



**INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION
(of UNESCO)**

**Fourteenth Intergovernmental Session of the IOC Sub-
Commission for the Western Pacific (WESTPAC-XIV)**

Jakarta, Indonesia, 4-7 April 2023

WESTPAC WORKPLAN AND BUDGET FOR MAY 2023 – APRIL 2025

The WESTPAC Programme and Budget for May 2023 – April 2025 was prepared based on the planned activities by the WESTPAC Office, programs/projects, working groups and RTRCs. The required budget was presented in three forms: i. regular budget allotted from IOC; ii. in cash extrabudget to be raised from member states; iii. in kind contribution from member states in support of WESTPAC Programmes and activities.

As a result of the very limited amount of regular budget from IOC, the WESTPAC Programme and Budget has been serving as guidance on the activities that the Sub-Commission would like to jointly promote and seek funding from various sources in support of their implementation. As usual, only 80K-100 K USD will probably be secured from the IOC Regular Budget for the period of 2024-2025. Therefore, same as before, most activities of the Sub-Commission over May 2023-May 2025 will have to be carried out via extrabudgetary support from member states, either in cash or in kind.

Kindly note that given the gradual easing of the pandemic restrictions and constraints, some uncertainties remain with the planned activities, particularly for those in 2023, the Sub-Commission has to adapt or further adjust its workplan to the ever-changing situation.

WESTPAC PROGRAMME AND BUDGET FOR MAY 2023 - April 2025¹

Project/Programme	Activities	Objectives	Expected outputs	Date and Place	Funding Required, US\$		
					IOC (in-cash)		Other in-kind sources (national or internat'l)
					Regular	Extra budget	
POLICY, STRATEGIC, TECHNICAL AND SCRETARIAT SUPPORT							
15th Intergovernmental Session	Statutory science-policy interface	Regional consensus reached on its programmes, new officers elected	Summary report and cooperative programmes established	Early 2025	5K	/	120K
UN Decade of Ocean Science for Sustainable Development (2021-2030)	UN Decade 2 nd Regional Conference & 11 th WESTPAC IMSC			April 2024	10K	20K	300K
	UN Decade advocacy and engagement, and Decade Action implementation workshops	To advocate UN Decade in ocean stakeholder in Member States	Engagement enhanced	May 2023-April 2025	10K	/	30K
11th WESTPAC International Marine Science Conference	Keynotes, sessions, workshops and side events	Gather marine scientists to develop multi-disciplinary collaboration	Conference Programme	April 2024	10K	20K	300K
WESTPAC Advisory Group Meeting	WESTPAC Advisory Group Meeting	Review and provide guidance	All activities developed with high quality, effectiveness	Late 2023, mid 2024, early 2025	5K	10K	20K
Coordination, including the office operation	Development, coordination and implementation, and resources mobilization of WESTPAC activities	Ensure the full operation of the Sub-Commission and implementation of workplan	New activities developed, workplan implemented and quality service provided	May 2023-April 2025	40K	50K	100K
OCEAN PROCESSES AND CLIMATE IN THE INDO-PACIFIC							
North East Asian Regional-GOOS (NEAR-GOOS)	1. 21st Session of Coordinating Committee for NEAR-GOOS	Review progress and status of NEAR-GOOS, and discuss future plan for development of NEAR-GOOS	Action plans and recommendations	Late 2023, Japan	/	/	20 K
	2. 22nd Session of Coordinating Committee for NEAR-GOOS	Review progress and status of NEAR-GOOS, and discuss future plan for development of NEAR-GOOS	Action plans and recommendations	Late 2024	/	/	20 K
	3. GOOS Regional Alliances Forum 11	Enhance cooperation and information sharing with other GOOS Regional Alliances and the GOOS Office	Further development of NEAR-GOOS through cooperation with other GOOS Regional Alliances	Late 2023	/	/	5 K
	4. The Fourteenth Intergovernmental Session of the IOC-WESTPAC	Increase visibility of NEAR-GOOS and promote development of NEAR-GOOS	Support for development of NEAR-GOOS	April 2023, Indonesia	/	/	2 K
	5. PICES Annual Meeting 2023 and 2024	Strengthen collaboration with stakeholders	Enhanced awareness on NEAR-GOOS	Late 2023, Late 2024	/	/	2 K
Ocean Forecasting System (OFS)							
South East Asian Regional-GOOS (SEAGOOS)	1. To operationally run the OFS in the following 2 years, and provide technical support for Thailand and Malaysia OFS	To provide operational forecast every day and distribute through WESTPAC website; and to provide operational forecast for two subdomains	Temperature, salinity, elevation and current within the following 5 days	Everyday, Global OFS in Qingdao, Thailand OFS at PMBC of Thailand, and Malaysia OFS at UMT of Malaysia	/	/	600K
	2. To provide forecasting products and services for IOC/WESTPAC community	To provide forecasting and services for emergent marine hazards and events	Forecasting reports	As needed	/	/	20K
	3. To extend ocean forecasting to ocean and climate forecasting	To provide monthly climate prediction products for the following 1 year	Climate prediction system	Start in 2023	/	/	340K

¹ the WESTPAC Programme and Budget mainly serves as guidance for joint activities that the Sub-Commission would like to promote and seek funding from various sources in support of their implementation. The amount of Regular Budget is based on the IOC Draft Programme and Budget for 2024-2025. The EXB will have to be sought from funding agencies.

Project/Programme	Activities	Objectives	Expected outputs	Date and Place	Funding Required, US\$		
					IOC (in-cash)		Other in-kind sources (national or internat'l)
					Regular	Extra budget	
Ocean Acidification and its Impacts on Marine Ecosystems (OA)							
	1. Workshop on strengthening the regional development of OA monitor and research on OA affecting the coastal ecosystem.	<ul style="list-style-type: none"> Review the progress of the regional OA project and national activities of OA -related Develop the collaboration on studying the OA impacts on marine ecosystem functions and services, including identifying potential study sites in the region and strengthening capacity development 	<ol style="list-style-type: none"> The actionable regional research and monitoring of the OA impacts. Establish the pilot's study sites/selected organisms/ecosystem-related function in participating member states. Identified good practices to be used for project implementation 	Late 2023	/	15K	5K
	2. Training workshop on the regional development of OA monitor and research on OA affecting the coastal ecosystem.	<ul style="list-style-type: none"> Follow up the progresses OA activities in Member States, based on agreement at the first workshop including reviewed progresses of OA monitoring sites. Identify the good practices for OA impacts study and build up the capacity for monitoring and research 	<ol style="list-style-type: none"> The participating research institutes, university, and government agencies formulated the OA impacts study/research and keep maintain the monitoring sites of OA in supporting the SDG-14.3. The ecological function/service impacts of OA study/research have established in the Member States and started implements. 	Mid or late 2024	/	15K	5K
	3. Organize OA Session and workshop at the WESTPAC International Marine Science Conference, Thailand (2024)	<ul style="list-style-type: none"> Knowledges and up-to-date technologies exchange based on research results to bring up the concerning OA impacts and discussion on the development future action. Follow up the progresses of OA project activities. To strengthen collaboration of OA research and related concerning actions 	<ol style="list-style-type: none"> Strengthening regional OA network and update information and knowledge of the region and glob. Getting more partners and idea to develop the direction of OA activities to fulfil requirement of the Member States in contributing to their commitment to the UN SDG-14.3. 	April 2024	/	3K	5K
	4. Partner with other WESTPAC projects in Develop Session of WESTPAC Incubator	To take opportunity, in joining effort with other WESTPAC projects, to develop the UN Ocean Decade project in supporting the implementation of UN Ocean Decade (2021-30)	<ol style="list-style-type: none"> To join an effort with other partners to establish the UN Ocean Decade project under the WESTPAC framework, particular on the Ocean Solution Incubator which was first organized at the Incubators session of the First Regional Ocean Decade Conference in November 2021 	April 2024	/	3K	/
Upwelling Studies through Ocean Data Integration towards Sustaining Ocean Health and Productivity (Upwelling studies)	1. 3rd Upwelling Workshop in 2023	<ul style="list-style-type: none"> To gather experts can present and discuss the progress of understanding of upwelling studies, productivity and its dynamics within 	<ol style="list-style-type: none"> Establishment of new framework that will support new new parameters such as nutrients, biology and biogeochemistry 	Nov, 2023, Malaysia	/	/	8K

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		<p>the region of South China Sea and surrounding seas</p> <ul style="list-style-type: none"> To develop plan for collaboration studies and training to synergize effort in exploring the possibility for joint studies and knowledge transfer among countries 	2. Setup of new partnership of using new approach of global climate modeling data for upwelling studies				
	2. Online training for Data Exploration of New Upwelling Sites. Co-organize by UMT and IODE	<ul style="list-style-type: none"> To explore existing upwelling site using available datasets and increase understanding of the physical-biological interaction dynamics of upwelling regions To construct integrated data gathering which involve field data, satellite data and wind-data at any particular upwelling site To conduct simple analysis from the integrated data in determining special characteristic of any particular upwelling site 	<ol style="list-style-type: none"> Young scientist with new knowledge of using existing data to explore upwelling site and provide detail analysis New networks with various partners and country that can provide more information on upwelling information from different sites and countries 	June, 2023, Malaysia	/	/	10K
	3. Publication of books with chapter contribution from upwelling team members and invited researchers	<ul style="list-style-type: none"> To develop a group that will plan, support and execute the publications effort for upwelling books To publish scientific output of upwelling studies in the region of Asia-Pacific in a form of chapters in book. 	Published Book with at least 10 chapters, by highly reputed publisher (i.e. Springer, Elsevier or MDPI)	Online Discussion	/	/	2 K
South China Sea Fluvial Sediments and Environmental Change (FluSed)	1. Oceanic observation cruise	Fluvial sediment source-to-sink transport mooring observation (sink)	Sediment transport and sinking mechanism in the deep sea	May 2023, South China Sea	/	/	100K
	2. Field/estuary observation	Fluvial discharge observation (source)	Sediment discharge and climate effect mechanism in the estuary	July 2023, Mekong delta (Vietnam)	/	/	60K
	3. Bilateral scientific visits	Science idea exchange and laboratory analysis	Publication and young scientist training	April 2023, Malaysia/China; June 2023, Thailand/China	/	/	10K
	4. 16th FluSed Workshop	Exchange of scientific results	Strengthening collaboration and discussion	November 2023, Shanghai (tentative)	/	10K	20K
	5. Oceanic observation cruise	Fluvial sediment source-to-sink transport mooring observation (sink)	Sediment transport and sinking mechanism in the deep sea	May 2024, South China Sea	/	/	100K
	6. Field/estuary observation	Fluvial discharge observation (source)	Sediment discharge and climate effect mechanism in the estuary	July 2024, Cagayan estuary (Philippines)	/	/	60K
	7. Bilateral scientific visits	Science idea exchange and laboratory analysis	Publication and young scientist training	April 2024, Cambodia/China; July 2024, Indonesia/China	/	/	10K
	8. 17th FluSed Workshop	Exchange of scientific results	Strengthening collaboration and discussion	November 2024, Singapore (tentative)	/	10K	20K

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					IOC (in-cash)		Other in-kind sources (national or internat'l)
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WG007: Working Group on Gas hydrates and Methane Fluxes in the Indo-Pacific Region	1. Third workshop	Further discussion on the preparation of the report	Draft report	May, 2023, on-line	/	/	/
	2. Fourth workshop Face-to face	Discussion on WG report and new project on Gas-hydrates and methane studies under WESTPAC To develop the implementation plan	Draft project proposal	November, 2023, Bangkok, Thailand	/	9K	3K
	3. Fifth workshop	Finalization of the proposal for joint project under WESTPAC	Project proposal	March, 2024, online	/	/	/
MARINE BIODIVERSITY, SEAFOOD SECURITY AND SAFETY							
Coral Reef Conservation and Restoration	1. Series of seminars: Advanced applications of coral reef conservation and restoration in the WESTPAC region	<ul style="list-style-type: none"> To update advanced applications related to coral reef conservation and restoration To summarize all coral restoration and conservation techniques available within the Western Pacific region and outside the regions To promote those techniques among WESTPAC member countries 	Report/scientific paper	May 2023-April 2024	/	/	7K
	2. Photo competition: Raise awareness of coral restoration in the WESTPAC region	<ul style="list-style-type: none"> To promote the awareness of coral restoration and conservation among WESTPAC member countries 	Photos	May- December 2023	/	/	10 K
	3. Workshop: updating activities of project coral reef conservation and restoration in the WESTPAC region	<ul style="list-style-type: none"> To disseminate the synthesis data on coral restoration techniques through scientific communities To have a guideline on reef rehabilitation for reef managers in Southeast Asia region 	Book	December 2023	/	/	From a book publisher
Coral Reef Resilience to Climate Change and Human Impacts	1. Symposium on Coral Reef Ecotourism: Toward Carbon Neutral Destination	<ul style="list-style-type: none"> To present current knowledge from scientific research, monitoring, management, and conservation with focusing on ecotourism and carbon-neutral destinations To promote capacity building related to management and conservation of coral reefs 	<ol style="list-style-type: none"> Lessons learned from the WESTPAC concerning capacity enhancement for monitoring and research, community-based management, and carbon-neutral tourism 30 participated researchers/managers Support the UN Decade of Ocean Science 	June 19 – 23, 2023, Singapore	/	5K	/
	2. Summer School on "Impact of Anthropogenic Forcing on Coral Reefs and Consequence at Ecosystem Level"	<ul style="list-style-type: none"> To gain knowledge on consequence of impacts of climate change and human activities on the coral reef health and interventions to reduce reef stressors, To use a book of Coral Reefs of the Western Pacific Ocean in a Changing 	<ol style="list-style-type: none"> 20 trained young marine scientists Report on capacity building of the project Support the UN Decade of Ocean Science 	December 2023, Penang, Malaysia	/	10K	/

Project/Programme	Activities	Objectives	Expected outputs	Date and Place	Funding Required, US\$		
					IOC (in-cash)		Other in-kind sources (national or internat'l)
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		Anthropocene and relevant materials for the trainees, <ul style="list-style-type: none"> To promote capacity building related to research and managing coral reefs in the WESTPAC. 					
	3. Workshop on Coral Reef Resilience-based Management	<ul style="list-style-type: none"> To review case studies on coral reef resilience-based management for applying in the WESTPAC To promote capacity building related to research and managing coral reefs in the WESTPAC 	<ol style="list-style-type: none"> Good case studies on coral reef resilience-based management in the WESTPAC 30 participated researchers Support the UN Decade of Ocean Science 	March 2024 Bangkok, Thailand	/	10K	/
	4. Workshop on collaboration of regional young scientists for coral reef resilience research	<ul style="list-style-type: none"> To review coral reef studies in the WESTPAC for determining research collaboration on coral reef resilience To enhance network for research on coral reefs and coordination with other projects in the region To promote capacity building related to young scientist research on coral reefs in the WESTPAC 	<ol style="list-style-type: none"> 20 participated young scientists A collaborative research proposal on coral reef resilience Support the UN Decade of Ocean Science 	March 2024 Bangkok, Thailand	/	10K	/
	5. Workshop to finalize a coral reef monitoring guideline for managing marine protected areas in the WESTPAC	<ul style="list-style-type: none"> To brainstorm and discuss on finalizing a coral reef monitoring guideline for managing marine protected areas To promote capacity building on coral reef monitoring and managing marine protected areas 	<ol style="list-style-type: none"> 20 participated scientists/managers Coral reef monitoring guideline for managing marine protected areas Support the UN Decade of Ocean Science 	August 2023 Bangkok, Thailand	/	5K	/
	6. Workshop for training users of a coral reef monitoring guideline for managing marine protected areas in the WESTPAC	<ul style="list-style-type: none"> To train users of a coral reef monitoring guideline for managing marine protected areas To promote capacity building on coral reef monitoring and managing marine protected areas 	<ol style="list-style-type: none"> 20 trainees for coral reef monitoring and managing marine protected areas in the WESTPAC Support the UN Decade of Ocean Science 	March 2024 Bangkok, Thailand	/	5K	/
Ocean Remote Sensing for Coastal Habitat Mapping	1. Steering Committee Meeting	<ul style="list-style-type: none"> To identify social and technical issues and needs related to ocean remote sensing in each country and to coordinate a training course and a workshop 	Sharing new techniques Contributing to capacity development Disseminate information	2023 (online) 2024 (online) 2025 (online)	/	/	/
	2. Demonstration of remote sensing technology on ocean remote sensing in selected pilot sites in cooperation with local authorities 1) Technical meeting at three sites 2) Generate thematic maps at three sites 3) Transfer mapping technics to researchers & local authorities at three sites	<ul style="list-style-type: none"> To demonstrate remote sensing technics to researchers/local authorities concerning ocean remote sensing that they don't use the technics To inform on the methods to monitor marine environment in broader areas that ground surveys can't cover To transfer remote sensing techniques to local researchers and authorities responding to their need 	<ol style="list-style-type: none"> Thematic maps generated by local researchers/authorities Implementing remote sensing technics for generating thematic maps from satellite images to researchers/local authorities monitoring marine environment Recommendation to marine policy 	Sites to be decided upon the steering meetings <ol style="list-style-type: none"> Technical meeting by December 2024. Generate thematic maps by December 2024 Transfer mapping 	/	20K	10K

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					Regular	Extra budget	
				technics by April 2025.			
	3. Scaling up workshop on ocean remote sensing with remote sensing for reviewing the results of several sites	<ul style="list-style-type: none"> To summarize the demonstration activities To share direction of use thematic maps produced by the project To expand demonstration sites 	<ol style="list-style-type: none"> Increase in authorities using the remote sensing technics Increase in reliable thematic maps in WESTPAC region by remote sensing technics Dialogue with local researchers and authorities to implement marine environment conservation policy with use of thematic maps Publication 	<ol style="list-style-type: none"> Scaling up workshop on ocean remote sensing by December 2024 Dialogue with local researchers and authorities by December 2024 Publication by April 2025 	/	20K	10K
	4. Capacity building	<ul style="list-style-type: none"> One capacity building activity (online) every year conducted in line with UN Decade of Ocean Science for Sustainable Development. Possible topics include: i) efficient field survey methods; ii) new technologies for remote sensing such as drone or Google Earth Engine; iii) new satellite image analysis methods such as AI or machine learning, etc. 	Two early-career ocean scientists in WESTPAC region who participated in the capacity building activity deliver presentations on their studies by April 2025.	May 2023- April 2025	/	/	/
Marine Toxin and Seafood Safety	1. Evaluation of RTRC	Providing and sharing working environment on marine toxins and seafood safety	<ol style="list-style-type: none"> Regional serving on TTX, STX and CTX analysis and research; Evaluated RTRC (MOU b/w IOC/UNESCO and IO). 	Apr.-Sept. 2023, IO, VN	/	3K	5K
	2. Co-field research on "Case study in Viet Nam -Occurrence of ciguatoxin"	Strengthening regional collaboration on marine toxins study and collect evidence of Ciguatoxin occurrence in the environment	<ol style="list-style-type: none"> Regional collaboration is strengthened; Specimens collection (fishes, microalgae) for toxin analysis 	Sept. 2023/Apr. 2024	/	30K	10K
	3. Expert sending for Confirmation of CTX by using advantaged technique	Strengthening capacity on toxin analysis	<ol style="list-style-type: none"> -2 trained persons who can work on CTX confirmation; Scientific method on toxin study is improved to obtain more reliable data for high quality publications; 	June/Sept. 2023, Hong Kong/Japan	/	/	6K
WG009: Working Group on Integrated Investigation in Indo-Pacific Convergent Center -Marine Ecosystem and Biodiversity	1. Workshops, seminars, and meetings	Communicate and discuss the research and findings on formation mechanism and status of marine biodiversity in the IPCC and their socio-economic impacts.	Better understandings on the mechanism and trend of evolution of the biodiversity center in the IPCC.	China, Indonesia, Malaysia, Bangkok, Japan	/	/	/
	2. 3-4 Training courses	<ul style="list-style-type: none"> -Deep sea ecosystem -Ocean observation 	More young professionals could benefit from the training and grow to be leaders.	China, Indonesia, Malaysia, Bangkok, Japan	/	/	/
Healthy Ocean Ecosystems							

Project/Programme	Activities	Objectives	Expected outputs	Date and Place	Funding Required, US\$		
					IOC (in-cash)		Other in-kind sources (national or internat'l)
					Regular	Extra budget	
Distribution, source, fate and impacts of marine microplastics in the Asia Pacific region	1. International workshop	Discussing the outcomes of this project, sharing the experience and discussion on publications. Considering the work framework on the Decade Action project.	1. Project summary report outline; 2. Decade Action project work framework.	April 20th, 2023 Online	/	/	3 K
	2. Training workshops for the riverine plastic and microplastic sampling,	Based on the methodology established, train young scientists and students in the Asia-Pacific region on the using of the methodology	At least 50 young scientists and students will be trained.	June 26-28th, 2023 Sanya, Hainan, China	/	/	10 K
	3. Filed sampling in pilot rivers	Collect in situ riverine plastic and microplastic data in pilot rivers	At least three pilot rivers will be sampled and the data will be obtained.	July 2023, Dec 2023, Selected pilot rivers	/	/	15 K
	4. International workshop	Share experiences and discuss the project progresses; Make plan for the future.	A project progress report	May 2024 Sanya, Hainan, China	/	/	8 K
	5. Training workshop on the transport of plastic and MPs in rivers.	Train young scientists and students in the Asia-Pacific region on the modeling the transport of plastic and microplastic in rivers.	At least 50 young scientists and students will be trained.	Oct 16-18th, 2024 Sanya, Hainan, China	/	/	8 K
	6. International workshop	Share data, experiences and discuss the project outcomes	Project Tire 1 report	May 2024 Sanya, Hainan, China	/	/	8 K
Harmful Algal Blooms	1. Steering meeting	Update the status of HAB information in the region and identify emerging HABs issue to address	identified national/regional HAB training courses, identified emerging HAB issues	2023 (in person in Hiroshima, Japan), 2024 (online), 2025 (online)	/	20K	10 K
	2. Strengthening collaboration with other HAB related networks (EASTHAB, GlobalHAB, IOCIPHAB, PICES S-HAB, etc.)	Join other HABs related meetings at least one time each by April 2025	Up-to-date information and cutting-edge technique and science on HABs shared among countries in the region; Emerging issues and needs on HABs of the countries in the WESTPAC region disseminated to other HAB related international societies.	2023-2025	/	/	/
	3. Capacity building	One capacity building activity (online) every year conducted in line with UN Decade of Ocean Science for Sustainable Development. Possible themes are: i) emerging issues on HABs in countries, ii) novel technique for early warning, iii) monitoring, mitigation and management, etc.	3 early-career ocean scientists in WESTPAC countries delivered presentations in the capacity building activities by April 2025.	2023-2025	/	/	In kind (Univ. Tokyo, Univ. Malaya, Univ. Philippines, etc.)
Enhancement of Sustainable Harmful Jellyfish Research & Networking in WESTPAC region	1. A special symposium during the upcoming IOC Westpac Conference in Thailand	<ul style="list-style-type: none"> Sharing of research findings by members from member states. 	A special issue on jellyfish in a selected journal or a publication.	September 2023 Bangkok, Thailand	/	10K	/
	2. International Workshop on Enhancing Societal Engagement Strategies towards Jellyfish Research and Management	<ul style="list-style-type: none"> Opportunity to have trainers from social science/ mass communication background to guide jellyfish scientists on effective communication for raising awareness. 	Social media and new techniques of societal engagement.	November 2023 Centre for Marine and Coastal Studies (CEMACS),	/	10K	/

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	(Multidisciplinary workshop)	<ul style="list-style-type: none"> Identifying target audience and goals- who do we need in our team to execute? 	Developing and measuring the effectiveness of Citizen science projects.	Universiti Sains Malaysia (USM), Penang, Malaysia			
	3. Advance Workshop on Jellyfish Biology/ Taxonomy and Envenomation	<ul style="list-style-type: none"> Knowledge sharing and SOP development on advanced jellyfish biology/taxonomy and envenomation research. 	Joint research projects on advanced jellyfish biology/taxonomy and envenomation.	August 2024 Pusat Penyelidikan Langkawi (PPL), Langkawi Research Centre, Universiti Kebangsaan Malaysia (UKM), Langkawi, Kedah, Malaysia	/	10K	/
Healthy, Productive and Sustainable Asian Marginal Seas: Understanding changes in the marine environment in responses to global climate change	1. Scientific session in the JpGU	Open the activities of the program to the public along with role of Project meeting	Making the program known to the public, and getting various information from the public	21 May 2023 Japan	/	/	5 K
	2. Capacity building in Thailand; part-I, for core project 1	Start the second case of the capacity building following the case of Indonesia and Japan	Establishing close relationship for capacity building and cooperative research	May, June 2023 Thailand	/	/	5 K
	3. Workshop on the core project 2 concerning mixing processes	Exchange information on the mixing processes and	Making mutual understanding related to cooperative research	June 2023 Japan	/	/	8 K
	4. Session in the scientific meeting of WESTPAC	Open the progress of the program to the WESTPAC community	Publicizing the activities of the program to wider community	2024 Thailand	/	/	5 K
	5. Capacity building in Thailand; part-II, for core project 1	Second stage of the capacity building in Thailand	Establishing close relationship for capacity building and cooperative research	2024 Thailand	/	/	8 K
	6. Project 1; core1&core2 joint meeting, program meeting	Confirmation of the progress of Project 1, and AMS program	Mutual understanding how the nutrient footprint can be traced.	Jan 2025	/	/	5 K
WG005: Working Group on Ocean Oxygen Network (O ₂ NE)	1. Two webinars 2023; two webinars 2024	Awareness raising; networking	More WESTPAC scientists engaged in O ₂ NE	Virtual	/	/	/
	2. Deoxygenation session WESTPAC ISC 2024	Reports on deoxygenation research in region; networking	More WESTPAC scientists engaged in O ₂ NE	Bangkok	/	5 K	/
	3. Deoxygenation workshop WESTPAC ISC	Networking; planning for review papers and summer training workshop	More WESTPAC scientists engaged in O ₂ NE; more work done by scientists in region in hypoxic sites	Bangkok	/	/	/
	4. Upload by mid-2023 and update monthly the WESTPAC O ₂ NE website within the WESTPAC webpage.	Awareness raising; networking	More WESTPAC scientists engaged in O ₂ NE	Virtual	/	2 K	/
WG008: Working Group on Rapid Detection Technologies for Harmful Algal Blooms	1. Workshops	Rapid Detection Technology for Harmful Algal Blooms	Review, communicate and exchange the research status of rapid detection technology for HABs; co-design and modify the rapid detection technology for HABs products from our working group towards the early warning	March 2024, Hangzhou, China	/	/	10K

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			and effective management of HABs in the region.				
	2. Training Workshops	Study Rapid Detection Technology for Harmful Algal Blooms	Sharing the Study Method and Rapid Detection Technology for Harmful Algal Blooms	TBD	/	/	10K
	3. Business Meetings	Discuss and summarize the progress of RDT-HAB-IOC-WESTPAC	Business discussion and decision	TBD	/	/	5K
CAPACITY DEVELOPMENT FOR MARINE SCIENCE, OBSERVATIONS AND SERVICES							
Regional Training and Research Center on Ocean Dynamics and Climate (RTRC-ODC)							
UNESCO/IOC Regional Network of Training and Research Centers on Marine Science	1. 12th ODC Training Course	Ocean model and data assimilation	Understanding the simulation of ocean dynamic processes, new generation ocean models, basic theory and principles of data assimilation, data assimilation method and systems for operational ocean forecast system	2023 Qingdao	/	20k	60K
	2. 13th ODC Training Course	Modeling of ocean ecosystem	Understand Basic dynamics of ocean circulation, surface wave, tide and mesoscale eddies in the open ocean and shelf regions, multi-processes coupling in ocean models, and numerical models of marine ecosystems.	2024 Qingdao	/	20K	60K
	3. Regular FYMS Activities	Related to Ocean dynamics and climate	Improve the exchange of knowledge scholars from different countries.	2023-2024 Qingdao	/	/	10K (local host)
Regional Training and Research Center on Marine Biodiversity and Ecosystem Health (RTRC-MarBEST)							
	1. Summer Course on tropical Mangrove Ecosystem: Vegetation and fish Monitoring	<ul style="list-style-type: none"> To enhance capacity building for monitoring mangrove ecosystems; To introduce the latest methods (e.g. app MonMang 2.0) for mangrove monitoring To strengthen networking in mangrove monitoring 	Increased number of researchers and lecturers for mangrove monitoring and using application of MonMang 2.0, and establishment of networking for mangrove monitoring	June 2023	/	10K	30K.
	2. Fish taxonomy in coastal ecosystems	<ul style="list-style-type: none"> To attract young scientist and lecturers to study fish taxonomy To enhance capacity of fish taxonomist using various fish identification techniques To build collaborative research among fish taxonomists 	Increased number of fish taxonomists, and strengthening the collaborative works between fish taxonomists	Nov-Dec 2023	/	10K	15K
	3. Coastal and small island management	<ul style="list-style-type: none"> To develop capacity building; To enhance partnerships To strengthen collaborative works among stakeholders 	Increased number of stakeholders in understanding coastal and small island management, and establishment the networking on the related activities in the coastal and small island ecosystems	2024	/	10K	50K
Regional Training and Research Center on Marine Plastic Debris and Microplastics							
	1. International workshop on harmonizing methodology for riverine plastic and microplastic monitoring	Develop standardized methodology for riverine plastic and microplastic monitoring and flux estimate.	A set of standardized methodology developed for riverine plastic and microplastic monitoring and flux estimate	April 20th, 2023 Online	/	/	5 K

Project/Programme	Activities	Objectives	Expected outputs	Date and Place	Funding Required, US\$		
					IOC (in-cash)		Other in-kind sources (national or internat'l)
					Regular	Extra budget	
	2. Training workshops for the riverine plastic and microplastic sampling,	Based on the methodology established, train young scientists and students in the Asia-Pacific region on the using of the methodology	At least 50 young scientists and students will be trained	June 26-28th, 2023 Sanya, Hainan, China	/	/	10 K
	3. Training workshop on the transport of plastic and MPs in rivers.	Train young scientists and students in the Asia-Pacific region on the modeling the transport of plastic and microplastic in rivers.	At least 50 young scientists and students will be trained	Oct 16-18th, 2024 Sanya, Hainan, China	/	/	8 K
Regional Training and Research Centers on Marine Toxins and Seafood Safety							
	1. High quality training on marine toxins verification/confirmation	To improve capacity for ciguatoxin verification/confirmation	2 trained persons who can work on verification/confirmation of ciguatoxin in RTRC-MTSS	03-04 weeks, Jun./Sept.2023, HongKong/Japan	/	/	10K
	2. Training workshop on "Scientific sampling for toxic organisms"	To provide scientific materials (protocol) and improve technical skill on scientific sampling of ciguateric organisms	1. Practical protocol for scientific sampling for ciguateric organisms which can be applied in the region. 2. 5-10 persons who can work on scientific sampling on ciguatera for member states and RTRC-MTSS	One week, Apr/Sept. 2024, IO, VN	/	20K	10K
	3. Developing practical protocols for analysis of tetrodotoxins in marine organisms (fish, gastropod and crab)	To provide scientific materials (protocol) for marine toxin analysis	3 developed practical protocols for analysis of tetrodotoxins in marine organisms (fish, gastropod and crab) which can be applied in RTRC-MTSS	06 months, Oct. 2024-Mar. 2025, IO, VN	/	/	30K
Sub-total					80 K	526 K	2,776 K
Total					3,382 K		