



**14th Intergovernmental Session of
the IOC Sub-Commission for the Western Pacific (WESTPAC-XIV)**
Jakarta, Indonesia, 4-7 April 2023

NEW PROGRAMME/PROJECT/WORKING GROUP PROPOSAL

I. PROPOSED PROGRAMME/PROJECT/ WORKING GROUP, AND ITS TIMEFRAME

(Please identify if the proposal will be a programme with a timeframe of no longer than eight years, or a project of no longer than four years. If you intend to propose 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)

ADVANCING MARINE CITIZEN SCIENCE: ACT LOCAL TO GO REGIONAL

II. PROGRAMME/PROJECT PROPOSER (OR WORKING GROUP CHAIR), AND RECOMMENDED MEMBERS FOR THE PROGRAMME/PROJECT STEERING GROUP (WORKING GROUP), IF AVAILABLE

(The Programme/Project Steering Group, and Working Group shall consist of ACTIVE members. Once the new programme/project/working group is established, National Focal Points in Member States can recommend their qualified experts to the Group. Once the Sub-Commission establishes its new programmes/projects/working groups, WESTPAC designated Principal Investigators (PIs)/WG Chairs will play an important role in the WESTPAC international cooperative framework/process, as they are entrusted to coordinate the development of respective WESTPAC programmes/projects/WGs, engage relevant stakeholders, and deliver knowledge, tools and results needed to address priority needs of Member States in the region.)

The WG membership is open to anyone, in particular ECOPs who is willing to promote, and has extensive experience in marine citizen science. Members could be further finalized, as the WG activities unfold.

WG chair: Yuki Minegishi (Japan)
WG co-chair: Abe Woo Sau Pinn (Malaysia)

Tentative members:
Annette Jaya Ram (Malaysia)
Mathinee Yucharoen (Thailand)
Lalita Putchim (Thailand)
Wulan Koagouw (Indonesia)
Maybelle A. Fortaleza (Philippines)
Truong Si Hai Trinh (Vietnam)

Advisor: Aileen Tan Shau-Hwai (Malaysia)

We would like to welcome new members as establishing and spreading the survey networks.

III. JUSTIFICATIONS FOR THIS PROGRAMME/PROJECT/WORKING GROUP

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

Nowadays we are facing various emergent issues due to global population expansion and climate changing. Many of them are related to the ocean and thus affect the marine ecosystems and human societies, particularly in the coastal areas. For example, marine pollution has been

harming wilds' and people's lives and frequently occurring/intensive natural disasters have caused serious disturbances and damages to marine ecosystems and societies. There is an urgent need to respond to those issues and prepare the consequent and upcoming impacts.

The people and societies in the IOC Western Pacific region are tightly linked to the ocean in various aspects such as industries, marine resources, histories, cultures, etc. In this context, the stakeholder of the ocean is the general citizens, which means that they are responsible for conservation of marine environments and sustainable use of marine resources. To share the awareness among communities and countries and take actions for global issues, the knowledge gap between citizens and scientists should be filled and the level of ocean literacy of the general citizens needs to be raised.

In addition, marine ecosystems and societies in the Western Pacific region are particular in each country, even in each local area within a country. Those particularities shape high natural and social diversities in a region and should be conserved for next generations and the globe. Although this fact needs to be understood by the stakeholders, i.e., the local people, there is a big gap of knowledge on local natures and societies between citizens and scientists, and between local communities.

The importance of and potential for citizen science has been realized in the last decade. Generally, it offers citizens the opportunities to contribute real science and does scientists to collect large-scale data in turn. In marine science, citizen science has been recently progressed, especially as beach-based projects (Garcia-Soto et al. 2021). It is obvious that citizen science increases the public knowledge through this process. Furthermore, if local people play a major role in a scientific project, it will accelerate their understandings on their own local areas and even rediscovery the values of their area/sea, which consequently raises the ocean literacy from local citizens to a level of entire communities.

IV. S.M.A.R.T OBJECTIVES AND EXPECTED OUTPUTS/OUTCOMES

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

The ultimate goal of this working group is to raise the ocean literacy amongst the general public through citizen science. The details are described below.

Specific:

To raise ocean literacy through cooperative surveys of marine environments by public and scientists

Measurable:

- 1) To engage general public and scientists in cooperative surveys of marine environments
- 2) To set up four study sites with protocols/guidelines to prepare sampling/survey, collect, gather and analyze the samples, and to return to and share the results with citizens
- 3) To transfer the knowledge of survey techniques from scientists to citizens through development of modules
- 4) To organize lectures, open workshops and public symposia about the basic knowledge on marine science to the general public across the region

Attainable:

- 1) To conduct cooperative surveys of marine environments with local people (focusing on current issues such as marine microplastics and debris pollution, loss of marine aquatic biodiversity etc.). Modules used are already in existence and pending for translation into different local languages.
- 2) To have regular lectures at schools and workshops and public symposia for general citizens

- 3) To establish long-lasting survey/monitoring networks in the Western Pacific region (at regional scales)

Relevant:

- 1) To connect local communities/scientists to understand the local uniqueness and generality by exchanging surveys and meetings
- 2) To provide opportunities for students and general public to present their own activities and results of surveys at any levels from schools to scientific conferences

Timeframe: 2023 – 2026 (a 4-years period)

Expected outputs:

- 1) Scientific publications/reports about local marine ecosystems
- 2) Production of modules/booklets in local languages
- 3) Development of survey networks that are connect in the whole WESTPAC region
- 4) Engagement of two schools per year in each member countries

V. TERMS OF REFERENCE OF THE PROGRAMME/PROJECT STEERING GROUP (OR WORKING GROUP):

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

The proposed WG will steer the development and implementation of all proposed activities specified in the Part VII, and ensure the objectives and outputs/outcome will be achieved.

- 1) Lead and organize cooperative scientific surveys
- 2) Lead educational activities and support researchers and schoolteachers
- 3) Manage and establish the survey networks
- 4) Review the achievements and the obtained results from the cooperative surveys, and advise to researchers and leaders of citizen groups

VI. ENGAGEMENT OF RELEVANT STAKEHOLDERS OUTSIDE ACADEMIA

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

In the activities of this working group, the general public, local governments, commercial corporate agencies and schools that are located at the study sites of cooperative surveys will be involved.

From Japan, the environmental DNA-based aquatic biodiversity monitoring network ANEMONE will be involved.

For Malaysia, involvement of schools and NGOs will be initiated for marine plastic/debris and biodiversity monitoring.

As both the modules for environmental DNA monitoring and plastic/debris monitoring are already available, both modules will be expanded to different countries of member state within the WG. Similar or equivalent stakeholders in each country (Indonesia, Philippines, Thailand, Vietnam) will be engaged.

VII. MAIN ACTIVITIES TO BE CARRIED OUT DURING ITS TIMEFRAME

This working group consists of four main activities; cooperative surveys, education of students and public, various face-to-face/online meetings and capacity development of young leaderships.

1) Cooperative surveys

Cooperative surveys with local people will be conducted in each site, each area, and each country in the Western Pacific region. After a technical training, regular surveys/sampling will be operated by local people with a standardized method. Scientists will analyze the samples and gather and interpret the results. Main surveys are the following two;

- a. Surveys on marine debris and plastics to understand the status of marine pollution and their effects on the wilds' and peoples' lives
- b. Aquatic biodiversity monitoring with environmental DNA method to understand the local marine ecosystems

2) Education of students and public

At the same time of cooperative surveys, education of students and public will be conducted at various levels to fill the gap of the knowledge on marine ecosystems and environments;

- i. Lectures for students about general marine science including marine pollutions and biodiversity to gain better understandings on marine ecosystems and environments
- ii. Open workshops for public with experiments to experience marine science and newest surveys
- iii. Public symposia about any fields of marine science to encourage local citizens to have broad interests of marine environment

3) Various face-to-face/online meetings

Comprehensive results will be shared by communities. When the results from the cooperative surveys are obtained and analyzed (preferably in the third year of the entire timeframe), face-to-face and/or online meetings will be held to feedback to the participants to cooperative surveys and local people at various levels:

- i. Wrap-up meetings at a local scale to share their results with scientists and among local communities
- ii. Public symposia at a national scale to understand the local uniqueness and generality in a country
- iii. Scientific conferences at a regional scale to understand the marine pollution and aquatic biodiversity in the Western Pacific region

4) Capacity development of young leaderships

To develop future leaders in the Western Pacific region who connect scientists and public, and among communities, young scientists from ECOP and locals will be involved in any activities of this working group :

- i. Management of 1) cooperative surveys, 2) education of students and public and 3) various meetings described above
- ii. Encouragement of development of new programs/projects as subthemes of this working group

The period of the proposed working group will be for two or four years with consideration of extension.

VIII. PROPOSED WORK PLAN AND BUDGET FOR MAY 2023 - MAY 2025:

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

Programme/ Project/Work ing Group	Objectiv es	Activities	Expected outputs/outco mes	Date and Place	Funding required	
					IOC	Other sources (i.e., from national/int ernational sources)
<i>Citizen Marine Science: from local to Western Pacific</i>	<i>To raise the ocean literacy of general citizens through citizen marine science</i>	<i>1. Sharing sessions of best practices of citizen marine science</i>	<i>Production of modules in different local languages of the member states</i>	<i>Centre of Marine and Coastal Studies (CEMAC S), Penang, Malaysia</i>	<i>USD 10,000</i>	
		<i>2. Developm ent and standardizi ng modules</i>				
		<i>3. Engagement and training of school children and general public</i>	<i>Reports at national levels</i>	<i>2023– 2026, within each member state</i>	<i>USD 8,000</i>	
		<i>4. Results sharing and feedback to communities</i>	<i>Reports at national and regional levels</i>	<i>October 2025, in one of the member states</i>	<i>USD 12,000</i>	
	<i>Publications of the works of WG member states</i>	<i>Anytime</i>				