



**INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION
(of UNESCO)**

**Eleventh Intergovernmental Session of the IOC Sub-
Commission for the Western Pacific (WESTPAC-XI)**
Qingdao, China, 21-23 April 2017

Item 5.1.2.2 of the Provisional Agenda

**PROGRESS REPORT ON MONSOON ONSET MONITORING AND ITS SOCIAL AND
ECOSYSTEM IMPACTS (MOMSEI)
(May 2015–April 2017)**

In accordance with Terms of Reference of IOC Sub-Commission for the Western Pacific, the report is provided to facilitate the consideration by the Sub-Commission on the progress made on the WESTPAC-SEAGOOS pilot project – Monsoon Onset Monitoring and its Social and Ecosystem Impacts (MOMSEI).

The report presents a summary of the activities and results of MOMSEI over the last intersessional period. The Sub-Commission is invited to consider its workplan for the next intersessional period.

I. Project

1. Monsoon Onset Monitoring and its Social and Ecosystem Impacts (MOMSEI)

II. Project objectives and expected outputs/outcomes

2. MOMSEI aims to enhance the in situ observation and to improve the scientific understanding of the air-sea interactions with close relevance to Asian monsoon onset and seasonal march, through the regional cooperation and capacity building.

3. The expected outcomes include:

1. the in situ oceanographic and atmospheric data, which help document the key air-sea interaction process accounting for the monsoon onset and development.
2. the scientific papers based on the data analysis
3. the knowledge available to the community and forecasting center, in order to enhance the capacity to mitigate the disasters caused by the monsoon variations at different time scales.

III. Principal Investigator (Chairperson) and Project Steering Group

4. Co-PIs are Dr. Weidong Yu from the First Institute of Oceanography (FIO), State Oceanic Administration (SOA), China, and Dr. Somkiat Khokiattiwong from Phuket Marine Biological Center (PMBC), Department of Marine and Coastal Resources (DMCR), Ministry of Natural Resources and Environment (MNRE), Thailand.

5. The Project Steering Group includes:

1. Dr. Weidong Yu, FIO/SOA, China
2. Dr. Somkiat Khokiattiwong, PMBC/DMCR, Thailand
3. Prof. Fredolin Tangang, Universiti Kebangsaan Malaysia, Malaysia
4. Dr. Tukul Rameyo Adi, Research Centre for Marine and Fisheries Socio-Economics, Indonesia
5. Prof. Tim Li, University of Hawaii, USA

IV. Terms of Reference of the Project Steering Group

1. Oversight of the science formulation and development, with particular emphasis on its scientific uniqueness and frontier essence
2. Review the progress against its scientific goals
3. Help on the coordination of regional cooperation and capacity building

V. Activities carried out and/or to be carried out during the last intersessional period (May 2015 – April 2017)

1. 6th WESTPAC Summer School on MOMSEI, 26-30 Oct. 2015, Phuket, Thailand

6. MOMSEI held its 6th Summer School during 26-30 Oct. 2015 with the kind co-host by Phuket Marine Biological Center and China-Thailand Joint Laboratory for Climate and Marine Ecosystem, in Phuket, Thailand.

7. There are 33 trainees from Bangladesh (2), China (9), Indonesia (6), Kenya (1), Maldives (1), Myanmar (2), Philippine (2), Sri Lanka (1), Thailand (9), Vietnam (1).

8. There 8 experts from USA (6), France (1) and China (1), who gave the lectures at the Summer School.

9. Dr. Somkiat Khokiattiwong, IOC/WESTPAC Chairperson, and Mr. Wenxi Zhu, Head of IOC/WESPTAC Secretariat, also joined the training and gave the presentations about IOC/WESTPAC.

10. The training scope included the basics of oceanography and climate over the tropical Indo-Pacific region, marine zooplankton ecology, physical-biological interaction, marine CO₂ system and ocean acidification, coral reef and climate change, etc.

2. Cruise on ocean-shelf interaction in Andaman Sea

11. The joint cruise was conducted over one spring time period on Apr. 18-24, 2016, in Andaman Sea. The participants from FIO/China, PMBC/Thailand and WHOI/USA joined the cruise, with the focus on the ocean-shelf interaction during the pre-monsoon critical time window.

12. Pre-monsoon time window provides the favorable condition by shoaling the thermocline for the internal waves intruding onto the wide continental shelf, where the benthic and coastal ecosystem like coral reef are intensively influenced by the plume of cold, low oxygen and turbid water along with the internal waves and their breaking on the shelf.

13. The cruise was conducted onboard PMBC research vessel. The measurements include the CTD, water sampling, VPR, temperature mooring and bottom-mounted ADCP mooring. This cruise well captured a series of large amplitude solitons in the deep ocean and their propagation and transformation on the shallow shelf.

VI. Problems encountered and actions to be considered by the 11th Intergovernmental Session, tentatively scheduled for April 21-23, 2017, Qingdao, China

14. MOMSEI used to circulate its summer school around the participating countries, to maximize the local participation and to promote the interaction with the local community, with the financial aid from China. Due to changes with Chinese regulation, it is difficult to cover the costs from Chinese fund. MOMSEI Annual Summer School stops in year 2016 due to this budget constraint. The alternative solution is to take advantage of China-Thailand Joint Laboratory for Climate and Marine Ecosystem to host the MOMSEI Summer School in Phuket, Thailand.

15. MOMSEI used to hold its annual expert workshop with the financial support from China. Due to the same budgetary constraint with MOMSEI Summer School, MOMSEI could not have its regular expert workshop during 2015-2016. The alternative solution is to combine the MOMSEI expert workshop with other WESTPAC activities, such as the MOMSEI Workshop in 2017 in line with the 10th IOC/WESTPAC International Scientific Conference.

VII. Workplan and Budget for May 2017 – May 2019

Program	Activities	Objectives	Expected outputs/outcomes	Date and place	Funding Required		Remark
					IOC	Other sources (i.e. from national or international)	
Monsoon Onset Monitoring and its Social and Ecosystem Impacts (MOMSEI)	1. Cruise	Ocean-atmosphere interaction during the monsoon transitions	In situ data, scientific understanding, capacity building	Nov. 2017 Apr. 2018 Apr. 2019	-	USD 150K	
	2. Summer School	Capacity building	Reports	Sep. 2017 Sep. 2018	-	USD 30K	
	3. Expert Workshop	Scientific review	Reports	Apr. 2019	-	USD 10K	During 12 th WESTPAC Session