Message from the Chairman
by Su Jilan

Since the first issue of WESTPAC Information (November 1992), I am pleased to note that a number of fruitful and interesting activities have taken place in the region and considerable progress has been accomplished in the implementation of WESTPAC projects.

The most important regional activity during this period was the Second Session of our Sub-Commission, held in Bangkok, 25-29 January 1993. The article on page 2 of this issue gives the highlights of the Session.

There have been a few changes in the project leaders since the Second Session. In view of the requirements of his new position, Dr. J. T. Baker declined to continue as Project Leader of ODC-1[1], whereupon Dr. Meryl Williams, Director of the Australian Institute of Marine Science kindly accepted to assume this responsibility. I also invited Dr. Yasuwo Fukuyo, from the University of Tokyo to be the Project Leader of OSLR-1[2], replacing Prof. T. Okaichi, who withdrew because of his heavy responsibilities as President of Kagawa University. I wish to express deep appreciation to Professors Baker and Okaichi for their years of dedicated service to the Sub-Commission’s activities. As well, I invited Prof. Zhang Jing of the Ocean University of Qingdao (China), to lead MPRM-3[3] on Atmospheric Inputs of Pollutants to the Seas.

I am happy to report that the agreement has officially become effective between UNESCO and the Thai Government.

(Cont'd on p. 8)

Third IOC WESTPAC
Symposium, November 1994

'Sustainability of the Marine Environment: An Integrated Scientific Approach to Coastal Management' is the theme of the Third IOC WESTPAC International Scientific Symposium, to be held in Bali, Indonesia, 22-26 November 1994. Organized in the spirit of UNCED and particularly Agenda 21, the symposium also aims to: (i) promote the exchange of ideas and information, particularly among young marine scientists, from both inside and outside the region; (ii) help coastal states to effectively address the regional needs of sustainable development of their coastal marine resources through interdisciplinary projects; and (iii) address global issues such as monitoring climate change, sea-level rise and biological diversity.

Call for papers

The symposium will focus on the following subject areas: (i) integrated scientific approach to coastal area management; (ii) biogeochemical processes and their impacts on regional biodiversity; (iii) dynamics, modelling and prediction of transport phenomena and (iv) climate variability/predictability and impacts. Papers are invited on: harmful algal blooms, river inputs of pollutants, impacts on mangroves, seagrasses and coral reefs, near-shore currents and sediment transport, continental shelf circulation, tides and tidal phenomena, storm surges and tsunamis, long-term records of climate change, ENSO and the sea-level signal, and climate change impacts. Sessions on WESTPAC programmes and projects will also be held concurrently with the symposium. Deadline for abstracts: 15 July 1994.

Correspondence concerning the scientific programme and papers should be addressed to: Prof. Tomio Asai, Faculty of Integrated Arts and Sciences, Hiroshima University, Kagamiyama, Higashi-Hiroshima, Japan—724; tel: (81-824) 246498; fax: (81-824) 240753. Dr. Asai, First Vice-Chairman of WESTPAC, is the Chairman of the symposium’s Scientific Organizing Committee.
SECOND SESSION OF THE IOC SUB-COMMISSION FOR THE WESTERN PACIFIC (SC-WESTPAC-III)
25-29 JANUARY 1993
THE AMBASSADOR HOTEL, BANGKOK, THAILAND.

Left to right: Dr. Suwit Vibulsresth, Deputy Secretary-General for the National Research Council of Thailand; Prof. Su Jilan, Chairman of the IOC Subcommission for the Western Pacific; Ms Choodchoi Eiumpong, Deputy Permanent Secretary for the Ministry of Science, Technology and Environment; and Dr. Gunnar Kullenberg, Secretary, IOC.
WESTPAC Training Workshop:  
Numerical Modelling of Coastal Ocean Circulation

In cooperation with the Ehime University of Japan, the IOC WESTPAC Training Workshop on Numerical Modelling of Coastal Ocean Circulation was held in Matsuyama, Japan, 27 September – 1 October 1993. This workshop aimed at training young scientists in WESTPAC Member States towards a better understanding of shelf circulation in the western Pacific region and focused on the introduction of and practical training in basic numerical simulation of ocean dynamics and circulation in the shelf and coastal seas. The workshop included: (i) the presentation of country reports by participants on progress of the study of coastal circulation; (ii) lectures on the relation between basic currents and material dispersion in the coastal sea; characteristics of tidal current, tide-induced residual current, and density- and wind-driven currents in the coastal sea; significance of vertical processes in the coastal physical, biochemical processes; the basic idea of finite difference on one-dimensional wave equation; some examples of numerical simulation on the physical, chemical and biological processes in the coastal sea; and (iii) exercises in numerical simulation.

IOC/China Training Course:  
Marine information management and ASFA

Following the offer of China and the decision of the Executive Council during its Twenty-Fifth Session, the Training Course on Marine Information Management and ASFA was held in Tianjin, China, 19-31 November 1992.

This training course was jointly sponsored by the IOC and China’s Department of International Cooperation of the State Science and Technology Commission (SSTC) and State Oceanic Administration (SOA). It was hosted by the National Marine Data and Information Service (NMDIS), SOA.

Eleven participants attended the course, of whom seven were selected from six IOC Member States in the WESTPAC area: Thailand, Philippines, DPR of Korea, Republic of Korea, Indonesia and Vietnam and four from China. Six experts of NMDIS in marine information management, ASFA input and computer software design, gave lectures. The course programme was developed by the experts from NMDIS in consultation with the IOC Secretariat.

The nine-day course emphasized hands-on exercise and covered the following subjects: (i) management and service of marine information; (ii) marine bibliographic database retrieval techniques; (iii) UNESCO’s Micro CDS/ISIS database software; (iv) the use of microcomputers in information management; (v) aquatic sciences and fisheries information management; (vi) aquatic sciences and fisheries abstracts; (vii) ASFIS guidelines for bibliographic description; (viii) ASFIS thesaurus and (ix) indexing and preparation of abstracts for ASFA.

Each trainee was provided with a diskette containing UNESCO’s Micro CDS/ISIS database software on completion of the training course. The proceedings of the course were distributed as IOC Training Course Reports no. 21.

Bathymetric chart of the Western Pacific

The IOC Editorial Board for the International Bathymetric Chart of the Western Pacific (EB-IBCWP) held its first session at the National Marine Data and Information Service of the State Oceanic Administration, Tianjin, China, 12-15 October 1993. The Board’s eight members (from Australia, China, Japan, Malaysia, Republic of Korea, Russia, USA and Vietnam) as well as invited experts from the International Hydrographic Bureau and China were in attendance.

The Editorial Board adopted its terms of reference as well as the specifications and assembly diagram for the IBCWP, and discussed implementation mechanisms. Commodore Mohammed Rastip Bin Hassan (Malaysia) was elected Chairman and Mr. Chris Johnston (Australia) as Vice-Chairman. The Board’s next meeting will be held in Australia approximately one year after the first session.

IOC’s ocean mapping activity in the Western Pacific was first approved in 1989 by the Commission’s 15th Assembly. Following a recommendation of the 1st Session of IOC WESTPAC, the 1st Meeting of the IOC ad hoc Group of Experts on Ocean Mapping in the WESTPAC Area was held in Tianjin, June 1990. The latter meeting submitted a recommendation to the 16th IOC Assembly which was approved, thus establishing the Editorial Board and designating Dr. Hou Wenfeng (China) as the Chief Editor.
New Projects

WESTPAC SEAWATCH initiative

The Long-Term Global Monitoring System of Coastal and Nearshore Phenomena Related to Climate was initiated by IOC in cooperation with WMO, UNEP and IUCN as a contribution to the GOOS module on Monitoring of the Coastal Zone Environment and Its Changes. The pilot phases of six pilot projects were endorsed by the Sixteenth Session of the IOC Assembly, with implementation plans being developed on: (i) Sea Level Changes and Coastal Flooding; (ii) Coastal Circulation; (iii) Assessment of Organic Carbon Circulation Accumulation in Surface Coastal Circulation; (iv) Change in Plankton Community Structure; (v) Benthic Communities: Coral Reef Ecosystems, and (vi) Terrestrial Vegetation: Mangrove Communities.

In view of the above, at the 27th Session of the UNESCO General Conference (Paris, November 1993), a proposal was made by China and supported by seven other countries to initiate an integrated coastal zone programme in the Asia-Pacific region. Initial emphasis will be on: (i) the creation of a SEAWATCH initiative, as a regional component of GOOS, with the first pilot project to be established in the East Asia area; (ii) integrated scientific interdisciplinary studies; and (iii) establishment of a network of centres for data processing and analysis, model and product development, impact assessment, information exchange and capacity-building. In light of this, the IOC Secretariat is taking steps to initiate a comprehensive WESTPAC SEAWATCH Programme in cooperation with several institutions inside and outside the region, based on the existing and planned data buoy systems as well as other coastal observing systems and relevant projects in the region, including *inter alia* the project on coastal circulation. The aim is to monitor coral reef ecosystems, mangrove communities, plankton community structure, sea level and coastal ocean circulation, as well as pollution sources, the health of the ocean and harmful algal blooms.

Assessment of atmospheric inputs of pollutants to the Western Pacific Ocean

The Assessment of Atmospheric Inputs of Pollutants to the Western Pacific Ocean has become the tenth project of the IOC Sub-Commission for the Western Pacific. The project was proposed by Professor Zhang Jing, Department of Marine Chemistry, Ocean University of Qingdao, China, as recommended by the IOC WESTPAC Scientific Symposium, Penang, Malaysia, 2-6 December 1991. The IOC Sub-Commission for the Western Pacific, at its second session (Bangkok, 25-29 January 1993), agreed to accept this proposal as one of the projects within the Programme on Marine Pollution Research and Monitoring of the Sub-Commission.

According to Prof. Zhang, atmospheric transport of pollutants is an important source of contaminants for the marine environment. Comparing atmospheric inputs with inflows of trace species to the ocean via rivers, trace metals in particulate form from rivers are the dominant route in coastal oceans. However, with respect to the open ocean such as the Pacific, the atmospheric path is likely to dominate.

Although considerable information exists about some of the processes involved, there is an urgent need for integrated research on input, transport of natural and anthropogenic materials, and on other environmental effects to the Western Pacific, and it is important to assess the atmospheric inputs in the coastal area within the WESTPAC region. Research projects include:

- measurement of natural materials through dry and wet deposition;
- measurement of input of atmospheric pollutants to the Western Pacific Ocean and its coastal areas;
- determination of the sources, deposition fluxes, seasonal and regional variabilities of both natural materials and pollutants by a combination of chemical, physical and meteorological studies;
- study of the marine processes that affect atmospheric pollutants input to the ocean and the mechanisms of the transfer of materials at the air-sea interface;
- *in situ* and laboratory study of the behaviours of atmospherically deposited material in the euphotic zone of the ocean and effects on bioproduction and sedimentation;
- comparison of atmospheric deposition between northern and southern hemispheric oceans and between high latitude and equator regions of the Western Pacific Ocean;
- study of numerical models that describe the transportation pattern of atmospheric pollutants into the West Pacific Ocean.

The decision to organize a workshop to prepare an Action Plan was taken by WESTPAC-II, and this activity is planned for November 1994, in conjunction with the Third WESTPAC Symposium.
Highlights of the XVII IOC Assembly

Delegates from 86 Member States and representatives from 12 international organizations gathered for the XVIIth IOC Assembly, held in Paris, 25 February - 11 March 1993 to discuss a whole range of challenging issues, including: IOC follow-up actions to UNCED; the establishment of the Global Ocean Observing System (GOOS); IOC development, operations, structure and statutes (DOSS); and IOC programme development.

IOC's follow-up to UNCED was one main focus of the meeting. The discussion was based on the 'Draft Action Plan for IOC Follow-up to UNCED and Implementation of Agenda 21: Overall Strategy and Goals', prepared by the IOC Secretariat and falling into three topics: UNCED and Agenda 21, the UN Framework Convention on Climate Change, and the Convention on Biological Diversity. An ad hoc Internessoinal Working Group was formed, which will be led by the Commission’s Chairman and comprised of the Chairmen of IOC regional, scientific and technical bodies, to evaluate and make recommendations on further actions to be taken by IOC, and explore the implications of UNCED for the programmes and budget of the Commission in the immediate, medium and long-term perspective.

The development of GOOS also attracted much attention at the Assembly. As the System, with the related Training, Education and Mutual Assistance (TEMA) has been identified as one of the priority actions in Agenda 21, the main thrust of IOC activities in the coming years is the planning and implementation of GOOS based on the existing ocean services programmes. This important endeavour again won the overall support of the Assembly.

The DOSS report generated much debate, demonstrating the deepening interest in the Commission as a competent inter-governmental instrument with respect to issues relating to marine science, ocean observations and related capacity building. While several proposals were adopted which aimed at more effectively gaining financial support and implementing IOC activities, other proposals were deemed to need more in-depth study.

The Assembly also reviewed the IOC programme activities with general satisfaction. A decision was taken to establish an Intergovernmental Committee for the Programme on Ocean Science in Relation to Living Resources and to reorganize the programme with two foci: (i) Ecosystem Dynamics and Living Resources, and (ii) GOOS support and Harmful Algal Blooms project. Activities of the regional bodies were reviewed with emphasis placed on the use of these groups in carrying out IOC activities and regional follow-up to UNCED, particularly in the coastal and shelf sea areas to ensure that more scientific input is provided to sustainable development. In this context, the Assembly accepted the offer by the Portuguese Government to host an international conference on marine scientific research and integrated coastal and ocean management for sustainable development in Lisbon, now scheduled for 7-12 November 1994, and a proposal was approved for a Conference on Coastal Change, to be held in Bordeaux, France, 6-10 February 1995.

Two Bruun Memorial Lectures were arranged during the Assembly, one given by Professor G.O.P. Obasi, Secretary-General of the World Meteorological Organization on the 'Role of WMO and the National Meteorological and Hydrological Services' and the other by Professor John Woods, Director of Marine and Atmospheric Sciences, Natural Environment Research Council, UK, who addressed the topic 'The Global Ocean Observing System'.

Elections were held with the following candidates elected unanimously: Manuel Marullo (Costa Rica) as Chairman, Geoffrey Holland (Canada) as First Vice-Chairman, Alexander Metalnikov (Russia) as Second Vice-Chairman, Hussein Badawi (Egypt) as Third Vice-Chairman and Su Jian (China) as Fourth Vice-Chairman. The Executive Council of IOC, composed of delegates from 30 Member States plus the above five officers, will hold its next session in Paris, 5-13 July 1994.

IOC ACTIVITIES IN THE REGION

International GOOS Symposium

One month after the 1st Session of the IOC Committee for the Global Ocean Observing System (GOOS, held in Paris, 16-19 February 1993), an international GOOS symposium was convened on 23 March in Tokyo, hosted by Japan. This event was organized by the Japanese Science and Technology Agency (STA) with the co-sponsorship of the Ministry of Education and several national agencies of the host country, and took place at the United Nations University. The features, problem areas and the strategic plan of GOOS were explained to an audience of about 250 people, mostly from various sectors of the Japanese community.

As a good cross-section of experts had been invited to the symposium, a two-day ad hoc workshop was also conducted, hosted by the Ministry of Education and STA, on the formulation of technical and scientific bodies necessary for the further development of GOOS and its Intergovernmental Committee. Details were added to the structure of the five GOOS modules.

GODAR workshop to be held in China

The second regional workshop on the Global Ocean Data Archaeology and Rescue (GODAR) of the IOC's International Oceanographic Data and Information Exchange (IODE) programme is scheduled to take place in Tianjin, China, 8-12 March 1994. The purpose of this workshop is to locate data, in the Western Pacific region, which are in danger of being lost, guarantee their continued availability, and make them accessible to a wide international community. Participants from fourteen countries of the region have been invited to attend.

The National Marine Data and Information Service of SOA, in Tianjin, is the location of World Data Centre-D (Oceanography) and National Oceanographic Data Centre of China.
Prof. Tomio Asai

The First Vice-Chairman of WESTPAC, Prof. Tomio Asai is presently at the Faculty of Integrated Arts and Sciences of Hiroshima University. He was the Director of the Ocean Research Institute, University of Tokyo from 1990 to 1993. He received his B.S., M.S. and Ph.D. degrees in the Geophysical Institute, Kyoto University. Beginning 1958, he served as a research associate and associate professor in the Faculty of Science and Geophysical Institute of Kyoto University, respectively, and became a professor in 1973 in the Ocean Research Institute of Tokyo University. Since 1990, he has been a councillor of the University of Tokyo. He also worked as a research scientist in the Meteorological Research Institute, Japan Meteorological Agency, as well as a visiting scientist in the National Center for Atmospheric Research of the USA. He has published several books on topics such as atmospheric convection, climate changes, atmospheric science, marine meteorology, and over 100 scientific papers.

Prof. Asai has had a number of professional affiliations. In particular, he is the President of the Meteorological Society of Japan and Councillor of the Oceanographic Society of Japan. He is also a member of the American Meteorological Society and the American Geophysical Union. He has been a member of international scientific bodies, including inter alia ICDP and ICCL of IAMAP, IOC-SCOR CCCO, JSC for WCRP, and is Vice-President of SCOR. At national level, he is the Chairman of the Japan National Committees for IOC and IAMAP. He is also a member of the Japan National Committees for UNESCO and SCOR.

Prof. Manuwadi Hungspeungs

The Second Vice-Chairperson of IOC WESTPAC, Prof. Manuwadi Hungspeungs is professor and presently head of the Department of Marine Science, Chulalongkorn University, Bangkok, Thailand. She obtained her B.Sc and Ph.D. degrees in chemical oceanography at the University of Liverpool, the United Kingdom. With a special interest in marine environmental chemistry and geochemistry, she has published over 30 papers on such topics as heavy metals and non-oil pollution in water, sediment and biota, the Thailand Mussel Watch Programme, river inputs to the coastal seas, river inputs to the sea and geochemistry of the estuarine area.

Prof. Manuwadi has been deeply involved in the IOC and its WESTPAC activities. She is the co-ordinator for the WESTPAC Programme on Marine Pollution Research and Monitoring as well as the Project Leader for the Assessment of River Inputs to the Seas. She also represented Thailand at the Seventeenth Session of IOC Assembly, Paris 25 February - 11 March, 1993.

On other national, regional and international activities, Prof. Manuwadi is a member of the National Committee on Marine Science and National Committee on Man and Biosphere of Thailand. She is a founding member of UNEP's Co-ordinating Body on the Seas of the East Asia (COBSEA) Programme and ASEAN Cooperation on Marine Science. She is also a member of the UNESCO Expert Group on Marine Science Curriculum.
Current and upcoming activities

Intercalibration exercise on river inputs to the seas

An intercalibration exercise, by correspondence and using nutrient samples, is being organized by IOC among participating WESTPAC laboratories, with a view to enhancing national capabilities in the area of assessing river inputs to the seas.

Dr. Herbert Windom, Skidaway Institute of Oceanography (USA) is responsible for purchasing standard reference samples and distributing them to the participating laboratories of IOC WESTPAC Member States, as well as for assessing and analyzing the results of the intercalibration exercise. This exercise is scheduled to be completed in the first quarter of 1994.

WESTPAC paleogeographic map project

A preliminary map compilation workshop for this WESTPAC project is planned for November 1994 in conjunction with the WESTPAC Symposium. An information package has been distributed to the participants.

Established during the 4th Session of the IOC Regional Committee of the Western Pacific (Bangkok, 1987), this project aims to compile numerous paleogeographical and geophysical data, generated in the past in the WESTPAC region. It will map coastlines on high and low stand in the late Quaternary and depict the paleogeography of the region during three time-slices. Thus far, six countries of the region have shown interest in participating.

(Cont'd from p. 6, 'Profiles')

relationships between the genetics, physiology and biochemistry of marine organisms are long-term objectives. Conservation of biodiversity is also examined.

(viii) River inputs to the sea and mussel watch projects - The marine chemistry group have played an active role in these two projects of the IOC WESTPAC Marine Pollution Research and Monitoring Programme since 1980. Several major rivers of Thailand have been studied as to their geochemical behaviours, watershed influences, etc. Monitoring of the quality of economically important bivalves has been practiced here since 1979.

In terms of international cooperation, the Department of Marine Science received substantial support from UNESCO and UNDP during the period 1979-1984 for the improvement of staff and facilities. Several cooperative programmes have been going on for some years with universities in the USA, Australia, Japan, Germany, UK and Sweden. The Department looks forward to cooperating with other IOC Member States, particularly the WESTPAC countries in carrying out future marine research activities.

CURRENT AND PLANNED REGIONAL ACTIVITIES FOR 1993-1995

Marine pollution

River inputs
(i) Intercalibration exercise by correspondence
(ii) River sampling analysis
(iii) Joint symposium on RI/HAB/circulation

Mussel watch
(i) Identify network and information circulation
(ii) Training workshop on methods of sampling and analysis

Atmospheric inputs
(i) Planning workshop on action plan

Ocean dynamics and climate

Banding of coral reefs
(i) Expert visits
(ii) Masters training

Ocean dynamics in Western Pacific
(i) Planning workshop
(ii) CREAMS planning workshop

Continental shelf circulation
(i) Training workshop on numerical modelling
(ii) Joint China-Philippines cruise in Sulu Sea
(iii) Joint symposium on RI/HAB/circulation

OSLR

WESTPAC-HAB
(i) Training workshop on taxonomy
(ii) Leaflet series
(iii) Expert mission
(iv) Joint symposium RI/HAB/circulation

PREP
(i) Expert visit, training workshop on data base management and analysis + PREP project plan

OSNLRR

Tectonics and its impacts on coastal zone
(i) Planning and project development workshop

Paleogeographic map
(i) Preliminary map compilation workshop
PUBLICATIONS/SOURCES OF INFORMATION

ISME activities for mangroves

The International Society for Mangrove Ecosystems (ISME), a non-governmental organization based in Japan and associated since its inception with the Coastal Marine (COMAR) Programme of UNESCO, organizes and implements a number of activities related to the study, conservation and rational use of these important natural resources. Requests for more information on ISME, its publications and other activities as well as on membership in the Society, should be addressed to: ISME Secretariat, c/o College of Agriculture, University of the Ryukyus, 1 Senbaru, Nishihara, Okinawa 903-01, Japan; fax: (81-98) 895 6602. Prof. Sanga Sabhasri (Thailand) is the ISME President, and Prof. Yoshihiro Kohda (Japan) the Executive Secretary.

News on harmful phytoplankton

The IOC produces a quarterly specialized information product entitled Harmful Algae News (HAN), with news on toxic algae and algal blooms written by specialists from various parts of the world, as well as information on IOC-FAO joint programme activities concerning this important problem. Requests to receive the HAN (free of charge) or other enquiries concerning IOC activities in this domain can be addressed to: Henrik Enevoldsen, HAB Project Coordinator, IOC of UNESCO, 1 rue Molliès, 75732 Paris cedex 15, France; tel: (33-1) 4568 4016, fax: (33-1) 4056 9316; omnet: ioc.secretariat.

Processing of oceanographic station data

Chinese and Russian translations of the UNESCO publication Processing of oceanographic station data have just become available. Produced by an editorial team of the UNESCO-ICES-SCOR-IAPSO Joint Panel on Oceanographic Tables and Standards, this manual contains recommended guidelines on how to calculate, either by computer algorithms or hand calculations, most of the common physical and dynamic properties of the sea, such as specific stability, density ratio etc. For more information, write to: G. Wright at the IOC address given in the Editorial Notice.

MEETINGS

PACON '94 – Sixth Pacific Congress on Marine Science and Technology; Townsville, Australia, 4-8 July 1994. Contact: PACON '94 Organizing Committee, C/- Sir George Fisher Center for Tropical Marine Studies, James Cook University, Townsville, Qld. 4811, Australia; tel.: (61-77) 814817, fax: (61-77) 755429.


Editorial Notice

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