



# **IOC Sub-Commission for the Western Pacific**

## **Eighth Session**

Bali, Indonesia

10–13 May 2010

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\* An executive summary of this report in French, Russian and Spanish is [available online](#) as a separate document referenced IOC/SC-WESTPAC-VIII/3s.

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## 1. OPENING

### 1.1 OPENING REMARKS

- 1 The Eighth Intergovernmental Session of the IOC Sub-Commission for the Western Pacific (WESTPAC) began in the Sanur Paradise Plaza Hotel and Suites, Bali, Indonesia, at 0900 on Monday, 10 May 2010. The Session was organized by the IOC Regional Secretariat for WESTPAC (WESTPAC Secretariat), and hosted by the Ministry of Marine Affairs and Fisheries (MMAF) and the Indonesian Institute of Sciences (LIPI) of the Republic of Indonesia.
- 2 At the opening ceremony, Dr Gellwynn Jusuf, Chair of Agency for Marine and Fisheries Research, MMAF, welcomed, on behalf of National Organizing Committee for WESTPAC-VIII, all delegates and representatives from the Member States, international organizations and programmes to the Session. He took the opportunity to highlight the active role that Indonesia has recently played in international ocean community in terms of hosting some major international conferences, such as the 1st World Ocean Conference and the 1st Summit for Coral Triangle Nations and Partners. He was proud that the hosting of this session provided another opportunity to demonstrate the importance that his country attaches to the ocean and its potentials to environment and society.
- 3 Dr Wendy Watson-Wright, IOC Executive Secretary and Assistant Director-General of UNESCO, speaking on behalf of the Commission and the Director-General of UNESCO, congratulated WESTPAC for the great achievements made particularly in its revitalization efforts and expressed the hope that the present momentum of regional cooperation created by WESTPAC would continue and the working relationships between WESTPAC Secretariat and the Member States would be maintained. She also briefed the Session on the recent progress made by IOC at global level, particularly the completion of the Assessment of Assessment as the start-up phase of the regular process under the United Nations for the Global Reporting and Assessment of the State of the Marine Environment, including socio-economic aspects. As a competent agency within UN system in marine science, observations, service and capacity building, IOC spares no effort to address various challenges and opportunities posed by climate change and sustainable development of marine and coastal resources. She gladly noted that many developing countries in the region have become more active in related regional and international scientific programmes and observing systems with ever-increasing recognition of the critical importance of marine science and observations for the improvement of knowledge on climate change, marine ecosystem functions and natural hazards. She thus thanked the Government of Indonesia for the efforts in developing observing capabilities. Finally she expected that the present session, with the knowledge, wisdom and enthusiasm, will come up with constructive and fruitful recommendations for the future of WESTPAC.
- 4 Dr Zhanhai Zhang, Chair of the IOC Sub-Commission for the Western Pacific highlighted the timeliness of this session, also as a regional commemorative event for the 50th anniversary of IOC, to take stock of advances in marine sciences and related international cooperation at regional levels, particularly those spearheaded by WESTPAC, and to enhance the level of public awareness of the importance of multilateral collaboration in ocean science at all levels of society. In view of the high densely population and great contribution to GDP by the coastal areas, he further stressed the need to strength the joint efforts in improving the understanding of the ocean process, ocean ecosystem and the impact of anthropogenic stresses as well as climate change through the cooperation on marine science and long-term observations. He noted in particular the substantial progress made in revitalizing WESTPAC and putting in effect WESTPAC projects since the last session due to the increasing support from Member States and the diligent service delivered by WESTPAC Secretariat. He expected that this secretariat support could be maintained throughout the future development of the Sub-Commission and this Session would identify and address critical issues facing the Sub-Commission. He also expressed his congratulation on the cruise launching for the Indonesian National GOOS (INAGOOS) and appreciated the Indonesian efforts for the strong willingness to contribute to

WESTPAC in order to further deliver the benefit generated WESTPAC for the people in the region.

5 H.E. Dr Ir. Fadel Muhammad, Minister for Marine Affairs and Fisheries, Indonesia, congratulated UNESCO and IOC for years of achievements in bringing the Member States in the region at the forefront of oceanographic development. In his view, however, our knowledge about ocean is still limited as compared to the numerous challenges we face, and we have a dilemma in the limited amount of resources we allocate to marine science and many answers we try to get from it. Moreover, our capacity development means not just more funding, but also increased joint efforts in building scientific capacity in the Member States. UNESCO and IOC are noted for the role they play in the improvement of knowledge on the oceans, for example, on the role of the oceans in the carbon cycle. From a regional perspective, Indonesia is undertaking a national GOOS initiative (INAGOOS) in line with her strategies for SEAGOOS and for Eastern Indian Ocean, which also contribute to the country's Tsunami related efforts.

6 All the speakers expressed high appreciation for the arrangements made by the Local Organizing Committee, Indonesian Institute of Sciences (LIPI) and Agency for Marine and Fisheries Resources, MMAF, and for the support from the Provincial Government of Bali, Indonesia.

## 1.2 LAUNCHING CEREMONY FOR INAGOOS CRUISES

7 As a commemorative activity of IOC's 50th Anniversary, a cruises launching for INAGOOS was conducted through a teleconference, chaired by H.E. Dr Ir. Fadel Muhammad between the meeting venue and four research vessels:

- R/V (Research Vessel) *Baruna Jaya VIII* from Kupang Harbour, Indonesia, with participation of Timor-Leste and Australia, focusing on the productivity and fisheries resources in Arafura and Timor-Leste Seas.
- R/V *Baruna Jaya III* from Jakarta, Indonesia, with participation of China (the First Institute of Oceanography, State Oceanic Administration), focusing on Java Upwelling, and the onset of monsoon and regional climatic variability.
- R/V *Baruna Jaya IV* from Jakarta, Indonesia, and R/V *Okeanoss* from the United States of America to work on collaborative projects in Indonesian water focusing on the deep sea oceanography, and the seamounts in particular.

8 During the teleconference, a dynamic exchange occurred between the participants of the Session and the project coordinators at the sites of Kupang and Jakarta, Indonesia, and Seattle, USA. The dialogue at the teleconference conveyed important messages on what countries can do to cooperate with one another in strengthening marine scientific research and improving ocean observing systems, and the catalytic role for international mechanisms like WESTPAC to bring about national, bilateral and multilateral collaboration.

9 Tokens of appreciation were presented by Dr Gellwynn Jusuf and Dr Hery Harjono, Deputy Chair of Earth Sciences, LIPI, to some notable personnel from IOC and its WESTPAC, Indonesia and other countries in recognizing their contributions to WESTPAC related activities. H.E. Dr Ir. Fadel Muhammad invited other delegates and representatives to join him in pressing the button for a symbolic siren of the INAGOOS cruises.

10 Full statements made at the opening ceremony are given in [Annex III](#).

## 2. ADMINISTRATION

### 2.1 ADOPTION OF THE AGENDA

11 Mr Wenxi Zhu, Technical Secretary for the Session, introduced the Tentative Provisional Agenda (Document IOC/SC-WESTPAC-VIII/1 prov.) and the Provisional Annotated Agenda (Document IOC/SC-WESTPAC-VIII/2 prov.) for the comments of the participants.

12 A suggestion was made to insert a new sub-item on INAGOOS under Agenda Item 5.2 Operational Observations and Services and the moving of IOC headquarters to Portugal under the Agenda Item 11 (Other Matters). These were accepted by the Session.

13 **The Sub-Commission adopted** the Agenda as amended, which is attached as [Annex I](#) to this report.

### 2.2 DESIGNATION OF RAPPORTEUR FOR THE SESSION

14 Dr Zhanhai Zhang, Chair of the IOC Sub-Commission, invited the Sub-Commission to designate the Rapporteur for the Session to assist the Chair and WESTPAC Secretariat in the preparation of the Session's Draft Summary Report. A proposal to designate the Rapporteur from the Delegation of Indonesia was seconded.

15 **The Sub-Commission accepted** the proposal and **welcomed** Dr John I Pariwono from Indonesia as the Rapporteur for the session.

### 2.3 CONDUCT OF THE SESSION

16 Mr Zhu introduced the Provisional Timetable (Document IOC/SC-WESTPAC-VIII/1 add.prov.) and the Provisional List of Documents (Document IOC/SC-WESTPAC-VIII/4 prov.) and pointed out that the meeting would be organised in plenary and ad hoc sessional working groups that may be formed to deal with specific items arising from the discussions.

17 **The Sub-Commission recognized** the need to establish some open-ended sessional working groups to facilitate deliberation under pertinent agenda items. **The Sub-Commission also noted** the time required for the deliberation on the adopted agenda and for the sessional working groups to undertake their work and report the results to the plenary.

18 The List of Documents, List of Participants and List of Acronyms are given in Annexes [IV](#), [V](#) and [VI](#) respectively.

## 3. REPORT ON INTERSESSIONAL ACTIVITIES AND PROGRAMME EVALUATION

### 3.1 REPORT ON WESTPAC INTERSESSIONAL ACTIVITIES

#### 3.1.1 Statement of Chair on the State of the Sub-Commission

19 Referring to IOC Rule of Procedure No. 8.1(a), Dr Zhanhai Zhang delivered his statement (Document IOC/SC-WESTPAC-VIII/5) on recent development of the Sub-Commission and the outlook for the coming years.

20 Dr Zhanhai Zhang recalled the outcomes of the Seventh Intergovernmental Session of WESTPAC, including the adoption of the WESTPAC Strategy and Programme Structure (2008–2013), the decision to establish a WESTPAC Advisory Group, the initiation of new regional country-driven projects aligned with IOC High-Level Objectives, the endorsement of the new



regional capacity-building initiative on “the UNESCO/IOC Regional Network of Training and Research Centers on Oceanography in the Western Pacific,” and the rescheduling of WESTPAC Sessions to be in phase with the IOC planning cycle.

21 Dr Zhanhai Zhang spoke of several encouraging signs indicating that the Sub-Commission has moved on the right track in its development since the Seventh Session. Most of projects have carried out their activities as planned in the form of joint cruises, international workshops, training courses and a series of workshops. The Regional Ocean Research Priority Plan has also been initiated and the first drafting group meeting has been convened under the responsibility of the First Vice-Chair, Professor Yasuwo Fukuyo. Great efforts have also been made in nurturing the regional capacity building initiative: “UNESCO/IOC Regional Network of Training and Research Centers on Oceanography” which was adopted at the Seventh Session in 2008.

22 Dr Zhanhai Zhang expected that some challenges ahead can be met to reach the ultimate goal of building the Sub-Commission as a unique platform for the regional marine scientific community and stakeholders to share knowledge and stimulate new ideas. In his view, the regular budget allocated from the Sub-Commission’s parent organization still remains too limited to sustain its activities. Furthermore, the value of marine scientific research and observations need to be further demonstrated in addressing the needs of society. Moreover, additional technical personnel are urgently needed to work in WESTPAC Secretariat to meet the growing demands from Member States with increased initiation and implementation of WESTPAC activities. He took the opportunity to thank the Vice-Chairs for their active voluntary pursuance in respect to the designated areas of responsibilities and Past Chair for his wise advice provided over the past two years. He expressed his confidence in the future of the Sub-Commission in view of the broad participation and augmented financial support by Member States, the high spirit of cooperation among Member States, and the unprecedented efforts exerted by WESTPAC Secretariat for a better Sub-Commission.

### **3.1.2 Report on WESTPAC Intersessional Activities and Budget Overview**

23 Mr Zhu reported on the progress made over last intersessional period, particularly on the implementation of the Sub-Commission's adopted recommendations and Programme and Budget, May 2008–May 2010 (Documents IOC/SC-WESTPAC-VIII/6).

24 All six recommendations adopted by the Sub-Commission at its last session have been fully implemented. The WESTPAC Advisory Group has been established in accordance with the Recommendation SC-WESTPAC-VII.1, with responsibility to provide scientific and technical advice on the development, planning and implementation of the activities of the Sub-Commission. This group conducted its work early before the Session with its main agenda to review the first draft of WESTPAC Regional Ocean Research Priority Plan (RORP) and the new regional project proposals received from Member States. Close communication has been maintained by WESTPAC Secretariat with the Government of the Republic of Korea for hosting the next WESTPAC International Scientific Symposium in Pusan scheduled for March 2011. In this regard, Mr Zhu expressed his great appreciation to the Government of the Republic of Korea for her recent decision to host the Eighth WESTPAC International Scientific Symposium and the on-going preparation for the Symposium.

25 In term of Recommendation SC-WESTPAC-VII.3: UNESCO/IOC Regional Network of Training and Research Centers in the Western Pacific, Mr Zhu reported that one submission has been made by the First Institute of Oceanography, State Oceanic Administration of China, on the establishment of Regional Training and Research Center on Ocean Dynamics and Climate. In accordance with the adopted guidelines contained in this recommendation, an evaluation process has been conducted by WESTPAC Secretariat with six other international experts within and outside the region. With the positive conclusion generated from the evaluation, an agreement on the establishment of the centre will be jointly signed by IOC and

the First Institute of Oceanography during the Session. Once established, the centre will provide regular training opportunities, on a free-of-charge basis, to the young scientists from the developing member states in the region.

26 Mr Zhu introduced the implementation of Recommendation SC-WESTPAC-VII.4: WESTPAC Strategy and Programme Structure (2008–2013). This recommendation provides a framework for the establishment, acceptance, continuation and termination of WESTPAC Project, in addition to presenting the strategic priorities and structures of the programmes of WESTPAC in the context of IOC High-Level objectives and Medium-term Strategy (2008–2013). WESTPAC Secretariat has received thus far ten new project proposals from China, the Republic of Korea, Malaysia, Indonesia and Vietnam, and made, together with the Chair of WESTPAC Advisory Group, a preliminary recommendation on each proposal. The first WESTPAC Advisory Group meeting will further review these proposals and make a recommendation to the Session under Agenda Item 6.

27 Mr Zhu briefed the participants on the progress made in the implementation of all projects and activities with regard to the Recommendation SC-WESTPAC-VII.5: WESTPAC Programme and Budget (2008–2010), due to active participation of Member States, such as:

- Shaping the future of WESTPAC through the development of Regional Ocean Research Priority Plan
- Enhancing the knowledge and Promoting its application through the implementation of WESTPAC scientific research
- Demonstrating the value of ocean observations and service through the development of Regional Ocean Observing Systems and Ocean Data and Information Network
- Improving the regional capacity in the study and management of their coasts and oceans through the conduct of a series of subject-oriented trainings and the materialization of UNESCO/IOC Regional Network of Training and Research Centers on Oceanography.

28 Mr Zhu also provided a budget overview of the Sub-Commission (Document IOC/SC-WESTPAC-VIII/7). He highlighted the joint responsibility which Member States have shared with WESTPAC Secretariat in securing better future of the Sub-Commission. This has been shown by the increasing contribution from several Member States in support of WESTPAC activities during the last intersessional period, particularly in view of the gap between the requirement of the Sub-Commission for activities and the limited resources available from IOC which only cover the salary of one local staff and one statutory meeting. Overall, it is encouraging that the extra-budgetary support increases; WESTPAC activities yield positive results; and the participation by, and cooperation among, Member States are strengthened.

29 Despite the notable progress made, Mr Zhu reminded the Sub-Commission of the challenges ahead and the messages received by WESTPAC Secretariat from its interaction with the Member States and other stakeholder concerning the need for:

- IOC to strengthen the role of Regional Subsidiary Bodies, such as WESTPAC in its global programmes, including the improvement of communication with WESTPAC regarding the Commission's involvement in international programmes and major global activities
- IOC national focal points for WESTPAC to: (a) raise awareness at all levels on the value to support marine sciences as a cost-effective investment; (b) strengthen their national coordinating mechanism to organize their scientists

nationwide to identify their requirements for regional cooperation in the study and protection of coasts and oceans; (c) facilitate the establishment of regional research networks to deal with trans-boundary issues; and (d) mobilize funding in support of the involvement of their scientists in the IOC and its WESTPAC activities and second associate experts to work in WESTPAC Secretariat

- WESTPAC Project Leaders to: (a) keep close and efficient communication with their team members, national focal points and WESTPAC Secretariat for better project planning which enable the full consideration of their common interests; (b) disseminate broadly project information; (c) seek more support from different sources; and (d) deliver, to the extent possible, the project benefits to both the countries and the region, and
- WESTPAC Secretariat to: (a) keep its high working spirit and enthusiasm in promoting regional cooperation; (b) maintain the cordial atmosphere among and effective working relationship with member states; (c) keep developing innovative ideas and projects with interested partners to address regional concerns; (d) reinforce the fund-raising efforts to ensure smooth implementation of WESTPAC activities; and (e) gain the confidence of member states through rendering quality services.

30 Following the delivery of the reports by the Chair and the Technical Secretary, interventions were made by delegates from Japan, China, Thailand, Indonesia, Republic of Korea, Malaysia, DPR Korea and the Philippines, with the following salient points:

- The two reports are highly commendable in terms of their comprehensive coverage of the progress made, constraints at hand and directions outlined
- WESTPAC revitalization strategy has moved from conceptual development to operation, and from planning to implementation, with positive outcomes due to the efforts of the Member States and WESTPAC Secretariat. We now have a clearer and better programme structure and framework which enable the Member States and other stakeholders to develop and implement WESTPAC activities with commitments and resources needed
- Member States highly appreciated the initiative undertaken by IOC and WESTPAC Secretariat in revitalizing WESTPAC, particularly the dynamic role of WESTPAC Secretariat in resource mobilization in order to meet WESTPAC needs. Shortage of staff in WESTPAC Secretariat must be addressed without delay. Member States are encouraged to contribute to human resource development and staff secondment to the regional secretariat
- Capacity development activities within WESTPAC framework have yielded positive results in the Member States. Training opportunities provided to the countries in such areas as oil spill preparedness and response have met the countries' critical needs
- Achievements made by WESTPAC and their benefits to the countries and the region are convincing enough to some Member States in the region to elevate their level of participation from merely attending meetings to mobilizing scientists and other stakeholders for the implementation of WESTPAC projects.

31 **The Sub-commission expressed** its appreciation to:

- The Government of Thailand for the provision of office space, facilities for WESTPAC Secretariat operation, and the secondment of four full-time

administrative assistants to WESTPAC Secretariat, as well as for the provision of research vessel and ship time for WESTPAC activities

- The Government of China for her annual donation of US\$ 70,000 to the Sub-Commission and in-kind contribution to WESTPAC activities through hosting the Regional Training and Research Center on Ocean Dynamics and Climate, and the provision of research vessel and ship time
- The Government of Japan for the regular contribution from the Japan Funds-in-Trust, in the implementation of some WESTPAC activities
- The Government of Republic of Korea for its decision to start contributing US\$ 50,000 to WESTPAC since 2008, as well as for hosting the next WESTPAC International Scientific Symposium in Pusan, March 2011
- The Government of Malaysia for the provision of a research vessel and ship time in support of the implementation of WESTPAC project
- The Government of Indonesia as the host country for its contribution to the present Session
- IOC Perth Regional Programme Office for the support it has provided to the development of SEAGOOS Pilot Project on Ocean Forecast Demonstration
- The contribution made by the United Nations University through the development of WESTPAC E-bulletin.

32        **The Sub-Commission endorsed** the reports of Chair on the state of the Sub-Commission and the Technical Secretary on WESTPAC intersessional activities and budget overview.

### 3.1.3 Operation of the IOC Regional Secretariat for the Western Pacific

33        Mr Zhu Introduced this agenda item by providing relevant background information on the operation of WESTPAC Secretariat. Since its establishment in November 1994, WESTPAC Secretariat has continued to function with the generous support from the Royal Thai Government. From October 2005, WESTPAC Secretariat moved into the Department of Marine and Coastal Resources (DMCR) from the National Research Council of Thailand. WESTPAC Secretariat could also count on the UNESCO Bangkok Office for assistance in many administrative and financial matters. WESTPAC Secretariat moved to a new office early 2009 along with the DMCR with more space and new furniture.

34        Mr Zhu informed the meeting that he was finally selected through UNESCO open recruitment process and officially appointed as Head of WESTPAC Secretariat and Programme Specialist of UNESCO Bangkok Office on 19 December 2008. WESTPAC Secretariat has been led by Mr Wenxi Zhu since September 2006 with administrative and financial assistance of Ms Nachapa Saransuth. In addition to handling IOC-related matters, Mr Zhu is also expected to develop innovative Science projects in the Bangkok Cluster countries. With rapid recent expansion of WESTPAC activities, the current single professional in WESTPAC Secretariat is overloaded in handling all technical matters. Secondment of technical staff and/or associate experts by Member States is highly encouraged.

35        One response was received from China that they will consider the possibility of sending technical staff at an appropriate time to WESTPAC Secretariat to assist the development and implementation of WESTPAC activities.

### 3.2 RECENT DEVELOPMENTS WITHIN IOC, UNESCO RELEVANT TO WESTPAC

36 Dr Wendy Watson-Wright informed the meeting of recent thrusts of development in the Commission's major programme areas, its participation in some major international conferences and activities, and its initiatives within UNESCO and UN system in coordinating and supporting global multi-sectoral and cross-organizational programmes and activities, particularly those related to the role of oceans in climate change, the Regular Process for Global Reporting and Assessment of the State of Marine Environment, and the Tsunami related networking and capacity development. She informed the meeting that WESTPAC has been recognized as the Commission's flagship among its regional components, which cannot be separated from the efforts made by the Member States in the region and WESTPAC Secretariat. She heard about WESTPAC's recent revitalization efforts before, and was impressed by WESTPAC achievements as shown during the Session. She stressed the need to improve communication on the activities between IOC headquarters and those in the regions as part of measures to strengthen implementation of the Commission's regional approach. She also informed the Session that the position of IOC Deputy Executive Secretary would be open for recruitment soon.

37 Delegations congratulated Dr Wendy Watson-Wright for her recent appointment as Executive Secretary IOC and ADG of UNESCO for IOC, and expressed their appreciation for her messages of support to WESTPAC. Some delegations took the opportunity to inform the Session of the initiatives their countries have taken in celebrating the 50th anniversary of the Commission. Support was expressed to the IOC Secretariat to do what it can in addressing the shortage of professional staff in WESTPAC Secretariat, improving communication between the Headquarters and WESTPAC Secretariat, and taking the lead in the coordination of such programmes as those concerning the role of oceans in climate changes.

38 Clarification was sought with regard to the recent development on the proposal to move the IOC headquarters to Portugal. Dr Wendy Watson-Wright outlined the processes and steps to be undertaken in handling the proposal which require a feasibility study / cost-benefit analysis prior to calling for the expression of opinions by the Member States and consideration by the governing bodies of IOC and UNESCO.

39 Responding to the issue of improving communication about activities in the region, Dr Wendy Watson-Wright explained that the improvement of communication helps not only the better understanding by the Member States in the region of their obligation in the implementation of Commission's global initiatives and efforts, but also the orientation of national delegations to the UN and other important global conferences regarding the lead role that IOC is to play in the concerned fields, for example, the role of IOC in the implementing mechanism for GRAME to be further developed by the UN which depends very much on the voices of national delegations.

## 4. POLICY ISSUES

### 4.1 CONTRIBUTION OF THE SUB-COMMISSION TO THE FIFTIETH ANNIVERSARY OF IOC

40 Mr Zhu presented his report on the contribution of the Sub-Commission to the fiftieth anniversary of IOC, referring to Document IOC/SC-WESTPAC-VIII/8. He explained that the main objectives of the commemorative activities for IOC's fiftieth anniversary is to enhance awareness of the importance of collaboration and involvement in ocean science advancement at all levels of society and to demonstrate to governments, international communities and the public the value of the Commission's achievements and its enormous contribution in the future of oceanography and related sciences, services and capacity development.

41 He further recalled the IOC Resolution EC-XL1.2 adopted at its 41st session, 24 June–1 July 2008, which, among others, invites Member States and other appropriate bodies and organizations cooperating with the Commission to contribute to the commemoration of the fiftieth anniversary of the IOC, and to inform the Executive Secretary accordingly. As a follow-up, WESTPAC Secretariat took an immediate step in designing one template and distributed it to all Member States of the Sub-Commission, inviting them to submit the information on the national commemorative events. A great deal of information has been collected from the Member States in the WESTPAC region and sent to IOC Headquarters. Apart from commemorative activities at national level, the Sub-Commission has planned to celebrate the event through a variety of activities, such as joint cruises, training courses, summer schools, international workshops/symposia and production of advocacy materials. He informed the Session that WESTPAC Secretariat could assist in coordinating these various national celebration activities in the region if requested by the concerned countries.

42 Delegations expressed their confidence that the activities to celebrate the Commission's fiftieth anniversary, once implemented, would increase significantly IOC's visibility in the countries and on the world arena. Some delegations highlighted certain key activities as listed in Document IOC/SC-WESTPAC-VIII/8 that their countries are planning to undertake, and informed the Session that their countries have already implemented some cruises and organization of workshops which flag the celebration of the Commission's fiftieth Anniversary. A reference was made to the International Conference on Oceans, Climate Change and Sustainable Development: Challenges to Oceans and Coastal Cities, Pacem in Maribus XXXIII in Beijing, China, scheduled for 2–4 September 2010, as part of the commemorative activities.

43 **The Sub-Commission expressed its appreciation** for the contributions made by the Member States for the celebration of the IOC's fiftieth anniversary and **encouraged** its Member States to further disseminate information on the commemorative activities as broadly as possible.

#### 4.2 WESTPAC OCEAN RESEARCH PRIORITY PLAN

44 Professor Yasuwo Fukuyo, First Vice-Chair of the Sub-Commission and Chair of WESTPAC Advisory Group, presented background information and the progress made on the preparation of WESTPAC Regional Ocean Research Priority Plan (RORP). This activity was initiated by WESTPAC Officers at its first meeting on 28–29 October 2008, aiming to identify the most compelling regional issues in the key areas of interaction between society and the ocean, present possible research priorities together with the pilot projects, and provide a framework for research investments in ocean sciences in the future. Once finalized, the plan could serve as a blueprint for WESTPAC to mobilize the concerted efforts of its Member States to address the identified issues.

45 A Drafting Group for the plan composed of leading scientists from China, Japan, Malaysia, Indonesia and Thailand, convened its first meeting in Bangkok, 25–26 August 2009. The meeting agreed that the RORP be drafted around societal themes with scientific inputs, rather than around historical academic research issues. It identified four themes of societal concerns: (i) the role of ocean in climate change and variability; (ii) resilience and vulnerability to natural hazards; (iii) health of ocean ecosystems and sustainability; and (iv) ensuring seafood security. The first draft of the RORP was completed in April 2010 and submitted to WESTPAC Advisory Group for consideration at its meeting on 9 May 2010 in Bali, Indonesia. The Advisory Group considered that more time was required for the countries and other stakeholders to provide inputs on the draft RORP, and more work was needed to refine the draft based on the further inputs received. The Advisory Group thus recommended a timetable to finalize the draft RORP for its adoption by the 9th session of the Sub-commission in 2012, including needed steps to be undertaken for further consultation.

46 Although the draft RORP has not yet been distributed at the Session, its major elements, particularly the identification of the four major themes as outlined were considered fairly balanced and informative. It was suggested that the major themes of the RORP address not only natural but also man-made ocean hazards. Some delegations suggested that the drafting group also take advantages of the relevant national workshops scheduled for 2011 as additional vehicles to undertake stakeholder consultations on the draft RORP. The delegate of China expressed the offer of his country to host one workshop to facilitate RORP related consultation as suggested by the drafting group.

47 An inquiry was made if the membership of the Advisory Group could be still open to the interested countries. Professor Fukuyo clarified that composition of the Advisory Group was set by the previous decision of the Sub-Commission, whereas the membership of the drafting group could be broadened to obtain new ideas and inputs which are important for the refinement of the draft RORP. He also promised to follow up with the delegations with regard to the offers they made in providing opportunities of further consultation on the RORP. In response to a question if the adoption of RORP in 2012 would be too late for WESTPAC to maintain its project momentum, Professor Fukuyo explained that the drafting group needed more time to keep the RORP in line with the high level objectives of both IOC and WESTPAC and a quality RORP would serve the long term interests of the Sub-Commission in developing his core programmes beneficial to the countries and the region. In addition, he considered useful to produce and disseminate some awareness materials on the RORP which are friendly to the policy makers and the general public in the form of a brochure or a small booklet.

48 **The Sub-Commission expressed its satisfaction** with the progress made by the drafting group and **requested** the drafting group to step up its activities as planned, taking into account the comments made at the Session. **The Sub-Commission encouraged** Member States to enable more leading scientists to participate in the drafting group and mobilize inputs to the drafting group.

#### 4.3 PREPARATIONS FOR THE EIGHTH WESTPAC INTERNATIONAL SCIENTIFIC SYMPOSIUM IN 2011

49 Professor Dr Nor Aieni Binti Hj Mokhtar, Second Vice-Chair of the Sub-Commission, presented the progress on the preparation for the Eighth WESTAPC International Scientific Symposium tentatively scheduled for 22–25 March 2011, focusing on capacity development, outreach activities, organizational and coordination, and financial implications.

50 Constant communications have been maintained between WESTPAC Secretariat and the national focal point for the Government of the Republic of Korea for hosting the symposium after the closure of WESTPAC-VII. A preparatory meeting for the Eighth WESTPAC International Scientific Symposium was organized on 25–26 March 2010 in WESTPAC Secretariat with attendance of Professor Noi Aieni, Mr Hyun Yeong Kim and Mr Keyseok Choe from Korea Ocean Research & Development Institute and Mr Wenxi Zhu. The meeting appreciated the final decision of the Government of the Republic of Korea to host the Eighth WESTPAC International Scientific Symposium in Pusan in March 2010, reviewed the current preparatory status for the symposium and identified all items requiring immediate action. The meeting also decided to officially make the first announcement of the symposium at this Session.

51 Ms Minyoung Choi, Deputy Director, Marine Territory and Development Division, Ministry of Land, Transportation and Marine Affairs (MLTM), presented a proposed outline of a programme framework and logistical arrangements for the preparation of the symposium with information on Pusan. The symposium would focus on the impacts of climate change on the marine environment of the region, dealing in particular with ocean observation, ocean acidification, climate modelling, environmental monitoring, capture fishery and aquaculture, natural disasters and paleo-climatology.

52 Concern was expressed if the World Ocean Forum annually held in Pusan would affect the participation in the symposium. It was explained that the regular forum and the symposium would not overlap in timing, and in addition, a larger part of participants in the forum would be local, which should be different from the international participation in the symposium. Some delegates also reminded the Session on a number of scheduled WESTPAC project workshops for next year, and efforts should be made to prevent overlapping of the symposium with these events in timing. There was also a suggestion for the symposium to include in its programmes themes on ocean dynamics or physical processes in the ocean.

53 **The Sub-Commission reviewed and adopted [Recommendation SC-WESTPAC-VIII.1](#)** pertaining to the Eighth WESTAPC International Scientific Symposium.

## **5. REVIEW AND EVALUATION OF PROGRAMMES AND PROJECTS FOR MAY 2008–MAY 2010**

54 Dr Zhanhai Zhang provided a brief overview of WESTPAC project activities and called on each project leader to provide an in-depth assessment of the project status.

### **5.1 MARINE SCIENCE AND APPLICATIONS**

#### **5.1.1 WESTPAC Harmful Algal Bloom Programme**

55 Professor Yasuwo Fukuyo, Asian Natural Environmental Science Centre, University of Tokyo, Japan, discussed project activities in 2008–2010, including the organization of WESTPAC-HAB strategic meeting, the establishment of a WESTPAC-HAB regional network, and coordination of the GEOHAB Asia project. No progress was made in a few capacity building activities, the development of HABSEA portal, and the collation of reports on HAB events for insertion in the IOC-ICES-PICES Harmful Algal Event Data-base, due to lack of funding. Future project activities would focus on the development of an activity plan through the strategic meeting, outreach activities and publication of facts about HABs.

56 Clarification was sought with regard to the termination of data collation as part of related international database development. Professor Fukuyo explained that resources to accomplish this task were not available, and similar work was handled by the Intergovernmental Panel for Harmful Algae Blooms (IP-HAB) at the global level. Some delegates informed the meeting of HAB related activities in their countries and suggested that WESTPAC-HAB activities be integrated with those national initiatives. China offered to assist in the project implementation by hosting a workshop if planned.

#### **5.1.2 Ocean Remote Sensing**

57 Professor Teruhisa Komatsu from the University of Tokyo, Japan, introduced the Ocean Remote Sensing project which focuses on the demonstration of “New Generation Sea Surface Temperature” (NGSST) and the development of regional Ocean Colour Algorithm in cooperation with the UNDP/YSLME (Yellow Sea Large Marine Ecosystem) and UNEP/NOWPAP (North-West Pacific Action Plan).

58 In view of the pressing need for remote sensing as an effective tool to monitor and map the present situation in the coastal areas for better management, he stressed the need to reform the WESTPAC Remote Sensing project thrust from academic technical development to the application of remote sensing to the integrated coastal zone management. As such, the project will develop remote sensing methods for mapping different types of coastal habitats and aquaculture facilities through satellite image analysis and sea truthing, and disseminate mapping products for the benefits of users in the coming years.



### **5.1.3 Response of Marine Hazards to Climate Change**

59 Dr Qiao Fangli of the First Institute of Oceanography, State Oceanic Administration (SOA), China, reported the project progress. He stressed the importance of the project as a platform for scientists in the region to share scientific knowledge on marine hazards in relation to regional climate change. He mentioned two workshops held with identification of pilot target areas for the typhoon generation study and the need to undertake research on the response of marine hazards to climate change by means of field observation, model development (including wave-circulation coupled numerical model, marine ecosystem model and climate model) and capacity building. Project progress also includes the development of a Project Science Plan and organization of a joint cruise for its implementation in 2009. Recognizing the need for field surveys to improve the understanding of typhoon generation and validate the models being developed, he encouraged the interested countries to participate in and contribute to this project in whatever ways they can.

### **5.1.4 Fluvial Sediments to the South China Sea**

60 Professor Liu Zhifei, Tongji University, China, highlighted a variety of activities undertaken to achieve the following project objectives to: (i) investigate fluvial sediment discharge to the South China Sea; (ii) determine the source and transport of sediments in the South China Sea during the geological past; and (iii) predict the future sediment discharge. Project progress includes a successful conduct of two international workshops on the Fluvial Sediment Supply to the South China Sea, and four field studies including a seismic cruise on the southern Sunda Shelf off the Malay Peninsula to trace detrital sediment transport path during the last glacial time. Four young scientists from Vietnam, Malaysia and Indonesia visited the State Key Laboratory of Marine Geology, Tongji University, either for long-term graduate programme or for short-term laboratory analysis training. He also highlighted the close cooperation occurring among all the participating members and suggested that the project be renewed for the next two years with same objectives and expected outcomes for consideration by the Sub-Commission.

### **5.1.5 Marine and Coastal Biodiversity and its Management**

61 According to Dr Suchana Chavanich, Chulalongkorn University, Thailand, the project has paid great attention particularly to marine invasive species and their impacts on biodiversity and conservations due to increasing threat of these species on the marine ecosystems and economy. To provide baseline information and assess the current status of marine non-indigenous species (including invasive species) in the region, the project implemented a series of activities including the organization of the Workshop on Marine Invasive Species and Management in the WESTPAC Region, the development of a regional status report in 2009 on marine non-indigenous species, and the establishment of research collaboration with North Pacific Marine Science Organization (PICES) Working Group 21. The project has also slated for this year a demonstration workshop on the rapid assessment of Marine Non-Indigenous Species with the assistance from PICES.

62 Responding to a question on the current level of research in the taxonomy of the invasive species and rate of coverage by the invasive species of the affected coastal waters, Dr Suchana Chavanich mentioned that traditional taxonomical approach is still being applied, and it is difficult to determine in many cases if a species is native and exotic due to the high level of biodiversity in the region and limitation in the methodologies. It was recognized that expertise within IOC in addressing the problems posed by invasive species is limited. Therefore it is desirable for IOC and its WESTPAC to interact and work together with other international agencies such as IMO for solutions on this matter. There is also a need to develop some genetic bank of species in the region as part of capacity development in this area.

### **5.1.6 Coral Reef under Climate and Anthropogenic Perturbations**

63 Professor Gao Huiwang, Ocean University of China, speaking for Professor Zhang Jing of the East China Normal University, China, who is unable to attend the Session, briefed the Session on the objectives of project to improve the understanding of biogeochemical and ecological nature of coral reefs in WESTPAC region under different geographic, physical and environmental settings and promote capacity building accordingly. The project progress includes the conduct of the 1st WESTPAC Workshop on the Coral Reef under Climate and Anthropogenic Perturbations, with an output of a synthesis list on the actual situation, hot spots and common issues of coral reefs in Western Pacific Region, as well as recommendations on actions to be undertaken.

64 In view of the increasing threat of land use on the coral reef systems, the project is preparing a training course on "Impact of Sedimentary Dynamics and Biogeochemistry on Coral Reefs" in Ko Samui, Thailand, on 15–18 June 2010, with objectives to enhance research capacity on impacts of sediment on coral reefs for WESTPAC countries, establish an international network in the field of sediment impacts on coral reefs and identify cooperative activities in the WESTPAC region. In addition, the second workshop on WESTPAC-CorReCAP is scheduled for 22–24 June 2010, Phuket, Thailand, in conjunction with the 2nd Asia Pacific Coral Reef Symposium (APCRS) on 20–24 June 2010.

## **5.2 OPERATIONAL OBSERVATIONS AND SERVICES**

### **5.2.1 NEAR-GOOS**

65 Professor Lin Shaohua, Past Chair of the NEAR-GOOS Coordinating Committee, presented the implementation of NEAR-GOOS over the past two years and the efforts made by each of the participating countries in terms of the amount and types of data transmitted in both real-time and delayed modes, data network developed, the data products made, the related services provided and the amount of users benefitted. The observing system and operational oceanographic system have been developed in the NEAR-GOOS region and will continue their contribution to the NEAR-GOOS.

66 Professor Lin briefed the meeting of the outcomes from the recent Thirteenth Session of WESTPAC Coordinating Committee for NEAR-GOOS in achieving the objectives for the second Phase of NEAR-GOOS: developing a comprehensive and sustained ocean observing network and a operational forecasting system in the region; continuing the management of the data exchange mechanisms developed in the first phase by increasing data parameters and the space of coverage, and timely generating more data products, in order to improve the services and demonstrate the value of NEAR-GOOS in the region. She also presented a work plan for the next intersessional period.

67 Many delegates and representatives expressed their high appreciation for the substantive progress achieved by the NEAR-GOOS countries and their support to the NEAR-GOOS's further development. As the first regional GOOS of IOC, NEAR-GOOS is expected to move towards its goal as a self sustaining regional ocean observing system which deserve more support. It is also hoped that NEAR-GOOS be accommodative to non physical data. The representative of NOWPAP appreciated a joint NOWPAP/WESTPAC/PICES activity proposed in the workplan on remote sensing data analysis, and indicated the recent consultation between UNEP Regional Seas Programme and GOOS which also encouraged cooperation between the two programmes.

### **5.2.2 SEAGOOS**

68 Dr Somkiat Khokiattiwong, Coordinator for SEAGOOS, in his summary of SEAGOOS activities and results, mentioned particularly two pilot projects on "Monsoon Onset Monitoring

over Andaman Sea and its Social & Ecosystem Impacts” (MOMSEI) and “Ocean Forecast Demonstration” in order to demonstrate the value of observation to conserving marine ecosystems and to the society. Through three expert workshops in 2009, MOMSEI has arrived at a series of concrete actions to be carried out in 2010, including finalization of MOMSEI Science Plan, establishment and adoption of the Terms of Reference of MOMSEI Scientific Steering Group, the formation of the MOMSEI Project Office within WESTPAC Secretariat with seconded experts, organization of the first MOMSEI Cruise in late 2010 and the scheduling of the first MOMSEI Summer School for June–July 2010. Another pilot project “Ocean Forecast Demonstration” is under development, with a view to developing ocean forecast system with products and applications for the South East Asian Seas through the utilization and comparison of the wave-tide-circulation coupled model (MASNUM), BLUElink or other global ocean forecasting systems in the region. He highlighted the joint effort made by WESTPAC Secretariat, and the project team in developing the pilot project.

- 69 Support was extended to SEAGOOS by various delegations. A need was felt to reinforce the efforts in establishing the SEAGOOS Coordinating Committee, building on the experiences gained from implementing the pilot projects.

### 5.2.3 INAGOOS

- 70 Mr Berny A. Subkhi, Agency for Marine and Fisheries Research, MMAF, Indonesia, informed the Session that INAGOOS is GOOS at national level in ocean observation, data and information management, and application. INAGOOS is ready to perform ocean and coastal observation programmes, starting as Coastal INAGOOS. The effective role of INAGOOS is considered as enhancing the regional alliances in ocean observation, such as SEAGOOS. INAGOOS has its scope of activities ranging from ocean dynamic observation for climate variability and change, ocean health monitoring and marine data management, to marine resources assessment, coastal observation and capacity building. Indonesia invites all Member States for cooperation on the research activities of INAGOOS.

- 71 **The Sub-Commission accepted** INAGOOS as a component of WESTPAC activities in the field of ocean observations and services.

### 5.2.4 Marine Hazards Forecasting and Mitigation

- 72 Speaking for Professor Yu Fujiang from the NMEFC, the Project Coordinator, Mr Wang Hui, Executive Deputy Director General, National Marine Environment Forecasting Center (NMEFC), China, briefed the Session on project objectives and the efforts made for their realization. The project aims to: (i) enhance the cooperation of WESTPAC Member States on marine hazards warning and mitigation technology; (ii) exchange and share the experience of marine hazards forecast; (iii) improve the forecast accuracy of marine hazards; (iv) develop new technology of marine hazards forecast, especially coastal numerical inundation forecast model; and (v) improve the capability of marine hazards warning and mitigation in WESTPAC Member States. Workshops and a training course were organized during 2008–2010 in Vietnam, China and Japan to initiate the project implementation. A workshop will be conducted in the second half of 2010 to share knowledge on operational storm surge forecasting, numerical model development and other marine hazards forecast technology. Much more work is needed before the project yields meaningful results. However the project team is confident to make it happen.

- 73 A request was made for the Project Coordinator to prepare and submit a project progress report for the participants to understand the project better.

### 5.2.5 International Bathymetric Chart of the Western Pacific (IBCWP)

- 74 Mr Jin Jiye, on behalf of Professor Hou Wenfeng, Chief Editor for the IBCWP Editorial Board (EB), spoke on the progress made in the IBCWP programme involving China, Japan, Philippines, Republic of Korea, Russian Federation and Vietnam. The project has thus far

compiled most of the sheets for three sub-regions out of the six which the project intends to cover. He expressed the concern that the Fifth Session of IBCWP has not yet taken place six year after its fourth session in 2004, although some progress is under way in the participating countries. To provide an impetus to IBCWP project implementation, it is suggested to put in place an effective group of technicians designated by Member States to compile all charts of the Western Pacific region rather than each country does its own. For data exchange and sharing, Member States are responsible for providing authentic mapping data based on their respective national data exchange policies. For the regions with isobaths data discrepancies, the technicians, together with the chief editor if necessary, should evaluate the charts, resolve the technical differences and provide the EB with commonly agreed digital charts for approval.

- 75 While supporting the efforts made by the project, an intervention was made on the need to improve communication between the participating countries submitting the sheets and the project coordinating unit receiving the sheets. In this connection, the former wishes to have feedback from the latter on the products submitted. However, such a feedback may not be always available. This comment was well taken as further efforts are needed to strengthen project performance.

## **5.2.6 Ocean Data & Information Network for the Western Pacific**

- 76 According to Professor Lin Shaohua, Regional Coordinator for ODINWESTPAC, project progress includes the establishment of a Project Coordinating Group, identification of focal points for data and information management, establishment of three technical working groups at the host centre (NMDIS, China), acquisition of hardware and software for constructing and operating a marine information website at NMDIS and development of a preliminary structure of the website. Future activities include the organization of a training course on the Establishment of National IODE Ocean Data Portal Nodes in collaboration with IODE, the collection of cruise summary reports in the region from IODE ROSCOP files and Member States, and preparation of regional directories of ocean and coastal projects and programmes, marine libraries and publications and research institutions and experts, as well as regional e-repository of scientific publications made by WESTPAC experts.

- 77 Appreciation was expressed to Professor Lin for her comprehensive report on the project progress. It was reminded on the need for the project to participate actively in the preparation of materials for the celebration of the fiftieth anniversary of IODE. This should be incorporated into the work plan, and followed up in due course.

## **5.3 CAPACITY BUILDING AND PUBLIC AWARENESS**

### **5.3.1 UNESCO/IOC Regional Network of Training and Research Centers on Oceanography**

- 78 Mr Zhu introduced this agenda item by focusing on the implementation of the new regional capacity building initiative on "UNESCO-IOC Regional Training and Research Centres on Oceanography in the Western Pacific". He thanked the First Institute of Oceanography, State Oceanic Administration of China, for submitting the related proposal on 23 April 2009, in accordance with the adopted guidelines and procedures on the establishment of a regional training and research center on ocean dynamics and climate (RTRC-ODC). The proposal clearly described the objectives, implementation strategy, expected outcomes, evaluation and reporting, detailed schedule of major activities, funding security and qualification of the nominated director for the RTRC-ODC. Evaluation process has been completed with positive comments from six invited experts in the same field in and outside the region. He expected that this centre would operate immediately after an agreement is co-signed by the Executive Secretary of IOC and the host institute. He also encouraged the active participation in the regional network by other institutions/universities in the region, through establishing regional

training and research centres, based on their respective specialization, which will provide regular training opportunities to the young scientists from developing countries in the region.

79 The Sub-Commission highly appreciated WESTPAC Secretariat for the progress made on implementation of the “UNESCO/IOC Regional Network of Training and Research Centers on Oceanography” which could be taken as a milestone in WESTPAC endeavour to capacity development. It was further suggested that this initiative may have more impacts if its objectives can be formulated in term of benefits expected rather than mere academic interest. This regional centre, if well established and operated, can make its way to the status of Category II training and research centre within UNESCO.

80 **The Sub-Commission invited** Member States to encourage their respective national oceanographic institutes and universities to actively participate in the Regional Network; and **requested** the Executive Secretary of IOC to take necessary actions to further promote this regional capacity building activity.

81 **The Sub-Commission accepted** [Recommendation SC-WESTPAC-VIII.2](#) regarding UNESCO/IOC Regional Network of Training and Research Centers on Oceanography.

82 A ceremony took place for the signing of Agreement between the Intergovernmental Oceanographic Commission of UNESCO and the First Institute of Oceanography of State Oceanic Administration of the People's Republic of China regarding the Establishment of a Regional Training and Research Center Participating in the UNESCO/IOC Regional Network of Training and Research Centers on Oceanography in the Western Pacific. The Agreement was signed by Dr Wendy Watson-Wright, Executive Secretary IOC, and Assistant Director-General of UNESCO, and Professor Ma Deyi, Director-General of the First Institute of Oceanography of State Oceanic Administration, China. The signing of the Agreement was witnessed by Chair of the IOC Sub-Commission for the Western Pacific, Dr Zhanhai Zhang, and Vice Chairs of the Sub-Commission, Professor Yasuwo Fukuyo and Professor Dr Nor Aieni Haji Mokhtar.

83 Upon affixing his signature on the Agreement, Professor Ma Deyi delivered a statement reassuring the commitment of his institute in developing the centre as a successful platform for young scientists in the region. Being one of the key institutes in marine research in China, the First Institute of Oceanography with a history of more than fifty years has been dedicated to researches on ocean dynamics and climate change. The Regional Training and Research Center on Ocean Dynamics and Climate will be certainly instrumental to enhancement of regional capacity in the research of ocean dynamics, air-sea interaction, climate change, the numerical modelling and training of scientists and students.

84 Dr Wendy Watson-Wright congratulated the First Institute of Oceanography on the establishment of a regional training and research center within the UNESCO/IOC regional network. She considered this initiative an indication of strong commitment of the Member States in the region to promote North-South and South-South cooperation. This regionally specific activity should, within its area of specialization, provide valuable experience which could be shared with other regions.

### **5.3.2 Enhancing the Regional Capability on Oil Spill Response and Restoration of Marine Ecosystems**

85 Dr Dosoo Jang, Director, Center for International Cooperative Programs, Korea Ocean Research & Development Institute (KORDI), Republic of Korea, briefed the meeting on the project activities, particularly the WESTPAC International Training Workshop on “Monitoring Technique and Emergency Response of Marine Oil Spills” in Qingdao, China, 20–23 April 2009. The workshop objective is to improve the regional capability on the oil spill response, through the provision of theoretical and practical knowledge of monitoring methods, identification methods, emergency responses, environment remediation to the selected participants among

the Member States of WESTPAC. This workshop is attended by thirty-four trainees from twelve Member States of WESTPAC and seven lecturers with strong qualifications.

86 In response to the questions if the scope of the project covered major sources of oil spills, and if satellite remote sensing technology was used in detecting the spills, Dr Jang provided the Session with additional information on the collaboration which KORDI has developed with such partners as NOAA and NOWPAP. The collaboration involves proactive approaches to oil spills by major sources and the application of cutting edge technology, including satellite remote sensing. It is expected that more training opportunities can be made available to personnel from developing Member States in the field of oil spill response and restoration of marine ecosystem.

### **5.3.3 WESTPAC E-Bulletin**

87 Dr Chun Knee Tan discussed the publication of WESTPAC E-Bulletin and its services in terms of the objectives, management, content, contributors, constraints and recommendations to overcome the constraints. He informed the session that the E-Bulletin has been periodically published three times a year. In the E-Bulletins, brief scientific articles were presented from the regional scientists and WESTPAC project leaders. PDF version of E-Bulletin has been widely distributed to scientific communities through WESTPAC Emailing groups which consist of more than 1,000 scientists in the region. Encouraging response is well received from the readers within and outside of WESTPAC region, especially from Indian Ocean region. In addition, the development of WESTPAC E-bulletin also created close linkages and exchange of information with partners, such as PEMSEA and NOWPAP. However, this initiative is also confronted with many challenges, e.g., lack of response for article contribution and being unable to trace the web access in late 2009 as WESTPAC website was restructured.

88 The difficulty in tracking web access to the E-Bulletin when WESTPAC website was restructured has drawn the attention of the delegations. Mr Zhu explained that WESTPAC did not have its own internet facilities and efforts are under way to improve the situation.

### **5.3.4 Review of On-Going Projects by the WESTPAC Advisory Group**

89 Upon reviewing the on-going projects, Professor Fukuyo, Chair of Advisory Group, reported to the Session the outcome of the work undertaken by the group. The group considered that tremendous achievements were made by the on-going projects as a whole over the recent years and tabled the following recommendations:

- All the on-going projects be continued, and the Sub-Commission officers and WESTPAC Secretariat assist in any way possible for development of these projects
- The Project Leader on "Marine Hazards Forecasting and Mitigation in the Western Pacific" submitted a project progress report on the intersessional activities no later than one month after the present session
- All projects review the characters of IOC as an intergovernmental body and seek ways to fulfill them in their project implementation
- All project leaders consider developing and strengthening interaction and collaboration among projects.

90 Extensive support was voiced to these recommendations and high appreciation was accorded to the Advisory Group and Professor Fukuyo for the job well done within a short time. It was noted that the spirit of these recommendation is to encourage all the projects to do their best to attain the project objectives. Some delegations hoped that certain projects could include

new members. The coordinator of ODINWESTPAC expressed her support to WESTPAC E-Bulletin, and suggested closer cooperation between the two projects.

- 91           **The Sub-Commission endorsed** the recommendations made by the Advisory Group and **decided** to continue all the on-going projects.

## 6. REVIEW AND APPROVAL OF NEW PROJECT PROPOSALS

- 92           Professor Yasuwo Fukuyo, Chair of WESTPAC Advisory Group, briefed the meeting on the recommendations made by WESTPAC Advisory Group on a total of ten project proposals received in accordance with the framework established in the WESTPAC Strategy and Programme Structure (2008–2013). Three new proposals have been tabled as the new projects of WESTPAC in view of the issues to be addressed, existing regional network and funding feasibilities, namely: Ocean Forecast Demonstration System, DNA Taxonomy and Recruitment Monitoring of the Coral Reef Marine Organisms, and Ensuring Seafood Safety from Toxic Marine Organisms. Then three newly-recommended projects were presented to the Session for consideration in terms of project objectives, methodologies, workplan and budget, area and duration, collaborators and management.

### 6.1 OCEAN FORECAST DEMONSTRATION SYSTEM

- 93           Professor Fredolin Tangang of National University of Malaysia, introduced the proposal, as one pilot project of SEAGOOS, with the objectives to: (i) enhance understanding of oceanographic processes through the development of an ocean forecasting system using the MASNUM wave-tide-circulation coupled numerical mode (MASNUM) for Peninsular Malaysia eastern's shelf and Gulf of Thailand; and (ii) facilitate the establishment of ocean numerical modelling groups and improve the numerical modelling capacity in Malaysia and Thailand through transfer of technology.

- 94           Support was expressed for this pilot project in terms of the importance of Marine forecasts (ocean currents, temperature, salinity etc) for various marine activities and users. The delegate of Indonesia suggested that the proposed project area could be expanded and expressed interest of scientists from his country for involvement in the project.

- 95           **The Sub-Commission adopted** the Project on Ocean Forecast Demonstration System (IOC/SC-WESTPAC-VIII/12.1).

### 6.2 DNA TAXONOMY AND RECRUITMENT MONITORING OF THE CORAL REEF MARINE ORGANISMS

- 96           Professor Youn-Ho Lee, Principal Research Scientist, Korea Ocean Research and Development Institute, Republic of Korea, informed the Session that the overall objective of the project is to investigate the extent of marine biodiversity and its dynamics with a genetic tool called DNA barcoding. The specific objectives are to: (i) build up an inventory of reef-dwelling marine organisms with uncovering yet unidentified species; (ii) develop a genetic marker for an objective identification of each species; and (iii) monitor the recruitment of marine organisms in coral reefs by in-situ discrimination of larvae and fries.

- 97           The project proposal as presented was well received at the Session. It was suggested that the project coordinator contact Coral Triangle Initiative (CTI) Regional Secretariat for interaction, coordination and partnership.

- 98           **The Sub-Commission adopted** the Project on DNA Taxonomy and Recruitment Monitoring of the Coral Reef Marine Organisms (IOC/SC-WESTPAC-VIII/12.2).

### 6.3 ENSURING SEAFOOD SAFETY FROM TOXIC MARINE ORGANISMS

99 Dr Dao Viet Ha, National Institute of Oceanography, Vietnam, stressing the importance of seafood quality to human health, explained that the project is to prevent poisoning caused by seafood containing natural biotoxins through the identification of these biotoxins and dissemination of scientific information to the general public. Concrete actions will be undertaken to analyze features of poisonings, raise public awareness for prevention of seafood poisoning, and facilitate scientific-based management strategies and measures for seafood safety.

100 Broad based support and interest of participation were voiced for the proposed project, as its expected outcomes would help build up the scientific basis for addressing directly the concerns for seafood safety and human health. It was suggested that organic linkages between the proposed project and WESTPAC/HAB be identified and facilitated, particularly in the study of toxic organisms and toxins of microalgae.

101 **The Sub-Commission adopted** the Project on Ensuring Seafood Safety from Toxic Marine Organisms (IOC/SC-WESTPAC-VIII/12.3).

## 7. GUIDELINE FOR THE ESTABLISHMENT OF WESTPAC WORKING GROUPS

102 Mr Zhu briefed the session on the Guidelines for the Establishment of WESTPAC Working Groups (Document IOC/SC-WESTPAC-VIII/13), and stressed the need for the Sub-Commission to establish a series of working groups with life time of about four years or less, with mandates for deliberation on specifically focused scientific topics, societal concerns largely requiring marine scientific inputs and/or other international “hot-spot” issues. The groups are expected to hold up to three meetings over four years to fulfil their terms of reference with outcomes of a publication for the primary scientific literature or a project proposal, together with a detailed implementation plan to be carried out within the framework of the Sub-Commission.

103 He further explained that the difference of a proposed WESTPAC Working Group from a WESTPAC Project could be couched in terms of the implementation method, life time and major outcomes. A WESTPAC Project will be implemented normally with life time more than four years in many forms such as workshops, trainings, cruises, and the exchange of visits, while a Working Group will conduct their work only through annual meetings with outcomes of publication(s), regional project proposal(s) with detailed implementation plan(s), or concrete action plan(s). In his view, the future activity of the Sub-Commission will mainly take on two forms: projects/programmes and working groups.

104 **The Sub-Commission expressed its satisfaction** to WESTPAC Secretariat for developing this initiative in order to build WESTPAC as a unique regional platform for advancing marine scientific knowledge, and **adopted** [Recommendation SC-WESTPAC-VIII.3](#) on the establishment of the working groups, which contains the guidelines as its annex.

105 **The Sub-Commission further encouraged** all Member States to widely distribute this information and **call for** proposals from their leading scientists accordingly.

## 8. REVIEW AND ADOPTION OF THE PROPOSED WESTPAC WORKING GROUPS

106 The Draft Guidelines for the Establishment of WESTPAC Working Groups were distributed to all Member States three months before the Session for New Working Group Proposal. Two proposals for WESTPAC Working Groups have been submitted to WESTPAC Secretariat, respectively, on Asian Dust and its Impact on Ocean Ecosystem in the Western Pacific (WESTPAC-ADOES), and Regular Process for Global Reporting and Assessment of the State of the Marine Environment (GRAME).



- 107 Professor Yasuwo Fukuyo, on behalf of WESTPAC Advisory Group, briefly introduced the review process and suggested that the Sub-Commission adopt the two working groups after consideration. The proponents were invited to brief the Session on their proposals.
- 108 Dr Huiwang Gao, Ocean University of China, informed the Session that the objectives of the group are to improve the understanding of the deposition flux and bioavailability of Asian dust, and its impact on biogeochemical processes and productivity of marine ecosystem in the Western Pacific, in view of the recent growing occurrence of dust storm by human activity and its impact upon ocean biogeochemical cycling and ecosystem, and marine primary productivity. Two specific scientific topics will be targeted: impacts of Asian dust on biogeochemistry and productivity in marine ecosystem, and transport path of Asian dust and its deposition flux to the Western Pacific.
- 109 This proposal was welcomed particularly for its scientific importance due to the influence of dust storm on human health and climate, as well as ocean ecosystems.
- 110 Dr Wang Juying, National Ocean Environmental Monitoring Centre, China, introduced her proposal by stressing the need to establish a working group to promote the implementation in the region of the Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including socio-economic aspects, which are expected to be approved in the UN General Assembly in 2010. She explained that the proposed working group should only function in its advisory capacity to the Sub-Commission, with its major objectives to facilitate and advise on the development of GRAME in the WESTPAC region. The group is expected to come up with a proposed WESTPAC Regional GRAME Strategy 2010–2015, including a concrete action plan, and a series of reports on GRAME's progress and achievements.
- 111 **The Sub-Commission decided** to establish a Working Group on Asian Dust and its Impact on Ocean Ecosystem in the western Pacific, and a Working Group on Regular Process for Global Reporting and Assessment of the State of the Marine Environment.

## 9. CO-OPERATION WITH OTHER ORGANIZATIONS

- 112 Dr Zhanhai Zhang introduced this agenda item, inviting the representatives of the regional entities to speak on cooperation with WESTPAC.

### 9.1 CENSUS OF MARINE LIFE

- 113 Dr Ian Poiner of the Australian Institute of Marine Science (AIMS) and Chair of the International Scientific Steering Committee of the Census of Marine Life (CoML) presented on the CoML, the Ocean Biogeographic Information System (OBIS), and areas of collaboration with IOC WESTPAC. The CoML is a ten-year international research programme to assess and explain the diversity, distribution, and abundance of marine life in the global oceans – past, present, and future. It has developed OBIS as its data management infrastructure, which is based at Rutgers University in the U.S. OBIS is a web-based portal for bio-geographic data on marine species and their distribution and abundance, which operates at national, regional, and international levels. OBIS currently contains 800 datasets providing 27.5 million distribution records, covering 122,000 taxa (147,000 names). OBIS is the largest marine component of the Global Biodiversity Information Facility (GBIF) and is a programme of the IOC/IODE since 2009. The IOC has established a trust fund for the long-term support of OBIS, and contributions of WESTPAC to this trust fund would help to ensure OBIS sustainability.
- 114 The OBIS portal, which provides open access to marine biodiversity data and analytical tools, facilitates data discovery and exploration, allows the integration of data across marine themes (e.g., regions, habitats, taxa), and enables data capture for re-use. This function has application for the management of natural resources through access to data, shared tools and

standards, and preservation of data. Analysis of all records in OBIS helps to identify unknowns and gaps in knowledge and facilitates priority setting.

- 115 Participation in OBIS can benefit WESTPAC by repatriating data that can facilitate reporting to the Convention on Biological Diversity (CBD). It can help WESTPAC in the preparation of products such as species lists, maps, and predictions based on combined data. Participation in OBIS can also help to place WESTPAC biodiversity information in the international scientific context, such as by adherence to standards and by access to additional sources of data in the region. OBIS would benefit from WESTPAC participation by the contribution of new national and regional datasets. WESTPAC can also help improve OBIS by providing feedback on quality, demonstrating OBIS usefulness, and assisting in tool development.

## 9.2 UNDP/GEF YELLOW SEA LARGE MARINE ECOSYSTEM

- 116 On behalf of the UNDP/GEF Yellow Sea Project and Mr Yihang Jiang, Project Manager, Mr Isao Endo congratulated WESTPAC on its successful implementation of the activities that produced a number of significant achievements during the inter-sessional period. He noted that these achievements became possible with the substantial efforts made by member countries, the excellent leadership of the Chair, and the hard work of WESTPAC Secretariat.

- 117 Mr Endo then thanked WESTPAC for its strong support and co-operation with the Project. He mentioned that the Project greatly benefited from scientific outputs produced by WESTPAC to address various environmental issues such as the nutrient inputs to the marine environment and the water circulation and climate change impacts on the ocean dynamics.

- 118 Mr Endo informed the meeting that the Project successfully completed all the activities planned for its first phase and that the Strategic Action Programme (SAP), one of the most important outputs of the Project, was prepared and endorsed by its participating countries. The Project entered a new stage of implementing the SAP, taking the science-driven and ecosystem-based approach to manage the marine environment in the Yellow Sea. He thanked the participating countries that were also the members of WESTPAC for their dedication and contribution to the Project.

- 119 Hoping that the co-operation between WESTPAC and the Project would be further strengthened, Mr Endo suggested the following three areas for possible future co-operation: (i) YSLME Commission; (ii) scientific and technical inputs; and (iii) joint activities. For the joint activities, he mentioned specific activities, including the assessment of environmental status and trends and the application of new technologies for marine environment monitoring. Mr Endo told that if the session agreed, the Project Management Office would like to work closely with WESTPAC Secretariat to jointly prepare a strategic programme for cooperation jointly.

- 120 Mr Zhu expressed his hope to explore the possibility of developing a strategic programme for cooperation with YSLME.

## 9.3 GEF/UNDP/UNOPS PARTNERSHIPS IN ENVIRONMENTAL MANAGEMENT FOR THE SEAS OF EAST ASIA (PEMSEA)

- 121 According to Ms Ingrid Narcise, PEMSEA Country Programme Manager, the Partnerships in Environmental Management for the Seas of East Asia (PEMSEA) is currently on a passage, moving from a project-based operating arrangement to a self-sustaining international organization focused on coastal and ocean management in the Seas of East Asia by virtue of the signing of the Agreement Recognizing the International Legal Personality of PEMSEA by Ministers of 8 PEMSEA Country Partners on 26 November 2009. As the first step, PEMSEA is presently undertaking an assessment of progress on SDS-SEA implementation, which will highlight Partners' progress, achievements and challenges in SDS-SEA

implementation, relative to selected performance indicators for coastal and marine governance and sustainable development of coastal and marine areas and resources. The assessment report will be tabled at the 3rd EAS Partnership Council Meeting, which will be held in Hulunbuir, Inner Mongolia, PR China from 26 to 30 July 2010. The assessment of progress represents the initial step to preparing a 5-year implementation plan, which will entail joint planning among Partners. A concept paper on strengthening collaborative planning among PEMSEA Partners for the implementation of the SDS-SEA will be tabled at the 3rd EAS Partnership Council Meeting. WESTPAC, as one of the non-Country Partners which has sound scientific expertise, is invited to provide inputs and views on the initial assessment of progress and the future Joint Planning among Partners.

122 PEMSEA believes that through a Joint Planning process, all Partners will realize benefits through improved collaboration and cost-effective use of resources and available skills in attaining the objectives and targets of the SDS-SEA as well as those of the Partner organizations. WESTPAC and PEMSEA have cooperated in several activities, including the participation of 17 WESTPAC representatives in the East Asian Seas Congress 2009 in Manila, Philippines, and convening of a WESTPAC organized Special Meeting during the EAS Congress, entitled, "Monsoon Onset Monitoring and its Social and Ecosystem Impacts". Some of the possible areas of future cooperation between WESTPAC and PEMSEA are:

- Collaboration between WESTPAC's Regional Network of Training and Research Centers and PEMSEA's Network of ICM Learning Centers to strengthen capacities of local governments, universities and other stakeholders in coastal and ocean management
- Capacity building in oil spill and HNS spill preparedness and response
- Co-convening workshops during the EAS Congress 2012 in Republic of Korea.

123 Mr Zhu considered the co-sponsoring of a working group on science for integrated coastal management with PEMSEA as a potential area of collaboration.

#### 9.4 UNEP/NORTH WEST PACIFIC ACTION PLAN

124 Mr Xiaodong Zhong, Deputy Coordinator, NOWPAP, briefed the meeting that NOWPAP was established in 1994 by the People's Republic of China, Japan, the Republic of Korea and the Russian Federation as an integral part of the UNEP Regional Seas Programme with activities regarding oil and hazardous and noxious substances spill response and preparedness, marine and coastal monitoring using remote sensing technology, harmful algal blooms, atmospheric and river and direct input of contaminants, integrated coastal and river basin management, marine biodiversity and invasive species. He highlighted the close cooperation with WESTPAC in the past on remote sensing training workshops, regional ocean colour algorithm, participation in the intergovernmental meetings (IGM) and the routine exchange of information. He expressed the hope that stronger partnership with WESTPAC could be developed particularly in terms of mutual involvement in each other's training programmes and workshops and data and information sharing in such areas as remote sensing data analysis, HAB, marine non-indigenous species, medium strategy and priority plan.

125 Mr Zhu invited UNEP/NOWPAP to join the newly-adopted WESTPAC Working Group on GRAME. This invitation is also applicable to other interested organizations and programmes operating in the region.

## 10. WESTPAC PROGRAMME AND BUDGET FOR MAY 2010–MAY 2012

- 126 Mr Zhu made a presentation on the Draft WESTPAC Programme and Budget for May 2010–May 2012, referring to the document IOC/SC-WESTPAC-VIII/15. This draft has been prepared based on the discussions pertaining to the respective agenda items at the present Session and the inputs from project leaders.
- 127 **The Sub-Commission noted with appreciation** the efforts made by WESTPAC Secretariat particularly in resource mobilization since the last session of the Sub-Commission and the preparation of the draft programme and budget for May 2010–May 2012.
- 128 **The Sub-Commission adopted** [Recommendation SC-WESTPAC-VIII.4](#) concerning WESTPAC Programme and Budget for May 2010–May 2012.

## 11. OTHER MATTERS

- 129 Dr Woong-Seo Kim, Korea Ocean Research and Development Institute, Republic of Korea, presented an overview of EXPO 2012, Yeosu, RO Korea, 12 May–12 August 2012. The overarching theme of the EXPO is the Living Ocean and Coast: Diversity of Resources and Sustainable Activities. Dr Kim stressed that EXPO 2012 welcomes all the Member States of WESTPAC and international organizations related to ocean and marine environment.
- 130 **The Sub-Commission expressed its appreciation** for the detailed information on EXPO 2012 in the Republic of Korea.
- 131 Delegate of Indonesia expressed the view of his country pertaining to the transfer of IOC Headquarters to Portugal.
- 132 **The Sub-Commission reached an agreement** that the matter regarding the transfer of IOC Headquarters be considered in other bilateral and multilateral platforms, bearing in mind the opinions expressed by the Delegate of Indonesia.

## 12. ELECTIONS

- 133 The Chair invited nominations for the Chair, the First and Second Vice-Chairs, in that order, noting that officers can serve for two terms. The delegate of Thailand proposed Dr Zhanhai Zhang from China for the post of Chair. The nomination was seconded by the delegates from Indonesia and Malaysia and unanimously supported by the Sub-Commission. Dr Zhanhai Zhang was thus duly **elected** by acclamation.
- 134 The delegate from Indonesia proposed Professor Yasuwo Fukuyo from Japan and Professor Nor Aieni Binti Hj Mokhtar from Malaysia to be the First Vice-Chair and the Second Vice-Chair respectively. The nomination was seconded by the delegates from the Republic of Korea, Thailand, China and Vietnam, and unanimously supported by the Sub-Commission. Professor Yasuwo Fukuyo and Professor Nor Aieni Binti Hj Mokhtar were thus duly **elected** by acclamation.
- 135 Dr Zhanhai Zhang thanked the delegates for the trust and support placed on him, and expected to continue working closely with the Vice-Chairs and WESTPAC Secretariat for securing further success with the Sub-Commission. Professor Yasuwo Fukuyo expressed his readiness to do his best, together with the countries and WESTPAC Secretariat, to achieve a better future for WESTPAC. Professor Nor Aieni Binti Hj Mokhtar stated that she would get together with her colleagues from the Member States and work harder to contribute to marine scientific advancement in the region.

### 13. DATE AND PLACE OF THE NEXT SESSION

136 The delegate of the Republic of Korea conveyed to the Session the offer of her country to host the next session, subject to formal confirmation of the Government of the Republic of Korea.

137 **The Sub-Commission accepted with appreciation** the offer by the Government of the Republic of Korea to host the Ninth Session in the second quarter of 2012, subject to the final endorsement of the relevant authorities.

138 In view of the above, **the Sub-Commission adopted** [Recommendation SC-WESTPAC-VIII.5](#) on date and place of the next session.

### 14. ADOPTION OF REPORT AND RECOMMENDATIONS

139 Dr Zhanhai Zhang called on the delegates to review paragraph by paragraph the draft summary report, taking into account the comments and recommendations made during the Session.

140 **The Sub-Commission adopted** the summary report and the recommendations contained therein, which incorporated the amendments accepted by the Sub-Commission.

### 15. CLOSURE

141 On behalf of all the participants, the Sub-Commission officers expressed thanks once again to the Local Organizing Committee (LOC) for its excellent arrangements to ensure successful conduct of the Session, and presented LOC's representatives with tokens of appreciation. The Sub-Commission's officers, Technical Secretary for the Session and some delegates highlighted the recent achievements made by WESTPAC particularly in fostering regional oceanographic collaboration to address issues affecting sustainable coastal and marine development. It was stressed that WESTPAC revitalization strategy was implemented with on-the-ground results in galvanizing multilateral cooperation in marine science, service and capacity development in the region. This has been shown not just by the programme framework and operational mechanisms developed by the Sub-Commission, but more importantly, by the substantial on-going WESTPAC project progress in undertaking multilateral collaborative field activities and their societal impacts.

142 The effectiveness of the newly established Advisory Group in providing technical inputs and thus paving the way for the smooth deliberation of the Session was noted with gratitude. The increased commitments of Member States and the dynamic efforts for resource mobilization exerted by WESTPAC Secretariat staff and their passion to serve WESTPAC's interests are considered among key factors behind WESTPAC's recent achievements. Confidence was expressed in securing further success for WESTPAC upon implementing the recommendations made by the Session and removing identified barriers in WESTPAC development.

143 Dr Zhanhai Zhang declared the Session closed at 11:30 on Thursday, 13 May 2010.

ANNEX I

**AGENDA**

**1. OPENING**

- 1.1 OPENING REMARKS
- 1.2 LAUNCHING CEREMONY FOR INAGOOS CRUISES

**2. ADMINISTRATION**

- 2.1 ADOPTION OF THE AGENDA
- 2.2 DESIGNATION OF RAPPORTEUR FOR THE SESSION
- 2.3 CONDUCT OF THE SESSION

**3. REPORT ON INTERSESSIONAL ACTIVITIES**

- 3.1 REPORT ON INTERSESSIONAL ACTIVITIES
  - 3.1.1 Statement of the Chairperson
  - 3.1.2 Report by the Secretariat on Intersessional Activities and Budget Overview
  - 3.1.3 Operation of IOC Regional Secretariat for WESTPAC
- 3.2 RECENT DEVELOPMENTS WITHIN IOC, UNESCO RELEVANT TO WESTPAC

**4. POLICY ISSUES**

- 4.1 CONTRIBUTION OF SUB-COMMISSION TO THE 50TH ANNIVERSARY OF IOC
- 4.2 WESTPAC OCEAN RESEARCH PRIORITY PLAN
- 4.3 PROGRESS ON THE PREPARATIONS FOR THE EIGHTH WESTPAC INTERNATIONAL SYMPOSIUM IN 2011

**5. REVIEW AND EVALUATION OF REGIONAL PROGRAMMES AND PROJECTS FOR MAY 2008 – MAY 2010**

- 5.1 MARINE SCIENCE AND APPLICATIONS
  - Harmful Algal Bloom
  - Ocean Remote Sensing
  - Response of Marine Hazards to Climate Change
  - Fluvial Sediments to the South China Sea
  - Marine and Coastal Biodiversity and its Management
  - Coral Reef under Climate and Anthropogenic Perturbations
- 5.2 OCEAN OBSERVATIONS AND SERVICES
  - North East Asian Regional-GOOS (NEAR-GOOS)
  - South East Asian Regional-GOOS (SEAGOOS)
  - Indonesian GOOS (INAGOOS)
  - Marine Hazards Forecasting and Mitigation in the Western Pacific
  - International Bathymetric Chart of the Western Pacific (IBCWP)
  - Ocean Data & Information Network for the Western Pacific (ODINWESTPAC)

**5.3 CAPACITY BUILDING AND PUBLIC AWARENESS**

- UNESCO/IOC Regional Network of Training and Research Centres on Oceanography in the Western Pacific
- Enhancing the Capability on Oil Spill Response and the Restoration of Marine Ecosystems
- E-bulletin

**6. REVIEW AND APPROVAL OF NEW PROJECT PROPOSALS**

**7. GUIDELINE FOR THE ESTABLISHMENT OF WESTPAC WORKING GROUPS**

**8. REVIEW AND ADOPTION OF PROPOSED WESTPAC WORKING GROUPS AND THEIR TERMS OF REFERENCE**

**9. COOPERATION WITH OTHER ORGANIZATIONS**

**10. WESTPAC WORKPLAN AND BUDGET FOR MAY 2010–MAY 2012**

**11. OTHER MATTERS**

**12. ELECTIONS**

**13. DATE AND PLACE OF THE NEXT SESSION**

**14. ADOPTION OF SUMMARY REPORT AND RECOMMENDATIONS**

**15. CLOSURE**

ANNEX II

**ADOPTED RECOMMENDATIONS**

<a href="#"><u>Recommendation SC-WESTPAC-VIII.1</u></a>	WESTPAC INTERNATIONAL SCIENTIFIC SYMPOSIUM
<a href="#"><u>Recommendation SC-WESTPAC-VIII.2</u></a>	UNESCO/IOC REGIONAL NETWORK OF TRAINING AND RESEARCH CENTERS ON OCEANOGRAPHY
<a href="#"><u>Recommendation SC-WESTPAC-VIII.3</u></a>	WESTPAC WORKING GROUPS
<a href="#"><u>Recommendation SC-WESTPAC-VIII.4</u></a>	WESTPAC PROGRAMME AND BUDGET FOR MAY 2010- MAY 2012
<a href="#"><u>Recommendation SC-WESTPAC-VIII.5</u></a>	DATE AND PLACE OF THE NEXT SESSION



Recommendation SC-WESTPAC-VIII.1

**WESTPAC INTERNATIONAL SCIENTIFIC SYMPOSIUM**

The IOC Sub-Commission for the Western Pacific,

**Recalling** the decision of its First Session that a major multi-disciplinary symposium should become a principal intersessional activity of the Sub-Commission,

**Further recalling** that WESTPAC International Scientific Symposium is the only scientific series to enhance exchange of marine scientific knowledge in the region,

**Having reviewed** the outputs and results of the previous symposia, particularly the Seventh WESTPAC International Scientific Symposium on the Natural Hazards and Changing Marine Environment in the Western Pacific, held in Kota Kinabalu, Sabah, Malaysia, 21–25 May 2008,

**Expressing its great appreciation** to the Government of Malaysia, through its National Oceanography Directorate, Ministry of Science, Technology and Innovation (MOSTI) for having hosted the Symposium,

**Having formulated** WESTPAC Programme and Budget for May 2010–May 2012,

**Bearing in mind** the need for presentation and exchange of scientific results in an interdisciplinary forum,

**Appreciates** the generous offer of the Government of Republic of Korea to host the next Symposium;

**Decides** that the Eighth WESTPAC International Scientific Symposium be organized in March 2011, Pusan, Republic of Korea;

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

**Encourages** all Member States for active participation and contribution to ensure the success of the Symposium;

**Decides** to establish an international scientific steering committee to provide guidance in the formulation of the Symposium Programme, including the scope, contents and structure, under the chairpersonship of the Second Vice-chairperson of the Sub-Commission.

Recommendation SC-WESTPAC-VIII.2

**UNESCO/IOC REGIONAL NETWORK OF  
TRAINING AND RESEARCH CENTERS ON OCEANOGRAPHY**

The IOC Sub-Commission for the Western Pacific,

**Recognizing** the urgent need of Member States to provide high quality training in specialized fields of oceanography in the WESTPAC region,

**Bearing in mind** the IOC Principles and Strategy for Capacity Building adopted at the Twenty-third Session of its Assembly in 2005,

**Recalling** that the initiative of “UNESCO/IOC Regional Network of Training and Research Centers on Oceanography”, together with corresponding Guideline and Procedure was adopted by the Sub-Commission at its Seventh Intergovernmental Session, 26–29 May 2008 and subsequently endorsed by the IOC at the Forty-first Session of its Executive Council, 24 June–1 July 2008,

**Noting** that the regional network will be formed through the establishment of regional training and research centres within the national oceanographic Institutes and universities which are willing to provide regular training and research opportunities to the trainees from all WESTPAC Member States on a free-of-charge basis,

**Appreciates** the First Institute of Oceanography, State Oceanic Administration of China for the submission of a proposal on the establishment of a Regional Training and Research Center on Ocean Dynamics and Climate;

**Notes with the satisfaction** the approval by IOC has been made on the establishment of the Center;

**Encourages** Member States to take active part in the activities planned for the Center once it becomes operational;

**Invites** Member States to encourage their respective national oceanographic institutes and universities to actively participate in the Regional Network;

**Requests** the Executive Secretary of IOC to take necessary actions to further promote this regional capacity building activity.

### Recommendation SC-WESTPAC-VIII.3

#### **WESTPAC WORKING GROUPS**

The IOC Sub-Commission for the Western Pacific,

**Recognizing** that the Sub-Commission has been instrumental in fostering regional cooperation through the development, coordination and implementation of the international/regional programmes on marine scientific research, observations and services and capacity building in the region,

**Noting with appreciation** the substantive progress made to revitalize the Sub-Commission by examining and correcting the present deficiencies, improving communications and interactions and initiating regionally-specific, country driven programmes in alignment with IOC High Level Objectives,

**Further recognizing** the need from Member States to establish a mechanism for attracting the leading scientists to deliberate on focused scientific topics, marine-related societal concerns and other international emerging issues,

**Decides** to establish WESTPAC Working Groups as the mechanism to deal with the above issues, with the Guidelines for the Establishment of WESTPAC Working Groups annexed to the Recommendation;

**Requests** Member States to widely disseminate this information and encourage their scientists to take part in this initiative.

Annex to Recommendation SC-WESTPAC-VIII.3

**GUIDELINES FOR THE ESTABLISHMENT OF WESTPAC WORKING GROUPS**

1. To further shape itself as one unique regional platform for sharing marine scientific knowledge and advancing marine scientific research in order to assist Member States in the study, protection and management of their coasts and oceans, WESTPAC would form, every two years, new working groups with life time of four years or less, aiming to attract leading scientists in the region to deliberate on specifically focused scientific topics, marine-related societal concerns and other international emerging issues which largely require marine scientific inputs. The groups are expected to hold up to one meeting per year over their life time to fulfill their terms of reference and develop a publication for the primary scientific literature, or a project proposal together with a detailed implementation plan, or a concrete action plan to be carried out within the framework of WESTPAC.

2. WESTPAC considers the proposals for new working groups every two years at its session, but at most three new groups can be funded after being adopted at each session, subject to WESTPAC's extra budgetary situation. The proposals shall be made by individual scientists and submitted, through his/her national focal point(s) of IOC, to the WESTPAC Secretariat at least six months prior to each WESTPAC session. Each proposal should contain the background for the focused topic and rationale for the establishment of WESTPAC working group, Terms of Reference for the group, and recommended members in the group, as well as expected outcomes from this working group.

Background

3. The proposal should provide a clear background on: (i) why the proposed topic is important to the society?; (ii) why the working group need to be established within WESTPAC framework and how the work of the proposed working group will contribute to the IOC and its WESTPAC's High Level Objectives and Strategy?; (iii) what preliminary scientific work has been done at global/regional level, and the relevance and link of the working group with those global/regional programmes and activities.

Terms of Reference

4. A set of terms of reference should be proposed to specify the main responsibilities of the working group. The terms of reference should be achievable within a four-year even less period, normally using a couple of meetings. It is possible that working groups could plan other activities than WESTPAC-sponsored meetings if additional funding could be sought from other sources. Among others, working group must provide written reports to WESTPAC each year, particularly upon the request of WESTPAC Secretariat in advance of WESTPAC sessions for evaluation by the WESTPAC on whether it merit continuation.

Working Group Members

5. Normally the proponent of working group should be the chair of the working group if it is approved and established. The proposed members of the working group should be listed and a few key words on their expertise should be provided to ensure the proposed Terms of Reference could be met. The working group shall consist of no more than 10 full members and other associate members, taking into full consideration of geographic representation and expertise needed. The meetings of the working group shall be open to all member states of WESTPAC and self-funded scientists shall be welcomed as associate members. Due to budget restriction, WESTPAC is only able to provide USD 8,000-10,000 per meeting to support the travel of full members. To minimize the expenditure, working group is encouraged to arrange their meetings in conjunction with other meetings to share the cost, and the members should try to use alternative sources of funding for some or all of their travel if at all possible.

### Expected Outcomes/Product

6. The proposal should specify the outcomes expected from the working group's activities. For each product, information should be given about what form it will take, the timeline for completion. All written products and webpages of WESTPAC Working Groups should acknowledge not only the sponsorship of WESTPAC, but also financial support from other sources that provide funding for this activity.

### Recommendation SC-WESTPAC-VIII.4

#### **WESTPAC PROGRAMME AND BUDGET FOR MAY 2010–MAY 2012**

The IOC Sub-Commission for the Western Pacific,

**Noting** the reports of the Technical Secretary for IOC Sub-Commission for the Western Pacific on Interessional activities and the WESTPAC Programme and Budget, contained in Documents IOC/SC-WESTPAC-VIII/6, 7 and 15,

**Further noting** the presentation of the IOC Programme and Budget for 2010–2011, through the IOC Resolution XXV-14,

**Also noting** the Recommendation SC-WESTPAC-VII.4 in 2008 on WESTPAC Strategy and Program Structure (2008–2013) which, among others, presents the strategic priorities and structures of the programmes of WESTPAC in the context of IOC High-Level Objectives, and Medium-term Strategy (2008–2013),

**Acknowledging** the importance of the IOC Regional Secretariat for WESTPAC for the success of the programme implementation,

**Expressing its appreciation to** the Royal Thai Government's continuing support for the WESTPAC Secretariat,

**Decides** that the WESTPAC Programme and Budget for May 2010–May 2012 shall be aligned with the High-Level Objectives of the WESTPAC Strategy and the priority areas detailed within the Strategy;

**Adopts** the Draft WESTPAC Programme and Budget for May 2010–May 2012 given in the Annex to this Recommendation;

**Urges** Member States:

- (i) To support WESTPAC programmes which are considered at the Executive Council and Assembly of IOC,
- (ii) To participate in the implementation of the proposed Programme, continue and increase their support to WESTPAC and its Secretariat through direct and in-kind contributions,

**Requests** the IOC and other organizations co-operating with the Sub-Commission to allocate necessary resources and assist in obtaining extrabudgetary funds from governmental and donor agencies.

**Instructs** WESTPAC Secretariat to communicate with Member States on the results of the Forty-third Session of IOC Executive Council, together with an analysis of implications for WESTPAC Programmes.

**PROGRAMME AND BUDGET FOR MAY 2010–MAY 2012**

Project/Programme					Funding Required		Remark
	Activities	Objectives	Expected outputs	Date and place	IOC (Regular and Extrabudget)	Other sources (national or international)	
POLICY AND COORDINATION							
Regional Ocean Research Priority Plan	Development Workshops on Regional Ocean Research Priority Plan	To identify the most compelling issues in the key areas of interaction between the ocean and society and provide a framework for the marine research and observations in the future	Regional Ocean Research Priority Plan	October 2010 March 2011 March 2012	USD 18K	/	
8th WESTPAC International Scientific Symposium	1. International Scientific Steering Committee meeting	Discuss and finalize the detailed program for the 8 <sup>th</sup> WESTPAC Symposium	Symposium Programme	July 2010	USD 8K	/	
	2. organization for the 8th Symposium	Improve governance and promote regional cooperation through the advanced scientific knowledge sharing on the current status of Western Pacific	Proceedings And /or new proposals for WESTPAC	21-25 March 2011, Pusan, Rep. of Korea	USD 15K (from IOC Regular budget)	USD 150K	
Operation of WESTPAC Secretariat	Development, coordination and implementation of WESTPAC activities; Raising fund and provide secretariat service	Ensure the full operation of the Sub- Commission, and implementation of workplan	New activities developed, and workplan implemented, quality service provided	May 2010-May 2010	USD 355K (from IOC Regular budget)	USD 30K (DMCR)	
WESTPAC Working Group	1. Asian Dust and its Impact on Ocean Ecosystem in the Western Pacific (WESTPAC-ADOES)	To focus on impacts of Asian Dust on Biogeochemistry and Productivity in Marine Ecosystem and Transport Path of Asian Dust and its Deposition Flux to the Western Pacific	Publications and improved scientific and implement plan of SOLAS	Late 2010 Late 2011	USD 16K	/	
	2. Establishment of WESTPAC Global Reporting and Assessment of the State of the Marine Environment (GRAMÉ)	To promote substantially implementation of GRAMÉ and improve capacity building of member states in WESTPAC region	1. WESTPAC regional GRAMÉ Strategy 2010-2015 2. Series of reports on the “Progress of GRAMÉ and its achievements”	Late 2010 Late 2011	USD 16K	/	
MARINE SCIENCE AND APPLICATIONS							
Harmful Algae Bloom (WESTPAC-HAB)	1. WESTPAC-HAB strategic meeting	review current status of HAB occurrence and HAB science in the region, and identify the priority activities for WESTPAC-HAB	Status of HAB research in the region and list of priority activities of WESTPAC-HAB	August 2010	USD 3K	USD 20K (JSPS)	
	2. Development of WESTPAC-HAB	Analyze scientific information on HAB and develop awareness-raising materials for the	Work plan of outreach activities	September 2010	USD 7K	USD 10K (JSPS)	

Project/Programme					Funding Required		Remark
	Activities	Objectives	Expected outputs	Date and place	IOC (Regular and Extrabudget)	Other sources (national or international)	
	outreach activities	general public					
	3. Publication of these awareness-raising materials in English and indigenous language	raise awareness of general public on the HAB, its impact and countermeasures	Publication of awareness-raising materials	March 2012	USD 5K	USD 10K ( Univ.of Tokyo)	
Ensuring Seafood Safety from Toxic Marine Organisms	1. The First Project meeting	<ul style="list-style-type: none"><li>- To discuss and finalize project activity plan.</li><li>- To collect information from each country members on toxic organisms and poisoning episodes.</li><li>- To decide contents and methods to publish</li></ul>	Project implementation plan	September or November 2010 at Institute of Oceanography Vietnam	USD 15K	/	
	2. Participation to a workshop on HAB	To discuss on potential linkage between ongoing HAB and present projects		TBD	/	TBD	
	3. The Second Project meeting	1. To discuss and confirm progress and add necessary modification of the project, 2. To edit structure of report and pamphlets	1. Project progress report 2. Report on structure and content of pamphlet	TBD in conjunction with the WESTPAC Symposium	USD 10K	/	
	4. Publication of a pamphlet in English	To get awareness on natural biotoxins and toxic marine organisms	200 hard copies and 1000 CD/DVD	September, 2011	USD 5K	/	
	5. Open webpage on the project achievement in WESTPAC website	To get awareness on natural biotoxins and toxic marine organisms	Webpage	February 2012	USD 5K	/	
Remote Sensing for Integrated Coastal Area Management (WESTPAC-ORSP)	1. Review the remote sensing methods for coastal habitats and aquaculture facilities	To have a current status of mapping methods of coastal habitats, and identify common method to be used in some identified areas	Collection of information about mapping methods	December 2010	USD 10K	USD 5K (Univ.of Tokyo)	
	2. Analyze initial mapping results of coastal habitat and aquaculture facilities	Analyze the results generated from Remote Sensing and overcome problems encountered in mapping coastal habitats	Elaboration of mapping methods are expected	November 2011	USD 10K	USD 5K (Univ.of Tokyo)	
	3. Dissemination of mapping products generated from remote sensing on coastal habitat	Dissemination of research results for local people and policy makers	Remote Sensing Products on coastal habitat	May 2012	USD 10K	USD 5K (Univ.of Tokyo)	
Response of Marine	1. Second cruise	To measure the ocean condition and air-	Improve	July-August 2010	/	USD 650K	

Project/Programme					Funding Required		Remark
	Activities	Objectives	Expected outputs	Date and place	IOC (Regular and Extrabudget)	Other sources (national or international)	
Hazards to Climate Change (WESTPAC-Rose))		sea fluxes related with marine hazards	understanding of marine hazards in the Southern SCS			(FIO)	
	2. Third workshop	To change ideas on the evolution of marine hazards		November 2010	USD 10K	USD 5K (FIO)	
	3. Third cruise	To measure the ocean condition and air-sea fluxes related with marine hazards	Improve understanding of marine hazards in the Southern SCS and Northwest Pacific	June-July 2011	/	USD 850K (FIO)	
	4. Forth workshop	To change ideas on the evolution of marine hazards		November 2011	USD 10K	USD 5K (FIO)	
Fluvial Sediments to the South China Sea (WESTPAC-FluSed)	1. Fieldwork Rivers in Thailand	Collect surface sediments along the Chaophraya River	Identification of mineral and elemental contents of Chaophraya River sediments	October 2010	/	USD 10K (Tongji Univ.)	
	2. 3rd workshop hosted Philippines University, Manila	Exchange and communicate project approaches and scientific results, and discuss on further cooperation	Proceedings of oral and poster presentations, international publications	November 2010	USD 20K	USD 10K (Univ. of Philippines)  USD 10K (Tongji Univ.)	
	3. Research cruise Sunda Shelf, Southern South China Sea	Organize a CHIRP seismic cruise on the Sunda Shelf to collect shallow stratigraphy profiles of bottom sediments	Tracking the paleo- channel distribution during the last glacial time and understanding the sediment transport	May 2011	/	USD 30K (Tongji Univ.)  USD 30K (Univ. Malaysia Terengganu)	
	4. 4th workshop hosted by National University of Singapore	Exchange and communicate project approaches and scientific results, and discuss on further cooperation	Proceedings of oral and poster presentations, international publications	November 2011	USD 20K	USD 10K (National Univ. of Singapore)  USD 10K (Tongji Univ.)	
	5. Fieldwork Rivers in Philippines	Collect surface sediments along Palawan rivers	Identification of mineral and elemental contents of Palawan sediments	March 2012	/	USD 10K (Tongji University)	

Project/Programme					Funding Required		Remark
	Activities	Objectives	Expected outputs	Date and place	IOC (Regular and Extrabudget)	Other sources (national or international)	
Marine and Coastal Biodiversity and its Management (WESTPAC-MCBM)	1. Rapid Assessment Workshop on Marine Non-Indigenous Species in the Western Pacific Region	1. gather historical and current occurrence data on marine native, introduced, and cryptogenic species in each country. 2. share experiences and knowledge related to marine non-indigenous species issues and taxonomic identification in certain groups 3. establish research collaboration among scientists in the Western Pacific region.	1. List of marine non-indigenous species in the region. 2. Increased knowledge of taxonomic identification in certain groups of marine organisms	November 2010	USD 20K	USD 2K (DMCR and Chula Univ.)	
	2. Updating current status of marine non-indigenous species and publish posters and pamphlets related to marine biodiversity and effect of marine non-indigenous species	1. update the list of marine non-indigenous species in the WESTPAC region. 2. raise public awareness on the importance of marine biodiversity and impact of marine non-indigenous species on marine biodiversity.	1. Updated list of marine non-indigenous species in the region. 2. Publishing of posters and pamphlets related to marine biodiversity and marine non-indigenous species.	2011	USD 12K	USD 2K (DMCR and Chula)	
Coral Reef under Climate and Anthropogenic Perturbations (WESTPAC-CorReCAP)	1. First summer school on the "Impact of Sedimentary Dynamics and Biogeochemistry on Coral Reefs"	1. build capacity on the impacts of sediment on coral reefs for the WESTPAC member states; 2. Establish an international research network in the field of sedimentary dynamics on coral reefs; 3. Identify cooperative activities concerning impacts of sediment on coral reefs in the WESTPAC region;	Teaching materials on sedimentary dynamics on coral reefs	June 2010	USD 13K	USD 6K (ECNU)  USD 4K (Ramkham haeng Univ.)	
	2. Second workshop of IOC/WESTPAC-CorReCAP Project	1. discussion on the special issue of publication on coral reefs in the WESTPAC region, 2. Preparation of one synthesis document to assess the actual situation of coral reefs and to identify the hot topics of research in the region.	Workshop proceeding Synthesis report	20-24 June 2010	USD 6K	USD 6K (ECNU)	
DNA taxonomy and recruitment monitoring of the coral reef marine organisms	1. First Planning Meeting	1. discussion on the project activities and planning the implementation procedures 2. exchange of information on marine biodiversity in each participating country	Document on project activities and the implementation plan	February 2011 Rep. Of Korea (KORDI)	USD 10K		



Project/Programme					Funding Required		Remark
	Activities	Objectives	Expected outputs	Date and place	IOC (Regular and Extrabudget)	Other sources (national or international)	
	2. Second Planning Meeting	1. selection of the organism groups to investigate and the project target sites 2. establishment of the methods for investigation	List of the organisms for investigation and the study sites; Protocol for the study	April 2011 Indonesia	USD 10K		
	3. Field Sampling	Sampling the organisms for DNA taxonomy	List of organisms sampled	May - July 2011	/	USD 120K (Rep. of Korea)	
	4. Building inventory	Cataloguing the diversity of coral reef organisms reported in each country	Catalogue of coral reef organisms	August 2011 - January 2012	/	USD 90K (Rep. of Korea)	
	5. DNA barcoding	Analysis of DNA barcodes for the sampled organisms	DNA barcode of coral reef organisms	November 2011 - March 2012	/	USD 40K (Rep. of Korea)	
	6. DNA barcode chip making	Designing the species-specific primers and probes for use of DNA barcode chip	List of species-specific primers and probes	March 2012 - April 2012	/	USD 30K (Rep. of Korea)	
	7. DNA barcode workshop	1. Exchange of information on DNA taxonomy of studied organisms 2. Training the use of DNA barcode chip	Report on DNA taxonomy for some selected organisms	May. 2012 Philippines or other places	USD 10K		
	8. Field sampling on Recruitment Monitoring	Sampling the larvae and fries for recruitment monitoring	List of samples, locations, and time	May - September 2012	/	USD 90K (Rep. of Korea)	
	9. Recruitment analysis	Identification of species for the sampled larvae and fries using DNA barcode chip	Species list for the larvae and fries	October 2012	/	USD 30K (Rep. of Korea)	
	10. Recruitment Monitoring Workshop	1. Exchange of information on recruitment monitoring 2. Discussion on the monitoring protocol	Report on recruitment of coral reef organisms	November 2012 Malaysia or other places	USD 10K		
	11. Final Meeting and Reporting	1. Summary of the project products: DNA taxonomy and recruitment monitoring 2. Planning the next stage activities	Report on the project outputs; Plan on the second stage	December 2012 Rep. Of Korea or other places	USD 10K		
OCEAN OBSERVATIONS AND SERVICES							
North East Asian Regional-GOOS (NEAR-GOOS)	1. Workshop on new NEAR-GOOS products	improve oceanographic data products and services in the region	Identified new products to be developed;	March 2011, Busan, Korea	/	/	
	2. NEAR-GOOS pilot project on developing forecasting and reanalysis systems – planning meeting	develop operational forecasting products in NEARGOOS' area	Development plan for NEAR-GOOS forecasting system	March 2011, Busan, Korea	/	/	

Project/Programme					Funding Required		Remark
	Activities	Objectives	Expected outputs	Date and place	IOC (Regular and Extrabudget)	Other sources (national or international)	
	3. Training course on remote sensing data analysis (jointly with NOWPAP and PICES)	Enhance the utilization of remote sensing techniques for monitoring and assessment of marine and coastal environment of the IOC/WESTPAC member countries	capacity building	October 2011, Vladivostok, Russia	USD 10K	USD 20K	
	4. Status Report on the Northeast Asia Ocean Observing System	Assess the status of regional ocean observing system and identify the gap for the future improvement	Status Report		/	/	
South East Asian Regional-GOOS (SEAGOOS)	Monsoon Onset Monitoring over Andaman Sea and its Social and ecosystem impacts (MOMSEI)						
	• Summer school	To train the young generation scientists in region with the scientific focus on ocean-atmosphere interaction and climate dynamics with social & ecosystem applications		14-18 June 2010	/	USD 10K (FIO)	
	• Establishment of Project office	To coordinate the progress activities and enhance the outreach		September 2010	/	USD 5K (DMCR/FIO)	
	• Oceanographic survey and training in Andaman Sea	To understand the ocean response to monsoon forcing and collect necessary data for buoy deployment	Cruise report and data sets	November 2010	US\$ 10K (??)	USD 20K (DMCR/FIO)	
	• Annual meeting of MOMSEI	Review the annual progress and prepare the next year's working plan	Meeting report and final MOMSEI science plan	December 2010, Malaysia	US\$ 5K (IOC)	USD 10K (FIO)	
	• Summer school	To train the young generation scientists in region with the scientific focus on ocean-atmosphere interaction and climate dynamics with social & ecosystem applications		during summer period of 2011	/	USD 10K (FIO)	
	• Oceanographic Buoy deployed in Andaman Sea	To understand the ocean response to monsoon forcing and deploy the monitoring buoy		April 2011	/	USD 35K (DMCR/FIO)	
	• Annual meeting of MOMSEI	Review the annual progress and prepare the next year's working plan	Meeting report	2011	US\$ 5K (IOC)	USD 10K (FIO)	
	• Oceanographic Buoy service cruise in Andaman Sea	Buoy turnaround and oceanography survey	Cruise report and data sets	April 2012	US\$ 10K (IOC)	USD 25K (DMCR/FIO)	
	Ocean Forecast Demonstration System in the Southeast Asian Seas						
	<u>BlueLink:</u>						
	• The first workshop on Ocean Forecasting Demonstration	To discuss the technical issue on development of BlueLink in SEAGOOS and IOGOOS region including the procedure,		July 2010, Perth, Western Australia	/	USD 4K (IOC Perth)	Support 2 participants from

Project/Programme					Funding Required		Remark
	Activities	Objectives	Expected outputs	Date and place	IOC (Regular and Extrabudget)	Other sources (national or international)	
	Project for IOGOOS and SEAGOOS and Project Planning	flam work and work plan and cooperation between SEAGOOS and IOGOOS					SEAGOOS
	<ul style="list-style-type: none"> <li>The Second workshop on Ocean Forecasting Demonstration Project for IOGOOS and SEAGOOS</li> </ul>	To follow up the progress of the work and further development of project		2011	/	USD 4K (IOC Perth)	Support 2 participants from SEAGOOS
	<u>MASNUM (wave-tide circulation coupling model)</u>						
	<ul style="list-style-type: none"> <li>First Planning Meeting</li> </ul>	Develop implementation plan for Peninsular Malaysia Shelf To plan how to conduct workshop and whom to involve	Project Implementation Plan Workshop plan	June 2010, Malaysia	USD 10K	/	
	<ul style="list-style-type: none"> <li>Second Planning Meeting</li> </ul>	develop implementation plan for GOT	Project Implementation Plan Workshop plan	July 2010, Thailand	USD 10K	/	
	<ul style="list-style-type: none"> <li>First implementation modeling workshop</li> </ul>	introduce MASNUM wave-tide-circulation model	Capability to use MASNUM model	September 2010, Malaysia/China	/	/	
	<ul style="list-style-type: none"> <li>Second Implementation modeling workshop</li> </ul>	introduce MASNUM wave-tide-circulation model	Capability to use MASNUM model	November 2010, Thailand/China			
	<ul style="list-style-type: none"> <li>Modeling work for ocean forecast system</li> </ul>	Actual development of forecasting model for both Peninsular Malaysia shelf and GOT	Forecast model for the areas	December 2010, Malaysia/Thailand,	/	USD 50K from national sources	
	<ul style="list-style-type: none"> <li>Ocean Cruise (eastern coast peninsular Malaysia)</li> </ul>	collect oceanographic data to validate the model	Data collection	July/November 2011, Malaysia	/	USD 100K from national sources	
	<ul style="list-style-type: none"> <li>Ocean Cruise (Gulf of Thailand)</li> </ul>	.collect oceanographic data to validate the model	Data collection	August/December 2010, Thailand	/	USD 100K from national sources	
	<ul style="list-style-type: none"> <li>First result ocean modeling workshop</li> </ul>	Workshop to discuss modelling results	Understanding of model capability	May 2010, Malaysia/China	USD 10K	/	
	<ul style="list-style-type: none"> <li>Second Result ocean modeling workshop</li> </ul>	Workshop to discuss modelling results	Understanding of model capability	February 2011, Thailand/China	/	/	
	<ul style="list-style-type: none"> <li>Final evaluation workshop</li> </ul>			May 2011, China	/	/	

Project/Programme					Funding Required		Remark
	Activities	Objectives	Expected outputs	Date and place	IOC (Regular and Extrabudget)	Other sources (national or international)	
Ocean Data & Information Network for the Western Pacific (ODINWESTPAC)	1. Working Group meeting of ODINWESTPAC	identify the capacity building needs and develop the strategy and working plan for the project.	Identification of Capacity build requirement	September or October 2010	USD 10K WESTPAC IODE	USD 15K (Host Center)	
	2. Training course for technical personnel on ODINWESTPAC	Build the capacity on oceanographic Data and Information collecting, processing , QC/QA and metadata description, data products making and upload and download data and information from the web of ODINWESTPAC	Capacity improved	Autumn of 2010	USD 20K IODE WESTPAC	USD 15K Host Center	
	3. Collection of cruise summary reports in the region from IODE histories ROSCOP report and member states; development of the metadata bases documenting available data in the region.	To provide the information services of the ROSCOP	Cruise summary reports collected Metadata based developed	Start from April 2009 and continue	/	In kind by Member States IODE Secretary	
	4. Preparation of a directory of ocean and coastal observations, research and management projects&Vprogrammes implemented in the region	To provide the information of the cooperation projects of international and regional to the users in the region.	Directory prepared	Start from April 2009 and continue	/	In kind by Member States	
	5. Preparation of a directory of marine libraries and Ocean publications, a directory of research institutions, experts and regional e-repository of scientific publications published by WESTPAC experts in the region.	To provide the directory and all information services to the users of member states in the region.	Directories prepared	Start from April 2009 and continue	/	In kind by Member States	
	6. Collection of marine data and information from member states, regional cooperation project and international project;	Promote cooperation with other projects in the region and continue to operational collect more data and information and provide good services to the users	Relevant information collected	Start from April 2009 and continue	/	Host Center and Member States in kind	

Project/Programme					Funding Required		Remark
	Activities	Objectives	Expected outputs	Date and place	IOC (Regular and Extrabudget)	Other sources (national or international)	
	develop data products; enhance cooperation with NEAR-GOOS, NOWPAC, SEAGOOS etc. and provide Data Management Guides.						
	7. maintenance of the ODINWESTPAC website	provide good services in the region	Website well maintained	Start from April 2009 and continue	/	Host Center Member States	
	8. provision of Data Management Guides	Provide guidance on the Data Management	Guidelines provided	End of 2011	/	In kind by Host Center	
International Bathymetric Chart of the Western Pacific (IBCWP)	1. Fifth Session of the EB-IBCWP	Review the progress made and provide solution to the existing problems which were not settled in the last session;	agreements reached on data sharing and services; consensus made on the annotation of the map sheets; capacity building needs discussed;	Late 2010 or early 2011	USD 9K	/	
	2. Mapping and compilation meeting for the technician of IBCWP	Submit the digital copy of all the sheets to Editorial Board of IBCWP for approval	All sheets ready for submission	Mid of 2011	USD 35K	/	
CAPACITY DEVELOPMENT AND PUBLIC AWARENESS							
UNESCO/IOC Regional Network of Training and Research Center	1. Capacity building (Training Course)	Improve the regional capacity on Ocean wave and circulation models		Late 2010	/	USD 30K (FIO)	
	2. Capacity building (Training Course)	Improve the regional capacity on Ocean Dynamic		Late 2011	/	USD 30K (FIO)	
Development of IOC/WESTPAC E-Bulletin	Development of IOC/WESTPAC E-Bulletin	Raising awareness on the activities of IOC/WESTPAC and advocate the latest scientific knowledge	Several issues developed and widely distributed	May 2010-May 2012	USD 10K	/	
<b>Subtotal</b>					<b>USD 823K *</b>	<b>USD 2,778K</b>	
<b>Total</b>					<b>USD 3,601 K*</b>		

\*only USD 370K secured from IOC Regular Budget, including one P4 post and one general service staff, with USD 3,231K to be raised from different sources

Recommendation SC-WESTPAC-VIII.5

**DATE AND PLACE OF THE NEXT SESSION**

The IOC Sub-Commission for the Western Pacific,

**Bearing in mind** the need for a sufficient period of time between sessions of Sub-Commission to allow a reasonable implementation of its activities,

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

**Further recalling** the Recommendation SC-WESTPAC-VII.6, adopted at the Seventh Session of the Sub-Commission in 2008 which decides to reschedule the period between sessions from three years to two years beginning with the close of WESTPAC-VII, to be in phase with IOC planning cycles. Further, WESTPAC Sessions will be scheduled for the first quarter of the year so its decisions, recommendations, and reports can be forwarded to the IOC Executive Secretary in time for review and consideration by the Executive Council,

**Appreciates** the Government of Republic of Indonesia for hosting the Eighth Session on 10–13 May 2010, Bali, Indonesia and excellent arrangements made for the Session;

**Accepts with appreciation** the offer by the Government of Republic of Korea to host the Ninth Session in the second quarter of 2012, subject to the final endorsement of the relevant authorities.

ANNEX III

**OPENING REMARKS**

**Opening Remarks of Dr Gellwynn Jusuf  
Chair of Agency for Marine and Fisheries Research  
Ministry of Marine Affairs and Fisheries, Republic of Indonesia**

His Excellency Fadel Muhammad, Minister of Marine Affairs and Fisheries;  
Intergovernmental Oceanographic Commission Executive Secretary, Madame Watson-Wright;  
Representatives of Member States of IOC-UNESCO;  
Distinguished Scientists, policy-makers, invited guests;  
Ladies and Gentlemen,

Good morning!

A heartfelt welcomes to all of you to the Eighth Intergovernmental Session of the IOC Sub-Commission for the Western Pacific (WESTPAC VIII), in this a paradise island.

It is a great pleasure for us to host this event and wish IOC MANY HAPPY RETURNS on its 50th Anniversary and the celebration.

I am glad to report that Indonesia, particularly the entire marine and ocean society have witnessed increasing awareness and appreciation towards our oceans.

In the recent years, Indonesia has returned to global map through various marine and ocean events and the pinnacle was exactly last year when we organized the 1st World Ocean Conference attended by almost all ocean nations and subsequently hosted the 1st summit among Coral Triangle Nations and partners.

We bond and bridge the world with our oceans and our researchers and scientists have been in the spotlights of climate change discussions globally; for instance in the last UNFCCC COP 15 in Copenhagen, Denmark, a parallel event called the OCEANS DAY was established. We are glad this bond is continued and strengthened again here in Bali.

We certainly hope all oceans nations can share the leaderships and wisdom towards a more meaningful scientific contribution that are concrete and fruitful for the betterment of our future generations.

Excellency Minister Fadel,

Today, we are hosting over 100 delegates from 13 Member States, and four Intergovernmental organizations. We have worked out the meeting agenda and programmes to deliver maximum result from the discussions and meeting ambience to foster dialogues.

I wish to emphasize a special sequence and session this morning.

We are soon connected to a number of research vessels including *Okeanoss Explorer*, and Chief Scientist of NOAA who is preparing the cruise for the forthcoming expedition in our deep water.

Our distinguished Minister Fadel will lead a dialogue simultaneously with (3) three Baruna Jaya Vessels in 3 (three) different sites.

These vessels will set sail to explore Arafura and Timor-Sea Ecosystem Action (ATSEA) programme; Java-Upwelling Variation (JUV) in the Indian Ocean and, Indonesia-US Exploration

Sangihe-Talaud (INDEX SATAL) 2010 partnering with Australia, Timor-Leste, China and the United States of America respectively.

Ladies and Gentlemen, please join me in thanking the committee and supports of various research institutions in Indonesia namely LIPI, BPPT, BAKOSURTANAL, LAPAN, BMKG, DISHIDROS, KEMHAN, KEMDIKNAS, PPGL ESDM, and universities. Without them this event would not be possible.

I look forward to open and constructive discussions and hope we have not just captured your brilliant inputs but we capture your smile too as we will take a group photo at the end of the teleconference.

On a more leisure scale, I am happy to inform you that our colleague from LIPI will host a dinner presentation for all of us. And if time permits we would be happy to assist any social events which you should not miss while in Bali. Thank you!

**Opening Remarks of Dr Wendy Watson-Wright  
Executive Secretary of IOC and Assistant Director General of UNESCO**

Your Excellency, Mr. Fadel Muhammad, Ministry of Marine Affairs and Fisheries;  
Dr. Zhanhai Zhang, Chair of the IOC Sub-Commission for the Western Pacific;  
Dr. Gellwynn Jusuf, Chair of the Agency for Marine and Fisheries Research;  
Distinguished delegates;  
Ladies and Gentlemen,

Good Morning! Selamat Pagi! It gives me great pleasure to meet with you, and it is an honour to deliver opening remarks at this 8th Session of the IOC Sub-Commission for the Western Pacific, the first WESTPAC session I am attending. On behalf of the IOC and Director-General of UNESCO, I would like to thank the Government of Indonesia for hosting this session and for all the excellent arrangement made for us here in the beautiful place of Bali.

Though it has been only a short while since I took office late last year, I have heard that great change has been taking place over the recent years for this Sub-Commission as a result of the joint revitalization effort from all member states and WESTPAC Secretariat. While congratulating you on the achievements made, I would like to express my expectation that the present momentum of WESTPAC will continue and that effective working relationships between the present WESTPAC Secretariat and Member States will be maintained.

It has been two years since the last session of WESTPAC in May 2008 Malaysia, and I would like to share with you some highlights of IOC at global level.

First of all, IOC organized the first ever Ministerial Round Table on Oceans on the 12th-13th October 2009 with the theme of "Building stewardship for the Ocean". Thirty-two ministers and twenty-five national delegations gathered to discuss and highlight the vital role of oceans in understanding climate change, in providing ecological services to human well-being, and in particular to coastal communities, as well as the role of UNESCO and its Intergovernmental Oceanographic Commission (IOC) in supporting global governance of the oceans.

Second, IOC, together with UNEP, has completed the Assessment of Assessments, as the start-up phase of the regular process under the United Nations for Global Reporting and Assessment of the State of the Marine Environment, including socio-economic aspects. This was requested by the UN General Assembly, through Resolution 60/30 in 2005.

In November 2008, the UN General Assembly decided to establish an ad hoc Working Group of the Whole to recommend a course of action to the General Assembly, at its Sixty-Fourth



Session, based on the outcomes of the fourth meeting of the Ad Hoc Steering Group in April 2009. In November 2009, the UN General Assembly requested that the Secretary-General convene an informal meeting of the Ad Hoc Working Group of the Whole from 30 August to 3 September 2010 to do two things: (i) to further consider and make recommendations to the General Assembly at its sixty-fifth session on the modalities for the implementation of the regular process; and (ii) to specify the objective and scope of its first cycle, the key questions to be answered and primary target audiences, in order to ensure that assessments are relevant for decision makers. In this regard, I would urge you to keep close communications with your UN delegations to firmly support the launch of the Regular Process, i.e. this health check for the oceans, in the coming sixty-fifth session of UNGA, September 2010.

On a third topic regarding the year we are in, 2010 is a year of major importance for the world's oceans. Nations around the world are expected to have met major international targets set by the world's heads of state at the 2002 World Summit on Sustainable Development, those being: (i) applying integrated, ecosystem-based approaches to the governance of oceans and coasts and (ii) halting biodiversity loss by 2010. We know already that we have fallen short on meeting those commitments. 2010 is also a year for the international community to celebrate the 50th anniversary of IOC, taking stock of the advancement of ocean science and policy, and charting the agenda ahead.

As a competent agency within UN system on marine scientific research, observations and service, as well as capacity building, IOC should spare no efforts to address various challenges and opportunities posed by climate change and sustainable development of marine and coastal resources. As a regional arm of IOC, I will look to WESTPAC to assist IOC, by working very closely with our Member States in the region, to achieve its missions. We gladly note, many developing countries in the region have become aware of the critical importance of marine science and observations in assisting to improve knowledge on climate change, marine ecosystem functions and natural disasters. They have therefore been taking actions to invest and take an active part in relevant regional and international scientific programs and observing systems. As such I will be very pleased to witness the Cruise Launching of INAGOOS today, and I wish to express my sincere appreciation to the Government of Indonesia for your efforts in developing ocean observing capabilities. I expect the benefit it generates will be delivered to the whole region to the greatest extent possible.

I sincerely hope and expect that, with your knowledge, wisdom and enthusiasm, we will come up with very constructive and fruitful recommendations at the end of this session.

I would conclude my short remarks by expressing my sincere thanks once again to the Government of Indonesia for providing us with such friendly and generous hospitality here, and more specifically to the Ministry of Marine Affairs and Oceans, Indonesian Institute of Sciences for your very efficient organization of this session. Tarima kasi! Thank you very much!

**Opening Remarks of Dr Zhanhai Zhang**  
**Chair of the IOC Sub-Commission for the Western Pacific**

Your Excellency Mr Fadel Muhammad, Minister for Marine Affairs and Fisheries, Republic of Indonesia;

Your Excellency Madam Wendy Watson-Wright, Executive Secretary of IOC and Assistant Director-General of UNESCO;

Dr. Gellwynn Jusuf, Chairman of the Agency for Marine and Fisheries Research, Ministry of Marine Affairs and Fisheries of Indonesia;

Distinguished delegates from Member States;

Representatives of International Organizations;

Ladies and Gentlemen,

Selamat Pagi! It gives me great honour to formally open the Eighth Intergovernmental Session of IOC Sub-Commission for the Western Pacific (WESTPAC) and I am very pleased to extend my warmest welcome to all of you for being here this morning.

First of all, I would also express our sincere appreciation to Dr. Wendy Watson-Wright for your presence for the first time in the region, immediately after you took the office early of this year. I would like to extend our heartfelt thanks, through His Excellency Fadel Muhammad, Minister of Marine Affairs and Fisheries, to the Government of Indonesia for hosting the Eighth Intergovernmental Session in this beautiful island of Bali, Indonesia. Particularly, we wish to send our special thanks to Dr. Hery Harjano (Deputy Chairman for Earth Sciences), Dr. Zainal Arifin and Dr. Budi Sulistiyo as well as all others behind the scene for the hard work and excellent arrangements made for this meeting.

On the occasion of 50th anniversary of IOC, it is an optimum time to hold the session, as a regional commemorative event, to take stock of advances in marine science and related international cooperation at regional levels, and enhance the level of public awareness of the importance of collaboration and involvement in ocean science at all levels of society. In this regard, I would express my congratulation to the Government of Indonesia on the cruises launching of INAGOOS as one of commemorative activities of IOC 50<sup>th</sup> Anniversary. I would also extend appreciation for the strong willingness of Indonesia to contribute to the WESTPAC in order to further deliver the benefit for the people in the region.

As the regional arm of the IOC/UNESCO in the Western Pacific region, WESTPAC has been instrumental in the development, coordination of regional activities on marine scientific research, observations and capacity development in order to assist his member states in improving their capacity and capability in the study, protection and management of coast and marine resources.

Ladies and Gentlemen,

It is never too much to emphasize the importance of marine science, observations, and capacity development in each of member states in WESTPAC region. More than two billion people are living in this region with almost 75% concentrated in the coastal areas. Eighty percent of the region's GDP is linked to the coastal and marine resources. However, the knowledge on the oceans as well as the impact of climate change still remains poor. Thus there is an urgent need to strengthen our efforts in improving our understanding on the ocean process, ocean ecosystem and the impact of anthropogenic stresses as well as climate change through the cooperation on marine science and long-term observations.

While reviewing the more than 20-year development history of WESTPAC, although WESTPAC has ever experienced difficult times, we are very proud of the results achieved, particularly the significant progress made over past years in revitalizing WESTPAC as a result of the joint efforts of all member states. I would recall the wishes that we expressed at last session two years ago that the present momentum of revitalization and reform should continue; the cordial atmosphere and effective working relationship between the present WESTPAC Secretariat and member states should be maintained. Two years later, we are gathering again to review the implementation of the goals we set and commitment we made at last session, and provide the direction for the Sub-Commission in the next biennium. In this sense, I wish the session a great success.

Distinguished Delegates,

I would like to take this opportunity to thank all member states for the support, either in kind or in cash, provided to the Sub-Commission and expect these contributions could be continuously made. I also would thank Mr. Wenxi Zhu, Head of the WESTPAC Secretariat and all staff in the secretariat for your unrelenting and constructive efforts in developing WESTPAC. Your devotion,

enthusiasm for this Sub-Commission should be highly commendable. I feel confident that the strong Secretariat will navigate the Sub-Commission a bright future.

Finally, I look forward to working together with you over the next four days and I am also convinced that your deliberations will provide fruitful achievements. I wish everyone a pleasant stay in the beautiful Bali.

Terima Kasi!

**Opening Remarks of H.E. Dr Ir. Fadel Muhammad  
Minister for Marine Affairs and Fisheries, Indonesia**

Honourable Intergovernmental Oceanographic Commission Executive Secretary, Madame Watson-Wright;  
National representatives of IOC Member States,  
Distinguished scientists, policy-makers, invited guests;  
Ladies and Gentlemen,

It gives me a great pleasure to welcome you all to the Eighth Intergovernmental Session of the IOC Sub-Commission for the Western Pacific (WESTPAC-VIII) in this Island of God, Bali.

Before I continue my remarks, I thank IOC for understanding of my absence in the last Global Oceans Conference in Paris last week because of the ban on all incoming and outgoing flights from most European countries due to the volcanic eruption in Iceland.

It is our privilege and honour to host this event in conjunction with the 50th Anniversary of Intergovernmental Oceanographic Commission and on behalf of the Government of Indonesia, let me congratulate IOC-UNESCO for years of achievements in keeping up its member countries on the importance of our great oceans.

Ladies and Gentlemen,

The world that we live in today is greatly challenged. We only have One Home we call it Earth. It is ONE PLANET, ONE OCEAN. However, so little is known about our ocean. So, science and research are keys to understand our oceans and coastal regions. But science must also be relevant particularly in sustaining the livelihood of millions of people whose lives depend on the oceans. Therefore, science must be able to answer critics on continuing global concerns on Food Securities, energy and key complimentary livelihood issues such as conservations, marine biodiversity and most particularly is the oceans' role in mitigating climate change or global warming.

Overtime, the importance of our oceans has been instrumental in mitigating global warming. This was very much discussed during the last UNFCCC-COP 15 in Copenhagen last December. Ocean is not just a relevant global issue but it is key for all citizen of the world particularly ocean states and archipelagic countries like Indonesia.

However, we face an on-going concern and perhaps a dilemma in the way we all set and allocate out resources to understand more about our oceans. I have been in constant discussions with many ministers, policy makers, scientists and other civil society all over the world and found out that we have done too little research about ocean. No wonder our understanding of our ocean is never sufficient.

I am not just talking about funding but more importantly our joint efforts in building scientific and research capacity between developed and developing countries.

Many questions on the importance of our ocean will remain unanswered. For instance, we were asked with a question during the COP 15 whether or not our oceans are actually carbon sink or carbon release region.

Ladies and Gentlemen,

I am confident that in the next three days, all participants will put their best efforts to align and come up with meaningful results.

On a grand scale, I am looking forward to sharing and advancing the particular of Blue Carbon substance which was highlighted during UNEP or the United Nations Environment Program, February this year in this island too.

I acknowledge the role and contribution of IOC-UNESCO explains the role of ocean in global carbon cycle, including coastal vegetations in carbon deposition.

Participants, Ladies and Gentlemen,

From a regional perspective both in the region of South East Asia and the Western Pacific area namely South East Asia GOOS (or SEAGOOS), Indonesia is initiating Indonesian-GOOS or INAGOOS. These two programs and the other GOOS programs are aligned.

Over and beyond the above regional GOOS, we also develop an Eastern Indian Ocean GOOS which has been very useful to provide scientific understanding and public awareness about Tsunami in this region.

Ladies and Gentlemen,

Finally, please join me in appreciating the organizing committee and all those who have made this event possible.

I wish you a very successful meeting, enjoy your stay in Bali, and now I declare this meeting an officially opened. Thank you.

ANNEX IV

**LIST OF DOCUMENTS**

**Working Documents**

IOC/SC-WESTPAC-VIII/1.prov.	Provisional Agenda
IOC/SC-WESTPAC-VIII/1.add.prov.	Provisional Timetable
IOC/SC-WESTPAC-VIII/2.prov.	Provisional Annotated Agenda
IOC/SC-WESTPAC-VIII/3	Draft Summary Report
IOC/SC-WESTPAC-VIII/4.prov.	Provisional List of Documents
IOC/SC-WESTPAC-VIII/5	Statement of the Chairperson
IOC/SC-WESTPAC-VIII/6	Secretariat's Report on Intersessional Activities
IOC/SC-WESTPAC-VIII/7	Secretariat's Report on Budget Overview
IOC/SC-WESTPAC-VIII/8	Contribution of Sub-Commission to the 50th Anniversary of IOC
IOC/SC-WESTPAC-VIII/9	Progress on the WESTPAC Ocean Research Priority Plan
IOC/SC-WESTPAC-VIII/10	Progress on the Preparations for the Eighth WESTPAC International Symposium in 2011
IOC/SC-WESTPAC-VIII/11	Review and Evaluation of Regional Programmes and Projects for May 2008 – May 2010
IOC/SC-WESTPAC-VIII/11.1	Progress Report on Harmful Algal Bloom
IOC/SC-WESTPAC-VIII/11.2	Progress Report on Remote Sensing for Integrated Coastal Area Management
IOC/SC-WESTPAC-VIII/11.3	Progress Report on Response of Marine Hazards to Climate Change
IOC/SC-WESTPAC-VIII/11.4	Progress Report on Fluvial Sediments to the South China Sea
IOC/SC-WESTPAC-VIII/11.5	Progress Report on Marine and Coastal Biodiversity and its Management
IOC/SC-WESTPAC-VIII/11.6	Progress Report on Coral Reef under Climate and Anthropogenic Perturbations
IOC/SC-WESTPAC-VIII/11.7	Progress Report on North East Asian Regional-GOOS (NEAR-GOOS)

IOC/SC-WESTPAC-VIII/11.8	Progress Report on South East Asian Regional-GOOS (SEAGOOS)
IOC/SC-WESTPAC-VIII/11.9	Progress Report on Marine Hazards Forecasting and Mitigation in the Western Pacific
IOC/SC-WESTPAC-VIII/11.10	Progress Report on International Bathymetric Chart of the Western Pacific (IBCWP)
IOC/SC-WESTPAC-VIII/11.11	Progress Report on Ocean Data & Information Network for the Western Pacific (ODINWESTPAC)
IOC/SC-WESTPAC-VIII/11.12	Evaluation Summary on the Application of “UNESCO/IOC Regional Training and Research Center on Ocean Dynamics and Climate”
IOC/SC-WESTPAC-VIII/11.13	Progress Report on Enhancing the Capability on Oil Spill Response and the Restoration of Marine Ecosystems
IOC/SC-WESTPAC-VIII/11.14	Progress Report on IOC/WESTPAC E-Bulletin
IOC/SC-WESTPAC-VIII/12	New Project Proposals
IOC/SC-WESTPAC-VIII/12.1	Ocean Forecast Demonstration System in the Southeast Asian Seas
IOC/SC-WESTPAC-VIII/12.2	DNA taxonomy and recruitment monitoring of the coral reef marine organisms
IOC/SC-WESTPAC-VIII/12.3	Ensuring seafood safety from toxic marine organisms
IOC/SC-WESTPAC-VIII/13	Guideline for the Establishment of WESTPAC Working Groups
IOC/SC-WESTPAC-VIII/13.1	Asian dust and its impact on ocean ecosystem in the Western Pacific (WESTPAC-ADOES)
IOC/SC-WESTPAC-VIII/13.2	Establishment of WESTPAC Global Reporting and Assessment of the State of the Marine Environment (GRAMÉ)
IOC/SC-WESTPAC-VIII/14	Cooperation with Other Organizations
IOC/SC-WESTPAC-VIII/14.1	Statement of UNEP/Northwest Pacific Action Plan (NOWPAP) on the Cooperation with IOC/WESTPAC
IOC/SC-WESTPAC-VIII/14.2	Statement of the UNDP/GEF Project in Reducing Environmental Pressure in the Yellow Sea Large Marine Ecosystem (YSLME)
IOC/SC-WESTPAC-VIII/15	Draft WESTPAC Workplan and Budget for May 2010 – May 2012

#### **Information Documents**

IOC/SC-WESTPAC-VIII/inf.1	Information on Services Available
IOC/SC-WESTPAC-VIII/inf.2	Provisional List of Participants
IOC/SC-WESTPAC-VIII/inf.3	Summary Report of the Seventh Intergovernmental Session of the IOC Sub-Commission for the Western Pacific (WESTPAC-VII), Sabah, Malaysia, 26-29 May 2008
IOC/SC-WESTPAC-VIII/inf.4	Summary Report of the IOC/WESTPAC Officers' Meeting
IOC/SC-WESTPAC-VIII/inf.4-1	First IOC/WESTPAC Officers' Meeting, Dalian, China, 28-29 October 2008
IOC/SC-WESTPAC-VIII/inf.4-2	Second IOC/WESTPAC Officers' Meeting, Paris, France, 22 June 2009
IOC/SC-WESTPAC-VIII/inf.5	Summary Report of the First Brainstorming Workshop of WESTPAC Drafting Group on the Regional Ocean Research Priority Plan (RORP), Bangkok, Thailand, 25-26 August 2009
IOC/SC-WESTPAC-VIII/inf.6	Summary Report of the Expert Workshop on the Pilot Project of SEAGOOS on the Monsoon Onsets Monitoring and its Social & Ecosystem Impacts (MOMSEI)
IOC/SC-WESTPAC-VIII/inf.6-1	Second Expert Workshop on the Pilot Project of SEAGOOS on the Monsoon Onsets Monitoring and its Social & Ecosystem Impacts (MOMSEI), Qingdao, China, 8-9 August 2009
IOC/SC-WESTPAC-VIII/inf.6-2	Third Expert Workshop on the Pilot Project of SEAGOOS on the Monsoon Onsets Monitoring and its Social & Ecosystem Impacts (MOMSEI), Manila, Philippines, 25-27 November 2009
IOC/SC-WESTPAC-VIII/inf.7	Summary Report of the IOC/WESTPAC Scientific Workshop "Responses of Marine Hazards to Climate Change in the Western Pacific" (WESTPAC-ROSE-MaHaz)
IOC/SC-WESTPAC-VIII/inf.7-1	First IOC/WESTPAC Scientific Workshop "Responses of Marine Hazards to Climate Change in the Western Pacific" (WESTPAC-ROSE-MaHaz), Qingdao, China, 23-24 November 2008
IOC/SC-WESTPAC-VIII/inf.7-2	Second IOC/WESTPAC Scientific Workshop "Responses of Marine Hazards to Climate Change in the Western Pacific" (WESTPAC-ROSE-MaHaz), Qingdao, China, 5-6 December 2009
IOC/SC-WESTPAC-VIII/inf.8	Summary Report of the IOC/WESTPAC Workshop on Marine Invasive Species and Management in the Western Pacific Region, Bangkok, Thailand, 4-5

June 2009

IOC/SC-WESTPAC-VIII/inf.9	Summary Report of the First IOC/WESTPAC Workshop on the Coral Reef under Climate and Anthropogenic Perturbations (CorReCAP), Shanghai, China, 23-26 May 2009
IOC/SC-WESTPAC-VIII/inf.10	Summary Report of the IOC/WESTPAC Training Workshop on Monitoring Techniques and Emergency Response of Marine Oil Spills, Qingdao, China, 20-23 April 2009
IOC/SC-WESTPAC-VIII/inf.11	IOC/WESTPAC E-Bulletin
IOC/SC-WESTPAC-VIII/inf.11-1	WESTPAC E-Bulletin No. 1, September 2008
IOC/SC-WESTPAC-VIII/inf.11-2	WESTPAC E-Bulletin No. 2, January 2009
IOC/SC-WESTPAC-VIII/inf.11-3	WESTPAC E-Bulletin No. 3, May 2009
IOC/SC-WESTPAC-VIII/inf.11-4	WESTPAC E-Bulletin No. 4, September 2009
IOC/SC-WESTPAC-VIII/inf.11-5	WESTPAC E-Bulletin No. 5, February 2010



ANNEX V

LIST OF PARTICIPANTS

**MEMBER STATES**

**CHINA**

Dr Zhang Zhanhai  
Director-General  
Department of International Cooperation  
State Oceanic Administration of China  
1 Fuxingmenwai Avenue, Beijing 100860  
China  
Tel: 86 10 68060086  
Fax: 86 10 68024627  
Email: zhangzhanhai@pric.gov.cn  
***(Also Chairperson of the IOC Sub-Commission for the Western Pacific)***

Mr Yang Yafeng  
Programme Officer  
Department of International Cooperation  
State Oceanic Administration of China  
1 Fuxingmenwai Avenue, Beijing 100860  
China  
Tel/Fax: 86 10 68048051  
Email: yyf@soa.gov.cn

Mr. Wang Hui  
Executive Deputy Director-General  
National Marine Environment  
Forecasting Center  
Dahuisi 8, Haidian District  
Beijing 100081  
China  
Tel: 86 10 62105605  
Fax: 86 10 62173620  
Email: wangh@nmefc.gov.cn

Mr. Wang Guihua  
State Key Laboratory of Satellite Ocean  
Environment Dynamics  
Second Institute of Oceanography  
State Oceanic Administration  
Hangzhou  
China  
Email: guihua\_wanggh@yahoo.com.cn

Ms. Lin Shaohua  
Director-General  
National Marine Data and Information  
Services (NMDIS)  
State Oceanic Administration  
93 Liuwei Rd., Hedong District

Tianjin, 300171  
China  
Tel: 86 22 2401 0803  
Fax: 86 22 2401 0926  
Email: shlin@mail.nmdis.gov.cn

Mr. Jin Jiye  
Researcher  
National Marine Data and Information  
Service  
China  
Tel: 86 22 24010874  
Fax: 86 22 24010926  
Email: jjy@mail.nmdis.gov.cn

Mr. Ma Deyi  
President  
First Institute of Oceanography of SOA  
6 Xianxialing Road Hi-Tech Industrial  
Park  
Qingdao 266001  
China  
Tel: 86 532 88967468  
Fax: 86 532 88965544  
Email: deyima@fio.org.cn

Prof. Dr. Qiao Fangli  
Deputy Director-General  
First Institute of Oceanography of SOA  
6 Xianxialing Road, Qingdao 266061  
China  
Tel: 86 532 88967400  
Fax: 86 532 88965544  
Email: qiaofl@fio.org.cn

Mr. Yu Weidong  
Laboratory of Ocean-Atmosphere  
Interaction and Climate Change  
First Institute of Oceanography  
State Oceanic Administration  
6 Xian-Xia-Ling Road  
Qingdao 266061  
China  
Tel/Fax: 86 532 88967403  
Email: wdyu@fio.org.cn

Ms. Wang Juying  
Researcher  
National Marine Environment Monitoring  
Center  
Tel: 86 471 84782526  
Email: jywang@nmemc.gov.cn

Dr. Zhifei Liu  
State Key Laboratory of Marine Geology  
Tongji University  
1239 Siping Road  
Shanghai 200092  
China  
Tel: 86 21 6598 4877  
Fax: 86 21 6598 8808  
Email: lzhifei@tongji.edu.cn

Prof. Gao Huiwang  
College of Environmental Science and  
Engineering  
Ocean University of China  
5 Yushan Road, Qingdao 266003  
China  
Tel: 86 532 66782977  
Fax: 86 532 66782058  
Email: hwgao@ouc.edu.cn

## INDONESIA

Prof. Dr. Ir. Hery Harjono  
Deputy Chairman of Earth Sciences  
Indonesian Institute of Sciences  
Sasana Widya Sarwono  
Jl. Gatot Subroto Kav 10  
Republic of Indonesia  
Tel: 62 21 5251850  
Fax: 62 21 5260804  
Email: hery\_harjono@yahoo.co.uk

Dr. Arief Rachman  
Chairman of Indonesian National  
Commission for UNESCO  
Ministry of Education and Culture  
Republic of Indonesia  
Tel/Fax: 62 21 5709426, 62 21 5733127,  
62 21 5709425

Prof. Dr. Jana T. Anggadiredja  
Deputy Chairman of Technology for  
Natural Resource Development  
Agency for Development and Application  
of Technology  
Ministry of Science and Technology  
Tel: 62 21 3169705  
Fax: 62 21 31924255

Dr. Gellwynn Jusuf  
Chairman of Agency for Marine and  
Fisheries Research  
Ministry of Marine Affairs and Fisheries  
Jl. Pasir Putih I, Ancol Timur  
Jakarta Utara  
Republic of Indonesia  
Tel: 62 21 64711438  
Fax: 62 21 64711685, 62 21 64711633

LAKSMA. Sugeng Supriyanto  
Head of Office of Hydrooceanography  
Indonesian Navy  
Jl. Pantai Kuta V Ancol Timur  
Republic of Indonesia  
Tel: 62 21 64711633  
Fax: 62 21 64711685, 62 21 64714819

Ir. R.W. Matindas  
Chairman of Agency for National Survey  
and Mapping  
Republic of Indonesia  
Tel: 62 21 8754592  
Fax: 62 21 8752064

Dr. Sunu Mahadi Soemarno  
Director of Social, Culture and  
International Organization  
Department of Foreign Affairs  
Jl. Taman Pejambon No. 6, Jakarta  
Republic of Indonesia  
Tel: 62 21 3848888  
Fax: 62 21 3507950, 62 21 3441508

Prof. Dr. Jan Sopaheluwakan  
Deputy Chairman for Scientific Services  
Republic of Indonesia  
Tel: 62 21 5255179  
Fax: 62 21 8752064

Prof. Dr. Suharsono  
Director of Research Centre for  
Oceanography  
Indonesian Institute of Sciences  
Jl. Pasir Putih I, Ancol Timur  
Jakarta 14430  
Republic of Indonesia  
Tel/Fax: 62 21 64712287

Dr John I Pariwono  
Faculty of Fisheries and Marine Science  
Bogor Agriculture University  
Kampus Darmaga, Bogor  
West Java  
Republic of Indonesia  
Tel: 62 251 622909, 622910, 622911

Fax: 62 251 8623644  
Email: jpar@indo.net.id

Dr. Ridwan Djamaluddin  
Director for Land Region and Disaster  
Mitigation Technology  
Agency for the Assessment & Application  
of Technology  
Republic of Indonesia  
Tel: 62 21 3169652/3169647  
Fax: 62 21 3169883

Dr. Ir. Budi Sulistiyo  
Director  
Research Centre for Marine Area and  
Non-living Resources  
Agency for Marine and Fisheries  
Research  
Ministry of Marine Affairs and Fisheries  
Jl. Pasir Putih I, Ancol Timur  
Jakarta Utara  
Republic of Indonesia  
Tel/Fax: 62 21 64711672, 64711654  
Email: budisul@yahoo.com

Dr. Aryo Hanggono  
Director  
Research Centre for Marine Technology  
Agency for Marine and Fisheries  
Research  
Ministry of Marine Affairs and Fisheries  
Jl. Pasir Putih I, Ancol Timur  
Jakarta Utara  
Republic of Indonesia  
Tel: 62 21 64711583  
Fax: 62 21 64711501

Dr. Deddy Setiapermana  
Head of Bureau for Cooperation and  
Promotion on Science and Technology  
Indonesian Institute of Sciences  
Republic of Indonesia  
Tel: 62 21 5251834  
Fax: 62 21 5251834, 5277183

Dr. Tony Wagey  
Senior Scientist  
Agency for Marine and Fisheries  
Research  
Ministry of Marine Affairs and Fisheries  
Jl. Pasir Putih I, Ancol Timur  
Jakarta Utara  
Republic of Indonesia

Dr. Augy Syahailatua  
Head of Ambon Marine Conservation  
Division Research Centre for  
Oceanography - LIPI Guru-Guru  
Poka, Ambon  
Republic of Indonesia  
Email: augy\_lipi@yahoo.com

Ms. Anastasia Rita Tisiana Dwi  
Kuswardani  
Research Center for Maritime Territories  
and Nonliving Resources  
Agency for Marine and Fisheries  
Research  
Ministry of Marine Affairs and Fisheries  
Jl. Pasir Putih 1, Ancol Timur  
Jakarta 14430  
Republic of Indonesia  
Email: anastasia.tisiana@gmail.com

Dr. Zainal Arifin  
Research centre for Oceanography - LIPI  
Jakarta 14430  
Republic of Indonesia  
Email: zarifin@dnnet.net.id

Ms. Selvi makarim  
Research Centre for Marine Area and  
Non-living Resources  
Agency for Marine and Fisheries  
Research  
Ministry of Marine Affairs and Fisheries  
Jl. Pasir Putih I, Ancol Timur  
Jakarta Utara  
Republic of Indonesia  
Tel/Fax: 62 21 64711672, 64711654  
Email: selvi\_makarim@yahoo.com

## **JAPAN**

Dr. Yasuwo Fukuyo  
Professor  
Asian Natural Environmental Science  
Center (ANESC)  
University of Tokyo  
Yayoi 1-1-1, Bunkyo-ku  
Tokyo 113-8657  
Japan  
Tel: 81 3 5841 2782  
Fax: 81 3 5841 8040  
Email: [ufukuyo@mail.ecc.u-tokyo.ac.jp](mailto:ufukuyo@mail.ecc.u-tokyo.ac.jp)  
**(Also First Vice-Chairperson of the  
IOC Sub-Commission for the Western  
Pacific)**

Dr. Yutaka Michida  
Professor  
Atmosphere and Ocean Research  
Institute  
University of Tokyo  
Kashiwa 277-8564  
Japan  
Tel/Fax: 81 4 7136 6362  
Email: [ymichida@ori.u-tokyo.ac.jp](mailto:ymichida@ori.u-tokyo.ac.jp)

Dr. Teruhisa Komatsu  
Associate Professor  
Atmosphere and Ocean Research  
Institute  
University of Tokyo  
Japan  
Email: [komatsu@ori.u-tokyo.ac.jp](mailto:komatsu@ori.u-tokyo.ac.jp)

Mr. Yoshiaki Kanno  
Senior Scientific Officer  
Office of Marine Prediction  
Marine Division  
Global Environment and Marine  
Department  
Japan Meteorological Agency  
Japan  
Email: [ykanno@met.kishou.go.jp](mailto:ykanno@met.kishou.go.jp)

Dr. Kazuhiro Kitazawa  
Adviser to the Director  
Planning Department  
Japan Agency for Marine-Earth Science  
and Technology (JAMSTEC)  
Japan  
Email: [kitazawa@jamstec.go.jp](mailto:kitazawa@jamstec.go.jp)

Dr. Takeshi Kawano  
Program Director  
Ocean Climate Change Research  
Program  
Research Institute for Global Change  
(RIGC)  
Japan Agency for Marine-Earth Science  
and Technology (JAMSTEC)  
Japan  
Email: [kawanot@jamstec.go.jp](mailto:kawanot@jamstec.go.jp)

Mr. Osamu Miyaki  
Administrative Specialist  
Advanced Research and Technology  
Promotion Department  
Japan Agency for Marine-Earth Science  
and Technology (JAMSTEC)  
Japan  
Email: [miyakio@jamstec.go.jp](mailto:miyakio@jamstec.go.jp)

Mr. Tetsuhito Minami  
Programme Specialist (Science and  
Culture)  
Office of Director General for  
International Affairs  
Ministry of Education, Sports, Science  
and Technology  
Japan  
Tel: 81 3 6734 2585  
Fax: 81 3 6734 3679  
Email: [tminami@mext.go.jp](mailto:tminami@mext.go.jp)

## **KOREA, DPR**

Mr. Jang Hyon Chol  
Director  
Department of International Cooperation  
State Hydro-Meteorological  
Administration (SHMA)  
Oesong-dong, Central District  
Pyongyang  
Democratic People's Republic of Korea  
(DPRK)  
Tel: 850 2 321 4539  
Fax: 850 2 3814427, 3814416  
Email: [shma@co.chesin.com](mailto:shma@co.chesin.com)

Mr. Song Yong Chol  
Senior researcher  
Marine Environment Monitoring Center  
State Hydro-Meteorological  
Administration (SHMA)  
Oesong-dong, Central District  
Pyongyang  
Democratic People's Republic of Korea  
(DPRK)  
Tel: 850 2 321 4539  
Fax: 850 2 3814427, 3814416  
Email: [shma@co.chesin.com](mailto:shma@co.chesin.com)

## **KOREA, REPUBLIC OF**

Ms. Minyoung Choi  
Deputy Director  
Marine Territory and Development  
Division  
Ministry of Land, Transportation and  
Maritime Affairs (MLTM)  
88 Gwanmun-ro, Gwacheon-city  
Gyeonggi-do, 427-712  
Republic of Korea  
Tel: 82 2 2110 8458  
Fax: 82 2 502 0341  
Email : [mignonchoi@gmail.com](mailto:mignonchoi@gmail.com)

Mr. Dosoo Jang  
Director  
Center for International Cooperative  
Programs (CICOP)  
Korea Ocean Research & Development  
Institute (KORDI)  
1270 Sadong, Ansan, 426-744  
Republic of Korea  
Tel: 82 31 400 6441  
Fax: 82 31 406 6925  
Email: dsjang@kordi.re.kr

Mr. Hyun Yeong Kim  
Deputy Director  
Center for International Cooperative  
Programs (CICOP)  
Korea Ocean Research & Development  
Institute (KORDI)  
1270 Sadong, Ansan, 426-744  
Republic of Korea  
Tel: 82 31 400 6750  
Fax: 82 31 406 6925  
Email: hykim@kordi.re.kr

Mr. Woong-Seo Kim  
Unit Leader  
2012 EXPO Supporting Unit  
Korea Ocean Research & Development  
Institute (KORDI)  
1270 Sadong, Ansan, 426-744  
Republic of Korea  
Tel: 82 31 400 6217  
Fax: 82 31 406 7780  
Email: wskim@kordi.re.kr

Mr. Youn-Ho Lee  
Principal Research Scientist/Professor  
Marine Resources Research Dept.  
Korea Ocean Research & Development  
Institute (KORDI)  
1270 Sadong, Ansan, 426-744  
Republic of Korea  
Tel: 82 31 400 6428  
Fax: 82 31 406 7780  
Email: ylee@kordi.re.kr

Dr. Eunil Lee  
Director  
Korea Hydrographic and Oceanographic  
Administration  
195 Seohae-ro, Jung-gu  
Incheon, 400-800  
Republic of Korea  
Tel: 82 32 880 0408  
Fax: 82 32 891 3773  
Email: elee@korea.kr

Dr. Hyung Tack Huh  
Sr. Scientist Emeritus  
Korea Ocean R & D Institute (KORDI)  
P.O.Box Ansan 29  
Seoul 426-744  
Republic of Korea  
Email: hthuh@kordi.re.kr  
Tel: 82 11 743 0231  
***(also Former Chairperson of the IOC  
Sub-Commission for the Western  
Pacific)***

## **MALAYSIA**

Prof. Dr. Nor Aieni Haji Mokhtar  
Secretary  
National Oceanography Directorate  
(NOD)  
Ministry of Science, Technology and  
Innovation (MOSTI)  
Level 6, Block C4, Complex C  
Federal Government Administrative  
Centre, 62662 Putrajaya  
Malaysia  
Tel: 60 3 8885 8201  
Fax: 60 3 8889 3008  
Email: noraieni@mosti.gov.my  
***(also Second Vice-Chairperson of the  
IOC Sub-Commission for the Western  
Pacific)***

Dr. Fredolin Tangang  
Vice-Chair IPCC Working Group I  
Professor & Head  
Research Centre for Tropical Climate  
Change System (IKLIM)  
Faculty of Science and Technology  
National University of Malaysia  
43600 Bangi Selangor  
Malaysia  
Tel: 60 3 89213826, 60 13 3472116  
Fax: 60 3 89253357  
Email: ftangang@gmail.com  
Website: <http://www.ocean.ukm.my/coal>

Dr. Anita Talib  
Deputy Director  
Centre for Marine and Coastal Studies  
(CEMACS)  
University Science Malaysia (USM)  
11800, Penang  
Malaysia  
Tel: 60 4 6533509, 60 4 6534574  
Fax: 60 6 8852751  
Email: anita@usm.my

Prof. Dr. Fatimah Md. Yusoff  
Director  
Institute of Bioscience  
University Putra Malaysia  
43400 Serdang, Selangor  
Malaysia  
Tel: 60 3 8947 2111  
Fax: 60 3 8947 2101  
Email: fatimah@ibs.upm.edu.my

Dr. Asmat Ahmad  
Senior Lecturer  
School of Biosciences & Biotechnology  
Faculty of Science & Technology  
National University Malaysia (UKM)  
43600 Bangi, Selangor  
Malaysia  
Tel: 60 3 8921 3221  
Fax: 60 3 8925 2698  
Email: asmat@pkrisc.cc.ukm.my

Aziatun Burhan  
Penolong Setiausaha  
National Oceanography Directorate  
(NOD)  
Ministry of Science, Technology and  
Innovation (MOSTI)  
Level 6, Block C4, Complex C  
62662 Putrajaya  
Malaysia  
Tel: 60 3 8885 8527  
Email: aziatun@mosti.gov.my

## **PHILIPPINES**

Dr. Virginia S. Carino  
UNESCO National Commission of the  
Philippines  
Science and Technology Committee  
National Committee on Marine Sciences  
(NCMS)  
22 Manga Road, corner Aurora  
Boulevard  
Quezon City 1109  
Philippines  
Tel/Fax: 63 2 726-6291, 63 2 723-0876  
Email: vscarino@kalayaan.edu.ph

## **RUSSIAN FEDERATION**

Dr. Vyacheslav B. Lobanov  
Deputy Director  
V.I.Ill'ichev Pacific  
Oceanological Institute  
Far Eastern Branch  
Russian Academy of Sciences

43 Baltiyskaya Street  
Vladivostok 690041, Russia  
Tel: 7 4232 312377  
Fax: 7 4232 312573  
Email: lobanov@poi.dvo.ru

## **THAILAND**

Dr. Cherdchinda Chotiyaputta  
Marine Resources Management  
Specialist  
Department of Marine and Coastal  
Resources  
Ministry of Natural Resources and  
Environment  
The Government Complex  
Building B, 9th Floor  
120 Moo3, Chaengwattana Rd., Lak Si  
Bangkok 10210, Thailand  
Tel: 66 2 141 1241  
Fax: 66 2 143 9240  
Email: [cherdchc@dmcr.go.th](mailto:cherdchc@dmcr.go.th),  
[chedchc@yahoo.com](mailto:chedchc@yahoo.com)

Dr. Somkiat Khokiattiwong  
Senior Marine Biologist  
Phuket Marine Biological Centre  
Department of Marine and Coastal  
Resources  
Ministry of Natural Resources and  
Environment  
P.O. Box 60, Phuket 83000  
Thailand  
Tel: 66 76 391091  
Fax: 66 76 391127  
Email: [skhokiattiwong@gmail.com](mailto:skhokiattiwong@gmail.com)

Dr. Maitree Duangsawasdi  
23/81 Moo Ban Sermmitr Soi 17  
Nawamin Rd., Buengkum  
Bangkok 10240  
Thailand  
Tel: 66 2 510 0783, 66 85 143 7755  
Fax: 66 2 510 1046  
Email: maitredu@hotmail.com

Dr. Suchana Chavanich  
Assistant Professor  
Department of Marine Science  
Faculty of Science  
Chulalongkorn University  
Bangkok 10330  
Thailand  
Tel: 66 2 218 5394  
Fax: 66 2 255 0780  
Email: suchana.c@chula.ac.th

## **VIETNAM**

Prof. Dr. Nguyen Tac An  
Chairman  
Vietnam National IOC Committee  
Institute of Oceanography  
01, Cau Da, Nha Trang  
Vietnam  
Tel: 84 58 3590035  
Fax: 84 58 3590034  
Email: [haiduong@vnn.vn](mailto:haiduong@vnn.vn),  
[nguyentacan45@yahoo.com](mailto:nguyentacan45@yahoo.com)

Ms. Dao Viet Ha  
Head of Department of Marine  
Biochemistry  
Institute of Oceanography  
01 Cau Da, Nha Trang, Vietnam  
Tel: 84 58 3590035  
Fax: 84 58 3590034  
Email: [tmmp\\_vnocean@dng.vnn.vn](mailto:tmmp_vnocean@dng.vnn.vn)

## **OBSERVER COUNTRIES**

### **CAMBODIA**

Dr. Srey Sunleang  
Director  
Department of Wetlands and Coastal  
Zones  
Ministry of Environment  
Cambodia  
Tel: 855 90 333 456  
Fax: 855 23 721073  
Email: [kampongspeu@yahoo.com](mailto:kampongspeu@yahoo.com)

Prof. Eng Kimsan  
Assistant Dean and Professor of  
Environmental Science  
External Relations and Business  
Development of Pannasastra University  
of Cambodia (PUC)  
#182-184, Norodom Blvd.  
Khan Chamcarmon, Phnom Penh  
Cambodia  
Tel: 855 23 993 956  
Fax: 855 23 993 956  
Email: [engkimsan@puc.edu.kh](mailto:engkimsan@puc.edu.kh),  
[engkimsan@yahoo.com](mailto:engkimsan@yahoo.com)  
Website: [www.puc.edu.kh](http://www.puc.edu.kh)

## **REPRESENTATIVES & OBSERVERS OF INTERNATIONAL ORGANIZATIONS**

### **United Nations Educational, Scientific and Cultural Organizations (UNESCO)**

Mr. Hubert Gijzen  
Director  
UNESCO Office Jakarta/Asia and Pacific  
Regional Bureau for Science  
UNESCO House  
Jalan Galuh (II), No. 5  
Kebayoran Baru  
Jakarta Selatan 12110  
Indonesia  
Tel: 62 21 739 9818  
Fax: 62 21 7279 6489  
Email: [h.gijzen@unesco.org](mailto:h.gijzen@unesco.org)

Mr. Takeshi Mori  
UNESCO Office Jakarta/Asia and Pacific  
Regional Bureau for Science  
UNESCO House  
Jalan Galuh (II), No. 5  
Kebayoran Baru  
Jakarta Selatan 12110  
Indonesia  
Tel: 62 21 739 9818 ext.828  
Fax: 62 21 7279 6489  
Email: [t.mori@unesco.org](mailto:t.mori@unesco.org)

### **UNEP/Northwest Pacific Action Plan (NOWPAP)**

Mr. Xiaodong Zhong  
Deputy Coordinator  
Northwest Pacific Action Plan (NOWPAP)  
of UNEP  
NOWPAP Regional Coordinating Unit  
Toyama Office  
5-5 Ushijimashin-machi, Toyama City  
930-0856  
Japan  
Tel: 81 76 444 1611  
Fax: 81 76 444 2780  
Email: [xiaodong.zhong@nowpap.org](mailto:xiaodong.zhong@nowpap.org)

Mr. Hidemasa Yamamoto  
Director of CEARAC  
Special Monitoring and Coastal  
Assessment Regional Activity Centre  
(CEARAC)  
5-5 Ushijimashin-machi, Toyama City  
Toyama 930-0856  
Japan

Tel: 81 76 445 1571  
Fax: 81 76 445 1581  
Email: [h-yamamoto@npec.or.jp](mailto:h-yamamoto@npec.or.jp)

Ms. An Tong  
Senior Engineer  
Data and Information Network Regional  
Activity Center (NOWPAP DINRAC)  
No. 1, Yuhuinanlu, Beijing 100029  
China  
Tel: 86 10 84630869  
Email: [an@mep.gov.cn](mailto:an@mep.gov.cn)

**UNDP/GEF Yellow Sea Large Marine  
Ecosystem Project**

Mr. Isao Endo  
UNDP/GEF Yellow Sea Project  
Rm 3113, Bldg R-3, KORDI Compound  
1270, Sa2-dong, Sangnok-gu  
Ansan-si, Gyeonggi-do, 426-744  
Republic of Korea  
Tel: 82 31 400 7793  
Fax: 82 31 400 7826  
Email: [isao@yslme.org](mailto:isao@yslme.org)  
Website: [www.ysslme.org](http://www.ysslme.org)

**GEF/UNDP/IMO Regional Programme  
on Partnerships in Environmental  
Management for the Seas of East Asia  
(PEMSEA)**

Ms. Cristine Ingrid S. Narcise  
Country Programme Manager  
DENR Compound, Visayas Avenue  
Diliman, Quezon City  
Philippines  
Tel: 63 2 929 2992  
Fax: 63 2 926 9712  
Email: [cinarcise@pemsea.org](mailto:cinarcise@pemsea.org)

**International Scientific Steering  
Committee, Census of Marine Life  
(CoML)**

Dr. Ian Poiner  
CEO, Australian Institute of Marine  
Science (AIMS)  
Chair, International Scientific Steering  
Committee  
Census of Marine Life (CoML)  
PMB No. 3 Townsville MC, QLD 4810  
Australia  
Tel: 61 7 4753 4478, 61 419 702 652  
Fax: 61 7 4753 4386  
Email: [i.poiner@aims.gov.au](mailto:i.poiner@aims.gov.au)

**RESOURCE PERSONS**

Dr. Huming Yu  
China Institute for Marine Affairs  
State Oceanic Administration (SOA)  
No.1, Fu Xing Men Wai Dajie  
Beijing 100860  
China  
Tel: 86 10 68037653, 86 1 13699134185  
Fax: 86 10 68030767  
Email: [yhm@cima.gov.cn](mailto:yhm@cima.gov.cn)

Dr. Tan Chun Knee  
Chief Operation Officer  
Geeoc Sdn Bhd  
53A&53, 2nd Floor  
Taman Gunung Indah  
Jalan Kuala Kedah  
05400 Alor Setar, Kedah  
Malaysia  
Tel: 60 4 771 0788  
Fax: 60 4 772 0788  
Email: [gs04127@hotmail.com](mailto:gs04127@hotmail.com),  
[cktan@geeoc.com](mailto:cktan@geeoc.com)

Dr Nick D'Adamo  
Officer in Charge- Perth Regional  
Programme Office of the  
Intergovernmental Oceanographic  
Commission (IOC)  
UNESCO  
c/o Bureau of Meteorology  
5th floor, 1100 Hay Street  
(corner of Harvest Tce)  
West Perth 6005, Western Australia  
Tel: 61 8 92262899, 61 8 92632222  
Fax: 61 8 92260599  
Email: [nick.d'adamo@bom.gov.au](mailto:nick.d'adamo@bom.gov.au)

**IOC SECRETARIAT**

Dr. Wendy Watson-Wright  
Assistant Director General and Executive  
Secretary IOC/UNESCO  
1, rue Miollis  
75732 Paris CEDEX 15  
France  
Tel: 33 1 45 68 39 83  
Fax: 33 1 45 68 58 10  
Email: [w.watson-wright@unesco.org](mailto:w.watson-wright@unesco.org)



Mr. Wenxi Zhu  
Head  
IOC Regional Secretariat for the Western  
Pacific (WESTPAC)  
c/o Department of Marine and Coastal  
Resources  
120 Moo3, Chaengwattana Rd., Lak Si  
Bangkok 10210  
Thailand  
Tel: 66 2 141 1287  
Fax: 66 2 143 9245  
Email: [w.zhu@unesco.org](mailto:w.zhu@unesco.org)

Ms. Nachapa Saransuth  
Administrative and Programme Assistant  
IOC Regional Secretariat for the Western  
Pacific (WESTPAC)  
c/o Department of Marine and Coastal  
Resources  
120 Moo3, Chaengwattana Rd., Lak Si  
Bangkok 10210  
Thailand  
Tel: 66 2 141 1288  
Fax: 66 2 143 9245  
Email: [n.saransuth@unesco.org](mailto:n.saransuth@unesco.org)

ANNEX VI

**LIST OF ACRONYMS**

ADOES	Asian Dust and its Impact on Ocean Ecosystem
AIMS	Australian Institute of Marine Science, Australia
APCRS	Asia Pacific Coral Reef Symposium
CBD	Convention on Biological Diversity
CoML	Census of Marine Life
CTI	Coral Triangle Initiative
DMCR	Department of Marine and Coastal Resources, Thailand
EAS	East Asian Seas
GEF	Global Environment Facility
GEOHAB	Global Ecology and Oceanography of Harmful Algal Blooms
GOOS	Global Ocean Observing System
GRAMS	Global Reporting and Assessment of the State of the Marine Environment
HAB	Harmful Algal Blooms
HABSEA	South East Asian HAB
IBCWP	International Bathymetric Chart of the Western Pacific
ICES	International Council for the Exploration of the Sea
ICM	Integrated Coastal Management
IGM	Intergovernmental Meetings
IMO	International Maritime Organization
INAGOOS	Indonesian National GOOS, Indonesia
IOC	Intergovernmental Oceanographic Commission
IODE	International Oceanographic Data and Information Exchange
IP-HAB	Intergovernmental Panel for Harmful Algal Blooms
KORDI	Korea Ocean Research and Development Institute, RO Korea
LIPI	Indonesian Institute of Sciences, Indonesia
LOC	Local Organizing Committee
MASNUM	Marine Science and Numerical Modelling
MLTM	Ministry of Land, Transportation and Marine Affairs, RO Korea
MMAF	Ministry of Marine Affairs and Fisheries, Indonesia
MOMSEI	Monsoon Onset Monitoring over Andaman Sea and its Social and Ecosystem Impacts
NEARGOOS	North East Asian Regional GOOS
NGSST	New Generation Sea Surface Temperature
NMDIS	National Marine Data and Information Service, China
NMEFC	National Marine Environment Forecasting Center, China

NOAA	National Oceanic and Atmospheric Administration, United States of America
NOWPAP	North-West Pacific Action Plan
OBIS	Ocean Biogeographic Information System
ODINWESTPAC	Ocean Data and Information Network for the Western Pacific Region
PEMSEA	Partnerships in Environmental Management for the Seas of East Asia
PICES	North Pacific Marine Science Organization
RORP	Regional Ocean Research Priority Plan
ROSCOP	Report of Observations/Samples Collected by Oceanographic Programmes
RTRC-ODC	Regional Training and Research Center on Ocean Dynamics and Climate
SAP	Strategic Action Programme
SDS-SEA	Sustainable Development Strategy for the Seas of East Asia
SEAGOOS	South East Asian Global Observing System
SOA	State Ocean Administration, China
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNOPS	United Nations Office for Project Services
WESTPAC	IOC Sub-Commission for the Western Pacific (WESTPAC)
YSLME	Yellow Sea Large Marine Ecosystem

In this Series	Languages
<b>Reports of Governing and Major Subsidiary Bodies</b> , which was initiated at the beginning of 1984, the reports of the following meetings have already been issued:	
1. Eleventh Session of the Working Committee on international Oceanographic Data Exchange	E, F, S, R
2. Seventeenth Session of the Executive Council	E, F, S, R, Ar
3. Fourth Session of the Working Committee for Training, Education and Mutual Assistance	E, F, S, R
4. Fifth Session of the Working Committee for the Global Investigation of Pollution in the Marine Environment	E, F, S, R
5. First Session of the IOC Sub-Commission for the Caribbean and Adjacent Regions	E, F, S
6. Third Session of the <i>ad hoc</i> Task team to Study the Implications, for the Commission, of the UN Convention on the Law of the Sea and the New Ocean Regime	E, F, S, R
7. First Session of the Programme Group on Ocean Processes and Climate	E, F, S, R
8. Eighteenth Session of the Executive Council	E, F, S, R, Ar
9. Thirteenth Session of the Assembly	E, F, S, R, Ar
10. Tenth Session of the International Co-ordination Group for the Tsunami Warning System in the Pacific	
11. Nineteenth Session of the Executive Council, Paris, 1986	E, F, S, R, Ar
12. Sixth Session of the IOC Scientific Committee for the Global Investigation of Pollution in the Marine Environment	E, F, S
13. Twelfth Session of the IOC Working Committee on International Oceanographic Data Exchange	E, F, S, R
14. Second Session of the IOC Sub-Commission for the Caribbean and Adjacent Regions, Havana, 1986	E, F, S
15. First Session of the IOC Regional Committee for the Central Eastern Atlantic, Praia, 1987	E, F, S
16. Second Session of the IOC Programme Group on Ocean Processes and Climate	E, F, S
17. Twentieth Session of the Executive Council, Paris, 1987	E, F, S, R, Ar
18. Fourteenth Session of the Assembly, Paris, 1987	E, F, S, R, Ar
19. Fifth Session of the IOC Regional Committee for the Southern Ocean	E, F, S, R
20. Eleventh Session of the International Co-ordination Group for the Tsunami Warning System in the Pacific, Beijing, 1987	E, F, S, R
21. Second Session of the IOC Regional Committee for the Co-operative Investigation in the North and Central Western Indian Ocean, Arusha, 1987	E, F
22. Fourth Session of the IOC Regional Committee for the Western Pacific, Bangkok, 1987	E only
23. Twenty-first Session of the Executive Council, Paris, 1988	E, F, S, R
24. Twenty-second Session of the Executive Council, Paris, 1989	E, F, S, R
25. Fifteenth Session of the Assembly, Paris, 1989	E, F, S, R
26. Third Session of the IOC Committee on Ocean Processes and Climate, Paris, 1989	E, F, S, R
27. Twelfth Session of the International Co-ordination Group for the Tsunami Warning System in the Pacific, Novosibirski, 1989	E, F, S, R
28. Third Session of the Sub-Commission for the Caribbean and Adjacent Regions, Caracas, 1989	E, S
29. First Session of the IOC Sub-Commission for the Western Pacific, Hangzhou, 1990	E only
30. Fifth Session of the IOC Regional Committee for the Western Pacific, Hangzhou, 1990	E only
31. Twenty-third Session of the Executive Council, Paris, 1990	E, F, S, R
32. Thirteenth Session of the IOC Committee on International Oceanographic Data and Information Exchange, New York, 1990	E only
33. Seventh Session of the IOC Committee for the Global Investigation of Pollution in the Marine Environment, Paris, 1991	E, F, S, R
34. Fifth Session of the IOC Committee for Training, Education and Mutual Assistance in Marine Sciences, Paris, 1991	E, F, S, R
35. Fourth Session of the IOC Committee on Ocean Processes and Climate, Paris, 1991	E, F, S, R
36. Twenty-fourth Session of the Executive Council, Paris, 1991	E, F, S, R
37. Sixteenth Session of the Assembly, Paris, 1991	E, F, S, R, Ar
38. Thirteenth Session of the International Co-ordination Group for the Tsunami Warning System in the Pacific, Baja California, 1991	E, F, S, R
39. Second Session of the IOC-WMO Intergovernmental WOCE Panel, Paris, 1992	E only
40. Twenty-fifth Session of the Executive Council, Paris, 1992	E, F, S, R
41. Fifth Session of the IOC Committee on Ocean Processes and Climate, Paris, 1992	E, F, S, R
42. Second Session of the IOC Regional Committee for the Central Eastern Atlantic, Lagos, 1990	E, F
43. First Session of the Joint IOC-UNEP Intergovernmental Panel for the Global Investigation of Pollution in the Marine Environment, Paris, 1992	E, F, S, R
44. First Session of the IOC-FAO Intergovernmental Panel on Harmful Algal Blooms, Paris, 1992	E, F, S
45. Fourteenth Session of the IOC Committee on International Oceanographic Data and Information Exchange, Paris, 1992	E, F, S, R
46. Third Session of the IOC Regional Committee for the Co-operative Investigation in the North and Central Western Indian Ocean, Vascoas, 1992	E, F
47. Second Session of the IOC Sub-Commission for the Western Pacific, Bangkok, 1993	E only
48. Fourth Session of the IOC Sub-Commission for the Caribbean and Adjacent Regions, Veracruz, 1992	E, S
49. Third Session of the IOC Regional Committee for the Central Eastern Atlantic, Dakar, 1993	E, F
50. First Session of the IOC Committee for the Global Ocean Observing System, Paris, 1993	E, F, S, R
51. Twenty-sixth Session of the Executive Council, Paris, 1993	E, F, S, R
52. Seventeenth Session of the Assembly, Paris, 1993	E, F, S, R
53. Fourteenth Session of the International Co-ordination Group for the Tsunami Warning System in the Pacific, Tokyo, 1993	E, F, S, R
54. Second Session of the IOC-FAO Intergovernmental Panel on Harmful Algal Blooms, Paris, 1993	E, F, S
55. Twenty-seventh Session of the Executive Council, Paris, 1994	E, F, S, R
56. First Planning Session of the IOC-WMO-UNEP Committee for the Global Ocean Observing System, Melbourne, 1994	E, F, S, R
57. Eighth Session of the IOC-UNEP-IMO Committee for the Global Investigation of Pollution in the Marine Environment, San José, Costa Rica, 1994	E, F, S
58. Twenty-eighth Session of the Executive Council, Paris, 1995	E, F, S, R
59. Eighteenth Session of the Assembly, Paris, 1995	E, F, S, R
60. Second Session of the IOC-WMO-UNEP Committee for the Global Ocean Observing System, Paris, 1995	E, F, S, R

61.	Third Session of the IOC-WMO Intergovernmental WOCE Panel, Paris, 1995	E only
62.	Fifteenth Session of the International Co-ordination Group for the Tsunami Warning System in the Pacific, Papete, 1995	E, F, S, R
63.	Third Session of the IOC-FAO Intergovernmental Panel on Harmful Algal Blooms, Paris, 1995	E, F, S
64.	Fifteenth Session of the IOC Committee on International Oceanographic Data and Information Exchange	E, F, S, R
65.	Second Planning Session of the IOC-WMO-UNEP Committee for the Global Ocean Observing System, Paris, 1995	E only
66.	Third Session of the IOC Sub-Commission for the Western Pacific, Tokyo, 1996	E only
67.	Fifth Session of the IOC Sub-Commission for the Caribbean and Adjacent Regions, Christ Church, 1995	E, S
68.	Intergovernmental Meeting on the IOC Black Sea Regional Programme in Marine Sciences and Services	E, R
69.	Fourth Session of the IOC Regional Committee for the Central Eastern Atlantic, Las Palmas, 1995	E, F, S
70.	Twenty-ninth Session of the Executive Council, Paris, 1996	E, F, S, R
71.	Sixth Session for the IOC Regional Committee for the Southern Ocean and the First Southern Ocean Forum, Bremerhaven, 1996	E, F, S,
72.	IOC Black Sea Regional Committee, First Session, Varna, 1996	E, R
73.	IOC Regional Committee for the Co-operative Investigation in the North and Central Western Indian Ocean, Fourth Session, Mombasa, 1997	E, F
74.	Nineteenth Session of the Assembly, Paris, 1997	E, F, S, R
75.	Third Session of the IOC-WMO-UNEP Committee for the Global Ocean Observing System, Paris, 1997	E, F, S, R
76.	Thirtieth Session of the Executive Council, Paris, 1997	E, F, S, R
77.	Second Session of the IOC Regional Committee for the Central Indian Ocean, Goa, 1996	E only
78.	Sixteenth Session of the International Co-ordination Group for the Tsunami Warning System in the Pacific, Lima, 1997	E, F, S, R
79.	Thirty-first Session of the Executive Council, Paris, 1998	E, F, S, R
80.	Thirty-second Session of the Executive Council, Paris, 1999	E, F, S, R
81.	Second Session of the IOC Black Sea Regional Committee, Istanbul, 1999	E only
82.	Twentieth Session of the Assembly, Paris, 1999	E, F, S, R
83.	Fourth Session of the IOC-WMO-UNEP Committee for the Global Ocean Observing System, Paris, 1999	E, F, S, R
84.	Seventeenth Session of the International Coordination Group for the Tsunami Warning System in the Pacific, Seoul, 1999	E, F, S, R
85.	Fourth Session of the IOC Sub-Commission for the Western Pacific, Seoul, 1999	E only
86.	Thirty-third Session of the Executive Council, Paris, 2000	E, F, S, R
87.	Thirty-fourth Session of the Executive Council, Paris, 2001	E, F, S, R
88.	Extraordinary Session of the Executive Council, Paris, 2001	E, F, S, R
89.	Sixth Session of the IOC Sub-Commission for the Caribbean and Adjacent Regions, San José, 1999	E only
90.	Twenty-first Session of the Assembly, Paris, 2001	E, F, S, R
91.	Thirty-fifth Session of the Executive Council, Paris, 2002	E, F, S, R
92.	Sixteenth Session of the IOC Committee on International Oceanographic Data and Information Exchange, Lisbon, 2000	E, F, S, R
93.	Eighteenth Session of the International Coordination Group for the Tsunami Warning System in the Pacific, Cartagena, 2001	E, F, S, R
94.	Fifth Session of the IOC-WMO-UNEP Committee for the Global Ocean Observing System, Paris, 2001	E, F, S, R
95.	Seventh Session of the IOC Sub-commission for the Caribbean and Adjacent Regions (IOCARIBE), Mexico, 2002	E, S
96.	Fifth Session of the IOC Sub-Commission for the Western Pacific, Australia, 2002	E only
97.	Thirty-sixth Session of the Executive Council, Paris, 2003	E, F, S, R
98.	Twenty-second Session of the Assembly, Paris, 2003	E, F, S, R
99.	Fifth Session of the IOC Regional Committee for the Co-operative Investigation in the North and Central Western Indian Ocean, Kenya, 2002 (* Executive Summary available separately in E, F, S & R)	E*
100.	Sixth Session of the IOC Intergovernmental Panel on Harmful Algal Blooms, St. Petersburg (USA), 2002 (* Executive Summary available separately in E, F, S & R)	E*
101.	Seventeenth Session of the IOC Committee on International Oceanographic Data and Information Exchange, Paris, 2003 (* Executive Summary available separately in E, F, S & R)	E*
102.	Sixth Session of the IOC-WMO-UNEP Committee for the Global Ocean Observing System, Paris, 2003 (* Executive Summary available separately in E, F, S & R)	E*
103.	Nineteenth Session of the International Coordination Group for the Tsunami Warning System in the Pacific, Wellington, New Zealand, 2003 (* Executive Summary available separately in E, F, S & R)	E*
104.	Third Session of the IOC Regional Committee for the Central Indian Ocean, Tehran, Islamic Republic of Iran, 21-23 February 2000	E only
105.	Thirty-seventh Session of the Executive Council, Paris, 2004	E, F, S, R
106.	Seventh Session of the IOC-WMO-UNEP Committee for the Global Ocean Observing System, Paris, 2005 (* Executive Summary available separately in E, F, S & R); and Extraordinary Session, Paris, 20 June 2005	E*
107.	First Session of the Intergovernmental Coordination Group for the Indian Ocean Tsunami Warning and Mitigation System (ICG/IOTWS), Perth, Australia, 3-5 August 2005	E only
108.	Twentieth Session of the Intergovernmental Coordination Group for the Tsunami Warning System in the Pacific, Viña del Mar, Chile, 3-7 October 2005 (* Executive Summary available separately in E, F, S & R)	E*
109.	Twenty-Third Session of the Assembly, Paris, 21-30 June 2005	E, F, S, R
110.	First Session of the Intergovernmental Coordination Group for the Tsunami Early Warning and Mitigation System in the North Eastern Atlantic, the Mediterranean and Connected Seas (ICG/NEAMTWS), Rome, Italy, 21-22 November 2005	E only
111.	Eighth Session of the IOC Sub-commission for the Caribbean and Adjacent Regions (IOCARIBE), Recife, Brazil, 14-17 April 2004 (* Executive Summary available separately in E, F, S & R)	E*
112.	First Session of the Intergovernmental Coordination Group for the Tsunami and other Coastal Hazards Warning System for the Caribbean Sea and Adjacent Regions (ICG/CARIBE-EWS), Bridgetown, Barbados, 10-12 January 2006	E only
113.	Ninth Session of the IOC Sub-Commission for the Caribbean and Adjacent Regions (IOCARIBE), Cartagena de Indias, Colombia, 19-22 April 2006 (* Executive Summary available separately in E, F, S & R)	E S*

114.	Second Session of the Intergovernmental Coordination Group for the Indian Ocean Tsunami Warning and Mitigation System (ICG/IOTWS), Hyderabad, India, 14–16 December 2005	E only
115.	Second Session of the WMO-IOC Joint Technical Commission for Oceanography and Marine Meteorology, Halifax, Canada, 19–27 September 2005 (Abridged final report with resolutions and recommendations)	E, F, R, S
116.	Sixth Session of the IOC Regional Committee for the Western Indian Ocean (IOCWIO), Maputo, Mozambique, 2–4 November 2005 (* Executive Summary available separately in E, F, S & R)	E*
117.	Fourth Session of the IOC Regional Committee for the Central Indian Ocean, Colombo, Sri Lanka 8–10 December 2005 (* Executive Summary available separately in E, F, S & R)	E*
118.	Thirty-eighth Session of the Executive Council, Paris, 20 June 2005 (Electronic copy only)	E, F, R, S
119.	Thirty-ninth Session of the Executive Council, Paris, 21–28 June 2006	E, F, R, S
120.	Third Session of the Intergovernmental Coordination Group for the Indian Ocean Tsunami Warning and Mitigation System (ICG/IOTWS), Bali, Indonesia, 31 July–2 August 2006 (*Executive Summary available separately in E,F,S & R)	E*
121.	Second Session of the Intergovernmental Coordination Group for the Tsunami Early Warning and Mitigation System in the North Eastern Atlantic, the Mediterranean and Connected Seas (ICG/NEAMTWS), Nice, France, 22–24 May 2006	E only
122.	Seventh Session of the IOC Intergovernmental Panel on Harmful Algal Blooms, Paris, France, 16–18 March 2005 (* Executive Summary available separately in E, F, S & R)	E*
123.	Fourth Session of the Intergovernmental Coordination Group for the Indian Ocean Tsunami Warning and Mitigation System (ICG/IOTWS-IV), Mombasa, Kenya, 30 February-2 March 2007 (* Executive Summary available separately in E, F, S & R)	E*
124.	Nineteenth Session of the IOC Committee on International Oceanographic Data and Information Exchange, Trieste, Italy, 12–16 March 2007 (* Executive Summary available separately in E, F, S & R)	E*
125.	Third Session of the Intergovernmental Coordination Group for the Tsunami Early Warning and Mitigation System in the North Eastern Atlantic, the Mediterranean and Connected Seas, Bonn, Germany, 7–9 February 2007 (* Executive Summary available separately in E, F, S & R)	E*
126.	Second Session of the Intergovernmental Coordination Group for the Tsunami and other Coastal Hazards Warning System for the Caribbean Sea and Adjacent Regions, Cumaná, Venezuela, 15–19 January 2007 (* Executive Summary available separately in E, F, S & R)	E*
127.	Twenty-first Session of the Intergovernmental Coordination Group for the Pacific Tsunami Warning and Mitigation System, Melbourne, Australia, 3–5 May 2006 (* Executive Summary available separately in E, F, S & R)	E*
128.	Twenty-fourth Session of the Assembly, Paris, 19–28 June 2007	E, F, S, R
129.	Fourth Session of the Intergovernmental Coordination Group for the Tsunami Early Warning and Mitigation System in the North Eastern Atlantic, the Mediterranean and Connected Seas, Lisbon, Portugal, 21–23 November 2007 (* Executive Summary available separately in E, F, S & R)	E*
130.	Twenty-second Session of the Intergovernmental Coordination Group for the Pacific Tsunami Warning and Mitigation System, Guayaquil, Ecuador, 17–21 September 2007 (* Executive Summary available in E, F, S & R included)	E*
131.	Forty-first Session of the Executive Council, Paris, 24 June–1 July 2008	E, F, R, S
132.	Third Session of the Intergovernmental Coordination Group for the Tsunami and other Coastal Hazards Warning System for the Caribbean Sea and Adjacent Regions, Panama City, Panama, 12–14 March 2008 (* Executive Summary available separately in E, F, S & R)	E*
133.	Eighth Session of the IOC Intergovernmental Panel on Harmful Algal Blooms, Paris, France, 17–20 April 2007 (* Executive Summary available separately in E, F, S & R)	E*
134.	Twenty-third Session of the Intergovernmental Coordination Group for the Pacific Tsunami Warning and Mitigation System, Apia, Samoa, 16–18 February 2009 (*Executive Summary available separately in E, F, S & R)	E*
135.	Twentieth Session of the IOC Committee on International Oceanographic Data and Information Exchange, Beijing, China, 4–8 May 2009 (*Executive Summary available separately in E, F, S & R)	E*
136.	Tenth Session of the IOC Sub-Commission for the Caribbean and Adjacent Regions (IOCARIBE), Puerto La Cruz, Bolivarian Republic of Venezuela, 22–25 October 2008 (*Executive Summary available separately in E, F, S & R)	E, S*
137.	Seventh Session of the IOC Sub-Commission for the Western Pacific (WESTPAC-VII), Sabah, Malaysia, 26–29 May 2008 (*Executive Summary available separately in E, F, S & R)	E*
138.	Ninth Session of the IOC-WMO-UNEP Committee for the Global Ocean Observing System, Paris, France, 10–12 June 2009 (* Executive Summary available separately in E, F, S & R);	E*
139.	Fifth Session of the Intergovernmental Coordination Group for the Tsunami Early Warning and Mitigation System in the North Eastern Atlantic, the Mediterranean and Connected Seas, Athens, Greece, 3–5 November 2008 (* Executive Summary available separately in E, F, S & R)	E*
140.	Fourth Session of the Intergovernmental Coordination Group for the Tsunami and other Coastal Hazards Warning System for the Caribbean Sea and Adjacent Regions, Fort-de-France, Martinique, France, 2–4 June 2009 (* Executive Summary available separately in E, F, S & R)	E*
141.	Twenty-fifth Session of the Assembly, Paris, 16–25 June 2009	E, F, R, S
142.	Third Session of the Joint WMO-IOC Technical Commission for Oceanography and Marine Meteorology, Marrakesh, Morocco, 4–11 November 2009	E, F, R, S
143.	Ninth Session of the IOC Intergovernmental Panel on Harmful Algal Blooms, Paris, France, 22–24 April 2009 (* Executive Summary available separately in E, F, S & R)	E*
144.	Fifth Session of the Intergovernmental Coordination Group for the Tsunami and other Coastal Hazards Warning System for the Caribbean Sea and Adjacent Regions, Managua, Nicaragua, 15–17 March 2010 (* Executive Summary available in E, F, S & R)	E*
145.	Sixth Session of the IOC Regional Committee for the Central and Eastern Atlantic Ocean, Accra, Ghana, 28–30 March 2010 (* Executive Summary available in E, F, S & R)	E*
146.	Forty-second Session of the Executive Council; Paris, 15, 19 & 20 June 2009	E, F, R, S
147.	Forty-third Session of the Executive Council; Paris, 8–16 June 2010	E, F, R, S
148.	Sixth Session of the Intergovernmental Coordination Group for the Tsunami Early Warning and Mitigation System in the North Eastern Atlantic, the Mediterranean and Connected Seas, Istanbul, Turkey, 11–13 November 2009 (* Executive Summary available separately in Ar, E, F, S & R)	E*
149.	Seventh Session of the Intergovernmental Coordination Group for the Tsunami Early Warning and Mitigation System in the North Eastern Atlantic, the Mediterranean and Connected Seas, Paris, France, 23–25 November 2010 (* Executive Summary available separately in Ar, E, F, S & R)	E*
150.	Sixth Session of the Intergovernmental Coordination Group for the Tsunami and other Coastal Hazards Warning System for the Caribbean Sea and Adjacent Regions, Santo Domingo, Dominican Republic, 26–29 April 2011 (* Executive Summary available in E, F, S & R)	E*

<b>151.</b>	Twenty-fourth Session of the Intergovernmental Coordination Group for the Pacific Tsunami Warning and Mitigation System, Beijing, China, 24–27 May 2011 (*Executive Summary in E, F, S & R included)	E*
<b>152.</b>	Twenty-first Session of the IOC Committee on International Oceanographic Data and Information Exchange, Liège, Belgium, 23–26 March 2011 (*Executive Summary available separately in E, F, S & R)	E*
<b>153.</b>	Eighth Session of the IOC Sub-Commission for the Western Pacific (WESTPAC-VIII), Bali, Indonesia, 10–13 May 2010 (*Executive Summary available separately in E, F, S & R)	E*