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'98 IOC-KMI International Workshop on Integrated Coastal Management (ICM)

Challenges and Strategies for Achieving Integrated Management of Coasts and Oceans: Examining Experiences in the Implementation of Chapter 17 of Agenda 21

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SUMMARY REPORT

1. GENERAL BACKGROUND

1.1 INTRODUCTION

The Intergovernmental Oceanographic Commission (IOC) of UNESCO and the Ministry of Maritime Affairs and Fisheries of the Republic of Korea (MOMAF) jointly sponsored a '98 IOC-KMI International Workshop on Integrated Coastal Management (ICM): Challenges and Strategies for Achieving Integrated Management of Coasts and Oceans, held from 16 to 18 April 1998 in Seoul, Republic of Korea (Korea) . As a contribution to the programme for the 1998 International Year of the Ocean, the Workshop was organized by the Korea Maritime Institute (KMI), in collaboration with the Centre for the Study of Marine Policy, University of Delaware, and the *Ocean and Coastal Management* international journal. IOC invited 30 international coastal participants to the Workshop and 22 papers were presented. Over 200 of Korea's national and sub-national coastal managers, practitioners, academic experts, and NGOs also participated in the Workshop.

The Workshop was aimed at high-level officials involved in preparing integrated coastal management (ICM) laws, institutions and plans at both national and sub-national levels of governments. The focus of the Workshop was on experiences with implementation of the institutional prescriptions of Chapter 17 of Agenda 21. Korea was chosen as the venue for this Workshop because it has taken a number of measures in support of integrated coastal and ocean management, *inter alia* through the creation of a new Ministry of Maritime Affairs and Fisheries.

1.1.1 Ministry of Maritime Affairs and Fisheries of Korea (MOMAF)

MOMAF was established in August of 1996 to respond to the coming 'Ocean Century'. It has incorporated into a single ministry a number of marine-related functions from ten different government authorities: ports, shipping, fisheries, coastal management, marine environment conservation and ocean sciences, in order to assure a consistent and effective marine policy. Thus, MOMAF presents an innovative model of ocean management and administration. It is also playing a key role in institutionalizing ICM concepts at the national level such as enacting an integrated Coastal Zone Management Law and formulating an ICM plan.

1.1.2 Korea Maritime Institute (KMI)

KMI was established in April of 1997 with the objective of integrating marine policy-oriented research institutions into a single new entry. KMI is a 'think-tank' for coastal and ocean affairs in Korea.

1.2 GOAL OF THE WORKSHOP

The goal of the workshop was to share the experiences being obtained from implementation of the institutional prescriptions found in Chapter 17 of Agenda 21 relating to oceans and coasts and to identify strategies for:

1.2.1 National context

- Implementation of the Chapter 17 recommendations for the creation of national co-ordination mechanisms to achieve integrated coastal and ocean management and the creation of similar mechanisms at sub-national levels (provincial, local);
- Establishment of effective mechanisms for linking the actions of national and sub-national levels of governments on ocean and coastal management; and
- Implementation of the principles of transparency and participation in decision-making about oceans and coasts at all levels of governments.

1.2.2 International context

- Co-ordination and harmonization of the ICM activities being carried out through the separate processes of implementation of Agenda 21: the Framework Convention on Climate Change; the Convention on Biological Diversity; the Global Programme of Action on Protection of the Marine Environment from Land-Based Activities; the International Coral Reef Initiative; and the Programme of Action on the Sustainable Development of Small Island Developing States.

2. OPENING

2.1 WELCOMING OF PARTICIPANTS

In his opening address, Dr. Seoung-Yong Hong, President of the Korea Maritime Institute, opened the Workshop and extended his sincere welcome to all participants. He mentioned three aspects which would make the Workshop more meaningful than other similar event. First, this year of 1998 is the UN International Year of the Ocean. Second, the Workshop commemorates the first anniversary of the Korea Maritime Institute. Third, the Workshop has been initiated to exemplify the Korean Government's strong efforts to respond to Agenda 21, Chapter 17. He also pointed out that the Workshop would be a great opportunity for all of us from every corner of the world community to share ideas and experiences with each other. He strongly hoped that the Workshop would make a great contribution to the understanding of integrated management of coastal zone and to institutionalizing of the ICM concept at the national, regional and local levels in practical ways (See Annex II (A)).

In his welcoming address, the Deputy Executive Secretary of IOC, Dr. Iouri Oliounine, on behalf of the former Executive Secretary IOC, Dr. Gunnar Kullenberg, and the present Executive Secretary IOC, Dr. Patricio Bernal, delivered their best wishes for the Workshop success. Dr. Oliounine also expressed their appreciation to His Excellency Dr. Sun-Kil Kim for his strong support of the Workshop; Dr. Seoung-Yong Hong for hosting this international meeting and providing all necessary facilities for its success; and Professors Biliana Cicin-Sain and Robert W. Knecht for the willingness to share their knowledge and experience in the preparation for the Workshop. Dr. Oliounine emphasized three aspects: (i) the importance of the application of science in coastal decision-making and management; (ii) the implementation of efficient co-ordination mechanisms in ocean and coastal zone research, monitoring, and management; and (iii) the wise coastal and ocean resource management for the next generation--our children (See Annex II (B)).

His Excellency Dr. Sun-Kil Kim, Minister of Maritime Affairs and Fisheries of Korea, expressed his congratulations to the opening of the Workshop and profound feeling of honour that the Workshop was held in Korea in celebration of the 1998 International Year of the Ocean and the first anniversary of KMI. He considered the Workshop particularly momentous and significant in two aspects. First, through this Workshop, it was important to effectively implement ICM prescriptions adopted in 1992, Rio de Janeiro, Brazil. Second, the Workshop would also provide knowledge and experience for achieving the goals of integrated coastal management in Korea. In this context, he stated that MOMAF would enact the Coastal Management Law before the end of 1998, and a national plan on integrated coastal zone management by 1999. He expressed special thanks to the organizing committee members from IOC and KMI for their hard work in planning and organizing the Workshop (See Annex II (C)).

3. KEYNOTE SPEECHES

3.1 ACHIEVING INTEGRATED MANAGEMENT OF OCEANS AND COASTS: PROGRESS IN IMPLEMENTATION OF THE INSTITUTIONAL PRESCRIPTIONS OF AGENDA 21, CHAPTER 17

Professor Biliana Cicin-Sain, Co-Director of the Centre for the Study of Marine Policy, University of Delaware, USA, began her keynote speech by raising some institutional capacity-building questions on the extent of needed institutional changes, the relationship between institutional changes and behavioural effects, and monitoring and assessment of the "on-the-ground" indicators of success. She pointed out coastal management problems arising from sectoral, or fragmented management approaches. As a pioneer in bringing ocean and coastal management together, she congratulated the Korean Government on the creation of a newly integrated Ministry of Maritime Affairs and Fisheries on 8 August 1996, and the Korea Maritime Institute on 18 April 1997.

Professor Cicin-Sain showed a number of examples of progress on institutional changes at international and national levels since the Rio Summit. Furthermore, she reviewed several important international conventions and action programme affecting coastal zone management paradigm, such as Agenda 21; the Framework Convention on Climate Change; the Convention on Biological Diversity; the Global Programme of Action on Protection of the Marine Environment from Land-Based Activities; the International Coral Reef Initiative; and the Programme of Action on the Sustainable Development of Small Island Developing States. She raised the questions as to how to bring these individual international action programmes into a co-ordinated effort at national and local implementation levels. She strongly encouraged all the Workshop participants to contribute actively to the discussion on various aspects of coastal and ocean policy integration, and to suggest useful recommendations at the end of the Workshop (See Annex II (D)).

3.2 REINVENTING KOREA'S MARINE POLICY FOR ACHIEVING INTEGRATED MANAGEMENT OF COASTS AND OCEANS

The President of the Korea Maritime Institute, Dr. Seoung-Yong Hong, expressed his gratitude again to the organizing committee of the Workshop and presented a brief overview of Korea's marine policy for achieving integrated management of coasts and oceans, adding some of the Korean experience in the implementation of Chapter 17 of Agenda 21. The key points of his speech

were described under two categories: coastal zone management in Korea and reinventing Korea's maritime policy. In the former category, he introduced coastal problems facing Korea such as the loss of wetlands, rapid coastal economic development, estuarine reclamation, industrial development in coastal zone, marine pollution, and fishery depletion. The major transformation was in attitude, changing from a development-minded policy to a more balanced conservation approach. In this effort, the basic pattern of coastal zone uses in Korea has steadily changed from the industrial development of the coastal zone to one of integrated coastal uses.

With respect to the second topic, Dr. Hong mentioned that the Korean Government established the new integrated MOMAF on August 8, 1996. Under the Kim Dae-Jung Administration, it has survived in spite of the Administration's downsizing plan to reduce from 21 to 16 cabinet ministries. He emphasized that Korea has taken a very ambitious step toward full-fledged integrated marine policy-making by establishing MOMAF. Another integrated institutional development was the creation of KMI on April 18, 1997, as a "think tank" for the Korean Government on ocean policy, environment, fisheries, shipping and ports. Importantly, MOMAF, jointly with KMI, formulated a working committee to draft a *Coastal Management Law* in September, 1997. He also mentioned that the establishment of MOMAF seemed to have created a catalyst for expediting some of the processes involved in addressing important issues in Korean marine policy (See Annex II (E)).

4. PRESENTATIONS

4.1 SESSION I: POLICY CO-ORDINATION MECHANISMS AT THE NATIONAL LEVEL: CHALLENGES IN HARMONIZING SECTORAL OCEAN AND COASTAL ACTIVITIES

Professor Robert W. Knecht, Co-Director of the Centre for the Study of Marine Policy, University of Delaware, USA, chaired Session I on policy co-ordination mechanisms at the national level.

Mr. Sang-Bae Han, Director of the Coastal Zone Management Division, Ministry of Maritime Affairs and Fisheries, Republic of Korea, presented on **Korean strategies for developing national mechanism of ICM**. He reported that Korea's coastal problems have not been effectively addressed by the complex coastal governance system of Korea, which was sectoral and somewhat fragmented. Coastal zone related activities are presently governed by nine Ministries implementing forty-five laws, each addressing a single sector of coastal resources or environmental problem. Recognizing the significance of coastal zone problems and responding to the recommendation made in Agenda 21, the Korean Government has formulated a *Marine Development Basic Plan*, which has been written according to the *Marine Development Basic Act* of 1987 and approved in January 1996. In the *Marine Development Basic Plan*, it was specifically proposed that Korean Government should establish a national mechanism for integrated coastal management; enact a "Coastal Management Law"; and formulate a "National Coastal Management Plan". He emphasized that one key measure in the draft Coastal Management Law was the adoption of a "Coastal Use Zoning System". Furthermore, the Korean Government is also planning to institutionalize a "Coastal Zone Enhancement Programme" with the focus on reducing coastal hazards and restoring degraded coastal habitats and ecosystems.

Mr. Joseph A. Uravitch, Coastal Programmes Division Chief, National Ocean Service, National Oceanic and Atmospheric Administration, USA, presented a talk on **National mechanism of ICM in USA**. He introduced the general background of the U.S. *Coastal Zone Management Act* (CZMA) of 1972 and emphasized U.S. experience on national and sub-national co-ordination on the basis of the "Federal Consistency Provision" prescribed in CZMA. He also mentioned this as an incentive mechanism that would encourage the coastal States to participate voluntarily in preparing their coastal zone management programmes. He explained boundary setting approaches under coastal zone management programmes using four different criteria: geographical features, fixed distance from shoreline, political jurisdiction, and watersheds. Mr. Uravitch explained the roles of federal and state governments in coastal zone management. Important federal roles are to ensure national interest; set national policy; programme funding and approval; oversight; programme evaluation; technical assistance; advocacy with other federal agencies, etc., while the state roles are: ensure state interest; set state policy priorities; programme development; programme management; programme improvement; review of federal actions, etc.

Mr. Luitzen Bijlsma, Managing Director of the Coastal Zone Management Centre, The Netherlands, presented on **Developing water policy in The Netherlands**. Given the particular geographical circumstances with a large part of the country's land below sea level, The Netherlands case is often considered to be a good example for implementing integrated water policies. According to Mr. Bijlsma, in The Netherlands, the struggle against the forces of sea has generated organized co-operation in water planning among citizens through the ages. As a bottom-up effort, this co-operation is reflected in the institutional arrangement of the Dutch Government. The local water boards, for example, are the oldest institutions in this country. He mentioned that The Netherlands coastal and marine policies are part of broader frameworks for water resources infrastructure and communication. The Minister of Transport, Public Works and the Water Management is therefore the co-ordinating minister for national coastal and marine policies.

Mr. Bijlsma described the basic tasks of public governance in The Netherlands: (i) to ensure safety from the forces of nature; (ii) to provide a fair division of and access to natural resources; and (iii) to stimulate a sound development to strengthen the welfare of the inhabitants. There are four dimensions of integration that have emerged in the Netherlands context: the linkage between the science and the policy making processes, integrated coastal and marine water management at the national level, integrated implementation of national policies at the local level, and the international regional co-operation in the North Sea Region.

Dr. Richard Delaney, Director of the Urban Harbours Institute, University of Massachusetts Boston, USA, presented a talk on **Developing ICM programmes within a regional context: The Gulf of Guinea Programme**. He identified some of the co-ordinating techniques and mechanisms that have been employed to achieve regional co-ordination and discussed some of the challenges encountered as illustrated in the current initiative among six West African countries that border on the Gulf of Guinea.

Dr. Alain Miossec, Director of the Institut de Géographie et d'Aménagement, University of Nantes, France, presented a talk on **Toward a more integrated coastal management in France: The action of the state government and administration**. He related one important catalyst for French Government's effort for a new way in coastal policy. In a report written in 1995, the central

question was to define a consistent policy for the French coastal zone. The report focussed high level attention on the administrative organization of the coastal zone. He said that the new Ministry of Sea of France has not enough capacity to manage all problems related to the coastal zone. Thus, a General Secretary in charge of the sea, strongly linked with the Prime Minister, now has the ability to prepare all issues related to coastal zone problems. Under this system, the country is moving slowly from a fragmented approach of coastal and sea development to a more co-ordinated one. He concluded that the French has more co-ordination, more global interaction, and more integration in the next century.

Dr. Jihyun Lee, Senior Researcher, Korea Maritime Institute, Republic of Korea, spoke on **Dynamic evolution of integrated coastal management policy in Korea**. She mentioned that Korea has been the laboratory for carrying out integrating marine institutional mechanism at both national and sub-national levels. The most prominent example of such an endeavour is the creation of MOMAF on August 1996, integrating marine related governmental functions. Until the creation of MOMAF, seven Ministries and two Administrations of the national government were involved in governing the coastal zone activities and resources in Korea. She emphasized that, due to the creation of MOMAF, the institutional capacity for integration has been greatly enhanced, promoting effective implementation of Agenda 21 prescriptions. Also, enhancement of the scientific capacity for integration has been attempted at both national level and local levels, through the National Coastal Zone Assessment Project and ICM Pilot Study in Chinhae Bay, respectively. In her conclusion, she emphasized the importance of socio-cultural and educational aspects of ocean management that was recognized by MOMAF and ocean community in Korea.

Professor Robert W. Knecht, Co-Director of the Centre for the Study of Marine Policy, University of Delaware, USA, spoke on **Achieving intersectoral co-operation in ICM**. Professor Knecht discussed the role of intersectoral co-ordination in ICM. For example, ICM co-ordination mechanism could provide a forum for conflict resolution and programme co-ordination; promote and strengthen agency collaboration; reduce agency rivalry and competition; and oversee co-ordination of agency budgets. Co-ordination between sectors faces barriers such as threatening of agency autonomy and differing constituency expectations. He also pointed out types of incentives for agency co-operation, alternative mechanisms for interagency co-operation, and existing situation in the United States. Professor Knecht also reported a new ocean and coastal policy legislation in the United States--the U.S. *Oceans Act* approved by the U.S. Senate in November 1997.

4.2 SESSION II: POLICY CO-ORDINATION MECHANISMS AT PROVINCIAL AND LOCAL LEVELS

Dr. Thia-Eng Chua, Programme Manager, UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas, Philippines, chaired Session II on policy co-ordination mechanisms at provincial and local levels.

Mr. Grover. J. Fugate, Executive Director of the Coastal Resources Management Council, Rhode Island, USA, spoke on **Policy co-ordination in the State of Rhode Island Coastal Resources Management Programme**. Mr. Fugate stated that the Coastal Resources Management Council was created by the Rhode Island State General Assembly in 1971 to be the principal planning and management agency for State's coastal resources. Through this Council, Rhode Island

implements collaborative planning projects such as Special Area Management Plans (SAMP). The Council has developed four SAMPs that encompass various geographic areas of the State. A SAMP is a watershed based ecosystem management plan, or land and water area management plan which looks closely at water quality, fish and wildlife habitat, storm hazards, geology, cumulative impacts, and physical resources management. He emphasized the co-ordinating functions of the Rhode Island Coastal Resources Management Council such as the permitting process, functioning as a binding arbitrator, consulting actions with local, state, and federal agencies and private interests, sponsoring coastal research, and acting as the State's representative to all bodies, public and private, on coastal matters.

Dr. Goro Sugihara, Director of the Osaka Office of Associate of Regional Planners & Architecture, Japan, talked on **The system of conservation, restoration and development in Osaka Bay area**. He stated that, in Osaka bay area, governmental planners began to support the technological development and the establishment of a new institutional system with the goal of sustainable development on the coastal zone. Since 1991, the Osaka Bay Area Development Organization (known as BARD) has been performing essential roles in the policy co-ordination of coastal management. BARD is a research and planning organization based on the collaboration of the national and local governments, industries and universities in Osaka Bay area. One of the symbolic projects proposed by the BARD was *Nagisa-Kaido*, which means "Coastal Road". It is an experimental attempt to tackle major problems in coastal zones in Osaka Bay area. In order to promote the *Nagisa-Kaido* movement, BARD is trying to involve citizens at the local and regional level. Dr. Sugihara said that this movement was still shaky, but was gaining in popularity in the Osaka Bay area. Through this collaborative movement, BARD aims to create accessible and clean shorelines with biodiversity.

Mr. Jong Jin Hong, Director-General of the Marine Fishery Bureau, Chollanamdo Provincial Government, Republic of Korea, talked on **Ocean management initiatives at Chollanamdo Provincial Government of Korea**. Challanamdo Province embraces the longest coastline of 6,420 km (56% of total national coastline) of the seven coastal provinces in Korea. He mentioned that the consensus among all communities within the Province was that the coastal zone needs to be developed for the Province to sustain economic growth and to improve the quality of life. In 1996, the Marine Development Council was established to formulate and implement the *Comprehensive Plan for Marine Development* which began with collecting various views of local residents. The Plan includes three key components: (i) mid-term and long-term plans for marine development; (ii) the implementation strategy through participation of local communities, provincial and local governments, and academia; and (iii) a co-ordination mechanism between fisheries, transportation, marine tourism, environmental conservation, and energy development. The Province is also planning to hold the OCEAN EXPO in 2010 to maintain national interest on marine and coastal zone issues.

Professor Jung-Woon Kang, Changwon National University, Republic of Korea, talked on **Enhancing the capacity of provincial and local governments for ICM implementation in Korea**. Professor Kang said that coastal zone management at local and provincial level in Korea was in the transition stage of national-local power delegation while emerging local growth and environmental politics was also becoming an important influence. Accordingly, he mentioned that there is a need for more attention to defining a substantive role for sub-national units of government in coastal zone

management policy changes toward ICM. He took examples of two ICM pilot studies: one in Chinhae Bay and the other in the West Coast. From these pilot studies, he suggested a polycentric model of coastal governance in the emerging ICM system in Korea. He explained that the polycentric model included a critical role for the national government which set guidelines and regulatory standards and a leading role in regional governance which would foster intergovernmental co-operation and participation among governmental units and citizen groups.

Dr. Thia-Eng Chua, UNDP/ IMO Regional Programme Manager, Philippines, discussed **Institutional arrangements for integrated coastal management in Xiamen, People's Republic of China**. Dr. Chua introduced the organizational and legal arrangements for implementing an integrated coastal management programme in Xiamen. He highlighted the process and institutional framework for addressing serious environment degradation and sustainable development problems particularly the transformation from a project to a permanent organizational structure at the local level for continuing ICM programme implementation. In particular, in terms of co-ordination at local level, the administrative order setting up the inter-agency committee provides the avenue for inter-agency co-ordination. Also, the establishment of a marine management office helps address interagency and intersectoral conflicts arising from marine resources governance and utilisation in addition to co-ordinating marine research, environmental monitoring and even law enforcement.

4.3 SESSION III: BRINGING INTERNATIONAL OCEAN AND COASTAL AGENCIES CLOSER TOGETHER: A DIALOGUE BETWEEN UN AGENCIES AND NGOs

Dr. Iouri Oliounine, Deputy Executive Secretary, Intergovernmental Oceanographic Commission, UNESCO, chaired Session III on bringing international ocean and coastal agencies closer together.

Mr. Habib El-Habr, East Asia Seas Programme/UNEP, spoke on **UNEP's Regional Seas Programme: A case study East Asian Seas Regional Co-ordinating Unit**. Mr. El-Habr reviewed the objectives of the East Asia Seas Regional Programme. He introduced the present action items for regional environmental management: scientific activities and the management problems of coral reef, sea grass meadows, coastal wetlands and mangroves, and coastal watersheds. For successful implementation of an effective ICM in the East Asian Seas, Mr. Habr emphasized three key factors: (i) the co-operation among the countries of the region; (ii) the co-ordination among the international agencies; (iii) the involvement of all stakeholders and, especially, the private sector in the regional ICM implementation.

Dr. R. Rajagopalan, Programme Director of the International Ocean Institute, India, talked on **The needs of coastal NGOs and the role of international agencies**. Dr. Rajagopalan argued that ICM plan and projects had to focus, not just on protecting the ecosystem, but on the well-being of the poorer coastal communities. Without gaining trust and support from the local coastal communities, the coastal ecosystem could not be well protected. He also insisted that if these groups, living along the long coastline of developing countries, had to be helped, it could be done only with the help of dedicated local NGOs, since government machinery or large internationally-funded ICM projects could never reach the thousands of coastal villages. He emphasized that international agencies must support the coastal NGOs in these areas through information networks, setting up ecotechnology demonstration centres, training of trainers, technology transfer, community-oriented

projects and the like. He introduced the experience of the International Ocean Institute (IOI), which is a global NGO with headquarters in Malta and established in 1972. In particular, regarding Indian coastal training, IOI India has taken up an Ecovillages Project in the State of Tamil Nadu. Implemented by a local NGO, the Project aims to improve the livelihood of the inhabitants of twenty coastal villages through the introduction of ecotechnologies and income generation activities. He argued that there should be a place for projects to support the small NGO who was trying to help the small man in the poorest coastal villages.

Dr. Iouri Oliounine, Deputy Executive Secretary, Intergovernmental Oceanographic Commission, UNESCO, talked on **The role of IOC in co-ordinating ICM in harmonization with other international agencies**. Dr. Oliounine introduced the general background of IOC history and major activities collaboration with other international agencies or organizations. He emphasized IOC's Global Ocean Observing System (GOOS) Programme and also the regional component of GOOS in the IOC/WESTPAC region. He mentioned the Global Investigation of Pollution in the Marine Environment (GIPME) project as an example of co-sponsoring, co-operative programme of IOC, with a joint IOC-UNEP-IMO endeavour. Also a joint IOC-UNEP International Mussel Watch Programme is being carried out within GIPME. In terms of coastal science-based management, Dr. Oliounine mentioned the Coastal Ocean Advanced Science and Technology Study (COASTS), developed at the Workshop in Liège, Belgium, May 1994. The Eighteenth Session of the IOC Assembly recognized that ICM was a very complex process, thus necessitating the interdisciplinary study of both natural and social sciences and well-co-ordinated, harmonized administrative co-operation at various governmental levels. Finally, he stated that the IOC was creating a computer data base as a clearing house mechanism to share the marine data and information among member countries.

Dr. Won Jang, President of the Green Korea United, Republic of Korea, presented a talk on **The role of NGOs in protecting coastal wetlands of Kang Hwa Island, Republic of Korea**. Kang Hwa Island is the fifth largest island in Korea. The southern mudflat of the Island is 11,217 ha in size and 20% of mudflats located in Kyung-Ki Bay. It is important for wildlife habitat, for endangered species, fisheries, and filtering polluted water run-off from the land. In order to protect the valuable coastal wetlands of Kang Hwa Island against irrational development, the local community took initiatives in co-operation with Environmental NGOs and concerned experts, carrying out a research project to develop a 'Kang Hwa Island Management Plan for the Sustainable Development'. Several strategies have been developed to implement the plan such as development of eco-tourism villages, public education programmes, wetland eco-tourism programme, bird-watching programmes, etc. Dr. Jang also pointed out that since this was a rare example of local initiative taken in collaboration with environmental NGOs, the successful implementation of the Knag Hwa management plan would stimulate future efforts by local communities.

4.4 SESSION IV: BRINGING SCIENCE AND POLICY TOGETHER IN INTEGRATED COASTAL MANAGEMENT

Professor Jae-Hyung Shim, Seoul National University, Republic of Korea, chaired Session IV on bringing science and policy together in integrated coastal management.

Professor Chan-Won Lee, Kyung-Nam University, Republic of Korea, spoke on **Applying science for managing Chinhae Bay in Korea**. Professor Lee pointed out that the key barrier for Chinhae Bay management was the lack of awareness of serious coastal problems. Another management problem was a difficulty to bring people together and developing a consensus plan. Thirdly, the ICM plan team should be composed of staff from all of the key agencies having important management roles regarding coastal resources and the coastal zone. Especially considering social and economic characteristics in Korea, the team should be directed by someone representing a higher policy level, for example, in the President's office, to get early ICM implementation for Chinhae Bay. Chinhae Bay ICM practitioners should keep in mind the seasonal variations of water quality and input loading, wastewater, and stormwater management in ICM planning. Finally, he emphasized a need to have local ICM centres for promoting awareness of the concepts and practice of ICM.

Mr. Jim Muldoon, Senior Consultant, Great Barrier Reef Marine Park Authority, Australia, talked on the **Role of science and monitoring in managing the Great Barrier Reef Marine Park**. Mr. Muldoon mentioned the core relationship between science and monitoring and managing the Great Barrier Reef Marine Park. He said that the Park Authority acted as a broker to the research and information gathering which was needed for management. Actually, the Park Authority was established to provide for science-based management of the natural resources of the Great Barrier Reef in order to provide for conservation and reasonable use. The Park Authority has also close and important relationships with scientific organizations such as the Australian Institute of Marine Science, Universities and the Commonwealth Scientific and Industrial Research Organization. In addition, it is a partner with research organizations and other management agencies in the Co-operative Research Centre for Sustainable Development of the Great Barrier Reef which is now the major vehicle used by the Park Authority and industry for the conduct of management related research.

Dr. Jinsen Yang, Deputy Director of the China Institute for Marine Development Strategies, People's Republic China, spoke on the **Role of science in developing coastal management policy in China**. According to his assessment, compared with advanced countries, China still has a long way to go in its marine scientific and technological level. In 1993, the Chinese Government issued the blue book of *Marine Technical Policies*, systemically formulating technical policies for marine scientific and technological development. In addition, the implementation of the National Marine Development Plan indicates that China is ushering in a new period of overall development and utilization of the ocean and the demands of activating the marine economy for scientific, and technological progress and its transfer into the real productivity are becoming higher and higher. He also emphasized the importance of the scientific basis for sustainable development and integrated management in coastal zone, and participation of educational circles, media, and scientific and technological circles in improving the ocean sense of the whole society.

Dr. Hong-Rhyong Yoo, Senior Assistant Secretary, Intergovernmental Oceanographic Commission, UNESCO, spoke on **Application of remote-sensing to ICM**. Dr. Yoo introduced an analytical study carried out to estimate the applicability of remote sensing by satellite to ICM based on the implementation of three research projects undertaken during the past ten years in Korea. For example, *A Study on the Geomorphology of Mudflats in the West Coast of Korea* demonstrated the strong applicability of the satellite remote sensing to this subject. Another example was that a study on the detection of the area influence by the thermal wastewater discharge from Wolsong Power

Plant using satellite data. It provided an excellent map of the influenced area identified by combining the thermal image data of Landsat TM with those of *in situ* measurements. In his conclusion, Dr. Yoo suggested that it was very important to establish a information transfer mechanism between scientists and policy advisors to the decision-makers to ensure the utilization of satellite data in ICM.

4.5 SESSION V: WORKSHOP CONCLUSIONS, RECOMMENDATIONS, AND THE SEOUL STATEMENT

4.5.1 Workshop Conclusions

Professor Biliana Cicin-Sain, Co-Director of the Centre for the Study of Marine Study, University of Delaware, USA, and Dr. Pil-Soo Jung, Vice-President of the Korea Maritime Institute, Republic of Korea, co-chaired Session V to conclude the Workshop and produce recommendations from participants and speakers. Also, Professor Robert W. Knecht, Co-Director of the Centre for the Study of Marine Policy, University of Delaware, USA, proposed the "Seoul Statement", which was adopted with minor changes.

Professor Knecht discussed the draft Recommendations, which had been suggested by participants. Some revisions were made to the draft Recommendations, principally involving:

- Global ocean forum
- Support for Korean ICM legislation
- Adding economic consideration to recommendation # 3
- Include "private sector" in groups needed to support ICM
- Need for sensitivity to social equity concerns as expressed in Agenda 21 and Rio principles

Moreover, some additional resolutions were proposed from the floor and were accepted on: education and capacity-building; ICM web page; and need for a good scientific and technological base for ICM.

The final revised and edited Recommendations, shown hereafter, were adopted by the Workshop. The co-chairs, Professor Biliana Cicin-Sain and Dr. Pil-Soo Jung thanked the participants for their active and enthusiastic contribution to the production of the "Seoul Statement" and fruitful outcome of the Workshop recommendations. They also thanked the KMI for organizing the Workshop and very warm hospitality, and IOC and MOMAF for their sponsoring the Workshop.

4.5.2 Recommendations

International organizations, donor groups, national governments, NGOs, the private sector, and others are called upon to support and encourage the following actions which will assist in the development and practice of ICM at all levels:

Global Ocean Forum – A forum held every two years or so, is urgently needed to bring together the various parts of the global ocean community (national governments, international organizations, NGOs, donor groups, scientists/academics, private sector, etc.) for an exchange of views, discussions

of new developments and the state of the oceans and coasts, assessments of progress in ICM and other management efforts, etc.

Global ICM Web Service – An ICM web service is needed to facilitate the exchange of relevant information among the wider coastal and ocean management community regarding ICM including basic definitions and concepts, international guidelines for ICM, examples of good practice, national programmes in ICM and the like.

Increasing Coastal Urbanization – International organizations, national governments, donor organizations, and others should focus increased attention on the growing trend toward urbanization of coastal areas and, especially on coastal megacities, given their explosive growth and the pressing problems of their great populations.

Sustainable Funding for ICM – Increased attention should be focussed on the important problem of developing sustainable funding mechanisms for the operation of ICM programmes.

Public Awareness – The lack of public awareness continues to hold back progress in ICM. Increased efforts at all levels are needed to publicize the urgent need for better integrated approaches to the management of coastal and ocean resources. It is especially important that these concepts begin to be incorporated into primary and secondary school teaching programmes.

Capacity-Building – The capacity of nations to implement ICM needs to be strengthened for both the median and long-term through sustainable funding, access to appropriate technology, and the development of comprehensive training and education opportunities in integrated coastal management.

Regional Centres for ICM – A permanent mechanism to promote regional collaboration in ICM is needed to co-ordinate international activities relevant to ICM at regional level, to foster active communication and collaboration among coastal nations in the region, to exchange model cases of ICM implementation and good practice, and to support the effective implementation of the global ocean forum concept.

Scientific and Technological Base for ICM – ICM programmes for the sustainable use and development of the coastal zone should be built upon good scientific and technical information concerning the physical and social properties of coastal areas.

ICM In Poor Coastal Communities – Other factors being equal, ICM projects should focus on the poor coastal communities and should be sensitive to the social equity principles spelled out in Agenda 21 and the Rio Principles. In such communities, the role of the small coastal NGOs is often very important; hence, international organizations, donor agencies, national governments and others should assist coastal NGOs by providing information on technology transfer, new training initiatives, funding for small projects, etc.

Enactment of Korean Coastal Management Law – The Workshop strongly endorses and supports the effort by the Korean Government to enact a coastal management law to develop an integrated coastal management system at the national level.

The Benefits of ICM – The monitoring of on-the-ground baseline indicators should be initiated early in the life of an ICM programme in order to measure, over time, the benefits of the integrated management programme. Also, greater attention should be given to the estimation of the economic benefits that will be produced by effective ICM.

Top-down and Bottom-up Approaches – Governments are urged to consider a combination of "top-down" and "bottom-up" approaches in ICM, that is, initiating ICM efforts both at the national level and the local (community) level.

4.5.3 The "Seoul Statement" on the Role of National Governments in Integrated Coastal Management (ICM)

Given the key role that national governments play in ICM, they should be encouraged to:

- Take effective actions to better harmonize the various ocean and coastal sectoral activities of the national government;
- Bring their provincial and local levels of government into their national ICM programme in a timely and appropriate way and with clearly defined roles and responsibilities;
- Stimulate the development and effectiveness of coastal NGOs since they often play an important role in effecting social and environmental improvements in coastal communities;
- Include, as active participants in ICM planning and implementation, representatives of the private sector whose success depends upon the health of coastal and ocean resources or whose activities can affect the quality of these resources; and
- Work with international organizations and the Secretariats of international agreements such as those dealing with biodiversity, climate change, and control of land-based pollution, to bring about greater co-ordination and coherency in ICM mandates originating at the global and regional levels.

5. FIELD TRIP

The one-day field trip took place on 18 April, the last day of the Workshop. Two sites were visited: The Port of Inchon and The New Songdo Teleport in Inchon Metropolitan City. The former represents the rapid expansion of the port development and shipping business in Korea, while the later represents the degradation and loss of precious tidal mudflats as a consequence of large-scale coastal reclamation.

The Port of Inchon was opened in 1883 and has become the gateway to the national capital region. There are four harbours within the Port: Coastal Ferry Harbour (passenger liners), Inner Harbour (freight ships), South Harbour (coastal freight vessels and barge ships), and North Harbour (crude oil and lumber). The Port of Inchon is a man-made port that overcomes the difference of ebb and flow of the tide, a maximum of 10 m, by the use of lockgate facilities. In 1996, the Port handled

cargo transport of about 42,623,000 tons for import, 12,432,000 tons for export, and 60,947,000 tons for domestic use.

The field trip participants then moved to the New Songdo Teleport construction sites. The Inchon Municipal City is leading a project to construct the Media Valley from 1997 to 2006 on reclaimed sites (total 858 acres), where were originally mudflats. This gigantic construction project has brought about environmental concerns by the public.

ANNEX I

WORKSHOP SCHEDULE

THURSDAY, 16 APRIL 1998

0800-0900 **REGISTRATION**
(Intercontinental Hotel, Seoul, Republic of Korea)

0900-0930 **OPENING CEREMONY**

Opening Address
Dr. Seoung-Yong Hong, President of the Korea Maritime Institute (KMI), Republic of Korea

Welcoming Address
Dr. Iouri Oliounine, Deputy Executive Secretary of the Intergovernmental Oceanographic Commission (IOC), UNESCO

Congratulatory Address
H.E. Dr. Sun-Kil Kim, Minister of Maritime Affairs and Fisheries of Korea, Republic of Korea

0930-1030 **KEYNOTE SPEECHES**

Keynote Speech
"Achieving integrated management of oceans and coasts: Progress in implementation of the institutional prescriptions of Agenda 21, Chapter 17"
Professor Biliana Cicin-Sain, Co-Director of the Center for the Study of Marine Policy, University of Delaware, USA

Keynote Speech
"Reinventing Korea's marine policy for achieving integrated management of coasts and oceans"
Dr. Seoung-Yong Hong, President of the Korea Maritime Institute (KMI), Republic of Korea

1030-1100 Coffee Break

SESSION I POLICY COORDINATION MECHANISMS AT THE NATIONAL LEVEL: CHALLENGES IN HARMONIZING SECTORAL OCEAN AND COASTAL ACTIVITIES

Chairperson: Professor Robert W. Knecht, Co-Director of the Center for the Study of Marine Policy, University of Delaware, USA

1100-1230 "Korean strategies for developing national mechanism of ICM"
Mr. Sang-Bae Han, Director of the Coastal Zone Management Division, Ministry of Maritime Affairs and Fisheries, Republic of Korea

"National mechanism of ICM in USA"
Mr. Joseph A. Uravitch, Coastal Programs Division Chief, National Ocean Service, National Oceanic and Atmospheric Administration, USA

"Developing water policy in the Netherlands"
Mr. Luitzen Bijlsma, Managing Director of the Coastal Zone Management Centre, The Netherlands

1230-1330 LUNCH

1330-1530 "Developing ICM programs within a regional context: The Gulf of Guinea Program"
Dr. Richard Delaney, Director of the Urban Harbors Institute, University of Massachusetts Boston, USA

"Toward a more integrated coastal management in France: The action of the state government and administration"
Dr. Allain Miossec, Director of the Insitut de Geographie et d'Amenagement, University of Nante, France

"Dynamic evolution of integrated coastal management policy in Korea"
Dr. Jihyun Lee, Senior Researcher, Korea Maritime Institute, Republic of Korea

"Achieving intersectoral cooperation in ICM"
Professor Robert W. Knecht, Co-Director of the Center for the Study of Marine Policy, University of Delaware, USA

1530-1600 Coffee Break

SESSION II POLICY COORDINATION MECHANISMS AT PROVINCIAL AND LOCAL LEVELS

Chairperson: Dr. Thia-Eng Chua. Program Manager, UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas, Philippines

1600-1830 "Policy coordination in the State of Rhode Island Coastal Resources Management Program"
Mr. Grover. J. Fugate, Executive Director of the Coastal Resources Management Council, Rhode Island, USA

"The system of conservation, restoration and development in Osaka Bay area"
Dr. Goro Sugihara, Director of the Osaka Office of Associate of Regional Planners & Architecture, Japan
"Ocean management initiatives at Chollanamdo Provincial Government of Korea"

Mr. Jong-Jin Hong, Director-General of the Marine Fishery Bureau, Chollanamdo Provincial Government, Republic of Korea

"Enhancing the capacity of provincial and local governments for ICM implementation in Korea"
Professor Jung-Woon Kang, Changwon National University, Republic of Korea

"Institutional arrangement for integrated coastal management in Xiamen, People's Republic of China"
Dr. Thia-Eng Chua, UNDP/ IMO Regional Programme Manager, Philippines

1830-2100 WELCOMING RECEPTION

FRIDAY, 17 APRIL 1998

SESSION III BRINGING INTERNATIONAL OCEAN AND COASTAL AGENCIES CLOSER TOGETHER: A DIALOGUE BETWEEN U.N. AGENCIES AND NGOS

Chairperson: Dr. Iouri Oliounine, Deputy Executive Secretary of the Intergovernmental Oceanographic Commission, UNESCO

1000-1200 "UNEP's Regional Seas Programme: A case study East Asian Seas Regional Coordinating Unit"
Mr. Habib El-Habr, Environmental Affairs, East Asia Sea/UNEP, Thailand

"The needs of coastal NGOs and the role of international agencies"
Dr. R. Rajagopalan, Programme Director of the International Ocean Institute, India

"The role of IOC in coordinating ICM in harmonization with other international agencies"
Dr. Iouri Oliounine, Deputy Executive Secretary, Intergovernmental Oceanographic Commission, UNESCO

"The role of NGOs in protecting coastal wetlands of Kang Hwa Island, Republic of Korea
Dr. Won Jang, President of the Green Korea United, Republic of Korea

1200-1330 LUNCH

SESSION IV BRINGING SCIENCE AND POLICY TOGETHER IN INTEGRATED COASTAL MANAGEMENT

Chairperson: Professor Jae-Hyung Shim, Seoul National University, Republic of Korea

1330-1530 "Applying science for managing Chinhae Bay in Korea"
Professor Chan-Won Lee, Kyung-Nam University, Republic of Korea

"Role of science and monitoring in managing the Great Barrier Reef Marine Park"
Mr. Jim Muldoon, Senior Consultant, Great Barrier Reef Marine Park Authority, Australia

"Role of science in developing coastal management policy in China"
Dr. Jinsen Yang, Deputy Director of the China Institute for Marine Development Strategies, People's Republic China

"Application of remote-sensing on ICM"
Dr. Hong-Rhyong Yoo, Senior Assistant Secretary, Intergovernmental Oceanographic Commission, UNESCO

1530-1600 Coffee Break

SESSION V WORKSHOP CONCLUSIONS, RECOMMENDATIONS, AND THE SEOUL STATEMENT

1600-1800 Co-chairs:
Professor Biliana Cicin-Sain, Co-Director of the Center for the Study of Marine Study, University of Delaware, USA

Dr. Pil-Soo Jung, Vice-President of the Korea Maritime Institute, Republic of Korea

1830-2030 DINNER

SATURDAY, 18 APRIL 1998

0800-1500 FIELD TRIP
(The Port of Inchon and the New Songdo Teleport in Inchon Metropolitan City)

ANNEX II

OPENING ADDRESS

A. THE PRESIDENT OF THE KOREA MARITIME INSTITUTE, REPUBLIC OF KOREA

by Dr. Seoung-Yong Hong

His Excellency Minister Sun-Kil Kim,
Mr. Iouri Oliounine, Deputy Executive Secretary
of the Intergovernmental Oceanographic Commission,
Professors Biliana Cicin-Sain and Robert Knecht,
from the University of Delaware,
Distinguished Participants, Ladies and Gentlemen:

It is a great honor and pleasure for me to take this opportunity to extend my sincere welcome to all of you who have come to join "98 IOC-KMI International Workshop on Integrated Coastal Management".

On behalf of the Korea Maritime Institute, I would like to express my gratitude to all of you for being with us today, representing government, academia, business, and NGOs.

I am sure this workshop will be more meaningful and impressive than any other similar events in at least three aspects.

Firstly, this year of 1998 is the International Year of the Ocean, which was declared by the United Nations. To celebrate the 1998 Ocean Year, IOC, UNESCO, has been initiating a number of events, and this workshop is one of them.

Secondly, this workshop commemorates the first anniversary of the Korea Maritime Institute. KMI was created on the 18th of April, 1997 as a "think tank" for the Korean Government on ocean policy, environment, fisheries, shipping and port. I am confident that the KMI has so far played its role very successfully.

Thirdly, this workshop has been initiated to manifest the Korean Government's strong efforts to respond to Agenda 21, UNCED in 1992. Since 1996 when the Ministry of Maritime Affairs and Fisheries was created, it has made a series of initiatives to apply the concept of sustainable development in the use of oceans and marine environment.

To establish a coordinated and integrated marine and coastal policy, the Ministry has been under way to enact a tentatively named "Coastal Management Act".

As we all know, the importance of coastal assets are ever-increasing. The more income we earn, the more emphasis on quality of life we place, so the coastal environment will have greater

value. However, we are witnessing increasing threats of pollution, population pressure, excessive fishing, and coastal zone degradation. To resolve these complicated problems, I am sure, an integrated approach for coastal management is unavoidable.

Integrated management begins with the awareness of coastal problems and understanding of the benefits of management by the governments and the citizens.

In addition, cultural, educational and community dimensions should be taken into consideration to manage ocean and coastal resources and to hand them over to our future generations in an efficient manner.

In this respect, it will be a great opportunity for all of us from every corner of the world community to share ideas and experiences with each other.

And, I firmly believe that this workshop will make a great contribution to the understanding of integrated management of coastal zone and to institutionalizing of the ICM concept at the national, regional and local levels in practical ways.

Korea is now facing revolutionary changes in its economy and society. The notion of integration in the use of ocean and coastal resources might accelerate these changes and will help Korea regain its economic vitality. In this regard, I think, this workshop is very timely and appropriate.

Once again, I would like to take this opportunity to express my sincere gratitude to all of you, particularly to speakers and commentators, for the active participation in this workshop.

In closing, I hope that your short stay in Seoul will prove to be both memorable and rewarding.

Thank you.

WELCOMING ADDRESS

B. THE DEPUTY EXECUTIVE SECRETARY OF THE INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION, UNESCO

by Dr. Iouri Oliounine

His Excellency Dr. Sun-Kil Kim
Mr. President of the Korea Maritime Institute
Distinguished Participants,
Ladies and Gentlemen,

I would like to thank you for the opportunity to participate in this Workshop and panel discussions. Intergovernmental Oceanographic Commission, UNESCO. Unfortunately, neither the past Executive Secretary of IOC, Professor Gunnar Kullenberg, nor the present, Dr. Patricio Bernal, were able to join our meeting due to other important commitments. They assigned me to pass their best wishes to the Workshop success and express appreciation to His Excellency Dr. Sun-Kil Kim for the strong support to the Workshop, Dr. Seoung-Yong Hong, President of the KMI for hosting this international meeting and providing all necessary facilities. We are also thankful to Professors Biliana Cicin-Sain and Robert Knecht for the readiness to share their knowledge and experience in the preparation of this Workshop. We are looking at the Workshop with a big hope.

IOC, established in 1960, gained a worldwide reputation as a valuable international mechanism for promoting marine scientific investigation and related oceanic services with a view toward learning more about the nature and resources of the oceans.

Over the past three decades, the main focus of the IOC activities was on the open sea and achievements of the Commission are well known--implementation of the Indian Sea Expedition, contribution to the global atmospheric research programme, leadership in ocean component of the world climate research programme and many others. Gradually, the interest to the coastal zone studies was rising and today activities related to the coastal zone research and monitoring occupy one of the priority places. There are many reasons for this, and among them: political and social, ecological, scientific and technological.

During the last years IOC has arranged a number of important scientific meetings on the management of the coastal zone, training courses and interesting publications. To a certain degree your Workshop occupies a unique place among other meetings as the organizers succeeded to bring together policy makers of different level, provincial and local governmental and international, as well as distinguished scientists with an objective to share the experiences and provide guidance.

I think the venue of this meeting is very appropriate since the Republic of Korea has created a new Ministry of Maritime Affairs and Fisheries (MOMAF), which incorporates a number of marine-related functions previously found in different ministries. This Ministry is presently playing a key role in promoting integrated coastal management concepts at the national level such as drafting an integrated Coastal Zone Management Law and formulating an integrated coastal management plan.

IOC expects that the Workshop will be able to formulate recommendations on the ways for establishing effective mechanisms for achieving integrated coastal and ocean management. One very important goal is to reach policy makers and management authorities to help ensure that the environment and the resources of coastal zones are even the priority they reserve in national policy as significant economic assets. The role of socio-economy, science and technology sectors as a mean to achieve sustainable development should be understood, accepted and used. This also implies that science must help address the issues facing our society. It is only through science that useful processes can be obtained to help in decision-making and management.

One of the main IOC objectives is to implement efficient coordination of efforts of Member States in ocean and coastal zone research, monitoring and management. The President of the United States in his address to the nation relevant to the start of the 1998 International Year of the Ocean proclaimed that "*because the ocean is a treasure that all nations of the world share in common, we must work in partnership to become wise stewards of its many reaches.*" Partnership and good will are even more important in managing coastal zones. We must strive together--at local, national, and international levels--to preserve the ocean's and its coastal zone health, to protect the marine environment, and to ensure the sustainable management of the myriad resources the ocean contains. I strongly believe that the Workshop will spark new interest to the coastal zones.

Finally, my last and most important point refers to our future generations. All of us here in this room as adults have more or less good lives. Our life expectancies are high. Our food resources for this generation relatively assured. I doubt whether we can say the same for the next generation--our children.

Ask not only what you can do for your city, province and country now, but what you can do for the children of the world who will inherit the situations we leave behind locally at a global level. As the Director-General of UNESCO said in his message to the world regarding the 1998 International Year of the Ocean: "*This planet does not belong to the adults of today and should not be managed on the basis of short-term considerations of economic gain or political power.*"

This Workshop is one small step in the right direction. I wish all of you here today our very best wishes in your searches for solutions in keeping the coastal zone and ocean safe and alive for our children.

Thank you.

CONGRATULATORY ADDRESS

C. THE MINISTER OF MARITIME AFFAIRS AND FISHERIES, REPUBLIC OF KOREA

by H.E. Dr. Sun-Kil Kim

Distinguished Dr. Iouri Oliounine, Deputy Executive Secretary of IOC,
Professor Biliana Cicin-Sain, and
Dr. Seoung-Yong Hong who will be sharing
their enthusiasm and insight into ICM, and
Distinguished Scholars and Honored Guests!

Ladies and gentlemen from far and near!

It is with a profound feeling of honor that IOC-KMI International Workshop on Integrated Coastal Management is held here in celebration of the '1998 International Year of the Ocean' and the first anniversary of the Korea Maritime Institute.

I consider this workshop particularly momentous and significant in two aspects.

First, it is important to effectively implement the ICM policy which was adopted according to the prescriptions of Agenda 21, Chapter 17 of the 1992 Rio meeting. To help accomplish that goal, presentations by coastal management experts and scholars of ICM will be geared to problem-oriented, action-oriented, analytical, comparative and interactive delivery. Through these processes, tangible progresses on identifying and managing the thorny affairs that are involved in attaining integrated management of coasts and oceans will be made.

Second, the workshop will also provide frank, thought-provoking and candid discussions on alternatives of trying to achieve the goals of integrated coastal management in Korea. I believe workable solutions, strategies and institutional prescriptions for appropriate integrated management of coasts and oceans will be expected to be within the reach of our efforts.

Honorable guests and participants!

Coastal zone is ecologically important area where many of living plants and animals reproduce and grow. It is the place where human activities such as building of coastal cities and industries, marine transportation, coastal reclamation and infilling, marine recreation and other activities are concentrated.

Korean coastal zone embraces 50 large scale ports and harbors, 25 cities, and 22 industrial complexes, and about 33% of Korea's population is residing in the coastal zone. It is also expected that by year 2005, the coastal area will be inhabited by 40% of total Korean population, with its total GDP reaching 50%.

Until recently, however, sufficient institutional mechanism and administrative strategies were not available to coordinate the coastal preservation and its development effectively. Developing industrial complexes as well as coastal reclamation and infilling were carried out without any consideration of their repercussion. Economically and ecologically precious tidal marsh and wetlands were lost. Imbalanced relationship between coastal development and management was witnessed.

To avert such threats to coastal environment, the integrated coastal management policy which is appropriate for each coastal type must be established. Such balanced management policy which will accomplish effective restoration and improvement of coastal land, and achieve sustainable development must be pursued. To carry out such challenges, MOMAF will enact the Coastal Management Act before the end of this year, and the national plan on integrated coastal management by 1999.

I am filled with great expectation that the workshop will be carried out with earnest and sincere discussion among all participants, international and national.

The occasion provided by this workshop will yield many substantial and concrete solutions to help achieve objectives of implementing ICM.

In addition, I offer my special thanks to the organizing committee members from IOC and KMI for their hard work in planning and organizing this workshop.

Thank you.

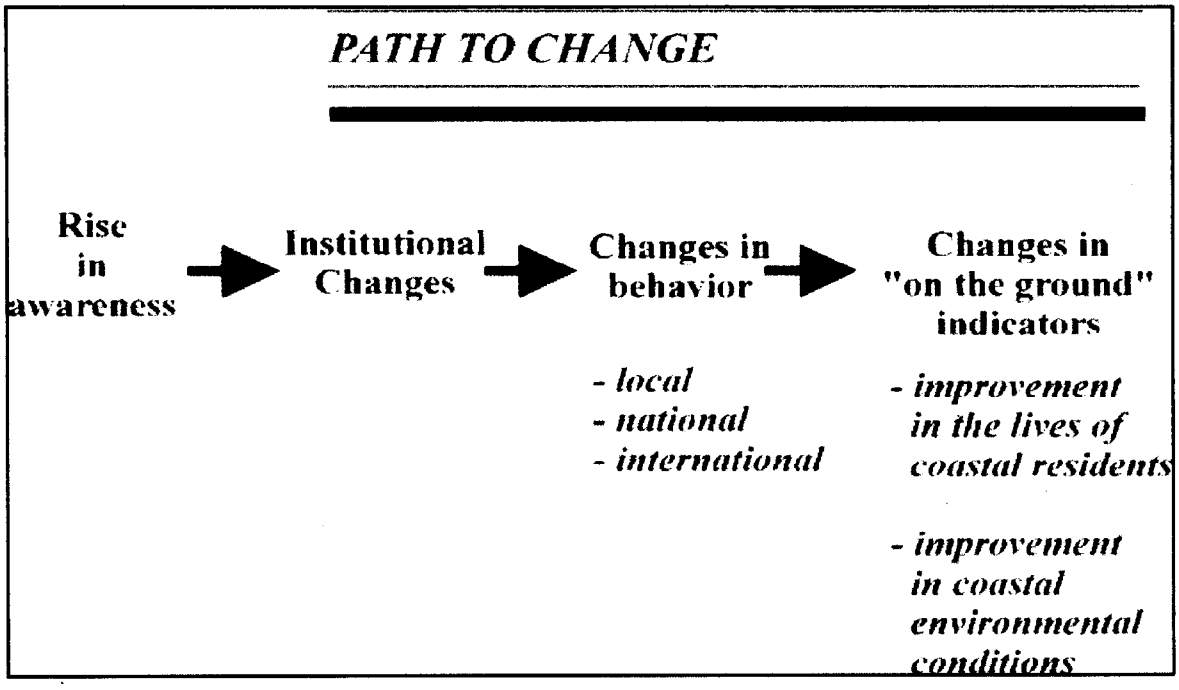
KEYNOTE SPEECH

D. ACHIEVING INTEGRATED MANAGEMENT OF OCEANS AND COASTS: PROGRESS IN IMPLEMENTATION OF THE INSTITUTIONAL PRESCRIPTIONS OF AGENDA 21, CHAPTER 17

by Professor Biliana Cicin-Sain
Co-Director of the Center for the Study of Marine Policy,
University of Delaware, USA

MAJOR QUESTIONS

- To what extent have we seen changes in institutions?
- Are changes in institutions producing changes in behavior?
  - At the national level?
  - Local level?



- International level?

Will the emerging behavioral changes result in improvement of "on-the-ground" indicators?

♦ Are we collecting the right information to be able to monitor the "on-the-ground" indicators and assess progress?

AGENDA 21, CHAPTER 17 — INSTITUTIONAL PRESCRIPTIONS

♦ National and local levels

"Each coastal State should consider establishing, or where necessary strengthening, appropriate coordination mechanisms (such as a high-level policy planning body) for integrated management and sustainable development of coastal and marine areas and their resources, at both the local and national levels."

♦ Participation

"Such mechanisms should include consultation, as appropriate, with the academic and private sectors, non-governmental organizations, local communities, resource user groups, and indigenous people. . . "

♦ International Level

"There are numerous national and international, including regional, institutions, both within and outside the United Nations system, with competence in marine issues, and there is a need to improve coordination and strengthen links among them."
"It is also important to insure that an integrated and multisectoral approach to marine issues is pursued at all levels."

PROGRESS SINCE THE RIO SUMMIT

Generally,

- Much institutional change at international level
  - UN Commission on Sustainable Development
  - Climate Change Convention (entered into force December 1993, new Secretariat in Bonn
  - Convention on Biological Diversity (entered into force December 1993, new Secretariat in Montreal)
  - Changes in World Bank
  - Changes in Global Environment Facility
  - Changes in UN organizations
  - Continued mobilization of international NGOs

- At national level
  - Many nations have created new institutions for sustainable development and have begun new programs on sustainable development

PROGRESS ON OCEANS AND COASTS

- Law of the Sea Convention entered into force (1994)
- Straddling fisheries stocks agreement adopted
- Program of action adopted for Small Island Developing States
- Global plan of action to control land-based sources of marine pollution
- International coral reef initiative
- Redirection of the work of UN agencies
- Capacity building efforts at all levels
- ICM adopted as a major organizing framework in
  - — Climate Change Convention
  - — Biodiversity Convention
  - — Plan of action for the control of land-based sources of marine pollution
  - — International Coral Reef Initiative
  - — Program of action for Sustainable Development of Small Island Developing States

- Consensus reached on ICM guidelines
  - — World Bank (1993, 1996), World Coast (1993), UNEP (1995), IUCN (1993), OECD (1991), Xiamen (1996), Climate Change (1997)

ASPECTS OF POLICY INTEGRATION TO BE ADDRESSED AT WORKSHOP

- Intersectoral Integration
  - At national level—Session I
  - At provincial and local levels—Session II
- Intergovernmental Integration (between national and provincial/local levels)
  - Also to be discussed in Sessions I and II
- Policy Integration and Transparency at the International Level
  - Session III
- Integration between the Sciences (Natural, Social) and Policy in ICM
  - Session IV

INTERSECTORAL INTEGRATION

When asked about major problems ICM faces, majority of respondents referred to problems in intersectoral integration. . .

Typical comments:

> "The sectoral system of governmental administration does not facilitate integrated management. Much greater effort is required to coordinate CZM in this situation. Awareness and training in CZM should target key sectors such as fisheries managers who do not consider themselves coastal managers."
> — *Asia-Pacific country respondent*

> "The very few ICM initiatives have had to face the strong inertia of the sectoral administration as well as the lack of tradition and "culture" of integrated management."
> — *European country respondent*

> "Agencies must be pushed and pulled into cooperation. . . They cannot be expected to do it naturally. . . "
> — *(Weiss, J. A. 1987. "Pathways to cooperation among public agencies," Journal of Policy Analysis and Management 7 (1): 94-117)*

KOREA—A PIONEER IN BRINGING OCEAN AND COASTAL MANAGEMENT TOGETHER

- Creation of Ministry of Maritime Affairs and Fisheries, August 8, 1996
- Creation of Korea Maritime Institute, April 18, 1997

SESSION I: INTERSECTORAL COORDINATION AT THE NATIONAL LEVEL

SESSION II: INTERSECTORAL COORDINATION AT PROVINCIAL AND LOCAL LEVELS

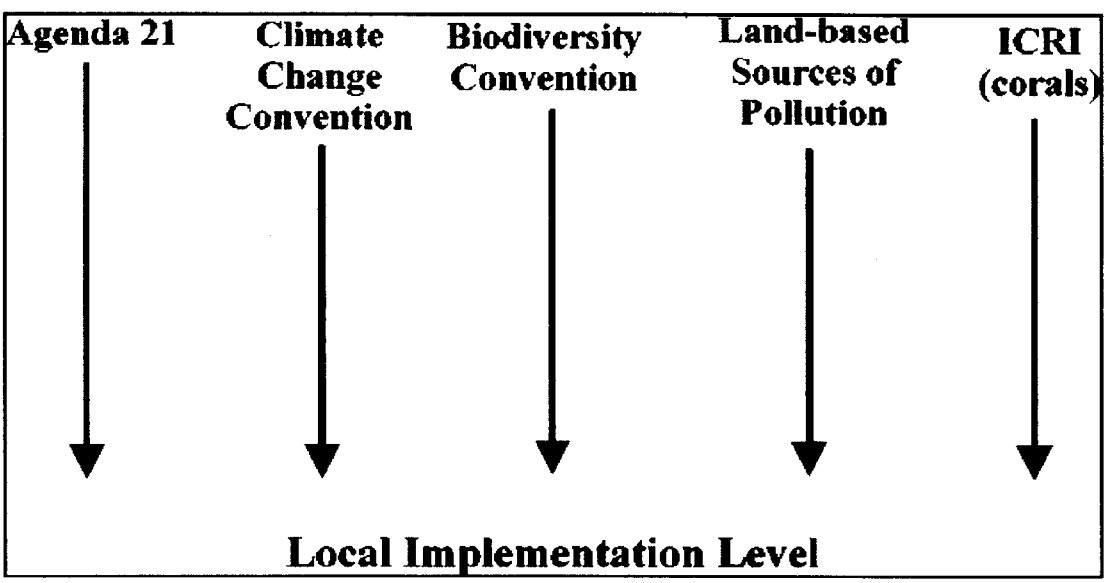
- What mechanisms for intersectoral integration are being used?
- With what success?
- What problems have been encountered?
- How have they been resolved?
- How has the national and provincial/local relationship been structured?
- Is it working and why?
- If not, how can it be improved?

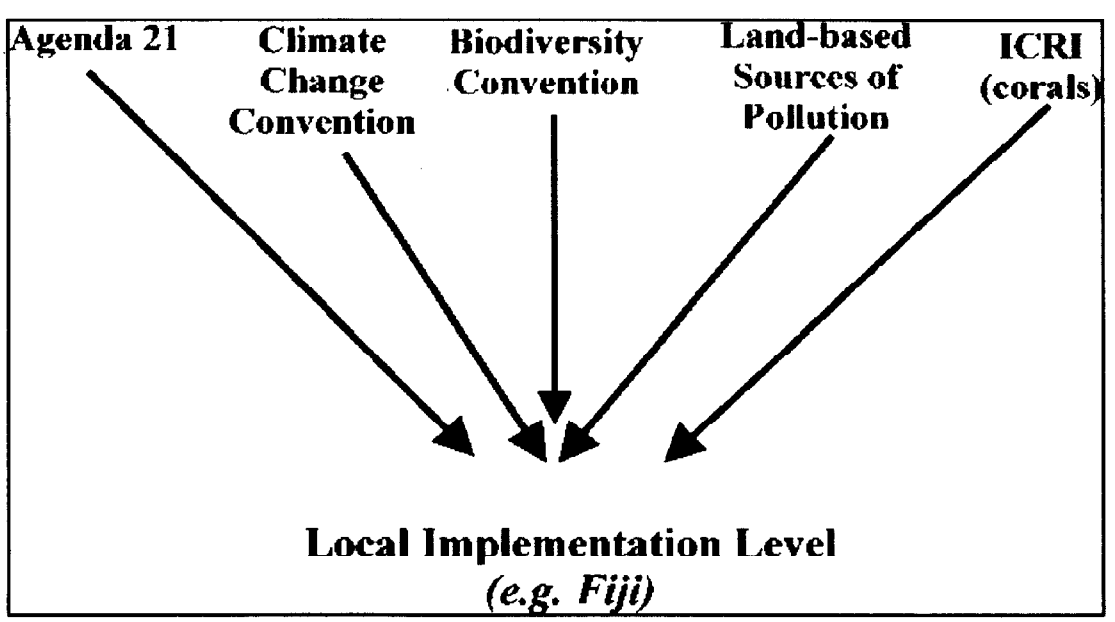
Experiences from Korea, East Asia, Japan, China, United States, Netherlands, France, West Africa

THERE IS NOW GENERAL CONSENSUS THAT:

- Most successful cases of ICM combine actions at the
  - National level
  - Provincial/local level

SESSION III: INTEGRATION AND TRANSPARENCY AT THE INTERNATIONAL LEVEL





- How to better harmonize the activities of UN and other institutions at
  - global level
  - regional level
  - national level

- How to harmonize the post-UNCED activities related to Agenda 21, the Biodiversity Convention, Climate Change Convention, Land-based Sources of Marine Pollution, International

  Coral Reef Initiative, etc.?

- How to institutionalize NGOs' participation at all these levels?

- Is a periodic global oceans forum needed?

SESSION IV: INTEGRATION BETWEEN THE SCIENCES AND POLICY IN ICM

ICM Must be grounded in good science

- The Challenges:
  Having relevant science available to the ICM policy-maker in a timely fashion

  - Take the time needed to carefully describe the needs of the policy-maker/manager
  - Disseminate those needs to a wide range of scientific and technical organizations
  - Develop incentives for scientists to work on applied problems
  - Hire in-house scientists to oversee this effort
  - Publicize examples of the successful integration of science into ICM practice (for example, the use of erosion rate-determined set-back lines)

KEYNOTE SPEECH

E. REINVENTING KOREA'S MARINE POLICY FOR ACHIEVING INTEGRATED MANAGEMENT OF COASTAL AND OCEAN

by Dr. Seoung-Yong Hong
The President of the Korea maritime Institute,
Republic of Korea

Excellencies,
Distinguished Participants,
Ladies and Gentlemen!

It is my special privilege to make a keynote speech on this special occasion of '98 IOC-KMI International Workshop on ICM'. I am most grateful to the organizing committee of this workshop for enabling me to meet old friends and make new acquaintances.

As I understand it, my role today is to outline briefly the general overview of Korea's marine policy for achieving integrated management of coasts and oceans and to talk about some Korean experiences in the implementation of Chapter 17 of Agenda 21.

Speaking to you today, I'm violating one of the three pieces of immortal advice from Winston Churchill, who said "*Never try to walk up a wall that's leaning towards you. Never try to kiss a person that's leaning away from you. And never speak to a group that knows more about a subject than you do*".

Before delivering my view, I'd like to say a few words about the changing nature of international initiatives on the oceans and coasts.

International Initiatives on the Oceans and Coasts

The ocean is of vital importance to the continued welfare of human beings as the 21st Century, so-called the 'Ocean Century', if you will, approaches. Mankind's first use of the sea was probably as both source of food and a means of transport between two points on dry land.

We now realize that we can bring the energies, the resources, initiatives, and technologies of all the communities of the world to bear upon issues regarding transportation, communication,, fishing, and even utilization of seabed minerals.

Today, well over 80% of international trade transport and over 40% of goods transported by volume, and a somewhat larger percentages in ton miles, is transported by oceans. As a consequence, most world mega-cities have been originally located at coastal sites to provide effective access to the oceans by navigation.

Great benefits abound for humankind, of whom three-quarters live within 60 kilometers of the shoreline.

Container ships as a major tool for ocean transportation have driven up ship sizes from 1,000 TEU class in the 1960s to 6,000 TEU class in the 1990s.

World consumption of seafood now exceeds 110 million tons per year. This replaces about 240 million steers or 910 million pigs. Not only has the world catch grown rapidly since the 1960s, but also an increasing amount of fishery commodities are traded now. The value of world international trade in fishery commodities, which was only $3.3 billion in 1970, had grown to $108.1 billion in 1995, or more than a thirty-fold increase in just 25 years.

Recent technological progress, the recognition of potential terrestrial resource shortages, and a generally expanded awareness of human ability to impact the marine ecosystem have begun to push our sphere of political interest seaward.

Thus, ocean environmental management is designed to address issues that help to maintain the oceans and coasts as a vital asset to humans.

The environmental problems created by both affluence and poverty have emphasized the need to develop a new understanding of sustainable development and new mechanisms for implementing the paradigm shift towards sustainability.

Sustainable development requires a detailed knowledge of the resources, their distribution, abundance, interchange, and potential yields. It requires insight into the complex social and scientific interactions to determine how a sustainable steady state might be achieved.

In this regard, it is important that each coastal and oceanic state develops and adequate capability in integrated marine policy for achieving sustainable development of the oceans and in wisely harvesting its resources.

The collective power of people to shape the future is greater now than ever before, and the need to exercise it is more compelling. Mobilizing that power to make life in the 21st century more democratic, more secure, and more sustainable is the foremost challenge of this generation.

The world needs a new vision that can galvanize people everywhere to achieve higher levels of cooperation in areas of common concern and shared destiny.

The United Nations Convention on the Law of the Sea and Agenda 21 of UNCED are seen as a major policy pull for achieving integrated management of coasts and oceans into the 21st century.

The development of new ocean science and technology is a major forcing function as a policy push.

Coastal Zone Management in Korea

In recent years, a significant environmental stress is being placed on Korea's coastal zones due to competing and irresponsible uses. Important physical and ecological processes as well as social and aesthetic values are being irreversibly damaged and lost. This deterioration are partly attributable to inadequate 'first come, first served' rule for coastal zone utilization as well as inadequate strategies for optimal planning and management of the coastal environment.

From an institutional perspective, coastal zone resources and environment were a simple issue area with few functional linkages in Korea before the 1960s. However, since the early 1970s, some major social-environmental changes such as rapid industrialization, increased energy needs, growing population density, increased foreign trade, and technological advances have challenged the traditional hierarchy of national interests and complicated coastal zone management.

An increased number of important coastal zone issues and interactions were reflected in the creation of new governmental organizations and new laws which deal with coastal zone resources and environment.

Now seven ministries with their subordinate institutions address major problems. Especially large-scale wetland reclamations along the west and southern coasts offer a big battle ground among relevant Ministries such as Agriculture & Forestry, Industry and Resources, Maritime Affairs and Fisheries, Construction and Transportation, Environment, National Defense, and Government Administration and Home Affairs.

The loss of wetlands in Korea can be seen as largely the result of 'intersectoral policy inconsistency', leading to systematic failures of markets and economic regulators to recognize the value of the ecological services the areas perform. All too often, wetlands have been regarded as areas for conversion to other uses - which may be of dubious long term value compared with the functions performed by the original ecosystems.

In Korea, about 40 percent of all wetlands, for ten years since 1987, have disappeared.

Economic development is often accompanied by significant adverse impacts on the environment. Many people still feel that some deterioration in environmental quality is a necessary and justifiable cost of economic growth. However, a growing body of opinion has gradually emerged that degradation of the environment and misuse of natural resources will result in real losses in the long term and, furthermore will undermine the sustainable improvement of human life.

One of the mechanisms for environmental control in Korea is the environmental impact statement process required by the Environmental Impact Assessment Act (Law No. 5302, approved on June 11, 1993 and amended on March 7, 1997)

The act provides room for a compromise settlement measure on the basis of scientific data.

It requires that would-be-developers prepare environmental impact statements (EIS) or supply data concerning their coastal zone activities such as industrial complex construction, port development, wetland reclamation, and water resource development.

While private or public developers are often in a unique position to generate sophisticated data due to available expertise and funds, there can be some argument that the quality of data generated also depends on the objectivity of the developers.

Effective regulation is possible if the standards are linked to a process of scientific assessment of the total effects of pollutants and some of the spatial problems such as area displacement of fishermen may be mitigated through compensation agreements. However, the impact to coastal fisheries identified in the environmental impact statements prepared for reclamation projects may have been underestimated.

This is partially due to the fact that environmental impact statements in general have focused on impacts of fisheries in the limited area, without considering broader second and third-order effects.

The Minister of Maritime Affairs and Fisheries under Article 3 (2) of the *Public-Owned Water Area Management Act* (Law No. 848, amended on April 10, 1997), is to establish a 'Basic Master Plan for Reclamation of Public-Owned Waters' so that public waters are rendered suitable for the nation's total land functions and uses.

The Act was originally supervised by a very development-minded Ministry of Construction and Transportation before the Ministry of Maritime Affairs and Fisheries was established in August 8, 1996. The established Basic Master Plan is subject to be reviewed every ten years.

While Article 14 of its amendment of 1986 articulated the positive participation of commercial construction firms in reclamation subject to governmental permission for acquiring ownership of the reclaimed area, it strengthened the compensation system to control reclamation activities more tightly than ever before to mitigate the conflicts caused by imprudent projects.

Coastal zone management in Korea is still embodied in separate laws, each typically addressing one class of resource or environmental matter. Since the early 1950s, the Korean National Assembly has enacted over fifty-four laws relating to coastal zone management.

The mechanisms for resolving inter-ministerial conflicts over the management of these resources and environments vary widely from law to law. Furthermore, the Government operates seventeen Committees or Commissions under various Ministries for the purpose of resolving inter-ministerial conflicts or improving efficiency of coastal zone management policies.

Some conservancy zoning programs have been applied in some regions to protect areas of special flora, fauna, and geologic or ecological interest. While local zoning is a broad tool for sensitive area management, it is also subject to many limitations including a limited data base, lack of administrative expertise, inadequate geographical perspective, and failure to take into account the unique features of each site.

To date, Korea has had a strong central governance system. From the beginning of 1990s, however, decentralization in favor of regional government has been decreed. Upon undertaking this new decentralized governance, Korea world seem well advised to be equipped with arrangements for assessing tradeoffs among competing interests in an objective, theoretically sound manner.

The basic pattern of coastal zone uses in Korea has changed from the linear expansion of coastal zone to one of integrated coastal uses. Therefore, integrated coastal zone management policy using strategies such as multiple-use planning may well have better success if they are begun on a regional basis, and then expanded to national land use planning.

Reinventing Korea's Maritime Policy

Governance is the sum of the many ways individuals and institutions, public and private, manage their common affairs. If public are to be put into effect, responsibility for their implementation must be assigned either to an existing agency or to a new agency established for this purpose. The governance for marine policy is a catalyst for achieving the planned target.

After careful consideration of the various alternatives, the Korean government established the Ministry of Maritime Affairs and Fisheries (MOMAF) on August 8th, 1996, merging various marine-related authorities previously belonged to 10 separate governmental agencies.

I am very happy to report it to you that the new President of Korea, Kim Dae-Jung finally decided to keep the Ministry of Maritime Affairs and Fisheries after the hot discussion on the Government downsizing plan to reduce to 16 cabinet ministries from the previous 21.

The followings are the main functions of MOMAF:

- Development and integration of marine policy
- Development of shipping industries and safety of ships
- Port development and operation
- Fisheries development and management
- Marine science and technology research
- Conservation of the marine environment
- Coastal Zone Management

Korea has taken a very ambitious step toward full-fledged integrated marine policy-making by establishing MOMAF. It has been almost one and a half years since the creation of MOMAF. Although it is too premature, it may be worthwhile at this point to compare the current marine policies with the previous policies formulated during the pre-MOMAF regime. In this way, we can glimpse a hint of the lessons from success or failure in implementing new marine policies.

At first glance, MOMAF's recent policy implementation seems to be meeting with considerable enthusiasm from the maritime constituency.

Since the beginning of the 1990s, Korea has been facing economic hardship to sustain economic growth. High wages, high interest rates, high land costs, and - high logistics costs, all contribute this hardship. The logistics cost generally marks up to 17% of production cost of total manufacturing companies.

It is the general consensus that the Korean Government should strengthen the capacity of social overhead capitals, mainly focusing on port development. Korea has been suffering from overcrowded, chronic congestion in its key international ports, experiencing a deficient port capacity in handling 295 million tons of cargo out of 482 million tons of the total international seaborne cargo in 1997.

To solve the problem of under-capacity, it is estimated that a 33 trillion won ($23.6 billion) investment will be required by the year 2011; almost a half of this investment is expected to come from the private sector.

In spite of the critical importance of port investment, however, actual investment to date has not been sufficient to meet the demand due to a number of reasons. Among them, four issues can be emphasized; the faltering involvement of the private sector; the complicated and protracted processes of construction arising from time-consuming compensation mechanisms for stakeholders who have incurred loss; the complex negotiation mechanisms involving other than that pertaining to port construction.

Thus, to expedite the construction process and to encourage the involvement of the private sector, the 'New Port Construction Promotion Act (Law No. 5251, approved on Dec. 31. 1996)' was enacted providing foundation for a drastic expansion of port facilities. Without MOMAF, this legislation could have been stalled indefinitely of seemingly interminable debates and deliberations.

Another strong feature of ocean governance since the creation of MOMAF is the shift in the mode of ports management from the public-owned public-operation to the public-owned private-operation through the amendment of the *Port Stevedoring Work Act* (Law No 1404, amended on Dec.13, 1997). There are two implications. First, major international ports in Korea will operate on a commercial basis due to the active involvement of the private sector. Second, traditionally powerful port labor unions will see their bargaining power diminish gradually, since only a selected labor force will be employed by terminal operating companies (TOC) in the future. This could never have been the case in Korea during the pre-MOMAF era, even though inefficiency in the ports arising from labor disputes has been frequently reported to the Government.

To help strengthen the international competitiveness of the Korean ocean-going shipping industry, the ministry succeeded in abolishing a 2.5 percent tax imposed on the introduction of vessels from abroad. Thus, the abolition of a 2.5 percent vessel introduction tax will greatly relieve the financial burdens of shipping firms, and the privatization of port operation will enhance their efficiency and competitiveness.

Furthermore, the ministry adopted the so-called 'International Ship Registry Act' (Law No. 5365. August 22, 1997). Under the second ship registry system, Korean ocean-going shipping firms would face relaxed controls on the use of foreign seamen as well as flexible financing, along with greater favors in taxation.

Presumably similar successes resulting from the strong leadership of MOMAF can also be found in other areas, *inter alia*, enhancing governmental expenditures for upgrading the quality of life at fishing villages and devising protective and precautionary measures for sporadic red-tide and oil pollution disasters.

To provide compensation measures for the damage from oil pollution, MOMAF amended the 'Prevention of Marine Pollution Act' (Law No. 4365, amended on Dec. 17, 1997) and the 'Compensation Act for Damage from Pollution'(Law No.4532, amended on Dec.13, 1997).

Among such remarkable endeavors of MOMAF, the efforts made on establishing national mechanism of integrated coastal management should be recognized as the most visionary and futuristic action toward the sustainable development of ocean and coastal resources.

To establish national coastal management policy in a more coordinated context with ocean management, MOMAF took over the responsibility of coastal management from the Ministry of Construction and Transportation on March, 1997 and created the Coastal Zone Management Division on May, 1997. MOMAF, jointly with KMI, formulated a working committee to draft a tentatively named the 'Coastal Management Law' in September, 1997.

Summing up, the long-awaited establishment of MOMAF seems to have created a catalyst for expediting some of the processes involved in addressing important issues in Korean marine policy. Also it is clear that the new ministry has achieved a certain degree of accord among parties from the many agencies and organizations whose functions have been transferred to MOMAF.

As you know, the Korean economic dynamism is recently being sapped by an increasingly debilitating set of systematic impediments, and a serious managerial and technology knowledge gap.

Through various analyses, it is a foregone conclusion that Korea cannot expect the same economic growth as we have enjoyed thus far chiefly owing to four major problems such as (i) widespread and costly bureaucratic intervention by a government guided economic model, (ii) high cost low efficiency economic structure from high cost financing, inflexible labor conditions, and high land costs, (iii) shortfall in both managerial and technological knowledge and (iv) international isolation.

The same problems are applicable to ocean industries in Korea. To overcome these problems, we have just examined a brand-new vision for integrated marine policy and strategies.

There are seven action agenda in our maritime arena that we would like to focus on during Kim Dae-Jung Government (1998-2002).

First, we should extend the wave of deregulations affecting free market operation system while we should strengthen environmental and safety regulations to guarantee cleaner and safer seas. Coastal zone management equipped with zoning system can be included in this category; on the one hand some areas can be efficiently developed for economic activities, on the other hand some areas shall be strictly preserved.

Second, more knowledge-based ocean infrastructure will be stimulated through commercial combination of marine environment industry, ocean science and technology innovation, and development of next generation ocean science business.

Third, more ocean service industries will be improved competitiveness through enhancing shipping industry marine information service industry, marketing mechanisms in fishery goods, and fostering marine tourism.

Fourth, ocean industries commanding strategic alliance and inducing foreign direct investment will be more networked to aim at regionally integration and globally connection.

Fifth, restructuring uncompetitive medium sized ocean companies, reforming port stevedoring labor market, and localization and privatization of port operation are to be pursued.

Sixth, investment on social overhead capitals (SOC) should be increased in order for Korean ports to function as the hub in East Asia.

Seventh, more fringe and social security programs will be provided for seafarers and fishermen of ocean industrial constituency.

In closing, any success the new ministry may claim in attaining these objectives is more likely to depend upon its strenuous efforts and the innovative leadership. What lies ahead for MOMAF is to promote further capacity-building and to effectively implement the '21st century Long-term Strategic Plan of Maritime Affairs and Fisheries' envisioning Korea as a first-rate *sea power State* at the beginning of the next millennium. As challenge brings response, future will be in our hands.

ANNEX III
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ANNEX IV

LIST OF ACRONYMS AND ABBREVIATIONS

BARD	Osaka Bay Area Development Organization (Japan)
COASTS	Coastal Ocean Advanced Science and Technology Study
CZM	Coastal Zone Management
CZMA	U.S. Coastal Zone Management Act
EAS-UNEP	East Asia Seas-United Nations Environment Programme
EIA	Environmental Impact Assessment
GEF	Global Environment Facility
GIPME	Global Investigation of Pollution in the Marine Environment
GIS	Geographical Information System
GOOS	Global Ocean Observing System
ICM	Integrated Coastal Management
ICAM	Integrated Coastal Area Management
IMO	International Maritime Organization
IOC	Intergovernmental Oceanographic Commission
IOI	International Ocean Institute
KMI	Korea Maritime Institute
MOMAF	Ministry of Maritime Affairs and Fisheries (Republic of Korea)
NGO	Non-Governmental Organization
NOAA	National Oceanic and Atmospheric Administration (U.S.A)
NOS	National Ocean Service (U.S.A)
OCRM	Office of Ocean and Coastal Resources Management (U.S.A)
SAMP	Special Area Management Plan
SOA	State Oceanic Administration (People's Republic of China)
TEU	Twenty-Foot Equivalent Unit
UNCED	United Nations Conference on Environment and Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
WESTPAC	IOC Sub-Commission for the Western Pacific

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No.	Title	Languages
1	CCOP-IOC, 1974, Metallogenesis, Hydrocarbons and Tectonic Patterns in Eastern Asia (Report of the IDOE Workshop on); Bangkok, Thailand, 24-29 September 1973 UNDP (CCOP), 138 pp.	E (out of stock)
2	CICAR Ichthyoplankton Workshop, Mexico City, 16-27 July 1974 (UNESCO Technical Paper in Marine Sciences, No. 20).	E (out of stock) S (out of stock)
3	Report of the IOC/GFCM/ICSEM International Workshop on Marine Pollution in the Mediterranean; Monte Carlo, 9-14 September 1974.	E, F E (out of stock)
4	Report of the Workshop on the Phenomenon known as 'El Niño'; Guayaquil, Ecuador, 4-12 December 1974.	E (out of stock) S (out of stock)
5	IDOE International Workshop on Marine Geology and Geophysics of the Caribbean Region and its Resources; Kingston, Jamaica, 17-22 February 1975.	E (out of stock) S
6	Report of the CCOP/SOPAC-IOC IDOE International Workshop on Geology, Mineral Resources and Geophysics of the South Pacific; Suva, Fiji, 1-6 September 1975.	E
7	Report of the Scientific Workshop to Initiate Planning for a Co-operative Investigation in the North and Central Western Indian Ocean, organized within the IDOE under the sponsorship of IOC/FAO (IOFC)/UNESCO/EAC; Nairobi, Kenya, 25 March-2 April 1976.	E, F, S, R
8	Joint IOC/FAO (IPFC)/UNEP International Workshop on Marine Pollution in East Asian Waters; Penang, 7-13 April 1976.	E (out of stock)
9	IOC/CMG/SCOR Second International Workshop on Marine Geoscience; Mauritius, 9-13 August 1976.	E, F, S, R
10	IOC/WMO Second Workshop on Marine Pollution (Petroleum) Monitoring; Monaco, 14-18 June 1976.	E, F E (out of stock) R
11	Report of the IOC/FAO/UNEP International Workshop on Marine Pollution in the Caribbean and Adjacent Regions; Port of Spain, Trinidad, 13-17 December 1976.	E, S (out of stock)
11 Suppl.	Collected contributions of invited lecturers and authors to the IOC/FAO/UNEP International Workshop on Marine Pollution in the Caribbean and Adjacent Regions; Port of Spain, Trinidad, 13-17 December 1976.	E (out of stock), S
12	Report of the IOCARIBE Interdisciplinary Workshop on Scientific Programmes in Support of Fisheries Projects; Fort-de-France, Martinique, 28 November-2 December 1977.	E, F, S
13	Report of the IOCARIBE Workshop on Environmental Geology of the Caribbean Coastal Area; Port of Spain, Trinidad, 16-18 January 1978.	E, S
14	IOC/FAO/WHO/UNEP International Workshop on Marine Pollution in the Gulf of Guinea and Adjacent Areas; Abidjan, Côte d'Ivoire, 2-9 May 1978.	E, F
15	CPPS/FAO/IOC/UNEP International Workshop on Marine Pollution in the South-East Pacific; Santiago de Chile, 6-10 November 1978.	E (out of stock)
16	Workshop on the Western Pacific, Tokyo, 19-20 February 1979.	E, F, R
17	Joint IOC/WMO Workshop on Oceanographic Products and the IGOSS Data Processing and Services System (IDPSS); Moscow, 9-11 April 1979.	E
17 Suppl.	Papers submitted to the Joint IOC/WMO Seminar on Oceanographic Products and the IGOSS Data Processing and Services System; Moscow, 2-6 April 1979.	E
18	IOC/UNESCO Workshop on Syllabus for Training Marine Technicians; Miami, U.S.A., 22-26 May 1978 (UNESCO reports in marine sciences, No. 4 published by the Division of Marine Sciences, UNESCO).	E (out of stock), F, S (out of stock), R
19	IOC Workshop on Marine Science Syllabus for Secondary Schools; Llantwit Major, Wales, U.K., 5-9 June 1978 (UNESCO reports in marine sciences, No. 5, published by the Division of Marine Sciences, UNESCO).	E (out of stock), E, S, R, Ar
20	Second CCOP-IOC Workshop on IDOE Studies of East Asia Tectonics and Resources; Bandung, Indonesia, 17-21 October 1978.	E
21	Second IDOE Symposium on Turbulence in the Ocean; Liège, Belgium, 7-18 May 1979.	E, F, S, R
22	Third IOC/WMO Workshop on Marine Pollution Monitoring; New Delhi, 11-15 February 1980.	E, F, S, R
23	WESTPAC Workshop on the Marine Geology and Geophysics of the North-West Pacific; Tokyo, 27-31 March 1980.	E, R
24	WESTPAC Workshop on Coastal Transport of Pollutants; Tokyo, Japan, 27-31 March 1980.	E (out of stock)
25	Workshop on the Intercalibration of Sampling Procedures of the IOC/ WMO UNEP Pilot Project on Monitoring Background Levels of Selected Pollutants in Open-Ocean Waters; Bermuda, 11-26 January 1980.	E (superseded by IOC Technical Series No. 22)
26	IOC Workshop on Coastal Area Management in the Caribbean Region; Mexico City, 24 September-5 October 1979.	E, S
27	CCOP/SOPAC-IOC Second International Workshop on Geology, Mineral Resources and Geophysics of the South Pacific; Nouméa, New Caledonia, 9-15 October 1980.	E
28	FAO/IOC Workshop on the effects of environmental variation on the survival of larval pelagic fishes. Lima, 20 April-5 May 1980.	E
29	WESTPAC Workshop on Marine Biological Methodology; Tokyo, 9-14 February 1981.	E
30	International Workshop on Marine Pollution in the South-West Atlantic; Montevideo, 10-14 November 1980.	E (out of stock) S
31	Third International Workshop on Marine Geoscience; Heidelberg, 19-24 July 1982.	E, F, S
32	UNU/IOC/UNESCO Workshop on International Co-operation in the Development of Marine Science and the Transfer of Technology in the context of the New Ocean Regime; Paris, France, 27 September-1 October 1982.	E, F, S
32 Suppl.	Papers submitted to the UNU/IOC/UNESCO Workshop on International Co-operation in the Development of Marine Science and the Transfer of Technology in the Context of the New Ocean Regime; Paris, France, 27 September-1 October 1982.	E
33	Workshop on the IREP Component of the IOC Programme on Ocean Science in Relation to Living Resources (OSLR); Halifax, 26-30 September 1963.	E
34	IOC Workshop on Regional Co-operation in Marine Science in the Central Eastern Atlantic (Western Africa); Tenerife, 12-17 December 1963.	E, F, S
35	CCOP/SOPAC-IOC-UNU Workshop on Basic Geo-scientific Marine Research Required for Assessment of Minerals and Hydrocarbons in the South Pacific; Suva, Fiji, 3-7 October 1983.	E
36	IOC/FAO Workshop on the Improved Uses of Research Vessels; Lisbon, Portugal, 28 May-2 June 1984.	E
36 Suppl.	Papers submitted to the IOC/FAO Workshop on the Improved Uses of Research Vessels; Lisbon, Portugal, 28 May-2 June 1984.	E
37	IOC/UNESCO Workshop on Regional Co-operation in Marine Science in the Central Indian Ocean and Adjacent Seas and Gulfs; Colombo, 8-13 July 1985.	E
38	IOC/ROPME/UNEP Symposium on Fate and Fluxes of Oil Pollutants in the Kuwait Action Plan Region; Basrah, Iraq, 8-12 January 1984.	E
39	CCOP (SOPAC)-IOC-IFREMER-ORSTOM Workshop on the Uses of Submersibles and Remotely Operated Vehicles in the South Pacific; Suva, Fiji, 24-29 September 1985.	E
40	IOC Workshop on the Technical Aspects of Tsunami Analysis, Prediction and Communications; Sidney, B.C., Canada, 29-31 July 1985.	E
40 Suppl.	First International Tsunami Workshop on Tsunami Analysis, Prediction and Communications, *Submitted Papers;* Sidney, B.C., Canada, 29 July - 1 August 1985.	E
41	First Workshop of Participants in the Joint FAO/IOC/WHO/IAEA/UNEP Project on Monitoring of Pollution in the Marine Environment of the West and Central African Region (WACAF/2); Dakar, Senegal, 28 October-1 November 1985.	E
43	IOC Workshop on the Results of MEDALPEX and Future Oceanographic Programmes in the Western Mediterranean; Venice, Italy, 23-25 October 1985.	E
44	IOC-FAO Workshop on Recruitment in Tropical Coastal Demersal Communities; Ciudad del Carmen, Campeche, Mexico, 21-25 April 1986.	E (out of stock) S
44 Suppl.	IOC-FAO Workshop on Recruitment in Tropical Coastal Demersal Communities, *Submitted Papers;* Ciudad del Carmen, Campeche, Mexico, 21-25 April 1986.	E
45	IOCARIBE Workshop on Physical Oceanography and Climate; Cartagena, Colombia, 19-22 August 1986.	E
46	Reunión de Trabajo para Desarrollo del Programa "Ciencia Oceánica en Relación a los Recursos No Vivos en la Región del Atlántico Sud-occidental"; Porto Alegre, Brazil, 7-11 de abril de 1986.	S
47	IOC Symposium on Marine Science in the Western Pacific: The Indo-Pacific Convergence; Townsville, 1-6 December 1966.	E
48	IOCARIBE Mini-Symposium for the Regional Development of the IOC-UN (OETB) Programme on 'Ocean Science in Relation to Non-Living Resources (OSNLR)'; Havana, Cuba, 4-7 December 1986.	E, S
49	AGU-IOC-WMO-CPPS Chapman Conference: An International Symposium on 'El Niño'; Guayaquil, Ecuador, 27-31 October 1986.	E
50	CCALR-IOC Scientific Seminar on Antarctic Ocean Variability and its Influence on Marine Living Resources, particularly Krill (organized in collaboration with SCAR and SCOR); Paris, France, 2-6 June 1987.	E
51	CCOP/SOPAC-IOC Workshop on Coastal Processes in the South Pacific Island Nations; Lae, Papua-New Guinea, 1-8 October 1987.	E

No.	Title	Languages
52	SCOR-IOC-UNESCO Symposium on Vertical Motion in the Equatorial Upper Ocean and its Effects upon Living Resources and the Atmosphere; Paris, France, 6-10 May 1985.	E
53	IOC Workshop on the Biological Effects of Pollutants; Oslo, 11-29 August 1986.	E
54	Workshop on Sea-Level Measurements in Hostile Conditions; Bidston, UK, 28-31 March 1988	E
55	IBCCA Workshop on Data Sources and Compilation, Boulder, Colorado, 18-19 July 1988.	E
56	IOC-FAO Workshop on Recruitment of Penaeid Prawns in the Indo-West Pacific Region (PREP); Cleveland, Australia, 24-30 July 1988.	E
57	IOC Workshop on International Co-operation in the Study of Red Tides and Ocean Blooms; Takamatsu, Japan, 16-17 November 1987.	E
58	International Workshop on the Technical Aspects of the Tsunami Warning System; Novosibirsk, USSR, 4-5 August 1989.	E
58 Suppl.	Second International Workshop on the Technical Aspects of Tsunami Warning Systems. Tsunami Analysis, Preparedness, Observation and Instrumentation. *Submitted Papers*; Novosibirsk, USSR, 4-5 August 1989.	E
59	IOC-UNEP Regional Workshop to Review Priorities for Marine Pollution Monitoring Research, Control and Abatement in the Wider Caribbean; San José, Costa Rica, 24-30 August 1989.	E, F, S
60	IOC Workshop to Define IOCARIBE-TRODERP proposals; Caracas, Venezuela, 12-16 September 1989.	E
61	Second IOC Workshop on the Biological Effects of Pollutants; Bermuda, 10 September-2 October 1988.	E
62	Second Workshop of Participants in the Joint FAO-IOC-WHO-IAEA-UNEP Project on Monitoring of Pollution in the Marine Environment of the West and Central African Region; Accra, Ghana, 13-17 June 1988.	E
63	IOC/WESTPAC Workshop on Co-operative Study of the Continental Shelf Circulation in the Western Pacific; Bangkok, Thailand, 31 October-3 November 1989.	E
64	Second IOC-FAO Workshop on Recruitment of Penaeid Prawns in the Indo-West Pacific Region (PREP); Phuket, Thailand, 25-31 September 1989.	E
65	Second IOC Workshop on Sardine/Anchovy Recruitment Project (SARP) int he Southwest Atlantic; Montevideo, Uruguay, 21-23 August 1989.	E
66	IOC *ad hoc* Expert Consultation on Sardine/Anchovy Recruitment Programme; La Jolla, California, U.S.A., 1989.	E
67	Interdisciplinary Seminar on Research Problems in the IOCARIBE Region; Caracas, Venezuela, 28 November-1 December 1989.	E (out of stock)
68	International Workshop on Marine Acoustics; Beijing, China, 26-30 March 1990.	E
69	IOC-SCAR Workshop on Sea-Level Measurements in the Antarctica; Leningrad, USSR, 28-31 May 1990.	E
69 Suppl.	IOC-SCAR Workshop on Sea-Level Measurements in the Antarctica; *Submitted Papers*; Leningrad, USSR, 28-31 May 1990.	E
70	IOC-SAREC-UNEP-FAO-IAEA-WHO Workshop on Regional Aspects of Marine Pollution; Mauritius, 29 October - 9 November 1990.	E
71	IOC-FAO Workshop on the Identification of Penaeid Prawn Larvae and Postlarvae; Cleveland, Australia, 23-28 September 1990.	E
72	IOC/WESTPAC Scientific Steering Group Meeting on Co-Operative Study of the Continental Shelf Circulation in the Western Pacific; Kuala Lumpur; Malaysia, 9-11 October 1990.	E
73	Expert Consultation for the IOC Programme on Coastal Ocean Advanced Science and Technology Study; Liège, Belgium, 11-13 May 1991.	E
74	IOC-UNEP Review Meeting on Oceanographic Processes of Transport and Distribution of Pollutants in the Sea; Zagreb, Yugoslavia, 15-18 May 1989.	E
75	IOC-SCOR Workshop on Global Ocean Ecosystem Dynamics; Solomons, Maryland, U.S.A., 29 April-2 May 1991.	E
76	IOC/WESTPAC Scientific Symposium on Marine Science and Management of Marine Areas of the Western Pacific; Penang, Malaysia, 2-6 December 1991.	E
77	IOC-SAREC-KMFRI Regional Workshop on Causes and Consequences of Sea-Level Changes on the Western Indian Ocean Coasts and Islands; Mombasa, Kenya, 24-28 June 1991.	E
78	IOC-CEC-ICES-WMO-ICSU Ocean Climate Data Workshop Goddard Space Flight Center; Greenbelt, Maryland, U.S.A., 18-21 February 1992.	E
79	IOC/WESTPAC Workshop on River Inputs of Nutrients to the Marine Environment in the WESTPAC Region; Penang, Malaysia, 26-29 November 1991.	E
80	IOC-SCOR Workshop on Programme Development for Harmful Algae Blooms; Newport, U.S.A., 2-3 November 1991.	E
81	Joint IAPSO-IOC Workshop on Sea Level Measurements and Quality Control; Paris, France, 12-13 October 1992.	E
82	BORDOMER 92: International Convention on Rational Use of Coastal Zones. A Preparatory Meeting for the Organization of an International Conference on Coastal Change; Bordeaux, France, 30 September-2 October 1992.	E
83	IOC Workshop on Donor Collaboration in the Development of Marine Scientific Research Capabilities in the Western Indian Ocean Region; Brussels, Belgium, 12-13 October 1992.	E
84	Workshop on Atlantic Ocean Climate Variability; Moscow, Russian Federation, 13-17 July 1992.	E
85	IOC Workshop on Coastal Oceanography in Relation to Integrated Coastal Zone Management; Kona, Hawaii, 1-5 June 1992.	E
86	International Workshop on the Black Sea; Varna, Bulgaria 30 September - 4 October 1991.	E
87	Taller de trabajo sobre efectos biológicos del fenómeno «El Niño» en ecosistemas costeros del Pacífico Sudeste; Santa Cruz, Galápagos, Ecuador, 5-14 de octubre de 1989.	S only (Summary in E, F, S)
88	IOC-CEC-ICSU-ICES Regional Workshop for Member States of Eastern and Northern Europe (GODAR Project); Obninsk, Russia, 17-20 May 1993.	E
89	IOC-ICSEM Workshop on Ocean Sciences in Non-Living Resources; Perpignan, France, 15-20 October 1990.	E
90	IOC Seminar on Integrated Coastal Management; New Orleans, U.S.A., 17-18 July 1993.	E
91	Hydroblack'91 CTD Intercalibration Workshop; Woods Hole, U.S.A., 1-10 December 1991.	E
92	Réunion de travail IOCEA-OSNLR sur le Projet « Budgets sédimentaires le long de la côte occidentale d'Afrique » Abidjan, Côte d'Ivoire, 26-28 juin 1991.	F
93	IOC-UNEP Workshop on Impacts of Sea-Level Rise due to Global Warming. Dhaka, Bangladesh, 16-19 November 1992.	E
94	BMTC-IOC-POLARMAR International Workshop on Training Requirements in the Field of Eutrophication in Semi-Enclosed Seas and Harmful Algal Blooms, Bremerhaven, Germany, 29 September - 3 October 1992.	E
95	SAREC-IOC Workshop on Donor Collaboration in the Development of Marine Scientific Research Capabilities in the Western Indian Ocean Region; Brussels, Belgium, 23-25 November 1993.	E
96	IOC-UNEP-WMO-SAREC Planning Workshop on an Integrated Approach to Coastal Erosion, Sea Level Changes and their Impacts; Zanzibar, United Republic of Tanzania, 17-21 January 1994.	E
96 Suppl. 1	IOC-UNEP-WMO-SAREC Planning Workshop on an Integrated Approach to Coastal Erosion, Sea Level Changes and their Impacts; *Submitted Papers* 1. Coastal Erosion; Zanzibar, United Republic of Tanzania 17-21 January 1994.	E
96 Suppl. 2	IOC-UNEP-WMO-SAREC Planning Workshop on an Integrated Approach to Coastal Erosion, Sea Level Changes and their Impacts; *Submitted Papers* 2. Sea Level; Zanzibar, United Republic of Tanzania 17-21 January 1994.	E
97	IOC Workshop on Small Island Oceanography in Relation to Sustainable Economic Development and Coastal Area Management of Small Island Development States; Fort-de-France, Martinique, 8-10 November, 1993.	E
98	CoMSBlack '92A Physical and Chemical Intercalibration Workshop; Erdemli, Turkey, 15-29 January 1993.	E
99	IOC-SAREC Field Study Exercise on Nutrients in Tropical Marine Waters; Mombasa, Kenya, 5-15 April 1994.	E
100	IOC-SOA-NOAA Regional Workshop for Member States of the Western Pacific - GODAR-II (Global Oceanographic Data Archeology and Rescue Project); Tianjin, China, 8-11 March 1994.	E
101	IOC Regional Science Planning Workshop on Harmful Algal Blooms; Montevideo, Uruguay, 15-17 June 1994.	E
102	First IOC Workshop on Coastal Ocean Advanced Science and Technology Study (COASTS); Liège, Belgium, 5-9 May 1994.	E
103	IOC Workshop on GIS Applications in the Coastal Zone Management of Small Island Developing States; Barbados, 20-22 April 1994.	E
104	Workshop on Integrated Coastal Management; Dartmouth, Canada, 19-20 September 1994.	E
105	BORDOMER 95: Conference on Coastal Change; Bordeaux, France, 6-10 February 1995.	E
105 Suppl.	Conference on Coastal Change: Proceedings; Bordeaux, France, 6-10 February 1995	E
106	IOC/WESTPAC Workshop on the Paleographic Map; Bali, Indonesia, 20-21 October 1994.	E
107	IOC-ICSU-NIO-NOAA Regional Workshop for Member States of the Indian Ocean - GODAR-III; Dona Paula, Goa, India, 6-9 December 1994.	E
108	UNESCO-IHP-IOC-IAEA Workshop on Sea-Level Rise and the Multidisciplinary Studies of Environmental Processes in the Caspian Sea Region; Paris, France, 9-12 May 1995.	E
108 Suppl.	UNESCO-IHP-IOC-IAEA Workshop on Sea-Level Rise and the Multidisciplinary Studies of Environmental Processes in the Caspian Sea Region; *Submitted Papers*; Paris, France, 9-12 May 1995.	E
109	First IOC-UNEP CEPPOL Symposium; San José, Costa Rica, 14-15 April 1993.	E
110	IOC-ICSU-CEC Regional Workshop for Member States of the Mediterranean - GODAR-IV (Global Oceanographic Data Archeology and Rescue Project) Foundation for International Studies, University of Malta, Valletta, Malta, 25-28 April 1995.	E

No.	Title	Languages
111	Chapman Conference on the Circulation of the Intra-Americas Sea; La Parguera, Puerto Rico, 22-26 January 1995.	E
112	IOC-IAEA-UNEP Group of Experts on Standards and Reference Materials (GESREM) Workshop; Miami, U.S.A., 7-8 December 1993.	E
113	IOC Regional Workshop on Marine Debris and Waste Management in the Gulf of Guinea; Lagos, Nigeria, 14-16 December 1994.	E
114	International Workshop on Integrated Coastal Zone Management (ICZM) Karachi, Pakistan; 10-14 October 1994.	E
115	IOC/GLOSS-IAPSO Workshop on Sea Level Variability and Southern Ocean Dynamics; Bordeaux, France, 31 January 1995.	E
116	IOC/WESTPAC International Scientific Symposium on Sustainability of Marine Environment: Review of the WESTPAC Programme, with Particular Reference to ICAM Bali, Indonesia, 22-26 November 1994.	E
117	Joint IOC-CIDA-Sida (SAREC) Workshop on the Benefits of Improved Relationships between International Development Agencies, the IOC and other Multilateral Intergovernmental Organizations in the Delivery of Ocean, Marine Affairs and Fisheries Programmes; Sidney B.C., Canada, 26-28 September 1995.	E
118	IOC-UNEP-NOAA-Sea Grant Fourth Caribbean Marine Debris Workshop; La Romana, Santo Domingo, 21-24 August 1995.	E
119	IOC Workshop on Ocean Colour Data Requirements and Utilization; Sydney B.C., Canada, 21-22 September 1995.	E
120	International Training Workshop on Integrated Coastal Management; Tampa, Florida, U.S.A., 15-17 July 1995.	E
121	Atelier régional sur la gestion intégrée des zones littorales (ICAM); Conakry, Guinée, 12-22 décembre 1995.	F
122	IOC-EU-BSH-NOAA-(WDC-A) International Workshop on Oceanographic Biological and Chemical Data Management Hamburg, Germany, 20-23 May 1996.	E
123	Second IOC Regional Science Planning Workshop on Harmful Algal Blooms in South America; Mar del Plata, Argentina, 30 October - 1 November 1995.	E, S
124	GLOBEC-IOC-SAHFOS-MBA Workshop on the Analysis of Time Series with Particular Reference to the Continuous Plankton Recorder Survey; Plymouth, U.K., 4-7 May 1993.	E
125	Atelier sous-régional de la COI sur les ressources marines vivantes du Golfe de Guinée ; Cotonou, Bénin, 1-4 juillet 1996.	F
126	IOC-UNEP-PERSGA-ACOPS-IUCN Workshop on Oceanographic Input to Integrated Coastal Zone Management in the Red Sea and Gulf of Aden Jeddah, Saudi Arabia, 8 October 1995.	E
127	IOC Regional Workshop for Member States of the Caribbean and South America GODAR-V (Global Oceanographic Data Archeology and Rescue Project); Cartagena de Indias, Colombia, 8-11 October 1996.	E only
128	Atelier IOC-Banque Mondiale-Sida/SAREC-ONE sur la Gestion Intégrée des Zones Côtières ; Nosy Bé, Madagascar, 14-18 octobre 1996.	E, F
129	Gas and Fluids in Marine Sediments, Amsterdam, the Netherlands; 27-29 January 1997.	E
130	Atelier régional de la COI sur l'océanographie côtière et la gestion de la zone côtière ; Moroni, RFI des Comores, 16-19 décembre 1996.	F
131	GOOS Coastal Module Planning Workshop; Miami, USA, 24-28 February 1997.	E
132	Third IOC-FANSA Workshop; Punta-Arenas, Chile, 28-30 July 1997	S/E
133	Joint IOC-CIESM Training Workshop on Sea-level Observations and Analysis for the Countries of the Mediterranean and Black Seas; Birkenhead, U.K., 16-27 June 1997.	E
134	IOC/WESTPAC-CCOP Workshop on Paleogeographic Mapping (Holocene Optimum); Shanghai, China, 27-29 May 1997.	E
135	Regional Workshop on Integrated Coastal Zone Management; Chabahar, Iran; February 1996.	E
136	IOC Regional Workshop for Member States of Western Africa (GODAR-VI); Accra, Ghana, 22-25 April 1997.	E
137	GOOS Planning Workshop for Living Marine Resources, Dartmouth, USA; 1-5 March 1996.	E
138	Gestión de Sistemas Oceanográficos del Pacífico Oriental; Concepción, Chile, 9-16 de abril de 1996.	S
139	Sistemas Oceanográficos del Atlántico Sudoccidental, Taller, TEMA; Furg, Rio Grande, Brasil, 3-11 de noviembre de 1997.	S
140	IOC Workshop on GOOS Capacity Building for the Mediterranean Region; Valletta, Malta, 26-29 November 1997.	E
141	IOC/WESTPAC Workshop on Co-operative Study in the Gulf of Thailand: A Science Plan; Bangkok, Thailand, 25-28 February 1997.	E
142	Pelagic Biogeography ICoPB II. Proceedings of the 2nd International Conference. Final Report of SCOR/IOC Working Group 93; Noordwijkerhout, The Netherlands, 9-14 July 1995.	E
143	Geosphere-biosphere coupling: Carbonate Mud Mounds and Cold Water Reefs; Gent, Belgium, 7–11 February 1998.	E
144	IOC-SOPAC Workshop Report on Pacific Regional Global Ocean Observing Systems; Suva, Fiji, 13-17 February 1998.	E
145	IOC-Black Sea Regional Committee Workshop: 'Black Sea Fluxes' Istanbul, Turkey, 10-12 June 1997	E
146	Living Marine Resources Panel Meeting, Paris, France, 23-25 March 1998	E
147	IOC-SOA International Training Workshop on the Intregration of Marine Sciences into the Process of Integrated Coastal Management. Dalian, China, 19-24 May 1997	E
148	IOC/WESTPAC International Scientific Symposium – Role of Ocean Sciences for Sustainable Development Okinawa, Japan, 2-7 February 1998	E
149	Workshops on Marine Debris & Waste Management in the Gulf of Guinea, 1995-97	E
150	First IOCARIBE-ANCA Worskshop Havana, Cuba, 29 June-1 July 1998	E
151	Taller Pluridisciplinario TEMA sobre Redes del Gran Caribe en Gestión Integrada de Áreas Costeras Cartagena de Indias, Colombia, 7-12 de septiembre de 1998	S
152	Workshop on Data for Sustainable Integrated Coastal Management (SICOM) Maputo, Mozambique, 18-22 July 1998	E
153	IOC/WESTPAC-Sida (SAREC) Workshop on Atmospheric Inputs of Polluants to the Marine Environment Qingdao, China, 24-26 June 1998	E
154	IOC-Sida-Flanders-SFRI Workshop on Ocean Data Management in the IOCINCWIO Region (ODINEA project) Capetown, South Africa, 30 November-11 December 1998	E
155	Science of the Mediterranean Sea and its applications UNESCO, Paris 29-31 July 1997	E
156	IOC-LUC-KMFRI Workshop on RECOSCIX-WIO in the Year 2000 and Beyond Mombasa, Kenya, 12-16 April 1999	E
157	'98 IOC-KMI International Workshop on Integrated Coastal Management (ICM) Seoul, Republic of Korea 16-18 April 1998	E

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ERRATUM

A typing error slipped in the date of the workshop on the cover page and title page of the printed version of the document.

'98 IOC-KMI International Workshop on Integrated Coastal Management (ICM)

Challenges and Strategies for Achieving Integrated Management of Coasts and Oceans: Examining Experiences in the Implementation of Chapter 17 of Agenda 21

Seoul, Republic of Korea

16–18 April 1998

SC-2000/WS/5 corr.

UNESCO