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**INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION (of UNESCO)**

**Fifteenth Intergovernmental Session of the IOC Sub-Commission for the Western Pacific (WESTPAC-XV)**
Tokyo, Japan, 11-13 March 2025

Item 7.1 of the Provisional Agenda

# New Working Group Proposal on Seagrass Research in the Indo-Western Pacific

## I. Title of proposal, and its timeframe

*(Please identify if the proposal will be a program with a timeframe of no longer than eight years, or a project of no longer than four years, or a working group of no longer than four years. In the case of a working group, please refer to the Guidelines for the establishment of WESTPAC Working Groups. The extension of programs/projects/working groups could be made, subject to their deliverables, performance and evaluation results.)*

1. **Title:** Establishment of Working Group for Seagrass Research in the Indo-Western Pacific: Enhancing Regional Collaboration for Seagrass Ecosystem Conservation and Restoration

2. **Timeframe:** 2025-2028

## II. Program/project proposer (or working group chair), and recommended members for the program/project steering group (working group), if available

*(The Program/Project Steering Group and Working Group shall consist of ACTIVE members. Once the new program/project/working group is established, National Focal Points in Member States can recommend additional qualified experts. As soon as the Sub-Commission establishes the new programs/projects/working groups, WESTPAC designated Principal Investigators (PIs)/G Chairs shall play an important role in the development and implementation, as they are entrusted to coordinate the development of respective WESTPAC programs/projects/WGs, engage relevant stakeholders, and deliver knowledge, tools and results needed to address priority needs of Member States in the region.)*

3. The Working Group is co-chaired by Udhi Eko Hernawan (Research Center for Oceanography-BRIN, Indonesia) and Tipamat Upanoi (Phuket Marine Biological Center, Thailand)

4. The recommended members of the WG are:
   1 Indonesia
   2 Thailand
   3 Philippines
   4 Malaysia
   5 Vietnam
   6 Singapore
   7 Cambodia
   8 Brunei Darussalam
   9 Japan
   10 China
   11 South Korea
   12 Timor Leste
   13 Australia

## III. Justifications for this program/project/working group

*(Note: This part is extremely important, Please provide detailed justifications as much as possible.)*

5. Seagrass ecosystems are a crucial component of the marine environment, providing significant ecological, social, and economic benefits. These ecosystems are essential habitat and nursery grounds for a variety of marine species, supporting biodiversity, many of which are economically important species. From an economic perspective, seagrass contribute to fisheries production that many coastal communities rely on for their livelihoods. Seagrass meadows also support tourism and recreation industries by maintaining water quality, protecting shorelines from erosion, and providing habitat for charismatic species, such as dugongs and turtles. Furthermore, seagrass meadows are significant carbon sinks, sequestering vast amounts of carbon dioxide and helping to mitigate climate change. In addition, they provide social and cultural value, being integral to the heritage and traditions of numerous coastal populations.

6. Despite the important services, seagrass ecosystems have been degrading as they are continuously under anthropogenic pressures. These pressures include overfishing, pollution, coastal development, land-use change, and climate change. Addressing these issues requires strong

support from science, as it provide a robust foundation for the conservation and sustainable management practices of seagrass ecosystems. In the absence of scientific data, seagrass conservation management can be more challenging. For example, a large-scale seagrass die-off in Trang, Thailand has been observed recently, threatening dugongs' survival in the region. However, the actual cause of the problem remains unknown, posing a considerable challenge for authorities in devising appropriate management strategies.

7. The scientific progress of seagrass ecosystems has lagged behind that of other coastal ecosystems, despite their vital contributions to marine biodiversity and the provision of essential ecosystem services. Since the last two decades, the number of scientific publications in related to seagrasses has been much lower compared to that of mangroves and coral reefs. This disparity in scientific progress can be attributed to more focus on coral reefs and mangrove forests, which have garnered more attention from researchers and conservationists alike. There have been much more fundings allocated for research in mangrove and coral reefs. This emphasis on coral reefs and mangroves has resulted in seagrasses being comparatively overlooked in research efforts, leading to a significant gap in knowledge regarding their ecology, distribution, and the threats they face.

8. As a result, the field of seagrass research encounters considerable obstacles in tackling urgent conservation challenges. The lack of comprehensive data on seagrass distribution and health limits the ability of scientists and policymakers to implement effective conservation strategies. Furthermore, the impacts of human activities, such as coastal development, pollution, and climate change, pose significant threats to seagrass ecosystems, yet the responses of these ecosystems to such stressors remain poorly understood. Without targeted research and conservation efforts, the degradation of seagrass meadows could have far-reaching consequences for marine biodiversity and the ecosystem services they provide.

9. Bridging this knowledge gap is crucial for the effective conservation and management of seagrass habitats, ensuring that they continue to thrive and support the myriads of organisms that depend on them. The strategy to address this issue is by prioritizing research topics, increasing research funding and public awareness, and promoting research collaboration. This strategy is necessary to accelerate the science of seagrass ecosystems, particularly in the context of impactful science on marine conservation efforts.

10. To help implement the strategy to accelerate the science of seagrass, particularly in the Indo-Western Pacific, we propose the Working Group for seagrass research in the Indo-Western Pacific. This working group is important for two reasons: first, it will serve as a coordination and collaboration platform for seagrass scientists to implement the strategy. Second, there is no such platform in the Indo-Western Pacific.

## IV. S.M.A.R.T objectives and expected outputs/outcomes

(Note: The objectives of WESTPAC program/projects/working groups shall be specific, measurable, attainable/achievable, relevant, and time-bound.)

11. The overarching objective of the Working Group is to accelerate the science of seagrass ecosystems that is impactful on seagrass conservation efforts in the Indo-Western Pacific.

12. Specifically, this Working Group is aimed to:

1 To promote research collaboration among scientists and stakeholders to enhance the understanding, conservation, and restoration of seagrass ecosystems.
2 To build research capacity for seagrass conservation, particularly in underrepresented regions of the Indo-Western Pacific, through targeted training, education, and resource sharing.
3 To establish a robust system for baseline data collection and management, enabling effective long-term monitoring and supporting evidence-based conservation strategies.
4 To develop standardized methodologies for seagrass monitoring, assessment, and early

warning systems to quickly detect and respond to signs of degradation.

5 To implement pilot projects at key sites, demonstrating best practices in seagrass restoration and adaptive management under diverse environmental conditions.

6 To provide policy recommendations that promote sustainable management, habitat restoration, and climate resilience of seagrass ecosystems, ensuring alignment with national and international conservation goals.

13. The expected outputs are:

- A regional report on the status of seagrass ecosystems in WESTPAC
- Standardized methodologies for monitoring and assessment;
- A policy brief about seagrass conservation and sustainable use
- Scientist exchange among institutions of group members
- Research proposal for grant application
- Joint seagrass research among group members
- Workshop and training manuals for capacity building related to seagrass monitoring

## V. Terms of reference of the program/project steering group (or working group)

*(For the purpose of guidance and management, WESTPAC encourages each program/project to set up its Steering Group with ACTIVE members. A draft TORs for this Group shall be developed, and submitted for considerations.)*

### TOR for SEAGRASS WORKING GROUP

### 1. Purpose

14. The Working Group aims to enhance collaboration and knowledge-sharing among researchers to accelerate the science of seagrass ecosystems that is impactful seagrass conservation efforts in the Indo-Western Pacific.

### 2. Objectives

- Promote collaboration among seagrass scientists
- Build capacity across the region through training and workshops.
- Share and develop research methods for seagrass monitoring and restoration.
- Create a strong and reliable framework for collecting and managing baseline data on seagrass ecosystems
- Provide actionable recommendations to policymakers for better management.

### 3. Membership

15. Members of the Working Group will include researchers, scientists, and practitioners working on seagrass conservation in the region. The group will consist of chairs and expert members. The chairs are responsible for overseeing the program's development, involving pertinent stakeholders, and providing the necessary knowledge, resources, and outcomes to meet the priority requirements within the region. Meanwhile, the expert members will include specialists in seagrass, who will link their domestic experts and stakeholders to the program. They will also contribute systematic and scientific expertise to create technical tools, promote research, collaboration, and data exchange aimed at the protection and restoration of seagrass ecosystems.

### 4. Activities

16. The Working Group will:

- Host meetings (in person or online) to coordinate the implementation of the WG

activities.
- Establish standardized data collection, monitoring, and management systems using technology.
- Develop shared tools and guidelines for seagrass monitoring and restoration.
- Organize training sessions and workshops for capacity building.
- Publish reports and share updates with the wider community.

**5. Meetings**

- Frequency: Meet at least twice a year, with additional meetings as needed.
- Meetings will focus on sharing progress, brainstorming ideas, and coordinating programs.

**6. Timeline**

17. The Working Group will operate for 4 years, with an option to be transformed into a WESTPAC Project/program, based on results and feedback.

**7. Coordination**

- A small coordination team will help manage activities and keep things on track.
- Regular updates will be shared with all members to keep everyone informed.

## VI. Engagement of relevant stakeholders outside academia

*(Please endeavor to outline and engage potential stakeholders of this program/project, if possible. The list of stakeholders could be continuously expanded as the program/project enhances its impacts.)*

18. The Seagrass Research Working Group will involve people and organizations beyond academics, including government agencies, NGOs, global and regional groups, and media

## VII. Main activities to be carried out during its timeframe

19. During its 4-year timeframe, the Seagrass Research Working Group will focus on the following key activities:

**I. Promoting collaboration**

- Organize regular meetings among seagrass scientists in the region
- Hosting a regular webinar related to seagrass research
- Develop a scheme to facilitate scientist mobility among members
- Develop a joint research proposal

**II. Capacity building**

- Organize training workshops and hands-on field sessions for researchers, community members, and policymakers.
- Develop a scheme to facilitate student conducting research in seagrass

**III. Standardized methodologies for seagrass monitoring and assessment.**

- Create resources like manuals and toolkits to guide monitoring and restoration efforts.
- Create a strong and reliable framework for collecting and managing baseline data on seagrass ecosystems.
- Publish annual reports and findings to keep stakeholders informed and engaged.

## IV. Policy recommendations

- Provide data and recommendations to help governments integrate seagrass conservation into national policies.
- Work with regional bodies to align activities with broader sustainability goals, like the SDGs.

## VIII. Proposed work plan and budget for 2025 - 2028

*(Provide, in tabular form, the action items that should be included in the work plan and budget)*

| Objectives | Activities | Expected Outputs/Outcomes | Date and place | Funding sources | |
|---|---|---|---|---|---|
| | | | | IOC | Other sources |
| WG Coordination | Kick of meeting | Work plan and roles | 2025 (Q2) | | |
| | Regular meeting | Monitor activities implementation | Online, every 3 months | | |
| To promote collaboration among scientists and stakeholders for seagrass ecosystems and their conservation | Workshop for research collaboration | Seagrass scientist network established | 2025 (Q3) | | |
| | Regular webinar | >100 participants (online) | 2025-2028 | | |
| | Scientist mobility | 3 scientists per year | 2025-2028 | | BRIN |
| | Joint research proposal | 3 research proposal developed | End of 2025 | | |
| To build capacity in seagrass science, particularly in underrepresented regions of the Indo-Western Pacific, particularly through the RTRC-MarBEST Center | Training in seagrass monitoring | >20 participants | 2026 (Q2) | | |
| | PhD scholarship for seagrass research | 2 PhD students per year | 2025-2028 | | BRIN |
| | Training in seagrass mapping | >20 participants | 2027 (Q2) | | |
| To develop standardized methodologies for seagrass monitoring and assessment | Development of seagrass monitoring guidelines | Standardized seagrass monitoring toolkit | 2025 (Q3-Q4) | | |
| | Seagrass health assessment (of 5 selected sites across the region) | Establish baseline data for comparison and future monitoring | 2025 (Q2-Q4) | | |
| | Establishment of data sharing platform | Seagrass data platform | 2026 (Q2-Q3) | | |
| To provide policy recommendations for sustainable management and restoration | Public awareness and campaign | 1 social media account for public outreach | 2025 -2028 | | |
| | Policy recommendations | 1 policy brief for seagrass conservation in the region | 2028 | | |
| | Final assessment and reporting | A report on actionable strategies for future seagrass conservation | 2028 | | |