



COMISIÓN OCEANOGRÁFICA INTERGUBERNAMENTAL
(de la UNESCO)

**12^a REUNIÓN INTERGUBERNAMENTAL DE LA SUBCOMISIÓN DE LA COI
PARA EL PACÍFICO OCCIDENTAL (WESTPAC XII)**

Manila (Filipinas)
2-5 de abril de 2019

RESUMEN DISPOSITIVO

De conformidad con lo dispuesto en el artículo 48.3 del Reglamento, la WESTPAC, en su calidad de órgano subsidiario principal de la COI, debe presentar informes de sus reuniones a un órgano rector.

Se invitará a la Asamblea de la COI, en su 30^a reunión, a examinar el presente resumen dispositivo. Para obtener información más detallada sobre esta reunión, sírvase consultar el informe resumido de la 12^a reunión intergubernamental de la WESTPAC en el enlace <http://iocwestpac.org/>.

- 1 La 12^a reunión intergubernamental de la Subcomisión de la COI para el Pacífico Occidental (WESTPAC) se celebró en el Centro Internacional de Convenciones de Filipinas en Manila, del 2 al 5 de abril de 2019, según el orden del día que figura en el [anexo I](#). El Gobierno de Filipinas acogió la reunión, por conducto de su Departamento de Relaciones Exteriores, la Comisión Nacional para la UNESCO, la Universidad Diliman de Filipinas y su Instituto de Ciencias del Mar. Asistieron a la reunión cerca de 100 delegados de 16 Estados Miembros del Pacífico Occidental y sus regiones adyacentes, así como representantes de la Iniciativa del Triángulo de Coral sobre los arrecifes de coral, la pesca y la seguridad alimentaria ([CTI-CFF](#)), la Asociación para la gestión ambiental de los mares de Asia Oriental ([PEMSEA](#)), el Centro de Desarrollo Pesquero de Asia Sudoriental ([SEAFDEC](#)), el Mapa Batimétrico General de los Océanos ([GEBCO](#)) [Seabed 2030](#) y el PNUMA/Órgano de Coordinación sobre los Mares de Asia Oriental ([COBSEA](#)).

¹ El orden del día y las recomendaciones están disponibles solo en inglés.

2 La Subcomisión expresó su más profundo agradecimiento al Gobierno de Filipinas por los atentos preparativos efectuados para todos los delegados y representantes, y dio una cálida bienvenida a los delegados de Fiji, Francia y Singapur, que habían asistido a esa reunión tras varios años de ausencia.

3 El Sr. Generoso Calonge, Subsecretario de la Oficina de Asuntos Marítimos y Oceánicos del Departamento de Relaciones Exteriores de Filipinas, el Sr. Vladimir Ryabinin, Secretario Ejecutivo de la COI, y el Sr. Vo Si Tuan, Presidente de la Subcomisión de la COI para el Pacífico Occidental, dieron la bienvenida a los participantes. Inmediatamente después de la inauguración se celebró un mini simposio científico para preparar el "Decenio de las Naciones Unidas de las Ciencias Oceánicas para el Desarrollo Sostenible (2021-2030)", en adelante denominado el Decenio, durante la reunión. La Subcomisión consideró que la reunión era un punto de partida oportuno para que la región se preparara para el Decenio y aportara ideas y reflexiones.

4 En una sesión de intercambio de ideas con representantes de todos los programas de la WESTPAC, grupos de trabajo, organizaciones asociadas y Estados Miembros se examinaron las formas de contribuir a los preparativos y la ejecución del Decenio.

5 Se celebró una ceremonia de firma para la creación de nuevos centros regionales de formación e investigación. Se firmaron dos cartas de intención entre la COI de la UNESCO y, por un lado, la Universidad Diliman de Filipinas acerca de la creación de un centro regional de formación e investigación sobre gestión y restauración de arrecifes; y, por otro, el Instituto de Oceanografía de la Academia de Ciencia y Tecnología de Viet Nam acerca del establecimiento de un centro regional de formación e investigación sobre toxinas marinas y seguridad de los productos del mar. La Subcomisión también informó de que en la Universidad Normal del Este de China se estaba creando otro centro regional de formación e investigación sobre detritos plásticos marinos y microplásticos, que ofrecería en poco tiempo oportunidades periódicas de formación e investigación.

Ejecución del Programa WESTPAC en el último periodo entre reuniones

6 A pesar de la considerable escasez de recursos humanos y financieros del presupuesto ordinario de la COI, la Subcomisión ha situado a la COI a la cabeza del desarrollo y la cooperación en materia de ciencias del mar en la región, gracias a la realización de un número considerable de actividades en las cuatro esferas prioritarias que ha definido, a saber, los procesos oceánicos y el cambio climático; la biodiversidad marina y la seguridad alimentaria; la salud de los ecosistemas oceánicos; y un mayor conocimiento de las cuestiones que van surgiendo.

7 Se estimó que alrededor de 2 012 (un 41% de mujeres) científicos marinos, funcionarios gubernamentales y administradores de recursos habían participado directamente en las actividades de la WESTPAC en 2017-2018. Estas actividades incluían la 10^a Conferencia Científica Internacional de la WESTPAC, la 12^a reunión intergubernamental de la WESTPAC, 12 cursos de formación/escuelas de verano y 33 talleres regionales de desarrollo científico/reuniones consultivas. Algunos de los principales programas y actividades clave ejecutados durante el último periodo entre reuniones son los siguientes:

- Conferencia Internacional de Ciencias del Mar de la WESTPAC, que se celebra cada tres años, y reunión intergubernamental bienal de la WESTPAC.

- Dos Alianzas Regionales del GOOS: los sistemas regionales de observación de los océanos como parte del Sistema Mundial de Observación de los Océanos (GOOS): el Sistema Mundial de Observación de los Océanos - Asia Nororiental ([NEAR-GOOS](#)) y el Sistema Mundial de Observación de los Océanos de los Mares del Asia Sudoriental ([SEA-GOOS](#)), con sus tres proyectos piloto, a saber, Observación del comienzo del monzón en el mar de Andamán y sus repercusiones sociales y en los ecosistemas (MOMSEI), Sistema de Previsión de los Océanos, y Seguimiento de los efectos ecológicos de la acidificación de los océanos en los ecosistemas de los arrecifes coralinos.
- Doce proyectos/programas de investigación marina: Floraciones de Algas Nocivas (HAB); Conservación de arrecifes de coral; Resistencia de los corales a los efectos del clima y los seres humanos; Taxonomía de ADN y seguimiento de la búsqueda de organismos marinos de arrecifes coralinos (DRMREEF); Especies marinas en peligro de extinción; Teledetección oceánica para la cartografía del hábitat costero (ORSP); Sedimentos fluviales del mar de China meridional y cambio ambiental (FluSed); Toxinas marinas y seguridad de los mariscos (TMO); Interacción aire-mar en la extensión de Kuroshio y su efecto climático; Estudios de afloramiento; Investigación y vigilancia de microplásticos marinos e Investigación sobre medusas dañinas.
- Una red regional de centros de formación e investigación en ciencias del mar: dos centros regionales de formación e investigación en funcionamiento, concretamente, el Centro Regional de Formación e Investigación sobre la Dinámica de los Océanos y el Clima (RTRC-ODC) y el Centro Regional de Formación e Investigación sobre Biodiversidad Marina y Salud de los Ecosistemas (RTRC-MarBEST); y establecimiento en curso de tres nuevos centros regionales de formación e investigación.
- Dos grupos de trabajo sobre la Red de oxígeno oceánico (GT 005); e Intercambio de energía y materiales en mares marginales (GT 006), respectivamente.

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Entre los principales logros alcanzados durante el último periodo entre reuniones se cuentan los siguientes:

- Fortalecimiento de la interfaz entre la ciencia y las políticas, mediante la aplicación del [Plan de acción de la ASEAN y las Naciones Unidas](#) sobre cooperación global (2016-2020) y el Marco de cooperación UNESCO-ASEAN (2015-2019), la participación activa en el segundo ciclo de la Evaluación Mundial de los Océanos de las Naciones Unidas, la sinergia con los esfuerzos de la ASEAN en la lucha contra los detritus marinos, y el fomento de la mayor plataforma de intercambio de conocimientos sobre los océanos de la región: la Conferencia Internacional de Ciencias del Mar de la WESTPAC.
- Elaboración de observaciones y servicios oceánicos permanentes, por medio de la red de intercambio de datos e información de NEAR-GOOS; y creación y puesta en marcha de una nueva versión de su sistema de predicción oceánica de SEAGOOS ([SEAGOOS-OFS](#)), que ofrece productos de predicción para cinco días y datos de archivo descargables sobre la altura de las olas en superficie, el periodo de olas, las corrientes oceánicas tridimensionales, y la temperatura y salinidad del mar.
- Fomento de los conocimientos sobre el cambio climático, la biodiversidad marina y la salud de los ecosistemas, mediante la realización de un estudio de viabilidad sobre el segundo estudio cooperativo de Kuroshio y sus regiones adyacentes ([CSK-2](#)), la transferencia de técnicas moleculares para la conservación de la biodiversidad marina y

la gestión de los recursos, la investigación conjunta sobre toxinas marinas con el primer documento publicado en el sudeste asiático sobre el caso confirmado de la toxina de la ciguatera, el fortalecimiento de la red regional de investigación y vigilancia de las repercusiones ecológicas de la acidificación de los océanos en los arrecifes de coral, y el desarrollo de una red de investigación y vigilancia de los microplásticos.

- Fortalecimiento de las capacidades institucionales y humanas, principalmente mediante sus instrumentos integrados de desarrollo de capacidades, comprendida la "Red Regional de Centros de Formación e Investigación de la COI sobre Ciencias del Mar", con dos centros regionales de formación e investigación en funcionamiento y tres nuevos centros regionales de formación e investigación en curso de creación, la organización de cursos periódicos de formación y escuelas de verano sobre temas específicos por rotación, y la creación de la "Beca de viaje para jóvenes científicos de la WESTPAC" y el "Premio al mejor científico joven".

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La Subcomisión expresó su agradecimiento, en particular, a:

- el Gobierno de Tailandia, por conducto de su Departamento de Recursos Marinos y Costeros, por haber facilitado espacio de oficinas e instalaciones para la Oficina de la WESTPAC; y su Comisión Nacional para la UNESCO por el apoyo financiero a las actividades de la WESTPAC relativas a la vigilancia de la acidificación de los océanos, la investigación sobre microplásticos, el buceo científico y el muestreo y procesamiento de dinoflagelados;
- el Gobierno de Filipinas, por conducto de su Departamento de Relaciones Exteriores, su Comisión Nacional para la UNESCO, la Universidad de Filipinas y su Instituto de Ciencias del Mar, por haber acogido la 12^a reunión intergubernamental de la Subcomisión (2-5 de abril de 2019);
- el Gobierno de China, por conducto de su Administración Oceánica Estatal y el Instituto Principal de Oceanografía, por haber acogido el Centro Regional de Formación e Investigación sobre la Dinámica de los Océanos y el Clima, que imparte cursos de formación anuales desde 2011 que han atraído a un total de 359 jóvenes científicos de 43 países;
- el Gobierno de Indonesia, por conducto de su Instituto Indonesio de Ciencias, por haber acogido el Centro Regional de Formación e Investigación sobre Biodiversidad Marina y Salud de los Ecosistemas, que imparte cursos de formación anuales desde 2016; y
- los Estados Miembros por su apoyo en efectivo o en especie, como China mediante su contribución voluntaria a la Cuenta Especial de la COI, el Japón mediante el Fondo Fiduciario UNESCO/Japón y la República de Corea mediante el Fondo Fiduciario UNESCO/Corea. China, Tailandia, Indonesia, el Japón, la República de Corea, Malasia, Filipinas, los Estados Unidos de América y Viet Nam también prestaron un importante apoyo en especie a diversos programas y actividades de la WESTPAC.

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Como se indica en el [Programa y Presupuesto \(mayo de 2017-abril de 2019\)](#) aprobado por la WESTPAC, la financiación necesaria para el periodo entre reuniones asciende a 8 millones de dólares estadounidenses, mientras que se asignaron 115 000 dólares estadounidenses a la WESTPAC para sus actividades en 2018-2019. Casi todas las actividades de la WESTPAC se ejecutaron con apoyo extrapresupuestario, en efectivo o en especie, de los Estados Miembros.

11 La Subcomisión ha venido demostrando su gran valor estratégico para la COI en el logro de sus objetivos mundiales, mediante sus funciones de vínculo estratégico entre los objetivos mundiales y las prioridades y actividades nacionales; de motor esencial para emprender acciones conjuntas de las comunidades científicas marinas a fin de hacer frente a los problemas de desarrollo; y de centro local de intercambio de información y creación de capacidad para la transferencia de tecnología marina y el refuerzo del empoderamiento de los Estados Miembros para fortalecer sus capacidades de investigación en favor del desarrollo sostenible. La Subcomisión expresó además su profunda preocupación por la incompatibilidad entre el tamaño actual de la Oficina de la WESTPAC y un espectro más amplio de actividades de la WESTPAC.

Ejecución del Programa WESTPAC en el próximo periodo entre reuniones

I. Preparativos del Decenio de las Naciones Unidas de las Ciencias Oceánicas para el Desarrollo Sostenible (2021-2030)

12 La Subcomisión participará activamente en la preparación y ejecución del Decenio de la siguiente manera:

- i) promoviendo el Decenio de las Naciones Unidas de las Ciencias Oceánicas para el Desarrollo Sostenible entre las diversas partes interesadas, y difundiendo información sobre el mismo;
- ii) organizando y acogiendo talleres regionales y mundiales para el Decenio;
- iii) contribuyendo a la creación de capacidades y a la transferencia de tecnología marina, por ejemplo, por conducto de su red regional de centros de formación e investigación;
- iv) creando y mejorando centros de excelencia en ciencias marinas para contribuir a los objetivos del Decenio;
- v) creando, coordinando y adaptando programas y actividades internacionales para alcanzar los objetivos del Decenio; y
- vi) haciendo de la Conferencia Internacional de Ciencias del Mar de la WESTPAC, que se celebra cada tres años, una plataforma regional esencial para responder oportunamente a los desafíos del Decenio, y examinar sus resultados.

13 Poco después de la primera reunión mundial de planificación del Decenio de las Naciones Unidas de las Ciencias Oceánicas para el Desarrollo Sostenible (13-15 de mayo de 2019, Copenhague, Dinamarca), la Subcomisión organizará en Tokio (Japón), del 31 de julio al 2 de agosto de 2019, un taller regional de planificación y consulta para el Decenio para los mares marginales del Pacífico Norte y el Pacífico Occidental, en estrecha cooperación con la Organización del Pacífico Norte para las Ciencias del Mar (PICES), el Comité Nacional Japonés para la COI/UNESCO, el Organismo de Ciencias y Tecnologías Marinas y Terrestres del Japón (JAMSTEC), la Universidad de Tokio y otros interlocutores de la región. El taller regional constituirá un valioso foro para que los diálogos internacionales, interdisciplinarios y de múltiples interesados contribuyan a la fase de preparación del Decenio.

14 Reconociendo que el Decenio apoyará plenamente a los países para la consecución de los objetivos de la Agenda 2030 para el Desarrollo Sostenible (y más concretamente el ODS 14), la Subcomisión alentó además a todos los Estados Miembros a participar activamente en la preparación y ejecución del Decenio. La Subcomisión aprobó la Recomendación SC-WESTPAC-XII.1 sobre el Decenio.

II. Ejecución de la Estrategia de desarrollo de capacidades de la COI para 2015-2021

- 15 La Subcomisión seguirá aplicando de forma continua la Estrategia de desarrollo de capacidades de la COI para 2015-2021 ([IOC/INF-1332](#)). Respetando su principio rector para el desarrollo de la capacidad, es decir, que sea inclusivo, adaptable y empoderante, la Subcomisión reforzará la concepción y ejecución conjuntas de sus actividades de fomento de la capacidad con los Estados Miembros, con miras a ajustar sus necesidades al desarrollo sostenible de los océanos, los mares y las costas.
- 16 Haciendo hincapié en la "formación mediante la investigación", la Subcomisión llevará a cabo, entre otras cosas, las acciones de fortalecimiento de capacidades definidas en la estrategia, entre ellas, el desarrollo continuo de la "Red Regional de Centros de Formación e Investigación de la COI sobre Ciencias del Mar en el Pacífico Occidental y sus regiones adyacentes", con cursos de formación anuales y oportunidades de investigación en los centros regionales de formación e investigación en sus ámbitos de especialización (acción 1.2.4); la organización de cursos de formación/talleres de formación/escuelas de verano nacionales-regionales adaptados a las necesidades de forma rotativa en los Estados Miembros, sobre, por ejemplo, la teledetección oceánica, la vigilancia de la acidificación de los océanos, la vigilancia de la aparición de los monzones y las interacciones entre el aire y el mar, la vigilancia y el muestreo de microplásticos, etc. (acción 1.2.1); la participación permanente de jóvenes y mujeres científicas en los programas de investigación de la WESTPAC (acción 1.4.1); y la selección del ganador del "Premio al mejor científico joven" de la WESTPAC, así como de la "Beca de viaje para jóvenes científicos de la WESTPAC", en la 11^a Conferencia Internacional de Ciencias del Mar de la WESTPAC de 2020 (acciones 1.3.4 y 1.3.1). Entretanto, la WESTPAC está adoptando más medidas para afianzar las capacidades en distintos niveles, entre otras cosas incorporando las ciencias del mar en las escuelas, promover los conocimientos básicos sobre los océanos (acción 5.2.1), y ayudar a los Estados Miembros a elaborar procedimientos de gestión de las ciencias del mar y políticas nacionales (acción 4.2.1).
- 17 La "Red Regional de Centros de Formación e Investigación de la COI sobre Ciencias del Mar en el Pacífico Occidental y sus regiones adyacentes" fue creada en 2008 por la Subcomisión y posteriormente aprobada por la COI/UNESCO, con el objetivo de mejorar las capacidades nacionales y regionales en materia de ciencias del mar de manera sostenible y sistemática. El nivel de apoyo a esta iniciativa quedó patente en la firme voluntad de un gran número de países de la región en diversas ocasiones, como en la 11^a reunión intergubernamental de la WESTPAC (21-23 de abril de 2017) y el taller sobre la creación futura de redes de centros de formación e investigación en el Pacífico Occidental, organizado en el Japón los días 23 y 24 de enero de 2018. La iniciativa de centros de formación e investigación ha sido reconocida como una práctica óptima para el desarrollo de capacidades y la transferencia de tecnología marina en la región.
- 18 Si bien aprecia el funcionamiento del Centro Regional de Formación e Investigación sobre la Dinámica de los Océanos y el Clima (RTRC-ODC) del Instituto Principal de Oceanografía de la Administración Oceánica Estatal de China, y el Centro Regional de Formación e Investigación sobre Biodiversidad Marina y Salud de los Ecosistemas (RTRC-MarBEST) del Centro de Investigación Oceanográfica del Instituto Indonesio de Ciencias, la Subcomisión diseñará y ofrecerá periódicamente cursos de formación y oportunidades de investigación en los otros tres nuevos centros regionales de formación e investigación que se están estableciendo (véase el párrafo 5).

19 La Subcomisión consideró que la iniciativa de centros de formación e investigación era un vehículo eficaz para el aumento de capacidades y la transferencia de tecnología marina en el marco del Decenio. La Subcomisión aprobó la [Recomendación SC-WESTPAC-XII.4](#) relativa a la Red Regional de Centros de Formación e Investigación de la COI sobre Ciencias del Mar.

III. Programa y Presupuesto de la WESTPAC (mayo de 2019-abril de 2021)

20 Dada la importancia social, económica y ambiental del Kurosvi, la Subcomisión decidió prorrogar la existencia del Grupo de trabajo para el periodo entre reuniones encargado del estudio de viabilidad acerca del segundo Estudio Cooperativo del Kurosvi y Regiones Adyacentes con un nuevo mandato, y aprobó la [Recomendación SC-WESTPAC-XII.3](#) a este respecto. La Subcomisión alentó encarecidamente a los Estados Miembros interesados a que designaran a expertos para que se sumaran al Grupo de trabajo. Además, la Subcomisión invitó a todos los Estados Miembros interesados a que hicieran participar a sus organismos públicos competentes en el proceso de desarrollo y planificación del segundo Estudio Cooperativo del Kurosvi y Regiones Adyacentes, a fin de lograr una mayor comprensión de dicho Estudio y apoyo para el mismo.

21 Habida cuenta de las funciones esenciales que desempeñan los órganos subsidiarios regionales de la COI en el proceso de desarrollo de la COI, la Subcomisión manifestó su compromiso de ayudar a esta última y a los Estados Miembros a conseguir el ODS 14, en particular sus metas 14.3 y 14.a. La Subcomisión también pidió al Secretario Ejecutivo de la COI que reforzara la Secretaría de la Subcomisión, con miras a mejorar la presencia y notoriedad de la Comisión.

22 Con la finalidad de lograr una mayor sinergia entre los esfuerzos, catalizar las actividades colectivas y movilizar el posible apoyo a todas las actividades de la WESTPAC, la Subcomisión examinó y aprobó las *Directrices para una comunicación eficaz sobre la elaboración y ejecución de programas*, con miras a seguir mejorando la ejecución y la eficiencia de los programas de la WESTPAC.

23 La Subcomisión aprobó el Programa y Presupuesto de la WESTPAC para mayo de 2019-abril de 2021 mediante la [Recomendación SC-WESTPAC-XII.4](#), con un presupuesto estimado de 6,78 millones de dólares estadounidenses. La Subcomisión consideró que su presupuesto aprobado se utilizaba principalmente como capital inicial para actividades que los Estados Miembros desearan promover conjuntamente y buscar financiación de diversas fuentes en apoyo de su ejecución. Sobre la base de la información actual recibida, solo 100 000 dólares estadounidenses (de un plan de gastos de 518 millones de dólares estadounidenses para toda la COI) o 115 000 dólares estadounidenses (de un plan de gastos de 534,6 millones de dólares estadounidenses) se obtendrían del Presupuesto Ordinario de la COI para las actividades de la WESTPAC durante el periodo 2020-2021. Esto demostraba que casi todas las actividades de la Subcomisión tendrían que recibir apoyo continuo de recursos extrapresupuestarios.

11^a Conferencia Internacional de Ciencias del Mar de la WESTPAC y 13^a reunión intergubernamental de la Subcomisión de la COI para el Pacífico Occidental (WESTPAC)

24 La Subcomisión expresó su agradecimiento al Gobierno de Indonesia por acoger la 11^a Conferencia Internacional de Ciencias del Mar de la WESTPAC del 25 al 28 de agosto de 2020, y aprobó la [Recomendación SC-WESTPAC-XII.2](#).

25 La Subcomisión tomó nota con gran reconocimiento de los amables ofrecimientos de Indonesia y Bangladesh de acoger la 13^a reunión intergubernamental de la Subcomisión de la COI para el Pacífico Occidental (WESTPAC) a principios de 2021, y aprobó la [Recomendación SC-WESTPAC-XII.6](#) sobre la fecha y el lugar de la reunión siguiente.

Elección de la Mesa de la WESTPAC

26 La Subcomisión eligió por aclamación a Vo Si Tuan de Viet Nam como Presidente y a Fangli Qiao (China), Zainal Arifin (Indonesia) y Kentaro Ando (Japón) como Vicepresidentes de la Subcomisión para el próximo periodo entre reuniones.

ANNEX I

AGENDA

1. OPENING

- 1.1 WELCOME REMARKS
- 1.2 MINI SCIENCE SYMPOSIUM
- 1.3 AN EVENT ON RTRCS

2. ORGANIZATION OF THE SESSION

- 2.1 ADOPTION OF THE AGENDA
- 2.2 CONDUCT OF THE SESSION

3. STATUTORY REPORTS

- 3.1 STATEMENT OF THE CHAIRPERSON
- 3.2 REPORT BY THE HEAD OF WESTPAC OFFICE ON INTERSESSIONAL ACTIVITIES AND BUDGET OVERVIEW, INCLUDING THE OPERATION OF THE WESTPAC OFFICE
- 3.3 RECENT DEVELOPMENTS WITHIN UNESCO, ITS IOC, AND THEIR RELEVANCE TO WESTPAC
 - 3.3.1 UN Decade of Ocean Science for Sustainable Development (2021–2030)**
 - 3.3.2 IOC Draft Medium Term Strategy (2022-2029)**

4. STRATEGIC DEVELOPMENT

- 4.1 PREPARATIONS FOR THE REGIONAL WORKSHOP FOR THE NORTH PACIFIC, UNDER THE AUSPICES OF THE UN DECADE OF OCEAN SCIENCE
- 4.2 PREPARATIONS FOR THE ELEVENTH WESTPAC INTERNATIONAL MARINE SCIENCE CONFERENCE (TENTATIVELY SCHEDULED FOR AUGUST 2020, INDONESIA)
- 4.3 THE IMPLEMENTATION OF SDG, PARTICULARLY SDG 14, AT NATIONAL LEVEL, AND THE CONTRIBUTION OF WESTPAC VIA ITS TWO VOLUNTARY COMMITMENTS: OCEAN ACIDIFICATION AND CAPACITY DEVELOPMENT
- 4.4 GUIDELINES FOR EFFECTIVE COMMUNICATIONS ABOUT PROGRAMME DEVELOPMENT AND IMPLEMENTATION

5. REVIEW AND EVALUATION OF REGIONAL PROGRAMMES, PROJECTS AND WORKING GROUPS FOR MAY 2017–APRIL 2019

- 5.1 OCEAN PROCESSES AND CLIMATE IN THE INDO-PACIFIC
 - 5.1.1 North East Asian Regional-GOOS**
 - 5.1.2 South East Asian Regional-GOOS**

- 5.1.2.1 Monsoon Onset Monitoring and its Social and Ecosystem Impacts (MOMSEI)
- 5.1.2.2 Ocean Forecasting System (OFS)
- 5.1.2.3 Monitoring the Ecological Impacts of Ocean Acidification on Coral Reef Ecosystems
- 5.1.3 Air-Sea Interaction in the Kuroshio Extension and its Climate Impact**
- 5.1.4 Upwelling Studies through Ocean Data Integration towards Sustaining Ocean Health and Productivity**
- 5.1.5 South China Sea Fluvial Sediments and Environmental Changes**
- 5.1.6 Indo-Pacific Ocean Environmental Variations and Air-Sea Interactions**
- 5.1.7 Intersessional Working Group on the Feasibility Study on the Second Cooperative Study of the Kuroshio and Adjacent Regions**
- 5.2 MARINE BIODIVERSITY, SEAFOOD SAFETY AND SECURITY
 - 5.2.1 Coral Reef Conservation and Restoration**
 - 5.2.2 Coral Resilience to Climate and Anthropogenic Impacts**
 - 5.2.3 DNA Taxonomy and Recruitment Monitoring of the Coral Reef Marine Organisms**
 - 5.2.4 Ocean Remote Sensing for Coastal Habitat Mapping**
 - 5.2.5 Marine Toxins and Seafood Safety**
 - 5.2.6 Regional Study on Marine Endangered Species (Mammals and Sea Turtles) in Tropical Asia for Effective Conservation**
- 5.3 HEALTHY OCEAN ECOYSTEMS
 - 5.3.1 Marine Microplastic Research and Monitoring**
 - 5.3.2 Harmful Algal Blooms**
 - 5.3.3 Harmful Jellyfish Research Network**
- 5.4 ENHANCED KNOWLEDGE OF EMERGING OCEAN SCIENCE ISSUES
 - 5.4.1 WG 005: Ocean Oxygen Network**
 - 5.4.2 WG 006: Energy and Materials Exchange Between Land and Open Ocean**
- 5.5 CAPACITY DEVELOPMENT FOR MARINE SCIENCE, OBSERVATIONS AND SERVICES
 - 5.5.1 IOC Capacity Development Strategy for 2015-2021 & the Role of WESTPAC in its Development and Implementation**
 - 5.5.2 IOC Regional Training and Research Centre on Ocean Dynamics and Climate (RTRC-ODC)**
 - 5.5.3 IOC Regional Training and Research Center on Marine Biodiversity and Ecosystem Health (RTRC-MarBEST)**

5.6 RECOMMENDATION OF WESTPAC ADVISORY GROUP ON THE
IMPLEMENTATION OF REGIONAL PROGRAMMES, PROJECTS AND WORKING
GROUPS FOR THE PERIOD MAY 2017–APRIL 2019

6. COOPERATION WITH OTHER ORGANIZATIONS AND PROGRAMMES

7. WESTPAC WORKPLAN AND BUDGET FOR THE PERIOD MAY 2019 - APRIL 2021

8. ADMINISTRATION AND MANAGEMENT

8.1 ELECTIONS OF THE OFFICERS OF THE SUB-COMMISSION

8.2 WESTPAC MEMBERSHIP AND PARTNERSHIP

8.3 RESOURCES MOBILIZATION

9. DATE AND PLACE OF THE NEXT SESSION

10. OTHER MATTERS

11. ADOPTION OF DECISIONS AND RECOMMENDATIONS

12. CLOSURE

ANNEX II

ADOPTED RECOMMENDATIONS

- | | |
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| <u>Recommendation SC-WESTPAC-XII.1</u> | THE UN DECADE OF OCEAN SCIENCE
FOR SUSTAINABLE DEVELOPMENT |
| <u>Recommendation SC-WESTPAC-XII.2</u> | WESTPAC INTERNATIONAL MARINE SCIENCE
CONFERENCE |
| <u>Recommendation SC-WESTPAC-XII.3</u> | THE INTERSESSIONAL WORKING GROUP OF
THE FEASIBILITY STUDY ON THE SECOND
COOPERATIVE STUDY OF THE KUROSHIO AND
ADJACENT REGIONS (IWG-CSK2) |
| <u>Recommendation SC-WESTPAC-XII.4</u> | UNESCO/IOC REGIONAL NETWORK OF
TRAINING AND RESEARCH CENTRES (RTRCS)
ON MARINE SCIENCE IN THE WESTERN
PACIFIC |
| <u>Recommendation SC-WESTPAC-XII.5</u> | WESTPAC PROGRAMME AND BUDGET FOR
MAY 2019–APRIL 2021 |
| <u>Recommendation SC-WESTPAC-XII.6</u> | DATE AND PLACE OF THE NEXT SESSION |

Recommendation SC-WESTPAC-XII.1

The UN Decade of Ocean Science for Sustainable Development

The IOC Sub-Commission for the Western Pacific (WESTPAC),

Noting the United Nations General Assembly resolution [A/RES/72/73](#) that proclaims the United Nations Decade of Ocean Science for Sustainable Development for the 10-year period beginning on 1 January 2021, within existing structures and available resources, and calls upon the Intergovernmental Oceanographic Commission to prepare an implementation plan for the Decade in consultation with Member States, specialized agencies, funds, programmes and bodies of the United Nations, as well as other intergovernmental organizations, non-governmental organizations and relevant stakeholders,

Further noting that the 1st Global Planning Meeting was scheduled for 13–15 May 2019 in Copenhagen, Denmark,

Having considered the Sub-Commission has a unique opportunity to contribute to the preparations and implementation of the United Nations Decade of Ocean Science for Sustainable Development (2021–2030),

Acknowledging a strong willingness of Member States and international partners in the region to support the UN Decade of Ocean Science, and constructive discussions at the 12th Session and a brainstorming session therein, covering a variety of topics such as:

- (i) advancing knowledge on the role of ocean in the earth system, in particular from coastal areas to the open oceans,
- (ii) the development of integrated observation systems, technologies, and advanced models for complex ocean systems,
- (iii) science-policy interface,
- (iv) science communications,
- (v) science for and with societies, and
- (vi) the nurturing of young generation of marine scientists,

Further recognizing that WESTPAC is a lead organizer of the Regional Consultative Workshop for the North Pacific towards the UN Decade of Ocean Science for Sustainable Development, scheduled for 31 July–2 August 2019, Tokyo, Japan, with the financial support of the UNESCO/ Japanese Funds-in-Trusts,

Calls upon Member States to:

- (i) promote the application of world class ocean science to societies;
- (ii) enhance collaborations with stakeholders;
- (iii) develop linkages with national projects/programmes;
- (iv) inspire and engage young generations; and
- (v) promote ocean literacy in the region;

Encourages WESTPAC Member States to actively contribute to these activities, and to the Global Planning Meetings as well as the Regional Consultative Workshop for the North Pacific towards the UN Decade of Ocean Science for Sustainable Development (31 July–2 August 2019, Tokyo, Japan).

Recommendation SC-WESTPAC-XII.2

WESTPAC International Marine Science Conference

The IOC Sub-Commission for the Western Pacific (WESTPAC),

Recalling:

- (i) the decision of its first session in 1990 that a major multi-disciplinary symposium should become a principal inter-sessional activity of WESTPAC,
- (ii) the WESTPAC International Scientific Symposium (renamed as “Conference” in 2017) is the only scientific series and has evolved as the largest regular gathering to enhance the exchange of marine scientific knowledge in the region,
- (iii) the proclamation of the United Nations General Assembly on the UN Decade of Ocean Science for Sustainable Development (2021–2030), to which the triennial WESTPAC International Marine Science Conference can make great contribution,

Expressing its great appreciation for the willingness of the Government of the Republic of Indonesia, through its Indonesian Institute of Sciences, to host and co-organize the 11th WESTPAC International Marine Science Conference in 2020,

Having formulated the WESTPAC Programme and Budget (May 2019–April 2021) with the Conference adopted as a key activity,

Bearing in mind the need for presentation and exchange of scientific results in an inter- and multi-disciplinary forum, and a great opportunity that the 11th WESTPAC International Marine Science Conference can further advocate, and engage ocean stakeholders in the preparation and implementation of the Decade,

Decides to establish an International Scientific Steering Committee to provide guidance in the formulation of the Conference Themes, Sub-Themes, and Programme, including the scope, contents and structure;

Recommends that pertinent regional and international organizations be invited to support and participate in the Conference;

Encourages all Member States and related international organizations to actively participate in and contribute to ensuring the success of the Conference.

Recommendation SC-WESTPAC-XII.3

**The Intersessional Working Group of the Feasibility Study
on the Second Cooperative Study of the Kuroshio and Adjacent Regions
(IWG-CSK2)**

The IOC Sub-Commission for the Western Pacific (WESTPAC),

Recalling the decision at its 10th session ([WESTPAC-X](#), Phuket, Thailand, 12–15 May 2015) setting-up an open-ended International Task Force on Feasibility Study of the Second Cooperative Study of the Kuroshio and Adjacent Regions (CSK-2),

Further recalling the Recommendation SC-WESTPAC-XI.2 adopted at the 11th Session of WESTPAC ([WESTPAC-XI](#), Qingdao, China, 21–23 April 2017) setting-up an Intersessional Working Group of the Feasibility Study on the Second Cooperative Study of the Kuroshio and Adjacent Regions (IWG-CSK2),

Having considered the report of IWG-CSK2 presented at the 12th Session of WESTPAC (WESTPAC-XII, Manila, the Philippines, 2–5 April 2019),

Expressing its appreciation to the IWG-CSK2 for the work done during the inter-sessional period 2017–2019,

Recognizing the vital social, economic, environmental and cultural importance of Kuroshio and its adjacent region,

Decides to extend the duration of the IWG-CSK2 in accordance with the revised Terms of Reference contained in the Annex to this Recommendation;

Encourages the WESTPAC Member States to actively participate in and contribute to the IWG-CSK2.

Annex to Recommendation SC-WESTPAC-XII.3

Terms of Reference of the Intersessional Working Group of the Feasibility Study on the Second Cooperative Study of the Kuroshio and Adjacent Regions (IWG-CSK2)

I. Objectives and Outputs

Objectives

Following the outputs from the Intersessional Working Group of the Feasibility Study on the Second Cooperative Study of the Kuroshio and Adjacent Regions (IWG-CSK2) during the inter-sessional period 2017–2019, the Working Group will:

- (i) Complete the review report of CSK and its related research projects;
- (ii) Take into account identified gaps for conducting CSK-2;
- (iii) Consider the potential for future coordination with on-going relevant national and international projects such as CLIVAR and GOOS, the requirements of WESTPAC Member States, and capacities available for the implementation of the project;
- (iv) Deliberate on a potential contribution of CSK-2 to the United Nations Decade of Ocean Science for Sustainable Development (2021–2030);

- (v) Develop a science plan of CSK-2, and its implementation strategy if feasible, while taking into account its societal and economic benefits to Member States; and
- (vi) Submit a report to the 13th session of WESTPAC in 2021.

Expected Outputs

- (i) One review paper or report to be published in an international journal or as a WESTPAC publication;
- (ii) One report concerning a science plan and strategy towards the implementation of CSK-2, including its expected output(s) and outcome(s).

II. Membership

The Intersessional Working Group is open-ended. The initial members for the intersessional period 2019–2021 include Kentaro Ando (Japan), Xiaopei Lin and Jingsong Guo (China), Vo Si Tuan (Viet Nam), Yang-Ki Cho and Jae-Hak Lee (Republic of Korea), Gil Jacinto and Cesar Villanoy (the Philippines), Zainal Arifin and Augy Syahailatua (Indonesia), and Vyacheslav Lobanov (Russian Federation).

III. Period of IWG-CSK2

The IWG-CSK2 will work until the 13th session of WESTPAC in 2021.

Recommendation SC-WESTPAC-XII.4

UNESCO/IOC Regional Network of Training and Research Centres (RTRCs) on Marine Science in the Western Pacific

The IOC Sub-Commission for the Western Pacific (WESTPAC),

Noting the United Nations General Assembly (UNGA) [Resolution 70/1](#) of 25 September 2015 on the 2030 Agenda and Sustainable Development Goals (SDG) that include a dedicated SDG for the ocean (SDG 14), and the UNGA resolution [A/RES/72/73](#) in December 2017 on the preparations of the UN Decade Ocean Science for Sustainable Development (2021–2030),

Being aware of the guidance document “UNESCO/IOC Regional Network of Training and Research Centres on Marine Science in the Western Pacific”, which was adopted at the seventh Intergovernmental Session of the WESTPAC in May 2008 and subsequently approved by IOC at the Forty-first session of its Executive Council through Resolution [EC-XLI.3](#),

Bearing in mind the IOC Capacity Development Strategy (2015–2021), which was adopted at the 28th Session of IOC Assembly in 2015 through Resolution [XXVIII-2](#) with the “UNESCO/IOC Regional Network of Training and Research Centers on Marine Sciences in the Western Pacific” identified as a targeted action to achieve the expected outputs of the Strategy,

Recalling that the development of the “UNESCO/IOC Regional Network of Training and Research Centers on Marine Science in the Western Pacific” has been accepted as a UN Ocean Conference voluntary commitment to the implementation of SDG 14, and has become an effective mechanism in the region for the implementation of the IOC Capacity Development Strategy,

Appreciating that the RTRC on Ocean Dynamics and Climate (RTRC-ODC) in China and the RTRC on Marine Biodiversity and Ecosystem Health (RTRC-MarBEST) in Indonesia have been operating successfully and recognized as a best practice for capacity development and technology transfer,

Welcoming with great appreciation the three new proposals to establish RTRCs on marine plastic debris and microplastics, marine toxins and seafood safety, and reef restoration and management by China, Viet Nam, and the Philippines, respectively,

Encourages Member States to actively participate in and promote RTRCs in order to further strengthen research capacity of Member States as well as to support the UN Decade of Ocean Science for Sustainable Development (2021–2030);

Invites the Executive Secretary of IOC to work with those Member States on their proposals to establish RTRCs and take the necessary actions to maximize the impact of this capacity development initiative.

Recommendation SC-WESTPAC-XII.5

WESTPAC Programme and Budget for May 2019–April 2021

The IOC Sub-Commission for the Western Pacific (WESTPAC),

Noting the reports of the Technical Secretary for WESTPAC on the intersessional activities and the WESTPAC Programme and Budget, May 2019–April 2021, contained in documents [IOC/SC-WESTPAC-XII/5.](#)

Expressing its appreciation to the Government of Thailand for its continued support to the IOC Regional Office for WESTPAC (WESTPAC Office), and to all other Member States for their contributions, either in cash or in kind, in support of the implementation of the WESTPAC Programme and Budget for May 2017– April 2019,

Acknowledging the importance of the WESTPAC Office for the successful programme implementation,

Noting with concern a limited allocation of the IOC regular budget for WESTPAC activities as a result of the financial constraint of UNESCO and IOC since late 2011,

Further noting that the UNESCO General Conference will examine and adopt at its 40th session in November 2019, the UNESCO Draft Programme and Budget for 2020–2021 (40 C/5), in which \$ 518M Expenditure Plan and \$ 534.6M Expenditure Plan of UNESCO for 2020–2021 foresee the IOC regular budget allocation as \$ 10.776 M, and \$11.075 M respectively for the biennium 2020–2021,

Considering the IOC Draft Programme and Budget for 2020–2021 submitted for consideration by the IOC Assembly at its 30th Session (IOC-XXX, Paris, 2019), in which **\$ 100 K** in the UNESCO \$ 518M expenditure plan (\$ 10.776M for IOC), and **\$ 115 K** in the \$ 534.6M Expenditure Plan (\$ 11.075 M for IOC) was allocated to WESTPAC for its activities over 2020–2021,

Recognizing that the WESTPAC Programme and Budget serves as a collaborative framework for activities that the Sub-Commission would like to jointly promote and seek funding from various sources in support of their implementation,

Adopts the WESTPAC Programme and Budget for May 2019–April 2021 in the Annex to this recommendation;

Urges Member States to continue and increase their support to WESTPAC and its Office through in-cash and in-kind contributions;

Requests the Executive Secretary of IOC to allocate necessary resources and assist in obtaining extra-budgetary funds for the Sub-Commission and its programmes from governmental agencies and donors.

WESTPAC PROGRAMME AND BUDGET FOR MAY 2019–April 2021²

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							
WESTPAC Advisory Group Meeting	WESTPAC Advisory Group Meeting	Review and provide guidance	All activities developed with high quality, effectiveness	Late 2019, 2020, 2021	10K	10K	20K
UN Decade Planning and consultation	UN Decade regional planning workshop, and engagement into global planning process	To communicate the Decade objectives, and engage stakeholders in Decade preparations	List of knowledge, list of potential partnerships, list of new programmes to be developed, etc.	31 July-2 August Tokyo, Japan		200K	100K
	UN Decade national advocacy and engagement workshop	To advocate UN Decade in ocean stakeholder in China	Engagement enhanced	2019 Qingdao, China		5K	30K
12th WESTPAC International Marine Science Conference	Keynotes, sessions, workshops and side events	Gather marine scientists to develop multi-disciplinary collaboration	Conference Programme	Indonesia 2020	10K	10K	900K
13th Intergovernmental Session	Statutory science-policy interface	Regional consensus reached on its program, new officers elected	Summary report	2021	8K	10K	120K
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 2019-April 2021	40K	200K	100K
OCEAN PROCESSES AND CLIMATE IN THE INDO-PACIFIC							
North East Asian Regional-GOOS (NEAR-GOOS)	1. 20 th Session of Coordinating Committee for NEAR-GOOS	To review the NEAR-GOOS development	Action plans and recommendations	November 2019, Republic of Korea	0/2.5K		20K
	2. 21 st Session of Coordinating Committee for NEAR-GOOS	To review the NEAR-GOOS development	Action plans and recommendations	Late 2020	0/2.5K		20K
	3. 9 th GOOS Regional Forum	Strengthen collaboration with other GOOS projects	Further development of NEAR-GOOS through Integration into the Global GOOS	August 2019			2K
	4. the WG workshop/technical	To improve ocean forecasting capacity in the NEAR-GOOS region	Release and improvement of NEAR-	During the intersessional period			10K

² The WESTPAC Programme and Budget mainly serves as a collaborative framework for joint activities that the Sub-Commission would like to promote and seek funding from various sources in support of their implementation.

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	
	meeting on NEAR-GOOS OFS		GOOS OFS webpages and forecast products				
	5. Continue NEAR-GOOS Climate Monitoring Section	To understand long-term variability of the water mass structure cause by climate change	Continuous time series of CTD and hydrochemical data along the section since 2011	Oct-Dec of 2019 and 2020			400K
	6. Ferry-based Monitoring	Monitoring the status and changes in the marine environment in the NEAR-GOOS region	Surface observation network	During the intersessional period			200K
	7. Partnership with PICES and other marine science organizations	Strengthen collaboration	Awareness on NEAR-GOOS enhanced	During the intersessional period			4K
South East Asian Regional-GOOS (SEAGOOS)	Ocean Forecasting System (OFS)						
	1. develop subdomain high-resolution models	Develop subdomain high-resolution models	subdomain high-resolution models developed	May 2019-April 2021			150K
	2. Joint survey cruises for validation	Joint survey cruises to obtain the data to validate the OFS product	temperature, salinity, current, and meteorological parameters collected	May 2019-April 2021			200K
	Monsoon Onset Monitoring and its Social and Ecosystem Impacts (MOMSEI)						
	1. Summer schools	Capacity building	Report	August 2019, August 2020			30K
	2. Expert Workshop	Scientific review	Report	December 2019			10K
	3. Cruise	in situ data collection	Cruise report	November 2019			100K
	Ocean Acidification and its Impacts on Marine Ecosystems (OA)						
	1. Workshop and Session at the WESTPAC international Marine Science Conference	Exchange knowledge and information, identify emerging issues	Latest knowledge shared	2020		5K	5K
	2. 6 th Training Workshop/Symposium	<ul style="list-style-type: none"> • Review project progresses • Examine new techniques • Develop partnerships • assess the OA status and its impact 		2019	0/5K	5K	10K
	3. 7 th Training Workshop/Symposium	<ul style="list-style-type: none"> • Review project progresses • Examine new techniques • Develop partnerships 		2020	0/5K	5K	10K

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	
		<ul style="list-style-type: none"> assess the OA status and its impact 					
Air-Sea Interaction in the Kuroshio Extension and its Climate Impact (ASIKE)	1. Joint Cruise for multi-disciplinary investigation in the western Pacific	<ul style="list-style-type: none"> Update the existing mooring systems in Kuroshio extension region and Mariana trench. Conduct intensive observation using underwater gliders and surface autonomous vehicles within a warm/cold core eddy. Test the prototype of deep Argo floats developed by Chinese institutes. Finish a repeat hydrologic line from 5N to 40N along the 143E. 	More in-situ data will be collected from this cruise.	1 Oct 2019 – 20 Nov 2019			2000K
	2. 2019 Ocean Obs' Meeting session	<ul style="list-style-type: none"> Promoting more collaboration among the IOC-WESTPAC countries Improve CSK-2 science plan Develop new technology 	Observation plan and social-economy service in the Western Pacific Ocean	16-20 Sep 2019			6K
Upwelling Studies through Ocean Data Integration towards Sustaining Ocean Health and Productivity (Upwelling studies)	1. Comparative studies on upwellings established	compile references on established upwelling sites in the region	Short report of established upwelling site in SCS and surrounding seas	Sep 2019			5K
	2. Training: Integrated data analysis for upwelling study	<ul style="list-style-type: none"> analyse data from upwelling site using available datasets construct integrated data gathering which involve field data, satellite data and wind-data at any particular upwelling site conduct simple analysis 	Capacity improved for analyzing and integrating data	Oct/Nov2019			15K.
	3. Workshop on Upwelling Region and its Dynamics in the South China Sea and its Adjacent Areas	<ul style="list-style-type: none"> To present and discuss the existing understanding of upwelling area and its 	Scientific progress on the area of interest;	Sep 2020		10K	15K

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	
		dynamics To discuss development plan					
South China Sea Fluvial Sediments and Environmental Change (FluSed)	1. Research cruise	Deep-sea sediment transport mooring (sink)	Deploying a deep-sea mooring observation system in the southern South China Sea	May 2019, South China Sea			100K
	2. 12th FluSed workshop	Exchange of scientific results	Strengthen collaboration: joint writing manuscripts, data comparison, further cooperation discussion.	December 2019, Singapore (tentative)			20K
	3. Research cruise	Deep-sea sediment transport mooring (sink)	Recovery and redeploying of the deep-sea mooring observation system in the southern South China Sea	May 2020, South China Sea			100K
	4. Research cruise	River discharge observation (source)	Deploying a tripod at the Mekong River estuary	July 2020, Vietnam			60K
	5. Research cruise	River discharge observation (source)	Deploying a tripod at a Sumatra estuary	August 2020, Indonesia			60K
	6. 13th FluSed workshop	Exchange of scientific results	Strengthen collaboration: joint writing manuscripts, data comparison, further cooperation discussion.	December 2020, Shanghai (tentative)			20K
Indo-Pacific Ocean Environmental Variations and Air-Sea Interactions (IPOVAI)	1. Study the effects of sea spray in climate model	To set up new model for Asian monsoon onset	New monsoon model	2021, Qingdao			100K
	2. Test new Typhoon model at operational forecasting center(s)	To improve forecasting ability of Typhoon intensity	Forecasting ability improved	2020			100K
	3. technical workshop	To share the new progress on Typhoon model		2020 or 2021 Qingdao			20K
Feasibility Study of the 2 nd Cooperative Study of the Kuroshio and its Adjacent Regions	1. Workshop	Develop science plan, and discuss MSR and data policy	Science plan	November 2019, Manila	5K		10K
	2. Publication	Publication of the review report	Publication	August 2019			3K
	3. Workshop	Develop implementation plan	Implementation strategy plan	November 2020	5K		10K
MARINE BIODIVERSITY CONSERVATION, HEALTHY ECOSYSTEMS, SEAFOOD SECURITY AND SAFETY							
Coral Reef Conservation and Restoration	1. Workshop: updating activities of project coral reef conservation and restoration in the WESTPAC region	<ul style="list-style-type: none"> • to update and plan activities; • to summarize all coral restoration and conservation techniques; 	Report/scientific paper	April 2020 (IOC/WESTPAC International Scientific Conference)		10K	

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	
		<ul style="list-style-type: none"> to promote those techniques among WESTPAC member countries 					
	2. Workshop: updating a list of marine non-indigenous species in the WESTPAC region	<ul style="list-style-type: none"> To summarize a list of marine non-indigenous species in the WESTPAC region; To increase public awareness on the impact of marine NIS 	Report/scientific paper Poster/guideline for management	August 2020 (Bangkok, Thailand)		5K	15K
	3. Preparing 1 book related to coral restoration techniques	<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 2019			5K
Coral Reef Resilience to Climate Change and Human Impacts	1. Summer School	Extensive training on "Impact of Anthropogenic Forcing on Coral Reefs and Consequence at Ecosystem Level"	Capacity improved	Penang, Malaysia, 2019			10K
	2. Finalize book chapters for the monograph of coral reefs in the Western Pacific	Using for training of summer schools, research and education	A book entitled Anthropogenic Environmental Impacts on Coral Reefs in the Western and South-western Pacific	2019			5K
	3. Capacity building	Regional and local training courses on molecular techniques for genetics connectivity/ resilience research	Trained scientists and students under the Young Scientist Network for Coral Reef Research in the Western Pacific	2019, Thailand			10K
	4. Workshop	Brainstorming and discussion on coral reef resilience, management and conservation in the Western Pacific	Recommendations for enhancing coral reef resilience, management and conservation from the WESTPAC.	2020	4K	5K	10K In collaboration with IMBeR

Project/Programme	Activities	Objectives	Expected outputs	Date and Place	Funding Required, US\$	
					IOC (in-cash)	
					Regular	Extra budget
DNA Taxonomy and Recruitment Monitoring of the Coral Reef Marine Organisms	1. Inception meeting of the 3 rd phase of the project	To plan and officially launch the 3 rd phase activities	Activity plan for the 3 rd phase	June 2019, Vietnam		15K
	2. Operation and expansion of data in the WESTPAC marine biodiversity portal system	To expand biodiversity information on coral reef marine organisms	Expanded marine biodiversity database	Continuous		80K
	3. Operation of a pilot site for recruitment monitoring	To monitor larval recruitment in a coral reef	Monitoring report	Continuous, Vietnam		20K
	4. Publication of WESTPAC marine biodiversity book	To provide a guide for identification of major species in the region and their distribution	An illustrated book	December 2020		10K
Ocean Remote Sensing for Coastal Habitat Mapping	1. publishing e-booklet	To deliver changes in seagrass beds revealed by remote sensing to citizens and policy makers	Awareness			
	2. workshop on new technologies of remote sensing	To share new technologies of remote sensing among ORSP members	Knowledge shared and improved	December 2019, Nha Trang, Vietnam	10K	4K
	3. Training workshop of remote sensing for coastal habitat mapping	To improve capacity for remote sensing for coastal habitat mapping	Regional capacity of remote sensing for coastal habitat mapping increased;	October 2020, Toyama, Japan	10K	4K
	4. Book publication	To deliver information on changes in seagrass beds by natural and human impacts	delivering information on changes in seagrass beds by natural and human impacts to societies.	2020	5K	4K
Marine Toxin and Seafood Safety	1. The 5 th IOC/WESTPAC-TMO workshop	ASP toxin contamination in WESTPAC region: Current situation and activity by TMO	Publication collected; Scientific information updated; Working plan developed on domoic acid study	Oct 2019, Vietnam	15K	5K
	2. The 6th IOC/WESTPAC-TMO workshop	To develop Guidebook on marine toxins	Outline of Guidebook on marine toxins; Identify capacity building activities	Mar/April 2020, Malaysia/Singapore	15K	5K
	3. The 7th IOC/WESTPAC-TMO training workshop on	To develop technical guidance for chemical analysis of domoic acid in	Technical guidance for chemical analysis of domoic acid	Nov/Dec 2020 Vietnam	15K	5K

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	
	"Chemical analysis of domoic acid in shellfish and plankton samples"	shellfish and plankton samples					
	4. The 8th IOC/WESTPAC-TMO workshop	To review and finalize contents and structure of Guidebook on marine toxins	Draft of Guidebook on marine toxins	May 2021, Thailand/Singapore		15K	5K
Regional Study on Marine Endangered Species (Mammals and Sea Turtles) in the Tropical Asia for Effective Conservation	1. Regional symposium on MES	Exchange information and results on development of technology and knowledge	Dissemination of updated technology and knowledge	Mid 2019, Thailand			25K
	2. Regional training course on MES	Training on both traditional and modern method/technology of observation and study	Dissemination of integrated methods of MES observation and study	Mid 2019, Indonesia			20K
	3. Session at the 11th WESTPAC IMSC	Exchange information and results on development of technology and knowledge	Dissemination of updated technology and knowledge	2020, Indonesia			10K
	4. Regional workshop on MES	Exchange information and results on development of technology and knowledge	Dissemination of updated technology and knowledge	2021, China			10K
	5. Local MES sessions / workshops	Exchange information and results on development of technology and knowledge	Dissemination of updated technology and knowledge	2019, 2020, 2021 Malaysia, Indonesia, China			30K
Distribution, source, fate and impacts of marine microplastics in the Asia Pacific region	1. Analyze the results from beaches and sediments which were collected using the harmonized method.	Analyze the results from beaches and sediments which were collected using the harmonized method.	Contamination condition level of microplastic in beaches and sediments in West Pacific Region	2019-2021 Shanghai			100K
	2. Finalize the sampling and analytical methods in surface water and marine organisms.	Harmonize the methods		TBD			10K
	3. Third WESTPAC Workshop on Distribution, Source, Fate and Impacts of Marine Microplastics in Asia and the Pacific			October 2019, Indonesia or China			25K
	4. Field survey on the microplastic contamination levels in water surface and			TBD			100K

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	
	marine organisms using the harmonized methods						
Harmful Algal Blooms	1. Strategic meeting	Discussion on future activities, especially on capacity building, and scientific development	List of training courses Drafts of outreach material	2019 and 2020 Venue TBD		15K	
	2. Establishment of regional network	Facilitation of information exchange and dissemination	Networking	2019-2021			
	3. Capacity building	International/national training workshops	Trained researchers and technicians	2019-2021		15K	10K
	4. Interaction with other HAB projects	Information exchange and collaboration of activities	Enhance effectiveness of activities	2019-2021			
	5. Production of outreach material	Information dissemination	Teaching material or poster	2019-2021			3K
Enhancement of Sustainable Harmful Jellyfish Research & Networking in WESTPAC region	1. Training on Identification of the polyps of harmful jellyfish	To provide identification techniques on harmful jellyfish with a focus on the polyps stage	To enhance the regional research network on harmful jellyfish.	August 2019, Penang, Malaysia		10K	5K
	2. Awareness & Education program on Harmful Jellyfish in local school & related tourism spots	To build a sustainable platform of harmful jellyfish data collection with community-based management strategy	Networking with local community in WESTPAC region to transfer the local knowledge with scientific data on harmful jellyfish research	April 2020, Pulau Langkawi, Malaysia			
	3. Workshop on identification of harmful jellyfish from Class Scyphozoa	To provide identification techniques on harmful jellyfish with a focus on class Scyphozoa species	Standardize the quantitative (& qualitative) information collected by members and compiled as one dataset for the region	December 2020, Penang, Malaysia		10K	5K
	4. WESTPAC Field Guide of Harmful Jellyfish	To publish the first WESTPAC Field Guide of Harmful Jellyfish in Western Pacific region	WESTPAC Field Guide of Harmful Jellyfish in Western Pacific region	April 2021		5K	
ENHANCED KNOWLEDGE OF EMERGING OCEAN SCIENCE ISSUES							
WG005: Ocean Oxygen Network (O ₂ NE)	1. Inception Workshop	<ul style="list-style-type: none"> • Obtain updated reports on deoxygenation sites • Outline a technical brief about the threat of deoxygenation to marine ecosystems 		Manila, Philippines 4Q, 2019	6K		10K

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	
		<ul style="list-style-type: none"> Outline and identify contributors to a scientific paper towards deoxygenation Identify capacity building needs on deoxygenation 					
	2. Website	Greater visibility of the issue and generating awareness and interest by many more stakeholders on deoxygenation	Greater awareness and engagement	Philippines, 3Q, 2019			5K
	3. GO ₂ NE International Summer School	Connect young researchers with leading scientists from the academic and SMEs world, and improve their capacity for laboratory experiments, field work, modelling and special sessions on communication, ethics, and engagement with stakeholder.	Several young scientists in the WESTPAC region trained and made part of a global network of researchers working on deoxygenation	Xiamen, China, 2-8 Sept 2019			
WG006: A framework for cooperative studies in the Western Pacific Marginal Seas: Energy and materials exchange between land and open ocean	1. 3 rd workshop	Exchange information for cooperative researches based on the common interests discussed in the previous workshop. Promote planning of possible cooperative cruises. Provide an opportunity to encourage early career scientists to progress their relationship.	Expand cooperative research groups and recommend cooperative cruises in the marginal seas. Framework by early career scientists starts for future cooperative researches.	June 2019, Seoul, Republic of Korea	6K		10K
	2. 4 th workshop	Confirm common understanding on the energy and material exchange in the marginal seas. Start a few frameworks for cooperative research by early career scientists.	Recommend international cooperative research in the marginal seas, mainly managed by early career scientists.	October 2020 in Toyama	6K		10K
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	1. Ninth Training Course	Climate dynamics and air-sea interactions	Understanding on the basic theory of climate	during 17-28 June 2019, Qingdao		2K	30K

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	
Training and Research Centers on Marine Science			dynamics and the air-sea interaction in tropic and mid-latitude regions				
	2. Tenth Training Course	Development and application of coupled regional climate models	Understanding the coupling processes of atmosphere, ocean circulation, surface wave, sea ice and land surface, development and application of coupled regional climate models	2020 Qingdao		2K	30K
	3. The 10th anniversary celebrations of ODC center	A ceremony for the 10th anniversary celebrations of ODC center	Summary for the outcomes of ODC center	2020 Qingdao		2K	10K
	Regional Training and Research Center on Marine Biodiversity and Ecosystem Health (RTRC-MarBEST)						
	1. Training on Estimation of carbon stock and sequestration in seagrass ecosystem	Applying protocol on carbon stock and sequestration estimation in seagrass ecosystem based on ASEAN Protocol	Capacity improved for carbon stock and sequestration estimation	2nd week of November 2019 in RTRC MarBEST		8K	20K
	2. Training on Mangrove Health Index Training	To develop and strengthen the capacity of human resources in the field of Mangrove health index	Capacity improved for developing mangrove health index	October/November 2020		8K	20K
	3. Training on Coral Taxonomy	Developing the capacity of human resources on taxonomy of coral	Capacity improved for coral taxonomy	October/November 2021		8K	20K
	Regional Training and Research Center on Reef Management and Restoration (Tentative)						
	1. Training on reef assessment and monitoring	To develop capacity for reef assessment and monitoring	Capacity improved for reef assessment and monitoring	2019		10K	20K
	2. Training on reef management, including MPA tools	To develop capacity for reef management	Capacity improved for reef management	2020		10K	20K
	3. Training on coral restoration techniques	To develop capacity for coral reef techniques	Capacity improved for coral reef techniques	2021		10K	20K
	Regional Training and Research Center on Marine toxins and Seafood safety (Tentative)						
	1. TC-WS "Scientific sampling for toxic benthic organisms"	To strengthen capacity on scientific sampling toxic benthic organisms	A practical protocol for scientific sampling of toxic benthic organisms;	2020		8K	20K
	2. TC-WS "Cultural experiment for potential ciguatoxin producers"	To strengthen capacity on ecology of toxic organisms	A practical protocol for cultural experiment of CTX producers	2021		8K	20K

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	
Regional Training and Research Center on Plastic Marine Debris and Microplastics (Tentative)							
	1. Training course on MP sampling and lab analysis	To strengthen capacity for MP sampling and lab analysis	Capacity improved for MP sampling and lab analysis	Nov 2019 Shanghai		5K	30K
	2. Training course on MP sampling and lab analysis	To strengthen capacity for MP sampling and lab analysis	Capacity improved for MP sampling and lab analysis	2020 Venue TBD		5K	30K
Sub-total					100³/115⁴	731	5,950
Total						6,781²/6,796³	

³ In the scenario of the UNESCO \$ 518M Expenditure Plan.

⁴ In the scenario of the UNESCO \$ 534.6M Expenditure Plan.

Recommendation SC-WESTPAC-XII.6

Date and Place of the Next Session

The IOC Sub-Commission for the Western Pacific (WESTPAC),

Bearing in mind the need for a sufficient period of time between the WESTPAC sessions for its programme implementation,

Recalling Recommendation SC-WESTPAC-I.3 in 1990 to have a three-year time span between its regular sessions,

Further recalling Recommendation SC-WESTPAC-VII.6, adopted at the 7th Session of WESTPAC ([WESTPAC-VII](#), Sabah, Malaysia, 26–29 May 2008), which decided to reschedule the period between the sessions from three years to two years beginning with the closure of WESTPAC-VII, in phase with the IOC planning cycles, and to schedule the session for early in the year,

Expresses appreciations to the Government of the Philippines, through its Department of Foreign Affairs, National Commission for UNESCO, the University of the Philippines Diliman and its Marine Science Institute, for hosting its 12th intergovernmental session on 2–4 April 2019 in Manila, and the excellent arrangements made for the session;

Accepts with appreciation the offers of the Government of Indonesia and the Government of Bangladesh to host its 13th intergovernmental session in 2021, subject to the final consultations of relevant parties and the final endorsement of their relevant authorities.