



# 31<sup>st</sup> Session of the IOC Assembly

## Key accomplishments over the last intersessional period and major results of the WESTPAC–XIII (27-29 April 2021)

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IOC Sub-Commission for the Western Pacific, IOC/UNESCO

### Agenda 3.3.2

Please refer to the full report (IOC/SC-WESTPAC-XIII/3s)

# WESTPAC development since June 2019



## June-Dec 2019: Field activities

Seawater collection and handling for carbonate chemistry in the Gulf of Thailand, 19 Dec 2019



RTRC-MarBEST on Assessment of Carbon Stock and Sequestration in Seagrass, 4-12 Nov 2019, Bintan Island, Indonesia



RTRC-ODC training on Air-Sea Interactions, 17-28 Jun 2019, Qingdao, China



A Harmful Jellyfish Sampling Protocol Workshop 7-9 Aug 2019, Penang, Malaysia



Delivering Ocean Forecasting Services for Coral Reef Conservation, 11-13 Sep 2019, Phuket, Thailand



Distribution, Source, Fate and impact of marine microplastics, 6-8 Nov 2019, Shanghai, China



Inception Workshop on Ocean Oxygen Network 20-22 Nov 2019, Manila, the Philippines

## 2020: Webinar Series

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

**Ocean Dynamics and Climate**  
First Institute of Oceanography, MNR, China

**Marine Toxins and Seafood Safety**  
Institute of Oceanography, Vietnam

**Marine Biodiversity and Ecosystem Health**  
Indonesian Institute of Sciences

**Reef Management and Restoration**  
University of the Philippines Diliman

**Phuket Marine Biological Center, Thailand**

**Marine Plastic Debris and Microplastics**  
East China Normal University

# DECADE OUTCOMES

## "THE OCEAN WE WANT"

-  **A clean ocean**
-  **A healthy & resilient ocean**
-  **A productive ocean**
-  **A predicted ocean**
-  **A safe ocean**
-  **An accessible ocean**
-  **An inspiring & engaging ocean**

## WESTPAC KEY AREAS OF ACTIONS

**A: Ocean processes and climate change**

**B: Marine biodiversity and seafood safety and security**

**C: Ocean ecosystem health**

**Regional Network of Training and Research Centers (RTRCs) on Ocean Science**



## WESTPAC PROGRAMMES/WORKING GROUPS

- A 1: NEAR-GOOS
- A 2: MOMSEI (SEA-GOOS)
- A 3: OFS (SEA-GOOS)
- A 4: Ocean Acidification (SEA-GOOS)
- A 5: Air-Sea Interactions in the Kuroshio Extension
- A 6: Upwelling studies through data integration towards ocean observing system
- A 7: South China Sea Fluvial Sediment and its Environmental Impacts
- A 8: Indo-Pacific Ocean Environmental Variations and Air-Sea Interactions
- A 9: Feasibility on the 2<sup>nd</sup> CSK (IWG)
- B 10: Coral Reef Conservation, Restoration and Resilience
- B 11: DNA taxonomy and recruitment monitoring
- B 12: Marine toxins and seafood safety
- B 13: Marine endangered species
- B 14: Marine toxins and seafood safety
- C 16 : Ocean remote sensing for coastal habitat mapping
- C 17: Harmful jellyfish research and monitoring
- C 18: Marine microplastic research and monitoring
- C 19: Harmful algae blooms
- C 20: Ocean Oxygen Network (WG)
- A+B+C: Energy and Materials Exchange Between Land and Open Ocean (WG: Marginal Seas)



# Delivering knowledge and services to serve the needs of our Member States for ocean sustainability

- Developing operational ocean forecasting services to support decisions

New Version of SEAGOS Ocean Forecasting System service

Ocean Forecasting Services for Coral Reef Conservation, 11-13 Sep 2019, Phuket, Thailand

<https://sites.google.com/view/balertsystem/bleaching-alert-area>

- Combating plastic pollution

2nd WESTPAC Symposium and 3rd Workshop on Distribution, Source, Fate and Impact of Marine Microplastics, 6-8 Nov 2019, Shanghai, China

WESTPAC effort was acknowledged

- Monitoring ocean acidification and researching its impacts

- OA Webinar Series
- Inter-calibration
- Develop a regional OA status report
- Task team on the impact of OA on mariculture
- Conduct multidisciplinary study

On going efforts

- Establishing ocean hypoxia research and monitoring network

Inception Workshop on Ocean Oxygen Network 20-22 Nov 2019, Manila, the Philippines

Coastal hypoxia is emerging as a major threat to coastal ecosystems globally

Exponential growth rate = 3.54% ± 0.23% year<sup>-1</sup> (R<sup>2</sup> = 0.94, P < 0.001)

- Transferring and applying remote sensing techniques for MPAs

Training for Thailand on Remote Sensing for Coastal Habitat Conservation, 16-18 Dec 2020, Hybrid

Integrating edge-cutting technologies into Coastal Habitat Mapping in the Western Pacific, 10-12 Dec 2019, Nha Trang, Vietnam

- Delivering knowledge on harmful jellyfish for public health

A Harmful Jellyfish Sampling Protocol Workshop 7-9 Aug 2019, Penang, Malaysia

Harmful Jellyfish Webinar: Future Friend or Foe? 22-23 Aug 2020

Live broadcasts

Box jellyfish breeding in Penang

Webinar, 15 September 2020

Science for society, Headlines, The Star, 15 July 2020



# Mobilizing Actions for the UN Ocean Decade in the Western Pacific and adjacent areas

## Support the promoting of the UN Ocean Decade In Member States



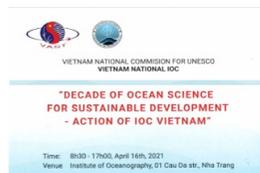
Workshop on UN Decade of Ocean Science for Sustainable Development on 5-6 September 2019, Qingdao, China



Special Forum on the UN Decade of Ocean Science for Sustainable Development on September at the X-MAS, 14 January 2021, Xiamen, China



Launch of Malaysia's Decade of Ocean Science for Sustainable Development, March 29-31, 2021, Malaysia



National Workshop on the UN Decade of Ocean Science for Sustainable Development, 16 April 2021, Nha Trang, Vietnam

### THE OCEAN DECADE VIRTUAL SERIES

**10 Nov 2020**  
13:00pm - 15:00pm (Bangkok time)  
07:00am - 09:00am (Paris time)

### Co-designing the Ocean Science we need for the Western Pacific and adjacent areas

	 Moderator – Wenxi Zhu IOC/UNESCO
13:05-13:15	Opening
13:15-13:17	Poll 1
13:17-13:50	<p>The main challenges and opportunities for collaborative research at regional level</p>
13:50-14:00	Q&A
14:00-14:40	<p>Capacity development, training, education and resource needs at regional level</p>
14:40-14:50	Q&A
14:50-14:55	Poll 2
14:55-15:00	Next steps and closing

Zhanhai Zhang  
Policy community

Vo Si Tuan  
Local authority community

Ungwati Hardjito  
Private sector

Makino Mitsutaku  
Research community

Jae Hye Lee  
Research community

Laila Pitchum  
Early career ocean professionals

Aimee T. Gonzales  
Coastal governance community

Ha Minh Toan  
Industry

Gokya Karina Radjasa  
Policy community

Fangli Qiao  
Research community

Atsushi Sugami  
Donors/foundations

# Capacity development & transfer of technology

**Development of "UNESCO/IOC Regional Network of Training and Research Centers (RTRCs) on Marine Science"**

Inclusion of capacity building into WESTPAC research programmes and conduct of a series of **regional and national tailored trainings (or training workshops)** in Member States, on a rotation basis

"**Training Through Research**" via the engagement of early career scientists into WESTPAC research programmes

Establishment of "**WESTPAC Best Young Scientist Award**" and "**WESTPAC Young Scientist Travel Grant**" to nurture young science leaders and facilitate international exposure of young scientists

Meanwhile, WESTPAC has been exploring more feasible tools to develop capacity at different level, including:

Initiation of "**WESTPAC Young Scientist Forum**" for WESTPAC early career scientists to exchange their perspective on marine science development and cooperation

Conduct of "**Bring Marine Science to School**" to inspire young generations/ school students on ocean and marine science

Integrated capacity development tools

## UNESCO/IOC Regional Network of Training and Research Centers (RTRCs) on Marine Science

### Regional Training and Research Center on Ocean Dynamics and Climate (RTRC-ODC)

- 9 International training courses (2012-19)
- 843 applicants from 54 countries
- 405 trainees from 43 countries
- 48 Prof. from 19 institutes of 16 countries

### Regional Training and Research Center on Marine Biodiversity and Ecosystem Health

**RTRC MarBEST**

- 2016: Training on Community
- 2017: Training on Biodiversity
- 2018: Training on Coral Reef Monitoring
- 2019: Training on Ocean Acidification
- 2020: Training on Ocean Acidification
- 2021: Training on Ocean Acidification
- 2022: Training on Ocean Acidification

One regional training and five national trainings in 2020

A Side Event at the 30th Session of the IOC Assembly

"Development of a Regional Network of Training and Research Centres (RTRC) on Marine Science in the Western Pacific and adjacent regions"

27 June 2019, UNESCO



## Tailored national/regional trainings as Integral part of WESTPAC Programmes

**A Harmful Jellyfish Sampling Protocol training Workshop**  
7-9 Aug 2018, Penang, Malaysia

**Ocean Forecasting Services for Coral Reef Conservation**, 11-13 Sep 2019, Phuket, Thailand

**National training on Ocean acidification and molecular techniques**, 22-23 Oct 2019, Vietnam

**National training on Ocean acidification**, 25-27 Nov 2020, Thailand

**National training on Remote sensing for Coastal Habitat Conservation**, 16-18 Dec 2020, Thailand

United Nations Educational, Scientific and Cultural Organization

From the People of Japan

Accelerating the transfer of marine technology for the conservation and sustainable use of oceans, seas and marine resources, June 2019-June 2022

United Nations Educational, Scientific and Cultural Organization

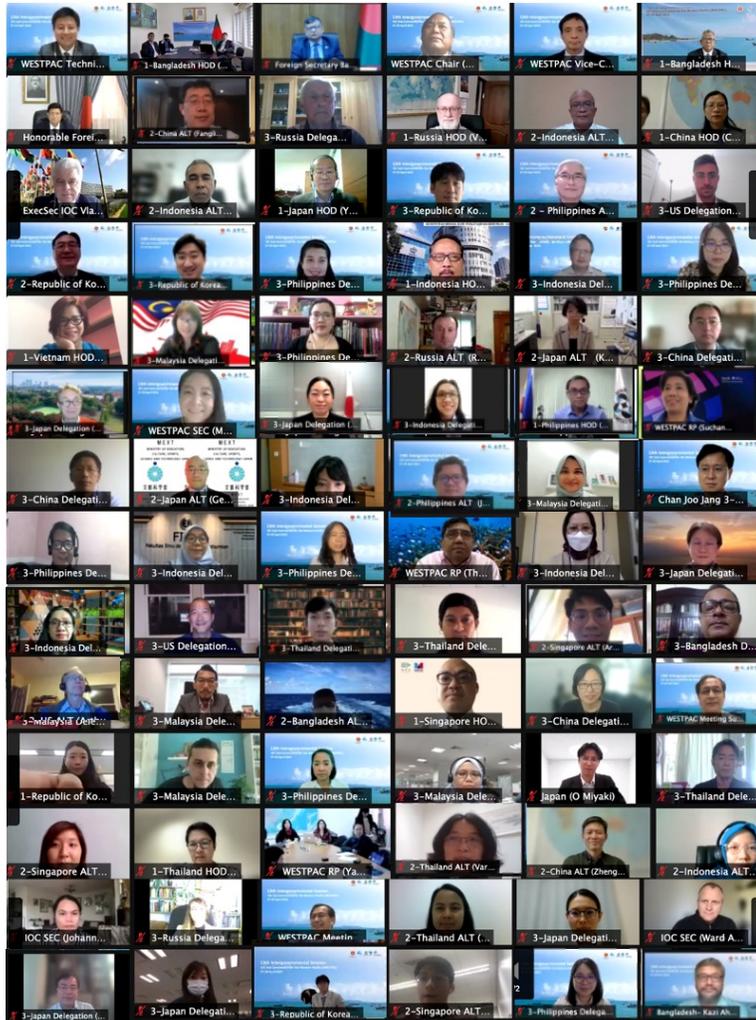
Korea Fund-in-Trust

Enhance the Capacity for Species Identification and Genetic Analysis on Marine Organisms in the Coral Reef Ecosystems in the Western Pacific", June 2019- June 2022

"If you want to go fast, go alone; if you want to go far, go together!"

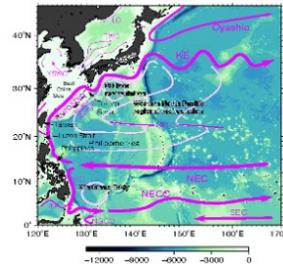
# Major results

## Of the 13<sup>th</sup> Intergovernmental Session of the Sub-Commission (27-29 April 2021, online)



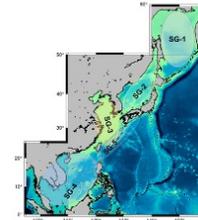
Overwhelming support received for the continued efforts in assisting MS to address their development challenges

- Establishment of new programmes/Working Groups

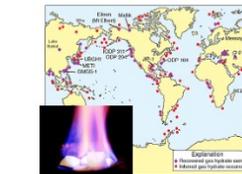
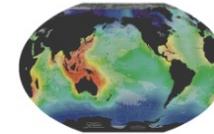


Asian Marginal Seas

2<sup>nd</sup> Cooperative Study of Kuroshio and its adjacent regions



WG: Indo-Pacific Convergent Center - Marine Ecosystem and Biodiversity (I3PCC-MEB)



WG: Gas hydrate study



WG: Rapid detection technologies for harmful algal blooms

- Promoting, and mobilizing actions for the Ocean Decade

# Major results

## Of the 13<sup>th</sup> Intergovernmental Session of the Sub-Commission (27-29 April 2021, online)

### Guiding principles for proposal development

- ❑ “Issue based, co-designed and solution-oriented” approach; responding to national and regional priorities;
- ❑ Capitalizing on and strengthening existing networks and resources; and engaging more relevant stakeholders;
- ❑ Integrating capacity development as an integral part of the proposed Action;
- ❑ Building on a strong willingness and commitment

- *Development of pipeline proposals for UN Decade Actions*  
*A non-exhaustive list for inputs, engagement and commitments*

#### I. The 2<sup>nd</sup> Cooperative Study of the Kuroshio and its adjacent regions (CSK-2)

- ❑ improved forecasts of regional weather and climate, through observations, modelling, forecasting and prediction.
- ❑ Science-informed regional fisheries and aquaculture management, through the study of the Kuroshio in relation to marine ecosystem variations linked to the effects of climate change and anthropogenic coastal activities,

#### II. Ocean Forecasting System for a predicted ocean

##### Delivering services to communities

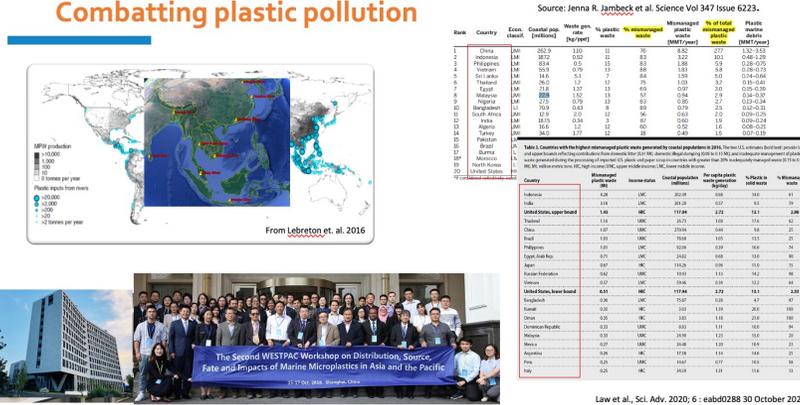
“Making ocean science more relevant”

# Major results

## Of the 13<sup>th</sup> Intergovernmental Session of the Sub-Commission (27-29 April 2021, online)

- Development of pipeline proposals for UN Decade Actions (cont'd)-a non-exhaustive list

### III. Riverine flux of Plastic to the Ocean Combating plastic pollution



### IV. Ocean Solutions A demonstration programme

Changes in the ocean & cryosphere

- Ocean warming | Ocean acidification
- Extreme storm events | Ocean deoxygenation
- Coral bleaching
- Erosion in coral reef structure
- Storm damage

Other human impacts

- Pollution | Sedimentation | Extraction
- Other impacts
- Algal production
- Destructive | Reef fishing
- Structuring & burial of coral polyps

Eutrophication-Hypoxia-Ocean Acidification: global environmental issues

- What drives hypoxia?
- Does hypoxia enhance OA?
- Interplay in between and along with temperature?
- Ecosystem impact?

Oxygen has declined in both the open ocean and coastal waters during the past half-century.

Pilot multidisciplinary study sites for ocean solutions

A Demonstration programme providing solutions to ocean health and a sustainable ocean economy via the stakeholder consultation, multi-disciplinary studies in several social-economically and ecologically important sites.

### V. Save our corals A Partnership research programme for coral resilience

Reaching out to and working together with international coral related initiatives and national programmes;  
Understanding & forecasting coral bleaching;  
Management and restoration to improve coral reef health  
Transformative knowledge for adaptive management to sustain fisheries & tourism

Joint consultation between OFS & coral reef resilience

Live fish Trade depends much on reef health

### VI. UNESCO/IOC Regional Network of Training and Research Centers (RTRCs) on Marine Science

Link training to research programmes

- Ocean forecasting system development and its application
- Ocean acidification
- Coral reef conservation, restoration
- DNA taxonomy and recruitment monitoring
- Marine toxins and seafood safety
- Marine microplastic research and monitoring

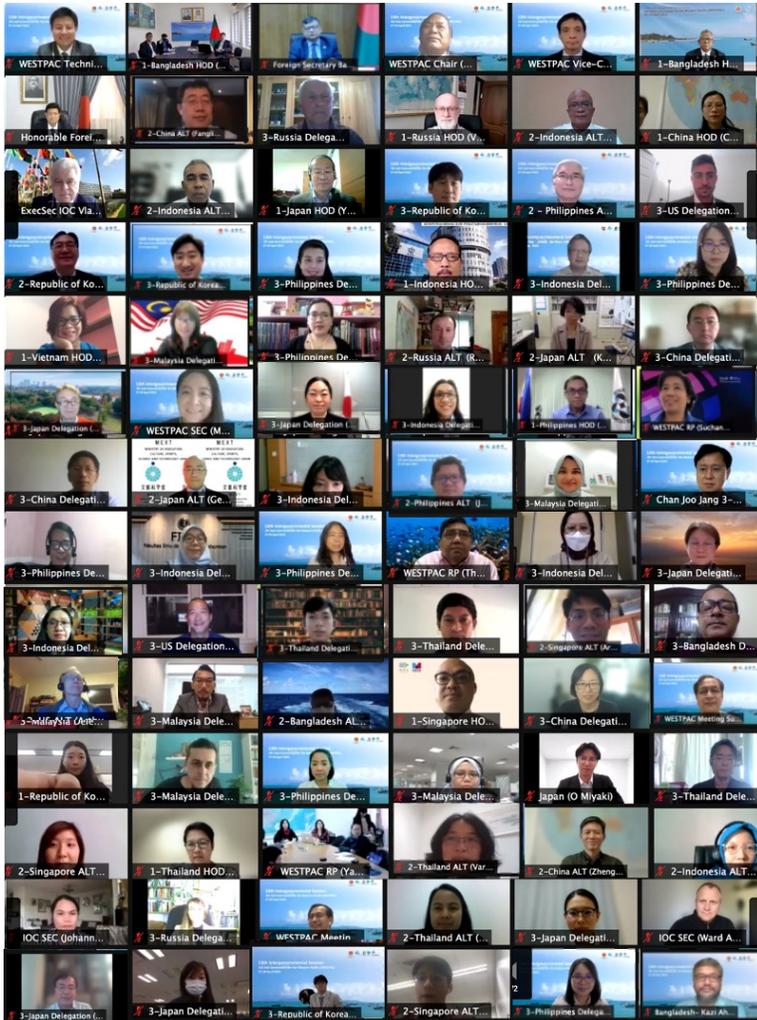
MORE RTRCs to be established based on "demand driven" and willingness.

### VII. UN Ocean Decade Regional Conference Series with the WESTPAC IMSC(2022,2025,2028,2031)

- Celebrate the launch of , review the progress of , the Ocean Decade and create excitement amongst diverse stakeholders across geographies and across generations in relation to their engagement in the Ocean Decade.
- Present the current status of ocean scientific knowledge, including pressures, threats and priority issues, identify gaps that need to be addressed in the region;
- Catalyze partnerships and initiate co-design of transformative solutions amongst diverse stakeholder groups to contribute to the Ocean Decade Challenges and achieve the Decade outcomes and vision.
- Provide a forum for supporters of the Decade to announce commitments to the Decade including flagship Decade Actions or financial or in-kind support;
- Lay and keep strengthening the foundation for dialogue and collaboration amongst diverse Decade stakeholders.

# Major results

## Of the 13<sup>th</sup> Intergovernmental Session of the Sub-Commission (27-29 April 2021, online)



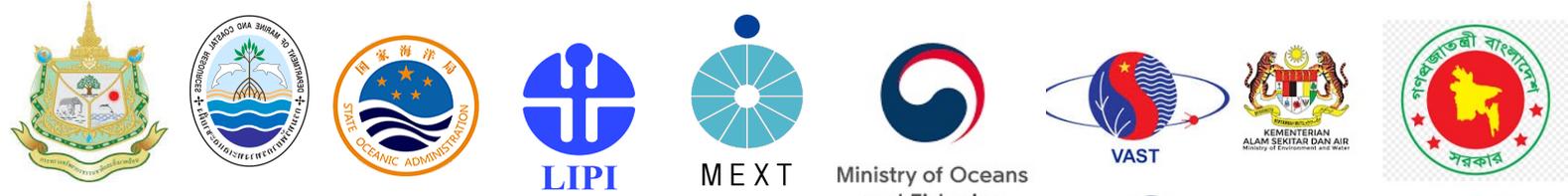
- *Promoting, and mobilizing actions for the Ocean Decade*  
Welcomed the kind offer of the Government of Thailand to host: (i) a Decade Coordination Office; (ii) the Decade Regional Kickoff Conference (August 2021, online), and the first Decade Regional Conference in conjunction with the 11th WESTPAC International Marine Science Conference in 2022.
- *Adopted its Programme and Budget (May 2021-April 2023) – most of joint activities to be conducted via EXB support*
- *Election of WESTPAC Officers*



# Acknowledgement



WESTPAC in Action  
for Sustainable  
Development Goals



# Thank You

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“We ourselves feel what we are doing is just a drop in the ocean. But the ocean would be less because of that missing drop.”  
-Mother Teresa