammad Jazari Juna
58. Representative Study Program of Biology, Faculty of Mathematics and Natural University of Mataram 1 : A.A. Nugrah Nara Kusuma
59. Representative Study Program of Biology, Faculty of Mathematics and Natural University of Mataram 2 : Dr. Yuliadi Zamron
60. Representative Research Center for Bioindustry and Land 1 : Dr. Kiki Syaputri Handayani
61. Representative Research Center for Bioindustry and Land 2 : Victor David Nico Gultom, Ph.D
62. Representative of the NTB Province LHK Service : Anjas Sirwan
63. Representative of the North Lombok Regency LHK Service : Agus Suidi hid
64. Representative of the NTB Province Ministry of Fisheries and Marine Affair : Remy V Wibisono

IMPLEMENTED AGENDA



IMPLEMENTED AGENDA

SUBMISSION OF PLANKTOSCOPE TO UNIVERSITY OF MATARAM



THANK YOU



This is our report about PlanktoScope, Hydrocolor and Fish GIS used in University of Mataram

Thank You