



United Nations
Educational, Scientific and
Cultural Organization



Intergovernmental
Oceanographic
Commission



2021 2030 United Nations Decade
of Ocean Science
for Sustainable Development

Small Island Research and Development for Island Sustainability

Zainal Arifin, Co-chair SIRaD Working Group

Research Centre for Oceanography, BRIN – Indonesia

28 May 2025, Institut Teknologi Indonesia (ITI), Serpong, South Tangerang

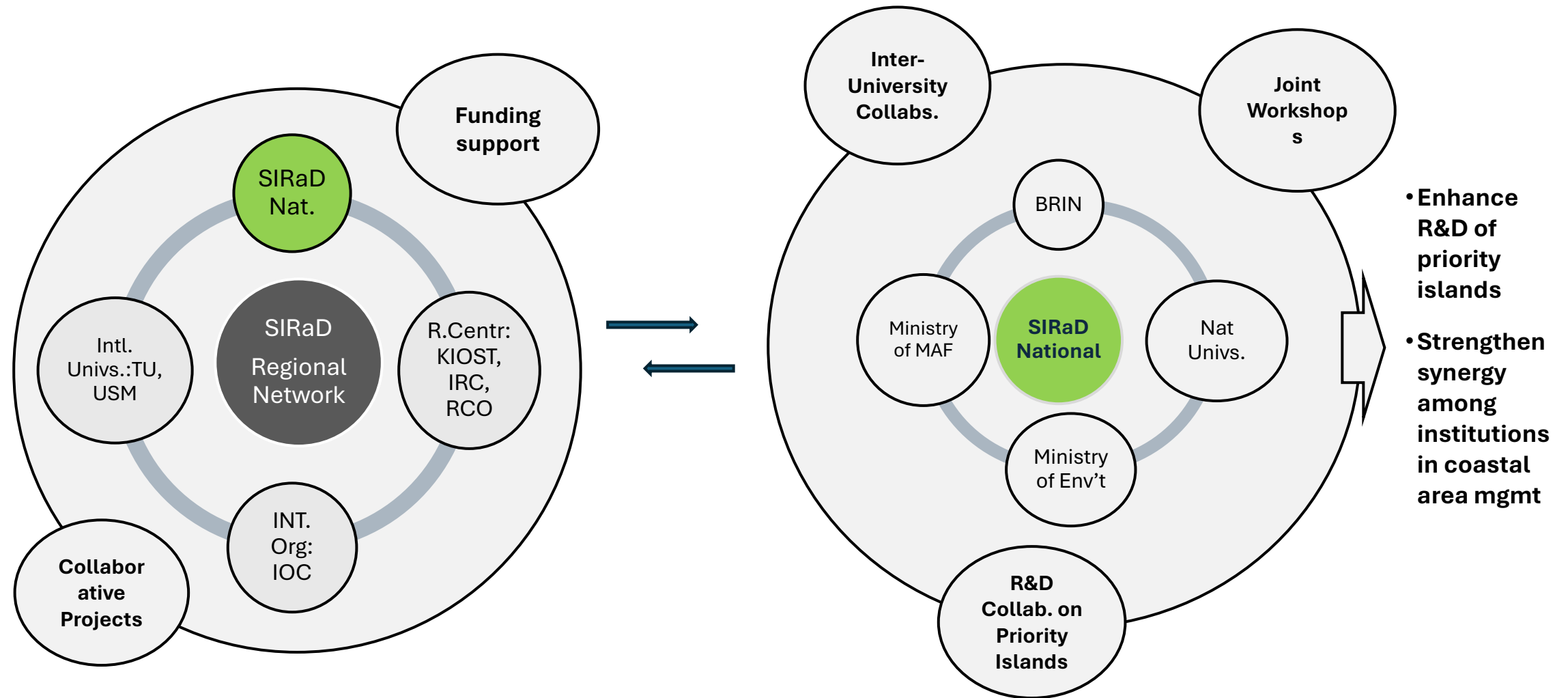
- Strategic approach to empower small island communities
- Balancing economic growth with environmental preservation.

1. Why small island is important?

- Small islands can be found across geographic area of the member states of IOC Western Pacific Region. Each island has special geologic features, as a result they individually have distinct ecosystems and **host unique biological community**.
- Island development increases dramatically in the last 10 – 20 years; as a result, **ecosystems** associated with the islands are under pressures due to human development activities e.g., tourists, aquacultures, mining and fishing industries;
- Problems such as., **coastal erosion, pollution, sea-level rise, habitat loss, and lack of clean freshwaters, as well as lack alternative livelihood** are commonly found throughout the Westpac region.

2. WG Establishment and Goal

The goal of SIRaD Working Group is to ***facilitate*** development resilience, inclusive growth, and sustainable prosperity.



SIRaD WG objectives

- i. fostering **interdisciplinary** research collaboration,
- ii. enhancing **community**-engaged approaches,
- iii. supporting **evidence-based policymaking** for sustainable small island development, and
- iv. strengthening **regional cooperation** among countries in the Western Pacific Region.

3. Time line activities : 2021-2022

IPB University
BRIN

**MEMBANGUN KERJASAMA RISET REGIONAL
DENGAN MEMACU RISET SAMUDRA DAN
MEMETAKAN BIODIVERSITAS LAUT**

"Indonesian Actions to the Decade of Ocean Science"

NARASUMBER

OPENING SPEECH

HOST

Dr. Hawis Madduppa
IPB University

Dr. Nugroho Hananto
Badan Riset dan Inovasi Nasional

Prof. Ismunandar
Duta Besar/Wakil
Delegasi Tetap RI untuk
UNESCO

Prof. Zainal Arifin
Badan Riset dan Inovasi Nasional

Kamis
16 Desember 2021
14.00 – 16.00 WIB

Meeting ID: 884 9500 1711
Password: FP-UNESCO

NATIONAL COMMITTEE OF IOC UNESCO
DECADE ACTION: SMALL ISLAND STUDIES

BRIN UNESCO

Mr. Wenxi Zhu
IOC UNESCO Secretariat for
WESTPAC Region
"UN Ocean Decade in the Region"

Prof. Ahmad Ismail
Malaysian Nature Society
*"Wildlife and Migratory Bird
Conservation in Southeast Asia"*

Dr. Aida Sartimbul
Brawijaya University, Indonesia
*"Small Island Ecosystems and
Oceanographic Processes"*

Prof. Sam Wouthuizen
Research Center for Oceanography
BRIN, Indonesia
*"Pari Island Ecology and
Communities Literacy"*

Prof. Suhendar I. Sachoemar
RC for Environment and Clean Technology,
BRIN / TIP – ITI, Indonesia
*"The Assessment of Environment and
Sustainable Utilization of Seribu Islands"*

FREE CERTIFICATE
Thursday, 18 August 2022
09.00 – 16.00 WIB
Link: s.id/small-island

Co-Hosts:

Nur Tri A. Suestiningtyas, M.A.
Acting Executive Secretary of BRIN

Prof. Zainal Arifin
Executive Director NatCom IOC UNESCO



Speakers: **IOC Bangkok Office** (W. Zhu), **Tokyo Univ.** (Prof. Saito), **UPM Malaysia** (Prof Ismail), **BRIN** (Profs. Heri & Suhendar) , **Brawijaya Univ.** (Dr. Aida), Yayasan Lamun (W. Kiswara)

Period 2023 - 2024

International Level

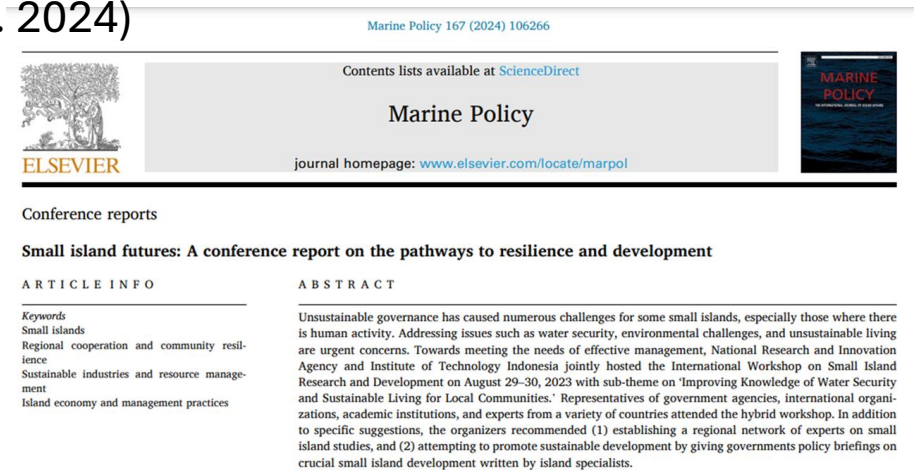


SIRaD workshop I (2023)

International Island Forum (2023. 2024)



SC member meeting via zoom (2024)



Period : 2024 - 2025

National Level



National workshop (2024)



Field visit (2024)



FGD with NGO (2024)



MoU BRIN-UB (2025)



Gili Ketapang Island (2025)



FGD of national SIRaD (2025)

4. Longterm Plan (2025-2030)

Phase 2 (2025-2026)	Phase 3 (2027 -2028)	Phase 4 (2029)	Phase 5 (2030)
Baseline Understanding & Situation Analysis <i>Identifying the basic needs and challenges in small islands; analyzing initial conditions</i>	Research-Based Solution Development <i>Developing innovative solutions and sustainable development strategies for small islands</i>	Implementation & Capacity Development <i>Research-driven solutions & capacity development for communities</i>	Evaluation, Replication, and Advanced Dev't <i>Evaluating the success of implemented solutions, expanding their reach, and enhancing sustainability</i>
Research activities: <ul style="list-style-type: none">• Mapping the socio-economics conditions• Study of natural resources• Clean water supply capability• Waste management practices• Climate change adaptation	Research activities: <ul style="list-style-type: none">• Marine & coastal ecosystem conservation project• Climate change adaptation research• Development sustainable fisheries/aquaculture technology• Pilot projects	Research activities: <ul style="list-style-type: none">• Training & Dissemination of outputs for local communities• Monitoring & evaluation of climate change impacts• Collaboration with government and the private sector	Research activities: <ul style="list-style-type: none">• Impact evaluation of pilot projects• Replication of successful projects• Developing sustainable funding systems

Proposed Activities (2025-2026)

Phase II: 2025 – 2026	Agenda	Year	2025	2026
	1. (blue) Economy		To study Fish Pop dynamics, feeding behavior	To analyze fisheries/aquaculture, tourism activities
	a. Fishing			
	b. Aquaculture		To study fish/shellfish culture	To provide policy recommendation
	c. Post harvest technology		To explore various possible technology applications	
	d. Tourism			
	e. Energy			
	2. Environment:		To develop based-line studies on distribution and quantity of marine debris/plastic, E-coli, TPH, and other contaminants	To analyze & map the distribution and quantity of marine debris/plastic, E-coli, TPH, and other contaminants;
	a. Ocean clean Index			
	b. Fresh water resources		To study the island's ability to provide fresh water;	
	c. Waste management		To evaluate the ongoing waste management.	To provide recommendations for the best waste management
	3. Social Aspects		To investigate the livelihood systems within the context of social-ecological system	To evaluate the SES's resilience from anthropogenic factors like resource exploitation, climate change and natural factors.

5. Member countries

- SC Country Members
 - Mr. Wenxi Zhu (IOC Secret)
 - Mr. Hiroaki Saito (Jpn)
 - Mr. Zainal Arifin (Ind)
 - Ms. Aileen Tan (Malay)
 - Mr. Hansan Park (S. Korea)
 - Mr. Yucheng Deng (China)
- Open to other Countries
- Involvement of Local Gov., Univs., NGO, Civil Soc.

No	Island (country)	Area, Pop (2023)	Note
1	JAPAN: Amami Islands	Area: 1,250 km ² (8 inhabited islands), Pop: 100,000	World Natural Heritage sites (Amami Oshima Is and <u>Tokunoshima Is</u> , 2021) Amami <u>Guntō</u> National Park Tourism, sugar cane,
2	INDONESIA: Gili Ketapang	Area: 68 Ha (0.7 km) Pop: 7,600	Local Tourist Destination, Fishing
	Gili Matra, Lombok	Area: 4,608.0 km ² Pop: 3,963,842	Global Tourist Destination, Aquaculture , Fishing AIC: Local Gov.; KKP; Min. Tourism,
3	SOUTH KOREA: Jeju	Area: 1,833 km ² Pop: 700,000	Global tourism, WNH site, Global Geopark
4	MALAYSIA: Langkawi	Area: 469.0 km ² Pop: 99,000	Global tourism, AIC: Langkawi Development Authority.
5	PR CHINA: Pingtan Dao	Area: 371.0 km ² Pop: 381,000	Global tourism, Cultural heritage, marine economy, offshore wind power, pharmaceutical industry, Shipping route

Thank You