

Intergovernmental Oceanographic Commission
Reports of Governing and Major Subsidiary Bodies

IOC Sub-Commission for the Western Pacific

Third Session

Tokyo, Japan

26 February - 1 March 1996

IOC/SC-WESTPAC-III/3
Paris, 3 July 1996
English only

TABLE OF CONTENTS

SUMMARY REPORT	Page
1. OPENING	1
2. ADMINISTRATION	3
2.1 ADOPTION OF THE AGENDA	3
2.2 DESIGNATION OF RAPPORTEUR FOT THE SESSION	3
2.3 CONDUCT OF THE SESSION	3
3. REPORT ON INTERSESSIONAL ACTIVITIES AND PROGRAMME EVALUATION	3
3.1 INTERSESSIONAL REPORT	3
3.2 EVALUATION OF EXISTING WESTPAC PROGRAMMES AND PROJECTS	5
4. REGIONAL WESTPAC PROJECTS: PROGRAMME FOR 1996-1998	6
5. REGIONAL DEVELOPMENTS OF IOC GLOBAL PROGRAMMES: PLANS FOR 1996-1998	7
5.1 GIPME	7
5.2 ODC, PARTICULARLY THE COASTS PROGRAMME	7
5.3 OSLR, ESPECIALLY HAB	8
5.4 OSNLR	9
5.5 REGIONAL COMPONENT OF GOOS	9
5.6 OCEAN MAPPING	12
6. RECENT DEVELOPMENTS WITHIN UNESCO OF IMPORTANCE FOR IOC AND WESTPAC	13
7. COOPERATION WITH OTHER ORGANIZATIONS	15
7.1 ORGANIZATIONS AND PROGRAMMES OF UN SYSTEM	15
7.1.1 UNEP	15
7.1.2 WMO	16
7.1.3 IMO	16
7.1.4 ESCAP	16
7.2 REGIONAL ORGANIZATIONS/PROGRAMMES AND OTHERS	17

	page
7.2.1 CCOP	17
7.2.2 ASEAN, SOPAC, JECSS, PICES and APEC	17
7.2.3 Others, including NGOs	19
8. TEMA	19
9. DEFINING THE REGIONAL PROGRAMME STRUCTURE	21
10. PROGRAMME AND BUDGET	21
10.1 MEDIUM - TERM STRATEGY 1996-2001: FOLLOW-UP OF UNCED	22
10.2 PROGRAMME AND BUDGET FOR 1996-1998: WESTPAC ACTION PLAN	22
10.3 WORKING MECHANISMS	22
10.4 REGIONAL SECRETARIAT	23
11. ELECTIONS	23
12. DATE AND PLACE OF THE NEXT SESSION	24
13. ADOPTION OF REPORT	24
14. CLOSURE	24

ANNEXES

I.	Agenda
II.	Recommendations with Table of Intercessional Activities
III.	List of Participants
IV.	Addresses
	A. Address by Prof. Su Jiland, Chairman of WESTPAC
	B. Address of Dr. Gunnar Kullenberg, Executive Secretary IOC
	C. Address by Mr. Hideki Hayashida, Director-General, Science and Intentional Affairs Bureau, Ministry of Education, Science, Sports and Culture of Japan
V.	WESTPAC Programme Structure: Guidance on Establishing, Maintaining and Terminating Projects
VI.	Programme of the Fourth IOC/WESTPAC Scientific Symposium
VII.	List of Acronyms

1. OPENING

- 1 The Third Session of the IOC Sub-Commission for the Western Pacific (WESTPAC) was opened in the National Olympic Memorial Youth Center, Tokyo, Japan, at 9:30 hours on 26 February 1996, by Prof. Su Jilan, Chairman of WESTPAC. On behalf of the Local Organizing Committee, Ms. Kuranishi welcomed the delegates from Member States and representatives from various intergovernmental and non-governmental organizations. The list of participants is attached as Annex III. She then invited Prof. Su Jilan to address the meeting.
- 2 Prof. Su also extended his welcome to the participants of the meeting. He mentioned that the main purpose of the meeting was to review the programme implementation over the past three years and plan the programme activities for the future three years. He emphasized that WESTPAC is not only a scientific organization, but also should aim to apply scientific research results to the marine environmental, coastal as well as various other socio-economic issues.
- 3 In terms of follow-up to UNCED, Prof. Su recalled the decisions of the Second Session of WESTPAC, Bangkok, 1993, to take actions in the following four areas: (i) the development of a regional component of GOOS; (ii) the Third WESTPAC Symposium focusing on the sustainability of marine environment, especially in the coastal areas; (iii) the establishment of close co-operation with other international organizations, especially those of policy-oriented nature; and (iv) the application for GEF funds for such identified regional projects as the inter-disciplinary studies of the Gulf of Thailand, the Malacca Strait and the Gulf of Tonkin. In this connection, he expressed his appreciation to Mr. Robert Harriss from Australia for his efforts in initiating a dialogue on behalf of WESTPAC with the GEF officers. He encouraged WESTPAC to continue pursuing its actions in relation to GEF, and urged Member States to give more thoughts as to how WESTPAC could contribute to the Integrated Coastal Area Management (ICAM).
- 4 In his turn, Dr. Gunnar Kullenberg, the Executive Secretary IOC, first thanked, on behalf of IOC, the Japanese Government and the Local Organizing Committee, particularly Dr. Taira for hosting and organizing WESTPAC-III in Japan. He was pleased to see representatives from various organizations in addition to many Member States and invited them to actively participate in the discussion of the meeting on various regional matters of common concern. He paid tribute to the late Chairman of WESTPAC, Dr. Nemoto, for his efforts in the development of WESTPAC, and expected that the holding of this WESTPAC Session in the Olympic Centre would stimulate the WESTPAC in achieving the expectations set by Professor Nemoto.
- 5 Dr. Kullenberg then recalled the main achievements since the first Session of WESTPAC. He thanked the Government of Thailand for its generous offer and assistance in the establishment of the WESTPAC Secretariat, as well as other countries, particularly the United States for its contribution to the Secretariat. He also thanked Mr Yihang Jiang, the Assistant Secretary for WESTPAC, for his efforts in operating the Office of the WESTPAC Secretariat. In this regard, he mentioned that a P4-post is being announced for application, but it would be difficult to establish a higher post depending only upon the contribution of UNESCO. He was pleased to note that most of the planned activities during the intersessional period had been successfully implemented. He paid special tribute

to Dr. Aprilani Soegiarto for his contribution to the success of the Third WESTPAC Symposium,

- 6 He also recalled the decision of the Twenty-eighth Session of UNESCO General Conference to give a real sense of functional autonomy to IOC through assigning considerable management flexibility, an incompressible allocation from the UNESCO regular budget as well as numbers of UNESCO staff for the IOC, and the support of the Eighteenth Session of the IOC Assembly to the WESTPAC development as well as the commitments made by such countries as Japan and the United States in providing financial support, and Japan and France in seconding staff to the WESTPAC Secretariat. He also encouraged Member States to make contributions to the special account of IOC for the implementation of its programmes, including the WESTPAC programmes. The increased functional autonomy has increased IOC responsibility and requires IOC to establish priorities and mobilize other sources of funding, e.g. GEF and World Bank to discharge these responsibilities.
- 7 Referring to the UNESCO Medium-Term Plan, he emphasized that the regional programme should also be formulated so as to help solving the various socio-economic problems of the region and ensure the sustainable development of marine environment in accordance with Agenda 21, Chapter 17 in particular. In this context, he mentioned the forthcoming session of the Commission on Sustainable Development in April 1996, where oceans will be on the Agenda. He stressed that the sustainable development will not be achieved without science as one basis. He mentioned the Framework Convention on Climate Change as a result of UNCED, where IOC has an indispensable role to play in providing scientific understanding as inputs to the policy-making process of Governments. He suggested that a sessional working group be set up to identify and redefine priority actions to be taken by WESTPAC in this regard as contributions to the IOC global medium-term strategy set by the Eighteenth Session of the IOC Assembly.
- 8 He informed the meeting of IOC actions to prepare for the 1998 International Year of the Ocean and Expo'98, including in particular the recommendations prepared by a dedicated Task Team to be submitted to the next session of the IOC Executive Council in Paris, 24 September-4 October 1996. An Inter-Secretariat mechanism of the UN system in form of ICSPRO will also be employed to achieve co-ordination. Finally, he particularly thanked the Ministry of Education, Science, Sports and Culture of Japan for the excellent organization of the meeting and wished the meeting full success.
- 9 On behalf of the Japanese Government, Mr. Hideki Hayashida, Director-General of Science and International Affairs Bureau, Ministry of Education, Science, Sports and Culture, joined the previous speakers in welcoming all delegates and participants to the WESTPAC meeting and expressed his pleasure for Japan to host the meeting. He said that UNESCO was the first UN organization Japan joined after the Second World War before becoming a member of the United Nations. Since then, Japan has made continuous efforts to contribute to the various UNESCO activities within the scope of competence of the Organization.
- 10 Being an island country who has benefited tremendously from the oceans, Japan attached much importance to international co-operation in ocean research. Japan has made a great contribution to the establishment of IOC within UNESCO in 1961 and took the initiative in establishing the WESTPAC with active participation in and financial

contribution to its programme activities, especially in the field of education and training for WESTPAC countries,

11 He noted the increasing global concerns on environmental change and its socio-economic impacts, which generated the full recognition of the impact of oceans on global climate change and ocean living resources, and the role of ocean research and systematic observation in understanding these global uncertainties. He stressed the need for strengthening international co-operation in ocean research and observation in coping with these global issues and the WESTPAC framework was recognized as an important mechanism in this respect.

12 Mr. Hayashida thanked the IOC and WESTPAC, Secretariats for their support to the organization of the meeting, as well as Prof. Hirano, Director of the Ocean Research Institute, the University of Tokyo and his staff for their efforts in the preparation for the meeting,

13 Mr. Geoffrey Holland, Chairman of IOC, also participated in the opening and delivered a speech at a reception hosted by the Ministry of Education, Science, Sports and Culture, and the Ocean Research Institute in the evening of the same day.

14 The Speeches of Prof. Su Jilan, Dr. Kullenberg and Mr. Hayashida at the opening of the meeting are attached as Annex IV,

2. ADMINISTRATION

2.1 ADOPTION OF THE AGENDA

15 The Technical Secretary for the Session, Mr. Yihang Jiang, introduced the agenda item, referring to document IOC/SC-WESTPAC-III/1 prov., the Provisional Agenda. The Sub-Commission adopted the Agenda with minor changes, attached as Annex I.

16 A Scientific Seminar was organized during the Session during which 6 scientists from the region presented their papers on various topics related to the application of marine sciences to the integrated coastal area management. The papers will be published in the IOC Workshop Report series.

2.2 DESIGNATION OF RAPPORTEUR FOR THE SESSION

17 The Sub-Commission accepted the proposal by Japan, seconded by Malaysia, to designate Dr. Anond Snindvong, Thailand, to serve as Rapporteur for the Session.

2.3 CONDUCT OF THE SESSION

18 The Provisional Timetable (Document IOC/SC-WESTPAC-III/1 Add. prov.) and the Provisional List of Documents (Document IOC/SC-WESTPAC-III/4 prov.) were introduced by the Technical Secretary, with two additional documents added to the list.

19 The Sub-Commission decided to work mainly in plenary. It also noted that drafting groups might be formed to deal with certain agenda items, such as the NEAR-GOOS Implementation Plan and the Agenda item 9, Defining the Regional Programme Structure.

3. REPORT ON INTERSESSIONAL ACTIVITIES AND PROGRAMME EVALUATION

3.1 INTERSESSIONAL REPORT

20 The Executive Secretary IOC introduced the agenda item, referring to Document IOC/SC-WESTPAC-III/6, IOC Executive Secretary's Report on Intersessional Activities (1993-1995). He reported to the Sub-Commission that all the Recommendations of the last Session of the Sub- Commission had been fully or partially implemented, He emphasized that it will be extremely important to provide the scientific results obtained during the last intersessional period to users, and apply them to the integrated coastal area management. The Executive Secretary encouraged the Delegates to provide information about the results to other institutions at the national level to increase awareness of the IOC programmes and activities in Member States of the WESTPAC. He invited the Technical Secretary to provide to the Sub-Commission details of the report,

21 Mr. Yihang Jiang then reported on the implementation of the Recommendations adopted by the last session of the Sub-Commission. He informed the Sub-Commission that Recommendations 1, 3 and 4 had been fully implemented and most of the activities identified in Recommendation 2 had been implemented during the intersessional period. Thanks to the generous support of the Government of Indonesia, the Third IOC/WESTPAC Scientific Symposium on Sustainability of the Marine Environment was successfully organized in Bali, Indonesia, 22-26 November 1994. with participation of more than 200 scientists from 28 countries, both inside and outside the WESTPAC region, A special session on Integrated Management of Coastal Areas was organized during the Symposium, where scientists and managers exchanged their views on this topic, It was concluded that to achieve the goal of sustainable use of coastal resources and for regional management of coastal areas, marine science should respond to the socio-economic needs,

22 The IOC Regional Secretariat for WESTPAC has been established in Bangkok with the kind support of National Research Council of Thailand (NRCT). An Agreement between UNESCO and the Government of the Kingdom of Thailand was signed by Mr. Federico Mayor, Director-General of UNESCO, and Mr. Prasong Soonsiri, the Minister of Foreign Affairs of Thailand, and the Agreement entered into force on 10 August 1993, A post was established at the end of September 1994 through cost-sharing between USA and UNESCO on a 50/50 basis, Detailed information of the establishment and operation of the Secretariat were presented to the Sub-Commission, Good co-operation with UNESCO Office in Bangkok helped ensure a successful operation of the Regional Office.

23 Brief information on co-operation with other international and regional organizations was also provided to the Sub-Commission and discussed further under Agenda Item 7.

24 **The Sub-Commission expressed** its appreciation to the Government of Indonesia for generously hosting the Third IOC/WESTPAC Scientific Symposium in Bali, Indonesia,

25 **The Sub-Commission also expressed** sincere thanks to the Government of Thailand for hosting the IOC Regional Secretariat and for providing support to the office.

- 26 With regard to the staff situation in the Regional Secretariat, an *ad hoc* group was set up to identify the necessary resources to support further development of the Secretariat, The report was presented under Agenda Item 10.4
- 27 **The Sub-Commission thanked** the Government of Japan for its generous support to host the Third Session of the Sub-Commission and provide excellent arrangement ensuring the success of the Session.
- 28 Many delegates stated the importance of the WESTPAC programmes in relation to the rapid economic development in the region, It was emphasized that the application of scientific results for various purposes should be given more attention in programme implementation for the next intercessional period,
- 29 Most delegates informed the Sub-Commission about their national activities during the last intersessional period and future activities in supporting the WESTPAC programme. It was noted that co-ordination of the marine science and other related activities is an essential role for IOC, in which the contributions from national institutions are fundamental aspects.
- 30 The Representative of the Japan Oceanographic Data Centre (JODC) stated that the JODC has conducted the Data Management Training Course for the International Oceanographic Data and Information Exchange (IODE) in the WESTPAC region, as an activity of the Responsible National Oceanographic Data Centre (RNODC) for WESTPAC. He further added that the Training Course should be continued for enhancing effective oceanographic data exchange in the region.
- 31 The Representative of WMO stated that WMO is in a position to continue and expand co-operation with IOC, including its regional subsidiary body, WESTPAC. He expressed particular interest in supporting the development of the three important programmes, namely, the SEACAMP, NEAR-GOOS, and IGOSS in partnership with IOC.
- 32 **The Sub-Commission adopted** the Report on Intersessional Activities, subject to some revisions and updating of the table on activities provided in the Report. If possible it should include also information on the resources provided not only from IOC but also from Member States.
- 33 **The Sub-Commission adopted** Recommendation SC-WESTPAC-III.1, A Programme of the Fourth IOC/WESTPAC Scientific Symposium, proposed by the Officers of WESTPAC, is presented in Annex VI.

3.2 EVALUATION OF EXISTING WESTPAC PROGRAMMES AND PROJECTS

- 34 Mr. Yihang Jiang, Assistant Secretary for WESTPAC, introduced this item, referring to Document IOC/SC-WESTPAC-III/8. He recalled the recognition of the IOC Assembly that a review of the existing projects is needed and stated that the paper represented a response of this. He noted that during the last intercessional period, most of the projects had been successfully implemented with a few exceptions due to lack of resources, There is a need for evaluation of the existing programmes and projects in terms of their importance and relevance to Member States in the region and to form a basis for deciding on their

continuation This evaluation will set the scene for discussions on Agenda Item 9: Defining the Regional Programme Structure.

3 5 Dr. Kullenberg added to the introduction by mentioning some specific projects which need further consideration and actions, He noted the need for a full time PREP coordinator as well as for funding for this from both international and national sources. He also mentioned the Asia-Pacific Mussel Watch Programme as an important project in addressing the assessment of the health of the marine environment. He informed that an evaluation of the existing programmes and projects had already been done for the IOCARIBE region, and that a similar exercise is necessary for the WESTPAC so as to adjust the programmes and projects of WESTPAC in view of follow-up to UNCED decisions.

3 6 He referred to ICAM as a possible priority area of actions in this context, with the contribution from existing WESTPAC projects, e.g. mussel watch, river and atmospheric inputs, and GOOS. He underlined the need to identify and focus on a well selected number of priorities. The newly initiated UNESCO inter-sectoral programme on coastal zones and small islands was cited as framework which may help ensure inputs of both natural science as well as socio-economic aspects, into a truly interdisciplinary and integrated approach.

3 7 The Representative of SOPAC emphasized the importance of co-ordinating the programmes of regional organizations together with those of the UN system working in the region. He also stressed that structuring of WESTPAC programmes and projects should ensure wider coverage so as to include island countries in the Pacific.

3 8 The Delegate of Australia suggested the termination of those projects which lack enthusiasm and financial and human resources, e.g. the PREP and coral banding projects. However, the Delegate of the United States expressed concern regarding the proposed termination of the coral banding project, and underlined the utility of such records for research on seasonal to interannual climate variability.

3 9 **The Sub-Commission decided** to proceed with making necessary adjustments to the existing programmes and projects. This should be initiated during this Session but may need to go on intercessionally. The sessional considerations will be discussed on basis of the recommendations of the sessional Working Group established under Agenda Item 9, which reports under Agenda Item 10,

4. REGIONAL WESTPAC PROJECTS: PROGRAMME FOR 1996-1998

4 0 The Technical Secretary presented a draft programme proposal for 1996-1998, referring to the documents IOC/SC-WESTPAC-III/7 and IOC/SC-WESTPAC-III/7.Add. The programme activities included in the documents were presented based on the contributions from the Programme Coordinators and Project Leaders, as well as consultations with relevant international and regional organizations. He informed the meeting that actions are needed to complete the document in relevant programme areas during the session. Due consideration should be given to the discussion in plenary and by the *ad hoc* sessional working group with regard to refining the programme structure for the Sub-Commission.

4 1 The Executive Secretary IOC emphasized that: (i) the WESTPAC programme activities should address scientific and management issues of global and regional concerns,

e.g. ICAM , HAB and climate change and (ii) national participation in the various programme areas are essential for the success of the programmes based on the national requirements and priorities. He invited the delegates to present briefly on-going national programmes, priority areas and plans,

42 Delegates from all countries participating in the Session provided to the Sub-Commission information on existing national programmes and national interests, with general agreement that the application of the scientific results obtained from various programmes should be seriously considered. It was also clearly indicated by most of the delegates that WESTPAC programmes should be based on regional concerns and requirements and should address scientific, as well as management issues.

43 Noting that the *ad hoc* sessional working group is working on the definition of the structure of the WESTPAC project and considering also that one basic role of the IOC is to co-ordinate the programme activities in the region, the Sub-Commission requested the Secretariat to revise the information in the table provided in the Document IOC/SC-WESTPAC-III/7 and provide the revised version to the Session together with the report of sessional *ad hoc* working group. The revision of the programmes should take into account the national information which was provided.

44 The revised proposal in a tabular form was provided to the Sub-Commission and discussed under Agenda Item 10.

45 **The Sub-Commission reviewed** proposals for a project on An International Co-operative Study on the Gulf of Thailand, and on a co-ordinated remote sensing project addressing special regional applications of remote sensing data, **The Sub-Commission agreed to** include these projects in the programme activities for next intersessional period.

46 **The Sub-Commission adopted** Recommendation SC-WESTPAC-III.2

5. **REGIONAL DEVELOPMENTS OF IOC GLOBAL programmes: PLANS FOR 1996-1998**

47 Under this Agenda Item, the WESTPAC Programme Coordinators or Project Leaders were invited to review the development of the relevant programmes.

5.1 GIPME

48 Mr. Yihang Jiang introduced this item on behalf of Dr. Manuwadi Hungspreugs, the Coordinator of WESTPAC Programme on Marine Pollution Research and Monitoring. He mentioned that GIPME, now co-sponsored by IOC, IMO and UNEP, provides a mechanism for authoritative evaluation of marine environment and coordinates activities in relation to marine pollution research and monitoring, both at global and regional levels, through its groups of experts on standardized methods (GEMSI), the assessment of biological effects of marine pollution on the marine environment (GEPP) and standards and reference materials (GESREM). It also conducts related training. The second open ocean baseline study cruise in the Atlantic Ocean is underway and will soon be complete. A similar study of organic and inorganic contaminants for the Pacific is in preparation.

49 In the WESTPAC region, IOC has been co-operating with various organizations, e.g. GEF-IMO and UNEP through provision of scientific advice to their marine pollution prevention and management programme in the east Asian region and regional seas programmes, respectively. The IOC-UNU International Mussel Watch Programme for the Asia-Pacific was initiated at the end of 1994, and a possible pilot project of the health of the ocean module (HOTO) of GOOS was proposed in November 1995.

50 **The Sub-Commission noted** the information provided **and decided** to further support the development of the GIPME programme, particularly the priority projects in the WESTPAC region,

5.2 ODC, PARTICULARLY THE COASTS PROGRAMME

51 Prof. Yamagata, the Project Co-ordinator for Ocean Dynamics and Climate in the WESTPAC region, gave an overview of the IOC programme on ODC. He mentioned that ODC is composed of both research programmes, including WCRP (TOGA, WOCE, CLIVAR, GEWEX), and operational programmes such as GOOS climate module and GCOS ocean component. He emphasized that attention should be given to the following relationships in order to ensure success of the ODC programme: regional vs. global ; research vs operational ; coastal/marginal seas vs. open oceans; disciplines vs. interdisciplines, and national vs. international (multilateral and bilateral programmes).

52 As regards ODC regional projects, he mentioned that CREAMS and NEAR-GOOS may well contribute to the objectives of the ODC. He also gave some introduction to ODC-2: Ocean Dynamics in the WESTPAC region, including the objectives, state of development and recommendations.

53 Dr. R. Lukas provided some information on CLIVAR-GOALS and CLIVAR DecCen programmes, particularly the interaction of Asian-Australia Monsoon with ENSO. An important aspects of this is the interaction of ocean circulation in the Western Pacific with the throughflow to the Indian Ocean. A recommendation was proposed that IOC/WESTPAC develop a co-operative plan for WESTPAC Monsoon Oceanography as a contribution to the CRP-CLIVAR-GOALS programme.

54 **The Sub-Commission adopted** Recommendation SC-WESTPAC-III.3.

55 Prof. Su Jilan reviewed the progress of the IOC Programme on Coastal Ocean Advanced Science and Technology Study (COASTS), which had been also presented in a separate lecture at the Bali Symposium. He informed the meeting that the First COASTS Workshop was held in Liege, Belgium, May 1994, with focus on physical processes. COASTS will eventually become fully interdisciplinary with emphasis on the interaction between physical-biological-geological-chemical processes, Training will compose an integral part of the programme. He informed that the next global workshop will be held in 1999, and planned activities before then will include: (i) facilitation of coordinated research on critical processes; (ii) development of standard remote sensing methods and products; (iii) development of standard generic methods and (iv) training. The goal of COASTS would be to provide a sound scientific database for coastal management. Prof. Su also informed that the COASTS programme proposed to support development of coastal seas modelling capabilities as part of its activities, and parts of the WESTPAC region were

considered as areas for immediate action. The modelling activities would be matched to the existing coastal zone observations, such as NEAR-GOOS.

- 56 **The Sub-Commission took note** of the information provided **and decided** to further strengthen the various coastal programmes, with due attention to the interaction among different disciplines, including the socio-economic aspects, with a view to contribution to the decision-making process in integrated coastal zone management.

5.3 OSLR, ESPECIALLY HAB

- 57 Dr. Fukuyo focused his presentation on the IOC Programme on HAB. He mentioned that, with the withdrawal of FAO, IOC is at present the only sponsor of the programme. He referred to the considerable increase of incidence of harmful algal blooms in recent years as a major cause and justification of HAB programme. He emphasized the need for further actions in order to prevent and mitigate the incidence of blooms. High priority should be given to capacity building, training in particular. He informed that a HAB centre had been established in Copenhagen, Denmark, and another one is now being established in Vigo, Spain. Other achievements in HAB programme include the publication of 11 issues of HAB newsletter since 1991; completion of a Manual on Harmful Marine Microalgae; publication of a Directory of Scientists engaged in HAB studies; and compilation of teaching materials for training. He also mentioned that the focus of the training in HAB has been training of trainers and that three such training courses have been organized thus far. Given the imbalance between the number of training courses vs. the number of applicants, an additional training course is planned in WESTPAC region, in 1996.

- 58 The Delegates of Japan, Korea, Russia and China provided information on the occurrence of algal blooms in their countries and the economic losses incurred,

- 59 **The Sub-Commission took note** of the information **and decided** to further support the IOC HAB programme as a matter of priority. **The Sub-Commission noted** with appreciation the offer of the Republic of Korea to share the cost of a possible Symposium on HAB in 1997,

5.4 OSNLR

- 60 Dr. Kagami recalled the International Conference on Coastal Change, held in Bordeaux, France, February 1995, where geomorphology, coastal erosion, neotectonics, sea-level change, coast utilization, coastal pollution, wetland environment, coral reef, remote sensing and coastal engineering were main topics of discussion. A better understanding of the present coastal situation through comprehensive programmes of mapping and monitoring was recommended. Various integrated coastal management programmes were also considered.

- 61 He also recalled the progress in the two WESTPAC projects: (i) Paleogeographic Map and (ii) Tectonics and Its Impacts to Coastal Zone including all kinds of natural hazards. Regarding the former, the International Symposium on Neogene Evolution of Pacific Ocean Gateways was held in Kyoto, Japan, October 1995 where the study of Pacific-Indian Ocean Throughflow was the main topic. In terms of the latter, he informed the meeting that the Second International Forum on Eastern Asia Natural Hazards Mapping

Project was held in Tsukuba, Japan, September 1995, where a mapping project of geological hazards in the marine areas was proposed.

62 Dr. Kullenberg also informed the meeting of the efforts initiated by IOC in the Indian Ocean and East Africa as follow-up to the Bordeaux Conference. He noted that the discussion over the past days provides also basic scientific information for consideration of similar actions in the WESTPAC region. He also mentioned the ongoing discussions in the Ocean Drilling Project (ODP) regarding the participation of the developing countries in the ODP and IOC's role in facilitating this participation. He invited the Sub-Commission to support those efforts.

63 **The Sub-Commission took note** of the information **and confirmed** its support to the development of OSNLR programme in the context of integrated coastal area management.

64 **The Sub-Commission took note** of the information provided in the Sub-items 5.1-5.4, **and decided** that the information on the global programmes of the IOC should be taken into account in the specification of the WESTPAC programme for the next intersessional period 1996-1998. It **accordingly instructed** the Secretariat to take this into consideration in further specifications,

5.5 REGIONAL COMPONENT OF GOOS

65 The Executive Secretary IOC, Dr. Kullenberg, informed the Session that the situation on the development of GOOS was reviewed by the Second Session of the IOC-WMO-UNEP Committee for GOOS (I-GOOS) and reported to the Eighteenth Session of the IOC Assembly. It was emphasized in the report that (i) in order to get GOOS fully operational joint efforts and commitments of Member States have to be obtained, to ensure global partnership; (ii) regional construction of GOOS operational system is needed and should be a priority, building on existing elements; and (iii) the benefits in socio-economic aspect should be appropriately addressed, to get commitments from governments.

66 He further informed the meeting about the global infrastructure of GOOS which provides for an intergovernmental mechanism and a scientific forum. The I-GOOS is the intergovernmental body of GOOS, the Joint Scientific and Technical Committee for GOOS (J-GOOS) provides scientific and technical advice to the development of GOOS. The regional development of GOOS in the different areas is currently going on, or planned, e.g. Euro-GOOS, European SEAWATCH, Med-GOOS, Black Sea-GOOS and Caribbean SEAWATCH, and several SEAWATCH endeavors in the WESTPAC region.

67 The Executive Secretary reiterated that the regional GOOS should aim to deliver products and serve different communities, and sectors who use ocean areas and resources in one way or another.

(i) North East Asian Regional-Global Ocean Observing System (NEAR-GOOS)

68 Prof. K. Taira introduced the NEAR-GOOS Implementation Plan referring to Document IOC/SC-WESTPAC-III/Inf. 2 together with the Report on the Expanded *ad hoc* Working Group for the NEAR-GOOS Implementation Plan. He reported on the development of the NEAR-GOOS, and the proposal in the document.

- 69 At its 27th Session (Paris, November 1993), the General Conference of UNESCO took note of Resolution 57 which called on IOC to establish a GOOS regional pilot activity in the North-East Asian region. Pursuant to the Resolution, IOC organized in 1994 two expert meetings (Beijing, China 16-18 August and Bali, Indonesia, 19-21 November) to define the framework for developing the project. The Pilot Implementation Plan prepared by the *ad hoc* Working Group was discussed in the Bangkok meeting (January 1996) and presented to the Sub-Commission in document IOC/SC-WESTPAC-III/Inf. 2.
- 70 Introducing the general goal of the programme, Dr. Taira indicated that the NEAR-GOOS is aiming at satisfying a number of specific applications, such as improved ocean services, natural disaster reduction, and providing information to fishery, mariculture and health of ocean for recreation purposes. The data downloaded from GTS and from all observations will be provided to real-time database. Data and data products will be open to all users.
- 71 **The Sub-Commission expressed** its strong support to the development of the regional components of GOOS. Delegations informed the Sub-Commission on the relevant national programmes and activities of ocean observation and monitoring, which can contribute to the operation of regional components of GOOS, e.g. NEAR-GOOS and the WMO-IOC SEACAMP.
- 72 Noting the strong support expressed by a number of Member States, the Delegation of Japan informed the Session that elaborate efforts and necessary arrangements will be made towards the early initiation of the operation of the NEAR-GOOS Real-time Database linked directly to GTS and Internet after the formal adoption of the Pilot Implementation Plan,
- 73 The Representative of WMO expressed, as one of co-sponsors of GOOS, the full support in developing NEAR-GOOS, in particular the operation of a real-time database system, which will enable all Member States of WESTPAC and other parties further develop both the ocean service and ocean research activities. For the successful operation of the system, he suggested that it would be more beneficial to various users if the NEAR-GOOS real-time data would be also made available to IGOSS through GTS as encouraged by the Seventh Session of the joint IOC-WMO Committee for the IGOSS, Paris, 20-28 November 1995,
- 74 The Representative of PICES confirmed the support to the development of NEAR-GOOS and expressed willingness to co-operate with IOC/WESTPAC on related activities in the areas of mutual interest,
- 75 The Delegates of China and Republic of Korea stressed that the improvement of ocean services should be the primary goal of the NEAR-GOOS. To facilitate an early inclusion of various parameters, they also purposed that a temporary steering committee be formed to investigate the feasibility.
- 76 The Representative of SOPAC pointed out the need for the establishment of a similar regional ocean observation system in the South Pacific. In response, Dr. Kullenberg offered to raise the issue at the next meeting of I-GOOS.

77 An extensive discussion focused on the parameters which should be initially involved in the system and will address requirements of various applications and be practically feasible for operation.

78 **The Sub-Commission agreed to** establish the Co-ordination Committee for NEAR-GOOS with revised Terms of Reference and allocated the responsibility to the Committee to further discuss the matters of the operational system including parameters, and application of the results obtained.

79 **The Sub-Commission adopted** Recommendation SC-WESTPAC-III.4.

(ii) **South-East Asian Centre for Atmospheric and Marine Prediction (SEA CAMP) Project**

80 The IOC Assistant Secretary for WESTPAC informed the meeting on the joint WMO-IOC First Implementation Planning Meeting on the project, at IOC/WESTPAC Regional Secretariat, Bangkok, Thailand, 18-20 July 1995, The proposed project is aiming at improving marine meteorological and physical oceanographic predictions in the region and providing necessary data and data products to various users for protection of marine environment and sustainable development. The proposed project is intended to last for three years, with the support of external donors. After this period the activities implemented would continue as a self-sustaining, long-term, operational programme. He also informed the Session that the next meeting is tentatively scheduled in Singapore, 6-8 May 1996. He and the Representative of WMO encouraged the Member States of the WESTPAC to strongly support the SEACAMP by active participation in the Second Planning Meeting.

81 The Delegates of Malaysia and Australia expressed their support for developing the proposed programme, and stated that the project will potentially benefit all countries in the region.

82 **The Sub-Commission supported** continued sponsorship of IOC in developing the project.

(iii) **Health of the Ocean Panel of GOOS**

83 Prof. Su Jilan, Chairman of WESTPAC, provided information on the Third Session of the Health of the Ocean (HOTO) Panel charged with developing a plan for the Health of the Ocean module of GOOS (IOC/WESTPAC Regional Secretariat for WESTPAC, Bangkok, Thailand, 15-21 November 1995), with reference to the document IOC/SC-WESTPAC-III/9 and the Annotated Provisional Agenda.

84 The Strategic Plan for the HOTO Module was discussed and finalized. A draft blue print for preparation of regional pilot projects has been prepared which also provides guidelines for regional actions. During the meeting, the proposals on developing pilot activities in the southern and northern parts of the WESTPAC region were drafted to address regional problems with regard to the health of the ocean with cross reference to the Coastal Module of GOOS.

85 The Delegate of the United States expressed the support to the regional approach of HOTO, and encouraged the expansion of NEAR-GOOS so as to include related parameters in the operational system, e.g. some chemical and biological parameters. Such WESTPAC co-operation can be beneficial to all participants.

86 **The Sub-Commission decided** to establish an *ad hoc* intercessional working group to prepare pilot projects for the WESTPAC region, taking into consideration existing WESTPAC projects related to this matter.

87 The Representative of IMO informed the meeting that, with implementation of the GEF project on Prevention and Management of Marine Pollution in the East Asian Region, management infrastructures have been set up in the demonstration sites of the project, He invited the Sub-Commission to consider this fact when the sites for pilot projects are selected.

(iv) **International Coral Reef Initiative**

88 The Delegate of the United States summarized the International Coral Reef Initiative and Global Coral Reef Monitoring Network, which may be regarded as a pilot component of the Coastal Module of GOOS. The initiative is a new partnership to promote the protection and sustainable use of coral reef ecosystems. A number of WESTPAC countries are co-sponsors, as well as the IOC, which has a special role to play in the development of the Network, Reference was made to the "Call to Action" resulting from the International Coral Reef Initiative Workshop hosted by the Philippines, 29 May-2 June 1995. This document calls on the IOC to report quadrennially on the ecological condition of coral reefs and related ecosystems.

89 **The Sub-Commission adopted** Recommendation SC-WESTPAC-III.5, which encourages broad participation by WESTPAC countries in the implementation of the Network.

5.6 OCEAN MAPPING

90 Admiral Rasip Hassan from Malaysia and Chairman of the IOC Editorial Board for the International Bathymetric Chart for the Western Pacific (EB-IBCWP) provided updated information on the WESTPAC ocean mapping project, He recalled the successful joint efforts between IOC and IHO in the preparation of GEBCO as well as the other regional ocean mapping activities and stressed the importance of the regional ocean mapping programme in view of the entry into force of the United Nations Convention on the Law of the Sea (UNCLOS). The Admiral informed the meeting that the Editorial Board for IBCWP had been established with 10 participating countries and had its first meeting in Tianjin, China, October 1993. The meeting agreed upon the Assembly Diagram, the terms of reference of the Board, the division of sub-regions and the working mechanism. He also mentioned the Officers Meeting of EB-IBCWP in Bali, Indonesia, November 1994 which confirmed the recommendation of the first meeting of the Editorial Board to hold a data compilation workshop and the second session of Editorial Board in the following year. Admiral Rasip also expressed his appreciation to China, especially the Chief Editor, for hosting the meetings of the WESTPAC ocean mapping project as well as other back-up activities, including the establishment of a database for the project. He informed the meeting that at present the activities, including the establishment of a database for the

project, are mainly done in individual countries and so there is a need for IOC to provide necessary financial support to hold the proposed workshop and the second session of the Board as soon as possible so as to maintain the momentum of the project.

91 The Delegations of China, France, Japan, R. Korea and Vietnam spoke in support of the IBCWP and informed the meeting of their current activities in ocean mapping.

92 The Representative of SOPAC informed the meeting of their ocean mapping activities and the data available in the SOPAC area.

93 The Executive Secretary informed the session about the staff and financial situation of the IOC in terms of IOC-IHO ocean mapping programme, and confirmed that the Second Session of the Editorial Board will be organized in 1996 as a matter of priority.

6. **RECENT DEVELOPMENTS WITHIN UNESCO OF IMPORTANCE FOR IOC AND WESTPAC**

94 This item was introduced by the Executive Secretary IOC. He recalled Resolution XVII-20 and referred to the Report of the Eighteenth Session of the IOC Assembly (13-26 June 1995) and in particular its Resolutions XVIII-1; XVIII-2; XVIII-18.

95 He also recalled the proposals made by the Director-General in the Medium Term Strategy of UNESCO for 1996-2001, and the Programme and Budget 1996-1998.

96 He informed that the UNESCO Executive Board had discussed these proposals at its spring and fall sessions in 1995. The Executive Board had reached consensus on a modified proposal to the 28 General Conference, which was adopted.

97 This decision of the General Conference provides for a protected (incompressible) budget for the IOC from UNESCO, corresponding to the provision proposed by the Director-General to be made as a financial allocation. It also provides for UNESCO staff to the IOC of 22 persons. This decision goes a long way towards securing dependable resources for the IOC, although not sufficient ones. A separate Special Account for the IOC has also been established by the Director-General. The Financial Regulations for the Special Account have been adopted by the Executive Board of UNESCO following the recommendation from the IOC Assembly,

98 The Executive Board has also requested the Director-General to provide two reports during 1996. The first is on the measures that the Director-General has taken, or intends to take, to ensure (on an experimental basis) an operational flexibility in administrative and financial terms for IOC. This report has been drafted to be delivered to the Board for its 149th Session in May 1996. The second report concerns a mechanism through which dependable resources could be provided to the IOC Trust Fund from Member States of IOC, not Member States of UNESCO. This will be an important additional step towards obtaining dependable resources for IOC.

99 The development in UNESCO for IOC must be seen as strengthening IOC considerably, and goes a long way towards implementing parts of Resolution XVII-20 which was adopted after considerable debates on basis of the report of the *Ad hoc* Study Group on IOC Development, Operations, Structure and Statutes (DOSS). The remaining

implementation of the Resolution XVII- 20 is going on and will also be addressed by the *ad hoc* Study Group reviewed by the Eighteenth Session of the Assembly through its Resolution XVIII-1, The work of this *ad hoc* Group has been initiated.

100 The Executive Secretary recalled that the proposal of the DOSS group that the Secretary IOC be upgraded to the level of Assistant Director General-ADG (and title adjusted) has been implemented. This implies that the Executive Secretary is now a member of the General Directorate of UNESCO which gives much additional possibilities and insights. It also implies that the Executive Secretary is attending the sessions of the Executive Board of UNESCO which likewise implies possibilities of much increased dialogue with this Governing Body of UNESCO.

101 **The Sub-Commission welcomed** the information and **strongly supported** the development and strengthening of the IOC within UNESCO.

102 Several delegations made statements as regards specific roles and problems of the IOC: the important ability of the IOC to co-ordinate regional and global programmes, for which coordination is required and gives a large return in form of saving resources as well as significantly increased outputs and abilities to use these (one major example is GOOS and regional components of GOOS); the need to ensure that national programmes and policies also form the building blocks of regional programmes, and that appropriate national mechanism to formulate the national programmes exist or are put in place; these should also include beneficiaries of the results of programmes/the users; the need for the IOC to be more pro-active and present to the Governments the issues and explain how the IOC programmes can help address these and solve problems, and invite the participation; the Governments must get the perception and understanding that IOC can be used for co-ordination by Member States of the national programmes and plans for the coming years. **The Sub-Commission decided** that the delegations would provide such information in tabular form to the Secretariat so that it could be used in formulating the coming programme of the Sub-Commission for WESTPAC.

103 The necessity for IOC to increase its profile and public relations at the national level was emphasized. In order to succeed we must pro-actively involve the relevant national institutions, as well as the beneficiaries and users of the results of our programmes at the national and international levels. Member States must actively acknowledge the IOC and its role together with the subsidiary bodies.

104 **The Sub-Commission recommended and urged** that such efforts be made at the national level.

105 These efforts should also help demonstrate the benefits of using the Sub-Commission as a mechanism in co-ordination, in obtaining scientific advice and in establishing systematic and adequate ocean observations. The benefits of co-operation at regional level should be brought out.

106 It was noted that at national as well as international levels there are many institutions and sectors dealing with ocean matters. This makes co-ordination and co-operation a necessity. However, it is often difficult to find the right counter partners. The IOC could play a more active role in this respect provided the IOC and the Sub-Commission really are

properly acknowledged. This again brings out the need that the Member States get the perception that IOC can be used.

107 **The Sub-Commission realized** that a list of on-going activities by various organizations in the WESTPAC region could be a useful basis for further co-ordination efforts **and decided** that such a list on a preliminary, exploratory basis should be prepared.

108 **The Sub-Commission noted** that the follow-up to UNCED, the entry into force of UNCLOS and the present concerns for the marine environment provide the IOC large challenges as well as opportunities.

109 **The Sub-Commission urged** that the IOC move towards active support of sustainable development, ocean management, including and perhaps focusing on coastal problems. Regional co-operation is very relevant in this context and the use of the WESTPAC mechanism maybe emphasized at national level.

110 **The Sub-Commission decided** to formulate through an appropriate mechanism a long-term strategy, taking into account the IOC Medium-Term Strategy as adopted by the IOC Assembly as well as the strengthening and development of the IOC in UNESCO. This strategy should help identify the interests of Member States in the WESTPAC programme, so that they can see the value of participating actively, The strategy should also address the role and activities expected from the IOC/WESTPAC Regional Secretariat.

111 **The Sub-Commission decided** that the strategy should be drafted intercessionally by the Officers and the Secretariat including the Executive Secretary IOC, and the draft be presented to the next session of the Sub-Commission.

112 **The Sub-Commission recognized** that co-operation and partnership also support capability building. The gradual development of GOOS and its regional components provides for an eminent possibility of obtaining a partnership and capacity building strategy. On-going developments in several Member States of the region to this effect were mentioned (Indonesia, Thailand and China).

7. CO-OPERATION WITH OTHER ORGANIZATIONS

7.1 ORGANIZATIONS AND PROGRAMMES OF UN SYSTEM

7.1.1 UNEP

113 The IOC Assistant Secretary for WESTPAC, Mr. Yihang Jiang informed the meeting that due to force majeure, the Representative of UNEP was not able to attend the Session as planned. Therefore, he introduced the co-operation with UNEP in the WESTPAC region.

114 The regular dialogue has been established with the Regional Co-ordination Unit for the East Asian Seas Action Plan of UNEP, and co-operation at regional level is going on in several ways. He informed the Session that a proposal on monitoring of marine debris has been jointly prepared by UNEP/RCU and IOC Regional Secretariat for WESTPAC, based on successful experiences on this subject in Caribbean Sea area, jointly by IOC and UNEP.

This is envisaged as a contribution also to the implementation of the Global Programme of Action for the Protection-of the Marine Environment against Land-Based Activities.

- 115 Considering the facts that the monitoring of marine debris has been identified in the HOTO module and the application of the monitoring result will provide useful information to marine environment protection and sustainable development of tourism, **the Sub-Commission agreed** to co-operate with UNEP in monitoring marine debris in the WESTPAC region, as well as in other on-going co-operative projects.

7.1.2 WMO

- 116 Mr, Koichi Nagasaka, the Representative of WMO. expressed satisfaction with the excellent co-operation with IOC for many years in marine sciences and ocean services, including WCRP, GOOS, GCOS, and the joint efforts in following up UNCED. As an example, the detailed information on recent development in IGOSS was presented to the meeting. He strongly encouraged the individual members of the WESTPAC to actively participate in IGOSS, in particular observation and reporting the sub-surface temperature by the XBT on board ships of opportunity.

- 117 It was noted that the co-operation of WMO and IOC at regional level has been established in the WESTPAC region of the IOC, and part of the regions of the Regional Associations II and V of the WMO. The joint efforts as regards the development of the SEACAMP project and NEAR-GOOS are good examples,

- 118 **The Sub-Commission took note** of the information with appreciation and encouraged further co-operation with WMO.

7.1.3 IMO

- 119 The Representative of IMO, Dr. Chua Thia-Eng, Programme Manager, informed the Session that in addition to its regular functions on marine safety and marine environment, IMO also executes a number of projects in relation to the marine environment protection. One of these is the GEF-UNDP Regional Programme on Marine Pollution Prevention and Management in the East Asian Seas (MPP-EAS). The activities of this regional programme is relevant to WESTPAC activities in this region in particular those under HOTO and GOOS.

- 120 The Programme involves 11 East Asian nations. The main purpose is to support the efforts of participating governments to collectively address marine pollution arising from both land and sea-based sources. Two of the three demonstration projects at Batangas (Philippines) and Xiamen (China) aim at demonstrating the viability and effectiveness of the applied integrated coastal management approach in addressing marine pollution from land-based sources, focusing on preventive as well as mitigating measures.

- 121 He further informed the Session that a regional workshop is being planned for 30 May-3 June 1996 in Pusan, R, Korea, to be jointly organized by the Korean Ocean Research & Development Institute (KORDI) and IOC/WESTPAC. He finally expressed his wish that the co-operation with IOC/WESTPAC will be expanded to other areas of common concerns in the future.

- 122 The Sub-Commission took note of the information with appreciation and endorsed and encouraged the co-operation between the regional programmes of IMO and IOC/WESTPAC.

7.1.4 ESCAP

- 123 The IOC Assistant Secretary for WESTPAC informed the Session that co-operation with ESCAP has been initiated with visits to the Secretariat of ESCAP. IOC/WESTPAC was invited to several workshops organized by the Organization. Information on the IOC/WESTPAC activities was presented to the workshops and included in relevant documents, e.g. the Regional Action Plan for Sustainable Development and Environment.

- 124 Co-operation on the integrated coastal area management will be further strengthened, in particular in the socio-economic aspect,

- 125 **The Sub-Commission took note** of the information with appreciation and encouraged the strengthening of co-operation with ESCAP.

7.2 REGIONAL ORGANIZATIONS/PROGRAMMES AND OTHERS

7.2.1 CCOP

- 126 Dr. Kim Sahng-Yup, Director of CCOP Technical Secretariat, provided to the Session information on the on-going CCOP programmes and activities. CCOP has devoted itself to offshore geological/geophysical surveys, regional map compilation and database development, etc. Dr. Kim emphasized the CCOP COASTPLAN and programme on marine environment safety, and strongly expressed the willingness of CCOP to co-operate with IOC/WESTPAC.

- 127 The Session was informed that a MOU has been signed between the CCOP Technical Secretariat and IOC Regional Secretariat for WESTPAC. The first inter-secretariat meeting was held on 1 February 1996 in the CCOP Secretariat and it will be continued in the future.

7.2.2 ASEAN, SOPAC, JECSS, PICES and APEC

ASEAN

- 128 On behalf of the participants from the ASEAN-Canada Co-operative Programme on Marine Science - Phase II (CPMS-II), Mr. Kah-Sin Ong, ASEAN Project Coordinator, expressed appreciation for the opportunity to attend the IOC/WESTPAC meeting, and presented a brief overview of CPMS-II's activities and achievements.

- 129 The CPMS-II is a CIDA-funded, 5-year programme formulated with the theme "Establishment of Environmental Criteria for Development and Management of Living Marine Resources and Human Health Protection", The goal is to support the regional effort of ASEAN countries to co-operatively optimize marine resource-based benefits through environmental maintenance in a manner that ensures the integrity of the resource base and promotes human health.

130 There are three activities under CPMS-II, namely (i) Development of Environmental Criteria, (ii) Pollution Monitoring and Baseline Data, and (iii) Red Tide.

131 With regard to co-operation with IOC/WESTPAC, several training courses/workshops on plankton taxonomy, particularly in relation to harmful algal blooms have been implemented with technical inputs from the experts of WESTPAC. He informed the meeting that the CPMS-II Conference on ASEAN Marine Environmental Management: Quality Criteria and Monitoring for Aquatic Life and Human Health Protection will be held in Penang, Malaysia, 24-28 June 1996, and invited active participation of scientists from WESTPAC countries.

SOPAC

132 On behalf of the South Pacific Applied Geoscience Commission (SOPAC), Dr. A. Simpson, Deputy Director of the SOPAC Secretariat, informed the meeting that SOPAC is an independent, intergovernmental regional organization with 15 Member States, and two Associate Members. In most cases, the areas of offshore sovereignty (EEZs) of the countries greatly exceed their land areas and are critically important to their long-term economic viability. The purpose of SOPAC is to assist its Pacific Island Member States with the sustainable development of their physical environment using geoscience.

133 Assistance provided by SOPAC is primarily through survey programmes in Mineral and Energy Resources, and in Environmental Geoscience. These are supported by programmes in Human Resource Development, and in Technical Services. In both the medium and long term, SOPAC can be expected to monitor and co-ordinate research, collect geoscientific and other marine data, exchange information, provide training and consultant services, and conduct field surveys,

134 He indicated that there is a number of opportunities for collaboration between IOC/WESTPAC and the many regional organizations in the South Pacific. It is hoped that a mechanism may be found to ensure that IOC may be able to work with and through the regional organizations to serve the same countries. Of particular common interest are issues such as the implementation of the United Nations Convention on the Law of the Sea, the establishment of a regional component of the Global Ocean Observation System (GOOS), the promotion of an ocean mapping programme and general studies on HOTO (Health of the Oceans).

JECSS

135 Prof. K. Taira informed that the Japan and East China Seas Study is a non-governmental programme with its scientific meetings being held once every two years. IOC/WESTPAC was invited to co-sponsor these meetings. Co-operation between JECSS and IOC/WESTPAC will enhance the development of marine science in the region.

PICES

136 Dr. Sangbok D. Hahn, the Representative of PICES, expressed his sincere thanks for the warm invitation to PICES. He indicated that since the IOC/WESTPAC was derived from CSK (Co-operative Study of Kuroshio) and the north Pacific region plays an important role in the global environment and climatic changes, co-operation between

IOC/WESTPAC and PICES seemed very natural, In March 1992, PICES was established as an intergovernmental organization to promote and co-ordinate marine scientific research and to upgrade knowledge on biological resources of the North Pacific Ocean and adjacent sea waters.

- 137 Dr. Hahn informed the Session on the working mechanism and programmes of PICES. He further informed that the PICES Annual Meeting is usually held in the middle of October every year for about 10 days, The next two meetings will be held in Nanaimo, Canada, 11-20 October 1996, and in Pusan, R. Korea, 10-19 October 1997.

APEC

- 138 The IOC Assistant Secretary for WESTPAC informed the meeting that co-operation with APEC Marine Resources Conservation Working Group has been initiated. Information on IOC activities, particularly in the WESTPAC region, has been provided for the purpose of co-operation and co-ordination, A project proposal on Inventory of Ocean Observation and Monitoring in the Asia and Pacific Region has been drafted by the IOC Regional Secretariat. Co-operation in harmful algal bloom research and monitoring has also been initiated, in particular as regards training.

7.2.3 Others, including NGOs

- 139 The Executive Secretary IOC draw attention to the recent establishment of the Independent World Commission on the Oceans, This Commission will prepare a report addressing ocean problems, help create public awareness, and the need for action, The IOC is establishing appropriate dialogue with the Independent World Commission on the Oceans,

- 140 Dr. Kasyanov, Russia, drew attention to the recent establishment of Temperate East Asia Committee (TEACOM) of START, with the Center on Global Change Research in Beijing, The Session expressed the hope for successful co-operation with regional START bodies (TESSACOM, SARCS), and ocean-related IGBP core projects (LOICZ, JGOFS). It was noted that IOC is co-operating closely with both JGOFS and LOICZ.

- 141 Dr. Holland informed the "Session that the Canadian International Development Agency (CIDA) is interested in the following activities during the next intercessional period of the WESTPAC:

(i) WOCE Conference, Halifax, May 25-29,1998, This International Scientific Conference will be held at the end of the intensive observation period to provide a preliminary overview of the accomplishments of the field programme as a source of information and encouragement for those who will follow in a modelling, analysis and assimilation studies on ocean circulation;

(ii) The Summit of the Sea Conference, in St. John's, Newfoundland, 1-5 September 1997. This is a high-level conference that addresses ocean issues under the respective sessions on Law of the Sea, Fisheries, Science and Technology, and People and Culture. It will address both the experts wishing to learn of political issues and policy maker wishing to learn more about the subject matters of oceans in particular;

(iii) CZ 96' Conference, in Rimouski P. Q., 12-17 August 1996. This International Conference is the second in the continuing series since 1994 in Halifax. The theme is Integrated Management and Sustainable Development in coastal zones.

142 In summing up the discussion, the Executive Secretary IOC noted the very positive presentations and emphasized that there are many opportunities for co-operation and much need for co-ordination, in order to ensure most appropriate use of limited resources.

143 **The Sub-Commission welcomed** all the information and expressed a positive interest in maintaining and developing adequate co-operation and co-ordination.

144 **The Sub-Commission decided** that co-operation and co-ordination with other organizations should be pursued intercessionally by the Officers and the Secretariat, and should be taken into account in the further formulation of long-term strategy for the Sub-Commission.

8. TEMA

145 Dr. Kullenberg introduced this Agenda Item, He said that the TEMA Programme, which stands for Training, Education and Mutual Assistance, provides a cornerstone for all IOC Programme activities through capacity building, training in particular. TEMA is not an isolated programme but underpins all programme implementation on a global and regional basis and responds to regional needs in marine scientific research and related ocean services. He informed the meeting that at present the IOC/TEMA is undergoing some adjustments in order to better respond to UNCED decisions. A Group of Experts on TEMA composed of national and regional representatives as well as experts from research institutions has been established with a view to identify training requirements for various purposes, including integrated coastal area management and climate change. A new TEMA strategy is being formulated.

146 He also mentioned that mobilization of enough funding is an important component of the strategy and efforts are being made to involve donors in TEMA activities, both national, bilateral and multilateral. Regional priority programmes form an essential part in attracting various donors. He emphasized the importance of partnership in TEMA activities in order to build the TEMA on a long-term and self-sustaining basis. In addition, TEMA shall also co-operate with other organizations both on the global and regional basis in order to avoid duplication of efforts.

147 He also stressed the importance of national commitment in the implementation of TEMA activities in terms of building up infrastructure, the provision of necessary heavy equipment and the pooling of resources. He emphasized IOC's role to facilitate dialogue between countries and donors and seine as a clearing house for TEMA activities, Based on his own experience in co-operation with donors, he encouraged Member States to enter into frequent dialogues with donors so as to build up partnership and friendship which will ensure better chances of success.

148 Adding to the introduction, Dr. Manuwadi Hungspreugs reviewed the TEMA activities during the intersessional period, as referred to in the document IOC/SC-WESTPAC-III/6. Particularly the training course on oceanographic data management and cruise training offered by the Japanese Government were mentioned. Citing an example, she attached

much importance to the role of the national focal point in co-ordinating efforts in TEMA. She also suggested national training with assistance of international experts, as an effective supplement to regional training. Education in school and relevant publications are also considered as good examples of TEMA. Dr. Stel also shared his experience in TEMA activities particularly in the development of GOOS.

149 The discussions that followed on the topic focused on the relationship with donors, the way to obtain funds and the development of a TEMA strategy for WESTPAC. ASEAN-Australian co-operation was cited as a successful case using bottom-up approach. Follow-up to training courses/workshops were considered important to show results and obtain feedback. Duplication of training efforts should be avoided where different organizations have overlapping interests. Training of technicians and sharing of resources in TEMA activities were also emphasized.

150 The Delegate of Japan confirmed the willingness of his Government to continue the training on oceanographic data management in JODC with support of IOC and the Ministry of Education, Science, Sports and Culture of Japan and seek means to increase the number of trainees to 5-6 each year. He further emphasized the importance to establish NODC/DNA in each Member State.

151 The Delegate of USA mentioned their training efforts in oceanographic data management. The Delegate of China announced a newly-launched project entitled Study of Strategic Aspects of Combining the Channel Stabilization and the Protection of the Dikes in the Northern Part of the Hunaghe River Delta Area and expressed interest in associating it with the WESTPAC programmes and invited other countries who are interested to participate in the project. The Delegate of Russia offered some of their research vessels for use in international co-operation through WESTPAC.

152 Dr. Kullenberg, in his intervention, confirmed that IOC in co-operation with Japan will increase the number of people trained each year for the training course on oceanographic data management in response to the suggestions made by Malaysia during the meeting. He also encouraged Japan and Republic of Korea to use their cruise training for support of the WESTPAC programmes.

153 **The Sub-Commission agreed on the following:**

(i) WESTPAC programme co-ordinators shall identify TEMA needs for their programme implementation in consultation with experts in various fields;

(ii) The Delegates present at the Session shall contact national donors and inform the WESTPAC Secretariat of the results;

(iii) One of the Vice-chairpersons shall be appointed as the responsible officer for TEMA activities who will also be involved in global TEMA activities; and

(iv) Training cruises will be organized separately and in co-operation with the UNESCO/IOC Floating University Programme. In the context of the 1998 International Year of the Ocean, a dedicated regional training course should be organized as part of a global effort. Japan and Republic of Korea are invited to explore this possibility, and inform the Secretariat.

9. DEFINING THE REGIONAL PROGRAMME STRUCTURE

154 Mr. Yihang Jiang introduced the Agenda Item, referring to the Annotated Agenda (Document IOC/SC-WESTPAC-III/2 prov.). He drew the meeting's attention to the UNCED decisions, particularly Chapter 17 of Agenda 21, and the need for WESTPAC to take further actions as follow-up to UNCED, including possible adjustment of the WESTPAC programme structure, taking into account the establishment of the WESTPAC Secretariat. He also referred to the need to plan for 1998 International Year of the Ocean,

155 Since this Agenda Item is much related to Agenda Item 3.2 which was already given due consideration, the Sub-Commission decided already at that stage to set up a sessional working group with Dr. Taira as the Chairman, and adopted the following Terms of Reference of the working group:

(i) Consider the present programme structure, taking into account Document IOC/SC-WESTPAC-III/6 and III/8, and propose projects, termination of present projects, and a suitable revised programme structure meeting the new demands;

(ii) Propose an outline and a mechanism for completing a synthesis presentation of programme results, and their possible implications, of the Sub-Commission to date, possibly since 1987 or 1990;

(iii) Taking into account Documents IOC/SC-WESTPAC-III/7, /7 Add., /Inf.2, and others as appropriate, proposed in tabular form a programme and budget for the Sub-Commission for 1996-1998, taking into account the results under point (i), as well as the available resources.

156 **The Sub-Commission also decided** that the working group will present its report under Agenda Item 10.3: Working Mechanisms.

10. PROGRAMME AND BUDGET

10.1 MEDIUM TERM STRATEGY 1996-2001: FOLLOW-UP OF UNCED

157 Dr. Kullenberg introduced this Agenda Item, drawing the meeting's attention to the Annotated Agenda (Document IOC/SC-WESTPAC-III/2. prov.). He emphasized the need for the WESTPAC to develop a long term strategy drawing upon the Medium-Term Plans of UNESCO and IOC as well as some of the recommendations in Dr. Soegiarto's presentation at the Scientific Seminar. He also suggested the ways of preparing the strategy. The draft strategy should first be sent to the Member States before it is presented to the subsequent WESTPAC session.

158 The Delegate of Thailand requested more information on the IOC planned activities for the preparation of the 1998 International Year of the Ocean, for the purpose of committing funds for this purpose. The Executive Secretary provided information referring to the Report of the Eighteenth Session of the IOC Assembly and the subsequent organization of a Task Team, A draft proposal is being sent to the Member States.

159 **The Sub-Commission decided** to accept the proposal of Dr. Kullenberg and charge the “Bureau” composed of WESTPAC Officers and Programme Coordinators, with the responsibility of preparing the strategy in co-operation with the WESTPAC Secretariat and present it to the next session of the Sub-Commission.

10.2 PROGRAMME AND BUDGET 1996-1998: WESTPAC ACTION PLAN

160 Delegates were invited to examine a table prepared by the Secretariat on the Programme and Budget 1996-1998 (Dec. IOC/SC-WESTPAC-III/7). This table is made based upon the discussions of the agenda items during the meeting and identifies actions to be taken under each project with clear statement of its objectives, date and place, finding sources and participating countries.

161 **The Sub-Commission considered** the proposed actions **and adopted** the table with amendments. This table is presented as an Annex to Recommendation SC-WESTPAC-111.2.

10.3 WORKING MECHANISMS

162 Dr. Eric Lindstrom, Rapporteur of the Sessional Working Group on Defining the Regional Programme Structure, reported on the result of the work of the Group,

163 After some discussion, **the Sub-Commission adopted** the report: WESTPAC Programme Structure: Guidance on Establishing, Maintaining and Termination Projects, with some adjustments. One substantial adjustment was to include “Ocean Services” in the WESTPAC programme, and another one was to add “the Contribution to Sustainable Development” to the WESTPAC themes. **The Sub-Commission emphasized** that TEMA should underpin the new programme structure and form an integral part of all the WESTPAC programmes.

164 It was agreed that to avoid possible exclusion of important activities, the themes of the programmes and the synergy between projects should be defined in a way which allows some flexibility.

165 **The Sub-commission also decided** that the “Bureau” shall apply this guidance during the intersessional period and report on experiences to the next session of the Sub-Commission.

166 The finalized version of the report: WESTPAC Programme Structure: Guidance on Establishing, Maintaining and Terminating Projects is attached as Annex V.

10.4 REGIONAL SECRETARIAT

167 Dr. Angus McEwan, Chairman of the *ad hoc* Sessional Working Group on Resources for the WESTPAC Secretariat, reported to the meeting on the results of the Working Group under three topics: (i) the expectation of the Member States; (ii) the needs for an effective Secretariat; and (iii) WESTPAC Secretariat resource commitments.

168 **The Sub-Commission took note** of the following conclusions of the Working Group:

(i) It was noted with approval that with the generous assistance and resources of Thailand, the office was now fully fictional at the NRCT headquarters in Bangkok, and is soon to be relocated to the new building of Ocean and Marine Environment Centre in NRCT.

(ii) The WESTPAC Office is presently managed by an UNESCO-IOC P3 level officer, Mr. Yihang Jiang, and till-time secretariat assistants, A further support assistant (driver or assistant) is to be appointed.

(iii) While the necessary secretariat functions are being performed satisfactorily, it was felt that in view of the rapid development of regional activities both inside and outside the WESTPAC framework, more continuous and proactive working interactions with national contact points would be highly desirable.

(iv) In particular a need was seen for IOC/WESTPAC Secretariat to take initiatives and to create for itself a clear identity in relation to other regional programmes and organizations, Public relations and publicity were also identified as important activities.

(v) The difficulty with the WESTPAC Secretariat is partly procedural and partly one of available manpower and experience. The need for a long-term strategy and stable resources was also noted, as well as the desire of national sponsors that these resources be applied to programmes rather than bureaucracy.

(vi) The group was reminded that the functional autonomy of IOC/WESTPAC needs to be further enhanced, but there was considerable freedom in the initiatives and work programme of its Officers. Member States could ensure specific support through contribution to the IOC Trust Fund.

(vii) It was noted with great satisfaction that UNESCO/IOC intends to appoint a further P4 Officer this year, that France intends to provide a seconded scientist to the office and that Sweden may also provide an associate expert (a junior professional). The US remarked on the leverage that these contributions can provide in encouraging national sponsorship.

11. ELECTIONS

169 The Chairman invited nominations for Chairperson, first and second Vice-Chairpersons in that order, The Delegate of Thailand nominated Dr. Keisuke Taira of Japan for the post as the Chairman. The nomination was seconded by the Delegate of China and unanimously supported. Dr. Taira was therefore elected Chairman by acclamation.

170 The Delegate of China nominated Dr. Manuwadi Hungspreugs of Thailand to be the First Vice-Chairperson. The nomination was seconded by the Delegate of Republic of Korea and Malaysia and unanimously supported. She was therefore elected by acclamation.

171 The Delegate of Indonesia nominated Dr. Hyung Tack Huh of the Republic of Korea to be the Second Vice-Chairman. This nomination was seconded by the Delegate of the United States and unanimously supported. Dr. Huh was therefore elected by acclamation.

172 In order to help ensure an effective implementation of programmes during the next intersessional period, a division of work for the officers of the Sub-Commission was proposed and adopted by the Sub-Commission. This division of responsibilities is indicated as follows:

- (i) programmes and projects (Chair)
- (ii) Symposium (2nd Vice-Chair)
- (iii) Co-operation with other international organizations (Chair)
- (iv) Follow-up to UNCED and integrated coastal management (1st Vice-Chair)
- (v) Regional GOOS (Chair)
- (vi) TEMA and capacity building (1st Vice-Chair)
- (vii) RDODC, data exchange and marine information management (Chair)
- (viii) Newsletter (Chair and 1st Vice-Chair)
- (ix) Brochure (1st Vice-Chair and Chair)

12. DATE AND PLACE OF THE NEXT SESSION

173 The Sub-Commission proposed that the next session be held in the Republic of Korea, March 1999, subject to formal confirmation of the Republic of Korea. **The Sub-Commission adopted** Recommendation SC-WESTPAC-III.6

13. ADOPTION OF REPORT

174 **The Sub-Commission reviewed** the draft report **and adopted** it, together with the recommendations attached as Annex II.

14. CLOSURE

175 Prof. Su Jilan, Chairman of WESTPAC expressed his great appreciation to all Delegates, and the Rapporteur for their co-operation in the conduct of the Session. He thanked the Government of Japan and the Local Organizing Committee for generous support to the Session, in particular, to Drs. Taira and Terazaki.

176 Delegates expressed their appreciation to Prof. Su Jilan for his outstanding management of the Session and for his firm leadership and guidance of WESTPAC during his terms as Acting Chairman and Chairman of WESTPAC.

177 The Chairman then closed the Third Session of the IOC Sub-Commission for WESTPAC at 11:30 on 1 March 1996.

ANNEX 1

AGENDA

- 1. OPENING**
- 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 AND PROGRAMME EVALUATION**
 - 3.1 INTERSESSIONAL REPORT
 - 3.2 EVALUATION OF EXISTING WESTPAC PROGRAMMES AND PROJECTS
- 4. REGIONAL WESTPAC PROJECTS: PROGRAMME FOR 1996-1998**
- 5. REGIONAL DEVELOPMENTS OF IOC GLOBAL programmes: PLANS FOR 1996-1998**
 - 5.1 GIPME
 - 5.2 ODC, PARTICULARLY THE COASTS PROGRAMME
 - 5.3 OSLR, ESPECIALLY HAB
 - 5.4 OSNLR
 - 5.5 REGIONAL COMPONENT OF GOOS
 - 5.6 OCEAN MAPPING
- 6. RECENT DEVELOPMENTS WITHIN UNESCO OF IMPORTANCE FOR IOC AND WESTPAC**
- 7. CO-OPERATION WITH OTHER ORGANIZATIONS**
 - 7.1 ORGANIZATIONS AND PROGRAMMES OF UN SYSTEM
 - 7.1.1 UNEP
 - 7.1.2 WMO
 - 7.1.3 IMO
 - 7.1.4 ESCAP
 - 7.2 REGIONAL ORGANIZATIONS/PROGRAMMES AND OTHERS

- 7.2.1 CCOP
- 7.2.2 ASEAN, SOPAC, PICES, JECSS, APEC
- 7.2.3 Others, including NGOs

8. TEMA

9. DEFINING THE REGIONAL PROGRAMME STRUCTURE

10. PROGRAMME AND BUDGET

- 10.1 MEDIUM TERM STRATEGY 1996-2001 FOLLOW-UP OF UNCED
- 10.2 PROGRAMME AND BUDGET FOR 1996-1998 WESTPAC ACTION PLAN
- 10.3 WORKING MECHANISMS
- 10.4 REGIONAL SECRETARIAT

11. ELECTIONS

12. DATE AND PLACE OF THE NEXT SESSION

13. ADOPTION OF REPORT

14. CLOSURE

ANNEX II

RECOMMENDATIONS

Recommendation SC-WESTPAC-III.1

INTERNATIONAL WESTPAC SYMPOSIUM

The IOC Sub-Commission for the Western Pacific,

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

Having reviewed the output and results of the Third IOC/WESTPAC Scientific Symposium on Sustainability of the Marine Environment, Bali, Indonesia, 22-26 November 1994,

Expressing its great appreciation to the Government of Indonesia for having hosted it,

Having formulated its programme for the period 1996-1998,

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

Noting the presentations made at the Scientific Seminar during this Session of the Sub-Commission,

Recognizing the success of the previous Symposia,

Recommends that the Fourth IOC/WESTPAC Symposium be organized in 1997, or 1998;

Further recommends that regional and global co-operating international organizations be invited to support and participate in the Symposium;

Establishes an interim scientific planning committee to formulate a detailed proposal for the scope, contents and structure of the Symposium, under the chairmanship of the Chairman of the Sub-Commission.

Recommendation SC-WESTPAC-III.2

THE WORK PROGRAMME OF THE SUB-COMMISSION AND BUDGET ESTIMATE FOR 1996-1998

The IOC Sub-Commission for the Western Pacific,

Having reviewed the implementation of the programme during the intersessional period,

Noting that a considerable amount of implementation has been achieved,

Acknowledging the important role played in this context by the IOC Regional Secretariat for WESTPAC, established in Bangkok in 1994,

Expressing its appreciation to the Government of Thailand for the support being provided to the Secretariat,

Thanking also other Member States who have contributed to the running of the Secretariat, in particular USA,

Noting that the UNCLOS entered into force in November 1994,

Noting further the importance of follow-up to UNCED and the opportunities provided by the 1998 International Year of the Ocean,

Emphasizes that the future regional co-operation programme should address priority needs of the region, including those of coastal areas, supporting implementation of international agreements and conventions dealing with major issues of society where oceans and coasts play a central role, while maintaining its science base and ocean observation orientations;

Stresses the need for an increasing dialogue between the marine science and ocean observations communities of WESTPAC, and social sciences, ocean and coastal area management communities, and decision makers;

Urges co-operation and co-ordination with other global and regional organizations, both in and adjacent to the WESTPAC region;

Decides to adopt the Programme of Work for the Sub-Commission and its regional co-operation over the period 1996-1998 as indicated in the Table annexed to this Recommendation;

Urges Member States of the region to participate in, and support the implementation of the regional co-operation programme to the best of their interests and capabilities;

Further urges IOC, other organizations co-operating with the Sub-Commission and donors, to support the programme implementation and strengthening of the Sub-Commission's role with an increasing allocation of resources.

Annex to Recommendation SC-WESTPAC-III.2
Programme and Budget Estimation (1996-1998)

Project	Activities			Funding Required	Participation	Remark
	Action	Objectives	Date & Place			
OSLR-HAB WESTPAC-HAB <i>Related to: Agenda 21, Ch, 17, parts A; E</i> <i>GPA on Land-Based Activities;</i> <i>Food security, and tourism recreation</i> <i>Marine biodiversity</i>	Training Workshop on Monitoring of PSP Plankton and Shellfish Toxicity	To enable regional scientists to detect PSP causative dinoflagellates and shellfish contaminated with PSP toxins, the obtained experiences will be used in designing a monitoring programme to prevent PSP occurrences.	once a year Asian Natural Environmental Science Center (ANESC), Japan	30,000 Japan IOC	most countries	Subject to adequate support from IOC and WESTPAC Secretariats
	Experts Missions	To carry out in-country training		No funds required from IOC WESTPAC IOC-TEMA	To developing countries in the region with experts	IOC and WESTPAC are requested to assist experts to approach donor agencies
	publication & distribution of reference materials	To provide reference materials for scientists in the region			Project leader and countries	
	Seminars on HAB	To share results and experiences from national research and monitoring programmes		30,000 IOC > donors National	HAB participants	Seek the possibility of co-operation with JICA and Korea
	Coordination of Research project Planning	To formulate research plan for regional collaborative project and to help regional scientists to apply to		3,000	all countries	Funding is for travel of Co-ordinator

Project	Activities			Funding Required	Participant ion	Remark
	Action	Object ives	Date & Place			
WESTPAC-GIPME River Inputs <i>Related to GPA-LBA activities; GOOS: Chapter 17 of Agenda 21</i>	No separate activity, but joint effort with other projects, e.g. HAB, CSC, SEA-GOOS, if established, as well as the cooperative project on the Gulf of Thailand			—		
Mussel Watch <i>Related to GPA LBA; GOOS-HOTO and Coastal module; Ch. 17, Agenda 21</i>	Monitoring Studies on Toxic Contaminants		1997-99	100,000 National	countries interested	Negotiating with Ministry of Educ. Sci. Sports & Culture, Japan
Atmos. Inputs <i>GPA on LBA; GOOS-HOTO</i>	triter-lab. calibrations of chemical analyses, including aerosol and rain samples	To improve the data qualities and ensure the comparison of results		4,000 IOC National	participating countries	
	Workshop on the project	To exchange research information and share experiences		6,000 IOC National	participating countries	
	Exchange of Scientists	To upgrade scientific knowledge for the scientist from developing countries		5,000 National	participating countries	

Project	Activities			Funding Required	Participant ion	Remark
	Action	Objectives	Date & Place			
Ocean Dynamics in WESTPAC <i>Related to Agenda 21, Ch. 17, E; Climate Change</i>	Participation by the WESTPAC scientists in the 1996 Western Pacific Geophysics Meeting,	Supporting 3 scientists to attend the meeting	Brisbane, Australia, 23-27 July 1996	7,500 IOC> National	countries interested	
	International Summer School on Ocean Data Assimilation (sponsored by Japan Marine Science Foundation)	Invite 5 Scientists from the Region to participate in the School	Mutsu, Japan, August, 1996	7,500 IOC; National	WESTPAC scientists	Only travel support required. Local expenses will be covered by Org. Commt.
	Workshop on WESTPAC Monsoon Oceanography			10,000 IOC; National	WESTPAC scientists	US & Japan considering national contribution
Continental Shelf Circulation <i>Related to: Agenda 21, Ch. 17, A; ICAM; relevant for HAB and GIPME</i>	No separate activity. But joint effort with other projects, e.g. HAB, RI, NEAR-GOOS, as well as the proposed project in the Gulf of Thailand					

Project	Activities			Funding Required	Participation	Remark
	Action	Objectives	Date & Place			
Tectonics & CZ <i>Related to: ICAM</i>	Workshop on Formation and Evolution of Marginal Sea Basins	To discuss contents of the hazard map in the coastal zone and future activities	Beijing, China, 4-14 Aug. 1996	UNESCO (IGCP & GEOHOST IOC; National	China, Japan, R. Korea, Russia, France, Germany, US and others	To be held during the 30th International Geological Congress, Beijing, 4-14 August 1996
Paleogeographic Mapping <i>Related to: ICAM; Sea level</i>	Workshop on preparation of the paleo. map on Holocene Optimum	To discuss the scientific focus on the map and to decide all the details for its compilation	late 1996	12,000 IOC; National	most WESTPAC countries	
	Workshop on compilation of the map"	To compile the data and discuss the scientific implications resulted from the maps	1997	12,000 IOC; National	most WESTPAC countries	Together with WESTPAC Scientific Symposium
	Publication of the map			3,500 IOC	project leader	
GOOS NEAR-GOOS	1st Coordinating Committee meeting	To further discuss the Implementation plan and to prepare technical manuals for the operation of NEAR-GOOS	1996 Bangkok	15,000 UNESCO IOC Japan	China, Japan, R. Korea, Russia	
	WG for NEAR-GOOS Technical Manual	to finalize the technical manual	1996	15,000 Japan	China, Japan, R. Korea, Russia	

Project	Activities			Funding Required	Participation	Remark
	Action	Objectives	Date & Place			
	Publication of the Technical Manual			3,000 UNESCO IOC.	WESTPAC Secretariat & Co-ordinator	
	2nd Coordinating Committee	to review the operation of NEAR-GOOS and to identify future activities	1997	15,000 UNESCO IOC Japan	participating countries	
Remote Sensing for ICAM	Establish regional network	To identify institutions in the region interested in participating the project	1996	no fund required	Project leader and counties	Working by correspondence
	Planing Workshop on the project	To prepare scientific & implementation plan for the project	1997/98	10,000 IOC; National	WESTPAC countries	together with the 4th IOC/WESTPAC scientific symposium
GOOS-HOTO Pilot experiments	(to be consulted with HOTO Panel and scientists concerned)					
Coral reef network- regional portion	plan and implement regional component	To provide training in methods and standards for data collection and exchange	1996-98	not yet identified	most countries	Coordination office being set up in Australia
ICAM in relation to UNCLOS	Preparation of training manual and training course	To prepare training materials for organizing the training course	1996	7,000 IOC	experts concerned	

Project	Activities			Funding Required	Participation	Remark
	Action	Objectives	Date & Place			
Cooperative study on the Gulf of Thailand <i>Related to: Integrated multidisciplinary</i>	Travel of project coordinator/expert	To identify institutions wishing to participate in the project and to explore and compile existing oceanographic data	1996-97	17,300 IOC Donors National	participating countries	
	Regional Workshop	To construct models and to plan for data collection	1997	23,600 IOC National Donors	participating countries	
	Project administration	To establish database management	1996-2000	32,000 IOC National Donors	project leader & participating countries interested	
	Training Course	To provide technical information on specified problems	1997	64,800 IOC National Donors	participating countries	
Ocean Mapping	Meeting on Editorial Board for IBCWP	To review progress has been made and to plan for future actions for the ocean mapping activity in WESTPAC	1996	20,000 IOC National	participating countries	
COOPERATION Cooperation with UNEP (GIPME, ICAM)	Joint Efforts on Monitoring of marine debris		1996-1997	10,000 IOC; National	WESTPAC Secretariat & countries	

Project	Activities			Funding Required	Part icipation	Remark
	Action	Objectives	Date & Place			
Cooperation with GEF/IMO project	Joint Workshop on Oil operational model	Travel Support for the scientist(s) from WESTPAC scientist	Jun. 1996 Korea	2,500		Fund for international travel required; KORDI will provide support for local expenses
Public awareness and information			1996-1998	4,000/year IOC	all countries	
Publication of Newsletters						
publication of brochure			1997	3,000 IOC	all countries	
4th WESTPAC Symposium			1997	70,000 IOC; Donors National	all countries	
WESTPAC-IV	Preparation		1999	15,000 IOC; National	all countries	Tentatively in R. Korea
Regional Secretariat	Operation cost		1996-1998	30,000/year IOC; National		

Recommendation SC-WESTPAC-III.3

ASIAN-AUSTRALIA MONSOON OCEANOGRAPHY

The IOC Sub-Commission for the Western Pacific,

Recognizing the strong impacts of the Asian -Australia Monsoon System and its year-to-year variations on WESTPAC Member States,

Noting the important dynamic influence of the Pacific-to-Indian Ocean throughflow in this monsoon system,

Noting that the interactions and water exchanges between the eastern Indian Ocean and western Pacific Ocean, via oceanic and atmospheric pathways, should be further studied in the context of the A-A Monsoon system, and its role in regional ocean circulation and thermodynamics should be well understood and incorporated in coupled ocean-atmosphere-land models to be used for assessments and predictions,

Noting the influences of this throughflow and its variations on WESTPAC marginal seas and coasts and consequent impact on living marine resources, pollutant transport, harmful algal booms, and other WESTPAC concerns,

Recommends that:

(i) co-ordination of ongoing and new national and international programmes in the WESTPAC region which are concerned with monsoonal oceanic and atmospheric circulation (and in particular the Pacific-to-Indian Ocean throughflow), their variations and impacts should be fostered by IOC/WESTPAC and implemented through WESTPAC ODC-2, in consultation with the CLIVAR Monsoon Panel;

(ii) WESTPAC Member States facilitate a co-operative approach to these studies, including participation in, and providing access to EEZs for co-operative observational projects which are needed for these purposes;

(iii) For these purposes, a workshop to formulate a WESTPAC monsoon oceanography component in conjunction with the developing CLIVAR Implementation Plan be convened and supported by IOC. This workshop should include a focus on the Pacific-to-Indian Ocean throughflow.

Recommendation SC-WESTPAC-III.4

NEAR-GOOS CO-ORDINATING COMMITTEE

The IOC Sub-Commission for the Western Pacific,

Recalling Resolution XVIII-11 on the Second Session of the IOC-WMO-UNEP Committee for the Global Ocean Observing System (I-GOOS),

Noting that a regional approach to GOOS implementation is likely to be the most appropriate means for many Member States to be involved in GOOS,

Taking note of the Draft Pilot Implementation Plan for NEAR-GOOS,

Decides to establish a Co-ordinating Committee as a management body for NEAR-GOOS with structure and Terms of Reference as given in the Annex to this Recommendation.

Annex to Recommendation SC-WESTPAC-III.4

Terms of Reference for the Co-ordinating Committee for NEAR-GOOS

The Co-ordinating Committee shall have the following:

1. **COMPOSITION:**

The Committee shall consist of representatives of all Participating Countries. Each Country shall designate two members who should be able to monitor data flow to and from NEAR-GOOS Real Time Data Base and Delayed Mode Data Base. The Committee shall elect a Chairman and a Vice-Chairman among the members, The Chairman of the Co-ordinating Committee will serve as the NEAR-GOOS Co-ordinator. The Committee shall meet to the extent possible in regular annual sessions at the expense of the participating countries. Other countries can attend the sessions as observers,

2. **TERMS OF REFERENCE:**

- (a) Further develop as required the operational and implementation plans for NEAR-GOOS, taking into account the need to cover various time scales (short and medium) and applications;
- (b) Prepare the Operation Manuals for the data bases;
- (c) Review the situation of access to and data reporting by the participating countries and others;
- (d) Review the project area, specific variables, data standards and formats, to make necessary recommendations and to advise the participating countries;
- (e) Review data and information infrastructure and allocation of observing platforms by the participating countries and advise on their improvements;

The Committee shall recommend and report to the IOC Sub-Commission for WESTPAC and through the Sub-Commission to the participating Member States.

The Co-ordinating Committee shall adopt an annual report of NEAR-GOOS for distribution to the Member States through IOC Regional Secretariat for WESTPAC This report shall be retained in the data base for reference by the registered users,

The NEAR-GOOS Co-ordinator shall register the users of the NEAR-GOOS data bases along with the application form.

The IOC Regional Secretariat for WESTPAC shall provide required secretariat services for the Committee,

The participating countries and users are responsible for financial implications of their access to data bases and their contribution to the NEAR-GOOS and the related report.

The participating countries shall endeavour to cover financial requirement of NEAR-GOOS related activities, directly or through voluntary contributions to the IOC Trust Fund.

IOC is invited to facilitate a financial allocation to NEAR-GOOS as a project under the framework of IOC/WESTPAC and in co-operation with other co-sponsors of GOOS

Recommendation SC-WESTPAC-III.5

INTERNATIONAL CORAL REEF INITIATIVE

The IOC Sub-Commission for the Western Pacific,

Considering that Resolution XVIII-12 endorsed the International Coral Reef Initiative (ICRI) Call to Action and Framework for Action and supported the implementation of a Global Coral Reef Monitoring Network (GCRMN),

Recalling that the ICRI Call to, Action places a priority on coastal area management capacity building, research and monitoring, and review,

Noting that the Pacific Science Congress adopted a resolution on ICRI to endorse the ICRI Framework for Action and to call on its member organizations and member institutions to encourage their governments to implement the Framework for Action,

Noting that the region has already demonstrated leadership in developing methods and protocols for monitoring coral reefs for global change through the ASEAN-Australia Marine Science Project with support from ASEAN AusAID, IOC, UNEP and IAEA

Noting that human disturbances and global climate change have been identified as having a major impact on regional coral reef decline,

Noting that coral reef ecosystems of the WESTPAC region are the most biologically diverse of the planet and at the same time faced with accelerating degradation from human activities,

Noting that the 8th International Coral Reef Symposium is convened in Panama in June 1996,

Resolves that WESTPAC:

- (i) endorses the Call to Action of ICRI and support its implementation in the WESTPAC region;
- (ii) Urges broad participation by WESTPAC governments in the regional implementation of the Global Coral Reef Monitoring Network, supporting the activities of the existing monitoring

sites and expanding the network where appropriate, to provide synoptic standardized monitoring of coastal ecosystems;

(iii) Calls upon WESTPAC to work in concert with the IOC-GOOS support office and others to develop GCRMN in the WESTPAC region, and

(iv) Encourages wide participation of the region in the 8th International Coral Reef Symposium in Panama in 1996, and urges the IOC to facilitate regional participation.

Recommendation SC-WESTPAC-III.6

DATES AND PLACE OF NEXT SESSION

The IOC Sub-Commission for the Western Pacific,

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

Recalling the decision of its First session to have a three-year time. period between its regular sessions,

Decides that its next session shall be in March 1999, tentatively in Republic of Korea;

Requests its officers, in consultation with the Executive Secretary IOC, to decide on further arrangements for the Fourth Session including as required as regards place and exact dates.

ANNEX 111

LIST OF PARTICIPANTS

I MEMBER STATES

A U S T R A L I A

Dr. Angus McEwan
Australia Delegate to IOC
Senior Science Adviser
Oceanography
GPO Box 727
Hobart Tas 7001

Tel: (61-02) 206673
Fax: (61-02) 206660
E-mail: a.mcewan@bom.gov.au

Dr. Venantius K Tsui
Superintendent, International and Public
Affairs
Bureau of Meteorology
GPO Box 1289 K
Melbourne VIC 3001
Australia

Tel: (613) 9669 4219
Fax: (613) 9669 4473
Email: v.tsui@bom.gov.au

C H I N A

Prof. Su Jilan (Chairman)
Director
Second Institute of Oceanography
P. O. Box 1507
Hangzhou, Zhejiang 310012
Tel: (86-571) 807 6924
Fax: (86-571) 807 1539
Email: sujil@bepc2.ihep.ac.cn

Mr. Mao Bin
Deputy Director
Dept. of International Co-operation
State Oceanic Administration
1 Fuxingmenwai Avenue
Beijing 100860
Tel: (86-10) 851 9791
Fax: (86-10) 835 5031

Mr. Li Jingguang
Deputy Director
Dept. of Marine Monitoring and Services
State Oceanic Administration
1 Fuxingmenwai Avenue
Beijing 100860
Tel: (86-10) 853 2211
Fax: (86-10) 853 3515

Mr. Qiu Zhigao
Deputy Division Director
Dept. of Science and Technology
State Oceanic Administration
1 Fuxingmenwai Avenue
Beijing 100860
Tel: (86-10) 853 2211 ext. 5709
Fax: (86-10) 853 355

Dr. Huang Weigen
Chief, Division of Marine Remote Sensing
Second Institute of Oceanography
PO. Box 1207
Hangzhou, Zhejiang 310012
Tel: (86-571) 8076924 ext. 2344
Fax: (86-571) 807 1539

DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA

Mr. Kim Yong U
Deputy Secretary-General
National Commission for UNESCO
Ministry of Foreign Affairs
PO Box 44
Pyongyang
Tel: (850-2) 322 7573
Fax: (850-2) 381 4660

Mr. Kang Gil Ryong
Head of Laboratory
Korean West Sea Marine Research Institute
Waudu District
Nampo City

FRANCE

Mr. Jacques Merle
ORSTOM
Delegation pour le Pacifique
Boite Postale A5 Noumea Cedex
Nouvelle Caledonie
Tel: 687 285 129
Fax: 687 264 326
Email: merle@noumea.orstom.nc

INDONESIA

Dr. Aprilani Soegiarto
Indonesian Institute of Science (LIPI)
Jl. Gatot Subroto 10
Jakarta 12710
Tel: (62-21) 525 1542 ext 259
Fax: (62-21) 5225709/5207226

Col. Sofyan Rawi
Hydro-Oceanography Office
Jl. Pantai Kuta V/I, Ancol Timur
Jakarta Utara
Tel: (62-21) 684 810
Fax: (62-21) 684 819

Ir. Eko Maulana Ali
Hydro-Oceanography Office
Jl. Pantai Kuta V/I, Ancol Timur
Jakarta Utara
Tel: (62-21) 684 810
Fax: (62-21) 684 819

JAPAN

Prof. Keisuke Taira
Ocean Research Institute
University of Tokyo
Minamidai 1-15-1, Nakano
Tokyo 164
Tel: (81-3) 5351-6417
Fax: (81-3) 5351-6418
Email: taira@ori.u-tokyo.ac.jp

Prof. Tomio Asai
Faculty of Integrated Sciences
Hiroshima University
Kagamiyama 1-7-1, Higashi-Hiroshima,
Hiroshima 739
Tel: (81-824) 24-6498
Fax: (81-824) 24-0758

Prof. Hideo Kagami
Faculty of Science
Josai University
Keyakidai 1-1, Sakado
Saitama 350-02
Tel: (81-492) 86-2233 Ext 387
Fax: (81-492) 85-7167
Email: hkagami@euclides.josai.ac.jp

Prof. Toshio Yamagata
Graduate School of Science
University of Tokyo
Yayoi 2-11-16, Bunkyo
Tokyo 113
Tel: (81-3) 5800-6942
Fax: (81-3) 3818-3247
Email: yamagata@geoph.s.u-tokyo.ac.jp

Dr. Yasuwo Fukuyo
Asian Natural Environmental Science Center
University of Tokyo
Yayoi 1-1-1, Bunkyo
Tokyo 113
Tel: (81-3) 3812-2111 Ext 2782
Fax: (81-3) 3812-0529
Email: afukuyo@hongo.ecc.u-tokyo.ac.jp

Mr. Hideaki Saito
Senior Staff
Ocean Development Division
Science and Technology Agency
Kasumigaseki 2-2-1, Chiyoda
Tokyo 100
Tel: (81-3) 3581-6561
Fax: (81-3) 3580-7442
Email: STIOO192@niftyserve.or.jp

Dr. Masaru Shiozaki
Director-General
Hydrographic Department,
Maritime Safety Agency
Tsukiji 5-3-1, Chuo
Tokyo 104
Tel: (81-3) 3541 3810
Fax: (81-3) 3545 2885

Mr. Shin Tani
Deputy-Director
Planning Division
Hydrographic Department,
Maritime Safety Agency
Tsukiji 5-3-1, Chuo
Tokyo 104
Tel: (81-3) 3541-3813
Fax: (81-3) 3545-6255
Email: stani@jhd.go.jp

Mr. Yutata Michita
Senior Scientist
Oceanographic Research Laboratory
Hydrographic Department
Maritime Safety Agency
Tsukiji 5-3-1, Chuo
Tokyo 104
Tel: (81-3) 3541-4387
Fax: (81-3) 3545 2885
Email: ymichida@jhd.go.jp

Mr. Makoto Toda
Director
Oceanographic Survey Division
Hydrographic Department
Maritime Safety Agency
Tsukiji 5-3-1, Chuo
Tokyo 104
Tel: (81-3) 3541-3814
Fax: (81-3) 3545 2885

Dr. Haruo Ishii
Deputy-Director
Oceanographic Survey Division
Hydrographic Department
Maritime Safety Agency
Tsukiji 5-3-1, Chuo
Tokyo 104

Tel: (81-3) 3541-3814
Fax: (81-3) 3545 2885
Mr. Tadao Tatsuno
Director
Japan Oceanographic Data Center
Hydrographic Department
Maritime Safety Agency
Tsukiji 5-3-1, Chuo
Tokyo 104
Tel: 81-3-3541-3818
Fax: 81-3-3545-2885

Mr. Goro Matsuura
Principal Scientist
Japan Oceanographic Data Center
Hydrographic Department
Maritime Safety Agency
Tsukiji 5-3-1, Chuo
Tokyo 104
Tel: (81-3) 3541-3818
Fax: (81-3) 3545-2885

Mr. Tomotaka Ito
Senior Scientist
Japan Oceanographic Data Center
Hydrographic Department
Maritime Safety Agency
Tsukiji 5-3-1, Chuo
Tokyo 104
Tel: 81-3-3541-3818
Fax: 81-3-3545-2885
Email: jodc@osman.jhd.go.jp

Dr. Takeshi Uji
Director, Oceanographic Division
Marine Department
Japan Meteorological Agency
Otemachi 1-3-4, Chiyoda
Tokyo 100
Tel: 81-3-3212-8341 Ext 5121
Fax: 81-3-3211-3047

Mr. Kuniyuki Shida
Senior Scientific Officer
El Nino Monitoring Center
Oceanographic Division
Marine Department
Japan Meteorological Agency
Otemachi 1-3-4, Chiyoda
Tokyo 100

Fax:81-3-3211-3047

Dr. Kazuhiro Kitazawa
Co-ordinator for International Affairs
Planning Department
Japan Marine Science and Technology Center
Natsushima 2-15
Yokosuka 237
Tel:81-468-67-5511
Fax:81-468-66-3061
E-mail:kitazawak@jamstec.go.jp

Mr. Masataka Hishida
Director-General
Oceanographic Survey and Research
Department
Japan Marine Science and Technology Center
Natsushima 2-15
Yokosuka 237
Tel:81-468-66 3811
Fax:81-468-66 0970

Mr. George Hisaeda
Director
Second Cultural Affairs Division
Ministry of Foreign Affairs
2-2-1 Kasumigaseki
Chiyoda-ku
Tokyo 100
Tel: (81-3) 3580 3532
Fax: (81-3)3595 0166

Mr. Yoshimasa Tezuka
Deputy Director
Second Cultural Affairs Division
Ministry of Foreign Affairs
2-2-1 Kasumigaseki
Chiyoda-ku
Tokyo 100
Tel: (81-3) 3580 3532
Fax: (81-3)3595 0166

Mr. Wataru Iwamoto
Director, International Scientific Affairs Division
Science and International Affairs Bureau
Ministry Education, Science, Sports and Culture
Kasumigaseki 3-2-2, Chiyoda
Tokyo 100
Tel:81-3-3581-1752
Fax:81-3-3503-7048

Mr. Keisuke Yoshio
International Scientific Affairs Division
Science and International Affairs Bureau
Ministry Education, Science, Sports and Culture
Kasumigaseki 3-2-2, Chiyoda
Tokyo 100

Tel:81-3-3581-2754

Fax:81-3-3503-7048

Mr. Takumi Iwamoto
International Scientific Affairs Division
Science and International Affairs Bureau
Ministry Education, Science, Sports and Culture
Kasumigaseki 3-2-2, Chiyoda
Tokyo 100
Tel:81-3-3581-2754
Fax:81-3-3503-7048

Ms. Miyuki Kuranishi
International Scientific Affairs Division
Science and International Affairs Bureau
Ministry Education, Science, Sports and Culture
Kasumigaseki 3-2-2, Chiyoda
Tokyo 100
Tel:81-3-3581-2754
Fax:81-3-3503-7048
E-mail:coo@monbu.go.jp

MALAYSIA

First Admiral Mohd. Rasip bin Hassan
Director
Hydrographic Directorate
Navy Headquarters
Ministry of Defence
Jalan Padang Tembak
50634 Kuala Lumpur
Tel: 03 235 3075
Fax: 03 298 7972

PHILIPPINES

Prof. Helen T. Yap
Marine Science Institute
University of the Philippines
Diliman, 1101 Quezon City
Tel: (632) 922 3959
Fax: (632) 924 7678
Email: hty@msi.upd.edu.ph

REPUBLIC OF KOREA

Dr. Hyung Tack Huh
Senior Research Fellow
Korea Ocean Research and Development
Institute (KORDI)
1270 Sa-dong
Ansan City
Kyunggi-do 425-600
Tel: (82-345) 400 6201
Fax: (82-345) 408 5934
Email: hthuh@sari.kordi.re.kr

Dr. Dong Young Lee
Principal Research Scientist
Korea Ocean Research and Development
Institute (KORDI)
1270 Sa-dong
Ansan City
Kyunggi-do 425-600
Tel: (82-345) 400 6341
Fax: (82-345) 408 5823
Email: dylee@sari.kordi.re.kr

Dr. Woong Seo Kim
Senior Research Scientist
Korea Ocean Research and Development
Institute (KORDI)
1270 Sa-dong
Ansan City
Kyunggi-do 425-600
Tel: (82-345) 420 6217
Fax: (82-345) 408 5820

Dr. Ji Hyun Lee
Research Scientist
Korea Ocean Research and Development
Institute (KORDI)
1270 Sa-dong, Ansan City
Kyunggi-do 425-600
Tel: (82-345) 400 6364
Fax: (82-345) 408 5824
Email: jihlee@sari.kordi.re.kr

Mr. Hyun Yeong Kim
Head, International Co-operation
Korea Ocean Research and Development
Institute (KORDI)
1270 Sa-dong
Ansan City
Kyunggi-do 425 600
Tel: (82-345) 400 6070
Fax: (82-345) 406 6925

RUSSIAN FEDERATION

Prof. Victor G. Neimann
Presidium
Russian Academy of Sciences
32-a Leninski Prospect
117334 Moscow
Tel: (095) 938 1463
Fax: (095) 938 1859
Email: lrud@oofag.comcp.msk.su

Mr. Vassili N. Jivago
National Oceanographic Committee
11 Tverskaya Street
103905 Moscow
Tel: (095) 229 0364
Fax: (095) 925 9609

Academician Georgy B. Eljakov
Chairman
Far-East Branch of the Russian Academy of
Sciences
50 Leninskaya Street
690600 Vladivostok
Tel: (4332) 222528, 223721
Fax: (4232) 312 573
Email: elyakov@piboc.marine.su

Prof. Arkady V. Alekssev
Deputy Chairman
Far-East Branch of the Russian Academy of
Sciences
50 Leninskaya Street
690500 Vladivostok
Tel: (4232) 311400
Fax: (4232) 268 890, 257 432
Email: avaleks@febras.marine.su

Mr. Victor A. Akulich
Director, Pacific Oceanological Institute
43 Baltyskaya Street
690041 Vladivostok
Tel: (4232) 311400
Fax: (4232) 312 573, 312 600
Email: akulich@imtp.marine.su

Prof. Vladimir I. Kasyanov
Director, Institute of Marine Biology
17 Palchevsky Street
690041 Vladivostok
Tel: (4232) 310905
Fax: (4232) 310 900

Dr. Eugeny V. Karasev
Deputy Director
Far East Hydro-Meteorological Research
Institute
24 Fontannaya Street
Vladivostok 690600
Tel: (4232) 267 902
Fax: (4232) 227 754

THAILAND

Prof. Manuwadi Hungspreugs
Dept. of Marine Science
Chulalongkorn University
Phya Thai Road
Bangkok 10330
Tel: (66-2) 2185409
Fax: (66-2) 251 1951
Email: hmanuwad@netserv.chula.ac.th

Mr. Wisut Chotikasathien
Department of Mineral Resources
Rama 6 Road
Ratchatavee
Bangkok 10400
Tel: (66-2) 202 3871-2
Fax: (66-2) 202 3870

Mr. Anond Snindvongs (**Rapporteur**)
Dept. of Marine Science
Chulalongkorn University
Phya Thai Road
Bangkok 10330
Tel: (66-2) 218 5410
Fax: (66-2) 251 1951
Email: fsciasv@chulkn.car.chula.ac.th
sanond1@netserv.chula.ac.th

Mrs. Kalayanee Thirarongnarong
National Research Council of Thailand
196 Phaholyothin Road
Chatujak
Bangkok 10900

Tel: (66-2) 579 2284
Fax: (66-2) 561 3721
Email: rpcd@fc.nrct.go.th

UNITED STATES OF AMERICA

Dr. Eric Lindstrom
Director, U.S. GOOS Office
National Oceanic and Atmospheric
Administration
National Ocean Service
1305 East West Highway
Silver Spring, Maryland 20910
Tel : (301) 713-3063
Fax: (301) 713-4307
Email: elindstrom@ocean.nos.noaa.gov

Dr. Rex J. Fleming
Climate Observations Program Manager
National Oceanic and Atmospheric
Administration
Environmental Research Laboratories
3300 Mitchell Lane
Suite 175
Boulder, Colorado 80301
Tel: 303 497-8165
Fax: 303 497-8158
Email: flemingr@ncar.ucar.edu

Dr. Steven Ramp
Program Officer
Office of Naval Research
800 N. Quincy Street
Arlington, Virginia 22217
Tel: 703 696-4533
Fax: 703 696-2007
Email: ramps@onrhq.onr.navy.mil

Dr. Roger R. Lukas
Professor
Department of Oceanography
University of Hawaii
1000 Pope Road
Honolulu, Hawaii 96822
Tel: 808 956-9222
Fax: 808 956-7896
Email: rlukas@soest.hawaii.edu

Ms. Muriel Cole
International Affairs Specialist
National Oceanic and Atmospheric
Administration
National Ocean Service
U.S. GOOS Office
1305 East West Highway
Silver Spring, Maryland 20910
Tel: 301 713-3063 X147
Fax: 301 713-4307
Email: mcole@spur.nos.noaa.gov

VIETNAM

Prof. Dang Ngoc Thanh
Chairman
National Committee for IOC of Vietnam
Vietnam National Centre for Nature Science and
Technology
Nghia Do - Tuliem
Hanoi
Tel: (84-4) 361 778
Fax: (84-4) 352 483

II REPRESENTATIVES OF ORGANIZATIONS

COORDINATING COMMITTEE FOR COASTAL AND OFFSHORE GEOSCIENCE PROGRAMMES IN EAST AND SOUTHEAST ASIA (CCOP)

Dr. Sahng-Yup Kim
Director, CCOP Technical Secretariat
2nd Floor, Mining Organization Building
110/2 Sathorn Nua Road
Bangkok 10500
Thailand
Tel: (66-2) 234 3578
Fax: (66-2) 237 1221
Email: ccop@external.ait.ac.th

INTERNATIONAL MARITIME ORGANIZATION (IMO)

Dr. Chua Thia-Eng
Programme Manager
Regional Programme for the Prevention and
Management of Marine Pollution in the East
Asian Seas
Department of Environment and Natural
Resources Compound
Visayas Avenue
Quezon City, Metro Manila
Philippines
Tel: (63-2) 96 97 12
Fax: (63-2) 96 97 12

INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION (IOC)

Dr. Geoffrey L. Holland
Chairman IOC
200 Kent Street, Room 1208
Ottawa, Ontario K1A, OE6
Canada
Tel: (613) 990 0298
Fax: (613) 990 5510
Email: gholland@resdox.net

Tel/Fax: +81 33 211 8309

Dr. Jan H. Stel
Co-Chairman, GOOS Capacity Building Panel
The Netherlands Geosciences Foundation
Laan van nieuw Oost Indie 131
The Hague, The Netherlands
Tel: (31-70) 344 0780
Fax: (31-70) 383 2173
Email: stel@nwo.nl

**NORTH PACIFIC MARINE SCIENCE
ORGANIZATION (PICES)**

Dr. Sangbok D. Hahn
Director, Oceanography Division
National Fisheries Research and Development
Agency (NFRDA)
Shirang-ri, Kijang, Pusan 619-900
Republic of Korea
Tel: (82 51) 720 2210
Fax: (82 51) 720 2225
Email: mrsl@haema.nfrda.re.kr
kodc@haema.nfrda.re.kr

**SOUTH PACIFIC APPLIED GEOSCIENCE
COMMISSION (SOPAC)**

Mr. Alfred Simpson
Deputy Director
SOPAC Secretariat
Private Mail Bag, GPO
Suva, Fiji
Tel: (679) 381139/381377
Fax: (679) 370040
Email: alf@sopac.org.fj

**WORLD METEOROLOGICAL
ORGANIZATION**

Mr. Koichi Nagasaka
World Meteorological Organization
41 Giuseppe-Motta
P.O.Box No. 2300, CH-1211 Geneva
Switzerland
Tel: +41 22 730 8111
Fax: +41 22 734 2326
Telex: 414199 OMM CH
c/o Japan Meteorological Agency
1-3-4 Otemachi Chiyoda-ku,
Tokyo 100, Japan

**ASSOCIATION OF SOUTH-EAST ASIAN
NATIONS (ASEAN)**

Dr. Ong Kah Sin
ASEAN Project Coordinator
ASEAN-Canada Cooperative Programme on
Marine Science
Wisma Tani, 50628
Kuala Lumpur
Malaysia

Tel: (603) 298 1776
Fax: (603) 291 3199
Email: evsasean@p1.apfnet.org

Dr. Deddy Setiapermana
National Coordinating Agency CPMS-II
Indonesia Institute of Science (LIPI)
R & D Centre for Oceanology
Jl. Pasir Putih 1, Ancol
Jakarta
Indonesia

Tel: (62-21) 683 850
Fax: (62-21) 681 948

Assoc. Prof. Dr. Khoo Hong Woo
Red Tide Task Leader, Faculty of Science
National University of Singapore
10 Lower Kent Ridge Road
Singapore 119260

Tel: (65) 772 2695
Fax: (65) 772 2486

Dr. Pomsook Chongprasith
Environmental Criteria Task Leader
Pollution Control Dept.
Pahonothin Centre Bldg. Floor 8
404 Pahonyothin Road, Phayathai
Bangkok, Thailand

Tel: (662) 619 2312
Fax: (662) 619 2210

Mr. Cesario Pagdilao
Director, Marine Resource Division
Philippines Council for Aquatic & Marine R& D
BPI Economic Garden
Los Banos Laguna 4030
Philippines

Tel: (63 94) 50015

Tel: (63 94) 50015
Fax: (63 94) 873 8937

Fax: (62-21) 315 0382

Dr. Pham Van Ninh
National SCMS Coordinator
Deputy Director of Inst. of Mechanics
National Centre of Natural Science and
Technology
Nghia Do, Tu Liem
Hanoi, Vietnam
Tel: (844) 326 136
Fax: (844) 333 039

IV LOCAL ORGANIZING COMMITTEE

Prof. Keisuke Taira
Ocean Research Institute, University of Tokyo
Minamidai 1-15-1, Nakano
Tokyo 164
Tel: (81-3) 5351-6417
Fax: (81-3) 5351-6418
Email: taira@ori.u-tokyo.ac.jp

III SECRETARIAT

Dr. Gunnar Kullenberg
Executive Secretary IOC
Intergovernmental Oceanographic Commission
UNESCO
1 rue Miollis
75732 Paris Cedex 15
FRANCE

Tel: (33-1) 4568 3983
Fax: (33-1) 4056 9316
Email: g.kullenberg@unesco.org

Mr. Haiqing Li
(same address as above)
Tel: (331) 4568 3994
Fax: (33-1) 4056 9316
Email: h.li@unesco.org

Mr. Yihang Jiang (Technical Secretary)
IOC Assistant Secretary for WESTPAC
IOC Regional Secretariat for WESTPAC
196 Phaholyothin Road
Chatujak
Bangkok 10900
THAILAND
Tel: (66-2) 561 5118
Fax: (66-2) 561 5119
Email: oijyh@chulkn.car.chula.ac.th

Nuning Wirjoatmodjo
Secretary
UNESCO Office Jakarta
Jl. MH Thamrin 14
Tromolpos 273/JKT
Jakarta, Indonesia
Tel: (62-21) 314 1308

Prof. Dr. Makoto Terazaki
Centre for International Cooperation
Ocean Research Institute, University of Tokyo
Minamidai 1-15-1, Nakano
Tokyo 164
Tel: (81-3) 5351-6528
Fax: (81-3) 5351-6716
Email: terazaki@ori.u-tokyo.ac.jp

Prof. Dr. Asahiko Taira
Centre for International Cooperation
Ocean Research Institute, University of Tokyo
Minamidai 1-15-1, Nakano
Tokyo 164
Tel: (81-3) 5351-6437
Fax: (81-3) 5351-6527
Email: ataira@ori.u-tokyo.ac.jp

Dr. Toshiyuki Hibiya
Centre for International Cooperation
Ocean Research Institute, University of Tokyo
Minamidai 1-15-1, Nakano
Tokyo 164
Tel: (81-3) 5351-6417
Fax: (81-3) 5351-6418
Email: hibiya@ori.u-tokyo.ac.jp

Ms. Hiroko Fukui
Centre for International Cooperation
Ocean Research Institute, University of Tokyo
Minamidai 1-15-1, Nakano
Tokyo 164
Tel: (81-3) 5351-6417
Fax: (81-3) 5351-6418

Ms. Miyuki Kuranishi
International Scientific Affairs Division
Science and International Affairs Bureau
Ministry Education, Science, Sports and Culture
Kasumigaseki 3-2-2, Chiyoda
Tokyo 100
Tel:81-3-3581-2754
Fax:81-3-3503-7048
E-mail:coo@monbu.go.jp

Mr. Kiyohiko Kuroda
International Scientific Affairs Division
Science and International Affairs Bureau
Ministry Education, Science, Sports and Culture
Kasumigaseki 3-2-2, Chiyoda
Tokyo 100
Tel:81-3-3581-2754
Fax:81-3-3503-7048

Ms. Chiho Kano
International Scientific Affairs Division
Science and International Affairs Bureau
Ministry Education, Science, Sports and Culture
Kasumigaseki 3-2-2, Chiyoda
Tokyo 100
Tel:81-3-3581-2754
Fax:81-3-3503-7048

ANNEX IV

ADDRESSES

A. Opening Address by Professor Su Jilan, Chairman of WESTPAC

Mr. Director-General of Scientific and International Affairs Bureau,
Ministry of Education, Science, Sports and Culture,
Dr. Hideki Hayashida,
Executive Secretary IOC, Dr. Gunnar Kullenberg,
Distinguished Delegates,
Ladies and Gentlemen,

It is my honour to formally open the Third Session of the IOC Sub-Commission for the Western Pacific and to warmly welcome all participants to this opening session,

In the next five days we have many agenda items to cover. Most important, we will review the activities over the past three years and then plan our activities for the next three years,

Many of us involved in WESTPAC are scientists. This is rightly so since IOC is an inter-governmental scientific organization, However, IOC is not charged to do pure science but rather to embark on scientific programmes relevant to the world society,

It is in the coastal area that many WESTPAC states find pressing problems on resources conservation and environmental protection, Indeed, many of our WESTPAC projects deal with scientific aspects relevant to such coastal problems. Three years ago at Bangkok, following the UNCED at Rio, the Second WESTPAC Session decided that WESTPAC should pay special attention to the issues of integrated coastal area management, That session identified four actions for WESTPAC. The first action was related to the regional component of GOOS, the Global Ocean Observing System, GOOS is a monitoring system. Its product has to have users and itself has to be operated by the governments. Thus, by definition, GOOS is already half way to management. I am happy to say that WESTPAC Member States have responded favourably to the call of the first action. Implementation plan for NEAR-GOOS will be reported to this session by Prof. Taira. I look forward to seeing the similar plan for SEA-GOOS, the South-East Asian GOOS, soon.

The second action was the 3rd IOC/WESTPAC Scientific Symposium held in Bali, Indonesia, 22-26 November 1994. In the Symposium there was a special session on Integrated Management of Coastal Areas where scientists and managers exchanged their views. It was concluded that close co-operation between marine scientists and socio-economists are needed for rational management.

The third action was for the WESTPAC to seek close co-operation with other international organization, especially those of a policy-oriented nature, such as ESCAP, APEC, SEAFDEC etc.. Because the WESTPAC Secretariat was established only in 1994, action along this line is just starting.

The fourth action was to apply for GEF funds for regional projects. Mr. Robert Harriss from Australia kindly put the matter to GEF However, we know that dedicated manpower is

essential to secure a GEF project. The present WESTPAC Secretariat just does not have enough personnel to take on the workload demand.

I believe that the WESTPAC should earnestly pursue the last two actions again in the next three years, when you consider the many matters during the next few days, I urge you to give more thoughts to how can WESTPAC contribute to ICAM.

Finally, I wish to express my sincere appreciation to our host country, Japan, and I would like to thank especially Prof. Taira for his considerable effort in efficiently organizing this Session.

Thank you

**B. Address by Dr. Gunnar Kullenberg,
Executive Secretary IOC**

Mr, Chairman, Prof. Su,
Mr. Director-General of Scientific and International Affairs Bureau, Ministry of Education,
Science, Sports and Culture, Dr. Hideki Hayashida,
Dr. Taira,
Dr. G. Holland, Chairman of IOC,
Delegates,
Ladies and Gentlemen,

I am very honoured to be here and to attend the Session which is the third WESTPAC Session I attend, and most likely the last one also. It is very appropriate that the Third Session of the Sub-Commission takes place in Japan, and on behalf of IOC, I wish to thank the Government of Japan, and the local organizing committee for the excellent arrangements made and welcome all Delegates. I am happy to see so many here. We all recall the large efforts of the late Professor Nemoto for IOC and WESTPAC and we all wish to honour his memory by living up to his high ideals and goals. The fact that this IOC/WESTPAC session is held in an Olympic Centre should certainly stimulate us and help us achieve those goals.

Since we met last time in early 1993, almost exactly 3 years ago, in Bangkok, there has been a very considerable development of the Sub-Commission, I want to record this, even if the intersessional activities will be presented and discussed under a separate agenda item.

First, the IOC/WESTPAC Regional Secretariat has been established in NRCT in Bangkok. We are grateful to Thailand for its strong support, as well as to other Member States who are contributing to the Secretariat, especially the United States. I also wish to pay tribute to the Assistant Secretary, Mr, Yihang Jiang, for his large efforts and hard, dedicated work.

The Third IOC/WESTPAC Scientific Symposium was successfully implemented in Bali, Indonesia at the end of 1994, with an excellent hosting by the Government of Indonesia, for which I again wish to express the thanks of IOC/WESTPAC to Dr. Aprilani who is present here.

The other intersessional programme activities agreed upon at the Second Session of the Sub-Commission have also been largely implemented, Those which have not been fully achieved have lacked sufficient resources. The number of major WESTPAC activities has continued to

increase and its now by and large one per month. I think this is in fact what can be achieved under the present circumstances - not more. The corresponding budget amounts to about 200,000 USD per year, all taken into account, at the international level, Nationally there is of course much more contributed through the national participation in the programme. It would be interesting to know how large those amounts or resources are, as an estimate, in kind and in cash.

The IOC Assembly in June 1995 expressed great satisfaction with the development. Several Member States made commitments to support the WESTPAC Secretariat with financial contribution (United States and Japan) or by seconded staff (Japan and France). So far Japan has delivered by increasing by almost a factor of 3 its contribution to the IOC-FIT dedicated to WESTPAC activities, for which we are most grateful. We are eagerly awaiting delivery of other commitments,

The Assembly also urged me to negotiate with UNESCO the establishment of a post in the WESTPAC Secretariat, I am happy to inform you that this has been achieved and that a professional post at level of P4 has just been announced. Applications are expected by 16 May 1996.

The Assembly also recognized the need to review the existing WESTPAC projects so that decisions can be made on continuation and priorities, in light of the resource situation, I am happy to report that in response to this a "Review of WESTPAC programmes/Projects Since Their Adoption" has been prepared by the WESTPAC Secretariat, and has been made available to you as Document IOC/SC-WESTPAC-III/8. This should form one important basis for the decision to be made by you on the next intercessional programme activities.

We have not been able to establish a high-level post at director level as head of the IOC/WESTPAC Secretariat, and I do not think this will be possible in the near future and, certainly not through UNESCO alone. You may wish to analyze this situation further,

Since your last Session there has also been very considerable development and strengthening of IOC in UNESCO. This was manifested at the 28th General Conference of UNESCO, following a long debate in the Executive Board, and in the Eighteenth Session of the IOC Assembly, June 1995. The IOC was given, on an experimental basis, a considerable administrative and operational flexibility, so as to substantiate the meaning of the functional autonomy of IOC previously adopted by the 24th UNESCO General Conference in 1987, and stated in the Statutes of IOC. The IOC was given a separate Special Account with its Financial Regulations. The IOC was further-more provided a protected financial contribution from UNESCO of 3 million USD for 1996-1997, and 22 staff, also protected. This is being maintained by the Director-General. It represents a very substantial step in securing dependable resources for IOC; other programmes in UNESCO are presently reduced, on temporary basis. Our protection of course also means an increased responsibility. We must deliver and live up to this confidence given to us.

What does this mean? Think about it - and think about the overall situation of the United Nations system.

It is ironic at this time when the IOC is really achieving progress in its mother organization that we shall face problems on other fronts. This situation is very serious. The decision on IOC of the Executive Board at its session before the General Conference includes an

instruction to find a way through which the contributions in the IOC Trust Fund from Member States of IOC not member States of UNESCO can be made dependable also. We have to report on this to the 150th Session of the Board in the fall of 1996,

I would urge us here at this Session to try to identify further resources for the WESTPAC programme implementation from outside UNESCO. It is pointless also to urge me to negotiate with the Director-General of UNESCO for a Director or P5 level post at WESTPAC in Bangkok, at least at present,

Are we using right approaches? Can we increase our cost-benefit? Can we produce a synthesis of our results and present to the Governments and decision makers? We must address these questions - we cannot just do business as usual. Let me emphasize that we need to find a new mechanism and that the Special Account provides for that.

At the last Assembly the Medium Term Strategy of the IOC and the related Comprehensive Plan were discussed and basically adopted. In these the programmes of the IOC are related to the current issues and needs of society. How are we helping address these? We must demonstrate the relevance of our actions to society - so as to help ensure that commensurate resources are made available to us for implementation of these actions. I wish to recall that most of these issues were identified during UNCED preparations, and that I referred to those at our last WESTPAC session. I now reiterate this again. It is critically important for IOC now to obtain sufficient resources in view of the fact that there is now increasing interest in the ocean situation and ocean problems. This is also reflected in the UNESCO Medium Term Strategy adopted by the General Conference,

In the UN system an inter-agency mechanism was established following UNCED, which has prepared a report on the implementation and actions to address Agenda 21, Chapter 17. At the same time the Conventions adopted at UNCED are gradually being implemented, and the marine environment forms an important part of these. Think about marine biodiversity and oceans and climate, The IOC is participating in these matters - but resources are required.

There has also been expressed interest on behalf of some governments for a concerted scientific advice on problems of the oceans, in relation to marine pollution, over-harvesting and climate change. For sure IOC ought to be associated and perhaps play a leading role in this context. Why are the Governments not asking IOC to prepare such a synthesis? Some have turned to ICSU for it! The IOC and its regional Sub-Commissions must now get to grips with this, and must enter the ocean management area, and must contribute to solving problems. Think about the results of our programmes and the contributions they are making - but we are not selling it! So now let us agree on doing that.

In this context I wish to recall the need to identify priorities in our actions - and I hope you will now do that. Funds for project implementation as they exist are very small - and we must make the best of them. I suggest you set up an ad hoc sessional group to address the intersessional programme and its structure and that you will use the ideas in the IOC Medium Term Strategy also in this context. I would also suggest that you consider preparing a synthesis of WESTPAC results to date, and perhaps set up a mechanism to do that now. Please also recall the role of WESTPAC Sub-Commission as specified in the IOC Manual.

Finally let me mention 1998 International Year of the Ocean and the related EXPO'98. The IOC Assembly established a mechanism for the planning of IOC actions in this context. A

draft programme has been formulated by this task team and is for review with the officer and other members of the Team, It will soon be sent to Member States. One important element in this concerns the need to help ensure that ocean information and education regarding the marine environment can enter schools from a middle to high level. We can use 1998 for achieving this and related public awareness,

Finally, Mr. Chairman, Delegates, Ladies and Gentlemen, let me once again express my gratitude to our host the Ministry of Education, Science, Sports and Culture, for the excellent arrangements and again wish you all welcome to the session, and wish the session great success.

C. Address by Mr. Hideki Hayashida
Director-General, Science and International Affairs Bureau,
Ministry of Education, Science, Sports and Culture

Chairman of WESTPAC, Prof. Su Jilan,
Executive Secretary of IOC, Dr. Gunnar Kullenberg,
Distinguished Delegates,
Ladies and Gentlemen,

It is my great honour to make an opening address on behalf of the Ministry of Education, Science, Sports and Culture, on the occasion of the Third Session of the IOC Sub-Commission for WESTPAC. I extend my warmest welcome to all delegates and participants from the WESTPAC region.

It is my pleasure that we have the opportunity to host this WESTPAC meeting in Japan.

UNESCO is the first international organization which Japan was admitted to join after the World War II, before gaining a membership of the United Nations. Since then Japan has been making efforts to contribute to all UNESCO activities in the fields of education, science and culture,

Japan is an island country surrounded with seas, and we have been enjoying uncountable benefits as well as numerous knowledge from the sea. From these experiences, we insisted on the necessity of international ocean research and we consider that we had made great contributions to establish the Intergovernmental Oceanographic Commission, IOC within UNESCO in 1961. Furthermore, we took an initiative to set up WESTPAC and have positively participated in WESTPAC activities, for example, holding chairman and vice-chairman of WESTPAC regional committee, and contributing to the funds-in-trust for education and training for the WESTPAC countries. Many Japanese experts and researchers are engaged in implementing WESTPAC programmes as project leaders. I believe that many of them have achieved good results.

Recent global environmental change draw socio-economic attention all over the world. Especially, the importance of ocean research , investigation and observation is recognized broadly, because it is found that the ocean has influence on global climate change and ocean living resources. In order to deal with such global issues, it is necessary to carry out not only individual but also international co-operative research and observation. From this viewpoint, the framework of WESTPAC becomes increasingly important.

I suppose all delegates and participants will earnestly discuss and review the existing projects on research and observations and future activities in WESTPAC region during this five-day meeting, I wish this meeting will be successful.

Finally, I would like to thank IOC Secretariat and WESTPAC Secretariat for their support to the organization of this meeting, and I should like to express our sincere gratitude to Prof. Hirano, Director of Ocean Research Institute, the University of Tokyo and his staff who have made great efforts to organize this meeting.

Thank you.

ANNEX V

WESTPAC PROGRAMME STRUCTURE: GUIDANCE ON ESTABLISHING, MAINTAINING AND TERMINATING PROJECTS

1. PREAMBLE

The IOC promotes the co-ordination of global and regional ocean science and service programmes, based on the recognition that no one country or group of countries can address international oceanographic concerns. IOC activities respond to a wide variety of application needs, many of which are carried out on a regional basis. Activities vary within each region depending upon priorities within the region. For WESTPAC, themes have been established for development and communication of its programmes and projects

2. WESTPAC PROGRAMME

WESTPAC programmes are as follows:

- (i) Ocean Science in Relation to Living Resources (OSLR)
- (ii) Ocean Science in Relation to Non-Living Resources (OSNLR)
- (iii) Ocean Dynamics and Climate (ODC)
- (iv) Marine Pollution Research and Monitoring (MPRM)
- (v) Integrated Interdisciplinary Studies
- (vi) Ocean Services

Programmes may be added, deleted or revised upon the approval of the Sub-Commission. Each programme should attempt to address all of the themes listed below.

3. WESTPAC THEMES

WESTPAC programmes will be justified on the basis of following themes:

- (i) Contribution to Global programmes (e.g. GOOS, WCRP, IGBP) and International Environment Treaties and Conventions
- (ii) Contribution to TEMA and capacity building
- (iii) Solutions for current environmental problems and natural hazards

Projects established within the WESTPAC must meet the following criteria:

- (i) involve multilateral co-operation in the WESTPAC area
- (ii) have demonstrated scientific quality, basis, orientation and emphasis
- (iii) have defined objectives or outcomes
- (iv) have developed work plan, including resources requirements
- (v) incorporate a plan for communication of results and data

4. GUIDELINES FOR ESTABLISHMENT OF WESTPAC PROJECT

WESTPAC projects are established (or continued) within the programme structure by submission of proposals (or project reports). These must be submitted at least 6 months before meetings of the Sub-Commission. Proposals will be evaluated for possible inclusion by a

WESTPAC Bureau consisting of the WESTPAC Officers and the co-ordinators of the WESTPAC programmes, Their recommendations are subject to the approval of the Sub-Commission. Proposals and project reports should provide justification for their inclusion or continuation by addressing the relevant themes established by WESTPAC. Proposals should provide detailed information for judging the scientific quality of the work, the intended or established collaborations, and the financial impact, if any, on WESTPAC programmes. It is the responsibility of project leaders to provide the material in written form at least six months prior to meetings of the Sub-Commission. It is the responsibility of WESTPAC programme co-ordinators to monitor project progress and serve on the WESTPAC Bureau to review project proposals.

Programme co-ordinators are appointed by the Chairman of WESTPAC. Project leaders shall be appointed by the appropriate programme co-ordinator upon acceptance of the project by WESTPAC.

Prior to each session of the Sub-Commission, the WESTPAC Secretariat will provide a synthesis of project results described in the context of WESTPAC themes and stated national reasons for participation, The synthesis will be compiled from information provided by each programme co-ordinator. The Sub-Commission should review the progress at each session and decide on continuation or not.

5. PROJECT TERMINATION

Projects are subject to termination:

- (i) when the objectives have been fulfilled,
- (ii) if or when they failed to meet the criteria given above, or
- (iii) the Sub-Commission judges that sufficient justification of the project has not been provided with respect to the WESTPAC themes.

ANNEX VI

PROGRAMME OF THE FOURTH IOC/WESTPAC SCIENTIFIC SYMPOSIUM

Role of Ocean Sciences for Sustainable Development

CO-ORDINATING STRUCTURE

(i) Scientific Organizing Committee

Dr. Hyung Tack Huh (Chairman)
Dr. Su Jilan
Dr. Manuwadi hungspreugs
Dr. Toshio Yamagata
Dr. Roger Ludas
Dr. Angus McEwan
Prof. Arkady Alekseev

(ii) Local Organizing Committee

Prof. Makoto Terazaki
Ocean Research Institute, University of Tokyo

(iii) Budget and Finance Committee

Dr. Keisuke Taira
Executive Secretary IOC
Assistant Secretary for WESTPAC

SYMPOSIUM STRUCTURE

1. Keynote speeches

Five or six keynote speakers will be invited including “Integration of Science and Policy for the Ocean”

2. Call for papers

Ocean science in relation to living marine resources

Ocean science in relation to non-living marine resources

Ocean dynamics and climate

Ocean services

3. Workshops on WESTPAC programmes and projects

ANNEX VII

LIST OF ACRONYMS

ADG	Assistant Director-General
ANESC	Asian Natural Environmental Science Centre
APEC	Asia-Pacific Economic Cooperation
ASEAN	Association of South-East Asian Nations
CCOP	Co-ordinating Committee for Coastal and Offshore Geoscience programmes in East and South-East Asia
CIDA	Canadian International Development Agency
CLIVAR	Climate Variability and Predictability
COASTS	Programme on Coastal Ocean Advanced Science and Technology Study
CPMS	Canada Co-operative Programme on Marine Science
CREAMS	Circulation Research of the East Asian Marginal Seas
CSC	Continental Shelf Circulation Project
CSK	Co-operative Study of Kuroshio and Adjacent Regions
DOSS	Ad hoc Study Group on IOC Development, Operations, Structures and Statutes
EB-IBCWP	Editorial Board for the International Bathymetric Chart of the Western Pacific
EEZ	Exclusive Economic Zone
ENSO	El Niño and the Southern Oscillation
ESCAP	Economic and Social Commission for Asia and the Pacific
FAO	Food and Agriculture Organization of the United Nations

GCOS	Global Climate Observing System
GCRMN	Global Coral Reef Monitoring Network
GEBCO	General Bathymetric Chart of the Oceans
GEEP	Group of Experts on Effects of Pollutants
GEF	Global Environment Facility
GEMSI	Group of Experts on Methods, Standards and Intercalibration
GESREM	Group of Experts of Standards and Reference Materials
GEWEX	Global Energy and Water Cycle Experiment
GIPME	Global Investigation of Pollution in the Marine Environment
GOOS	Global Ocean Observing System
GPA	General Programme Action
GTS	Global Telecommunication System
HAB	Harmful Algal Blooms
HOTO	Health of the Oceans
IAEA	International Atomic Energy Agency
I-GOOS	IOC-WMO-UNEP Committee for the Global Ocean Observing System
ICAM	Integrated Coastal Areas Management
ICRI	International Coral Reef Initiative
ICSPRO	Inter-secretariat Committee on Scientific programmes Relating to Oceanography
ICSU	International Council of Scientific Unions
IGBP	International Geosphere -Biosphere Programme
IGCP	International Geological Correlation Programme

IGOSS	Integrated Global Ocean Services System
IHO	International Hydrographic Organization
IMO	International Maritime Organization
IOC	Intergovernmental Oceanographic Commission
IOC-FIT	IOC Fund-in-Trust
IODE	International Oceanographic Data and Information Exchange
JICA	Japan International Co-operation Agency
J-GOOS	Joint Scientific and Technical Committee for the Global Ocean Observing System
JECSS	Japan and East China Seas Study
JGOFS	Joint Global Ocean Flux Study
JODC	Japan Oceanographic Data Centre
KORDI	Korea Ocean Research and Development Institute
LOICZ	Land-Ocean Interaction in the Coastal Zone
MOU	Memorandum of Understanding
MPP-EAS	Marine Pollution Prevention and Management in the East Asian Seas
MPRM	Marine Pollution Research and Monitoring
NEAR-GOOS	North-East Asian Regional-GOOS
NGOs	Non-Governmental Organizations
NODC	National Oceanographic Data Centre
NRCT	National Research Council of Thailand
ODC	Ocean Dynamics and Climate
ODP	Ocean Drilling Programme

OSLR	Ocean Science in Living Resources
OSNLR	Ocean Science in Relation to Non-Living Resources
PICES	North Pacific Marine Science Organization
PREP	Penaeid Prawns Recruitment Project
PSP	Paralytic Shellfish Poisoning
RI	River Inputs Project
RNODC	Responsible National Oceanographic Data Centre
SARCS	Southeast Asia Regional Committee for START
SEACAMP	South East Asia Centre for Atmospheric and Marine Prediction
SOPAC	South Pacific Applied Geoscience Commission
START	Global Change System for Analysis, Research and Training
TEMA	IOC Committee for Training Education and Mutual Assistance in the Marine Sciences
TOGA	Tropical Ocean and Global Atmosphere
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNCLOS	United Nations Convention on the Law of the Sea
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNU	United Nations University
WCRP	World Climate Research Programme
WESTPAC	IOC Sub-Commission for the Western Pacific
WMO	World Meteorological Organization

WOCE	World Ocean Circulation Experiment
XBT	Expendable Bathythermograph