WESTPAC Approach to Capacity Development in Marine Science

“If you want to go fast, go alone; if you want to go far, go together”
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The ocean, our common heritage, is key to sustaining all humankind on the planet. It shapes Earth’s climate and influences the distribution of ecosystems, biodiversity, and thus food availability. Humans, however, have put the ocean at risk of irreversible damage by unregulated exploration and development, increasing pollution, climate change and ocean acidification.

Many international fora (World Summit on Sustainable Development, Rio+20, UN Regular Process) have identified the need to strengthen marine science capacities of developing nations in order to advance sustainable ocean management at all levels.

Responding to the requirements of international instruments and Member States, the IOC Sub-Commission for the Western Pacific (WESTPAC), rooted in the most densely populated area with significant social and economic reliance on ocean and coasts, is committed to developing and enhancing marine science capacities of young scientists, institutions and countries in the Western Pacific and adjacent regions.

In considerations of regional characteristics and common interests of Member States, WESTPAC employs adaptive approaches to capacity development, with guiding principles to focus on national and regional needs, to foster North-South and South-South cooperation, and to link training to the attainment of research goals addressing critical challenges to sustainable development in the region. WESTPAC approaches to capacity development embody:

- Development of "IOC Regional Network of Training and Research Centers on Marine Science" through the establishment of IOC Regional Training and Research Centers (RTRCs) in national marine research institutes and/or universities, and provision of regular trainings on the specialization focus of these Centers to young scientists mainly from developing nations within and outside the region;
- Conduct of a series of topic-specific trainings in Member States on a rotation basis;
- "Training Through Research" through the engagement of early career scientists into WESTPAC research programs;
- 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.

1 Intergovernmental Oceanographic Commission (IOC) of UNESCO, the competent agency within UN system for marine research, observations, services and capacity building.
2 Hands-on training and/or training on-board are involved together with professional lectures.
WESTPAC APPROACH TO CAPACITY DEVELOPMENT IN MARINE SCIENCE

IOC Regional Network of Training & Research Centers on Marine Science

WESTPAC initiated one regional capacity building program in 2008 entitled “UNESCO/IOC Regional Network of Training and Research Centers on Marine Science”, aiming to improve regional capability and capacity on marine science in a sustainable and systematic manner, through the establishment of IOC Regional Training and Research Centers (RTRCs) in national oceanographic institutes or universities, and regular provision in these Centers of training and research opportunities on their domains of focus to young scientists mainly from developing countries within and outside the region.

In accordance with associated Guidelines, the first IOC Regional Training and Research Center was established, with focus on ocean dynamics and climate at the First Institute of Oceanography, State Oceanic Administration of China (FIO, SOA) in 2010. Regular training on ocean dynamics, air-sea interaction, climate change and numerical modeling have been developed and provided annually since 2011.

WESTPAC has been continuing its efforts in the development of IOC Regional Network of Training & Research Centers on Marine Science. Consultations have been ongoing with potential hosts for other IOC Regional Training and Research Centers (RTRCs) with positive feedbacks received from Thailand, Indonesia, Malaysia and Vietnam. It is recommended the experience of WESTPAC in the development of IOC Regional Training and Research Centers (RTRCs) could be shared with, and replicated in other regions to generate more benefits.

FIO wave-circulation coupled model with 0.1 x 0.1 resolution
The IOC Regional Training and Research Center on Ocean Dynamics and Climate was officially established through an Agreement signed by the Intergovernmental Oceanographic Commission of UNESCO and the host institute, the First Institute of Oceanography, State Oceanic Administration (FIO, SOA) of China, at the Eighth Intergovernmental Session of IOC Sub-Commission for the Western Pacific (WESTPAC-VIII) in Bali, Indonesia on 11 May 2010.

Being the first IOC Regional Training and Research Center, the ODC Center aims to enhance regional research capacity and capability on ocean dynamics, air-sea interactions, climate change and numerical modeling through, among others, the provisions of regular training courses in English once a year to junior scientists and doctoral/master students mainly from the developing member states within and outside the region.

Since its inauguration in 2011, the ODC Center has been organizing regular training annually with a total of 204 young scientists from 28 countries having participated in. The regular training at the ODC Center attracts great interests of young researchers on ocean dynamics, and numerical modeling, which could be demonstrated by the ever-increasing number of applicants from a growing geographical coverage.
A. First training course on ocean models, Qingdao, China, 10-16 June 2011

69 trainees from 10 countries for one week.

B. Second training course on ocean dynamics, Qingdao, China, 16-22 July 2012

75 trainees from 15 countries for one week.

C. Third training course on air-sea interaction and modeling, Qingdao, China, 12-23 August 2013

34 trainees from 15 countries for two weeks.

D. Fourth training course on climate model, Qingdao, China, 3-14 November 2014

41 trainees from 13 countries for two weeks.
Regular Topic-Specific Training Courses/Summer School

Regular topic-specific training opportunities have been developed and organized in WESTPAC Member States on a rotation basis in order to enhance the capacity of its Member States for conservation and sustainable development of their coasts and marine biodiversity and resources.

HARMFUL ALGAL BLOOMS (A)

“to understand the biological and chemical nature, population dynamics and environmental effects of harmful algae, and mitigate the negative effects caused by Harmful Algal Blooms in the region”

MARIN TOXINS AND SEAFOOD SAFETY (B)

“to improve the knowledge on the natural biotoxins in marine organisms and their risks to human health and the transfer of knowledge to the public through the identification of toxic marine organisms”

MARINE ALIEN SPECIES (C)

“to provide regional status on marine alien species and assist with the identification techniques in the detection of these species”

CORAL REEF CONSERVATION & RESTORATION (D, E)

“to advance the understanding on the biogeochemical and ecological nature of coral reefs; build, with the introduction of DNA bar-coding, an inventory of marine organisms living in the Coral Triangle and neighboring coral reefs; and identify the best practice of coral reef restoration techniques”
WESTPAC APPROACH TO CAPACITY DEVELOPMENT IN MARINE SCIENCE

OCEAN REMOTE SENSING (F)

“to develop adaptive remote sensing methods to map the distribution of coastal habitats”

MOMSEI SUMMER SCHOOL (G, H)

Monsoon Onset Monitoring and its Social & Ecosystem Impact (MOMSEI)

“to improve, from air-sea interaction’s point of view, the understanding and forecasting of Asia monsoon onsets and its multi-scale variability at a regional scale through the development and conduct of air-sea observations over the Andaman Sea and Bay of Bengal, and analysis of the preconditioning role of ocean in the monsoon onset”

Meanwhile, following closely the development of global initiatives and international conventions, WESTPAC is committed to engaging regional scientists, developing and organizing associated trainings to meet the needs from the region in the implementation of global initiatives and international conventions, such as the World Ocean Assessment, and Convention on Biological Diversity. WESTPAC has been facilitating the implementation of the World Ocean Assessment by bridging the information gap, and identifying regional capacity building needs for the Assessment.
WESTPAC Best Young Scientist Award

The “WESTPAC Best Young Scientist Award” was first established in 2011 at its 8th International Scientific Symposium (Busan, Republic of Korea, March 2011) in order to nurture science leaders and assist young scientists to further dedicate themselves to marine science, sustained observations and services underpinning the sustainability of ocean and coastal resources to benefit all.

As from 2011, WESTPAC selects the winners for “WESTPAC Best Young Scientist Award” at its regular WESTPAC International Scientific Symposia.

WESTPAC Best Young Scientist Award 2011

WESTPAC Young Scientist Travel Grant

To facilitate international exposure of early career scientists, WESTPAC initiated the “WESTPAC Young Scientist Travel Grant” program in support of young scientists to participate in the WESTPAC International Scientific Symposia with a view to assisting them to develop research network, advance their knowledge and engage in marine science cooperation.

With the financial support of the Government of Vietnam, Korea Institute of Ocean Science and Technology (KIOST), and State Oceanic Administration of China (SOA), 50 young scientists have been provided with partial and full travel support for their participation in the 9th International Scientific Symposium, 22-25 April 2014, Nha Trang, Vietnam.