

**TOWARD THE
2002 WORLD SUMMIT ON
SUSTAINABLE DEVELOPMENT,
JOHANNESBURG**

**Ministerial Perspectives
on Oceans and Coasts
at Rio+10**



**The Global Conference on Oceans and Coasts
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**Edited by
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Table of Contents

FOREWORD.....	v
France	
M. Gilles Le Chatelier, Directeur de Cabinet, Ministère de la Recherche, France	
OPENING REMARKS TO THE GLOBAL CONFERENCE ON OCEANS AND COASTS (text in French)	1
Republic of Korea	
Honorable Vice-Minister Seoung-Yong Hong Ministry of Maritime Affairs and Fisheries, Republic of Korea	
OPENING COMMENTS TO PANEL 1: MINISTERIAL PERSPECTIVES TO OCEANS AND COASTS AT RIO+10	5
United States of America	
Honorable Congressman James C. Greenwood United States House of Representatives and President, GLOBE International	
ADDRESS TO THE GLOBAL CONFERENCE ON OCEANS AND COASTS	7
Australia	
Veronica Sakell, Director, National Oceans Office (for the Honourable Dr. David Kemp, Australian Minister for the Environment and Heritage)	
AN AUSTRALIAN PERSPECTIVE ON PROGRESS AND CHALLENGES	9
Brazil	
Honorable José Sarney Filho, Minister of Environment, Brazil Presented to the Conference by Ambassador José Israel Vargas, Permanent Delegate of Brazil at Unesco	
COASTAL AND MARINE INTEGRATED MANAGEMENT IN BRAZIL	13
Canada	
The Honourable Herb Dhaliwal, P.C., M.P., Minister of Fisheries and Oceans, Department of Fisheries and Oceans, Government of Canada	
ADDRESS TO OCEANS AND COASTS AT RIO+10: A CANADIAN PERSPECTIVE.....	17
Mozambique	
Honorable Francisco Mabjaia, Deputy Minister for Co-ordination of Environmental Affairs, Ministry of Co-ordination of Environmental Affairs, Mozambique	
MARINE AND COASTAL RESOURCES IN MOZAMBIQUE: A CHALLENGE FOR A POLICY TOWARDS SUSTAINABLE DEVELOPMENT	19
Republic of Indonesia	
Minister Dr. Rokhmin Dahuri, Minister of Marine Affairs and Fisheries, Republic of Indonesia	
THE CHALLENGES OF PUBLIC POLICY FOR SUSTAINABLE OCEANS AND COASTAL DEVELOPMENT: NEW DIRECTIONS IN INDONESIA	29
Mexico	
Exequiel Ezcurra, President, National Institute of Ecology, Secretary of the Environment and Natural Resources, Mexico	
MEXICO'S PERSPECTIVE ON OCEANS AND COASTS TEN YEARS AFTER RIO	35
Russian Federation	
Honorable Victor I. Kalyuzhny, Deputy Minister of Foreign Affairs of the Russian Federation and Special Representative of the President in the Caspian Region	
ADDRESS TO THE RIO+10 WORLD CONFERENCE ON OCEANS AND COASTAL AREAS	37

People's Republic of China

Dr. Ni Yuefeng, Deputy Administrator, State Oceanic Administration, China

CHINA'S OCEAN AND COASTAL MANAGEMENT41

Italy

Honorable Roberto Tortoli, Italian Undersecretary of State for Environment

ADDRESS TO OCEANS AND COASTS AT RIO+ 10: AN ITALIAN PERSPECTIVE53

Republic of Nigeria

Honorable Dr. Otuekong Imeh T. Okopido, Minister Of Environment (State), Federal Ministry Of Environment, Federal Republic Of Nigeria

THE AFRICAN PROCESS ON THE DEVELOPMENT AND PROTECTION OF
THE MARINE AND COASTAL ENVIRONMENT55

Republic of Korea

Honorable Vice Minister Seoung-Yong Hong, Ministry of Maritime Affairs and Fisheries, Republic of Korea

CLOSING STATEMENT TO PANEL 1:
MINISTERIAL PERSPECTIVES TO OCEANS AND COASTS AT RIO+1065

Canada

Matthew King, Assistant Deputy Minister, Department of Fisheries and Oceans, Canada

NATIONAL OCEANS POLICY AND PLANNING AND MANAGEMENT OF
EXCLUSIVE ECONOMIC ZONES67

Samoa

Ambassador Tuiloma Neroni Slade, Permanent Representative of Samoa to the United Nations, New York, and Chairman of the Alliance of Small Island States (AOSIS)

SMALL ISLAND DEVELOPING STATES: TRENDS SINCE RIO69

Finland

Ambassador Peter Stenlund, Chair of the Arctic Council, Finland

LESSONS IN REGIONAL COOPERATION FROM THE ARCTIC77

United States of America

Ambassador Mary Beth West, Deputy Assistant Secretary for Oceans and Fisheries, Bureau of Oceans, International Environmental and Scientific Affairs, U.S. Department of State

IMPROVING SCIENCE APPLICATIONS TO COASTAL MANAGEMENT79

United Nations

Ambassador Satya N. Nandan, Secretary-General, International Seabed Authority, Kingston, Jamaica

DEVELOPMENTS IN THE INTERNATIONAL LEGAL FRAMEWORK FOR
GLOBAL OCEAN GOVERNANCE81

South Africa

Honorable Rejoice Mabudafhasi, Member of Parliament of the Republic of South Africa, Deputy Minister of Environmental Affairs and Tourism

CONCLUDING REMARKS TO OCEANS AND COASTS AT RIO+10:
TOWARD THE 2002 WORLD SUMMIT ON SUSTAINABLE DEVELOPMENT, JOHANNESBURG.....87

Global Conference on Oceans and Coasts at Rio+10:

ORGANIZING COMMITTEE91

FOREWORD

This volume contains the addresses and papers of the Ministers and other Eminent Persons participating in the *Global Conference on Oceans and Coasts at Rio+10: Toward the 2002 World Summit on Sustainable Development, Johannesburg*. The Conference took place on December 3-7, 2001 at UNESCO, Paris, and involved over 400 participants from 61 countries, assembling an array of experts from a diverse range of sectors including governments, United Nations agencies and other intergovernmental organizations (IGOs), and nongovernmental organizations (NGOs) representing environmental, industry, and scientific/technical perspectives.

After opening remarks, the Conference commenced with a panel devoted entirely to Ministerial Perspectives on the status of oceans and coasts nearly ten years after the 1992 United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro. Ministers and representatives came from 13 leading countries in ocean and coastal management, including: Australia, Brazil, Canada, China, Iceland, Indonesia, Italy, Korea, Mexico, Mozambique, Nigeria, the Russian Federation, and the United States. In addition, ministers and other eminent persons from South Africa, Finland, Canada, the United States, Samoa and the United Nations addressed the conference through panel presentations, and the Conference was concluded with a view toward the forthcoming World Summit in Johannesburg by the South African delegation.

This conference occurred at a crucial time for oceans, coasts and islands. After a decade of significant change at international, national, and local levels, *Oceans and Coasts at Rio+10* provided an opportunity to take stock, to assess what has been accomplished on oceans and coasts since the Earth Summit. Agenda 21 established an ambitious program of action. But, the world has changed and new priorities have emerged. From the ministerial perspectives, the panel speakers, and the working group discussions that occurred at the conference, a clear and central theme emerged: it is imperative that oceans, coasts and islands be included in the discussions at the WSSD, as sustainable development and poverty reduction cannot be achieved without healthy oceans.

Among the national and international perspectives offered by the Ministers and other Eminent persons attending the conference, areas of common concern emerged. For instance, declining trends in the marine environment, whether related to overfishing, destruction of coral reefs, erosion caused by the loss of mangrove swamps, or degradation of coastal ecosystems, were often highlighted. At the same time, however, local and national Agenda 21 initiatives are being witnessed on an ever-increasing scale, and it is especially encouraging to hear mention made of many promising projects that are currently either in developmental or implementation phases.

We are deeply thankful to the Ministers and Eminent persons who participated in the conference and lent their strong support to this preparatory process for the WSSD. We would also like to thank the many Governmental, NGO, and IGO organizations that have provided support for the conference and which are listed in the beginning of this volume. We especially appreciate their encouragement and faith that an unusual "hybrid" meeting like this one — which brought together Governments, NGOs, and IGOs together in the same venue — could produce significant results for consideration by the international community.

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France

OPENING REMARKS TO THE GLOBAL CONFERENCE ON OCEANS AND COASTS

M. Gilles Le Chatelier,
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La conférence de Rio a permis il y a bientôt dix ans une avancée essentielle dans la prise de conscience de l'influence de l'activité humaine sur notre environnement et tout particulièrement sur la nécessité de réduire les émissions de gaz à effet de serre. Le sommet mondial de Johannesburg qui se tiendra en septembre 2002 doit, au-delà de l'indispensable bilan des actions réalisées depuis 10 ans, nous permettre de poursuivre dans cette voie et de prendre de nouvelles initiatives en faveur du développement durable.

Aussi, la France se félicite d'avoir été choisie pour accueillir cette conférence qui s'inscrit dans la préparation de ce sommet et qui est dédiée à un thème particulièrement sensible: le rôle des océans et des zones côtières et celui du couplage océan-atmosphère dans l'évolution du système « Terre ».

Je suis donc très honoré et, heureux, au nom du Gouvernement français et du ministre de la recherche, Roger-Gérard Schwartzberg, retenu par d'autres obligations, de vous accueillir aujourd'hui et de vous souhaiter la bienvenue à Paris. Je tiens d'ailleurs à remercier tout particulièrement la Commission océanographique intergouvernementale d'avoir organisé ce colloque dans notre capitale, et l'UNESCO qui nous accueille dans ses locaux pour cette grande manifestation. Tous nos vœux de réussite vous accompagnent pour ces travaux qui sont particulièrement importants pour notre avenir.

La France, nation à grande tradition maritime, possède un système côtier particulièrement étendu, dont il faut concilier l'utilisation par des acteurs aux intérêts parfois divergents. Elle est bordée par la Méditerranée, par l'Océan Atlantique, la Mer du Nord et la Manche, ainsi que par les océans Indiens, Pacifique et Antarctique.

Comme vous le savez nous disposons avec l'IFREMER, d'un organisme dont les recherches sont spécifiquement orientées vers le milieu marin et qui met à la disposition de la communauté scientifique nationale des navires et des moyens de recherche tout à fait remarquables comme la THALASSA, l'ATALANTE ou encore le MARION DUFRESNE de l'IFRTP. Je sais que de nombreux experts de cet établissement sont reconnus au niveau international et sont des membres tout à fait actifs de votre communauté et je tiens à saluer son Président directeur général Jean-François Minster qui doit être présent parmi nous.

Notre pays est ainsi très attentif aux phénomènes complexes qui perturbent les équilibres des océans et aux effets de ces perturbations sur la planète et son climat. Dans la problématique de l'effet de serre et l'analyse de ses impacts, l'océan et les zones côtières jouent un rôle essentiel:

En premier lieu, les océans et les mers qui couvrent plus de 70% de la surface de notre planète contrôlent le cycle du carbone. A terme l'océan régule l'abondance du gaz carbonique et d'autres gaz à effet de serre dans l'atmosphère. Il absorbe actuellement plus du tiers du gaz carbonique d'origine anthropique. Il est donc essentiel d'analyser l'influence que pourraient avoir l'évolution des conditions physico-chimiques liées à l'effet de serre sur ce rôle joué par l'océan.

De plus, l'océan absorbe et redistribue une grande partie de la chaleur créée dans l'atmosphère par les mécanismes liés à l'effet de serre. Parmi les conséquences éventuelles des changements induits, on trouve ainsi la réduction du taux de formation des eaux: profondes dans l'Océan Atlantique Nord, avec des conséquences climatiques au niveau régional qui pourraient être plus intenses que celles liées au réchauffement climatique lui-même. De telles hypothèses doivent être analysées de façon approfondies et leurs signes avant-coureurs suivis de près.

Le réchauffement climatique induit par ailleurs des phénomènes comme la réduction de l'épaisseur et de l'étendue des glaces en Arctique, comme l'élévation du niveau des mers, et des événements tels que El Nino qui peuvent avoir des conséquences spectaculaires à court terme mais dont les effets doivent également être étudiés sur le long terme, notamment pour les populations concernées.

Enfin, c'est dans l'océan que l'on commence à percevoir les premiers signes des conséquences du changement climatique sur les écosystèmes et les ressources vivantes. Dans le Golfe de Gascogne, on trouve maintenant des poissons tropicaux. Des colonies d'espèces jusqu'ici spécifiques des côtes du Portugal ont également été observées au nord de l'Angleterre. On peut aussi d'ores et déjà percevoir une tendance significative au ralentissement du renouvellement des stocks de certains poissons d'intérêt économique.

Le réchauffement climatique est un des défis majeurs à relever par nos sociétés au XXIème siècle. Il existe aujourd'hui un large consensus scientifique pour dire que si rien d'efficace n'est fait, ses conséquences seront très préoccupantes: sécheresses, inondations, élévation du niveau des océans, érosions des sols... Aussi, il est aujourd'hui nécessaire d'agir vite et de façon déterminée pour lutter contre ce phénomène.

Plus nous tarderons à nous engager dans la réduction des émissions de gaz à effet de serre et plus le changement climatique qui en résultera sera important. Nous avons là une responsabilité très forte vis-à-vis des générations futures, qui auront à connaître les effets des décisions que nous allons prendre ou ne pas prendre

dans les années à venir. En la matière, le laissez-faire ou l'inertie constituerait pour les décideurs publics une faute politique grave.

La réduction des émissions de gaz à effet de serre doit intervenir dans un cadre international et concerner tous les Etats. D'abord, parce que les évolutions du climat se manifesteront au niveau mondial, et pas seulement dans les zones géographiques les plus génératrices de pollution. Ensuite parce que seul un effort de tous les pays, réparti de façon équitable et coordonné au niveau international, nous permettra de parvenir à maîtriser ce phénomène.

C'est la raison pour laquelle la France s'est résolument engagée avec l'Europe pour soutenir le protocole de Kyoto et sa mise en oeuvre effective.

La recherche a un rôle essentiel à jouer dans cette mobilisation contre les effets du réchauffement climatique. Les recherches sur l'environnement et l'énergie font ainsi partie des trois priorités du ministère de la recherche, avec les sciences de la vie, et les sciences et technologies de l'information et de la communication (STIC).

En 2002, le ministère leur consacra près de 16% du budget civil de recherche et développement, soit un montant de 1 445 millions d'euros, en augmentation de 3,3% par rapport à 2001. Au total plus de 5 000 chercheurs et ingénieurs sont mobilisés au niveau national à temps plein sur ce thème. Cette priorité devra également figurer en bonne place au sein du 6ème Programme Cadre de la Recherche et de Développement de l'Union européenne, le PCRD, en cours de discussion au sein du Conseil des ministres européens de la recherche du Parlement européen.

Les scientifiques sont d'ailleurs à l'origine des discussions qui ont conduit à la signature de la convention de Rio en 1992, puis du protocole de Kyoto en 97. La Recherche est en effet en mesure d'intervenir aux différents niveaux de la lutte contre le changement climatique :

Elle permet d'abord de mesurer les évolutions de notre environnement, de comprendre les mécanismes du changement climatique et de les modéliser pour estimer les évolutions à venir:

Il est à ce titre plus que jamais indispensable de poursuivre notre effort de compréhension et de modélisation des évolutions du climat, de notre environnement et de l'impact des activités humaines sur ceux-ci. Comme je le soulignais tout à l'heure l'Océan joue ici un rôle prioritaire.

Le développement des sources d'observation et de recueils de données sur l'environnement est également une priorité, qu'il s'agisse de la recherche des données du passé ou du suivi des évolutions en cours.

Je tiens à ce titre à souligner l'importance de l'initiative lancée par la Commission européenne pour la surveillance de l'environnement et la prévention des risques : Global Monitoring for Environment and Security, GMES. Cette initiative a été soutenue par le Conseil de l'Union pendant la présidence française et le

Conseil de l'ESA vient de décider à Edimbourg de lui consacrer 83 millions d'euros supplémentaires.

Les moyens spatiaux constituent en effet un outils privilégié de l'observation de la Terre et de son environnement, car ils offrent des données de façon permanente et fiable, en couvrant toutes les échelles nécessaires d'espace et de temps. Il est cependant indispensable de fusionner les données mesurées depuis l'espace avec celles acquises au sol, dans les océans et le sous-sol.

La coopération engagée entre le CNES et la NASA avec de nombreux autres organismes pour lancer le 7 décembre prochain le satellite d'océanographie Jason, qui prendra la relève de Topex-Poseidon et permettra de surveiller les courants océaniques et le niveau de la mer est un exemple concret des actions à conduire dans ce domaine.

Simultanément, l'IFREMER et Météo-France élaborent les outils de surveillance In situ des courants océaniques, les bouées du projet Coriolis, composante française de l'expérience internationale ARGO. 6 organismes français se sont associés pour développer un système de prévision des courants océaniques appelé Mercator, avec l'ambition à moyen terme que se crée avec nos partenaires européens un centre d'océanographie opérationnelle.

La Recherche permet ensuite d'appréhender les conséquences du changement à venir sur les activités humaines, sur la santé et sur les milieux naturels (eau, cultures, forêts, biodiversité...):

Il ne s'agit pas ici de céder au catastrophisme, les sociétés humaines disposant en effet de fortes capacités d'adaptation, mais nous devons étudier les conséquences des évolutions de notre environnement et des pollutions, dont les effets peuvent être multiples :

- sur la santé humaine, il y aura un impact direct dû aux variations de température et aux pollutions locales; mais surtout il y a un risque de développement et de déplacement de certaines pathologies et de leur dissémination ;
- sur la nature au sens large et notamment sur les arbres et sur l'agriculture, qui devront aussi bien intégrer l'augmentation de la teneur en gaz carbonique que les variations de température et d'humidité.

Les régions du globe qui disposent des ressources les plus réduites sont aussi celles dont les capacités d'adaptation sont les plus faibles. Celles-ci sont donc les plus vulnérables. Là encore, il faut agir pour empêcher le fossé Nord-Sud de se creuser .

La Recherche est enfin à la source du développement technologique et des solutions que nous devons dégager pour réduire les émissions de gaz à effet de serre :

Notre effort de réduction des émissions de gaz à effet de serre doit aujourd'hui principalement porter sur deux axes, la production d'énergie et les transports.

Nous devons réduire nos consommations énergétiques, tout en maintenant notre qualité de vie. Il s'agit de produire mieux en consommant moins d'énergie et aussi de produire autrement en développant la part des énergies renouvelables.

Nous devons nous orienter vers des procédés propres et contrôlés par une interaction renforcée entre le secteur de la production et de la recherche, même la plus amont.

Il faut également réfléchir aux modes de transport de personnes et de marchandises, et modifier nos comportements quotidiens. La mobilisation de tous est ici nécessaire, chercheurs, industriels et citoyens.

Les choix à faire dépendent de l'acceptation de l'opinion publique, qu'il faut pleinement informer et des décisions politiques qu'il faut avoir le courage prendre.

Il y a plusieurs décennies, Paul Valéry écrivait déjà: Le temps du monde fini commence. Plus tard, dans les années 1910, Marshall Mac Luhan décrivait la terre comme un village planétaire. Aujourd'hui, nous y sommes. La population mondiale prend conscience de son unité et du fait que l'humanité est une, par-delà les frontières, qui sont souvent des cicatrices de l'histoire.

Ce qui est en jeu, c'est notre destin commun dans les décennies qui viennent et, au-delà, le sort des générations futures que nous ne pouvons hypothéquer par nos actes ou nos abstentions d'aujourd'hui.

Il faut concilier le développement et le respect de l'environnement. Il n'y a aucune fatalité à voir la croissance économique se réaliser au détriment des préoccupations écologiques, comme cela a été trop souvent le cas au XXe siècle.

Le concept de développement durable doit conjuguer une double nécessité: celle de la croissance économique et celle de la protection de l'environnement.

La protection de l'environnement doit être désormais une de nos principales priorités politiques et le volontarisme politique doit s'appliquer à la défense de l'environnement, comme il s'applique à d'autres grandes priorités. Face à l'urgence climatique, face aux autres défis écologiques, la recherche peut et doit contribuer à la prise de conscience et à la prise de décision.

L'importance de l'océan dans la compréhension des phénomènes climatiques locaux ou globaux est un fait reconnu. Cette conférence, lieu de concertation et d'échange, permettra de progresser dans la prise en charge par les scientifiques certes, mais également par les Etats, du problème mondial de l'effet de serre, et de la prévision de ses impacts sur les climats régionaux et sur le climat global.

Je tiens donc encore une fois à remercier, au nom du Gouvernement français, les organisateurs de cette conférence et l'UNESCO et à vous renouveler tous mes vœux de réussite pour vos travaux.



Republic
of Korea.

OPENING COMMENTS TO PANEL 1: MINISTERIAL PERSPECTIVES TO OCEANS AND COASTS AT RIO+10

Honorable Vice-Minister Seoung-Yong Hong
Ministry of Maritime Affairs and Fisheries, Republic of Korea

Good morning, Excellencies, distinguished participants, Ladies and Gentlemen:

I'm Seoung-Yong, Hong, Vice Minister of the Maritime Affairs and Fisheries Ministry from the Republic of Korea.

On the occasion of this important UNESCO Conference on Oceans and Coasts at Rio+10, I'd like to express my special honor and privilege to chair this panel 1 whose speakers are leading in today's world marine domain.

I am particularly indebted to the two Program co-chairs, Professor Biliiana Cicin-Sain - University of Delaware - and Dr. Patricio Bernal - Executive Secretary of IOC.

Ladies and Gentlemen!

Let's pause and consider how we will honor the past and imagine the future and what we want to leave to our future generations.

Era of Blue Revolution: Symptom of Oceanization

Thomas Mann once depicted that "The ocean is not landscape, it is the experience of eternity." If I quote the eloquent speech of Al Gore, this is because oceans are critical – not just to our economy, not just to our food supply and trade – but to the fabric of human life itself.

World-renowned scholars forecast that the twenty first century will be the Blue Revolution. Expectations regarding the Blue Revolution of the 21st century are much greater than those of the Green Revolution of 1960s.

The economic, ecological and social dimensions of the oceans and seas were recently estimated with the economic value of the oceans from US \$ 1 trillion to US \$ 7 trillion per year. However, the ecological value varied from US \$ 3 trillion to US \$ 21 trillion per year, thus outreaching 1.3 times the world GDP.

Today, two-thirds of the world's largest cities are located within the coastal strips.

Over 80% of international trade is transported by oceans. Container ships have driven up their sizes from 1,000 TEU in the 1960s to over 6,000 TEU in the latter 1990s. Concept designs already exist for ships up to 18,000 TEU. The limits to growth, if there are any, will be market-determined. World container cargo volume increased five times in twenty years (*from 37 million TEUs in 1980s to 180 million TEUs in 2000.*)

World production of fish and shellfish has tripled since 1960s and has increased at twice the rate of the world's population growth. World demand of fish has increased about 30 million

tons every ten year. It provides 16% of all animal protein with the world.

We are witnessing more and more push for deep sea drilling for oil and gas as it becomes technically feasible. Our oceans are an endless universe of exploration and discovery, a key source of bio-technology and a barometer of weather and climate.

Paradigm Shift in Ocean Management

Distinguished Participants!

It is my understanding that our politics and institutions, declarations and agreements are an expression of our values. The values are an expression of our spiritual beliefs on the relationship between humanity and the nature.

The adoption of the UN Convention on the Law of the Sea (UNCLOS) in 1982 and the Chapter 17 of Agenda 21 in 1992 are the reflections of the world community's consensus on the need to protect the sustainability of whole nature.

According to Chapter 17, a large number of activities at the global, regional and national levels have been fostered and implemented. If I quote some examples:

- Convention of the Biological Diversity in 1992;
- GPA (Global Programme of Action for the Marine Environment from the Land-Based Activities) in 1995;
- FAO Code of Conduct for Responsible Fisheries in 1995;
- Significant improvement of IODE (International Oceanographic Data & Information Exchange) programme and GOOS (Global Ocean Observing System);
- UNICPO (United Nations Informal Consultative Process on Oceans and the Law of the Sea) in 2000;

International communities' recent adoption of Kyoto Protocol and Doha Development Agenda of WTO is also expected to influence our ocean agendas.

Challenging Issues

Such global progresses, however, should not be a blindfold veiling the long way for us yet to go. While our actions and accomplishments are commendable, the challenges faced by the international community are also enormous; in some cases, persistent problems continue; in others, new issues are emerging, thus requiring attention and wisdom.

Overexploitation of marine living resources, degradation of the marine environment, inability of many countries to benefit from the rights and fulfill the obligations under the new international legal regime, vulnerability of many islands and coastal

countries to ocean phenomena and increasing crimes at sea are only a few examples.

Therefore, developing better ocean governance should also be an impending mandate.

The Scholarly Father of Ocean Governance, the late Dr. Robert Knecht emphasized the need of an integrated architecture and make-up of governance with the advent of new ocean regime. He stressed the importance of Proactive, Anticipatory look at current and potential use of ocean areas, Evaluation of management measures in place, and the ultimate Modification of existing approaches or the Crafting of new management framework.

Korean Experiences: Fusion Politics

Ladies and Gentlemen!

In my view mostly based on Korean experiences, ocean governance may be an example of fusion politics.

Allow me to summarize some recent achievements in the Korean case.

To establish MOMAF in 1996, incorporating National Fisheries Administration, Maritime and Port Administration, National Maritime Police Agency and some scattered ocean-related functions in 13 ministries, and serving as an operating arm of decision-making among governments and other stakeholders;

To entail transparency and accountability of ocean governance; On the ground of SWOT (Strength, Weakness, Opportunity and Threat) analysis, to set national priorities and goals, for establishing long-term chart of Ocean Korea 21 (OK21) in 2000:

- 1) Knowledge-based industry;
- 2) International competitiveness;
- 3) Environment-friendly policies;

To revise and newly enact laws, regulations and guidelines in accordance with new ocean regime (say, ICZM in 1999; EEZ Act in 1996; new bilateral Fisheries Pact with Japan and China; totally amended Oceans Act in 2000);

To deregulate and decentralize, taking into consideration globalization and market-oriented economy;

To prepare APEC Ocean-related Ministerial Meeting next year in Seoul;

In relation to capacity-building, to introduce Korean Sea Grant Program for strengthening academic institutions and private sectors;

However, we also have some challenging issues to cope with. First, the NIMBY (Not In My Back Yard) Syndrome in-between development and conservation.

Second, PIMFY (Please In My Front Yard) Syndrome to induce development projects in their own areas to the benefits of stakeholders nearby.

Third, NIMT (Near In My Term) Syndrome since politicians often tend to push policies into action to complete projects within their terms for their political stakes.

Conclusion

Distinguished Participants!

In this panel, we can expect these eminent speakers to explain how their countries have addressed these issues in their own context.

I would like you to draw your particular attentions on how the countries in this panel have set and formulated VISIONS, OCEAN GOVERNANCE and ACTION PLANS pertinent to their marine domains.



*United States
of America*

ADDRESS TO THE GLOBAL CONFERENCE ON OCEANS AND COASTS

Honorable Congressman James C. Greenwood
United States House of Representatives, President, GLOBE International

Thank you Dr. Cicin-Sain for your kind introduction. I am honored to address this distinguished gathering. It is a rare opportunity for a national legislator, to communicate with those who spend a great deal of their time involved in international dialogue on the environment. As Dr. Cicin-Sain mentioned, I am a member of the US House of Representatives. I am completing my ninth year of service in Congress representing a district just outside of Philadelphia, Pennsylvania.

During my career first as a state legislator and then as a Member of Congress, I have come to understand the importance of representing the global as well as local concerns of my constituents. They are interested in the health of the global environment, because they know that their well being is tied to the health of people around the world. Dr. Biliانا Cicin-Sain and Dr. Patricio Bernal offered me the honor of addressing this gathering because in July, I was elected by my colleagues to serve as president of Global Legislators Organization for a Balanced Environment, (or GLOBE). As president of GLOBE International, I represent national legislators dedicated to working on global environmental issues at the international level.

I know that some of you are well aware of GLOBE's work. GLOBE was founded about 12 years ago by legislators in Europe, Japan, and the United States who shared the conviction that cooperation of national legislators at the international level was essential to meet world-wide environmental challenges.

Since that time GLOBE has become a network of over 800 legislators and members of parliament from almost 100 countries. GLOBE has affiliate offices in Brussels, Cape Town, Moscow, Tokyo, and Washington DC.

During my term as President of GLOBE International, my colleagues and I have made the issue of land-based activities or land-based sources of pollution, which I will refer to as LBS, a priority. It is my hope that through the work that is done at this conference and other efforts, the World Summit on Sustainable Development will be an event where LBS begins to receive the attention that it deserves.

Coastal and marine environments, as well as upland watersheds, are mirrors of the activities carried out on land. From upstream industrial and agricultural production to daily domestic acts, impacts are generated that affect the health of these ecosystems and ultimately, of the very populations that depend on them for sustenance. GLOBE members are working around the world to reduce these impacts.

Because the world's oceans cover over 71% of our planet's surface, our marine ecosystems impact the wellbeing of every man, woman and child on the planet.

In 1995, the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities was adopted, which I will refer to as the GPA. This instrument emphasizes that the degradation of marine and coastal areas must be primarily addressed at the national and regional level.

I believe that national legislators are essential to the GPA's success because of their prerogative to legislate on land use. National legislators must take up the charge and lead the way in protecting our ocean environments from land-based activities through the development and implementation of national and regional programs that directly address the impacts of pollution and land use.

In the U.S. we certainly need to continue to make improvements to help protect coastal areas. We have the Clean Water Act that has enabled us to dramatically clean our nation's rivers and our coastal zones over the last 28 years.

Worldwide, like the U.S., people are concentrated along or near coasts. Forty percent of the world's population lives within 100 kilometers of a coastline, an area that accounts for only about 20 percent of the landmass.

Much of the remaining non-coastal population is concentrated along rivers and other waterways. Pollution and poor land use practices within these watersheds affect downstream marine habitats because sediments and pollutants are ultimately washed into coastal waters.

As recently noted in UNEP's publication, "Protecting the Oceans from Land-Based Sources", the human illnesses associated with LBS generates an economic loss of over 13 billion dollars per year. The toll taken on the health of the world's population poses an ever-expanding challenge that we as national legislators must face in partnership with our national governments, civil society and international institutions.

A number of national, regional and global mechanisms have been developed that seek to address the contaminants and impacts of LBS. These include the recently signed treaty on Persistent Organic Pollutants.

In my discussions with legislators around the world, I have come to understand that the differences between the U.S. Government's constitutional structure and most other parliamentary systems have created concerns about our ratification of treaties and our government's commitment to and willingness to address critical international environmental issues such LBS.

In the United States, the principle of separation of powers between the executive and legislative functions means that the signing of a treaty by the President does not necessarily mean that the treaty will be ratified by Congress.

In parliamentary systems, the Prime Minister is an extension of the parliament and the head of his or her party. By contrast, in the United States, the prerogatives of the legislature and executive are carefully separated. Although it is the job of the President to negotiate the best treaty he can, the Senate must act independently in its ratification process. Additionally, Members of the Senate will not necessarily agree with the President simply because they share his party affiliation.

The Biodiversity Convention and the International Law of the Sea Convention are examples of agreements that have been negotiated by the executive, but not accepted by the Senate. In the U.S. context, legislators play a pivotal role. My colleagues and I within Congress will continue to work to ensure that important instruments such as the Law of the Sea Convention are ratified.

Whatever the structure of government, it is beneficial to bring legislators into the process at an early stage. Legislators need to understand how the international environmental agenda is relevant to them and to their constituencies. They must be involved throughout the process of developing international environmental laws and policies and not just at the end stage when these laws and policies are brought back to national capitols for ratification and codification.

Legislators need to be partners in the process to ensure that the sentiment of the treaty expresses the interests of their constituents at home. I believe that too many environmental agreements have not been properly implemented because legislators have not been fully informed about the issues and negotiators have acted without the benefit of their perspectives.

The common denominator among legislatures worldwide is that we often hold the keys to ensuring successful implementation of international agreements, as well as ratification. As legislators become more engaged in the policy and programmatic discussions of international institutions, they bring critical political, technical and financial resources with them.

National legislators must lead the way in protecting our ecosystems from LBS. GLOBE International is working on several fronts to educate, motivate and activate members of parliaments worldwide on LBS.

GLOBE International is working with UNEP, the GPA Coordination Office and the United States National Oceanic and Atmospheric Administration (NOAA) under a Memorandum of Understanding to create educational materials for legislators around the world. The materials make the case for the importance of the GPA and illustrate how national legislation can effectively eliminate LBS to coastal environments and national watersheds.

Last week, GLOBE International presented a declaration of support to the First Inter-Governmental Review of the GPA in Montreal, Canada.

In the declaration we welcomed the efforts of the UNEP GPA Coordination Office and declared our continued support of the Memorandum of Understanding that was reaffirmed between GLOBE and UNEP in November 2000.

The GLOBE declaration urged our governments to commit to the full implementation of the GPA by mainstreaming the GPA into national programs and strategies that include the integration of watershed and coastal ecosystem management at all levels.

In particular, GLOBE members will seek to continue to support efforts to strengthen municipal wastewater legislation, address land-use planning legislation to prevent the destruction of coastal habitats, and to work with our partners in exploring additional domestic and international finance mechanisms to protect marine and coastal environments.

GLOBE members will do all that we can to support participant governments in these efforts as peace, development and environmental protection are interdependent and indivisible.

As GLOBE's activities move forward toward the World Summit on Sustainable Development there will be a number of additional activities that we will undertake. We will host an International Legislators Conference on Land-Use, Watersheds and Coastal Areas in Washington, DC in the spring of 2002.

I have to return to Washington because our congressional session has been extended to address the aftermath of the recent tragic events in New York and Washington. As the program here moves forward, I encourage you to build LBS into each discussion as a critical and cross cutting theme.

It is vital that legislative leaders are given the necessary tools of good science, information and guidance from experts like you to develop effective policies.

In closing, one of my personal interests is in expanding international joint projects to explore, research and protect the world's oceans. And so I would like to close with a short quote by Dr. Sylvia Earle, one of the world's premier deep-sea explorers. She wrote in her seminal book, *Sea change*: "If the sea is sick, we'll feel it. If it dies, we die. Our future and the state of the oceans are one."

Thank you for your attention and on behalf of the other members of GLOBE around the world, I would like to once again thank you for including me in these discussions so that I may share my perspective.

We look forward to working with you to secure a peaceful, safe and sustainable future for our environment and our children's environment.



Australia

AN AUSTRALIAN PERSPECTIVE ON PROGRESS AND CHALLENGES

Veronica Sakell, Director, National Oceans Office

(for the Honourable Dr. David Kemp, Australian Minister for the Environment and Heritage)

Introduction

Australia's new environment minister, the Honourable Doctor David Kemp, sends his apologies for being unable to attend this important meeting.

As many of you may be aware, Australia has just recently held its national elections and our new cabinet was sworn in only last week.

Minister Kemp is working through a long list of priorities to keep the momentum on many important international and national environmental agendas Australia is currently working on.

I would like to raise some of those agendas with you today.

Why we are here now

Next year's World Summit on Sustainable Development provides an opportunity for all of us to renew our commitment to the previously agreed goals of biodiversity conservation and ecologically sustainable development of oceans resources, including on the high seas.

In order to achieve those goals Australia believes that we need to recognise the threats to achieving them, determine priorities and take prompt, practical and far-sighted measures which will progressively build on the progress we have made since Rio.

This conference is an important forum for the exchange of views and ideas in the lead up to the World Summit.

While integrated management of the oceans, especially within the jurisdiction of coastal nation states has progressed significantly since Rio, there are serious threats to achieving similar objectives on the high seas.

The challenge is to make the best use of existing resources to give effect to policy objectives through improved coordination mechanisms, that have both national and regional appeal, and to take practical measures to counter those threats. Australia is working to progress this in various international forums.

Like many of you here today, Australia understands that the oceans contain resources of enormous potential benefit to all nations, including those which may not yet be benefiting from existing resource use. These resources must be managed carefully, for current and future generations, in order to ensure economic benefit exists side by side with sensitive environmental care.

As a party to the United Nations Convention on the Law of the Sea, Australia has rights and responsibilities over some 16 million square kilometres of ocean - one of the world's largest and most diverse marine jurisdictions.

As part of our obligations to the United Nations Convention on the Law of the Sea, Australia has developed and is implementing its Oceans Policy.

This policy clearly demonstrates the importance Australia places on comprehensive and integrated management of ocean resources.

Where we stand now

Progress at national level

Australia has worked hard to tackle the difficult task of implementing the principles of ecologically sustainable development.

Australia was one of the first countries to produce a national sustainable development strategy in 1992, following the Rio Summit. This strategy will continue to guide our approach to natural resource and environmental management. Since 1992 we have developed a number of major policy and program responses to address key sustainable development issues, including oceans and coasts management.

Australia's national Oceans Policy, launched in 1998, the International Year of the Ocean, was the first such coordinated national policy for the sustainable management and protection of the marine environment. The policy is backed by resources and a dedicated office, the National Oceans Office, to drive its implementation.

Ecologically sustainable development is the principal driver of *Australia's Oceans Policy*. What is clear is that the use of resources must be ecologically sustainable if we are to conserve the biodiversity and long term security of our marine environment and the industries and communities that depend on marine resources.

To implement ecologically sustainable development under Australian Oceans Policy, regional marine plans are being developed to ensure decisions are integrated across all the relevant sectors in a holistic manner.

Regional marine planning uses large marine ecosystems as one of the starting points for planning - extensive areas of ocean that share relatively uniform structures, eg fish species, ocean currents and topography.

The plans will be based on assessments of the ecosystems and resources within marine regions, including their current and potential uses. The assessment streams cover the biophysical, social, indigenous, institutional and economic dimensions of the region.

The planning process will assist in the identification of proposed representative areas for protection. It will improve existing and

initiate new ecosystem based management arrangements to meet development and resource use needs, while conserving marine biodiversity.

Oceans Policy is just one part of a much broader reform of environmental policy and legislation in Australia. In July 2000 the *Environment Protection and Biodiversity Conservation Act 1999* came into force. This Act represents a significant reform in Australia's environmental legislative arrangements and requires all Commonwealth agencies to report on how their internal operations and actions accord with the principles of ecologically sustainable development.

For example, the Government wants to make further improvements in the sustainability of Australia's fisheries. Under the new legislation, strategic environmental impact assessments of management arrangements for all nationally managed fisheries will be undertaken.

Australia now has a sound policy and legislative framework to make significant progress towards better integrated and sustainable management of its marine resources. While it is important to acknowledge the progress made internationally since Rio, we also need to point to areas where further progress is needed and can be achieved.

Progress at the international level

Australia has also worked hard to improve the management of ocean resources within its jurisdiction, and within those international organisations to which it is a member. Much useful progress has been made since Rio by Australia and many other nations.

However, it has become apparent, increasingly so in recent years, that one nation or a small group of nations cannot be successful alone in combating the urgent and serious threats to marine biodiversity, especially on the high seas. Some threats are simply too complex, too urgent, or require resources beyond the capacity of a few nations to combat successfully.

Some examples of such threats include illegal, unreported and unregulated (or IUU) fishing - which is causing serious and potentially irreversible damage to fish stocks, benthic habitats and already endangered seabird populations - and the increasing spread of introduced marine pests, which threaten major damage to regional ecosystems and biodiversity. While the international community has begun to recognise the seriousness of these threats and begun to take action to combat them, more effective and more urgent responses are needed.

Achieving the goals of marine biodiversity conservation and ecologically sustainable development on the high seas requires many nations to all work cohesively, to identify work priorities and to implement a strategic, practical program of measures. It will require the determined actions of many nations working both to implement existing measures, and to develop a range of new scientific, legal and economic measures that collectively deliver practical benefit to all nations. It will also require a well coordinated and holistic approach; one that does not wait until

there is certainty about threats or problems, or that waits until they grow to serious proportions. Measures must taken in a timely, practical and efficient manner.

To date, international oceans management has generally taken place on a sectoral or single issue basis. Significant progress on widening the responsiveness of sectoral management of oceans resources has been made in recent years, including through the International Maritime Organisation and the Food and Agriculture Organisation.

The Global Oceans Observation System and the Joint Committee on Oceans Monitoring are important and successful developments which demonstrate how strong, well-organised cooperation can greatly improve the effectiveness of scientific and other programs. However, more work is needed by the International Maritime Organization, the Food and Agriculture Organization and other organisations to further improve existing programs, including by improved co-ordination mechanisms.

At a national level, Australia has recognised that inadequately coordinated sectoral approaches impede progress towards ecologically sustainable development.

At an international level there are undoubtedly efficiencies to be gained through greater cooperation and integration between national programs and within the UN system.

The need for better integration and improved cooperation within the UN system has been reflected in the establishment of the United Nations Oceans Consultative Process.

Australia has welcomed the informal Oceans Consultative Process as a major step towards more integrated responses to global priorities in oceans management.

The Oceans Consultative Process has already made useful contributions to the General Assembly annual debate on Oceans and Law of the Sea.

It has allowed States to devote time in its first two meetings to specific and significant sectoral and cross sectoral issues such as marine pollution, IUU fishing, marine science and piracy. However, while useful, this work should be seen as a start, not a conclusion to addressing those important and specific issues.

In 1999 at the 7th Session of the Commission on Sustainable Development, the Australian Minister for the Environment and Heritage highlighted the need to improve the conservation and sustainable use of the biological diversity of the high seas. Australia continues to believe that there is a role for a range of new, internationally agreed measures to improve the conservation of high seas biodiversity. It is important to note that we do not equate the need for such measures with the exclusion of fishing or other resource use, nor with curtailing the rights and freedoms afforded under the UN Convention on the Law of the Sea.

Rather we regard them as a critically important step in achieving ecologically sustainable development in high seas areas and ensuring appropriate conservation and management of the biodiversity and other values of those areas, especially those of global significance.

I would also like to expand briefly on the need for global action to support regional efforts to conserve biodiversity and achieve ecologically sustainable development. Agreements such as the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR) have made significant improvements in achieving their conservation and other objectives.

In the case of CCAMLR, much has been achieved due to good working relationships between the Members of CCAMLR and other States supportive of the aims of that agreement and the innovative work of the Commission established under it to develop scientifically-based measures to ensure conservation and ecologically sustainable development of fisheries.

However, the experience of CCAMLR over the last four years or so also points to the need for urgent and substantial progress outside the Convention, if the objectives of the Convention are to be realised.

The effectiveness of the multi-lateral Commission and its management regime established under CCAMLR are being seriously undermined by the actions of those States whose vessels and nationals are involved in or support IUU fishing or the trade of fish caught in this manner from the CCAMLR Area.

If the present level of IUU fishing continues for even another two or three years, those States presently fishing responsibly, in an ecologically sustainable manner, and those which might wish to do so in the future, will be forced to stop and irreversible damage will have been done to fish stocks and seabird populations, including those of endangered albatrosses. Already, some fish stocks have become commercially extinct.

I note that there has been recent attention to new fisheries agreements around the world to take account of regional interests. While I welcome these initiatives, the burgeoning of such agreements and the need for coordinated action between them may potentially result in many nations being unable to participate actively and effectively in all the agreements in which they are interested.

In addition, such a situation may result in global threats to the success of regional organisations not being effectively addressed before serious damage to high seas fish stocks has occurred. Australia considers that there is an urgent need to better integrate regulatory conventions to enable global responses on threats to high seas fish stocks and their environment.

What needs to happen internationally

The Joint Group of Experts on Scientific Aspects of Marine Environmental Protection, in its 'A Sea of Troubles' report published in January this year highlighted some key failings in arrangements that limit ecologically sustainable development of oceans. These included:

- Inadequate governance arrangements at both national and international levels, including a widespread failure to understand the need to approach interlinked environmental problems in an integrated way, rather than sector by sector
- not involving the range of relevant stakeholders in designing and implementing environmental programs

- a lack of coordination between international programs and institutions and
- not adequately translating objectives into priorities and specific actions.

It is vital to address all the issues in the report and Australia believes that there are probably a wide range of other critical contributing factors that should also be addressed.

Where to next

Increased international integration and cooperation is one key objective. The oceans debate recognises that many of the complex ocean issues, both existing and emerging, require improved commitments at the global, regional/sub regional and national levels.

Australia would like to reaffirm the importance of oceans to the sustainable development agenda, recognising an evolving oceans agenda, and emerging issues that require an integrated approach.

Australia also believes that we should focus on revamping and strengthening the consultative processes and achieving practical, coordinated action. We should strengthen current frameworks rather than replace them, particularly where they are working well.

Australia believes that the consultative process is an important opportunity for us to share knowledge and perspectives, and for the international community to firstly enrich and deepen the debate on Law of the Sea issues and secondly to identify and take practical actions that achieve the most benefits from existing and limited resources. Consequently Australia welcomes wide and active participation in this process.

I look forward to the discussions over the next few days. The Australian Government is keenly interested in the outcomes of the meeting and wishes the organisers and all participants a successful meeting.



Brazil

COASTAL AND MARINE INTEGRATED MANAGEMENT IN BRAZIL

Honorable José Sarney Filho

Minister of Environment, Brazil

Presented to the Conference by Ambassador José Israel Vargas, Permanent Delegate of Brazil at Unesco

It is a great pleasure for me to be with you on this panel to discuss a very important theme for humanity – coasts and oceans issues. In spite of its relevance, this subject hasn't been frequently addressed on international agenda for environment events.

It is therefore our responsibility to change this situation as far as coastal and marine environment are concerned, and in this Conference we will have the opportunity to adopt concrete recommendations and suggestions to be further examined in the next Johannesburg Summit, in September 2002. On that occasion the international community will join efforts in order to preserve the integrity of an ecosystem that undoubtedly constitute an asset to mankind.

In Brazil's case, the coastal zone constitute a vital one. As is well known, our country has a huge coastal zone of 8.698 kilometers, which includes a group of contiguous ecosystems in a land area of roughly 388.000 square kilometers where there are more than 400 cities. It also includes a marine zone, which is the territorial sea of 12 nautical miles. The coastal zone concentrates almost a fifth of the country's population – about 36,5 million people – in an average density of 90 hab/km², which is five times the national rate.

In addition to its territorial sea, Brazil has an exclusive economic zone ranging from 12 to 200 nautical miles, as well as a continental shelf with nearly 4,2 million square kilometers of surface, which were established according to United Nations Convention on the Law of the Sea, art. 76.

These data indicate how the theme is important for us and explain that the coastal zone, one of our most important ecosystems, has been considered a national heritage by the Constitution of 1988 (art. 225, par.4). According to the Constitution, the coastal zone exploration shall take environment preservation and sustainable development into account.

Structural difficulties and quest of consensual solutions – adjustments and prevention

Signs of important environmental damage exist in Brazil's coastal zone and they ask for corrective actions, arbitration of conflicts deriving of multiple utilization of space and natural resources, and control of consequences of land-based exploration. Besides, these spaces include sparsely populated areas with strategic ecosystems that have recently attracted people in a pattern of occupation that sometimes causes problems that call for preventive measures.

Therefore, the management of our coastal zone presents a set of significant problems. Besides the pollution of waters with land-

based origins, there are other real or potential impacts like activities linked to oil industry (oil exploration in the sea); maritime transport; predatory fishery and depletion of the sea's natural resources; threats to biodiversity and genetic heritage of the sea; and real estate speculation.

The common feature of these situations are the variety of environmental problems, the fragility of ecosystems, the complexity of management and the lack of human and financial resources, which calls for a joint action of the Federal Government, the States and the Municipalities. At the same time, the participation of different social and economic sectors involved in integrated management and in regional policy reorganization is necessary.

In order to face these difficulties, it is essential to have a decentralized, transparent and collective management process, embracing the participation of public and private sectors and the civil society, which will permit to meet the environment challenge. As Minister of Environment, these principles have directed my action.

Principles, concepts and management tools – institutional framework

The present integrated management of coastal and marine zone of Brazil are based on principles, dispositions and concepts of Agenda 21, chapter XVII concerning ocean protection.

Strategies, policies and national plans referring to this integrated management are implemented under the supervision of the *Ministério do Meio Ambiente* (MMA), the Brazilian Ministry of Environment, as part of two main mechanisms speeding up the coordination of different organizations specialized on coastal and marine environment.

The first is the *Comissão Interministerial para os Recursos do Mar* (CIRM), a body linked to the naval forces created in 1974 to implement the national policy for the sea, *Política Nacional para os Recursos do Mar* (PNRM). It is a inter-ministerial body.

The second is the *Conselho Nacional do Meio Ambiente* (CONAMA), presided by me, the national council for environment which Executive Secretary is assured by MMA. The CONAMA counts on delegates from Ministries, State governments and Federal District, Municipalities, NGO's and of Industry, Trade and Agriculture unions. It works as a sound box for all themes involving environment in Brazil and can approve resolutions that must be applied everywhere in the country.

As part of this mechanism, and under *Ministério do Meio Ambiente* coordination, the *Plano Nacional de Gerenciamento Costeiro* (PNGC), our national plan for coastal management, has been designed. It was recently reviewed and led to the establishment

of a technical assistance group of coastal management that is formed by delegates of very dynamic Federal sectors, State bodies and NGO's delegates. This special task force is called *Grupo de Integração de Gerenciamento Costeiro* (GERCO).

Brazil has also settled the above mentioned *Política Nacional para os Recursos do Mar* (PNRM), approved by a Presidential Decree signed 12 May 1980 that intended to promote the integration of the territorial sea, the exclusive economic zone and the continental shelf to Brazilian territory in order to explore maritime resources in a sustainable and ecological approach.

This policy, that will be soon reviewed, is implemented with the support of annual or multi-annual plans. It also involves four major segments: *Plano Setorial para os Recursos do Mar* (PSRM), *Plano Nacional de Gerenciamento Costeiro* (PNGC), *Plano de Levantamento da Plataforma Continental Brasileira* (LEPLAC) and *Programa Antártico Brasileiro* (PROANTAR).

These national management tools follow international institutional actions, which are better framed by wide international agreements, conventions, laws such as: United Nations Convention on the Law of the Sea (in force since 1994); Agenda 21; United Nations Convention on Biological Diversity; Conduct Code for Responsible Fishery; The implementation agreement of the Convention relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (being ratified now); the International Convention for the Prevention of Pollution from Ships, its protocol, its amendments and its optional annexes III, IV and V (MARPOL 73/78 – in force since 1998); the International Convention of Marine Pollution by Dumping of Waste and Other Matter (London Convention); the International Convention of Oil Pollution Preparedness, Response and Cooperation; the International Convention on Civil Liability for Oil Production; and the International Convention on Liability and Compensation for Damage in Connection of the Carriage of Hazardous and Noxious Substances by Sea.

Expressive Programs and Projects

With a view to implementing an integrated management policy in coastal and marine zones, Brazil has developed different programs and projects.

The first one is the *Programa Nacional de Gerenciamento Costeiro* (GERCO). Due to its wide scope, it must be considered the most important development plan in coastal zone in Brazil. Its goal is to plan and to manage social, economic and environmental activities in the coastal zone, in an integrated, decentralized and collective way, in order to ensure a sustainable use of natural resources and ecosystems. This program also helps coastal States and Municipalities environmental bodies. In fact, this program allows Federal Government to work close with coastal States, since these last have the responsibility for land management in their coastal areas. It also provides the development of environmental management tools for soil use through the setting up of channels of participation as well as the integration of government sectors and society in decision-making processes.

In this context, we aim to set up long-term strategy for the planning and management of coastal zones, taking into consideration different social and economic interests in a transparent and integrated process of consultation, while protecting their ecological integrity and biodiversity, all this with the support of modern information and scientific technology.

The GERCO program has different work-lines. One is related to the implementation of a special program, the *Programa Global de Ação para a Proteção do Ambiente Marinho frente às Atividades Baseadas em Terra* (PGA). In Brazil, the main marine pollution from land-based sources are the drainpipe degradation, long lasting organic pollutants, radioactivity, heavy metals, oil, deposit removing and garbage.

The Ministry also created a specific regional program, designed to stimulate cooperation with neighboring countries, the *Programa Nacional de Ação para Proteção do Ambiente Marinho frente às Atividades Baseadas em Terra na Porção Brasileira do Atlântico Sudoeste Superior* (PNA), an initiative with Argentina and Uruguay, linked to a larger program called PASO (*Programa de Ação para o Atlântico Sudoeste Superior*) and related to the United Nations Environment Program. Its goal is to prevent sea degradation caused by land activities in the region stretching from Cabo de São Tomé, at Rio de Janeiro State, to Peninsula Valdés, in Argentina. In a regional perspective, it would be interesting that this initiative could get more significant international support, not only in financial terms, but also in technical and technological terms.

The control of pollution caused by sea and harbor activities is a crucial issue in Brazil. In order to deal with this problem, several important plans were created such as: *Plano Nacional de Contingência para Derrame de Óleo no Mar*, *Planos de Área and Planos de Emergência Individuais*, and in addition to those, the *Proposta de Regulamentação do Uso de Dispersantes Químicos para Derrame de Óleo no Mar*, already approved by CONAMA.

The Ministry has yet established an *Agenda Ambiental Portuária*, a creative initiative with the aim to take the environmental dimension into account in the developing plans for harbor activities. The Agenda is being implemented in 8 different harbors, the most important in our country (Vila do Conde, PA; Itaqui, MA; Maceió, AL; Rio de Janeiro and Sepetiba, RJ; Santos, SP; Paranaguá, PR; and Rio Grande, RS) as a result of a partnership between MMA and the national transport authority, the *Ministério dos Transportes*. To reinforce this initiative we can also count on *Programa de Capacitação para a Gestão Ambiental Portuária* that includes evaluating activities on environmental reality of the harbors. The main goal is to enforce environmental standards when managing and modernizing 36 harbors.

In the field of maritime activities, the Ministry coordinates the *Projeto Controle e Gerenciamento da Transferência Indesejável de Espécies Exóticas e/ou Organismos Patogênicos por Meio da Água de Lastro de Navios*, taking as example the Sepetiba bay, RJ, part of the Global Program for Water Control from United Nations International Maritime Organization (IMO).

Actions to protect maritime coasts are also being implemented by the *Projeto Orla (Projeto de Gestão Integrada da Orla Marítima)*, which is the result of a partnership between MMA and the Brazilian Ministry of Planning, Management and Budget (*Ministério do Planejamento, Orçamento e Gestão*), with the participation of *Instituto Brasileiro do Meio Ambiente (IBAMA)*, linked to MMA, Marinha do Brasil and other Federal, state, and municipal bodies, and society as well. The main goal is to promote an integrated management of maritime coast with a view to conserving its areas, to occupying them in an ordering way and with sustainable use of natural resources.

As part of the *Programa Nacional do Meio Ambiente*, and benefiting from World Bank resources, the Brazilian government has tried to give to its coastal States some instruments to improve their coastal management practices, including the outlining of a four-years strategic plan concerning living resources.

The first one is a program developed specifically to our EEZ, called *Programa de Avaliação do Potencial Sustentável de Recursos Vivos na Zona Econômica Exclusiva (REVIZEE)*. Its main goal is to canvass sustainable potentialities for capturing living resources in EEZ in order to attempt the following goals: to draw up an inventory of living resources in ZEE and its environment characteristics, determine its bio mass, establish the potentialities of its sustainable seizure.

This initiative is the consequence of a number of commitments made by Brazil since the country has ratified the United Nations Convention on the Law of the Sea in 1998. The program is one of the main targets of *V Plano Setorial para os Recursos do Mar (1999-2003)*. It has allowed the development of oceanographic operations, fishing prospecting campaign, population's movement studies, stocks evaluations, and has increased knowledge about national marine living resources, as much for understanding of traditional natural resources as for discovering new ones.

Besides these programs, we ought to mention other projects and initiatives developed under the Ministry and IBAMA's responsibility, with the aim to protect the ecosystems in general, with special attention regarding the marine species in danger.

- *Projeto TAMAR*, promoting researches conservation actions and collective management to protect marine tortoises;
- *Projeto de manejo e Conservação de Sirênios*, with the aim to protect the marine "Peixe boi", one of the most threatened species in the world;
- *Projeto de proteção à Baleia Jubarte e à Baleia Franca*, also a recent Brazilian proposition, in the frame of International Commission of Whales, for creating a Whales Sanctuary in South Atlantic;
- *Plano de Ação para Mamíferos Aquáticos e Projetos de Conservação e Manejo de Aves Marinhas*.

Within this framework, we should draw attention to *Programa de Consolidação do Sistema de Unidades de Conservação (SNUC)* implemented with the aim to plan and to manage protected natural areas according to national goals related to them. This

system has a component linked to maritime and coastal Conservation Unit. In this particular point we can note the recent inscription of the Fernando de Noronha National Park, together with Atol das Rocas Reserve, as the first Brazilian marine site in the World Heritage List of Unesco.

In the field of fishery, we have the *Programa Recursos Pesqueiros Sustentáveis*, which is an initiative from MMA and includes actions from directed to the control of Brazilian fishery in the sea or in rivers. Different Control Plans were outlined last years, one of them intended to Lobster fishery at North East coast, and another one to sardine and shrimp fishery at South and South East coast.

To protect marine biodiversity, the *Programa Nacional da Diversidade Biológica (PRONABIO)*, which main goals are : (i) to define priority areas to the biodiversity conservation at marine and coastal zones (ii) to define priority actions to conservation at these areas. (iii) to evaluate choices of marine and coastal zone's natural resources use that keep with biodiversity conservation. (iv) to evaluate and to propose models of profit sharing coming from sustainable utilization of marine and coastal biodiversity.

Besides these initiatives, we participate in others international programs related to marine and coastal environment issues as :

- *Programa Global de Observação dos Oceanos (GOOS- Brasil)*, as part of International Oceanographic Commission (IOC), with the aim to collect, study and transmit data concerning oceanic and coastal areas;
- *Programa Train-Sea-Coast Brazil*, linked to UN Train-Sea-Coast capacity network, with the aim to enhance qualified professionals, specially managers and decision makers working at oceanic and coastal regions. The main targets are public and private administrators, as well as civil servants from States and Municipalities that are directly or indirectly concerned by the development of marine and coastal zones and that deal with environment subjects. The Program's headquarters in Brazil is at Fundação Universidade Federal de Rio Grande, and it has been able to offer 13 coastal management courses since 1995. More than 250 technicians were trained, coming from public Institutions, private sector (industry and services) and NGO's, some of them from Uruguay or Argentina. This initiative should be reinforced in order to reach a larger number of specialists, not only from Brazil, but also from other Latin American and African countries.

Inefficiency and difficulties related to coastal and marine integrated management in Brazil

In spite of these accomplishments, the complete realization of integrated management in Brazil faces some difficulties and limitations. First, one can mention the non-existence of up-to-date data, due to a lack in the knowledge of environment dynamics and of coastal and marine spaces occupation and utilization. This is due mostly to institutional weakness and politic difficulties to deal with conflicts and to apply strategic programs results. We still have a considerable deficiency concerning the enforce-

ment and understanding of the legislation, and the result is the proliferation of legal conflicts at different levels.

Since Brazil has a very large coast, we have a lack of human resources to manage properly these areas. Also there is a weak public awareness about marine and coastal problems.

At the international level, we face difficulties related to the access, transfer and utilization of technologies that are environmental correct, and we notice a certain lack of interest from the international community concerning the development of technical, scientific and technological cooperation programs. Unfortunately, we have scarce national and international financial resources available. International resources tend to privilege green issues related to the conservation and the preservation of forests ecosystem's biodiversity instead of the so-called brown and blue agenda, concerning coastal regions.

I believe that my colleagues here, especially those from developing countries agree with me on that topic.

Global partnership and challenges of Rio + 10

My experience as Minister of Environment showed me that environment management asks for partnerships. Moreover, this is the main lesson of the Rio-92 Conference, which was enthusiastically supported by developing and developed countries.

Nevertheless, the goals set-up then were not attained. The fatigue of developed countries on international cooperation is notorious, especially with regard to oceanic and coastal zones, where few initiatives have had support. Are we in a borderline case, where global partnership preached at Rio 92 completely failed? Reverting this situation is perhaps the main challenge of Rio + 10.

I strongly hope that this Conference will trace firm directions to Johannesburg Conference. Maybe a Global Action Plan based on Agenda 21, Chapter XVII, can permit to reopen issues concerning oceans, seas and coastal zones in a worldwide agreement. The commitment of all partners, from Government to private sectors, international institutes and NGO's, should be a priority.

Oceans and Seas have ever been essential to the progress of Humanity. They ease trade and relations among States, provide multiple resources to technologic and scientific development, keep life in our planet, instigate leisure activities, provide for transportation, and so on. We ought to and we have to take care of these ecosystems.

These are Brazilian ideas and contribution to Rio + 10. I insist that international cooperation, in global or regional level, has an essential role to play if we want to reach the target of rational use and sustainable development of these areas and theirs resources.



Canada

ADDRESS TO OCEANS AND COASTS AT RIO+10: A CANADIAN PERSPECTIVE

The Honourable Herb Dhaliwal, P.C., M.P.

Minister of Fisheries and Oceans, Department of Fisheries and Oceans, Government of Canada

Conference co-chairs. Chair Hong. Excellencies, delegates, ladies and gentlemen, *Madame et monsieur les coprésidents de la conférence. Monsieur le président Hong. Excellences, délégués, mesdames et messieurs:*

As Canada's Minister of Fisheries and Oceans, it gives me great pleasure to offer Canada's perspective on progress achieved with respect to the sustainable development of oceans and coasts since the 1992 World Summit in Rio.

The '92 Summit set the global course for a renewed approach on many issues. But of particular interest to us today is Chapter 17 of Agenda 21 - The Protection of our Seas. Quite simply, it put forward a united, long-term vision to ensure a strong and healthy oceans heritage for future generations.

Keeping this vision alive and in the forefront of our respective government agendas is even more important today than it was then. Our oceans have become busy places. Traditional activities like fishing and shipping have been joined by newer industries, like tourism, aquaculture and oil and gas development. Strong, sustainable and flexible oceans management has never been so important.

But as I'm sure other oceans nations can attest, vision by itself isn't enough. Each nation needs to translate this vision into reality - to *take* action and bring about the changes required to truly achieve our collective goals.

And in Canada, that's what we've done.

Oceans Act

In 1997, we became the first country in the world to adopt its own Oceans Act. The Act is Canada's blueprint for managing our three oceans in an integrated and sustainable way. It sets out the principles we want to foster in our ocean activities. Principles like sustainable development, integrated management, and the precautionary and ecosystem approaches. And most importantly, it puts these principles into practice.

With the many competing users of our oceans, finding a way to address everyone's needs has never been so important. No oceans activity operates in isolation. Meeting our oceans goals means bringing people together to talk about their interests, and how their needs fit into the larger oceans "picture":

- Levels of government.
- Communities.
- Aboriginal groups.
- Non-governmental organizations.

Each has knowledge and expertise to contribute. Each deserves a say in how our oceans should be managed.

The *Oceans Act* gives us that table.

Integrated management planning provides a mechanism to exchange information and opinions, address user conflicts, and agree on a practical management plan that best suits each particular area. And, over the last two years, we've worked with 21 groups to develop integrated management pilot initiatives for key areas on Canada's three coasts.

For instance, with the Mackenzie Delta and Beaufort Sea poised to become major contributors to North America's energy supply, the need to establish an integrated management planning process for that area has never been greater. We're working with the Inuit of the Western Arctic, the Government of the Northwest Territories, and industry representatives to establish a new integrated planning process for this area. This will ensure that we support the *best use possible* for this ocean space - balancing economic, cultural and environmental needs. Similarly, on the Eastern Scotian Shelf right in our Exclusive Economic Zone on the East Coast - we're working to develop a management plan for that area. This plan will allow for the continued development - and dynamic co-existence of the traditional fishing industry with newer oceans industries, like the oil and gas industry and telecommunications. And we're working with a wide range of stakeholders to establish Marine Protected Areas, or MPAS. We currently have 13 pilot MPAs on all three of Canada's coasts. They range from unusual offshore hydrothermal vents, to fragile estuarine environments, to local fishing communities wanting to protect their lobster stocks. Our Marine Protected Areas program is giving us yet another tool to protect our most fragile and unique ocean environments.

Our *Oceans Act* has also allowed us to build up a solid network of oceans expertise. I established a Ministerial Advisory Council on Oceans, to give me expert advice on managing and protecting our oceans. And, I've appointed two oceans ambassadors to promote our oceans and their sustainable use. We've also established the National Oceans Management Research Network, which links university oceans researchers across Canada.

And I formed an intergovernmental Oceans Task Group, representing federal and provincial Ministers from across Canada, to foster a stronger oceans dialogue among different levels of government.

We've made a lot of progress over the last two years, and we've only just begun. After two solid years of oceans work, we're now ready to take the next step. We've developed Canada's Oceans Strategy, a comprehensive action plan to build on the lessons we've learned through our oceans pilot projects, and to bring about even more important changes in how we manage and protect our oceans.

International Leadership

Canada's progress at home mirrors our progress internationally. Indeed, we fully recognize that we're part of a larger oceans "system". Our national efforts must complement our international efforts. Because if oceans are a global asset, then they present a *global responsibility*. And Canada takes its international oceans commitments very seriously.

For instance, we're a strong supporter of the UN's informal process on oceans. We feel it's important to have a process like this in place to explore new and innovative means of managing and protecting our oceans in an informal environment, where "give and take" among nations is encouraged. We've also strongly supported the Intergovernmental Oceanographic Commission since its establishment here in Paris 40 years ago. Over the years, the IOC has become a key part of UNESCO, and its new priorities are fully supported by Canada.

We're also committed to conserving and managing straddling and highly migratory fish stocks on the high seas.

I'm particularly proud of the leadership we've shown in ratifying and promoting the *United Nations Fish Stocks Agreement*, or UNFA - a high priority for me, as Minister, since I accepted this job two years ago. In fact, Canada was proud to host the first Intergovernmental Review Meeting of the GPA in Montreal just last week. Countries from around the world came together to talk about how we can control the effects of terrestrial pollution on our fragile marine environment. I had the pleasure of co-hosting the conference, and chairing a two-day ministerial panel on how to build on our progress so far. And we have much to celebrate on this front. UNFA will enter into force this month, allowing us to fully implement UNFA at the domestic, regional and global levels.

And we're a very strong supporter of the Global Program of Action, or GPA. In fact, we were the first country to implement our own National Program of Action for the protection of our marine environment from land-based activities. Our NPA is giving us a strong and effective mechanism for co-operation on many levels leading to a number of positive initiatives for our oceans. The Meeting's outcome - the Montreal Declaration - contained a number of key commitments. We endorsed a new action plan to give every coastal nation a practical guide on how to prevent sewage and poorly treated wastewater from entering the marine environment. We committed to strengthening regional seas programmes to play a key role in the implementation of the GPA. We also recognized the need to co-operatively identify new financing mechanisms, to help countries around the world meet their goals under the GPA.

And we recognized that it will take a long-term global commitment to clean up our oceans and prevent land-based activities from harming our marine environment. Indeed, building global consensus in these and other areas is essential as we prepare for the World Summit on Sustainable Development in Johannesburg next year. At the Summit, Canada will continue to advance our belief in inclusive and cooperative oceans governance.

From the experience we've gained in the field we're convinced that the integrated management approach - coupled with the ecosystem and precautions aches, collaborative decision-making, and a strengthened stewardship ethic - are worth considering as other oceans nations explore ways to implement the Rio vision.

Another initiative I strongly support is a regular state-of-the-oceans report. We need a baseline against which to measure our progress in managing our oceans. Canada's oceans strategy will provide for such reporting. I encourage other countries to consider the benefits of oceans report. I can assure you that Canada will pursue and promote these and other oceans management principles and ideas with vigour and determination at the Summit in Johannesburg.

And if this meeting is any indication of our collective commitment, I'm confident that we'll emerge from the Summit with an even stronger conviction to protect and develop our oceans over the long-term.

Conclusion

Ladies and gentlemen. *Mesdames et messieurs*. Canada saw Rio as an opportunity. An opportunity to find ways to better manage our oceans. And an opportunity to find ways to leave our oceans stronger than we found them.

We took this challenge to heart. Our *Oceans Act* gave us the tools we needed to understand, protect and enhance our oceans and their resources over the long-term. And it's given a wide range of Canadians the opportunity to get involved in the decision-making processes for our oceans, and play a positive and meaningful role in Canada's oceans heritage.

We still have much to learn - and much work ahead of us.

But meetings like this give me hope that as a global community, we can find ways to demonstrate our commitment to our oceans, share ideas on how we can translate this commitment into reality, and ultimately give future generations the strong and sustainable oceans heritage they deserve.

On behalf of the Government of Canada, I thank you for this opportunity.



Mozambique

MARINE AND COASTAL RESOURCES IN MOZAMBIQUE: A CHALLENGE FOR A POLICY TOWARDS SUSTAINABLE DEVELOPMENT

Honorable Francisco Mabjaia

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GENERAL BACKGROUND INFORMATION

Geographical Framework and climate

Mozambique is situated on the eastern coast of Southern Africa, between 10°27' S and 26°52' S latitudes and 30°12' E and 40°51' E longitudes. The total land area is 784090 km². The country is divided into 10 provinces. About 70% of the country is covered by savannah and secondary forests. Approximately 45% of the territory have potential for agriculture. About 60% of the land is classified as domesticated land, that include crop and permanent pasture lands.

The maritime area is about 666 km². The total area of the Exclusive Economic Zone is about 562 km². The shelf area is about 104 km² and extends up to 200 m depth. The Mozambican coastline is about 2700 km in length and is characterised by wide diversity of habitats including sandy beaches, sand dunes, coral reefs, estuarine systems, bays, mangroves and seagrass beds.

The coastal zone from Ponta do Ouro in the south to latitude 16°S immediately north of Angoche is composed by unconsolidated Quaternary to recent sediments, mostly sand dunes and sandy plains, but interspersed with heavier textured soils (alluviums) at the lager river mouths. At latitude 16°S and at Macambo, Nacala and Memba bay areas, Tertiary basalt occurs. From Angoche northwards heavily faulted Cretaceous to Tertiary sediments line the coast. The sedimentary deposits occupy two distinct basins separated by the large area of crystalline rocks of Mozambique Belt (Precambrian). The southern basin corresponding largely to the present wide Mozambique plain, from Maputo river as far as north of the Zambezi river and the Rovuma Basin now occupying a narrow coastal belt of Nampula Province and successively becoming larger towards the north from Lurio river to Rovuma, in the Cabo Delgado Province. The North-Mozambique basin constitutes a mesa-Cenozoic sedimentary succession with an age ranging between Lower Cretaceous and Mio-Pliocene (Kairu and Nyandwi, 1997).

The morphology of the coastal area is characterised by low lands, rising inland to the altitude of 200 m above the sea level or more. The coastline is characterised by a strip of beaches, recent dunes and inland lagoons in the south; by mangroves, swampy depressions and series of low beach ridges in the centre and mangroves, small dunes alternating with cliffs in the north. The alluvial valleys have fertile clay soils and a steppe-like vegetation. The predominant extensive plains and inland dunes have poor

sandy soils and a savannah vegetation. Three hydrogeological provinces can be identified as:

- i. A series of dune belt developed along the whole coast southern of Save river on which the porous eolian sands form a regional phreatic aquifer with fresh groundwater. The permeability decreases from the coast inlandwards, as a consequence of an increase in clay content.
- ii. The alluvial valleys developed along the main rivers may contain productive stratified good quality aquifer.
- iii. In the volcanic terrains, primary and secondary fractures are the most important waterbearing features in the rocks.

The climate in the region north of the Zambezi river is under the influence of the equatorial low pressure zone with a NE monsoon in the warm season. The climate south of Zambezi river is influenced by subtropical anti-cyclonic zone. North Sofala along the Zambezi river lay a transitional zone with high rainfall figures (Saetre and Paula e Silva, 1979).

The winds in the northern part of Mozambique are influenced by the monsoon system with NE winds during the southern summer and SW winds during the southern winter. Central and Southern Mozambique are dominated by the SE trade winds.

The average annual precipitation is about 1200 mm. The rainfall is mainly restricted to the warm season November to April. According to the classification of Kppen, the northern (Cabo Delgado, Niassa, Nampula and Zambezia) and coastal region have a tropical rain savannah climate. Whereas the upland areas of the interior have a humid temperature climate. Ocean currents, particularly the Mozambique warm current, may influence the rainfall.

Mozambique posses over 100 rivers, and the major ones are: Rovuma, Lurio and Zambezi in the north, Pungu, Buzi, Gorongosa and Save in the centre and Limpopo, Incomati and Maputo in the south. These rivers drains about 208 km² of water rich in nutrients into the coastal waters. About 80% of this water enters the ocean from Sofala Bank, central Mozambique. Zambezi river, the largest river in eastern Africa, alone, contribute with 67% of the total river discharge in the whole country (Saetre and Jorge da Silva, 1982).

The country is regularly affected by tropical cyclones, floods and draughts. In February/March 2000 the country was severely affected by the strongest floods ever observed in the past fifty years. These floods had caused severe damages to the coastal habitats and infrastructures.

Demography

The current population of Mozambique is estimated at more than 16.5 million. It is expected to grow at an annual rate of 2.5%, and in the year 2025 it is estimated to be about 35 millions. About 40%-45% of the population is composed by the youth and children (<15 years old). The working or active population (between age 15 and 65) constitute about 50% of the total population; thus, about half of the population is dependent. Urban population is quite representative and shows a considerable increase with years. In 1950 urban population represented only 5.4% of the total population, and it increased to about 33% in 1995.

The fertility rate is likely to drop in the future, as the family planning programs become more effective and extended to the rural areas, the status of women in the society improves and the poverty diminishes. Further, it is more likely that the mortality rate would decrease and the life expectancy would increase in the future as the medical care becomes more accessible to most of the people and status of living of the population improves. The most causes of death in Mozambique are infectious and parasitic diseases, as in other developing countries. This analysis does not take into consideration the effect of FUV/AIDS, that currently the estimates indicated that about 16% of the Mozambican population is infected.

About 2/3 of the Mozambican population live in the coastal zone., for security reasons. During the war coastal zones were relatively safer (UNCED, 1992). Other reasons that attract people to the coastal zone are related to the easy access to food and employment facilities. Most of the infrastructures such as large cities, tourism, industry, commerce, harbours are located in the coastal zone. The average population density in the coastal area is about 120 people per km², against overall population density of 2 people per km².

Economy

Mozambique is among the group of the least developed countries in the world. The country debt was around 1 billion of US\$ in the beginning of 1990's, in 1996 was about 5 billion of US\$. Several causes both of political and natural natures have contributed for the current critical economic situation in Mozambique. As a result of these factors, during the decade 80's, the Gross Domestic Product fell dramatically, the trade account deficit worsened, and public expenditures rose alarmingly.

However, Mozambique's geographical position and resource potentials offered ample space for the country's rapid social and economic development. It is located in the sea side and so it offers harbour and transportation facilities to the neighbouring countries. It has a variety of natural resources including large fertile land, several forest and wildlife resources, minerals, water resources and large potential for hydroelectric power production, marine and coastal resources.

In order to reverse the negative economic development the Mozambican Government initiated in 1987 a Structural Adjustment Program aimed at reducing state control over the economy, promoting the family sector in agriculture and

improving the marketing of agriculture products, adjusting the internal and external imbalances, improving resource distribution, expanding the responsibility of the private sector in the economy activities. These economic reforms have rendered positive results, GDP has grew from about 6%-per annum in 1995/1996 to about 12% in 1997/1998, while inflation fell from about 50% to 4% in the same period. Consumption per capita gradually increased from 0.8% to 1% in 1988 and remained stable at about 2% in 1989 and 1990. Forest and wood land increased by 7.7 % between 1986 and 1989; in the same period the production of cereals increased by 5%, the livestock, pig production observed increased of about 27%, marine catch increased by 28%, the export increased by 16%.

In spite of these economic achievements the foreign debt is still high compared with the Gross Domestic Product and its foreign earning. For instance, the balance of payment in 1995 and 1996 was -256.1 x 10⁶ and -90.2 x 10⁶ US\$, respectively. Mozambique's economy and social status remains fragile. The first national assessment of poverty in Mozambique, carried out in December 1998, showed that 70% of Mozambicans are poor. The average Mozambican lives on only USD 220 per annum (World Bank, 1999). However, recent government policies are contributing to improve this situation. The recent debt relief confirms the sustainability of these policies.

Coastal Resources Utilisation and Development

Fisheries and aquaculture

The fisheries resources are mostly located in two major shelf the Sofala Bank, in the center and Delagoa Bight in the south, and in the bays. The major resources include: Shallow water shrimp in Sofala Bank, deep water crustacean on the slope, scad and mackerel in Sofala Bank and Delagoa Bight, the demersal fish in the southern and northern regions. In the coast region there are large artisanal fisheries which include mollusks and form the basis of subsistence of several local populations.

The fisheries sector employs between 50,000 to 60,000 people, and its contribution to the economy is substantial, it represents about 40% of the total export earning, The estimated potential of the fish in Mozambique is about 310,000 tons. Recorded amount of marine fish at the landings were about 32,000 tons in 1980, about 80,000 tons in 1980, and about 120,000 tons in 1992. The artisanal and semi-industrial contribute with more than 50% of the total fish production. The most valuable fishery resource is the shallow water shrimp and its bycatch, deep water shrimp and scad and mackerel. These resources represented about 54% of the total export in 1993. The shallow water shrimp resource alone contributed about US\$20 million in 1979-80.

The current production of shallow water shrimp is about 7000 tons per year. Unfortunately, in spite of the restriction in the fishing effort, this resource shows signs of overexploitation in Sofala Bank, where most of this resource is located. The catch yield is decreasing. Environmental factors such as the artificial Zambezi flow regime brought by the Cahora Bassa dam activity may contribute for the reduction in the availability of the shrimp in Sofala Bank (Hoguané, 1997).

Other resources that are overexploited are those located in the Bays of Maputo and Inhambane. The government policy is to encourage the fishing of other resources apart from traditional fishing area. The scad and mackerel production stopped in 1990 due to the fall of the major fishing company owned by jointly by Mozambique and former Soviet Union governments. This means that the resource is underexploited and therefore available for new fishing licensing.

The central Mozambique offers excellent conditions for prawn culture. Maputo is another area where it is possible to develop the shrimp culture. The activity is being promoted for the investment.

The fresh water resources are mostly located in Lake Niassa and in the Cahora Bassa reservoir. The annual recorded catches are about 30,000 tons although the estimated potential is about 90,000 tons.

Ports and harbours

There are three large ports in Mozambique: Maputo, Beira and Nacala, and several small ports: Inhambane, Quelimane, Pebane, Angoche, Pemba. Mozambique harbours provide services not only for national customers but also, and mostly, for the neighbouring countries. Perhaps most of the foreign services provided by Mozambique is through its harbours.

Mozambique harbours handle annually several tons of cargo to and from: Swaziland, South Africa, Zimbabwe, Zambia and Malawi. Some of the cargo to and from Congo is also handled in Mozambique ports.

Both the road and railways networks are built to facilitate regional trade rather than the national economic integration of the country. The transport sector used to be an important foreign exchange earner from the transit facilities offered to the neighbouring countries. This sector accounted for 12.7% of the GDP in 1975. It dropped to 8.8% of the GDP in 1989 and picked up again in the 90's. For instance in the period 1995-1997, the harbours and railways sectors earned about 16.5 US\$ million in the services provided to sugar handling. Current Government policy is to give priority revitalisation and rehabilitation of the infrastructures (harbours, roads, railways) that were destroyed during the war.

Offshore minerals

The predominant minerals in Mozambique may be grouped in three categories as follows: (1) energetic (coal, natural gas and petroleum), (ii) metallic minerals (gold, iron, copper) and (iii) non-metallic minerals (marble and precious stones).

The delta of the Zambezi River accumulates large amounts of heavy-minerals deposits such as ilmenite, rutile and zircon; similar situation exists around the estuaries and deltas of other major Mozambican rivers, such as Limpopo, Save, Ligonha, Lurio and Rovuma. Accumulations of heavy-mineral can also be found either on beaches or in sand dunes. The most promising deposits are those located between Quelimane and Quinga that are being currently exploited.

In spite of the recognition of the potential of the mineral resources in Mozambique, the mineral industry still does not play a major role in the country's economy. Its contribution is only 2% of the GDP. Reasons for the weak development of the mineral industry are associated with, among others, the abandonment of the property by the owners during the independence and the destruction during the civil war.

Recreational parks and tourism

Tourism offers an important future economic potential for the country. Historically, Mozambique had a thriving tourism industry, mainly in the centre and south of the country, with Rhodesia and South Africa providing the potential markets. Now the opportunity exists to tap both these historical markets and the tourism markets of the north. Soon after the war stopped development plans were put forward. Mozambique has excellent potentials for both the coastal and wildlife based tourism.

Coastal tourism is well developed in the southern part of the country, south of Save River. This region is characterised by beautiful sand beaches and extensive corals. This type of tourism expanded rapidly after the end of the civil war in 1992. Many areas in the southern Mozambique are now experiencing tourist pressure due, in part, to uncontrolled tourism activity. Some of the tourism activities include beach sailing, and game fishing. Several game fishing competitions take place a year in Bazaruto, Inhambane, Maputo and Ponta do Ouro.

Wildlife based tourism offers good prospects for economy. There are two forms of land based tourism: (i) Photo-safaris and (ii) hunting safaris. Photo-safaris were very of little significance in the past two decades. Safari companies, associated with the civil war, were unable to attract these kind of clients. Hunting safaris contributed considerably for the country's economy. Between 1965 and 1970 about 1310 tourists hunted in Mozambique. The resulting revenue was about US\$87,000 per year for the government (licences and administrative fees) and US\$642,000 per year for the safari companies.

Institutional framework

There are several institutions dealing entirely or partially with one or more issues regarding marine affairs. These institutions structure from national level to regional level. The province is the lowest authority level for most of the institutions. There is no single institution responsible for all the marine affairs. Co-ordination between institutions has been always an issue of concern within the government and the public concern. There were created a number of inter-institutional committees that include besides the government representatives, non-governmental organisations and private sectors, to address issues that transcend the mandate of a single institution.

The Ministry of Co-ordination of Environmental Affairs, created in 1995 under the Presidential decree 6/95 of 16 of November, is the responsible for the execution of the environmental policy, co-ordinate, evaluate and control initiatives for correct planning and utilisation of the natural resources in the country. Thus, the ministry prepares and enforces legislation for sustainable development and rational exploitation of the resources.

Major issues of concern and problems

The major issues associated with marine and coastal environment in Mozambique may be summarised into six major categories: (i) fresh water shortage, (ii) pollution of water, (iii) destruction of coastal environment (depletion of mangroves, corals, seagrass beds, vegetation over sand dunes), (iv) loss in biodiversity, (v) overexploitation of fishery resources of high commercial value or high social impact, (vi) use of inadequate harvesting practices.

The causes of these issues may be grouped into two categories: (i) environmental and (ii) anthropogenic. Fresh water shortage is associated to both climatological factors (drought) and to human activity (effect of the dams, deviating water for irrigation). Pollution is mostly due to human activity through use of agricultural-chemicals, urban sewage and industrial wastes. There is some source of bacteriological pollution due mainly to the discharge of highly fertile water. The destruction of the coastal ecosystems is due to both environmental and human activity. Storms cause the destruction of the coastal protection (erosion) and of the corals and seagrass beds. Destructive human activity in the coastal zone include overexploitation and misuse of the resources (vegetation, corals and seagrasses), including over-grazing and wrong tourism practices. Over-exploitation of the resources are primarily driven by food needs and high income demand. Mozambique is one of the poorest countries in the world, and most of the people live in absolute poverty. In order to lift the country out of the critical economic situation it impels (unwillingly) for more pressure into the resources.

Major impacts of the issues

Environmental consequences brought by these issues are diverse, and often have feed back implications. Freshwater shortage contribute for rapid deterioration of water quality, as in such a case there is high probability for recycling the water, and further, the flushing time of the water is longer. The reduction in the water volume and the drop in the water quality have further implication in the downstream ecology. Water pollution also contributes for low water quality and affects severely the living resources (both fauna and flora). The destruction of the coastal ecosystems affects primarily the productivity and the biodiversity, and then, causes the reduction in the resources availability. In particular, the depletion of the vegetation cover over the coastal sand dunes stimulates coastal erosion, which in turn contribute to the death of corals and seagrass by siltation. Overexploitation of the fishery resources results in reduction of the stocks and loss of biodiversity. In addition, the studies on the vulnerability of the Mozambican coastal zone to the global climate changes, have revealed that the coast is highly vulnerable to flooding in the event of sea level rise. This is because most of the coastal zone is a low laying area.

Socio-economic consequences related to marine and coastal issues are immense considering that a significant percentage of the population, about 40%, live in the coastal zone and their living depends on the resources available in these regions, and further, the economy of the country depends largely in the

marine and coastal resources. Deterioration of the water quality and pollution have further, implications on human health. Indeed, most of the causes of death in Mozambique are infectious and parasitic diseases, all associated with poor hygiene and water quality. Further, the destruction of the coastal environment reduces income from the fisheries and tourism. Reduction in fish resources has implications in the economy, employment facilities and reduces capacity for the local community to meet basic needs (subsistence). It should be pointed out that shrimp fishery is one of the major sources of income for the country.

Transboundary consequences

Major transboundary consequences of the identified issues are based in the fact that most of the resources in question are shared with neighbouring countries, and hence, for their sustainable exploitation require an integrated management approach. Freshwater shortage is associated in part to the restriction for use in the highland countries. Considerable pollution affecting the Mozambican waters is due to intensive agriculture activity in upper river (e.g. Limpopo, Incomati, Umbeluzi, Save and Zambezi). Most of the fleets fishing shallow water shrimp in Sofala Bank are owned by foreigners or are joint venture with nationals. Most of the fish products are for exportation (mainly to European market). In addition, demersal fisheries caught in game fishing are shared with South Africa, and most of the game fishermen are from that country. Hence, reduction in availability of these resources is of a considerable transboundary nature.

Constraints to action

Major constraint to action is related on one side to the lack of understanding of the ecosystem structure and function, and to institutional and legal framework limitations on the other side. Lack of qualified personnel is the key factor behind our limited knowledge. Very often we do not know how most of the ecosystems function, how each intervening factor contributes to the system, and how the different factors are inter-related each other. Institutional capacity goes from the lack of infrastructures for research and monitoring to the lack of co-ordination among different institutions dealing with marine issues. Lack of co-ordination often leads to duplication of actions with unnecessary expenditure of resources. Sustainable exploitation of resources requires thorough research and permanent monitoring, which is too expensive for a developing country. In addition to these limitations, in some cases the legislation may not provide for sustainable development, particularly where there is a free access to the resources, or absence of regulation.

Progress made to-date

Progress achieved to date has been entirely inspired by the Government commitment to the implementation of Agenda 21 and other international environmental agreements, specifically with regard to aspects related to the protection of the oceans and seas including coastal zones. The government of Mozambique has been particularly engaged in the protection and promotion of rational use of coastal and marine resources, and in the promotion of sustainable development in the coastal zones.

Achievements described below are in conformity with programmatic areas defined by Agenda 21. Mozambique has concentrated on building institutional capacity for environmental management and in the consolidation of the existing ones.

One of the Major achievements since Rio 1992 was the establishment of the Ministry for Coordination of Environmental Affairs in 1994 with the mandate to co-ordinate and ensure sustainable development of the country, the establishment of the Council for Sustainable Development (CONDES) and the promotion of the Pan-African Conference on Sustainable Integrated Coastal Management (PACSICOM).

Along the same period several other coastal and marine management institutions were created as need raised. With support of UNESCO, UNESCO Chairs of Marine Sciences and Oceanography and of Man and Environment, were both established at the Eduardo Mondlane University. The universities and research institutes have been active in the capacity building in specific areas of coastal and marine sciences. In parallel, several environmental NGOs were established including some international NGOs such as WWF-Mozambique, which plays significant role in marine conservation and protection. IJNESCO/IOC have been active in capacity building in the area of marine sciences in Africa. Under IOC leadership, programs such as ODINEA that evolved into ODAFRICA and GOSSAfrica were initiated.

Furthermore, an effort has been put towards recognition, establishment and documentation of management plans for the two (Inhaca and Bazaruto) already existing Marine Protected Areas (MPAs). One of the recent products of that endeavour is the extension of the limits of the Bazaruto National Park, an MPA aimed mainly at the protection of the Dugongo (Dugong dugong), an endangered species whose viable population in the Eastern African Region is found in that area.

The adoption and ratification of several international and regional conventions and protocols has been assumed by the Government of Mozambique as a means of pursuing goals and objectives of the Rio Summit. Of particular importance are the CBD, UNFCCC, CCD. The law of the sea, the regional seas programme and the Nairobi Convention and related protocols. We are preparing the ratification of RAMSAR Convention.

Mozambique as a SADAC country has co-operated towards the implementation of SADAC Protocol on Fisheries whose main goal is to promote sustainable development of the fisheries sector in the whole region. Presently, Mozambique is laying the grounds for the introduction of a Monitoring Control and Surveillance system for fisheries legislation enforcement. This system will gradually be implemented in territorial waters and along the jurisdictional waters, allowing for rapid information flow and effective low enforcement along our EEZ. Still within the SADAC a protocol on shared watercourses was signed and countries are trying to implement an integrated river basin management. Further, a protocol on environment is under-preparation.

Institutional framework

The creation of the Ministry for the Co-ordination of Environmental Affairs, was a major step taken in the direction of

an integrated management strategy for natural resources. In fact the co-ordination role that this institution plays stresses the importance of the principle of a collective, participatory and harmonised management process rather than a sectoral, isolated and not coordinated one.

In June 1994, the Government approved the National Environmental Management Programme (NEMP), which is the master plan for the environment in Mozambique. It contains a national environment policy, environment umbrella legislation, and an environmental strategy. The Ministry for the Co-ordination of Environment Affairs (MICOA) has taken the lead for environmental management in Mozambique. Within MICOA's framework, a coastal zone management unit (CZMU) was created in 1995, whose main responsibility was to co-ordinate activities in the coastal zone. The Unit was responsible for the institutionalisation of a coastal zone management structure within MICOA and underwent several activities pertaining to public awareness, inter-institutional co-ordination, development coastal planning, community-based demonstration projects, information dissemination, coastal ecosystem research, and monitoring and training.

This unit developed into a full Department that now deals directly with coastal zone management in its aspects of inter-institutional interaction and ecosystem management. MICOA has also developed a *Center for the Sustainable Development of Coastal Zones in Xai-Xai*. The Center aims at providing technical and management advice to the Government and other institutions, dealing with more specific aspects of planning, training, awareness, education, monitoring, research and data-bank.

The Government facilitated the creation of an ad-hoc inter-institutional technical committee for coastal zone management, in 1996. The committee, which is lead by MICOA, is responsible for discussing and reviewing the co-ordination of activities among stakeholders. The Committee has a secretariat hosted by MICOA and the members are nominated at the highest level at the Ministry or by invitation through MICOA in the case of NGOs or intergovernmental bodies.

As for the institutional arrangements for the coastal zone, it is proposed that the current inter-institutional committee become a technical subcommittee of the already created National Council for Sustainable Development (CONDES), in the light of the newly approved Environmental Law. CONDES is composed by key Ministries in coastal zone activities, represented at the level of Ministers, and representatives of civil society and academia.

Policy development

In 1998 a macro-diagnosis of the Mozambique coastal zone was produced, which outlines the major environmental issues for coastal zone management as well as the approach for inter-sectoral cooperation in the area. Mozambique started the preparation of a "National Coastal Zone Management Policy" and a "National Coastal Zone Management Program". These documents, once approved will constitute the overall policy framework for coastal zone management in Mozambique. The CZM policy includes the establishment of the Center for

Sustainable Development of Coastal Zones with the mandate for training, education, raising awareness at all levels of society, a systematic approach to coastal planning and development, and the use of ecosystem approach in dealing with the fragile coastal ecosystems, among other priorities.

The Environmental Law was developed and then approved by the Parliament in 1996 - *Lei do Ambiente* - and constitutes the first attempt to introduce a new concept of the environment and a new vision and strategy for its management, both for the institution's activities and for the public in general. According to this umbrella Law, MICOA has the responsibility, on behalf of the Government, of taking measures to control, monitor and supervise the implementation of natural resources management, land use and best practices towards a cleaner environment. Civil society is also called to contribute in this strategy, having an important role on natural resources uses and good governance control. The concept of "polluters pay" was introduced in this legislation. The environmental impact assessment (EIA) process is also regulated since 1998.

Other important legislation approved by the Parliament is the Law 10/99, which lays the *"Principles and Basic Guidelines for the Protection, Conservation and Sustainable Use of Forestry and Wildlife Resources."* The regulation establishes, among others, species of fauna and flora to be protected, protection areas and role of stakeholders on natural resources uses and protection.

While producing national environmental legislation, the country has adopted and ratified, since 1996, important international and regional environmental conventions. Ratification included the Conventions on Biological Diversity; the Framework Convention on Climate Change, the Basal and Bamako Conventions on trans-boundary transport of Toxic Waste, Montreal Protocol on the Ozone Layer, and the Convention on Protection and Management of Marine and Coastal Environments in the Eastern African Region (Nairobi Convention). The Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities (GPA) was also adopted. The Nairobi Convention represents a particularly important Convention for Mozambique and countries in the WIO area. Two of its protocols - the protocol on protected areas and species and the protocol on oil spills - will bring a very important framework for co-operation in the region. Mozambique is hosting the Third COP of this Convention in December 2001.

As already stated, Mozambique has a population markedly poor: 70% of its people live below the line of extreme poverty. This situation is particularly serious in most coastal areas, since these are densely populated and the soils are in general very poor for agriculture. Further, extreme events such as drought and floods observed in the last decade have further deteriorated the situation of most families. Further, coastal zones are sites with great potential for tourism, transport and fisheries that attracts further more people.

As a general policy, the Government has launched its Action Plan for the Reduction of Absolute Poverty (PARPA). The main pillars

of this Plan include promotion of agriculture, rural development, education and health, and government decentralization.

The establishment of marine protected areas also represents a bright opportunity in this combat against poverty. Local communities look at this as an opportunity for a better management of their resources, so improving their living standards. It is also an opportunity for sharing the incomes from other activities (e.g. tourism). At the same time, the Government's role in making sure that the processes are in line with its policy towards better conditions and a better environment for all is also fulfilled. Mozambique has recently approved the extension of the boundaries of Bazaruto National Park. The total area of this MPA - one of The Two in Mozambique, being Inhaca Reserve the second - has increased from about 500 km² to about 1400 km², which makes it probably the first or second largest MPA in the Eastern African Region.

The Government had approved some acts and ratified some international conventions related to marine affairs. The Fisheries Act, 1996, establishes the criteria for sustainable exploitation of fish resources and defines regions and seasons for close fishing activity.

In addition to these more broadly base acts there are a number of specific regulations of the aspects of the environment including the Farming and Hunting of Wildlife, 1970, Regulation of Foreign Fishing Boats, 1978, Diplomas establishing reserves in all parts of the country, and the act to control shrimp fishing, the use of processed wood and ivory and general hunting of wild animals.

Under the category of health related acts, the most significant are acts dealing with the control, handling and processing of food, and the Pesticides Regulation, 1987.

The designation of protected zone areas in the Land Act Cultural Properties Protection Act, 1988, The reserve under the Forest Act and the National Parks. The establishment of marine protected areas also represents a bright opportunity in this combat against poverty. Local communities look at this as an opportunity for a better management of their resources, so improving their living standards. It is also an opportunity for sharing the incomes from other activities (e.g. tourism). At the same time, the Government's role in making sure that the processes are in line with its policy towards better conditions and a better environment for all is also fulfilled.

The Acts that have fixed penalties include the Shrimp Fishing Regulation, The Regulation of Foreign Fishing Boats, Regulation of Hunting, Regulation of Precious Wood, Cultural Properties Act, The Use of Pesticides Act, and all which regulates the use of resources mentioned above.

Since 1987, legislation proposals have included mandatory preparation of environmental assessment studies. These studies have involved as a method for determining the most ecologically-sound methods for pursuing a development activity. Two legislation schemes have required the preparation of these studies, the Processing of National Investments, 1987 and the Mining Act.

The coastal zone can and must benefit from the existing international legal instruments in the field of the environment, some of which were already ratified by the country. The introduction in the internal legal system of the provisions of the environmental conventions and the development of the activities listed in them, will certainly bring benefits to coastal zone protection.

Decentralization and participatory process

The government is making effort toward decentralization as a materialization of democratic process. And good governance. Local Government at provincial and district levels are becoming more engaged in policy development and enforcement. The issue of ICZM is becoming more familiar to most of the stakeholders at the local level. In fact, most of the policy developed so far had its foothold in the local government institutions and local community, where local habits and traditions were taken into consideration.

The government encourages and promotes the participation of the civil society, organized in the most diverse ways possible such as associations, NGO's or traditional groupings, in the various development initiatives and in the implementation of the government policy. In this context partnership between public and private sectors and the civil society is now a reality and is proving to be instrumental in the implementation of sustainable development policies.

Regional dimension

At the regional level, Mozambique supported the establishment in Maputo of SEACAM, the Secretariat for Eastern African Coastal Area Management, in 1997. The initiative was a follow up to decisions taken by the region during the Seychelles meeting on integrated coastal area management in the Eastern African region. The Secretariat has been active in areas such as information dissemination, training and guidelines development.

In 1998, Mozambican concept of coastal zone management was presented to a broad forum of African countries in the Pan-African Conference on Sustainable Integrated Coastal Management (PACSICOM), which was held in Maputo. The concept was widely accepted and the foundations for regional programs for the co-ordination of coastal management were laid.

Mozambique, recognising the importance of coastal zones and their resources in the overall development of the country, conscious of the threats imposed both by man and the natural processes in the availability of the resources, aware of the challenges for sustainable use of these resources due, in part, to the conflicting interventions in the coastal zones and also, due to lack of understanding of the ecosystem structure and functioning, and recognising further the transboundary nature of the issue, invited the fellow coastal country member states of Africa for discussion and adoption of an integrated strategy for sustainable management of the coastal zone and the resources on it - The PACSICOM process.

The First meeting of PACSICOM, held in Maputo in July 1998, represented an appropriate window of opportunity for intergovernmental dialogue, as well as regional and international

co-operation vis-a-vis Africa's marine environment. During that meeting the African states represented at ministerial level, committed themselves to join effort for sustainable development of coastal and marine resources. From the recommendations set it is emphasised the following, thought with particular relevance to academic and research institutions:

- The need for development of sound technical understanding, based on the integration of scientific, social and economic variables, the monitoring of social, economic and natural;
- Conditions and the forecasting of changes. Thus a holistic and multidisciplinary approach in both formal and informal education;
- The need for building human and technical capacities in natural and social sciences relevant to the needs of the region;
- The need for expanding curricula to include coastal and marine environmental issues at all levels of education;
- The need to strengthen the collection and dissemination of scientific information as a basis for effective management of coastal areas;

The PACSICOM was upgraded into an African Process that had three main stages as follows:

- (i) The Maputo Conference, held in July 1998, whose main objective was to identify and raise awareness of the major issues of concern and the need for integrating effort towards mitigation/prevention of these problems.
- (ii) The second, held in Cape Town in December 1998, whose main objective was to review the conventions (Nairobi and Abidjan) signed by the African States, assess the successes and failures in their implementation; and
- (iii) The third phase, that will be held in Johannesburg in the Year 2002, during the World Summit on Sustainable Development (Rio +10), whose main objective is to meet with the partners and discuss the ways towards an effective implementation of initiatives for promotion of sustainable development and conservation of nature. During the Cape Town meeting, the African States are expected to present concrete proposals for addressing the issues of their major concerns to the partners.

Future perspectives

The government of Mozambique will consolidate the foundations laid to the achievements of goals defined in the Agenda 21 through strengthening its institutional capacity to meet the necessary requirements for the full implementation of Rio Summit decisions. This would be done in the context of the absolute poverty reduction plan of action, which constitutes the main objective of the government.

In this regard the resources use and the overall social and economic development should be done on a sustainable basis. This implies that the development strategies should be harmonised with ecologically sound management. Of particular interest are the marine and coastal zones where the government prioritises a number of activities related to integrated management of the

natural resources. The main issues for this programme are: (i) Fisheries, (ii) coastal and marine ecosystems management, (iii) coastal and marine protection, (iv) marine parks and (v) tourism.

Major challenges

The agenda 21 was not fully implemented due mainly to:

- Limited financial resources, which continues to be the main barrier to the implementation of the Rio 1992 agreement;
- Limited capacity in developing world;
- High level of poverty in developing countries;
- Unsustainable government policies
- Low public participation in decision making

The expectation to Rio+10

Considering the challenges outlined above, the main expectation in Rio+10 can be summarised as follows:

- Increased co-operation (south-south and north-south);
- Identification of additional funding for capacity building activities in developing countries;
- Promotion of synergies between environmental conventions related to coastal zone management and marine resources;
- Integration of coastal zone management strategies in poverty reduction policies.

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Republic of
Indonesia

THE CHALLENGES OF PUBLIC POLICY FOR SUSTAINABLE OCEANS AND COASTAL DEVELOPMENT: NEW DIRECTIONS IN INDONESIA

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OPENING REMARKS

Before beginning my remarks I would like to thank UNESCO for its sponsorship of this conference, as well as the other Ministers present for their support. In addition, I would like to give a special thanks to the Conference Co-Chairs, Dr. Patricio Bernal and Dr. Biliana Cicin-Sain for their excellent work in putting this Ocean and Coasts Rio+10 Conference together. I would also like to thank the organizing committee for inviting me to speak before this distinguished group of international and marine diplomats, experts, scientists and leaders, and to the Coastal Resources Center at the University of Rhode Island for helping to make my attendance and participation possible. It is a rare privilege and an honor to stand among you here.

In the 1992 Rio Conference, we recognized that up to that time approaches to ocean and coastal management on all scales had not always been successful in achieving sustainable development. As part of this recognition, we accepted the Rio Declaration commitment to work in a number of specific areas using approaches that are 'integrated in content and are precautionary and anticipatory in ambit'. Toward these ends, coastal States further committed to focus on such mechanisms as management and coordination, data collection, science and information, financing, technology and human resources development and capacity building.

In many ways, it is difficult to say exactly what this has meant over the last ten years in terms of implementation. Public policy, especially regarding ocean and coastal resource use and conservation, is a difficult and sometimes hazy process that includes powerful vested interests and complicated issues of access and use-rights. Complicating this is a modern technological and commercial capacity that is speeding the depletion of our resources by meeting the increasing global population's desire for consumption of ocean and coastal products. Demands for these resources inland and far away in other countries are now being met, resulting in far more pressure on coastal and marine resources than could have been imagined years ago. This greatly extended ability to service demand for consumption of ocean and coastal resources, combined with other impacts such as global warming and pollution, indeed present a formidable challenge for our governments. However, since our entire future is intimately tied to achieving sustainable development of ocean and coastal resources, we accepted the sustainable development challenge at Rio and find ourselves here to review our progress.

I am sure that much will be presented in this conference that indicates progress of which we should be proud. I am equally sure that much will be presented revealing that we have still not achieved our goal of finding the right combination of policies

and practices through which we can achieve the political transitions, legal evolution and cultural transformation required for sustainable development of our oceans and coasts. We must recognize that establishing a comprehensive framework is a dynamic and never-ending task, a cyclical process of issue identification, program development and formalization, implementation, evaluation, and modification. It is this dynamic process that constitutes the business of making public policy for sustainable ocean and coastal development. And, as politicians and experts, scientists and managers, it is our duty to fully participate in this *public policy process* to achieve our goal.

My choice of the word *process* is intentional. It is process that distinguishes the making of good public policy and recognizes the dynamic nature of effective governance. But beyond our broad agreement that this process is dynamic and ongoing, what do we mean when we talk about ocean and coastal public policy? Most importantly, we are talking about government commitment and government action. There is no public policy on coastal and marine resources without government commitment followed by government action, or at least not positive public policy. As we all know, public policy set through lack of government action can be just as powerful, but in a negative way.

In a broad sense, the work before us in this Conference is about monitoring and evaluating our progress in terms of moving along the continuum of positive public policy making for ocean and coastal resources. As scientists and managers we understand the need to monitor and evaluate our progress based on the best marine and coastal science available, and to adjust our course as needed. But our monitoring and evaluation is not only about using the best marine science available. Monitoring and evaluating our progress in terms of the continuum of public policy requires that we evaluate how well we have done in meeting the needs of civil society as well as the natural environment. As a result, we are dealing in the realms of human emotions, needs, feelings, culture and other social and political factors that, while often less quantifiable, are no less real and important to our progress toward sustainable development.

While the Rio Declaration on Environment and Development identified twenty-seven broad principles to guide national and international actions, nowhere did it provide practical guidance to individual nations confronting the socioeconomic, cultural, political and scientific complexities that we all are confronting. Nor could we expect the Rio Declaration to provide these. Addressing the complexity of practical implementation is the job of each of us gathered here, based on the conditions and culture we find in our own nations. In Indonesia, these complexities are daunting indeed, perhaps more than most

other nations as a result of our tremendous biophysical and human diversity.

The Indonesian Context

Geographically, our country extends over three time zones and more than 6,000 km from our eastern borders in the Philippine Sea to the western borders in the Indian Ocean. We have an 82,000 km coastline, the second longest in the world. Our seas contain what is considered by some to be the greatest marine biodiversity in the world within a single nation. This blessing is balanced by nature, as we are also host to almost every natural hazard known, including explosive volcanoes, intense earthquakes, floods, and tsunamis, all of which directly impact our coastal populations and ocean resources. Our people reflect this tremendous natural diversity. Indonesia is the fourth most populous country in the world with over 200 million people and literally hundreds of distinct languages and cultures.

Despite growing levels of trained professionals, high technology and college-education, the vast majority of our people have fairly low skill levels. There are very few mid-sized enterprises: most industry is large-scale factories or small family operations. Marine transportation and shipping has shifted from labor-intensive to technology intensive activities. Commercial fishing, which shifts the distribution of wealth from large numbers to a few, has become high-tech and large-scale as well, and is operated mostly by foreign interests. Sixty percent or 130 million of our lower-skilled people and eighty percent of our industry are located along the coasts.

Indonesia is an example of a 'large coastal nation' in the same category as Australia, the United States and Canada. We have large-scale geographic issues such as a broad range of climates, ecosystems, community structures and diverse sociocultural groups. Distance and remoteness are significant factors for communication and governance. Indonesia can also be seen, paradoxically, as a 'small island nation' in the same category as the Philippines and Micronesia with small-scale issues. About 17,000 islands in our archipelago are identified as small islands. Less than 9,000 islands have names, and less than 6,000 are inhabited. Traditional communities who continue to embrace different customary marine tenure rights occupy many islands. Two ethnic groups, Bajo and Buton, are classified as sea nomads who still move from one island to another and practice open-access property. Increasing coastal populations have led to significant conflicts among our ocean and coastal resource users.

Given all this, our policy context is very complex and many of our policies and programs must address extremely varied sets of characteristics and needs. Herein lies Indonesia's great challenge-enormous diversity spread over a vast area.

Indonesia at Rio

Entering the Conference at Rio, Indonesia's tropical forests and minerals were considered our principal resources and were the focus for both exploitation and conservation activities. As we focussed on the depletion of our terrestrial resources, our marine resources quietly suffered. Except for ports, our coasts were uti-

lized for little other than small-scale subsistence fishing and some recreational use by the more privileged.

Foreign fishing fleets, many of them fishing illegally, were harvesting our offshore stocks because we had not developed the capacity or priority to harvest pelagic fish stocks. Due to the size of our Exclusive Economic Zone (EEZ), the number of ports and the kilometers of coastlines, enforcement of international agreements was problematic. Unsustainable local fishing practices such as using cyanide and dynamite on the reefs had existed for more than a generation and were considered "indigenous" practices. The depletion of coastal fish was becoming evident, even to subsistence fishers, yet most coastal villagers did not realize the scale or sources of threats to their resources.

Activities such as the gleaning of the reefs for fish and invertebrates to supply the international market of marine ornamentals were likewise becoming unsustainable. Depletion and degradation were coupled with new concerns such as overpopulation of Crown-of-Thorn Starfish and local bleaching events on the reefs. Conversion of coastal habitats for aquaculture was followed by loss of critical habitat, flooding and coastal erosion in the villages. Non-coastal residents and foreigners were enjoying the greatest benefits from ocean and coastal exploitation in our country.

Since then, the Asian monetary crisis, our own internal political evolution toward democracy, and the international events of the past few months, coupled with a weakening of the global economy are adding additional economic and political pressures that have the potential to further complicate ocean and coastal management in Indonesia. But our response has been strong and I can add Indonesia's report to this conference as one of those showing significant progress. And, our internal response to these complexities are in fact also examples of how we have responded to our commitment to the twenty-seven broad principles outlined in the Rio Declaration on Environment and Development.

Indonesia Changes in Governance and Institutions Since Rio

Following Indonesia's signing of the Rio Declaration in 1992, our government began an important process of elevating ocean and marine resources on the political agenda. As a result, Indonesia separated marine sector management from other institutional and economic sectors for management purposes in 1994 through its Sixth Long Term Development Plan. Following this, and in order to address the growing need to integrate ocean and coastal issues previously handled by more than ten different Ministries, Indonesia established my new Ministry of Marine Affairs and Fisheries in 1999. My Ministry contains five Directorate Generals including Coastal and Small Island Affairs, Research and Technology, Enforcement and Surveillance, Capture Fisheries, Culture Fisheries, and Institutional and Capacity Development. In addition, my Office of the Secretary General provides experts on law and governance issues that span and support all other Directorate Generals. This was a tremendous event that has been equated with the creation of NOAA in the United States.

Simultaneously, our government reform movement triggered a momentous push toward decentralization and participatory governance after almost fifty years of strong central government control during which all mandates emanated from the closed central government in Jakarta. A new National Maritime Council was formed consisting of politicians, private sector representatives, NGOs and government officials. Law 22 in 1999 provided the legal mandate for decentralization of broad authorities to local governments. Law 25 in the same year provided local control of financial resources that empowers local governments to implement these new. A significant element of Law 22/1999 was district control of marine resources out to four nautical miles and provincial control of marine resources out to 12 nautical miles. As a result, local communities and governments have control over ocean and coastal resources for the first time since the 1945 Constitution, which provided for complete central government control of all oceans and coastal resources.

My Ministry has now assumed the unique challenge and opportunity to design from the beginning a program that supports and horizontally links local government actions and policies, and simultaneously builds a vertically integrated national program around national standards that represent national interests. Our priorities are to increase supervision, control and production of coastal, marine and small-island resources, and to improve economic efficiency in their utilization; to develop information, policies and mechanisms for participatory integrated management; to expand the understanding of marine resources to our population; and to empower the local communities to manage their own coastal resources.

Central to our national interest is the protection and management of our ocean fish populations and increased production from cultured stocks to reduce pressure on ocean-based resources. For example, we are establishing a vessel monitoring system for that will monitor all licensed fishing vessels in order to regain control of our pelagic resources and retain more of the benefits related to these resources. At the same time, I have initiated a number of programs to help local entrepreneurs develop culture fisheries operations and other programs that support sustainable development of aquaculture enterprises and use of local fish resources.

However, local communities and governments in Indonesia have historically looked to the central government to create policy, to protect resources, to enforce rules and to generate activities, particularly in the last several decades. Even in the era of decentralization, a recent attitudinal survey about ocean and coastal resources management indicates that this perspective is still held by the vast majority of the population surveyed (more than 70%). To succeed in empowering local communities and government, we must change the residual belief that the central government is solely responsible for ocean and coastal resources and change the expectations for central government's provision of services related to these resources. And, as most of our technical capacity still resides within the central governmental agencies, we must also bridge the capacity gap to enable local stewardship and initiative.

One of my first steps to bridge the capacity gap and encourage local action was to initiate development of a national coastal management legislation, through which technical assistance and resources can flow to local communities and governments. This legislation encourages horizontal and vertical integration among government agencies, provides guidelines for regional and community coastal management planning and implementation, and takes a non-regulatory, voluntary approach to local participation and actions under a national program. I am proud to say that this legislation is already being discussed throughout the country and will be presented to Parliament for ratification in 2002.

In preparation for the passing of this legislation, the Ministry has started to develop numerous policies to guide capacity development and action by the government and communities. These include national guidance documents for coastal management, small islands management, coastal area spatial planning, coastal and ocean hazard mitigation, habitat rehabilitation, capture and culture fisheries development and licensing and tracking for domestic and foreign fishing operations among many others. These form the backbone of my public policy regime in terms of both empowering the public to take control at the local level, and giving expression to public aspirations at the national level.

We have also initiated a number of pilot programs to develop Indonesia-based models for local community and local government coastal management. In East Kalimantan we developed the first watershed-based Bay Management Plan in Indonesia and facilitated the establishment of the first ever local government inter-departmental working group focused exclusively on inter-departmental coordination and budgeting regarding coastal and ocean management. In South Sumatera, we created the first GIS-based provincial coastal atlas and strategic plan that was so successful a tool that eight other provinces have developed similar atlases and strategic plans using their own resources to complete the tasks. In North Sulawesi, we have the first ever village-based and enforced community marine sanctuaries in Indonesia and are beginning the national community-based marine sanctuary program in 2002. These community-based marine sanctuaries will ultimately form a string of protected areas throughout the thousands of coastal villages in Indonesia, serving as community protected and maintained breeding areas and multiple-use reserves.

Education of future generations is also a critical part of my agenda. I am currently leading the establishment of a new Marine Policy Research Center at the Bogor Agricultural Institute, the premiere coastal university in Indonesia. This initiative has already resulted in establishing student and faculty exchanges with the University of Rhode Island in the United States. We have developed the Indonesian Coastal University Network to link and build capacity in coastal universities across the nation and a national internet-based network of marine NGOs is similarly linking non-governmental organizations focused on coastal issues.

We have made significant progress in managing our national marine parks, such as Komodo National Park near Bali, by

empowering local communities to manage these resources. In Bunaken National Marine Park in Northern Sulawesi, local government, NGOs and communities are working together with donors to develop and enforce a tiered zoning program, begin a reef monitoring and rehabilitation program, and develop a shared management system with community patrols. New partnerships with dive operators include the first user-pays fee system in Indonesia with 90 percent of the funds going to park management. Bunaken Marine Park has also recently been proposed as a World Heritage Site and we hope to establish it as a national center of excellence for national capacity-building purposes.

In addition, my Ministry supports a national bi-annual conference for coastal management professionals that in 2000 was attended by more than 1 000 national and international participants. Our next national conference is in May 2002 and I encourage all of you to attend and present papers that contribute to our continued progress. In addition to our national and local conferences, we are increasing our linkages to the global community by participating in programs such as the International Coral Reef Initiative and international NGO programs, as well as hosting international marine science conferences such as International Coral Reef Symposium 2000 in Bali. These developments and activities are critical for keeping current with the global community and on-course internally. It also allows us to borrow, adapt and disseminate innovations for and from our experimental programs.

The economic and social development of coastal communities is also a major mandate of my Ministry. Work is slow amidst increasing populations and rapid internal migration that increases the potential for conflict around resource access and use. I have initiated a significant microenterprise development program, with special emphasis on alternative income streams for women, to improve the standard of living while also increasing awareness in coastal villages of the implications of local actions for ocean and coastal resources.

In addition, my Ministry supports a national bi-annual conference for coastal management professionals that in 2000 was attended by more than 1 000 national and international participants. Our next national conference is in May 2002 and I encourage all of you to attend and present papers that contribute to our continued progress. In addition to our national and local conferences, we are increasing our linkages to the global community by participating in programs such as the International Coral Reef Initiative and international NGO programs, as well as hosting international marine science conferences such as International Coral Reef Symposium 2000 in Bali. These developments and activities are critical for keeping current with the global community and on-course internally. It also allows us to borrow, adapt and disseminate innovations for and from our experimental programs.

These are just a few examples of the progress we are making. In all, my Ministry is currently coordinating ocean and coastal resource management projects in over half the provinces in the Indonesia and in 45 separate districts and cities. As with all of us,

our challenge is to draw from experiences around the world, try to understand the underlying principles of the models available, and then adapt them to our local context. In Indonesia, our awareness and capacity to do this is improving, but we need much more knowledge and experience in coastal management, and in many cases we are addressing these needs for knowledge and experience with the generous support of the donor community, for which we are grateful. Especially important now are programs that focus on building capacity to analyze and formulate national policies for fisheries management and coastal resources management, as well as preparation and implementation of local management plans for coastal and areas.

CONTINUING CHALLENGES

Indonesia is not alone in facing the challenges ahead. We are struggling to balance several competing priorities, all of which need resources and attention. From land-based sources of marine pollution to marine transportation issues, sea level rise, coral reef degradation and small island management - how is one to choose? In Indonesia, we have taken the best possible first steps forward by recognizing the need to manage ocean and coastal resources through an integrated rather than sectoral approach and establishing a new Ministry of Marine Affairs and Fisheries through which to realize this need. However, the challenge we accepted at Rio of balancing and finding our way through the many socioeconomic, political and scientific complexities we face in establishing that elusive integrated framework of sustainable ocean and coastal development will remain with us long into the future.

The last 10 years have gone by quickly. And, just as in the Rio Declaration, I believe that offering practical guidance here for implementing all ocean and coastal management programs is impossible. However, we have learned much in the past few years in Indonesia and I believe that there are a few important lessons that I can offer to this Rio +10 Conference in terms of public policy for sustainable oceans and coastal development.

First, the importance of setting the public agenda cannot be overstated. In order to achieve integrated governance of ocean and coastal resources there must be an alignment of vision and mission in terms of the entire national public agenda. This is probably the single most important action that national governments can take for rapid success in sustainable ocean and coastal development. It is also probably the most difficult. And, while local and national public agendas must necessarily move along their own individual timeliness vertically and horizontally linking local and national agendas is directly linked with our rapid expansion of ocean and coastal management in Indonesia. As a result, I believe this should be the linking element and constantly in the mission of national government and donor efforts. To achieve this, national policy agendas must be designed downward looking and local agendas must be designed upward looking, each incorporating the others aspirations and enabling the other's success. Moreover, the structure of these must be designed internally to match domestic needs rather than designed through the tyranny of project funding from abroad.

In practical terms, setting the public policy agenda means looking for, and/or creating, the triggering mechanisms required to catalyze rapid change and open the door for policy innovations in integrated ocean and coastal governance. Good fortune came from bad fortune for Indonesia as the Asian monetary crisis acted as a powerful triggering mechanism and produced a refocusing of the national economy on natural resources conversion. Ocean and coastal resources were suddenly hot topics in terms of foreign currency capture, the national budget, food security and conflict over access and use-rights.

Second, and following closely behind setting the public policy agenda for oceans and coastal governance, is the need to engage our governments in much larger geographic-scale efforts for implementing ocean and coastal initiatives. Isolated community-based activities and small pilot projects taught us much in the early phases of ICM about the potential results of management opportunities. And, continued scientific research is critical to inform our programs. However, we must admit that integrated management of ocean and coastal resources is by nature a governance function that must be conceived, proposed and carried out on large scales in order to produce the results we want. While certainly a more complex task than smaller demonstration projects, largescale efforts are required in order to produce the results necessary to maintain a position in the competitive public agenda and address the critical issues that exist.

Finally, it is important to use the support garnered through the public agenda to rapidly set the policies that provide practical guidance for action at all levels. As all the management gurus tell us, the most common mistake in reengineering private or public structures is moving too slowly. In Indonesia we are moving as fast as possible to set new policy through our new national coastal management legislation and supporting guidance documents that I described earlier. These in turn are being implemented around the country through our government budget. I cannot emphasize enough the importance of moving quickly. While triggering mechanisms open the governance door for innovation and rapid progress, and working at large scales offer the promise of bigger and more attractive results, the public agenda doors often close with the announcement of the latest crisis and so we must seize the day while it is offered.

As we are learning in Indonesia, it is important to rapidly put in place the governance infrastructure for support and action to continue after our day in the spotlight has faded. This infrastructure must be designed to quickly accomplish the first order outcomes of formalized institutional structures and constituencies while preparing the way for second and third order outcomes leading to integrated governance of ocean and coastal resources.

These are some of the lessons we have learned internally. To see all that we are learning, I invite you to our National Coastal Management Conference in Bali from May 21-24, 2002.

Although it would be nice to think that nations will place global ocean and coastal conditions and needs above their own, this is unrealistic. We need to continue to work together directly, and

through international bodies, to continue to improve our understanding of the importance of the externalities we incur and create, and to continue to develop innovative approaches to mitigate these externalities without major detriment to our own people. Without international consensus and willingness to sacrifice equally, the needs of the world will usually come second in priority to the needs of a nation.

It is our job to find solutions that are compatible with our own national needs, and to make conscious and well-considered decisions to intentionally change our behaviors and policies based on these needs. We can experiment, adapt the models of others, discuss widely the possibilities and implications, but the decisions are ultimately ours to make and the work is ours to do. It is a challenge of the spirit, as well as the mind, to integrate change with historic and cultural identity. It is a difficult balance to recognize some things cannot move too quickly while recognizing that speed may be the determining factor in the preservation of our renewable ocean and coastal resources.

In Indonesia we are moving fast, while still looking for better approaches that meet the needs of our nation. We are all the while remembering that managing ocean and coastal resources means managing peoples' complex behaviors and feelings. While we struggle to push innovation, we also spend time facilitating and listening. In cooperation with our international partners, which have been extraordinarily generous with Indonesia, we are moving forward with experimentation, adaptation, and discussion of the options for integrated governance of our commonly held oceans and coasts, and are emerging with our own capacity and public agenda to take action. Together we are all on the road to search for a comprehensive framework for integrated governance of ocean and coastal resources. And through this search, I am sure we will find solutions to the problems caused by old behaviors that are no longer sustainable while holding on to the essence of our national culture.



Mexico

MEXICO'S PERSPECTIVE ON OCEANS AND COASTS TEN YEARS AFTER RIO

Exequiel Ezcurra

President, National Institute of Ecology, Secretary of the Environment and Natural Resources, Mexico

Currently, Mexico confronts a problem of slow economic growth and continuing degradation of its natural resources. The growing disparities between developed and developing nations, coupled to our own internal inequalities, have evolved in parallel with the gradual but unrelenting degradation of our environment. For Mexico, this process has represented a growing dependence on imported food supplies, as well as increased levels of poverty. Effective international cooperation for sustainable development should include a system capable of ensuring better prices for raw materials from the developing world, whose producers are forced to compete unfairly with the highly subsidized primary producers of developed countries. Otherwise, the growing pressures to obtain a meager income from impoverished natural systems will lead inexorably to the continued degradation of the world's ecological base.

This degradation also includes, unfortunately, our coastal and marine resources. Mexico is a mega-diverse country, not only in its land systems, but also in its seas. The selective extraction of a few commercially valuable fisheries in our species-rich seas often implies a great impact on our ecosystems, where a high proportion of the accompanying fauna is harvested as by-catch and thrown back into the ocean. As in other tropical countries, this is the case with our shrimp dragnet fleet, where the by-catch proportion can be as high as ten to one.

Together with the decline of our fishery reserves in open waters, we have also observed during the last decades a negative trend towards environmental degradation in our coasts. Oil and industrial chemicals, urban discharges, the flow of agricultural residues, and the cutting of mangroves, among other causes, are major driving forces of degradation in our estuaries and lagoons, which function in our tropical coasts as nutrient traps, and play an immensely important role in the juvenile life cycle of many open-water fisheries. Mangrove forests occupy a large proportion of our coastal lagoons, and the environmental services they provide are immense. However, aquacultural farming and tourism developments are putting this critical environment under increasing pressure.

Coral reefs, a fundamental life supporting system in tropical seas, have been showing some disturbing signs of damage resulting from human activities. Coral bleaching, and sometimes the death of the coral polyps themselves, have become a recurrent problem in some of our coasts, revealing the high level of environmental stress to which these fragile communities are being subject. Marine pollution, increased turbidity from deforestation and coastal runoff, eutrophication resulting from wastewaters, and increased sea temperatures induced by global climate change, all seem to be playing their synergistic role in the decay of one of our richest ecosystems. This is especially true in our

Caribbean waters, a region which -because of its location in the tropical convergence zone- is highly vulnerable to extreme climatic phenomena such as tropical hurricanes or the generalized warming of its waters, and is thus threatened by global warming.

These are some of the immense problems we have to tackle in Mexico's oceans and coasts. There is a lot of work ahead, and we have to address the issues with responsibility. However, the opportunity that this meeting offers to look back and reflect on what the Rio Conference meant for many of us, is indeed golden. So much has happened in these ten years; so many things have changed.

In 1992 we only had one small marine protected area in Mexico -the Veracruz Reef National Park. Largely as a result of the extraordinary momentum that the Rio summit brought into our country, in 1993 Mexico decreed its first large marine protected area in the Upper Gulf of California. Since then, it has been a landslide: In subsequent years marine protected areas were decreed in Loreto and Cabo Pulmo, also in the Gulf of California; around the Marias and Revillagigedo Islands in the Pacific; in the Alacranes Reef in the Gulf of Mexico; the Chinchorro Key in the Caribbean, and in Los Petenes on the coast of Campeche.

Many other areas with coastal lagoons have been also added to our national system of reserves. Funding has been ensured for some of these areas through a GEF donation that was converted into a model trust fund for conservation. In parallel, increased Federal funding was committed to support the operation of our growing system of protected areas, with a special emphasis in our own coastal and marine reserves.

Our national listing of endangered species was modified in 1994 to include a new category of species that, even if they were not themselves under any risk, may provide crucially threatened environmental services. Thanks to this new regulation, mangroves now enjoy full protection and their clear cutting is now legally punishable by Mexico's Environmental Attorney General. Similar rules and standards were established in the 1990s to control the discharge of wastewaters into coastal areas, protect breeding grounds around coastal lagoons, and regulate the catch of strategic fisheries. The National Fisheries Chart was also modified in that period to include new concepts of integrated adaptive management and to provide more legal protection for marine and coastal reserves.

Our General Law of the Environment was modified in 1996, four years after Rio. Among other changes, the new law establishes the right of the Federal Government to plan the environmental use of coasts and seas and to enforce these plans. Based on this, more than ten large-scale, coastal and marine-use plans have

been made to regulate the development of our coasts and seas, and to protect their seriously fragile environments.

Finally, during the last decade international cooperation was actively promoted, in projects such as the Bight of the Californias, a critically important coastal region shared by Mexico and the United States, or in actions such as the program of international observers in our tuna fleet, possibly the most intensely watched fishery in the world.

All these changes occurred and evolved in Mexico as a result of what we may call the "spirit of Rio." In this last decade, our problems in marine and coastal regions have continued to accumulate, and we are still far from solving them. In Mexico, like in most countries in the world, many of the dreams of Rio

failed to come true. But, looking back, it is clear that during these last ten years we also started to act, we lost our paralyzing inertia with respect to protecting the marine environment. Perhaps the biggest dream of Rio was simply that: to start acting, to set societies in motion, to start doing something to revert the trends of global environmental degradation and of global inequity. Rio implied, for many countries, both a call to action to protect our environment and a call to compassion towards those that have been left out of global access to natural resources.

This dream is now as legitimate and compelling as it was then. Let us work to rekindle the illusions. Our coasts and our seas need it.



Russian
Federation

ADDRESS TO THE RIO+10 WORLD CONFERENCE ON OCEANS AND COASTAL AREAS

Honorable Victor I. Kalyuzhny

Deputy Minister of Foreign Affairs of the Russian Federation and
Special Representative of the President in the Caspian Region

Mr. Chairman,

Ladies and Gentlemen,

Since the Rio 1992 Summit, Russia has undergone dramatic changes. One of them is a greatly enhanced "ecologization" of legal awareness of its population, deepened, though not yet nation-wide, public concern over the state of environment, progress and problems related to the harmonization of technological progress and health of natural flora and fauna.

The issue of ensuring a full-fledged life for the present and future generations and state of planet Earth itself concerns all states and every individual. As Russia's President noted, this country "is involved in all global processes."

One of the features of the world in the third millennium is the fact that mankind is turning again to the place that once became the cradle of life on Earth - to the World Ocean.

The man came to the sea about a million years ago. According to scholars, he was fascinated by the blue plain that stretched out behind the coastal cliffs. Hiding among the trees, he spent hours watching the sea unaware of the future alliance with it. In order to survive, the man picked up all kinds of "seafood" left by waves. That was how the initial, though "gastronomic", information on marine resources was being accumulated¹.

Today, people who realize the importance of environmental and economic links between the sea and the coast and who are concerned with the oceans' future, are exploring ways to solve the interrelated problems of satisfying the growing demand of the population for natural resources of the World Ocean while both preserving the riches and diversity of the marine environment and maintaining the primary function of the Ocean - oceanic Earth's crust - that is to sustain geological and biological processes to provide normal functioning of our planet.

Historically, coastal areas, rich in resources, have been among most exploitable areas all over the world. More than 60 per cent of the world population live within a 60-mile coastal area, and the process of its migration from mainland to coastal areas is on the rise.

So, there is no wonder that an acute conflict exists between the desire to immediately use and consume coastal resources and the necessity to provide for their sustained reserve. In many countries, as well as in Russia, this conflict has reached a critical point. Many parts of coastal areas have been polluted by wastes from local and inland industrial and agricultural sources. Lifeless gulfs and bays and general pollution of environment devoid sea-coasts of their recreational attractiveness. Fisheries are facing

decrease or totally disappearing. No wonder that we are witnessing a growing concern with the fact that the balance between benefits and damage from offshore oil and gas exploration activities is changing for the worse.

In many respects, the problems encountered by Russia in this sphere seem to be typical of other countries with the developed power industry infrastructure.

The contradictions related to the increased use of coastal resources inevitably aggravate the problems of social and economic development. Conflicts of interest brought about by multiple jurisdiction and competition among users of resources in the absence of dispute settling mechanisms, inadequate forms of protection of resources, as well as the lack of national and local policies of coastal area management providing for informed decision-making undermine the possibilities of sustainable development in the future.

The UN Conference on Environment and Development held in Rio de Janeiro in 1992 recommended coastal countries to develop and implement integrated coastal area management programs, taking into account their specific conditions. In accordance with this recommendation Russia pays great attention to this aspect. For example, Russia is participating in the multidisciplinary program for East Baltic coastal areas sponsored by UNESCO-Intergovernmental Oceanographic Commission within the framework of the Baltic Floating University project. Measures are being taken to reduce pollution of coastal waters from rivers in order to develop certain coastal regions.

However, it is obvious now that the length of Russia's shoreline and complexity of the problems arising there demand a broader approach to solve them. The Russian Federation has large coastal areas. Its sea component (shelf) alone makes up one third of Russia's land territory, or more than half US territory (excluding islands), and is ten times as large as the surface of France. With the World Ocean shoreline extending 777,000 km, the length of the Russian coastline is 60,000 km.

In environmental terms, the coastal area constitutes an outer, transitional zone between the continent and the ocean and, consequently, is a zone of ocean-land interaction. It boasts the major oil and gas deposits, the greatest specific biodiversity and the highest bioproductivity. The coastal area is a sort of purification plant for pollutants from the shore.

The specific natural features of Russia's coastal area at moderate and southern latitudes provide enormous opportunities for recreation activities. Moreover, this is a zone of busy navigation

¹ See Yu. M. Yakovlev, "The Sea and the Man". <http://www.fegi.ru/PRIMORYE/SEA/people.htm>.

as well as port and hydrotechnical facilities construction. Life within coastal areas in its economic, social and cultural aspects is closely linked to marine activities and greatly depends on natural factors. This close linkage to the marine ecosystem and particular dependence on nature and elemental forces of the sea determine the specific character of coastal areas to be reckoned with while developing the structure, principles and legal framework of management of these regions.

It would be impossible to work out any socio-economic projects of coastal development without taking into consideration the ecological situation in Russia's coastal area. The Russian coastal area is a zone of dynamic economic activities, meanwhile, its natural features make it extremely vulnerable to any human intervention into the natural evolutionary process.

Our country recognizes the need to develop an efficient legal mechanism to preserve natural coastal territories as the most precious national asset and ensure their general accessibility and integrity.

At present, management of natural resources within Russia's territory is governed by the *Constitution of the Russian Federation*, which is of fundamental significance, and a number of federal laws:

- Law of the Russian Federation on Environmental Protection (1993);
- Law on the Continental Shelf of the Russian Federation (1995);
- Law on Inner Sea Waters, Territorial Sea, and Adjacent Zone of the Russian Federation (1998);
- Law on the Exclusive Economic Zone of the Russian Federation (1998);
- Federal Law on General Organizational Principles of Local Self-Government in the Russian Federation (1997 version)
- Federal Law on Environmental Impact Assessment (1998 version);
- Law of the Russian Federation on Mineral Resources (2000 version);
- Federal Law on Share of Production Agreements (1999 version)
- Land Code (1993 version)
- Law on Natural Medicinal Resources, Curative and Rehabilitation Sites and Health Resorts (1995);
- Law on Specially Protected Areas (1995);
- Law on Wild Fauna (1995);
- Law on the Protection of the Atmospheric Air (1999);
- Forest Code of the Russian Federation (1997);
- Federal Law on Sanitary and Epidemiological Health of the Population (1999);
- Water Code of the Russian Federation (1995).

The brief list above shows that the peculiarity of Russia's legislation in force lies in the fact that *different natural resources are*

regulated by different laws, vesting the responsibility for monitoring, registration, preservation, protection and management of the coastal natural resources with different government bodies. At the same time, an analysis of the economic, social and environmental situation in the regions in question reveals the necessity of:

- Working out of *special regulations* establishing a legally *optimum regime* for the "coast-sea" line on the great extension of Russia's coastal area and territorial sea;
- Drawing up a legal framework to harmonize interests of different users of natural resources: oil producers, fishermen, sea recreation businessmen, etc.
- Adopting a legal act defining a coastal area (coast and sea line, characterized by closely interrelated environmental, economic and social factors) as the *economically and environmentally integrated whole*.

We believe that a legal framework of coastal area management should take into account appropriate rules of international law (relating to the marine environment conservation, support for traditional fisheries and many other activities) established by both multilateral, including universal, conventions (first of all, the UN Convention on the Law of the Sea), and bilateral treaties to which Russia is a party.

It is precisely in the light of these approaches that a special draft law on coastal areas is being developed. It builds upon the international legal expertise in this area, including the European Union Model Law on Sustainable Management of Coastal Zones, FAO documents, as well as legislative acts of certain countries (Netherlands, Great Britain, Sweden, USA and others).

On the basis of scientific and economic factors testifying to the urgent necessity of legal definition of the regime of coastal area management in Russia, the legislative act under preparation could include the following key provisions:

- For management purposes, a coastal area covers an adjacent sea area with its outer boundary coinciding with the outer boundary of the exclusive economic zone, as well as an appropriate coastal strip, the population of which strongly depends on the sea;
- Extension of the constitutional provision on the "joint jurisdiction" of the Russian Federation and its constituent entities to cover the issues related to coastal zone management. One of the possible ways in this regard is to establish within the government structure a consultative body consisting of representatives of federal, regional and local authorities, economic entities, NGO's and local population. The main task of the consultative body should be to promote the harmonization of interests of the area and those of its population and various users of natural resources;
- Another possible way to implement the "joint jurisdiction" concept is to draw up plans of coastal zone development. Such plans are seen as a basis for activities in the area. They should be initiated by local self-government structures, while finally approved by a Federation's constituent entity or at the

federal level. The law is supposed to specify obligatory and optional elements of such plans, a procedure of their preparation using the experience acquired in the process of environment impact assessment of economic activities, and a procedure of their coordination and approval;

- Definition of areas not subject to privatization (such as recreation zones, national parks, areas along communications lines, etc.);
- Basic rules of holding tenders for long-term lease. The key criterion for nominating a winner should be in particular the feasibility of projects from the point of view of social development and conservation of the natural environment;
- Other important sections of the draft law are supposed to be special sections related to conservation of nature (in particular environmental requirements concerning military facilities), mandatory insurance of companies engaged in exploration and exploitation of natural resources and transportation of mineral products.

A new legislative act should be based primarily on the idea of conservation of the unique coastal area for the present and future generations. The main criterion of quality of such normative endeavours could be the extent to which such an act provides for both development of the coastal area and its accessibility and environmental activities.

Finally, I would like to emphasize a regional aspect of this problem which very important for Russia and involves global consequences. Taking into account a known conflict of interests between offshore oil and gas developers and fishermen, Caspian States are particularly in need of common legal mechanisms. An ideal solution would be an adoption of the Convention of the legal status of the Caspian Sea that would regulate the entire set of problems, including the protection of its environment and use of biological and mineral resources. Persisting differences in the views of the Caspian States regarding the new status of the Caspian Sea in the context of their understanding that the Convention can be adopted only by consensus, do not, however, allow the solution of the issue by one act. Taking into account these circumstances and the deteriorating ecological situation at the Caspian-this especially concerns a critical situation of the unique sturgeon population of the sea-Russia strongly advocates a stage-by-stage advancement towards a consensus solution on the status, the conclusion, in a priority order, of a package of five-Party environmental agreements that would permit the coastal States to urgently take collective measures aimed at the protection of the Caspian environment and its fishery resources. What I mean specifically is the conclusion of agreements on the protection and use of bioresources of the Caspian Sea, on the protection of the Caspian Sea natural environment, and on the cooperation of the Caspian States in the field of hydrometeorology and monitoring of the Caspian Sea environment.

Russia positively views the work on the preparation of the framework convention on the protection of the marine environment of the Caspian, which is performed by the experts from five Caspian States with the technical Assistance of the UNEP, favors its early accomplishment.

I would like to note separately the extreme importance of the across-the-board introduction in the process of drilling at the Caspian of the so-called zero discharge method, when all the waste formed is taken to the shore and stored in special dumping grounds.

A five-Party Caspian centre, which Russia deems necessary to create on a permanent basis for monitoring the Caspian environment and offering relevant recommendations to the governments of the coastal States, is to become the instrument of protection of the Caspian.

Unfortunately, in practice things are moving ahead slowly so far. There is a view that the conclusion of any specific agreements at the Caspian is of no use until a new legal status of the sea is defined. Such logic has its right to be voiced.

But the life is not an abstract scheme. In the conditions when an environmental disaster is emerging at the horizon, it is, to say the least, counterproductive to link measures aimed at its prevention with any other affairs.

Our position in respect of the projects of construction of submarine trans-Caspian pipelines is also motivated by environmental considerations. The Caspian sea is a closed water body situated in the zone of high geodynamics. Therefore, before starting to implement such projects, the coastal States must solve together the issues of their environmental security. What I mean is, first, to minimize the possibility of pipeline accidents, and second, to establish responsibility for the damage caused and the procedure of its compensation.

Conservation and development of the Caspian Sea environmental system on such a basis including the famous Caspian sturgeon population combined with environmentally monitored offshore exploitation of marine mineral resources would specifically contribute to the implementation of the Rio Platform during the third millennium.

Thank you for your attention.



People's Republic
of China

CHINA'S OCEAN AND COASTAL MANAGEMENT

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Introduction

On the occasion of the forthcoming tenth anniversary of UNCED, it is of great importance to hold the Global Conference on the Ocean and Coastal Zone at Rio +10.

The ocean and the coastal zone are of important strategic significance to the development and progress of human society. Ushering in the 21st century, man has fully realized that the ocean is an important component of the life-supporting system of the globe. Through unceasing explorations, the strategy of sustainable development has evolved while the ocean is the treasure house of resources for realizing the sustainable development. The coastal zone is an area with the closest relationships between the ocean and man, and the highest values. From ancient times, the coastal zone has been an important place where man lives and carries out productive activities, a gateway of the coastal countries in their contacts with foreign countries and an outpost of their national defence. It has now become a zone where the economies, cultures and sciences of the contemporary world gather together. However, the ocean and the coastal zone are also encountered with numerous problems of sustainable development whereas management is one of the major ways of maintaining the health of the ocean and coastal eco-environment and its sustainable use.

In this paper, I am going to share with you how my country - China, in pursuance with the aspirations of UNCED, has devotedly implemented Agenda 21 in terms of ocean and coastal zone management, and what are we going to do as future strategies in the new millennium.

Development of Marine and Coastal Zone Management Towards the 21st Century

The ocean and the sustainable development

The ocean is an essential component part of the globe's life-supporting system. Occupying 71% of the earth's surface, the ocean is the cradle of life and the huge environmental regulator, thus making the earth a suitable place where the vulnerable and air-breathing mankind can live and go in for production. Over a very long historical period, man has been operating in part of the continental areas occupying 29% of the earth's surface. The rapid growth of population, the accelerated exhaustion of resources and the increasing deterioration of environment has made the problem of environment and development a global strategic issue. In seeking to solve the strategic problems of global socioeconomic development, man has realized the significance of sustainable development and the role of the ocean, and has returned to the ocean once again.

The choice of the social development pattern determines the fate of environment issues and their countermeasures. In the course of global development, the society is faced with such problems as population, bipolarization and consumption pattern, etc.; the economy is facing the economic mansion built on the basis of high consumption of resources and energy and the situation where the gross national product equals the national total pollution; the environment is confronted with desertification vs. forest, global environment vs. ecological crisis, and environmental deterioration in the developing countries. The 1972 Stockholm Environment Conference resulted in an understanding all over the world of the environmental problems, especially the problem of environmental pollution, and the 1992 Rio Conference on Environment and Development (UNCED) evolved a new understanding of the environmental problems, which are no longer just an issue of pollution, but have gradually developed into the global issue of ecological crisis and disaster. The environmental problems are, in the final analysis, caused by the choice of the strategy for social and economic development, thus leading to an assessment of the limitations of the traditional development pattern, seeking a completely new development strategy in the light of the social, economic, resource and ecosystem harms done to the environment, and finally resulting in the strategy of sustainable development.

With the advances of marine science, man has gained a deeper understanding of the marine resource and environment as well as of the service functions and values of marine ecosystems. The marine economy is developing rapidly. Therefore, the ocean has become an essential component part of the sustainable socioeconomic development and constituted an important basis for affecting the choice of the strategy for social development. The marine scientific research and the social practice have made firm man's belief in returning to the ocean. Mankind has realized that the ocean, with its huge system capacity, is regulating the global environment and supporting man's subsistence and development. In the utilization of the ocean over several thousand years before the 1960s, the subjects of marine economy had been marine fishery, sea-salt industry, and marine communications and transportation. It was not until the 1960s that the development of offshore oil exploitation and mariculture became the sign and symbol of modern marine development. The world output value of marine industries has seen a rapid growth, which was 13 billion US dollars in 1969, 250~280 billion US dollars in 1980, 600~800 billion US dollars in 1991, accounting for 5% of the world total output value and now has been estimated at more than 1500 billion US dollars, accounting for 15% of the world total. And the order of the output values of

world marine industries has developed from the primary, secondary and tertiary industries in the 1950s~1960s, through the secondary, tertiary and primary industries in 1990, to the tertiary, secondary and primary industries now. Marine economy has become a new area of growth and an important component part of the world's economy.

The ocean and the land are both the object of man's cognition and possess the socioeconomic attributes that can be utilized for the benefit of mankind itself. This has aroused man's urgent demands for developing and utilizing the ocean, promoted its overall understanding of the relationships of basic interests between the ocean and the nation which correspondingly led to the occurrence, formation and development of man's marine concept. The marine concept is an understanding of the essential attributes of the ocean which man obtains through the practice of economic, political, military and transportation activities, etc. Since the ancient times, the marine concept has undergone five stages of evolution: (1) Before the 15th century, the ocean had provided us with "the convenience of water transport and the benefit of developing fishery and salt-making"; (2) From the 15th century to the early 20th century, the ocean constituted the easy transport passage for trade and expansionism; (3) From the First World War to the years before the 1960s, the ocean became a hotly contested strategic point and an important battlefield; (4) Between the 1960s and the 1980s, there appeared the concept of marine territory, and the development of the relevant industries brought along by the offshore oil exploration and exploitation and the mariculture industry marked the beginning of the modern epoch of ocean development; (5) Since the 1990s, the ocean has been realized as an essential component part of the man's life-supporting system and valuable wealth for sustainable development. To grasp the formation and trends of the modern marine concept is an important aspect in the modern marine and coastal zone management.

Ocean and coastal zone management has become an important tool of the coastal countries to realize sustainable development. The development of the modern ocean and coastal zone management tends to be comprehensive, dynamic and closely combined with socioeconomy. The integrated marine management has become a high-level managerial form in the field of marine management. With the overall marine interests of the State and the sustainable development of the ocean as goal, by means of formulating and implementing strategies, policies and plans, zoning, legislation, law enforcement, coordination as well as administrative supervision and inspection, and under the system of unified management and management by various sectors and at various levels, the space, resource, environment rights and interests of the sea areas under national jurisdiction as well as their development, utilization and protection are subject to overall planning, coordination and management so as to achieve the aim of raising the systematic efficacy of marine development and utilization, promoting the coordinated development of marine economy, protecting the marine eco-environment and safeguarding the national marine rights and interests. The integrated coastal zone management is a

regional management and a high-level management over the coastal zone. It refers to the coordination, supervision and management with respect to the space, resource, eco-environment of the coastal zone as well as its development and utilization by means of such functional behaviors of the government as strategy, zoning, planning, legislation, law enforcement and administrative supervision so as to effect the sustainable use of the coastal zone.

Significance of the United Nations Conference on Environment and Development as a milestone in history

The United Nations Conference on Environment and Development has epoch-making significance in the world's history of development. The 1972 Stockholm Conference should be, so to speak, the first milestone in the history of environmental protection as it paid attention to the environmental pollution problems and awakened man's awareness of the need to protect the environment on a global scale. But in choosing the development pattern, it did not break away from the development at the expense of damaging the environment. In the late 1980s, in the light of the problems of population, resource and environment as well as the predicament of development brought about by the industrial civilization, it became necessary to proceed from the integrity of modern science and technology, develop productivity being oriented to the coexisting values of mankind and natural systems and seek for the development pattern of sustaining man and nature as well as socioeconomy on the basis of inheriting and displaying the advantages of agricultural and industrial civilizations, centring around the interaction between man and natural systems with the information civilization as the managerial tool, thus resulting in the strategy of sustainable development, which is cognition of the issues of environment and development from a higher plane. This is the distinguishing feature of the 1992 Rio Conference on Environment and Development as the second milestone in man's history of environmental protection and the Conference should also be rated as one of the most significant events in the late 20th century and would be of far-reaching significance to the environment and development in the various countries of the world in the 1990s and the early 21st century.

To carry out ocean and coastal zone management on the principle of sustainable development has become a sign of the beginning of the new historical period in ocean and coastal zone management after the Conference on Environment and Development. The United Nation's "Agenda 21" adopted by the 1992 Rio Conference on Environment and Development urged the coastal countries to undertake to carry out integrated management and sustainable development in the coastal areas and marine environment under their national jurisdiction and made principled stipulations concerning the objectives, action plans, implementation conditions of the integrated ocean and coastal zone management, thus constituting a guide to the marine and coastal zone management carried out by the coastal states. The World Coast Conference held in November, 1993 summed up the new experiences of various countries in carrying

out marine and coastal zone management, worked out the technical documents for the coastal zone management and proposed theories, methods and measures for the integrated coastal zone management, thereby vigorously promoting the experiments in the integrated coastal zone management conducted by the developing countries. Since the 1990s, initiated by the relevant UN organizations, and supported and urged by the World Bank, UNDP and the organizations in the developed countries for aid to foreign countries, the integrated coastal zone management has made great headway and 95 coastal countries have launched the integrated coastal zone management in 385 regions. This is where lies the historic significance of the Rio Conference on Environment and Development.

The strategic problems being faced

The contemporary world is still encountered with the problem of environment and development, and the subjects of general concern are the problems of resource, environment and population as well as the role of the ocean's contributions and the sustainable development in solving the common problems of the world. The ocean is facing more prominent problems, and such issues as marine rights and interests, marine resource and wealth, marine eco-environmental health, national and regional security, high seas resource sharing, etc., have become the subjects of marine management; The major problem in the ocean and coastal zone management is how to establish the national, regional and global response mechanisms. In the socioeconomic system, the hot issues are still protection of the ocean as the resource treasure-house for sustainable development and development of the leading factors of sustainable development; occupation of the ocean as the major battlefield for competition in science and technology and the commanding point in the 21st century; impelling the ocean to become the major motivating force of economic development; development of favourable conditions in so far as the ocean is the focus of political contentions; realizing that the ocean is the major area where lies a nation's destiny and prosperity and the symbol of its rise and fall, developing marine economy and attaining control of the sea by relying on science and technology. As a result of constant deepening of cognition on the ocean, the ocean has become an important domain in the international competition in the century with respect to politics, military affairs, economy, science and technology, resource and environment.

China's strategies

China's implementation of the strategy of sustainable development has its own implications. The Chinese Government has made positive response after the Rio Conference on Environment and Development, put forward the ten major policies concerning environment and development as the State's programme of action in realizing the coordinated development of environment and economy and taken the lead in formulating the "China Agenda 21" which reflects China's strong sense of historical mission and responsibility for fulfilling her due duties for the international community and her resolve of unremittingly making greater contributions to the common cause of the

whole mankind, and is also taken as a guiding document for drawing up the China's long-term development plan for national economy and social development. However, the basis for the implementation of sustainable development is "development", the economic development is the prerequisite of sustainability, the quality of economic growth is of utmost importance, the natural conservation is the basis and improvement of social quality is the goal.

The sustainable development in the coastal area requires the support of marine environment and ecosystem. The ocean makes China's coastal region the birthplace and forward position of China's reform and opening to the outside world as well as the focus of national economy and the most vigorous hot place in regional economy. In China, the area of the coastal region accounts for 14% of the national total, its population over 40% of the national total, the GDP more than 60% of the national total and its annual rate of growth is nearly 5 percentage points higher than the national average; The gross output value of agriculture accounts for about 40%, and that of industry about 67%, the total volume of retail sales of social consumer goods over 59% and the total volume of export trade about 88% of the national total; The level of coastal urbanization has reached 25.5%, 1.2 percentage points higher than the national average; and over 90% of the national import and export materials passes through the coastal ports. The coastal region is playing an important role in the national communications, information exchange and contact with the international market as a "passage" and a "bridge". The coastal economy is growing constantly, and the marine economy has gradually become an important component part of coastal economy and, in recent years, it has been developing at an annual average growth rate of over 20%. In 1999, the national output value of major marine industries amounted to 365.1 billion yuan (RMB).

The development of the coastal region plays an important part in the national development and the maintenance of prosperity as well as in establishing China in an unassailable position in the increasingly fierce international competition in the 21st century. The superiorities of coastal development lie in the ocean, the foundation of sustainable development is in the rational use of the ocean and the fundamental way out for solving the problems restricting the development is in relying on the ocean. Although the marine economy is developing rapidly, the marine development has not become the prop industry in the coastal area and the major marine industries are those traditional ones such as marine fisheries, and marine communications and transportation, etc., which have a strong dependence on the marine environment and ecology. Without the guarantee of marine environment and ecology, the superiorities of the coastal region in development would soon vanish and it would be impossible for the coastal region to realize its sustainable development, which would further affect the process of China's sustainable development.

To better act in the spirit of the China Agenda 21 in the marine fields and promote the sustainable development and use of the ocean, the Chinese Government has formulated and

implemented the China Ocean Agenda 21, which expounds the basic strategies, strategic objectives, fundamental countermeasures for the sustainable development of the oceans as well as the major programme areas. To become a truly strong marine state, China is drawing up the strategy of revitalizing the nation through ocean. This is the phasic requirement in China's implementation of the Ocean Agenda 21 and the requirement of the times for national development. Its overall thinking is to take revitalizing the nation through ocean as strategy, lay emphasis on both development and conservation, be supported by science and technology, be drawn by the hi-tech industries, lay up strategic resources, improve qualities of life, safeguard national security, bring along the development of the relevant industries, effect the sharing of high sea resources and evolve a large systems engineering. The strategic objectives for revitalizing the nation through ocean are integrated marine management, advanced marine science and technology, well developed marine economy, healthy marine eco-environment and solid national comprehensive marine strength.

China Ocean Agenda 21

The ocean's contributions to and support for China

China is a major marine state, but not a rich one. China boasts a continental coastline of over 18000 km and an insular coastline of over 14000 km; According to the stipulations of the United Nations Convention on the Law of the Sea, China also exercises sovereign rights and jurisdiction over its broad continental shelf and EEZ. Located in Northwest Pacific, China's sea area strides across the tropic and temperate zones with a great variety of marine life, high biodiversity, a vast shallow sea and tidal flat, numerous coastal bays, a deepwater coastline of over 400 km, rich in the reserves of oil and gas, and solid mineral resources as well as ocean energies, and a multitude of coastal landscape resources. However, there are obvious disadvantages in China's sea area resources. China's per capita area of sea, sea-land area and the per capita area of sea within the 200 nm are all quite small and the coastline coefficient is only 0.00188. But the ocean occupies an important strategic position in China's national economy and social development, and marine economy is showing a momentum of rapid development. Between the early 1980s and the late 1990s, the gross output value of the major marine industries throughout China had increased by 32 times and it amounted to over 400 billion yuan (RMB) in 2000, with an added value of 202.2 billion yuan (RMB) and an annual average growth rate of 25%, which was much higher than the average rate of national economy.

Challenges and opportunities faced by the marine undertakings in China

China's marine undertakings are confronted with tremendous challenges and opportunities. China's jurisdictional sea areas are rich in marine resources, including those of living organisms, oil and gas, solid minerals, ocean energies, marine tourism, etc. The various activities of marine resource development have evolved into different marine industries, among which are traditional marine industries such as those of marine fishing, marine com-

munications and transportation, and salt-making from sea water; the newly emerging marine industries including mariculture and stock enhancement, offshore oil and gas exploitation, coastal tourism, direct utilization of sea water, marine medicines and sea food development; as well as some future marine industries which are in the stage of technical reserve such as ocean energy utilization, deep-sea mining, marine information, multi-purpose use of sea water, etc. The marine industries have constituted an important component of coastal economy and are now just beginning to take shape. But the marine environment affects climate change, distribution of rainfall and occurrence of natural calamities, thereby possibly exerting a direct or indirect influence on the economic and social development in the coastal area and even in the inland region. Developing and protecting the ocean has constituted an important integral part of China's environment and development.

While they are rapidly presenting huge economic benefits, China's modern activities of marine development have also brought along a series of resource and environment problems. For instance, the serious overfishing of offshore fishery resources has done a great harm to the marine living resources; The constant increase of the total amount of pollutants dumped into the sea has aggravated the environmental pollution in some sea areas and worsened the ecological environment; Lack of high-level plans and coordination mechanisms have resulted in prominent contradictions among the various sectors using the sea and irrational development and use of the sea; The economic development is out of balance among various coastal sections and some individual regions have not completely been lifted out of poverty while, in the economically developed coastal sections, there also exist quite a lot of environmental problems; The global climate change and the increase of economic activities in the coastal area have caused the marine disasters to occur more frequently and on a larger scale, and the economic loss arising therefrom has increased and the consequences have been more serious. However, with the constant increase of China's national economic strength, China will be able to control and solve the marine problems now available and actively involve itself in the international marine affairs.

China's marine policies

The China Ocean Agenda 21 has clearly set forth China's marine policies. In the development of future marine undertakings, the coordinated development in both the sustainable ocean use and the marine undertakings should be the guiding ideology for the oceanic work in China in the 21st century. The principles of taking the development of marine economy as the core task, quickening, as appropriate, the step of development, integrating the development on the land and in the sea, promoting the marine industries by relying on science and education and developing in a coordinated way should be adhered to and implemented. In developing the ocean at a moderately fast speed, while a high speed development is maintained, emphasis should be laid on better benefits and bringing the ocean development onto the road of technology and capital-intensive development. The strategy of the integrated development on

both land and sea should be implemented in the overall planning of the land development in the coastal land and sea areas. By adhering to the policies of coordinated development of regional economy, different types of development areas shall be formed in the coastal zone. Ocean development must take the road of developing the ocean through science and education by taking various energetic measures, implementing the overall development strategy, promoting the progress of ocean science and technology, raising the productivity level of ocean development, promoting the close cooperation among science, technology and education and the marine development activities, and by pushing forward the sustainable, rapid and healthy development of the ocean economy. Ocean development involves many sectors, conservation of the marine ecological environment involves many fields and marine research covers a number of disciplines, so coordinated development is an objective requirement, which requires multidisciplinary cooperation in the study of the ocean and man's better understanding of the ocean; coordinated development of various sectors such as oil industry, transportation, fisheries, tourism, salt industry etc. so that each has a role to play; coordinated land-based and offshore activities for the joint conservation of the marine ecological environment; balance between the marine development and the bearing capacity of marine resource and environment for the sustainable use of the ocean; enhancement of the capacity of participating in the international marine affairs, tracking of the developments in the international marine science and technology, study on international marine laws, and active involvement in the international marine scientific research, the global marine environmental protection as well as the development and management of the international sea-bed and polar marine resources.

Basic countermeasures of the China Ocean Agenda 21

In the light of China's national development strategies and the demands of national economy and social development, the basic countermeasures of the China Ocean Agenda 21 are to:

- (1) Develop basic countermeasures for the sustainable development and utilization of the ocean by laying emphasis on the prevention and control of damage to the marine ecological environment and resources and giving full play to the guiding role of the market in the rational distribution of resources with the United Nations Convention on the law of the Sea as the international legal basis and the development and management of China's seas as the objective basis.
- (2) Guide the establishment and development of ocean industries by following the principle of sustainable development; Ensure fair distribution of sea area space and resources among various marine industries through integrated coordination; Promote clean production; Explore new resources, and develop new technologies so as to establish and develop new marine industries by relying on the progress of science and technology.
- (3) Promote ocean development activities according to plans and along the set orientations by combining the ocean development with the social and economic sustainable development in the coastal areas for gradually solving the key constraining problems in the coastal socioeconomic development so as to promote the social and economic sustainable development in the coastal region.
- (4) Promote the sustainable development of coastal islands by taking into consideration the development, utilization and conservation of coastal islands in the light of the national economic construction as a whole and the sustainable development of the coastal region; Attach importance to the special position of islands in the territory, improve the integrated management of sea islands and protect the biodiversity on and around the islands.
- (5) Conserve the marine living resources for sustainable utilization; Establish marine protected areas of coral reef, mangrove, seaweed bed and island, as well as those of spawning and nursery grounds of fishes, shrimps and crabs in the bays and coastal areas so as to protect biological species and special ecosystems; Manage well the coastal fishery of the masses and the mariculture and stock enhancement in the tidal flats and shallow waters; Develop clean mariculture technologies; Improve fishing technologies and methods and carry out moderate fishing of economic fishes; Develop ocean ranching technologies; Strengthen rational development, use and management of the resources in the exclusive economic zone.
- (6) Promote sustainable development and utilization of the ocean by relying on the progress in science and technology. Explore and seek for new exploitable marine resources by carrying out further surveys on the marine environment and resources; Research into and develop new technologies and methods, and develop deep-sea mineral resource, biological resource, chemical elements in sea water, ocean energy resource, marine pharmaceutical resource and create new and hi-tech industries; Develop science and technology for ocean observation and raise the levels of marine forecast and information service.
- (7) Establish an integrated marine management system. Form step by step an integrated decision-making mechanism for ocean development and management, and formulate unified guiding principles for ocean development, ocean technologies and conservation policies; Gradually improve the coordination between ocean development and management; Reinforce the integrated ocean management by formulating and perfecting the laws and regulations on the integrated marine management, and establish and improve the law-enforcement system.
- (8) Protect the marine environment. The central and local coastal governments should coordinate in the marine environmental protection work in order to prevent the degradation of marine environment due to land-based pollution; The gross pollution load in the key sea waters

should be controlled and monitored, and the integrated management model and the demonstration sites for the coordinated development of environment, economy and society should be established; Further strengthen control of ocean dumping; Formulate and implement contingency plans for preventing and controlling marine pollution; Strengthen capacity-building in marine environment monitoring, surveillance and law-enforcement management.

- (9) Improve the ocean observing, forecasting, early warning and disaster mitigation work. Perfect the ocean forecast and early-warning system and carry out timely and accurate forecasting of natural marine disasters; Develop disaster prevention and mitigation countermeasures, and contingency plans so as to reduce the loss from natural disasters.
- (10) Strengthen international cooperation. Promote positively the international cooperation in the research, development and protection of the Northeast Asian waters; Enhance the international cooperation in the research, development and protection of the Southeast Asian waters; Participate in the international cooperation in the global marine research, marine environmental protection, international seabed resource development and management, and research on the Antarctic and Arctic as well as the waters around the poles.
- (11) Promote participation of the public in the marine undertakings and the popularization education and professional education in ocean knowledge with the aim of creating a new situation where the whole nation cares for and protects the ocean, the people from all walks of life participate in developing marine undertakings and the coastal masses of the people cooperate in developing and protecting the ocean.

China's Ocean and Coastal Management

Present situation of China's ocean and coastal management

China is one of the earliest countries to carry out marine management. In the Zhou Dynasty over 3000 years ago, King Wen appointed special officials responsible for fishery administration and stipulated the closed fishing season; The Han Dynasty instituted fishery officials in the imperial house; In the Board of Works of the Ming and Qing Dynasties, there are middle-rank officials specialized in fishery administration; and in the late Qing Dynasty, fishery bureaus were set up in the coastal prefectures; And the management of salt production has also had a history of over 2000 years. Since the founding of New China, the marine industries have recovered and developed. Following the establishment of the departments for marine sectoral management, as the marine affairs are increasing and tend to be comprehensive, the State Oceanic Administration of China has been founded and become the competent authority of the State responsible for marine affairs. Its major tasks are to organize and coordinate the national oceanic work and take charge of organizing and carrying out marine survey, marine scientific research,

and marine management and marine service for public good.

The China's marine managerial system and operating mechanism have basically come into being. Since 1998, the fundamental functions of the State Oceanic Administration have been marine legislation, planning and management, and its basic duties are sea area use management, marine environmental protection, marine science and technology promotion, international marine cooperation, marine disaster prevention and mitigation, and safeguarding of marine rights and interests. In 1999, the State Oceanic Administration adjusted the offshore law enforcing organs, and established the China Marine Surveillance Headquarters and headquarters for various sea areas, which are responsible for the integrated law-enforcement work in all the sea areas under China's jurisdiction. In addition, the marine management organs of coastal provinces and municipalities have been set up one after another, thus resulting in a marine administrative system consisting of both the central and local marine management organs. On the whole, China is practicing the system of unified supervision and management combined with management in various sectors and at different levels and the mutually supplementary and promoting mechanism of operation between the integrated marine management and the marine sectoral management.

Construction of marine laws and regulations

The Chinese Government has attached great importance to the construction of marine laws and regulations. So far, China has established nearly 30 ocean-related laws and regulations covering such fields as territorial sea and contiguous zone, exclusive economic zone and continental shelf, marine environmental protection, maritime traffic safety, fisheries and mineral resources, etc. In the light of the variations in the marine environment and ecosystems as well as the needs of national economy and social development, China revised the Marine Environmental Protection Law in 1999, which officially came into force as of April 1, 2000. The Law has newly added the Supervision and Administration of the Marine Environment, the Marine Ecological Conservation and the Prevention and Control of Pollution Damage to the Marine Environment by Coastal Construction Projects. The Law lays special emphasis on the implementation of the system to control the total pollution load for sea disposal in major sea areas, establishes the legal status and role of marine functional zoning and defines the rational use of sea areas, and the conservation of marine ecology as well as the related legal liabilities.

However, the Marine Environmental Protection Law alone cannot by far meet the needs of managing and protecting the sea as a resource under China's full sovereignty. At present, China is actively pushing on the legislation on the sea area use management. Since its promulgation and implementation jointly by the State Ocean Administration and the Ministry of Finance in 1994, the Interim Regulations on the Management of National Sea Area Use has played a great role in controlling the disorderly, excessive and gratuitous state in the past sea area use and ocean development. The sea area, as a specific geographic region and resource base, needs to be protected, and rationally planned and

used through law. The sea area should be owned by the State and its ownership and rights of use are protected by law; The necessity that the right of sea area use shall be affirmed through examination and approval and the user pays system reflect the State's macro regulation and control over the distribution and structure of sea area uses so as to suit the needs in the regulation and control of the market under the system of market-oriented economy with Chinese characteristics. In October, 2001, the Law of the People's Republic of China Concerning the Sea Area Use Management was formally approved by the Standing Committee of National People's Congress.

Marine planning and zoning

Planning and zoning management is an important means of marine management in China. China's implementation of marine functional zoning, marine development plans and sea area use plans in its jurisdictional sea areas, especially its nearshore sea area, provides the code of conduct and managerial basis for marine management. The marine functional zoning and the sea area use plans fall within the category of resource management with the aim of laying a foundation for the sustainable use of marine resources; The marine functional zoning belongs to an advanced arrangement while the sea area use plan lays emphasis on the arrangement for a given period. The marine development plan goes beyond the category of marine resource management and penetrates into the field of marine economic management and marine territory management.

Between 1989 and 1995, China organized the development of national marine functional zoning on a scale of 1:200,000, thus resulting in the reports, registration forms and maps on the marine functional zoning for the coastal provinces, autonomous regions and municipalities directly under the Central Government as well as the national marine functional zoning and atlases. Starting from 1997, China began to revise and improve the marine functional zoning already accomplished and launched the large-scale marine functional zoning, on a scale of 1:50,000 for the ordinary regions and 1:10,000 for the focal regions. Marine functional zoning has now constituted the basic foundation for the construction of the marine administrative mechanism, developing ocean-related plans and marine policies as well as selection and designation of marine nature reserves.

Between 1991 and 1993, China carried out the work of drawing up the national marine development plan, evolving the national marine development plan, the marine development plans of the coastal provinces and municipalities and the national specialized marine development plans, etc. Now China is working out the National Marine Economic Development Plan, i.e., to design a blueprint for the major exploitation of the ocean and the vigorous development of marine economy by proceeding from the overall interests of the nation and drawing on the appropriate international experiences and lessons, and in the light of the actual conditions and national strength of China, so as to provide guarantee for the coordinated development of various ocean-related sectors. Under the guidance of the National Programme for the Eco-Environmental Conservation, the

National Plan for the Eco-Environmental Construction and Conservation came into being in 2001, which, proceeding from the reality of the eco-environment construction and conservation in China's jurisdictional sea areas, gives priority to the China's nearshore sea area and coastal zone while giving consideration to the distant sea waters, and stresses the immediate objectives while looking ahead into 2030. The purpose of the Plan is to make a rational distribution of marine resources and ecosystem development and carry out marine resource development and use, and ecological construction in a scientific, rational, orderly and moderate way, thus changing the mode of production and improving the quality of life in the coastal area; and develop the new motive force for the sustainable development of China's coastal areas, and restore and maintain the sustainability and stability of marine ecosystems so as to satisfy the requirement for China's socioeconomic development in the new century and meet the demands of the nation in the international economic and political competitions.

The Chinese Government has intensified the effort of marine environmental protection and pollution control. China's Tenth Five-Year Plan for National Economy and Social Development has clearly proposed to "strengthen the protection of the water quality in the nearshore sea waters, research into, prevent and control red tides, and do a good job of the integrated improvement and management of the Bohai Sea environment". The state departments concerned are actively pushing on the integrated improvement of sea areas, and particularly the Bohai Sea, China's internal sea as the focal sea area, and have successively worked out the Integrated Improvement Plan for the Bohai Sea, which incorporates the sea area pollution control, adjustment of resource development, ecological recovery, scientific and technological demonstration, and supervision and management into an organic whole, and the Bohai Blue Sea Action Plan with the control of pollutants discharged into the sea in the round-the-Bohai region and the ecological construction as the main body; and mobilized the local people's governments of Liaoning, Hebei, Tianjin and Shandong around the Bohai Sea to actively participate in the plan making and the work of integrated environmental improvement. Besides, the improvement plans for the estuarine sea waters such as the Changjiang River and Zhujiang River mouths are also being worked out.

The relevant international organizations and organs have paid great attention to China's integrated Bohai improvement and management. In 1999, aided by the Asian Development Bank, China initiated the research on the project "Bohai Coastal Resources Conservation and Environmental Management". The Project of "Partnerships in Environmental Management for the Seas of East Asia" (PEMSEA) jointly sponsored and funded by GEF, UNDP and implemented by IMO has paid attention to the Bohai environmental management and constructed the Bohai Environmental Management Demonstration Project with the transboundary integrated management pattern as the dominant factor, which would be carried out in 2000~2004.

Marine management activities

China's marine management includes the integrated management and the sectoral management; The integrated management embodies the basic part and dynamic developments of national marine management. At present, in carrying out the integrated marine management, China lays emphasis on the marine environment monitoring, integrated marine law-enforcement, sea area use management, marine environmental protection, coastal islands management and construction of marine nature reserves.

Marine environment monitoring. On the basis of a great deal of investigation and research on marine environment, China began in 1978 to conduct the marine environmental pollution monitoring with marine pollution as the dominant factor in the Bohai and Huanghai seas and set up China's first marine environment monitoring network; In 1984, the relevant departments of the State jointly established the national marine environment monitoring network, which was joined by over 100 monitoring and research institutions and began to conduct the routine marine environment monitoring in the sea area throughout the country. After more than 20 year's construction and development, China has developed the basic capacity of carrying out the water quality, biological, sedimentological, atmospheric environment monitoring in its entire sea area and the ability to apply the ship monitoring and buoy technologies as well as underwater detectors and coastal station automatic detection system, etc.. In recent years, the national marine environment monitoring has been conducted as planned, grasping the marine environmental quality condition and the trend of change in the whole sea area, various seas and the sea areas adjacent to the coastal provinces and municipalities, and releasing or working out the marine environmental quality bulletins or reports to provide basis for the macro decision-making and management of the marine environmental protection; and keeping abreast of the trend of environmental quality in the nearshore focal and hot-spot sea areas so as to provide direct service for the marine and socioeconomic development as well as the marine environment management in the coastal provinces and municipalities.

Marine law-enforcement. China conducts real-time surveillance, supervision and inspection related to the enforcement of marine laws and regulations in various activities of development, use and control in the sea areas under its jurisdiction; spot torts and activities at sea in contravention of laws and regulations; carries out in-situ survey and evidence collecting with respect to the maritime cases so as to provide evidence for the treatment according to law; conducts in-situ survey of the incidents and accidents, and stops the illegal activities from doing more harm and reduces their damage and consequences. China's marine law-enforcing contingents include the China Marine Surveillance Headquarters, China harbor superintendency administration and China fishery administration; China's sea frontier patrol and marine anti-smuggling group are also a component part of the marine law-enforcement contingent in China.

Sea area use management. In 1994, China released the Interim Regulations on the National Sea Area Use Management and established the systems of application, demonstration, examination and approval, licence and user pays for sea area use. In October 2001, the Law on Sea Area Use Management was approved by the National People's Congress. The local governments are working out their own regulations and measures with respect to the sea area use management based on the Law.

Protection and management of marine engineering environment. Environmental management for the marine construction projects is the content of management added into the China's newly revised Marine Environmental Protection Law, which falls within the responsibility of the State competent authority in charge of marine affairs. The major systems now being formulated and implemented for the environmental protection of marine engineering include those of examination and approval, marine functional control, marine environmental impact assessment, post-monitoring assessment, supervision and inspection, "three simultaneous" (i.e., Environmental protection installations of marine construction projects shall be designed, built and put into operation together with the principle part of the construction projects simultaneously.), and protection of focal areas; The work of the environmental management for the marine engineering is being actively pushed on so as to turn the legal regulations into the practice of management.

Construction of marine nature reserves. As of 1999, China has established 73 marine nature reserves of various kinds in respect of natural landscape, historical sites and special marine ecology, etc., among which 8 are managed by the oceanic administrations, covering a total area of about 140,000 ha. Establishment of marine nature reserves has not only brought about obvious results in improving the marine environment, conserving biological resources and biodiversity, and accelerating the recovery and rehabilitation of resources, but also provided an important base for developing science and culture, ecological tourism, environmental protection education and cooperation with foreign countries.

Management of uninhabited islands. China boasts over 6500 islands with an area of over 500 m² each, among which only 433 have residents and the rest are all uninhabited ones. At present, most of the uninhabited islands are still in want of management. Over 50% of the territorial sea base points already announced by China is located on the uninhabited islands. According to the relevant laws and regulations, China has begun to conduct protection and management of the uninhabited islands and their adjacent sea waters, establish the managerial system conforming to the local reality and strengthen law-enforcement on the uninhabited islands and the sea areas around them.

Construction of demonstration sites for the integrated coastal zone management

At present, the managerial system with the coastal zone as an independent management unit has not yet come into being in China. However, a great deal of basic work and construction of

demonstration sites have been carried out in the coastal zone, including the integrated survey of China's coastal zone and intertidal zone, resources, the integrated survey of national sea island resources, functional zoning of national oceans as well as appropriate land areas, and the national marine pollution baseline survey; In terms of the integrated coastal zone management, construction of the demonstration sites for the sea area use management has been carried forward in nearly 20 coastal cities; Through international aid and participation of the relevant international organizations, the construction of demonstration sites and capacity building for the integrated coastal zone management with different characteristics have been carried out in China's Xiamen City of Fujian Province, Yangjiang City of Guangdong Province, Wenchang City of Hainan Province and Fangchenggang City of Guangxi and have accumulated experiences which may be drawn upon and popularized in the China's coastal area as well as the East Asia region and other coastal countries.

Construction of Xiamen demonstration site of Fujian, China.

In 1994, the GEF, UNDP and IMO as well as the State Oceanic Administration of China and the Xiamen Municipal Government jointly organized and implemented the Xiamen Demonstration Plan for the Marine Pollution Prevention and Management in the East Asia Seas, with the aim of promoting the integrated marine management in the Xiamen City and providing experiences for the East Asian countries and other coastal regions of China to draw upon. The Xiamen City of China is a coastal island city as well as a scenic harbour city. The socioeconomic development of the city is closely linked with the ocean. But the Xiamen City is encountered with many problems of management. Through the implementation of the demonstration plan during 1994-1999, it has systematically analysed the major problems in the marine pollution and coastal zone management in the Xiamen City, integrated the socioeconomic factors and development plan demands and gradually established the integrated coastal zone management system and basic capacity, thus obtaining significant benefits.

Capacity building for integrated coastal management in northern South China Sea. In the 1990s, the economic growth rate in South China has all along been maintained at over 10%, which results in the increase of conflicts day by day among the various economic sectors, especially in the coastal zone and increasingly more prominent problems of resource and environment. In 1995, the Chinese Government submitted an application to the UNDP for aid to strengthen capacity building and choose a demonstration site in the Guangxi Zhuang Autonomous Region, Guangdong Province and Hainan Province respectively for planning and implementing the integrated coastal zone management strategy, which is then to be popularized and applied throughout the country. Between 1997 and 2000, the project "Capacity Building for Integrated Coastal Management in Northern South China Sea" which was funded by UNDP, undertaken by the China International Economic and Technological Exchange Center and implemented by the State Oceanic Administration scored great successes in the three demonstration sites, and initially established the managerial

model for development and conservation in Fengchenggang of Guangxi with harbour construction as the dominant factor, the integrated management model in the Hailing Bay of Guangdong with fishery as the dominant factor and the managerial model for coordination and use of multiple functions in the Qinglan Bay of Hainan, which have accumulated demonstrative experiences and lessons that may be popularized and applied.

Marine scientific research service

To promote ocean development and use, and the rapid and sound development of socioeconomy in the coastal areas, China has actively conducted marine basic researches, devoted major efforts to push on the development and application of marine hi-techs, tackled the key problems in the major technologies for the transformation of traditional marine industries and the hi-tech industrialization, well conducted the basic work in a down-to-earth manner to protect the integrity and continuity of marine data, and launched the demonstration projects for developing the ocean through science and technology to speed up the transformation of scientific results toward marine economy.

Since the mid-1990s, China has carried out a series of important marine scientific research projects and activities. For instance, (1) The second national marine pollution baseline survey. Covering a total area of 2.68 million km² and with the 35 estuaries, bays or sea areas adjacent to the middle and large-sized cities as focal areas, the survey collected over 23000 samples of all kinds and obtained over one million data; (2) Research on the dynamics of ecosystems and the sustainable use of biological resources in the Bohai Sea, East China Sea and Huanghai Sea, in order to further find out about the structure, functions of China's offshore marine ecosystems as well as their service and outputs and seek the ways of developing and utilizing the marine ecosystem in a sustainable way; (3) Research on the formation and variation mechanism of China's offshore circulations, the numerical forecast methods and the impacts upon the environment so as to gain a systematic understanding of China's offshore circulations and the dynamic mechanism of their variations with the support of modern observing technologies; develop the numerical forecast model for the variations of China's offshore circulations and preliminarily solve a number of important basic problems of the coastal zone resource and environment related to the offshore circulations; (4) Research on the key problems with respect to the formation and evolution of China's marginal seas as well as the important resources, with emphasis laid on solving such scientific problems as the lithostratigraphy structure in China's marginal seas and its dynamic mechanism, the differences in tectonic evolution between the South and East China Seas and its geological implications, and the effect of the formation and evolution of China's marginal seas on the resource, etc.; (5) Research on the key technologies for the utilization of coastal zone resource and environment as well as research on tackling key problems in the technologies for the coastal zone pollution monitoring, prediction, prevention and control, the large-scale mariculture zone capacity and optimization, prediction of the coastal zone marine dynamic

environment and its disasters, the integrated coastal zone management and the information systems, etc., in which important technological breakthroughs have been made and practical technological results obtained.

China has actively conducted survey of deep-sea polymetallic nodules. Since the mid-1980s, China has collected a large amount of very valuable data from the polymetallic nodules pioneer area in East Pacific covering an area of 15000 km². In 1991, the China Ocean Mineral Resources Research and Development Association (COMRA) was registered with the United Nations as a pioneer investor for the development of international seabed resources. As a result, China possesses a mining area for polymetallic polymetallic nodule resources covering an area of 75,000 km² with the exclusive right of exploration and the right of preferential development in addition to the sea areas under its jurisdiction. In the mid-1990s, China carried out the research program on the environmental baseline and its natural change with emphasis laid on biology and ecology and arranged a five legs' deep-sea environmental survey, which has resulted in a vast amount of scientific data. The research findings have given a strong impetus to China's effort of participating in the environmental legislation process of the International Seabed Authority and safeguarded the fundamental interests of China. China has positively participated in the relevant international cooperative projects (TOGA, WOCE, JGOFS, GOOS, IGBP, GLOBEC, LOICZ, etc.), and actively promotes the development of NEAR-GOOS.

Participation in the international marine affairs

China has done a great deal of work in protecting the ocean together with the related international organizations. This is manifested in not only the conventions and treaties that the Chinese Government has ratified and acceded to, but also the relevant programs and actions of the international organizations, including the United Nations Convention on the Law of the Sea; Framework Convention on Climate Change (FCCC); Convention on Biological Diversity, Convention on International Trade in Endangered Species of Wild Fauna and Flora; Amendments to Article 21 of the Convention on International Trade in Endangered Species of Wild Fauna and Flora; Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London Convention 1972); Amendments, 1989, to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972; International Convention on Civil Liability for Oil Pollution Damage, 1969; Protocol relating to the International Convention on Civil Liability for Oil Pollution Damage, 1969; Protocol, 1978, relating to the International Convention for the Prevention of Pollution from Ship, 1973; Amendments to the International Convention for the Prevention of Pollution from Ship, 1973 and Supplementary Article I of Its Protocol, 1978; Amendments, 1990, to the International Convention for the Prevention of Pollution from Ship, 1973 as revised by the Protocol, 1978 (I, V); International Convention relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, 1969; Protocol relating to

Intervention on the High Seas in Cases of Marine Pollution by Substances other than Oil, 1973; International Convention for the Regulation of Whaling; Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal; Agreement regarding the Execution of the Provision of the United Nations Convention on the Law of the Sea on Dec. 10, 1982 on the Conservation of Straddling and Highly Migratory Fish Stocks; as well as the global action plans concerning land-based pollution, etc.

In the field of marine environmental protection, China has carried out research on and given impetus to solving the problems of environment, pollution, harmful algal blooms, ecology, etc. in marine development in cooperation with the International Seabed Authority, London Convention 1972, IOC/UNESCO, APEC, SCOR and North Pacific Marine Scientific Organization (PICES).

China's Future Strategy for Marine and Coastal Zone Management

China will attach great importance to the construction of the marine legal system, and establish and perfect the marine and coastal zone management system

China will further improve the laws and regulations system for the ocean and coastal zone management, strengthen marine legislation, law enforcement and legal system publicity and education and push for such laws as coastal zone management law, coastal Island development and protection law, etc. so as to provide guarantee for establishing the rational order of marine resource development, arranging the productivity in a scientific way, maintaining the sound circle of marine ecology and increasing the development benefits and basis for safeguarding the national marine rights and interests and realizing the sustainable use of the ocean.

China will intensify the marine eco-environmental conservation and carry out high-intensity marine monitoring, surveillance, supervision and management

China will continue to pursue the environmental protection policy of "putting prevention first, combining prevention with control and carrying out integrated management", put into effect the newly revised Marine Environmental Protection Law, establish and perfect the necessary rules and regulations and push on enforcement of laws as well as supervision and management.

China will conduct high-intensity marine environment monitoring and special monitoring, and promote the application of hi-techs in the monitoring and their operationalized transformation; shape up the technological support system for monitoring; regularly carry out marine environment monitoring in the sea areas under its jurisdiction; and exercise supervision over the entire sea area and provide fundamental basis for ocean and coastal zone management.

China will strengthen the plans management and the integrated marine management, and maintain the sustainability of the marine eco-environment

In the light of the overall requirement for the implementation of the China Ocean Agenda 21 and the demands for the socio-economic development of China, China will do its best at making an overall plan for ocean development so as to support the formulation and implementation of China's strategy of revitalizing the nation through the ocean; do a good job of the medium and long-term plans for marine environmental protection and environment improvement, gradually restore the damaged ecosystems and strengthen the construction of marine nature reserves; carry out dynamic management of marine functional zoning and, in the light of the requirement for the national socioeconomic development and the level of marine scientific and technological development and on the basis of constantly understanding the ocean process, adjust the marine functional zoning so as to better maintain the sustainability of the ocean.

China will intensify supervision and management of all economic activities and activities of development and use at sea and through marine functional zoning, adjust the offshore and marine industrial structure as well as the productivity distribution; control the offshore fishing intensity, develop, as appropriate, the marine aquaculture, establish and practise the total allowable catch system and strengthen the stock enhancement and conservation of living resources; strictly implement the system of marine environmental impacts assessment with respect to marine engineering and coastal construction projects and control the damage to the marine ecological environment; and take effective measures to control the coastal erosion and ensure safety in the coastal production and life.

China will greatly enhance the capacity of marine service and promote the development of marine economy and coastal region

China will further perfect the national ocean observing and forecasting service system and the national marine information service system, improving the equipment and technological capacity of the system, enhancing the capability of the marine natural disaster prediction and forecast system, building the capacity for the early-warning of such environmental hazards as marine harmful algal bloom, marine oil spillage and marine virus and the forecast of the losses caused by the disaster; heightening the capacity of forecasting and predicting the disastrous marine variations, effecting the operational forecast of storm surge overbanking, nearshore sea waves and surface sea temperature, and carrying out the experimental research on the forecast of sea temperature, current and harmful algal bloom; and providing effective service for the coastal zone development, ocean development and use as well as safety in production and life.

China will devote major efforts to developing marine science and technology and providing service for marine management, economic construction and national security

China will continue to carry out the survey of environment and resource in the sea areas under Chinese jurisdiction, their adjacent waters and in the open ocean; make a further research on the environmental variation caused by pollution damage and the succession of ecosystems in the nearshore sea areas and the research on the environmental self-purification and assimilative capability of the nearshore sea areas; continue to deepen the resource survey and exploration in the sea areas under China's jurisdiction. In the meantime, efforts will be made to carry out the comprehensive survey and observation research in the polar oceans with research stations as bases, and the research on the marine resources, marine engineering environment and marine rights and interests as well as the integrated sea area zoning in the island-reef zone of the Nansha Islands.

China will focus the marine hi-tech research on the area of resource and environment, with emphasis on the development of the technologies for marine environmental protection, bio-engineering for marine pollution control, marine biotechnology, the technology for utilization of living resources, the seawater circulation and cooling technology and the key technologies for the post-treatment process of the seawater used for domestic purposes; research and develop a number of sea-bed prospecting and oil and gas resource exploration and exploitation technologies, evolve technical products and major equipment as well as the exploration technology series for developing the continental shelf sea areas; adopt the policy of combining technological import with independent development and shape up the technological series for deep-sea resource exploration and exploitation as well as the international, open scientific research vessels.

China will carry out ocean propaganda and education, and enhance the awareness of the whole society about the ocean as its long-term task

The recognition of the whole society of the strategic position and important role of the ocean in national economy and social development is the social basis on which the work of marine and coastal zone management may be improved and carried out smoothly. Therefore, it is necessary to strengthen the extensive participation of the public, give full play to the special role of the grass-roots governments in the coastal areas in organizing the participation of the masses, and by means of various educational ways and diversified publicity, popularize ocean knowledge, raise the marine scientific and cultural qualities of the labourers and foster the consciousness of the public in participating in the marine resource conservation and in the environmental protection.

China will continue to strengthen international cooperation and exchange

Since the 1980s, China has joined over 10 ocean-related international organizations, and established cooperative relations with over 50 countries and regions, and through cooperation and interchange, played an important role in training talents, importing technologies and exchanging information. China will continue to improve its capacity of participating in international marine affairs, following the developments of international marine science and technology, studying the international laws of the sea, and actively participate in the international marine scientific research, the global marine environmental protection and the development and management of the international seabed and polar marine resources. China will also positively promote the international cooperation in the research, development and conservation of the Northeast Asia sea waters; strengthen the international cooperation in the research, development and conservation of the Southeast Asia sea waters; and participate in the international cooperation in the global marine research, marine environmental protection, development and management of international seabed resources as well as expedition and research in the Antarctic and Arctic, and the polar sea area.

China will give an impetus to the implementation of the United Nations Convention on Law of the Sea; actively participate in the development and conservation of high sea living resources; push forward the work of the International Seabed Authority; take part in the relevant activities of IOC/UNESCO and SCOR; enhance the international cooperation in the marine environmental protection, participate in and cooperate with the follow-up activities of the international conventions and treaties to which China is a party, fulfil its commitments and obligations and push on China's marine environmental protection. China will strengthen cooperation with the Scientific Committee on Antarctic Research (SCAR) and expand cooperation and exchange with the countries engaged in the Antarctic and Arctic scientific and technological activities.

As one of the important countries in the Asia-Pacific region and a nation with most rapid development of economy, there is a need for China to improve cooperation and coordination with countries of the regional and regional organizations, and strengthening cooperation and interchange in regional maritime affairs in the Asia-Pacific and West Pacific.

Concluding Remarks

Ushering in the 21st century, the socioeconomic system is encountered with a persistent subject—the problems of population, environment and economy while the development of socioeconomic will rely more and more on the role of the ocean which occupies over 70% of the earth's surface. Many experts and politicians have foretold that the 21st century will be a new era of marine development. "The Mediterranean is a sea of the past, the Atlantic is a sea of today and the Pacific is a sea of tomorrow". The Mediterranean and ancient Greek civilizations have become a thing of the past and history is bound to give the opportunity for the Pacific circle of civilizations to crop up. The marine and coastal zone management will face a severe challenge.

China has incorporated the rational development and use of marine resources and conservation of the marine ecological environment into the overall plan for national economy and social development across the century, marine problems have become a national strategic issue and the sustainable development of marine undertakings has constituted a basic strategy. The immediate objective in China's oceanic work is to strengthen marine management according to law, enhance innovation in marine science and technology and effectively safeguard marine rights and interests, striving to build China into a strong marine state with integrated ocean management, advanced marine science and technology, developed marine economy, sound marine ecological environment and solid integrated national marine strength. However, China's modern ocean and coastal zone management is still in its primary stage and needs to be vigorously promoted so that it could meet the needs of China's development of marine socioeconomic and development of the international marine situation. China will make unremitting efforts to carry out the ocean and coastal zone management work creatively and bring into full play the integrated benefits of marine and coastal zone management while constantly developing the productivity and further increasing the integrated national strength, so as to make her due contributions to the marine cause in China and the world as a whole.



Italy

ADDRESS TO OCEANS AND COASTS AT RIO+ 10 AN ITALIAN PERSPECTIVE

Honorable Roberto Tortoli
Italian Undersecretary of State for Environment

Mister Chairman, Mister Director-General, Excellencies, Ladies and Gentlemen,

Almost a decade ago, the Rio Conference drew our attention on the issue of the environment and its preservation. We are now aware that human development cannot be sustainable in the longer term the way it has been up until now. Advanced and less advanced countries, though with different responsibilities and guidelines, will necessarily have to take awareness of and cope with a fundamental question. That is, natural resources and their exploitation are limited by the absorption capacity of the ecosystem. Such a reality is particularly visible, sometimes in the most dramatic way, in the marine context.

We are therefore very grateful to the Intergovernmental Oceanographic Commission of UNESCO and to all Bodies and Institutions involved in the study of this specific environmental aspect, such as the National Oceanic and Atmospheric Administration of the United States, for convening this Global Conference. It is indeed the appropriate time for relevant authorities and scientists to take full account of the achievements and lessons so far drawn in this sector. Studies and discussions of these days in Paris will pave the way for more fruitful and active participation at the World Summit that will take place in Johannesburg late next year.

As a contribution to the general debate and in my capacity of representative of the Italian Government, I shall focus my presentation on the environmental trends and patterns experienced in the Mediterranean. It is a specific contribution. The geographic position of Italy itself recommends this approach.

Experts and scientists will have the opportunity to meet and cooperate and exchange data on specific issues in the next months. This is why I shall limit myself to some general information.

The Mediterranean Sea is surrounded by forty six thousand two hundred sixty seven kilometers of coasts, including islands. It accounts, with an area of two and a half million square kilometers, for seven per cent of the global oceans surface, and its cycle of renewal of the water mass is of approximately eighty-one hundred years. It is like a huge bathtub, where the longest distance of a point to the coast is three hundred seventy kilometers, but where more than fifty per cent of its surface is at less than one hundred kilometers from the closest shore. The Mediterranean area enjoys one of the largest tourism flows in the world and the majority of its population is concentrated along the coastline. Urbanisation, industry, production and consumption of energy, transport, tourism, agriculture, and fishing are among the factors with the utmost environmental impact.

A sustained maritime trade crosses the Mediterranean Sea, via the Suez Channel, the Gibraltar Strait, the Turkish Straits. Fleets are very often made of old tankers, unsafe in many cases, most of which with no double hull.

The most serious danger for oceans and coasts is represented by oil - or other toxic substances - spilling in the sea. Decisions recently taken by the International Maritime Organisation (IMO) will allow for the elimination of old and unsafe ships in the future. But it will take time and we do not have all that time. The Mediterranean Sea is a close sea, with low seabed and underwater life already seriously damaged in many areas.

The Italian Ministry of the Environment has therefore finalised an original instrument worth being mentioned here. It is a Voluntary Agreement among Ministry of Environment, Ministry of Transport, Industrial Associations, Shipowners, Oil Companies and Environmental Organisations, that will accelerate the timetable currently foreseen for the unilateral elimination (striking off) of ships with no double hull. Moreover, other measures aim at reducing the negative impact of possible accidents. To provide an example, we shall for instance significantly reduce dangerous traffic flows transiting via the Bocche di Bonifacio and in the Venice Lagoon.

I believe this is an interesting experience, that brings together Government and private sector in unilateral and voluntary undertakings. The aim of such undertakings is to try to involve business in the preservation of the environment, with no prejudice to existing international conventions. Their legitimate concerns, especially as regards the transportation of dangerous substances and the utilisation of the most adequate vessels, will thus be taken on board as well.

Some other problems are linked to the very intense tourism activity taking place in the Mediterranean, to the negative impact on coasts deriving from growing urbanisation, to intensive fishing, and other. During their stay in Paris, the members of the Italian Delegation will be happy to provide information on our own experience and to exchange views on all these aspects with experts and interested parties.

I wanted to draw your attention to the specific initiative of the Voluntary Agreement because I think the role of the State, and of all relevant regional or international organisations, though fundamental, is not exhaustive. At present, environmental problems seriously affect ever-increasing sectors of our population. And this especially in the marine domain, where we need to engage more radically and more extensively.

I wish the participants to these proceedings all success in their endeavors and would like to express my thanks to UNESCO and to France for hosting us here in Paris this week.



Republic of
Nigeria

THE AFRICAN PROCESS ON THE DEVELOPMENT AND PROTECTION OF THE MARINE AND COASTAL ENVIRONMENT

Honorable Dr. Otuekong Imeh T. Okopido

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Abstract

The Sub-Saharan African Coastal and Marine Environment embodies 32 countries with an aggregate coastline, which exceeds 12,000 kilometers. The region faces a multitude of growing challenges at an immense scale, which if not addressed adequately, could endanger the future stability of her development path. Towards intervention, the PACSICOM and Cape Town Conferences were organised, and the two major undertakings were later coalesced into the African Process on the Development and Protection of the Marine and Coastal Environment. While it focuses on the protection of the environment, the main thrust of the African Process is the creation of enabling conditions for long-term sustainable development. This paper assesses the status of the African Process and identifies major new developments and key problem areas requiring further attention.

Introduction

I consider it a privileged honour to be invited to participate in the panel on "Implementation of International Agreements on Oceans and Coasts and their Harmonization," and to present a paper on "The African Process".

"The Global Conference on Oceans and Coasts at RIO + 10" takes place at an important juncture for the African continent, and indeed the global environment, as we stand at the threshold of the new environment millennium, which provides novel challenges and opportunities, but also presents new risks which require innovative solutions especially for nations with economies in transition. It is pertinent to note that this Global Conference comes at the heels of the United Nations General Assembly resolution to convene the World Summit on Sustainable Development (WSSD) in South Africa in 2002 to review the status of implementation of the goals adopted at Rio in 1992, and to revitalize regional and global commitment to sustainable development. It also follows the First Steering Group Meeting of the Global Environment Facility (GEF) Project on the Development and Protection of the Coastal and Marine Environment in sub-Saharan Africa held in November, 2000, at the Hague, Netherlands. At the meeting, a framework was developed for the identification and characterization of environmental hot-spots and threatened sensitive areas, resource and amenities warranting special protection, in order to design a programme of intervention and solicit support for implementation in sub-Saharan Africa.

Today, this conference, which is stimulated by the NGO community and organised in collaboration with the public sector, has created a forum for environmental experts, legislators and the active civil society to assess the progress achieved on the marine and coastal environments since the earth summit in 1992 and to

provide inputs for the upcoming WSSD in 2002. It is on this premise that this paper on "The African Process" is discussed, based on the theme "Implementation of International Agreements on Oceans and Coasts and their Harmonization."

The African Challenge

Global perception of environmental matters has included some very important issues concerning the impact of development activities on the African regional habitat. Events in the continent have created an urgent need to reconcile regional and national interests and initiatives with the paradoxical issues of development and environment, taking into account the factors that are relevant towards achieving sustainable development in the continent. In consideration of these and the need for positive and timely action, priority attention must be directed at capacity strengthening towards addressing identified key challenges.

In recognition of the common nature of the priority environmental problems, and of their underlying social and economic causes, as well as their transboundary implications and globalisation undertones, early attempts were made by the sub-Saharan nations to mitigate and reverse the spreading degradation of the coastal and marine environment and their resources. The adoption of the Abidjan Convention in 1981, and the Nairobi Convention in 1985, were a clear indication of the political and shared leadership roles of the sub-Saharan countries to cooperate in efforts to counter the degradation of coastal and marine resources.

Initial Action Plans

The initial thrust of the follow-up action plans to the two conventions was on marine pollution control, a subject of pressing need requiring a harmonized regional policy and strategy. However, experience soon showed that underdevelopment, or improper development and resources use, are fundamental to most of the environmental problems and that meaningful and lasting environmental protection is intrinsically linked with socioeconomic development. Therefore, the cardinal thrust of the action plans gradually shifted from a sectoral approach with focus on pollution control to integrated coastal zone planning and management as the focal tool through which solutions are being sought. In particular, the state of the sub-Saharan African environment has come into much focus in contemporary times.

The State Of The Sub-Saharan African Environment:

The Sub-Saharan African coastal and marine environment embodies 22 countries in West Africa and 10 in East Africa includ-

ing the Island countries. The aggregate coastline of the 32 sub-Saharan states exceeds 12,000 kilometers. Sub-Saharan African coastal ecosystems include barrier/lagoons, deltas, wetlands, mangroves, coral reefs and seagrass meadows.

Disregarding amenity values, the most important resources from an economic standpoint are fisheries, oil and gas, and other minerals including sand, limestone and diamonds. Tourism also makes an important contribution to the economy of the region.

Sub-Saharan Africa is rapidly growing more complex. The region today faces a multitude of new challenges at an immense scale, which if not addressed adequately, could endanger the future stability of her development path. During the United Nations Conference on Environment and Development in 1992, it was made clear that development, environmental protection, and civil and international peace are interdependent and indivisible. Reports such as ACOPS Conference on Cooperation for Development and Protection of the Marine and Coastal Environment in Sub-Saharan Africa (December, 1998), and AMCEN'S Role in Sustaining Africa's Future (April 2000), provide a compelling assessment of the serious nature of the environmental threats that can hinder the sustainable development of the sub-Saharan region. UNEP's Global Environment Outlook 2000 also indicates that as increased resource demands continue to cause the region's ecosystems to deteriorate, the result could be devastating for human development and the welfare of biotic species.

Following from these considerations, the need to evolve innovative approaches to address new requirements for development and protection of the environment becomes more apparent, particularly in the face of the following unveiling crucial issues which reflect the state of the environment:

- (i) The region is facing a multitude of problems threatening natural resources, some stemming from existing resource exploitation practices. Development and environment-related problems are exacerbated by a lack of effective institutional control, which has encouraged indiscriminate exploitation of resources beyond the capability of the environment to self-recover. For example, the over-exploitation of fishery stocks is caused mainly by poor regulation, inappropriate quotas, selective harvesting of preferred species, use of inappropriate gear and harvesting of small size classes and reproductive females.
- (ii) Coastal areas are the most densely inhabited and industrialized parts of almost every sub-Saharan country with approximately 50% of the population residing within 100 km of the coastline. The coastal areas are also the location of the main import and export centres and provide food supplies for the landlocked countries of Africa. Essentially, all of the sub-Saharan countries are under increasing economic stress derived from global and regional economic driving forces. Under these circumstances, the limited resources of many countries are forcing the assignment of relatively low priorities to the critical issues of environmental protection and the conservation of natural resources. Significant

improvements in environmental quality and the protection of natural resources are ultimately contingent on improved economic condition of the people inhabiting sub-Saharan Africa. Recognition of this is essential if any long-term progress is to be made in improvement of socioeconomic conditions in the region.

- (iii) The rate of industrial development in the region during the previous four decades has been substantial, especially in West Africa. According to a UNDP/GEF 1993 report, about 60% of the industries in the Gulf of Guinea States are located within the coastal zone. Therefore, as a result of migration from the countryside, urban areas have grown at 4% annually during the last 30 years. Urban services are therefore, unable to keep pace with urban growth resulting in inadequate provision of housing, roads, sanitation, clean water, waste disposal and social services.
- (iv) Growing population and the constant search for more land for agriculture have resulted in the systematic destruction of the region's forests and drainage of wetlands. Forests are also constantly under threat because of the demand for land to meet the fuelwood and construction needs of an ever-increasing population, and to satisfy the market for timber primarily for export from the continent. About 60% of the original forest and mangrove habitats have already disappeared, and about 150,000 hectares continue to be lost annually. Deforestation is a major factor in increased soil degradation and erosion. Also with the loss of these habitats, wildlife populations have declined and the number of threatened species is increasing at a worrisome rate.
- (v) Oil and gas exploitation, although limited to a few countries principally Nigeria, Gabon, Benin, Cameroon, Senegal and Cote d'Ivoire, is a resource of major economic importance to the region, accounting in the case of Nigeria for about 90% of her foreign exchange earnings. However, poor infrastructural development, low level investment portfolio, and bureaucratic processes in project investment decisions have resulted in large-scale flaring of uncommitted natural gas in petroleum-producing sub-Saharan African nations, thereby turning a beneficial but depleting asset into a wasting resource. The rate of gas flaring ranges from 68% in Nigeria to over 97% for the Cameroon compared to about 2% of gross production in non-OPEC countries. Gas flaring is associated with global climate change and the related negative effects of global warming, deforestation, flooding and inundation of coastal lands, and acid rain. Furthermore, arising from extreme events associated with climate change phenomena, coastal areas are forced to adapt to the resulting environmental changes and therefore, saddled with the enormous costs of addressing problems associated with more frequent and intense destructive weather patterns, rising sea levels, salt water intrusion, and fundamental changes in agricultural system and marine-based resource habitats (Dabeiko and Simmons 1997).
- (vi) Although oil and gas form the most important mineral reserves in the coastal zone, other minerals including hematite, mag-

netite, limestone, sand and diamonds are also exploited. However, unplanned and uncontrolled rate of mineral exploitation in the region are causing widespread degradation of coastal areas and silting of rivers with concomitant effects on living resources.

- (vii) Touring is a growing industry in some sub-Saharan countries. The natural beauty of the coastline, combined with favourable climatic conditions, results in coastal tourism being an important foreign exchange earner for such countries as Gambia, Senegal, Mauritius, Tanzania and Namibia. In the Seychelles, tourism accounts for 18.5% of the GDP and more than 70% of foreign exchange earnings. In South Africa, tourism generates more than US 1.2 billion dollars annually with over 20 million international and domestic visitors to coastal areas each year.

However, poorly planned coastal development is leading to increased pollution of coastal areas of the region. The degraded quality of coastal waters and coastal landscapes seriously threatens some traditional tourist destinations and is becoming an impediment to further tourism development. Coastal development is also the dominant cause of the accelerating loss of many natural ecosystems and wetland habitats with significant but often unrecognised amenity values.

- (viii) The marine resources of Africa, including fish, coral reefs and marine mammals and some reptiles are declining at alarming rates, and the major challenges to them come from unscrupulous fishing, shell collection, tourism, coastal silting and pollution. Currently, Africa's marine resources are not adequately protected under the Abidjan and Nairobi Conventions of 1981 and 1985, respectively, because there has been a marked downward trend in the implementation of both conventions, even as supplemented by the Maputo and Cape Town Declarations.

- (ix) The total salt-water fish harvested by countries of the region was 3.9 million tonnes in 1994 but this figure excludes the catch of foreign fleets that is not landed in the region. FAO has estimated the total potential fisheries yield as 7.8 million tonnes per year. The further development of aquaculture is limited by deteriorating water quality, destruction of critical habitat for recruitment of stock and the lack of financial and human resources.

These various trends and problems reflect the increasing stress on coastal and marine areas of the sub-Saharan region. Land degradation, deforestation, loss of biodiversity, loss of wetlands and threats to fisheries and other living resources, and the pollution of coastal waters with sewage and industrial effluents are continuing. Capacity constraints limit access to information for many in the continent, and therefore knowledge of critical issues involving the need to take action to conserve, rehabilitate and protect the sub-Saharan African environment is often lacking. Thus, the low level development, or lack of institutional capacity, adequate infrastructure and financial resources continue to frustrate the reversal of fortunes in the region.

Directly deriving from these issues, the state of the African environment, and in particular sub-Saharan Africa, has come into much focus in contemporary times.

The African Process

As at today, the protection of the coastal and marine environment of sub-Saharan Africa is regulated by two UNEP's regional conventions:

The Nairobi Convention which covers the area from Somalia to Mozambique, including the Island states.

The Abidjan Convention which extends to the Atlantic side, starting from Mauritania, and down the coast to Namibia.

However, both of these instruments were negotiated in the early 1980s and for many years, very little action-based progress has been made. It was for this reason that the Government of Mozambique,, together with UNESCO and the Government of Finland organized the Pan-African Conference on Sustainable Integrated Coastal Management (PACSICOM) in Maputo, in July, 1998. This was followed by the Cape Town Conference, which was organised by the Government of South Africa acting with UNEP and ACOPS in November 1998. *These two major undertakings were coalesced into what is now called the "African Process on Development and Protection of the Marine And Coastal Environment," or the AFRICAN PROCESS.*

While it focuses on the protection of the environment, the main thrust of the African Process is the creation of enabling condition for long-term sustainable development. The importance of this concept to Africa's socio-political scenario is that it uplifts protection of the environment to the level of political priority through its direct linkage with the key socioeconomic issues of the environment, namely:

- Poverty alleviation
- Job creation
- Improvement in health
- Enhancement of educational standards
- Equal opportunity for all

At the summit of the Organization of African Unity (OAU) which held in July 1999 at Algiers, the Heads of State considered the report submitted by the Government of South Africa on the result of the Maputo and the Cape Town Conferences and endorsed the Cape Town Declaration and adopted a resolution recognizing the importance of the Abidjan and Nairobi Conventions as framework for action. In addition to the action plans of the Abidjan and Nairobi Conventions, there are a number of sub-regional programmes and arrangements, most of them in the form of projects with specific limited goals and duration. Among those that deserve contemporary mention at this conference are:

- (i) GEF- supported projects on Water Pollution Control and Biodiversity Conservation in the Gulf of Guinea Large Marine Ecosystem. This will be further discussed.
- (ii) UNESCO'S COMAR project on management of African coasts and marine areas.

- (iii) Eastern African Coastal Area Management (SEACAM) Programme and the associated Marine Science Programme for Eastern Africa.
- (iv) IUCN's Regional Programme in Eastern Africa focussing on protection of coral reefs, conservation of turtles and marine areas requiring special protection.
- (v) IMO's regional and country programmes promoting integrated waste management and response capabilities to oil pollution.
- (vi) European Union's Integrated Fisheries Management Project in Eastern Africa.
- (vii) European Union's Regional Environment programme of the Indian Ocean Commission (IOC).
- (viii) GEF-supported World Bank project on oil spill contingency planning in Eastern African Countries.
- (ix) Fisheries Surveillance Project in selected Western African Countries with support of the World Bank and the Government of Luxembourg.
- (x) CIDA- supported Support Programme for Fisheries Management in West Africa in the framework of the Sub-regional Fisheries Commission.

The Global Environment Facility Medium Size Project (GEF-MSP)

As a follow-up to the Africa Process, and through the joint efforts of ACOPS and the Intergovernmental Oceanographic Commission (IOC) of UNESCO, a GEF Medium Size Project (MSP) on Development and Protection of the Coastal and Marine Environment in Sub-Saharan Africa was launched. Eleven African countries are participating in the project through a Working Group on Integrated Problem Analysis (WGIPA).

The Initial membership of the Working Group, which reports to the OAU, comprised:

- South Africa
- Mozambique
- Kenya
- Seychelles
- Ghana
- Cote d'Ivoire
- Nigeria

Today, I wish to pay glowing tribute to the most successful development of the GEF-MSP. Its solid implementation has led both UNEP and the GPA Coordinating Office to provide resources for expanding it to include additional four countries, namely:

- The Gambia
- Mauritius
- Senegal
- Tanzania

On the basis of the reports of the eleven national teams, a Regional Comparative Analysis is being developed which will enable this initiative to become truly sub-Saharan in scope.

The First Meeting of the WGIPA was held in December 2000, in Paris. A recent meeting of WGIPA was held in September, 2001, at Cape Town, South Africa, to provide an overview on the advancement of the second phase of this GEF project, which deals with the development of regional and national programmes of intervention. It is expected that the output of this project will help the development of national project proposals to be presented at the Partnership Conference in South Africa in 2002, preparatory to the World Summit on Sustainable Development.

Objectives Of The GEF-MSP Sub-Saharan Africa Project

The overall goal of this Project is to assist sub-Saharan African countries in achieving sustainable management of their coastal and marine environment and resources. The main objectives of the project are as follows:

- to identify hot spots, that is, areas, sites or living resources of regional and global significance that are suffering measurable degradation;
- to determine the sources/causes of this degradation and the associated scales of impact (national, regional and global) to provide a basis for calculating incrementality at regional and extra-regional scales;
- to identify areas, sites and resource of regional significance that, although not currently degraded, are threatened with future degradation either because of the sensitivity of the receptor or the magnitude of the activity posing the threat;
- to determine, through root-cause analysis, the fundamental causes of the damage or threat posed;
- to design a programme of interventions, including demonstration projects and pre-investment studies, addressing problems of regional priority; and
- to present the programme of interventions at the Partnership Conference for the Development and Protection of the Coastal and Marine Environment in sub-Saharan Africa, in order to solicit support for the implementation of the programme.

The programme is envisaged as a range of interlinked regionally coordinated country-driven activities focusing on the priorities established in the Project. The subsequent interventions to be supported via commitments made during the Partnership Conference will be directed towards:

- ameliorating the contemporary degradation of areas, resources and amenities that have been assigned priority at a regional level. Initial emphasis will be devoted to pre-investment studies designed to determine the efficacy and value of larger-scale interventions for which funding can then be attracted; and
- increasing the margin of safety for the protection of areas, resources and amenities threatened with future degradation because of continued or envisaged human activities in sub-

Saharan Africa. The application of integrated coastal management including river catchment basins in demonstration projects will be considered as a unifying approach to developing the mechanisms for such increased protection.

Programme Of Intervention

A programme of intervention will be prepared. These interventions will address specific issues of regional priority such as: management of fisheries resources; control of coastal erosion; integrated management of river basins and coastal zones, including their living resources; pollution control; protection and conservation of freshwater resources; development of economic, legal and administrative instruments stimulating environmental protection and sustainable use of resources; and adaptation to or mitigation of the impacts associated with expected climate change.

Outputs of these activities will be used as the basic inputs for the Partnership Conference that will be expected to review, prioritise and endorse, as deemed appropriate, the proposals for:

- a) preinvestment studies in areas, sites or resources identified as regionally significant "environmental hot spots",
- b) programmes for the protection of regionally significant environmentally sensitive areas, sites or resources threatened by anthropogenic activities and warranting additional protective measures; and
- c) implementation of regional projects proposed for direct implementation through partnership arrangements.

ACOPS has been asked, as a facilitator of the Partnership Conference, to liaise with the existing GEF Projects. The need for co-ordination has been emphasised at the most recent meetings of COPs of the Nairobi Convention (Mauritius, Oct./Nov. 1999) and the Abidjan Convention (March 2000) and also at the meeting of AMCEN (April 2000). No efforts will be spared to ensure full linkage between this project and regional GEF programmes in Africa and also those programmes funded and steered by other agencies and Governments. This will ensure that inputs for this project are passed on to other programmes, thus preventing the possibility of overlap.

Specific And General Stakeholder Involvement

The principal stakeholders in the execution of this project are Governments, at a level which involves the full cabinet support. Concrete involvement of Government will be ensured through regular meetings of the Preparatory Committee at which they are represented at the ministerial level. In view of the fact that AMCEN itself is a member of the Preparatory Committee, a good liaison is ensured with all African Governments. A further control mechanism is the OAU itself to which the Preparatory Committee reports in accordance with terms agreed in the Cape Town Declaration.

The ministers attending the Cape Town Conference have made a major step in recognising the need to involve the civil society and asked for its representative to be included on the Preparatory Committee. This process has started and a roster of several NGOs

already observes, and takes part in the work of the Preparatory Committee on a rotational basis.

Expected Outcomes Of The GEF-MSP Sub-Saharan Africa Project

The Project will provide a foundation both for the future rational allocation of limited national resources of the developing countries within the sub-Saharan region and for securing support from external partners for priority actions. Rational prioritisation is the *sine qua non* for optimising the effectiveness of both remedial and preventative actions. An essential element of this project is therefore the convening, with external assistance, of a Partnership Conference to attract partners and co-financing for priority actions. This course of action was agreed and endorsed by both African Ministers and external partners at the Cape Town Conference.

Implementation of the project will therefore, lead to the following outcomes that would not be otherwise achieved:

- (i) Recommendations to national authorities and international community on measures and interventions for the development and protection of the marine and coastal environment in sub-Saharan Africa in order to deal with the following problems and issues:
 - Control or elimination of environmental hot-spots in coastal and marine regions of sub-Saharan Africa;
 - Protection of threatened sensitive areas, resources and amenities warranting special protection;
 - Concrete project proposals serving as the basis for bilateral or multilateral projects to be implemented in partnership between African and non-African countries and institutions ;
- (ii) Assessment of the root-causes of the environmental problems in the marine and coastal regions of sub-Saharan Africa;
- (iii) Adoption of the list of internationally agreed priority hot-spots and sensitive areas in the marine and coastal regions of sub-Saharan Africa; and
- (iv) Adoption of the priority listing and securing funding for agreed actions as per the findings of the project.

Directly deriving from the above approach, the gaps between existing GEF projects are generally known on the basis of assessments, which are typically carried out. In fact, the ongoing follow-up projects for some of the regional GEF projects specifically incorporated assessment workshops to identify gaps emanating from the original projects so that their proper follow-up is ensured. A regional case example of such project is the *Gulf Of Guinea Large Marine Ecosystem Project*.

Regional Case Example: The Gulf Of Guinea Large Marine Ecosystem Project

The GEF Operating Strategy calls for the development and implementation of projects in the International Waters Programme that can achieve global benefits. The Guinea Current Large Marine Ecosystem (GCLME) project is an ecosystem -based effort to energize a paradigm and resource sustainability. The overall

objective is to shift from short-term sector-by-sector driven sustaining the production potential for ecosystem-wide goods objectives to a long-term perspective, and from managing commodities to management and services. The GEF Project Pilot Phase comprised a six-country Gulf of Guinea Large Marine Ecosystem (GOG-LME) project.

One of the key outcomes of activities carried out under this project will be the preparation of the proposals for intervention and securing of funding for agreed actions as per the findings of the project. In turn, a concrete programme of interventions will evolve, serving as the basis for bilateral or multilateral agreements to be implemented in partnership between African and non-African countries and intervention agencies. A major challenge in the project is to ensure that the resources and external assistance provided to sub-regions, including those to the Nairobi and Abidjan Conventions, are focussed on priority issues whose solution offers the greatest net benefits to the region. This, in turn, requires that assessments of damage and impediments to environments be holistic and consider all causes of degradation, in order to ensure the implementation of effective protection measures.

A planned new programme is to extend the present Gulf of Guinea project from 6 to 16 countries, all of which border on the Guinea Current LME. The new project would assist these 16 countries in making changes with a view to ensuring that human activities are sustainably conducted in the different sectors. A key objective is to ensure that the GCLME and its multi-country drainage basins can sustainably support the socioeconomic development of the region in a manner that is environmentally realistic and does not go beyond the capacity of the environment to absorb. The project's goal is to build the capacity of Guinea Current countries to work jointly and in concert with other nations, regions and GEF projects in West Africa to define and address transboundary priority environmental issues within the framework of their existing responsibilities under the Abidjan Convention and its Regional Seas Programme.

Future Perspective: The Partnership Conference On The African Process:

The Partnership Conference on the African Process for the Development and Protection of the Coastal and Marine Environment in sub-Saharan Africa is planned for 2002. The concept of the Conference was conceived by the Ministerial segment of the Cape Town Conference and I am proud, as a Vice-President, to note that ACOPS has played an instrumental role in assisting African countries, including my own, in the preparation of this important event. The Partnership Conference should bring together all stakeholders (representatives from African and non-African countries, private sector, intergovernmental and international organisations, non-governmental organisations and other partners) for the purpose of promoting the development and protection of the marine and coastal environment in sub-Saharan Africa.

At this juncture, permit me to share with you my vision of what the Partnership Conference my accomplish. This conference is designed to achieve the following aims:

- To become a major boost for the World Summit on Sustainable Development in terms of allowing African countries to demonstrate their resolve in dealing with sustainable development, and also in providing an opportunity for external partners to provide their goodwill in assisting one of the poorest regions of the world to achieve this important aim.
- To give a large incentive to the development of sub-regional and other regional projects under the umbrella of international waters in GEF.
- To provide useful input into a further stage of the international process, namely the Euro-African Process, which was set up as a permanent institution following the success of the Cairo Summit, held in April 2000.
- To provide benchmarks for bilateral co-operation.
- To serve as an important tool for intra-Africa co-operation and, as such assist the peace process in our troubled continent.
- To strengthen the regional conventions in sub-Saharan Africa.

Preparatory Committee For The Partnership Conference

The Preparatory Committee for the Partnership Conference was established by the Cape Town Conference. At the 37th Summit of the Organization of African Unity (OAU) in July 2001, there was a resolution of all African Heads of State, which among other issues:

- endorsed the generous offer of the Government of Nigeria in its capacity as the Presidency of AMCEN, to convene not later than February 2002, a high level preparatory meeting of the Super Prep-Com of the Partnership Conference;
- endorsed the proposal to convene the Partnership Conference in conjunction with the World Summit on Sustainable Development (WSSD) at the level of Heads of State, and called upon the African partners to be present at the highest level;
- invited all African States to support and actively participate in the implementation of the African Process, and to liaise through the Preparatory Committee, on preparation of the Partnership Conference.

The Preparatory Committee has adopted a detailed work plan and timetable of activities that would lead to a successful Partnership Conference.

The Super Prep-Com meeting for the Partnership Conference is slated for February, 2002, in Abuja, Nigeria, and will be chaired by the President of the Federal Republic of Nigeria, His Excellency, Chief Olusegun Obasanjo.

The Super Prep-Com meeting will put final touches to the programmes and projects identified through the MSP project and will also finalise strategies for the hosting of the Partnership Conference in Cape Town. The importance of the Super Prep-Com meeting can not be over emphasised. Hence the President

of the Federal Republic of Nigeria has approved the formation of the Preparatory Committee for the hosting of the Super Pre-Com which will put in place all local and International arrangements for the hosting of the meeting in Abuja. With this and for once, Africa can start to put in place programmes that will ensure sustainable management of our coastal and marine resources.

Nigeria's Position In The African Process

The project of the African Process is accorded high priority in Nigeria's environmental programme. The nation espouses the African Process, especially since it transcends a purely environmental agenda, and also promotes sustainable economic development. Nigeria has played an effective role in the African Process, and actively participated at the Cape Town Conference in November 1998. Furthermore, since we assumed the Presidency of AMCEN in April 2000, Nigeria joined the Preparatory Committee as a representative of the entire African continent. Nigeria is one of the countries in which the assessment of root cause analysis, identification and prioritisation of environmental hot spots and assessment of sensitive areas is being carried out, in preparation for the Partnership Conference.

As Minister for Environment, I have committed Nigeria's full support to the Chair of the Preparatory Committee to playing a key role in mobilising the support of all countries on the African continent through AMCEN, to the African Process. As a further plus for the environment, it is also a happy coincidence that the Chairmanship of the Preparatory Committee is held by another Vice-President of ACOPS, the Honourable Rejoice Mabudafhasi, Deputy Minister of Environmental Affairs and Tourism of South Africa, who shall forge a common front of all coastal countries in sub-Saharan Africa. This process, as well as that of GEF and its constituent organisations, namely the United Nations Environmental Programme (UNEP), the United Nations Development Programme (UNDP) and the World Bank, is likely to come up with a string of other projects relating to waters and totalling some 300 million U.S. dollars.

Sustainability Of The African Process

The major risk in working on environmental projects in Africa is that poverty is so endemic and acute, and political instability and conflicts so widespread, that environmental issues are accorded in reality a very low priority indeed. Whilst all these factors still prevail, it is suggested that activities leading to this Project have built an unprecedented degree of political support and consensus, culminating in an endorsement by the OAU Heads of State Summit (July 1999, Algiers and July 2001, Lusaka).

The issue of sustainability is more complex. However, leaders of the Preparatory Committee for the Partnership Conference have made it amply clear that if Africa wishes to rely on a continuous support by external partners, a lot of preparatory work has to be done. Some Governments have already earmarked national resources in order to ensure that this process works. It is therefore hoped that the willingness of some African countries to regard environment as an economic resource would encourage all African leaders to follow the path of sustainable support, and that this in turn will stimulate partners to provide major investments.

In fact, the UK Government already announced in the Cape Town Conference that in view of solidarity displayed by African countries, it would provide over 30 million dollars towards responsible code of fisheries projects in West and Central Africa. In other words, one of the principal factors which discouraged donors to invest major resources towards environmental protection in Africa in the past, was their perception that there was insufficient commitment by African Governments to drive this process. It will be noted that the Partnership Conference will serve effectively as a donor meeting which will review the Programme of Intervention. It should be borne in mind that this whole activity is very much action driven and hopes to ensure long term support to provide remedial measures to deal with the problems which will be identified in the course of other relevant projects in the region.

Recommendations For Further Action:

From the foregoing, the following recommendations are made in line with critical issues that require the further attention of Africa and the international community within the framework for sustainable development *vis-a-vis the African Process*:

- data collection, analysis, collation and storage, and the maintenance and accessibility of regional data inventories;
- food security towards the alleviation of poverty; sustainable, coordinated training programmes;
- strengthening of the two existing conventions, i.e. Nairobi and Abidjan; and
- expanding the scope of current conventions to wider than coastal and marine matters.

It is also pertinent to note that in order to achieve the above set goals, it will be necessary to implement the following action plans:

- build the political will and visionary leadership relating to sustainable development;
- build networks and partnerships in the region and with Overseas Organisations to ensure capacity building and maintenance;
- avoid the brain drain, recognise what we have and remunerate accordingly;
- use experts from the region in preference to overseas experts as far as possible;
- convince finance ministries and others in government about the importance of the environment;
- capitalise on existing success stories; and
- develop a workable, different economic model to facilitate socioeconomic upliftment within sustainable environmental settings.

In addition, the following related priority issues require further attention for timely resolution:

- securing sustainable funding streams, through partnerships between private and public sector stakeholders in the region and with the developed world;

- by whom and how the framework for sustainable development should be developed and maintained;
- what mechanisms would be used to coordinate between current initiatives; and
- the geographic extent of the framework agreement, that is, African or sub-Saharan, etc.

Summary And Conclusion

The challenge facing the African environment is immense. It therefore requires the cooperative efforts and timely attention of all stakeholders to manage the process of halting and reversing its degradation. We must trail this route if we are to ensure that its sustainable development and preservation will be a reality in our time.

Directly deriving from this clarion call, the gravity of the environmental challenges facing us is poignantly underscored by the compelling need to pool our common efforts to implement the following action-based activities, that is:

- (i) to preserve Africa's rich biodiversity, habitats and ecosystem through the formulation and implementation of policies and enforcement of laws designed to protect the regional environment, while at the same time, ensuring the livelihoods of the ever-expanding population.
- (ii) to protect, manage and develop Africa's coastal and marine environments including the maritime zones outside the national jurisdiction of coastal States.
- (iii) to support AMCEN as the major intergovernmental body working on the African environment, so that it may realise its full potential as a regional environmental mechanism capable of providing guidance on policy, and direction and coordination towards implementation. Collectively, African nations under the umbrella of AMCEN, should now focus on identifying key interventions and possible initiatives to help implement the clear goals and priorities that were the foundation basis for the regional body, to bring about concrete results in order to ensure that the benefits of shared leadership for the environment are felt by all.
- (iv) to enhance the new and growing perception that today, there is sufficient commitment by African Governments to drive the African Process, and to undertake a range of substantive responsibilities for a number of thematic and cross-sectional areas in Agenda 21, as they affect the continent at the upcoming World Summit on Sustainable Development in South Africa in 2002.

The benefits derivable from a successful African Process are monumental, for example:

- (i) The protection of the coastal belt and the oceans is a prime laboratory for testing the linkage between the protection of the environment and sustainable development.
- (ii) Safeguarding the oceans enhances food security, and by protecting fisheries assists in the alleviation of poverty and improving the health of the population.

- (iii) Protection of the sea safeguards economic security, especially by enhancing sustainable eco-tourism and thus strengthening the economic security of African nations.
- (iv) Prevention of unacceptable environmental degradation is a key ingredient to social, and therefore, political stability.
- (v) Through firm and concrete commitments to the African Process, African countries display a harmonized approach to the identification of key problems and characterizing trans-boundary issues.

In conclusion, a successful African Process will be a helpful tool for foreign policy, an amalgam which binds countries together. Africa that cares for its strategic resources is a more prosperous Africa, and a more politically stable Africa. This enables the continent to enhance the role of its private sector and also make the continent a more valuable partner for external stakeholders. In addition, efforts towards the protection of the region's coastal and marine ecosystems, and indeed the African environment, can also assist in strengthening of the peace process in various African countries. Therefore, the African Process must be made a reality in our time. Thank you.

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*Republic
of Korea.*

CLOSING STATEMENT TO PANEL 1: MINISTERIAL PERSPECTIVES TO OCEANS AND COASTS AT RIO+10

Honorable Vice Minister Seoung-Yong Hong
Ministry of Maritime Affairs and Fisheries, Republic of Korea

Excellencies, Ladies and Gentlemen,

I'd like to thank all the panel speakers for their excellent presentations. Their perspectives, these valuable inputs of the panelists, will be the critical thrusts and edification for the ongoing development of ocean governance.

At this Paris juncture before the World Summit next year, we can check if there is any deviation from our navigation and reset our charts. We can expedite the remaining course by benchmarking others' success story which avoiding similar perils that may lurk in our course.

As I suggested in the beginning of this panel, I would like to summarize the dignitaries' presentation in accordance with three categories; vision, ocean governance and the strategic action plan. I would like to deliver only the key words.

Establishment Of New Vision

We have consensus on the fact that there should be balance, caution, and especially vision for the sustainable development of oceans and coasts. Our common future will depend on the extent to which people and leaders around the world develop the vision over better world and strategies, and the will to achieve it.

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

Ocean Governance

Ocean governance is the sum of the many ways, individuals and institutions, public and private, manage their common affairs in marine domain. The creation of adequate ocean governance mechanisms is complicated because it must be more inclusive and participatory than in the past. The ocean governance must be flexible enough to respond to new problems and new understanding of older ones. A multi-faceted strategy for ocean governance, therefore, is required.

Long-Term Strategic Plan

The strategic terrain is now simply different from what it was even five years ago. With the recognition of sustainable development, long-term plans of nations are becoming more and more interwoven locally, regionally, nationally and globally into a seamless net of causes and effects.

Ladies and Gentlemen, Paul Stolz defines Adversity Quotient (AQ) as the ability to change obstacles into opportunities. I have the opinion that the countries with high level of AQ will normally be the developed ones. Things are the same in the matter of ocean governance. If we can exert high level of AQ, we can get over the obstacles, and anchor at another land of opportunities in ocean governance.

Before closing this panel, I once again express my deepest gratitude to all the panel speakers, the audience and, the last but not the least, the organizing committee for having brought us to this wonderful conference. I wish all of you the best success in the remaining panels and pleasant stay in this beautiful Paris.



Canada

NATIONAL OCEANS POLICY AND PLANNING AND MANAGEMENT OF EXCLUSIVE ECONOMIC ZONES

Matthew King

Assistant Deputy Minister, Department of Fisheries and Oceans, Canada

I am pleased to have the opportunity to participate on this panel today and discuss with you the approach that Canada has taken in the development of a national oceans policy.

Over the next few minutes, I would like to:

- review some of the main aspects of Canada's Oceans Act, that established the policy priorities for a national oceans strategy;
- briefly describe our approach to policy development;
- outline the main concepts of Canada's Oceans Strategy; and finally,
- discuss a few of the lessons that we have learned along the way.

As Minister Dhaliwal noted in his opening remarks, the *Oceans Act* set out a national vision for managing the relationship between our land and our three oceans in a fully integrated and sustainable way.

In the first instance, the *Oceans Act* confirms in domestic legislation Canada's international roles and responsibilities in the territorial sea, the contiguous zone and the exclusive economic zone.

Under the *Oceans Act* the lead responsibility for implementing the Integrated Management of oceans resources is assigned to one Minister, the Minister of Fisheries and Oceans.

However, the *Act* respects the mandates and jurisdictions of other federal Ministers and other levels of government. As such, it requires the Minister to work with provincial, territorial and local governments, First Nations and Canadians in the development of the Oceans Strategy.

The *Act* is very prescriptive in that it:

- States that any Ocean Strategy must be based on the principles of Sustainable Development, the Precautionary Approach and Integrated Management.
- It identifies the ecosystem approach to conservation as being fundamental to maintaining biological diversity and productivity in the marine environment; and
- It provides a legislative basis for three key programs: Marine Protected Areas, Marine Environmental Quality and Integrated Management Planning.

From a policy development perspective, the *Act* set out two main governance challenges:

- The first was that of moving from a sector-specific, Department by Department management regime toward integrated management of oceans resources based on ecosystem considerations which cross Ministerial boundaries,

- The second was to commit to a governance regime that fully involved coastal communities in the resource planning process.

Responding to these challenges, meant re-examining how we, in government, do business.

Since 1999, we have employed a policy development approach that focussed on "learning by doing" in the implementation of the *Oceans Act*.

Over this period, we have invested \$ 60 million in the policy development process, primarily to launch pilot projects on all three of Canada's coasts and to build the requisite capacity to implement the *Act*.

Because of the governance challenges, we felt it necessary to get out into communities to support a face-to-face approach to policy development. Accordingly, my department has established oceans offices in each of the six regions of the country and we have built our internal capacity to engage with oceans stakeholders.

We now have 120 staff working on these issues, and we are aiming to double the complement in the coming year.

We have now launched over 20 Integrated Management pilot projects and identified 13 Marine Protected Areas. Through these projects we worked with a wide range of partners to test how the *Oceans Act* principles and programs can be applied in real time and real life situations.

As well, Minister Dhaliwal noted on Monday that Canada has followed up on the Global Programme of Action on the Protection of the Marine Environment from Land-based activities with a National Programme of Action that involves federal, provincial and territorial governments in Canada.

We also have in place key structures to ensure that we are engaging and informing our partners in policy development. These include a Minister's Advisory Council on Oceans and a federal - provincial -territorial oceans working group that Minister Dhaliwal announced this year, and an Oceans Management Research Network to link with and engage the academic community and to integrate natural science and social science research.

The Government of Canada will, in the coming months, formally release Canada's Oceans Strategy. The Strategy itself will formally constitute Canada's policy statement on oceans issues, and is based on the experience generated by the pilot initiatives.

The Strategy will be accompanied by detailed policy and operational frameworks for the three key programs set out in the *Oceans Act*:

The Marine Protected Areas operational framework will set out the means by which MPAs will be established in Canada, including the strong role communities will play in the process.

The Integrated Management Operational Framework is the cornerstone of our oceans strategy. It has been designed to promote collaboration, address user conflict issues and develop the movement toward ecosystem-based science necessary for decision making.

And finally, Marine Environmental Quality: We are now completing the development of guidelines to provide guidance to oceans managers to ensure that ocean related activities do not compromise ecosystem structure and function.

Currently, 23 federal Ministers are independently pursuing oceans-related initiatives. As I noted, this presents a significant governance challenge.

As such, the Oceans Strategy will also include a federal action plan that bring together all federal oceans-related initiatives under a common policy framework in three theme areas:

- understanding and protecting the marine environment;
- supporting sustainable economic opportunities; and
- international leadership

This will help to ensure that future oceans related policy and programs are developed with a front-end consideration of integrated management and ecosystem-wide impacts.

Let me share just a few of the lessons we have learned that may be of use to other governments initiating oceans policy development.

The first is that while legislation is vitally important and will ground policy development, it alone cannot bring about the change that is required.

For Canada, implementing the Oceans Act is about behavioural and cultural change. And you need to begin the change process in a way that makes sense to all stakeholders. We found it helpful to start the policy development process with those aspects of the oceans agenda that were the most readily understood and appreciated by the largest number of people.

In our case, it was Marine Protected Areas. We found that once various groups had come together and participated in the governance structures to establish and maintain MPAs, the leap to setting up Integrated Management planning bodies became a logical next step.

However, this type of change does not happen overnight. Ocean users tend to see any change in the status quo in a Zero-sum fashion. Asking groups with historically divergent mandates and opinions to accept a common policy approach requires a significant investment in relationship building.

Through our Pilot Projects, we found that the relationships that are needed to make integrated management work, develop in their own time. To rush the relationship-building process is both artificial and counter-productive.

Finally, communications may well be the key to success. Government representatives need to be committed to bringing groups together. Every group involved in the IM process might feel uncomfortable at first. As such, there is a need to constantly work with participants to ensure they know where you want to go and how you will get there with them.

This cannot be done by press release. Governments need to be on the ground, inside the planning process, listening to concerns and participating in, not directing, the search for common ground.



Samoa

SMALL ISLAND DEVELOPING STATES: TRENDS SINCE RIO

Ambassador Tuiloma Neroni Slade

Permanent Representative of Samoa to the United Nations, New York,
and Chairman of the Alliance of Small Island States (AOSIS)¹

Introduction

The scale of human activities today affect not only the large-scale physical systems of the planet, but also have consequences that reach far into the future. Most environmental problems that will require policy attention are ones that are well known, and as time goes on these problems will become more severe and pose more local as well as global challenges. The future impacts of today's decisions thus need to become more and more prominent in current policy-making.

The world's oceans play a crucial role in maintaining the health of the planet's ecosystems and serve as a valuable current and future food source for humankind. The oceans provide the only means of subsistence for many communities around the world, particularly the coastal populations like those of small island developing States (SIDS).

SIDS are widely acknowledged to be ecologically fragile and vulnerable. They face specific and unique constraints arising from their smallness, isolation, geographical dispersion and vulnerability to natural disasters. Fragile ecosystems, difficulties with transportation and communications, remoteness from markets, vulnerability to exogenous economic and financial shocks, lack of natural resources and heavy dependence on importations are known and additional constraints. These factors create significant disadvantages for SIDS, economically and in environmental terms. For SIDS, the ocean and coastal environment is of vital and strategic importance and constitutes perhaps their only real sustainable development resource.

The political commitment and direction provided by Agenda 21 and the Barbados Programme of Action (BPOA) for the sustainable development of SIDS, and their subsequent reviews, have been used as the benchmark for measuring progress and the achievements of the last 10 years. The international community recognises the special 'case' of small islands, and their situation and responsibilities as custodians of vast ocean spaces. However, the trends of the last decades show that the approach to date has not been working to the scale necessary to achieve sustainable development. Achievements have been fragmented and have not been multiplied or sustained or, perhaps, not focused in areas of greatest need. As Rio+10 is to focus, as far as possible, on actions and specific initiatives, SIDS are attempting to focus on "what next", and to look at "new" initiatives. Regional-scale ocean governance presents very real potential that has, in some cases, produced results. The development of regional approaches by SIDS provides pertinent and useful insights, and there are several worthwhile example highlighted in this paper.

Oceans and coasts are critical to the natural and cultural heritage of the world. While many marine areas support a great diversity of plants, animals and natural habitats, oceans also play an essential role in the climatic cycles and other global processes. Marine ecosystems are fundamental to the sustainable development of coastal countries. Coastal marine areas are also dominated by a nearly continuously living fringing reef, protecting the coasts from the onslaught of the waves. Associated with the reefs is a complex and diverse system of animals and plants, which use the reef as a habitat, but at the same time, provide the conditions, which are essential for the very survival of the reef.

The marine environment includes unique ecosystems and threatened species that are increasingly menaced by unsustainable use and water pollution. With rapid industrialization and absence of strict enforcement of regulations, the environment is exposed to increasing stress. For SIDS, particularly given their small size, nearly all land-based activities impact directly on the coastal zone. Activities along the shorelines are increasing, as the economy is developing. Rapid tourism expansion in just about every SIDS region has also given rise to unplanned development along the coastline, increasing pressures on the limited resources in these areas.

In the process, in all SIDS, significant marine and coastal habitats are being adversely affected as a result of increasing pollution, over-exploitation, conflicting resource use, and habitat damage and destruction. Mangroves and wetlands are filled to create real estate, leased for aquaculture (or the closure of small bays for aqua farms), and mangrove-dependent flora and fauna are threatened as a result of these habitat altering and reducing activities.

In particular, effluents from industries and coastal urban areas have impacted on the lagoon systems, and as a result many lagoon habitats are threatened by this and other pollution. Intensive fishing practices have contributed to the degradation of the lagoon and reef ecosystem. Tourist infrastructure development has also given rise to coastal habitat destruction. Degradation is traceable directly to damage by over fishing, tourism and development activities, and inactive reef management.

Whereas it is difficult to protect the biota around the entire island because of various activities, protection of specific marine areas (MPAs) is possible, and desirable. Protection of the coastal biodiversity on an island or islet may appear to be local in nature; however, isolated populations of organisms evolve and form distinct components of the global genetic pool. At the same time,

¹This paper, which reflects the contributions of AOSIS representatives and colleagues, is submitted on behalf of AOSIS.

many SIDS have taken steps to apply integrated coastal zone management practices to their coasts. While the concepts are often difficult to apply in practice, these concepts have also given rise to the idea of integrated island system management that takes on a holistic approach to conservation and management, and to the interaction between islands and the seas.

The need for broader, integrated coastal and marine resource management approaches cannot be delayed any further. The consequences of non-action are too risky, and likely to be catastrophic for SIDS.

Status of coastal and oceans issues since UNCED 1992

The political commitment demonstrated by the BPOA, has been translated into specific activities at national, regional and international levels, as each country in the SIDS regions work to define paths towards sustainable development. Island governments have committed themselves to a range of international conventions, including the UN Framework on Climate Change (UNFCCC), Convention on Biodiversity (CBD), UN Convention on the Law of the Sea (UNCLOS) and the related implementing Agreement on Straddling and Highly Migratory Fish Stocks (Fish Stocks Agreement), Global Programme of Action for the Protection of the Marine Environment from Land Based Activities (GPA), International Coral Reef Initiative (ICRI) and Global Reef Monitoring Network, Implementation of the Jakarta initiative on Conservation and Sustainable Use of Marine and Coastal Biological Diversity. New institutional arrangements, and small but significant increases in committed human and financial resources, indicate that the investment in environment management and sustainable development is ongoing.

Overview of SIDS marine and coastal issues

The marine and coastal environments represent an important natural resource for SIDS. The coastal ecosystems with its high level of biodiversity are extremely fragile, and therefore vulnerable to human interventions. SIDS economies are still mostly based on the extraction or use of renewable natural resources. SIDS are rapidly moving from production and sale of primary materials (sugar, cotton, fruits), to the sale of tourism services based on sun, sand and sea. The small size of the SIDS and their associated eco-regions may be placed at substantial risks by these activities in terms of impacts on local habitats and the species they feed and shelter. The biological resources and their related ecosystems are under pressure from developmental activities. It is estimated that two thirds of the coral reefs are at risk, and one-third are at high risk.

The importance of the marine environment to the smaller islands is even greater, especially in SIDS where the water to land ratio exceeds 30:1, and averages over 200:1 for the quartile of the smallest islands of the various regions. Stresses are occurring at a regional scale in addition to site-specific coastal and marine pollution from many watersheds. The functions of shoreline stabilization, fish nurseries, recreation and flood control provided by the coastal zone can be drastically curtailed by degradation

of coastal and near-shore environments. A number of sectors (for example agriculture, aquaculture, fisheries, forestry, energy, transportation, urbanisation, industry and tourism) have operations with potentially high impacts on the coastal and marine environment. Island shorelines provide a logistically convenient location for industrial and commercial activities, and are also critical for tourism. Coastal environments are subject to the pressures of high population and multiple economic activities across several sectors.

At the regional level in almost all SIDS, ongoing activities conducive to the sustainable management of coastal and marine resources are in progress. These include training and resource inventories, sharing of experience and production of integrated coastal area management (ICAM) plans.

In the area of fisheries management, all SIDS have institutions responsible for fisheries. Through regional cooperation SIDS can collectively negotiate fisheries agreements. The Forum Fisheries Agency (FFA) of the South Pacific region provides, for instance, amongst other services, technical support to SIDS for negotiation of fishing agreements and other arrangements with foreign fishers. SIDS in the Indian Ocean have initiated an integrated fisheries project, focusing on research, stock assessment, monitoring, control, surveillance, and preservation of species training. The Indian Ocean Commission (IOC) is developing an oil spill contingency plan, as part of its effort to control marine pollution from sea-based activities.

SIDS and reefs

SIDS have some of the world's largest reef areas, and have much larger shallow-water systems, such as sand banks, sea grass beds, and sponge beds at depths less than 100 meters. A combination of near-shore pollution and offshore over-harvesting, places the whole of this vast ecosystem at risk of collapsing. Harvesting techniques for both fish and shellfish may cause lasting damage. While pollution from outside the SIDS is a reality, the local impacts are often equally damaging.

The coastal zone contains some of the most productive ecosystems, including sea grass meadows, mangrove swamps, and wet lands and rich biodiversity reserves. Major population centers, agricultural areas, ports and other major sites for industrial and commercial activity are co-located in the coastal zone. In addition tourism is to a great extent located in the coastal region. Combined, these activities and uses have contributed towards the deteriorating quality of many coastal habitats. In addition to over-fishing, the loss of important coastal nursery areas such as mangroves and sea grass beds may have contributed to the decline in stocks.

Progress in the sustainable development of coastal and marine resources

Implementing the BPOA in the coastal and marine area has been given high priority in almost every SIDS. Awareness of ICAM has also increased. National environment management strategies (NEMS) provide a framework for implementing ICAM. Coastal zone management is assuming increasing importance in the

SIDS management systems, and are being developed to deal with the growing problems of coastal deterioration caused by rapidly expanding levels of beach tourism, growing urbanization of coastal islands and coastal sand-mining. As noted earlier, many SIDS have taken the experiences with ICAM to the stage where island systems management can be considered.

Problems of ecological fragility, close interdependence of economy and environment and vulnerability to natural hazards require the island countries to exercise great care in maintaining their natural resource bases. All SIDS regions have adopted the ICRI. The IOC and the South Pacific Environment Programme (SPREP) have developed guidelines for monitoring coral reefs and current bleaching of coral reefs.

Constraints in the sustainable development of coastal and marine resources

SIDS have been faced with a number of significant constraints in implementing sustainable development initiatives related to oceans and coasts. Principal among these are:

- **Inadequate coordination and capacity at national level for implementation**

Despite States having adopted the ICAM concept in principle, complete and effective coordination of activities between the implementing agencies, private sector and the community is yet to materialize. Inadequate coordination at national level has overloaded the capacities of governments and thereby reducing effectiveness. As it is, island governments are already disadvantaged from not having adequate levels of human, financial and institutional resources.

- **ICAM plans are not integrated into national plan**

Important efforts on ICAM, though technically innovative and successful, have evolved at local level, often leaving them isolated from the mainstream of national development planning. Such efforts have also not attracted the requisite funding, making them less effective.

- **Inadequate financial resources from national and international community**

The financial resources available to the SIDS for implementing ICAM have been inadequate to date. Not inconsiderable effort has been expended in developing guidelines and plans. On the other hand, financial resources for implementation have been scarce.

- **Lack of economic tools**

ICAMs have been seen more as an environmental tool rather than a sustainable development programme, receiving limited funding from national budgets. Many SIDS do not have the environmental tools (for example, indicators for integrating environmental considerations with economic development) that would allow governments to estimate the true cost of environmental degradation.

- **Inadequate scientific and technological means for implementation**

Because of lack of island-specific studies, SIDS often use inappropriate technologies based on concepts and criteria designed for large countries, which invariably are not suitable for small island conditions.

Major policy trends and patterns in SIDS

Coastal and marine resources

SIDS in all regions have made progress towards sustainability of coastal and marine resources. Significant development has been made in the initiation and adoption of regional action plans reflecting priorities, capacity and resource needs. As noted above, action plans providing framework for implementing the BPOA in the coastal and marine area have been given high priority.

Integrated coastal area management (ICAM)

Most countries have adopted the ICAM concept. Guidelines have been developed, and pilot projects have been carried out in many island States. The NEMS provide a framework for implementing ICAM. Cape Verde, Fiji, and Kiribati, among other SIDS, have developed such plans, but are at different levels of implementation. Some countries have established specific institutions for coastal management, like the Barbados Coastal Conservation Unit, supported by specific legislation like the Coastal Zone Management Act. Resource surveys, mapping, and hazard assessments are other activities that have been carried out within the framework of ICAM.

At the regional level, activities conducive to sustainable management of coastal and marine resources, and production of ICAM using regional guidelines have been attempted.

Fisheries management

Most SIDS have institutions responsible for fisheries. Most South Pacific countries have adopted policies on the sustainable exploitation of fisheries. Through regional cooperation, SIDS can collectively negotiate fisheries agreements. The FFA of the South Pacific region provides for technical support in licensing arrangements and access agreements for foreign fishing vessels. SIDS in the Indian Ocean, drawing in part from the experience of the South Pacific region, have initiated an integrated fisheries project, focusing on research, stock assessment, monitoring, control, surveillance, preservation of species and training. The IOC is developing an oil spill contingency plan as a part of its efforts to control marine pollution from sea-based activities.

Coral reefs

All the SIDS regions have adopted an ICRI strategy to address the concerns of their regions. Most regions have established networks to monitor the health of the reefs. The IOC and the South Pacific Regional Environment Programme (SPREP) have developed guidelines for monitoring of reefs. The current coral bleaching events are being studied by a number of countries, including many SIDS.

Regional organisations

Regional organisations have played an important role in information collection and exchange. Numerous publications on the

various disciplines of coastal and marine management have become available. These have assisted SIDS in terms of public information material and contributing to greater awareness raising. A number of networks and nodes of information exchange have been established throughout most SIDS regions, augmented by the Small Island Developing States Network system (SIDS/Net).

Capacity building

SIDS have also been the recipients of formal and informal training efforts to improve the capacity to implement sustainable coastal and marine resource management from regional and international development partners and institutions, including in the United Nations system. Through these connections, many of the States have been able to mobilise some of the necessary resources.

Major coastal and marine-related projects undertaken by SIDS

The health, protection and preservation of coastal and marine resources are fundamental to the sustainable development of the SIDS. Improved coastal and ocean management, sustainable use of coastal and marine resources, and the reduction of land-based pollution are priority issues in the maintenance of the oceans as a source of food and equally important in the development of tourism.

The critical state and importance of the marine and coastal environment demand immediate action of all SIDS. Governments need to increase efforts to enhance regional arrangements in particular, for such arrangements have possibly the greatest prospects for effective action. To ensure viability and success, the efforts of SIDS will require the committed support of the international community.

Regional governments need to be empowered and encouraged to design, monitor, and assess progress in coastal and marine activities. Natural resource accounting must be factored into the planning of economic and social activities, so that true costs of development options can lead to selection of those activities that minimise negative impacts on vulnerable and productive ecosystems.

A selection of on-going and planned activities and projects among SIDS are described briefly below. They give indication not only of the range and complexity of the issues, but also of the approaches and techniques being applied.

• South Pacific ocean development programme (C-SPOD)

Marine issues, resource management and environmental issues are key areas in regional ocean development programmes being undertaken with the cooperation of major donor countries, the UN system and international institutions.

This programme focuses on sustainable development of the South Pacific region's living marine resources, ownership and accountability for its results by the regional partner organizations. C-SPOD is working with four regional organizations - FFA, Pacific Islands Forum Secretariat (FORSEC), SPREP and the

University of the South Pacific. This approach to aid programme management has been well received, and is viewed as a test case for decision-making in the region. Some 14 project activities have been approved to date, among them the turtle conservation, tuna management plans, ocean pollution control, marine ornamentals export and marine studies post-graduate scholarships.

• Integrated management of watersheds and coastal areas in Caribbean SIDS

Integrated freshwater basin-coastal area management is essential for a sustainable future for the SIDS. This project, funded by the Global Environment Facility (GEF) covers 15 States, and primarily targets coastal area management and biodiversity, land and marine based sources of pollution. It will strengthen institutional capacity at the national and regional levels, provide assistance to countries in understanding linkages between fresh water and marine environments, integrating management of watersheds and coastal areas, and national priorities within the regional context. UNEP will be the lead agency in cooperation with UNDP and the Caribbean Regional Coordinating Unit.

• Marine ecosystem management project, Seychelles

The objective is for the successful management of Seychelles' unique and threatened marine ecosystems, with focus on identifying, managing and rehabilitating remnant ecosystems through improved skills, scientific understanding and conservation management knowledge and direction. This project is co-financed by the GEF and to be executed by the Marine Conservation Society of Seychelles (a local NGO), the Ministry of Environment and Transport (a Government agency) and the Marine Parks Authority (quasi-governmental).

• Coastal wetland ecosystem conservation and sustainable livelihoods, St Lucia

The project aims to conserve St Lucia's globally significant biodiversity by improving the capacity of natural resource management agencies to manage protected areas and biodiversity. Two new protected areas are established in critical coastal and marine zones, which help to develop economic opportunities for local communities, including nature tourism, small crafts for local artisans, and marketing of local resources (sea moss).

• Conservation and sustainable use of the barrier reefs, Belize

Belize's coastal zone contains a globally significant diversity of ecosystems and organisms, the most striking of which is the longest barrier reef in the Western Hemisphere, stretching 220 kilometers along its coastline. The project builds on consolidating and implementing the institutional structures, financing mechanisms, regulatory frameworks, and conservation. It will complement the implementation of the Coastal Zone Management Act, by undertaking targeted interventions for biodiversity protection. The 5-year project funded mainly by GEF, will be implemented by the UNDP.

• Integrated archipelagic ecosystem management and sustainable development for the Eastern Caribbean

The overall aim is to assist the Organisation of Eastern Caribbean States (OECS) to develop national, long-term integrated island management and sustainable development strategies throughout the sub-region. These national strategies will be linked and networked so as to develop a sub-regional management initiative for the Eastern Caribbean (Lesser Antilles) eco region, which will provide the building blocks for the conservation and management of globally significant biodiversity throughout this eco region. This will also be linked in and coordinated with the Caribbean SIDS GEF International Waters Project.

- **Developing sustainable island resource management strategies for conservation of globally significant biodiversity, Antigua and Barbuda**

Antigua and Barbuda depends on a particularly close relationship between eco systems functions and quality of life. The interactions of important ecosystems such as coastal habitats, forests, watersheds and their hydrology are intimately related to each other as well as to all human activities such as tourism, agriculture, and social development. Attempts are now being made to adopt a more integrated island eco system approach, and the lessons learnt would be globally transferable to other SIDS.

- **Marine biodiversity conservation, Mauritius**

The objective is to establish a system of marine protected areas (MPAs) in order to ensure conservation and protection of critical and unique marine diversity within the Republic of Mauritius. It will facilitate a consultative process and public policy of marine and coastal resource use, strategic framework, capacities for management of MPAs, and strengthen enforcement mechanisms to effectively conserve globally significant biodiversity.

- **Coral reef monitoring in member states of the Indian Ocean Commission**

The goal is to assist in the national and regional conservation of the high biodiversity of coral reefs and their socio-economic value, and in the sustainable management of their resources, through a monitoring network. Emphasis is given to linking stakeholders, providing decision-making tools for conservation, enhancing national capacity for monitoring and contributing actively through data transfer. Four States are involved in this project which is funded by the GEF and co-financed by the participating countries.

- **Biodiversity protection in the Sabana-Camaguey ecosystem, Cuba**

The northern archipelago of the SCE, in central Cuba, contains marine and terrestrial biodiversity of global significance. This diversity was threatened principally by conventional tourism development, over fishing and agro-industrial pollution. First stage of the project (1993-1997) successfully established the scientific and institutional foundations for biodiversity conservation through integrated management of the entire SCE. The consolidation stage proposed here focuses on the implementation of critical sustainable development activities, in management through zoning, establishment of protected areas, monitoring and institutional strengthening.

- **Caribbean coastal marine productivity program (CARICOMP)**

This regional scientific programme to study coastal ecosystem productivity aims to integrate the three main coastal ecosystems in the Caribbean region - mangroves, sea grasses, and coral reefs - and to assess the nature and influence of land-sea intersections.

SIDS success stories: coastal and marine

The following are among the examples of best practices highlighted by the SIDS Unit of UN/DESA in its assessment of SIDS success stories in sustainable development of coastal and marine resources:

- **CARICOM fisheries resource assessment and management programme**

This programme contributed significantly to the improvement of fisheries management capacity, and scientific knowledge of the state of stocks in the CARICOM region.

- **Cooperative programme on marine science, Singapore**

This programme, which involves a number of countries in the region, provides support to the regional effort to cooperatively optimize marine science capabilities through environmental maintenance, ensuring the integrity of the resource base and the protection of human health.

- **South Pacific ocean development programme (C-SPOD)**

Noted earlier above, this programme focuses on regional linkages and mechanisms for the sustainable development of the region's marine resources.

- **Tourism: ecological impact and environmental protection measures, Mauritius**

The severe environmental impact experienced mainly along the coast was apparent during the study of this project. Results achieved included establishing and implementing measures for coastal protection, improvement of environmental impact, sanitation, location and design aspects of tourist centers.

Emerging priorities for SIDS: oceans and coasts

Dealing with the complex issues involved, and based on the experience of the activities described, has largely confirmed the SIDS priorities set in many national action plans and in the BPOA. It has also established a pattern of emerging priorities for SIDS, as follows:

Information resources

Communication and information management

The establishment of effective communication systems, and information management of ocean and coastal systems is emerging as a high priority. In the context of the vastness and complexity of the ocean regions and fragile coastal systems across extensive EEZs, island countries share a fundamental concern as to how to access up-to-date information, improve on data collection, and access to state of art technology. Assessment of environmental assets, threats to ocean grids, coastal resources,

and projections that can be factored into planning and sustainable use thresholds are important. The efficiency of present plans and their future viability and sustainability must be underpinned by data and information systems that are reliable and of high quality and accessible to all stakeholders.

Above all, it is necessary for SIDS to improve the capacity to collect and store data, as well as the systems for their effective management and utilisation.

Action required

- strengthening and support of systematic data collection at national and regional levels;
- support for sharing and transfer of information, tools and technology, such as GIS, remote sensing with training in their use in resource management;
- consolidating the Small Islands Developing States Network (SIDS/Net) with other networks with a marine focus, as well as linking data providers, users and all stakeholders, data centers at national, regional and international levels;
- consolidating and establishing regional components of international research and monitoring programmes, such as GOOS, as a means of gathering of fundamental data and information; and
- developing and improving requisite local capacities, particularly in relation to research and data/information collection and reporting, and in order to comply with obligations under the Laws of the Sea Convention and other international instruments.

Improving the understanding of biological and physical ocean processes

An improved understanding of relevant biological and physical processes is essential to achieving sustainable development aspirations. For many SIDS there is need to intensify efforts towards this end. ENSO analysis and research effects have had far reaching impacts on the fisheries and climate, both regionally and globally. Improved predictions of weather and climate are invaluable for more effective management of fragile ecosystems and of limiting damage during periods of natural disasters.

As knowledge of biological and physical interactions in the oceans increase, it will enhance attempts to take an ecosystem management approach to fisheries, rather than managing single commercial species in isolation. Improved understanding of physical ocean processes would also be essential for management of coastal areas, in terms of erosion, sand deposition, marine diversity and pollution. It will be of particular importance in the future, as human needs and development venture further into the deep sea areas in the already active search for minerals and alternative energy sources.

The financial resources of SIDS to undertake these globally significant activities is very limited, and assistance will be required to develop adequate scientific knowledge to support sustainable development of the ocean resources. The beneficiaries of this improved scientific knowledge will not be restricted to SIDS, pro-

vided appropriate information sharing agreements are put in place, since SIDS hold globally significant living and nonliving resources, much of which has a reach beyond their EEZ.

A focus on developing and consolidating international cooperative efforts, including substantial direction and involvement from SIDS, and mobilising additional financial resources will assist in this regard.

Action required

- consolidating sustainable development of the globally significant living and non-living resources of SIDS, targeted data collection, and research on a cooperative basis;
- establishing acceptable arrangements for undertaking data collection and research; and
- ensuring additional financial resources.

Resource management

There is a growing need to support fundamental planning and management approaches within ocean-related sectors in SIDS, combined with training on ecosystem relations to the limits of the natural resources systems of oceans and their unexplored potential, and the carrying capacity of SIDS.

Sustainable planning and management frameworks

Subsistence users, community-based managers, and users of coastal and ocean resources, need to be actively engaged in the integrated and sustainable development of oceans, converting scientific knowledge to wider ecological knowledge, and utilising traditional systems.

The promotion of an integrated planning and management approach to the protection, rational use, development and sustainable utilisation and conservation of ocean resources, is one of the key issues for sustainable development in SIDS. The support of the international community is required to improve and to ensure international cooperation and coordination with regard to all these matters.

Action required

- ensuring the development of useable economic accounting mechanisms;
- facilitating improved capacity development for planners and users; and
- encouraging and supporting improved regional fisheries management arrangements.

Coastal management

Effective planning and management in coastal areas is essential to the health of ocean and reef systems. Integrated coastal management (ICM) has been considerably promoted, and many international agreements have addressed these issues.

Focus and efforts are needed to achieve the global objectives related to coastal management, and to avoid duplication that could be associated with attempting to implement the coastal components of these agreements separately.

Action required

- consolidating and improving institutional links between relevant bodies and groups involved in the development and implementation of coastal management projects;
- improving practical guidelines for achieving the objectives of global agreements within an integrated coastal management framework; and
- seeking and increasing funding requirements and modalities for ICM.

Technical assistance and financing

Funding shortages have been experienced and identified by all SIDS, and are affecting delivery of programs at the national, regional and international levels. The need for cooperative programs to maximise impact is therefore a high priority. Particular attention needs to be accorded to financial schemes that would mitigate destruction of productivity, and promote rehabilitation as well. Delivery mechanisms for financial resources need to be streamlined and cost and time effectiveness considerably improved. There are many ocean resources that are and will be of special use and interest to the global community. In order to ensure sustainable development, a consistent and predictable resource flow will be extremely valuable. For almost all SIDS there is high priority to improved access to financial mechanisms that are of an appropriate scale and efficient for the countries involved, and the issue to be addressed.

Action required

- exploring further with funding mechanisms like the GEF the prospects of SIDS- specific funding, including from the GEF small grants scheme, to cover island and coastal states, with particular emphasis on the protection of international waters;
- supporting trust funds for environmental management and sustainable development to provide consistency and predictability in long-term programs to manage ocean and coastal resources;
- pursuing the more effective implementation of the SIDS/TAP; and
- supporting the use of regional and sub-regional institutions as delivery mechanisms and modalities for the implementation of programmes.

Recommendations for action

International support for SIDS

Local level

- Dissemination of information: preparing versions of international instruments related to sustainable use of marine and coastal areas that are easily understandable to local communities and laypeople, showing linkages between different agreements and benefits to and responsibilities of SIDS.

National level

- Island management: establish and strengthen new institutional and administrative arrangements for development and consolidation of integrated island management plans. Modify existing ICAM into integrated island management, including implementation of pilot projects. Ensure capacity building for implementing integrated island management.
- Transfer of clean technology: facilitate transfer of clean technologies (cleaner production) to reduce pollutants at their source, and appropriate methods for treating sewage, industrial wastes and solid wastes.
- Community-based management: support the development of guidelines and the implementation of pilot projects for community-based management of coastal resources, as well as the development of alternative livelihoods like aquaculture and eco-tourism.
- Marine resources: exploiting living and non-living resources in the EEZ. Assess and monitor fish catch, processing and marketing by foreign and domestic fishing companies. Develop legal framework for sustainable fisheries activities. Develop management plans and policies for assessing, monitoring and exploiting resources in the EEZ.

Regional level

- Institutions: assist regional institutions to strengthen their capacity to negotiate agreements related to the use of marine resources.
- Protection of marine environment: strengthen the capacity to develop and implement national and regional action plans, consistent with the goals of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities.
- Ocean energy: SIDS have a high dependence on fossil fuels. A shift to new and renewable forms, like that of ocean energy (thermal and mechanical), needs to be galvanized.

Specific initiatives for sustainable management of oceans

- Implementation of UNCLOS, and related international instruments in an integrated manner and support for the development of related national policies and legislation.
- Boundary delimitation: improved access to survey and monitoring technologies and the resulting products in order to ensure responsible and sustainable use of ocean resources and the completion of marine boundaries delimitation.
- Ocean policies: development and implementation of regional and national policies so as enhance the sustainable management of the oceans and its resources.
- Ecosystem marine resources management: promotion of total ecosystem marine resources management through capacity building and pollution control measures, and further development of policy and program options to assist countries to sustainably manage their own marine and ocean jurisdictions.

- Geographic information systems (GIS): quantum increases in use of coastal inventories.
- Coastal vulnerability assessments: qualitative improvements in coastal vulnerability assessments.
- Coral reef monitoring: proactive coral reef monitoring.
- Resource evaluation: economic evaluation of coastal and marine resources and the design of economic and regulatory instruments.

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Finland

LESSONS IN REGIONAL COOPERATION FROM THE ARCTIC

Ambassador Peter Stenlund
Chair of the Arctic Council, Finland

The significance of regional governance in the Arctic is largely explained by the unique character of the Arctic Ocean. While it is made up of several large seas, it is essentially a semi-enclosed ocean that is shared by a small number of surrounding countries. The Arctic is home to migratory wildlife that traverses its ice cover and 20% of the world's fisheries, both of which are critical to the traditional lifestyle of its indigenous populations. It is a sink for global pollution because of the flow of oceanic and atmospheric currents, and is therefore a bellwether of global changes caused by human economic activity. The Arctic Ocean creates the context for a very fragile ecosystem that is threatened by land based activities, shipping, dumping and exploitation of offshore hydrocarbon.

New opportunities to regional cooperation on oceanic and other environmental issues emerged during the final reformist phase before the dissolution of the Soviet Union. The Arctic countries adopted an Arctic Environmental Protection Strategy (AEPS) in 1991. Five years later, in 1996, the Arctic Foreign Ministers agreed upon the Ottawa Declaration, and the Arctic Council was founded as an intergovernmental forum with a broad programme including all dimensions of sustainable development.

The Arctic Council is a unique international forum for co-operation among national governments and indigenous peoples. I am not aware of any other intergovernmental structure where representatives of indigenous peoples participate in the work on a de facto equal footing with governments. The active participation of six Arctic indigenous organizations make it possible for the Council to benefit from traditional knowledge in addition to scientific research.

Environmental Protection

The Arctic Environmental Protection Strategy, which with the establishment of the Arctic Council in 1996 was integrated into the new structure, highlighted the risks posed to human health and wildlife by persistent organic pollutants, heavy metals and long-lived radio nuclides.

Environmental monitoring and assessment became a specialism of the Arctic Council. Scientifically based decision-making is a deeply rooted principle. The Arctic Monitoring and Assessment Programme (AMAP) presented a first comprehensive report on the state of the Arctic environment in 1997. The monitoring programme is still in operation and focuses on trends in contaminants and their effects on the Arctic environment. The second assessment report will be delivered to the Ministers in autumn 2002.

AMAP's findings gave an important impetus to the negotiations on the international Stockholm Convention on POPs, signed in May this year. The Arctic Council is not dragging its feet as regards actions to facilitate implementation of this agreement. The Council has in place an Action Plan with specific initiatives on source elimination or reduction of the priority pollutants in the Arctic region.

The programme for the Conservation of Arctic Flora and Fauna (CAFF) has finalized an overview report on biodiversity and conservation in the Arctic, including marine areas. Recommendations on conservation are being prepared and will be presented to the governments of the Arctic in autumn 2002. The value of collaborative scientific research as a foundation for governance is illustrated, for example by CAFF's work in the management and conservation of ocean species.

On the basis of the Monitoring and Assessment reports and drawing on national country reports as well as regional and international information sources, the Arctic Council has in 1998 adopted a Regional Programme of Action for the Protection of the Arctic Marine Environment from Land-based Activities. This Action Programme follows UNEP's methodology.

Our Working Group on the Protection of Marine Environment (PAME) is coordinating the implementation of the regional programme and supports Arctic States in their efforts to develop national action programmes. To this end, PAME is working closely with Russia, who in September this year finalized the work on her Arctic National Plan of Action.

The Arctic Council is also engaged in work aimed at enhancing environmental safety in connection with utilization and transportation of oil and gas. The Arctic Council offshore oil and gas guidelines serve as a basis for further discussion among stakeholders. The Arctic Council has produced a Field Guide for Oil Spill and Response and the expert group on Emergency, Prevention, Preparedness and Response (EPPR) is preparing a Circumpolar Map of Resources at Risk from Oil Spills in the Arctic.

The Arctic countries have committed themselves to coordinate their efforts in international forums. A good example is the ongoing development through the International Maritime Organisation (IMO) of guidelines for Arctic shipping in ice-covered waters. This work is driven by the Arctic countries with a stake and with support of PAME.

Development

The vast, sparsely populated Arctic region is facing huge socio-economic challenges. The Arctic populations are still very dependent on traditional sources of livelihood. With technological advances, the traditions of utilizing the environment and its renewable resources for survival have often become economically unviable and sometimes in conflict with sustainable use. At Arctic Council meetings, we hear people requesting the Council to pay more attention to human development in the Arctic.

The Arctic Council Ministerial in Barrow, Alaska, in October 2000, agreed upon a strategic framework document on sustainable development - the Barrow Chapeau. With this foundation for further cooperation in place, the Arctic Council Working Group on Sustainable Development is now working hard on developing the economic, social and cultural aspects of sustainable development.

An increasingly important issue is the sustainable use of natural resources - be they living resources or non-renewables. If properly managed, expanded utilization of natural resources such as oil, gas, metals and minerals can bolster sustainable growth and well-being in the region. But without precautionary measures the traditional livelihood of indigenous and other local people, as well as the existence of vast areas of pristine nature, may be in danger.

Expanded use of natural resources and growth in tourism will lead to new and more frequently used navigation routes. This calls for reinforced efforts to enhance the security of marine transport, prevent emergencies or respond to them effectively, including smooth cross-border assistance among neighbouring states.

Climate change

Climate variability and change are posing a multitude of challenges to the future prospects for man and nature in the Arctic.

Climate change is taking place with strong, variable and largely unpredictable effects on nature and communities in the Arctic.

As an attempt to address these challenges, the Arctic Council Ministerial Meeting in Barrow, Alaska, adopted a new, ambitious project on Climate Impact Assessment in the Arctic (ACIA). The project group was asked to address environmental, human health, social, cultural and economic impacts and consequences of climate variability and change, and make policy recommendations. One of the themes subject to scrutiny is possible effects on marine ecosystems.

The start-up of the Arctic Climate Impact Assessment project (ACIA) is the latest encouraging example of the commitment of all Arctic states, and several observers, to combine knowledge and work for a common, urgent purpose.

Ladies and Gentlemen

The Arctic Council is a soft law regime. Taking this limitation into consideration, the Council has been able to contribute considerably to sustainable development in a vast sparsely populated region with a harsh climate and fragile environment. An ongoing endeavour is to make the Arctic visible and present in the preparations for the Johannesburg Summit 2002.

The basic responsibility for the implementation of regional policies lies with the states and their sub-regional administrations. An expanded dialogue between the public and private sectors is crucial. Regional cooperation is establishing a common knowledge base, is spreading information on best practices and lessons learned and has an important role in the development of policy recommendations.

Under the umbrella of the Arctic Council, the protection of the marine environment is not perceived as a separate issue. Protection is considered to be an integral element in the whole structure of sustainable development.



*United States
of America*

IMPROVING SCIENCE APPLICATIONS TO COASTAL MANAGEMENT

Ambassador Mary Beth West

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Thank you very much for the opportunity to speak to you today on emerging issues in ocean and coastal management. We appreciate the work by the Conference organizers and the Chair and other members of this panel. The United States takes a keen interest in science and technology issues and looks forward to a fruitful discussion today. I want to use my brief time to talk with you about the promise that new technologies and science bring to our responsible stewardship of the world's oceans, coasts and fisheries.

Since Rio

There is international recognition of the continuing need to understand marine life, so that national, regional and global actions that address coastal and marine issues are based on sound science. This conference provides an opportunity to identify areas of common ground in marine research and discuss opportunities for constructive engagement among all stakeholders. In fact, since Rio we have expanded our use of marine scientific research, have made strides in advancing our understanding of the world's atmosphere and oceanography and in applying this knowledge to practical on-the-ground problems. Innovations in technology, from satellites to submarines, let us see more, measure more, and learn more about the oceans than ever before.

Still, we estimate that 95 percent of the oceans remain unexplored. Oceanography is maturing from straightforward monitoring and description of exploratory observations to an understanding of oceans processes and, now, remarkably, to the emerging ability to forecast events. Physical oceanographers now use long-term, operational observing systems in portions of the world's oceans that complement the atmospheric observing systems in place for the past 30 years. The importance of a system that recognizes the relationships between the oceans and the atmosphere is best illustrated by the work that led the international science community to predict the El Nino/La Nina phenomena.

El Nino

The economic and human health consequences of the early 1980's "El Nino" events so alarmed the international community that it undertook a huge, cooperative international effort to predict the phenomena. This effort led to the development of ENSO (El Nino/Southern Oscillation), the current observing system. ENSO, coupled with computer modeling and satellite and ship observations, led to the successful forecast—six months in advance—of the onset and extent of the 1997 "El Nino" event.

Open Data Exchange

The United States is committed to a policy of full and open data exchange and recognizes the tremendous benefits this policy can have for all nations. The ENSO observing system's data, for exam-

ple, is immediately and publicly available. The result is that all stakeholders can make better informed decisions about ocean and coastal resources and meet their goals for sustainable development.

Good Governance

Good environmental governance at the national level depends on building and strengthening legal, programmatic, and regulatory frameworks and governmental institutions that establish and oversee the manner in which countries meet their social, economic and environmental goals. Good national governance is critical to our stewardship of oceans, fisheries and coasts. For instance, in order to ensure that decision makers have the scientifically based information they need to understand all relevant considerations when making policy choices, it is important for national governments to include stakeholders and major groups in broad-based public participation efforts. Inclusion of all interested parties helps to ensure that government decision making solicits the views of civil society. In turn, this helps generate the broadest possible support for policy and its implementation. Implementation of such policies by all governments is important to promote sound science-based decision-making worldwide.

Problems Persist

We all recognize that human health and livelihood are inextricably linked to the sea through food security, shoreline protection, trade, medicine, recreation and more. This link to the oceans increases in importance as the Earth's population and economic activity in the coastal zone increases. Today over 2 billion people live within 100 kilometers of the seashore and about 1 billion of those people depend on fish for their primary source of protein. Changes in marine and coastal systems can undermine the basic economic and environmental services provided by the oceans. These changes include habitat destruction and alteration, overfishing, eutrophication, changes in hydrology, sediment transport and the input of sewage and chemicals that threaten ecosystem and human health.

With so much at stake for so many of us, it is incumbent on all of us to try to make sure the best scientific information and applications are available to improve the management of oceans, coasts and fisheries. Let me describe three applications that are using new science and technologies to contribute to sustainable development of coastal regions.

Three Applications

First, in the realm of fisheries, the draft International Plan of Action to Improve Status and Trends Reporting, developed by the FAO Advisory Committee on Fisheries Research, if adopted swiftly, will contribute positively to global food security. The goal of

the Plan of Action is to increase our knowledge of the quantity of fish and other marine life and to determine whether the stocks are changing over time. This program underscores the role of marine science in the assessment of fish stocks and their sustainable use. Those interested in pure science gain a more accurate measure of the world's marine bio-diversity, while those interested in applied marine science gain a better understanding of the quantity and value of stocks in waters under their national jurisdictions. This is a win-win strategy for both scientists and policymakers concerned about improving the quality of life for coastal residents.

Second, the Global Ocean Observing System (GOOS) has been under development with substantial U.S. participation to improve the world's capacity to observe the state of the oceans. GOOS provides a framework, that when fully implemented, will ensure that the nations of the world are able to document the changes in the physical, chemical and biological state of the ocean. GOOS is sponsoring a Global Ocean Data Assimilation Experiment and a major enhancement of the ocean floats (ARGO) that collect data from the upper ocean. We will hear more from Mr. Malone about how GOOS is being applied.

Finally, I am pleased to tell you about a new US-led international initiative called "Geographic Information for Sustainable Development" or GISD.

The GISD initiative uses a new generation of earth observation data, state-of-the-art GIS-linked technologies, and field-tested geographic knowledge to provide information for sustainable development. The goal is to assist local, national, and regional agencies to address long-term challenges such as disaster mitigation, natural resource management, and poverty alleviation. The early results are demonstrating the value of international collaboration in using geographic information for a broad range of sustainable development challenges of the next decade. Right now GISD pilot projects are underway in Africa led by USAID and its collaborating partners.

One of the applications of GISD is along the coastal zone of Tanzania and Kenya—a region that is experiencing rapid urban development, growth in tourism and mariculture, and expanding population growth that threaten coastal resources and natural systems such as coral reefs and fish-breeding grounds. I am pleased to let you know that we have Mr. Jeremiah Daffa of Tanzania with us here at the conference. Mr. Daffa is managing the GISD project in Tanzania as a part of his work with the Tanzania Coastal Management Partnership. The GISD initiative provides processing of satellite data and construction of GIS maps that will help analyze rates of change over time in coastal resource and land use patterns. These analyses, in turn, will help identify priority locations for coastal action planning and conservation, aquaculture and tourism development planning and land use zoning. The project is intended to provide a major boost to long-term efforts to use science to improve the management of coastal resources. You are invited to join this international effort to use existing earth observation data and state of the art information management tools to address the local, national, and regional challenges facing us all. We have a handout available for you with

contact information and a website address for the GISD project and I am sure Mr. Daffa will be happy to give you his perspective as a technical expert and advisor to Tanzanian stakeholders.

The success of the "El Nino" efforts and the promise of the GISD, the FAO Status and Trends Reporting, and other oceans initiatives give us reason to be optimistic about the future. Still, it is important to realize that there is much more to be done in marine science and its applications. Integrated chemical, biological and physical oceanographic research programs must be supported. They made the difference in the case of "El Nino." The challenge is to look for additional ways we can cooperate and innovate in order to enhance our capabilities to address ocean and coastal issues that are critical to sustainable development.

The U.N. Role

The UN system has a critical role to play in facilitating, coordinating, and developing standards and guidelines for marine research, information sharing, and operational ocean observing systems. When it comes to the coastal environment, however, we have learned that regional approaches are often most effective. The Cartagena Convention in the Caribbean, the Arctic Council—a forum involving indigenous communities and the eight nations with territory in the Arctic—and the South Pacific Regional Environmental Program (SPREP) are good examples of regional bodies in which people collaborate effectively to protect human health, prevent, control and reduce pollution and ensure sound environmental management of oceans and coastal areas.

We believe that the UN system needs to develop regional mechanisms to facilitate and coordinate its programs so that a diversity of programs can be brought to bear in an integrated way to solve problems specific to each region. We think that regional institutions working in the same area must be in contact with each other and, to the extent possible, co-locate the times and venues of meetings, especially of Parties to regional Conventions. For example, a regional fishery and a regional seas meeting held jointly or back-to-back could bring new synergies to both groups. The objective should be to bring the fruits of new science and technologies to bear on the oceans and coastal issues confronting decision-makers. Joint meetings, web sites, publication of directories of specialists on relevant regional topics and regular regional reporting of priorities for incorporation in the Secretary General's report might better galvanize action.

Conclusion

In conclusion, my presentation today has highlighted several specific initiatives that will promote science-based decisions on oceans and coastal activities. I have also suggested several policy directions for national action—such as full and open data exchange and promoting public participation. Finally, I have suggested improvements in coordination among oceans-related bodies at the regional and global level. We look forward to continuing to explore these opportunities through the course of this conference, in further preparations for Johannesburg and beyond.

Thank you for this opportunity to share my enthusiasm for improving science applications to coastal management.



United Nations

DEVELOPMENTS IN THE INTERNATIONAL LEGAL FRAMEWORK FOR GLOBAL OCEAN GOVERNANCE

Ambassador Satya N. Nandan

Secretary-General, International Seabed Authority, Kingston, Jamaica

Introduction

The basis for all our efforts to utilize the resources of the oceans and manage the maritime environment lies in the international legal framework for ocean governance that has been progressively established over a period of several hundred years. In the final decades of the 20th century the pace at which this legal framework continued to develop accelerated sharply in the face of new challenges and increased understanding of the need to enhance our knowledge of the marine environment. The Rio Conference of 1992 and Agenda 21 set in motion a number of major developments in ocean governance and created a new impetus in international efforts to manage the oceans and the impact of human activity related to the oceans in a more effective manner. It is timely to reflect on the development of the norms for ocean governance and to consider whether the legal framework for ocean governance needs improvement.

The basis of the legal framework for ocean governance is contained in the 1982 United Nations Convention on the Law of the Sea. The Convention provides the framework in which the jurisdictional rights, benefits and obligations of States are to be exercised, and their administrative and management policies for the oceans will be developed. The purpose of this paper is to provide an analysis of the legal framework for ocean governance under the Convention and to examine the major trends that have emerged in recent years.

Background to the Convention

The need for a new legal order for the oceans had become increasingly apparent from the early years of the twentieth century. The old regime which had developed over four centuries was no longer adequate to meet present needs. By the 1960s, the rapid technological developments since the Second World War rendered many of the provisions of the 1958 Conventions relating to the jurisdiction of States obsolete and many of the newer post-colonial States considered that the existing law did not respond adequately to the needs and interests of the new world community.

The predominating factor in the law making process was the economic interests of States. Thus, the Truman Proclamation of 1945, which extended the claim for jurisdiction over the continental shelf, was motivated by U.S. economic interests in the petroleum resources and the shrimp fisheries of the continental shelf. Other countries followed by also extending jurisdiction; where a continental shelf did not exist by virtue of geology, they devised a compensatory mechanism by extending territorial waters or fishery zones. No uniform set of practice or rules existed, nor was there any mechanism for overall management or governance of the oceans.

It was not until the 1950s, and the First and Second United Nations Conferences on the Law of the Sea that efforts were made to codify the international law of the sea and create a uniform system of ocean governance. While the First Conference failed once again to agree on the limits of the territorial sea, it nevertheless made some progress in relation to the issue of fisheries conservation and management by adopting in 1958 the Geneva Convention on Fishing and the Conservation of the Living Resources of the High Seas. This was some recognition at last that the fish resources of the oceans are not in inexhaustible supply and that some measures have to be taken for their conservation and management. Such measures, however, were left largely to the flag States to determine and enforce, although there was a general exhortation for cooperation among all those who fish on the high seas. The other significant development was the adoption of the exploitability criteria for determining the extent of the continental shelf. While this recognized the sovereign rights to resources of coastal States on the adjacent continental shelf it did not define precisely the limits of jurisdiction nor did it address in any significant way the question of impact on marine environment from the exploitation of those resources.

Nevertheless, such attempts at resolving specific issues did not tackle the broader issue of ocean governance, with the result that with rapid developments in science and technology, States began to take their own unilateral actions with regard to the limits of jurisdiction. Some of these were motivated by concerns for conservation of resources, such as fisheries resources; some were motivated by security concerns while others were simply reactions to the escalation of claims. It was therefore inevitable that the only way the emerging conflicts in the oceans could be avoided was through a Third United Nations Conference on the Law of the Sea, which would rationalize the competing claims in a manner that would address the issue of potential conflicts between and among States as well as conflicts between competing uses of the ocean and the impact of these activities on the marine environment. The result was the 1982 Convention.

The 1982 United Nations Convention on the Law of the Sea

The achievements of the 1982 Convention are many. It has resolved a number of critical issues, some of which had eluded agreement for centuries. It reflects a delicate balance between competing interests in the use of the ocean and its resources by taking a functional approach in establishing the various maritime zones and the rights and duties of States in those zones, including areas beyond national jurisdiction.

It is important to understand that the 1982 Convention is not a static instrument. While it contains norms which are precise, it also establishes principles which lend themselves to further development of the law of the sea. In this sense, there is an in-built flexibility which allows for the development of new norms within the framework of the Convention in response to evolving circumstances and increased awareness of the physical environment of the ocean and its resources.

The norms for ocean governance go beyond the Convention and are contained in many instruments, declarations and decisions related to the regulation of uses of the oceans and the development of their resources. These cover subjects as diverse as navigation and overflight, fisheries, scientific research and the ocean environment in general. Such instruments may be categorized as those which pre-existed the entry into force of the 1982 Convention, and are consistent with it, and those that have been adopted since in multilateral and regional or subregional arrangements. Among these must also be counted a growing body of soft law instruments that have been adopted.

There are also a large number of technical regulatory measures that have been established through global and regional organizations. Among these must be included the rules and guidelines adopted by the International Maritime Organization in relation to maritime safety and prevention of pollution from ships, the rules, codes and conventions adopted by the UN Food and Agriculture Organization in relation to responsible fishing practices, and the regional seas conventions adopted under the auspices of the United Nations Environment Programme. Other important instruments, such as the London Dumping Convention, the Antarctic Treaty System, the Convention on Biological Diversity and elements of the Framework Convention on Climate Change also impact upon the system of ocean governance. To these must be added the influence of declarations such as the Stockholm Declaration on the Human Environment, from which the basic principles for protection and preservation of the marine environment were developed for inclusion in Part XII of the 1982 Convention, and the Rio Conference on Environment and Development, which produced Agenda 21, in particular Chapter 17 on the seas and oceans, as well as the Global Programme of Action on the Protection of the Marine Environment from Land-Based Activities. While not having the status of treaty law, these instruments contain important principles which apply to the oceans and make an important contribution to the overall system of ocean governance.

With the near-universal acceptance of the Convention, the problem is not that there is no legal framework for ocean governance but rather how States should act in the discharge of their responsibilities under the Convention and in the exercise of the rights and duties ascribed to them for ocean governance. The major problem today is not so much with respect to the legal framework at the international level but effective discharge of duties and obligations for ocean governance in areas under national jurisdiction for which international law has provided states with extensive competence.

Ocean Management at National Level

The extent of maritime jurisdiction over the territorial sea, the exclusive economic zone and the continental shelf claimed by States is relatively uniform in State practice and consistent with the Convention. However, the discharge of the responsibilities imposed by the Convention in these zones is sorely lacking. There are many provisions in the Convention which require States to take certain positive action in the zones claimed. Examples of these are to be found in the provisions on marine pollution which require states to adopt laws and regulations to prevent, reduce and control pollution of the marine environment from land-based sources, seabed activities, dumping at sea, vessels and the atmosphere (articles 207 to 222). Similarly, the sovereign rights over the resources in the 200 nautical mile exclusive economic zone is conditioned by the obligation to ensure proper management of the resources of that zone. For this purpose, the Convention requires certain actions by coastal States. For example, the coastal State must determine the total allowable catch in the zone and, taking into account the best scientific evidence available to it, must ensure through proper conservation and management measures that the maintenance of the living resources in the zones is not endangered by over-exploitation. It is also required to determine its own catch capacity and to give access to others to the surplus. Clearly these and other provisions of the Convention require active management of the zones and the development of national marine policies in order to discharge the responsibilities of the coastal States. However, the complexity of the Convention and the regime governed by it involves an interplay between rights and duties and there is a need for a comprehensive and integrated approach to management objectives.

The growth and expansion of the uses of ocean space and its resources have more often than not simply prompted governments to assign new marine-related functions to existing ministries or departments. Typically, therefore, several different ministries exercise varying levels of specific responsibility for elements of ocean management. The resultant dispersion among many ministries has led in many cases to a sectoral approach to development. One important consequence of this is that development in one sector frequently takes little or no account of parallel developments in other sectors, making it increasingly difficult to pursue an overall oceans policy that optimizes the use of ocean space and its resources.

To benefit from the legal regime established by the Convention and the potential it offers for general development, it is necessary for governments to establish at a high governmental level an appropriate policy and coordination mechanism to formulate new policy, review marine-related legislation and make necessary administrative adjustments. Unfortunately, a review of the activities of States will reveal that a majority of them have assumed jurisdiction over maritime zones but have not developed national policies to administer these zones in a manner consistent with the sustainable use of the oceans and their resources as envisaged by the Convention.

Marine resources development cannot be viewed independently of the overall socio-economic development. The dimension added by the marine sector must therefore be viewed in the overall context of national development priorities.

Governments need to better integrate their policies on marine development in their overall development strategies so as to ensure an appropriate allocation of resources between the marine and other sectors. It is important, therefore, that any administrative structure or mechanism for ocean management should ensure adequate coordination at the national level. Such a structure should allow for the enunciation and implementation of national ocean development objectives while at the same time facilitating the discharge of obligations relating to regional and global ocean management, especially those reflected in the Convention. Such coordination at the national level will also ensure more effective collaboration bilaterally and multilaterally with the various international and regional organizations and agencies that have been given a role to play in the system of global ocean governance.

Regional Cooperation

An important theme of the 1982 Convention is recognition of the desirability of cooperation where appropriate at the sub-regional, regional, or global levels, while several key provisions of the Convention may be given effect to in conjunction with organizations operating at those levels. Because "region" is not defined in the Convention and because a region is not limited to geographic criteria alone, and can encompass economic, political or cultural factors, the scope for sub-regional or regional cooperation is potentially considerable.

Amongst the more important provisions on marine living resources, reference may be made to the following opportunities for subregional or regional cooperation: the formulation of conservation and management measures for marine living resources (both within the exclusive economic zone and on the high seas) including the exchange of scientific information, conservation and sustainable use of straddling stocks, conservation and promotion of optimum utilization of highly migratory species, conservation of anadromous stocks and access by land-locked and geographically disadvantaged states to surpluses of the living resources of the exclusive economic zones in the same subregion or region.

Where States border enclosed or semi-enclosed seas they are exhorted, either directly or through an appropriate regional organization, to coordinate their activities with respect to management, conservation, exploration and exploitation of the marine living resources, measures regarding the protection and preservation of the marine environment, to coordinate their scientific research policies and to undertake where appropriate joint programmes of scientific research.

Provision is also made for cooperation both globally and regionally in formulating and elaborating international rules, standards and recommended practices for the protection and preservation of the marine environment, taking into account characteristic regional features. In several instances, the exercise of coastal State

jurisdiction over marine pollution depends on the existence of internationally agreed measures.

States also have a general obligation to promote, along with international organizations, international cooperation in marine scientific research for peaceful purposes. The Convention also urges the establishment of regional marine scientific and technological research centres in order to stimulate the conduct of marine scientific research by developing states and to foster the transfer of marine technology. The functions of such centres are indicated in the Convention.

It is important, nevertheless, that the same principles of integration that are applied at the national level are also applied at the subregional, regional and global levels and that appropriate linkages are established between the various levels of governance. The principal merit of regional arrangements is that they reflect the geographic scale of marine resources and ecosystems. They also help to reflect regional priorities in global decision-making. Regional arrangements cannot, however, serve as a substitute for effective action at the national level. While they facilitate information exchange and dialogue between States and offer economies of scale, as well as provide a framework for the development of regional standards, such regional arrangements must be backed up by the necessary national policies and actions, in order to produce harmonized goals and policies.

The System of Ocean Governance in Practice

The interaction between the global rules established by the Convention, which are implemented at the national level by States through their ocean development policies, is well illustrated by reference to the marine environment and fisheries. In both cases, the Convention and, in the case of fisheries, the new UN Fish Stocks Agreement, establish global rules and norms and specify the national action to be taken by States. This action is supplemented by requirements of regional cooperation.

The Marine Environment

Part XII of the Convention, dealing with the protection and preservation of the marine environment, represented the first attempt to set out a general framework for a legal regime that establishes the obligations, powers and functions of States with respect to the marine environment. The subject of marine pollution had not been addressed at all in the 1958 Conventions and, although a series of multilateral treaties on dumping at sea, vessel-source pollution (MARPOL 73/78), intervention in cases of maritime casualties and civil liability for oil pollution, had been adopted in the 1960s and 70s, there was no comprehensive legal regime. A number of other important areas remained unregulated, including pollution from deep seabed mining and the control of land-based sources of marine pollution. The inadequacies of the existing law were recognized in the Stockholm Declaration, which called upon States to participate in new efforts to bring all sources of marine pollution, including land-based sources, under effective control.

The Convention, in articles 192 and 194, establishes a basic duty on all States to protect and preserve the marine environment and an obligation to take all measures necessary to prevent, reduce

and control marine pollution as well as to ensure that activities under their jurisdiction or control do not cause pollution damage to other States and their environment, and that pollution does not spread beyond the areas where they exercise sovereign rights under the Convention. These articles form the basis for a complex web of powers and duties covering the adoption and enforcement of laws and regulations, global and regional cooperation, monitoring and environmental assessment and state responsibility for pollution. For the first time, the Convention requires States to cooperate on a global basis, and, as appropriate, regionally in formulating international rules, standards and recommended practices for the protection and preservation of the marine environment (article 197). In addition, States Parties are obliged to provide scientific and technical assistance, particularly to developing States (article 202), to conduct monitoring and environmental assessment programmes (article 204) and to adopt laws and regulations to prevent, reduce and control pollution of the marine environment from land-based sources (article 207).

These laws and regulations must, however, be based on rules and standards adopted by the international community acting through competent international organizations. Such rules and standards thus provide an objective basis for measuring whether States have fulfilled their obligations under the Convention. The emphasis placed on the need to protect and preserve the marine environment as a whole also underlines the importance of regional cooperation in achieving the objectives of the Convention. To this end, the activities undertaken by UNEP with regard to its Regional Seas programme, and the various protocols and conventions adopted by the International Maritime Organization are illustrative of the practical measures taken to implement Part XII of the Convention.

Fisheries

In the area of fisheries, by the early 1990s it was widely recognized that the legal regime for the high seas set out in the Geneva Conventions of 1958, and largely incorporated in the 1982 Convention, was inadequate to safeguard the fisheries resources of the high seas, particularly those classed as straddling fish stocks and highly migratory fish stocks. It was therefore not surprising that the Rio Conference called for a conference to address the problems of high seas fisheries. Such a conference was convened by the United Nations in 1993 and completed its work in 1995 with the adoption of the UN Fish Stocks Agreement.

In the context of straddling fish stocks and highly migratory fish stocks, the Fish Stocks Agreement establishes principles for management which are of general application. In this respect, the Agreement is a blueprint for fisheries conservation and management in general and the future of fisheries depends on how this very important Agreement will be applied and implemented by States.

The Agreement recognizes the importance of a cooperative approach to fisheries management and calls for compatible conservation and management measures. While the Agreement does not in any way affect the concept of sovereign rights of States as found in the Convention it nevertheless emphasizes the interdependency of stocks and recognizes that, in the final analysis,

neither the coastal State nor the distant water fishing State, can manage the stocks in isolation.

The holistic approach to management cannot be left to coastal States or fishing States alone. There must be a framework through which they can cooperate to establish management regimes and agree on problems of allocation and effort limitation. In this regard the provisions of the Convention have been elaborated upon. The roles and responsibilities of regional fisheries management organizations have been clarified and made more meaningful as a forum for management of shared resources. In particular, not only have the requirements for flag State responsibility been further developed and enumerated, but also they have been supplemented by the measures that can be taken by members of regional organizations in cases where the flag State is unable or unwilling to take effective action itself. Thus, through a combination of the mechanisms provided in the Agreement and the measures to be adopted through regional organizations, an important gap in the effective application of conservation and management measures has been filled. This is an important innovation and a major development in international law.

Already, the Fish Stocks Agreement has had a profound effect. It has become the reference point for the review of fisheries management organizations worldwide. It has been used as the basis for the establishment of at least two important regional fisheries management organizations; in the Western and Central Pacific Ocean and in the South-East Atlantic Ocean. It has also been used as the basis for review of the structure and mandates of several existing regional fisheries management organizations, including some which were established before the adoption of the 1982 Convention.

Emerging trends

When we consider the way in which the legal framework for ocean governance has developed, four broad trends emerge:

- The first such trend was towards enclosure of the oceans, in the sense of national control and jurisdiction over large areas of ocean space.
- The second broad trend was towards an accommodation of competing interests in the oceans, or an appropriate balance between the rights and duties of States on one hand and the need to ensure sustainable use of the resources of the oceans and to protect and preserve the marine environment on the other hand.
- The third major trend that has emerged as our knowledge and understanding of the oceans has improved is towards a more integrated, ecosystem-based, approach to ocean management. While this approach is latent in the provisions of the 1982 Convention, it has emerged since the 1990s as the dominant consideration in the implementation of many of the provisions of the Convention. This concept was first articulated in the 1980 Convention on the Conservation of Antarctic Marine Living Resources, but is also perhaps most clearly reflected in the UN Fish Stocks Agreement. In particular, we have seen the precautionary approach emerge as a guiding principle.

- The fourth major trend, as the complexity of ocean governance has increased and the relationship between multiple uses of the ocean have become more intricate, is an increased recognition of the need for international cooperation and better coordination. This has been exemplified by the work of the UN General Assembly in recent years in its efforts to promote better implementation of the Convention and related instruments.

The first two of these trends are illustrated by the developments leading to the adoption of the 1982 Convention, while the latter two may be considered as emerging trends since the adoption of the Convention.

In the last few years, as international attention has focused more on sustainable use of the oceans, there has been concern at the apparent proliferation of organizations and bodies with overlapping responsibilities for oceans affairs and the prospects for fragmentation in approaches to ocean management at the national, regional and global levels. There is concern that without proper coordination and an integrated approach, there is a risk of ineffective and inefficient policy-making based on sectoral considerations which may not accord with the overall balance achieved in the Convention on the different uses of the ocean. This in turn may lead to inconsistent implementation of the Convention itself.

As a result of these concerns, the General Assembly adopted in 1999 a resolution establishing an open-ended consultative process intended to identify the main issues for consideration by the General Assembly in its annual consideration of law of the sea issues and make recommendations for better coordination and cooperation between the various organizations and bodies involved in oceans affairs. To date, two meetings have taken place under the new informal consultative process, with the participation of a broad cross-section of representatives from a number of the specialized agencies and other international organizations and bodies, as well as representatives of the non-governmental organizations. Many important subject areas have been addressed constructively in considerable detail and, although the process is to be reviewed in 2002, it does appear to have been of assistance to the General Assembly in clarifying the issues to be considered in its annual debate on law of the sea and ocean affairs.

As we seek to manage the oceans and their resources in the face of increasing pressure from rapid technological development, increased scientific research and growing concern for the marine environment, sound policies for ocean governance at the national, regional and global level will become even more urgent if we are to maintain the health of the oceans.

It is clear that the foundation for effective ocean governance must remain the 1982 Convention and its implementing agreements, supported by the detailed provisions of Agenda 21 and other global programmes and agreements. As the Independent World Commission on the Oceans concluded in its report, *The Ocean: Our Future*, efforts to build a more effective system of ocean governance must start with the implementation of the Convention as well as the other existing legal instruments relating to the sea.

At the same time, it must be recalled, however, that the Convention deals with a broad spectrum of issues, and the inter-relationship of the various parts of the Convention is premised on the fundamental principle that the problems of ocean space are closely inter-related and need to be considered as a whole. This principle is restated in no uncertain terms in Chapter 17 of Agenda 21. It is therefore only logical that this integrated approach to the different uses of the oceans and the development of their resources is adopted in the implementation of the Convention. It is only through such an approach that the delicate balance, between the conflicting interests and activities in the oceans achieved in the Convention, which was seen as a *sine qua non* for its general and widespread acceptance, can be maintained.

The signs that we are moving towards an effective global system of ocean governance are encouraging. Further progress is needed, however, and should include the following elements:

- A revitalization of the General Assembly debate on the Law of the Sea to draw together economic, legal, social, environmental and political aspects and to better monitor progress and performance in implementation at the national and regional level as well as to identify any gaps in regional and international agreements.
- An increased emphasis on capacity building and better coordination of oceans affairs at the national level is critical to avoid a diffused, fragmented and sectoral approach, especially in the case of developing countries.
- There needs to be a continued emphasis on regional cooperation as it becomes apparent that management across jurisdictional and political boundaries cannot succeed without cooperative and coordinated action by States within that region. At the same time, decision-making mechanisms within regional organizations need to be strengthened.
- National, regional and global efforts need to be informed and guided by the concept of ecosystem-based management. We need to improve our knowledge of marine ecosystems, increase our understanding of the relationship between ecosystems and multiple uses of the oceans and take these factors into account in making decisions.

It is encouraging to note that these themes, as well as others, are reflected in the most recent General Assembly resolution on Oceans and the Law of the Sea (A/56/L.17) adopted on 28 November 2001. However, Agenda 21 prescribed a detailed plan of action in six specific programme areas, setting out not only the basis for action in each programme area, but also the objectives to be achieved and activities to be carried out by States and the means of implementation in each area. It is equally important, therefore, that the international community takes the time to review the progress that has been made towards implementation and to identify any barriers to good ocean governance. In particular, strong emphasis needs to be placed on the importance of capacity-building. Agenda 21 itself recognizes that the implementation by developing countries of the activities set forth in Chapter 17 shall be commensurate with their individual techno-

logical and financial capabilities and priorities in allocating resources for development needs and ultimately depends on the technology transfer and financial resources required and available to them.

In conclusion, I believe that, since Agenda 21 was adopted, there has developed an increased awareness of the need to synthesize and integrate policy relating to the use of oceans resources and protection of the marine environment at all levels. At the global level, significant progress has been made in raising awareness and

in identifying issues, as well as in promoting more effective, transparent and coordinated collaboration between States and international organizations and institutions. We have also seen an increased level of activity at the regional level in such areas as fisheries and marine pollution. Greater emphasis is needed, however, on the implementation of global initiatives at the national level and on the integration of national oceans policies with overall development strategies.



South Africa

CONCLUDING REMARKS TO OCEANS AND COASTS AT RIO+10: TOWARD THE 2002 WORLD SUMMIT ON SUSTAINABLE DEVELOPMENT, JOHANNESBURG

Honorable Rejoice Mabudafhasi,

Member of Parliament of the Republic of South Africa, Deputy Minister of
Environmental Affairs and Tourism,

Chairperson of the Preparatory Committee for the Partnership Conference,

Vice-president of ACOPS from South Africa

Excellencies, Secretary-General of UNESCO, Secretariat of this conference, distinguished participants and let me not forget my neighbours from Africa and the many friends I have met here but also the new friends that I have made during the conference, I want to extend a word of thanks to each and everyone of you for your role not just in this conference, but ultimately in the World Summit on Sustainable Development. It is through your participation here and events such as this that you are making your contribution not only to the World Summit on Sustainable Development, but to sustainable development in general.

I am indeed honoured to deliver this closing address. Let me take this opportunity to thank the organising committee and the Co-Chairs for having the foresight to hold this meeting at this opportune time. You will agree with me that it is through conferences such as this that we are well on our journey to Johannesburg - a journey that we ought to take beyond Johannesburg in a practical and implementable way for all participating partners to influence not just the environment but directly the quality of life of so many people.

Through initiatives like this and the GPA Intergovernmental Review I attended last week, we are able to determine a meaningful Agenda for Johannesburg.

It is at fora such as this that we are able to deliberate the many challenging issues that we as a global community face. This conference provided us with a platform to not just create awareness of the challenges in our respective environments, oceans and coasts in our countries and regions, but also with an opportunity to come up with a collective approach to address some of these challenges.

During the deliberations this week two distinct areas of information emerged: Accomplishments since the Rio Summit and Issues to be addressed to achieve the noble objectives of Agenda 21. Together with this, five overarching themes crystallized.

Before getting into the overarching issues let me briefly describe the Legacy of the 1992 Rio Summit.

The many international agreements promoting sustainable development have been unable to reverse or halt the effects of the globalisation process, which has effectively reinforced global inequality, deepening and widening the rift between the rich and poor.

The root cause of much of the discussion during the week centred around the failure to integrate international systems for trade, finance and investment with the goals of sustainable

development. The challenge for the next ten years will be to integrate the priorities of these sectors, and eliminate perceptions that these priorities compete with each other.

Other issues that perpetuate this Rio legacy are:

- The plethora, fragmentation and lack of co-ordination of conventions & institutions;
- The development initiatives are under funded and ineffective;
- Complex ocean and coastal governance systems hinder developing country participation and co-ownership;
- Donor funds are limited and not necessarily in line with country priorities;
- Poor implementation of development targets; and
- Shortcomings in international conventions.

Returning to the second area of discussion, the issues to be addressed to achieve the noble objectives of Agenda 21 are:

- Environmental Protection;
- Resource Conservation and Sustainable Use;
- Socio-Economic and Resource Development;
- Ocean and Coastal Governance;
- Data Management and Information Sharing.
- Environmental Protection

Future sustainable development or management of ocean and coastal resources depends on achieving a level of environmental protection, sufficient to ensure public health and food security. This is especially relevant to developing States where marine industries often dominate coastal economies. It is therefore important that ocean and coastal environments, with their associated biodiversity, be protected from potential threats posed by anthropogenic activities at all scales. On a global scale, climate change impacts on Coastal States in general, and on Island States in particular, a result of rising sea-level (which compounds coastal erosion) and rising sea temperatures (which causes coral bleaching in the tropics). At the local level, pollution and habitat degradation resulting from industrial, agricultural and coastal urban development may cause irreversible damage to coastal environments, so threatening the life-support systems of both ocean and coastal species. Counters to such threats must focus on precautionary measures for pollution prevention and reduction of habitat degradation. In specific cases, designated projects

to enhance environmental rehabilitation are required, not least in reversing past losses to key ocean and coastal resources through the recovery of associated biodiversity.

Resource Conservation and Sustainable Use

The world's ocean and coastal environments exhibit wide biodiversity and ecological potential, thereby necessitating the greatest possible protection. Such protection is essential for ensuring that a genetically diverse fauna and flora are preserved so as to maximise the potential for sustainable resource development, thereby contributing to alleviating poverty.

Long-term sustainable utilisation of ocean and coastal resources necessitates the preservation of a balance between biological sustainability of the resources concerned, equitable access to such resources and economic stability.

To date, the need for economic stability has largely been driven by developed States, which seems to lead to exploitation of the ocean and coastal resources in the developing world. This has both limited access to these resources for developing States and has also compromised resource sustainability by encouraging profit-orientated exploitation at the expense of conservatory practices.

Solutions to this issue require development of equitable partnerships between the developed and developing world.

A key principle to be carried forward is that long-term economic sustainability in the ocean and coastal sectors play a major role in ensuring food security and political stability in coastal states in general, and in coastal communities in the developing world in particular.

Socio-Economic and Resource Development

Several presentations throughout the week emphasized the link between socio-economic development and the environment. The underlying theme here was finding mechanisms to integrate management in real ways and to strengthen the examples that have begun to show some results. A key constraint in the sustainable development of ocean and coastal resources has been the extent of prevailing poverty. This has forced many poor developing States to sacrifice their natural environments and resources to provide for some level of health, food and political security. Consequently the sustainable development of ocean and coastal resources, along with the development and optimisation of attached socio-economic benefits, requires increased support from developed States. This support is necessary to build capacity in developing States so that they benefit from sustainable management, development and utilisation of ocean and coastal resources.

Ultimately, as a result of the tremendous pressure on our limited resources, there is a need to investigate alternative sustainable livelihood options to sustain our coastal communities.

Ocean and Coastal Governance

The expressed purpose of many international marine, fisheries or coastal agreements is to promote long-term resource sustain-

ability and to ensure global political stability by removing sources of conflict (economic or otherwise). There has been consensus this week, that the complexity and scope of agreements has often prejudiced their implementation. This is especially true for developing countries, who, due to a general lack of capacity or through excessive duplication of function cannot participate fully in these initiatives. This has tended to favour developed states. Furthermore, the economic benefits flowing from a general lack of standards for international governance or resource exploitation (especially on the high seas) has tended to favour developed states. There are some current and planned projects to develop capacity. However I wish to urge current negotiations and those to take place over the next few years to appreciate the current levels of capacity, so as to not marginalise developing states further.

Data Management and Information Sharing

A message to take forward to the WSSD, is that the success of global, regional and national actions likely to emanate from the WSSD will be critically dependent on a reliable system of information exchange. This requires recognition of the importance of, and commitment to, information exchange to facilitate appropriate partner initiatives and co-ordination of activities.

In identifying the above five issues, I have tried to comment on the larger, over-arching issues. I am sure that in the fine print there are many more issues, the result of the deliberations of a combination of experts from diverse fields of expertise.

What should be the focus of WSSD?

We must understand that WSSD is about sustainable development, equity, alleviation of poverty and ensuring economic and food security and all the underlying aspects that underpin this concept.

So many times this week as well as at the GPA Intergovernmental Review last week, we heard that interventions at the regional level should be encouraged. In many parts of the world, regional initiatives have proved to be successful. Some examples include the Cartagena Convention, the Mediterranean Action Plan and the Russian Federation Arctic Programme. Closer to home African countries have embarked on the African Process for the Development and Protection of the Coastal and Marine Environment, particularly in Sub-Saharan Africa.

This regional initiative, like the other Oceans and Coasts issues feed into the outcomes of WSSD. On this point, as Chair of the "African Process," I acknowledge and thank Minister Okopido of Nigeria, as the Presidency of the African Ministerial Conference on the Environment (AMCEN), for illustrating the vision and functioning of the "African Process" on Monday during the Ministerial Perspectives Session. I also acknowledge the leadership of the Vice-Chair, Minister Kachamila of Mozambique. The 'African Process' also represents the marine and coastal thrust within the larger African Development Programme, the "New Partnership for Africa's Development" (NEPAD). It is for this reason that Heads of State at the Lusaka OAU Summit in July 2001 and African Environment Ministers at the recent African WSSD

Preparatory Committee Meeting in Nairobi endorsed the resolution to convene the Partnership Conference at the level of Heads of State during WSSD. The President of South Africa, President Thabo Mbeki and other African Heads of State met with the G8 leaders in July of 2001 to discuss the NEPAD initiative and the next meeting is scheduled for July 2002.

The NEPAD process is underpinned by the philosophy of re-negotiating the North-South Relationships into effective and efficient partnerships, based on a true sense of partnership.

As we converge on Johannesburg next year, let me take a few minutes and be the true tourist guide to our beautiful country.

Worth noting is that the Summit is to be held in Johannesburg which is the largest metropolis and situated in the heart of our land mass, and certainly not close to any coast or ocean.

I do encourage those of you attending the WSSD to spend some time visiting our coastal regions. I guarantee you will not be disappointed, we certainly do have the big five: Great White Sharks, Sword Fishes, Large populations of Anchovies and Sardines, Whales and of course great numbers of Seabirds.

South Africa, with its fragile coastline of more than 3000 km, is situated at the tip of Africa and serves not only as the gateway to Africa but also as the gateway to Antarctica. Flanked by the Agulhas and Benguela currents on the east and west coasts respectively, our coast offers enormous economic opportunities in terms of fisheries and tourism. Threatened by the fact that 80% of the maritime traffic passes the Cape, South Africa, through extensive consultative processes, put in place policies and laws to address fisheries and sustainable coastal development in South Africa. South Africa also has two Antarctic interests, the Prince Edward and Marion Islands. Of course this unique location has considerable responsibilities in that South Africa has to service the South East Atlantic Fisheries Organisation (SEAFO), the impending South West Indian Ocean Fisheries Organisation (SWIFO) and the Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR).

Poverty and inequality are the greatest threats to global sustainable development in the twenty first century. I think that all participants would agree, but we would emphasise that this be consciously acknowledged in planning a strategy for this century.

To make serious inroads in addressing inequalities, there must be serious interventions, even paradigm shifts in terms of trade, investment and debt relief.

Governments alone cannot address the myriad - partnerships with business, industry and civil society are critical.

National and regional projects should serve as the delivery agents for such partnerships, so as to encourage ownership. The point that ownership produces the best results has been made several times this week and must not be ignored. The "African Process" and the "New Partnership for Africa's Development" serve as models of such delivery agents.

What would be the achievements of WSSD next year?

A renewed commitment to Agenda 21. This renewed commitment must take the form of setting in motion definite and practical implementing mechanisms.

We must find ways of implementing a global commitment to eradicate poverty for sustainable development.

WSSD must also find ways to impact on the economic factors that underpin the marginalisation of the developing world, with special reference to trade, finance and investment.

Ultimately the WSSD must produce a Johannesburg Programme of Action with clear commitments, deliverable targets, monitoring mechanisms, definite time frames and resources, which are readily accessible.

We should not forget that sustainable development rests on three related pillars:

- Economic Development;
- Social Development; and
- Environment.

Of course, each of the pillars has subcomponents as the slide illustrates. Oceans and coasts fit into the Environment Pillar.

In conclusion, let us ensure that WSSD will not be just like any other resolution-generating conference, but that concrete deliverable actions with suitable timeframes and achievable objectives will be the outcome of this major global event.

Distinguished participants, there is no doubt that the ocean unites the peoples of the world. We need to be united in our actions and act in unity, so significantly reflected in the theme of the Summit:

"People, Planet, and Prosperity"

I thank you.

Global Conference on Oceans and Coasts at Rio+10

Organizing Committee

NGOs/scientists

Chair: **Dr. Biliانا Cicin-Sain**, Director, Center for the Study of Marine Policy, University of Delaware, USA

Dr. Tundi Agardy, Consultant

Mr. Tim Bagley, Global Legislator's Organization for a Balanced Environment

Dr. Paula Caballero, Advisory Committee on Protection of the Sea

Dr. Aldo Chircop, Coordinator, Marine Affairs Program, Dalhousie University, Canada

Dr. Chua Thia-Eng, GEF/UNDP/IMO Regional Programme on Building Partnerships in Environmental Management for the Seas of East Asia, Philippines

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Prof. John Morrison, Ocean and Coastal Research Centre, University of Wollongong, Australia

Dr. Hiroyuki Nakahara, Research Institute for Ocean Economics, Japan

Mr. Steve Olsen, Coastal Resources Center, Rhode Island, USA

Dr. Erdal Özhan, MEDCOAST, Middle East Technical University, Ankara, Turkey

Mr. Pietro Parravano, World Forum of Fish-Harvesters & Fishworkers

Dr. Sian Pullen, World Wildlife Fund, United Kingdom

Dr. R. Rajagopalan, International Ocean Institute, India

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Dr. Mario Ruivo, Portuguese Committee for IOC, Lisbon, Portugal

Dr. Albert Salman, European Union for Coastal Conservation (EUCC), The Netherlands

Dr. Hance Smith, Cardiff University, United Kingdom

Mr. Victor Sebek, Advisory Committee on Protection of the Sea (ACOPS)

Dr. G. Robin South, University of South Pacific, Fiji

Dr. Juan Luis Suárez de Vivero, University of Sevilla, Spain

Dr. Phiphat Tangsubkul, Southeast Asia Programme in Ocean Law, Policy and Management (SEAPOL)

Mr. Hiroshi Terashima, The Nippon Foundation, Japan

Dr. Adalberto Vallega, International Geographical Union and International Centre for Coastal and Ocean Policy Studies, Italy

Prof. Jon M. Van Dyke, Ocean Governance Study Group, William S. Richardson School of Law, University of Hawaii, USA

Dr. Jentje van der Weide, Delft Hydraulics, The Netherlands

Dr. Geoffrey Wescott, Deakin University, Melbourne, Australia (member of the Australian National Oceans Advisory Group)

International Organizations

Chair: **Dr. Patricio Bernal**, Executive Secretary, Intergovernmental Oceanographic Commission (IOC), UNESCO, France

Dr. Chris Crossland, Land-Ocean Interactions in the Coastal Zone (LOICZ), The Netherlands

Mr. Michael Z. Cutajar, United Nations Framework Convention on Climate Change, Germany

Dr. David Freestone, Legal Advisor, World Bank, Washington

Mr. Serge Garcia, Food and Agriculture Organization (FAO), Italy

Dr. Marea Hatzioios, Senior Coastal and Marine Resource Specialist, Environment Department, World Bank

Dr. Indumathie Hewawasam, Africa Region, World Bank

Dr. Geoffrey Holland, Canada, Former Chairman, IOC, UNESCO

Mr. Andy Hooten, AJH, Environmental Services

Dr. Su Jilan, China, Chairman, IOC, UNESCO

Mr. Phil Reynolds, United Nations Development Program Consultant and Former Chief, Water Program, UNDP

Dr. Will Steffen, Executive Director, International Geosphere-Biosphere Programme (IGBP), Sweden

Dr. Narasimhan Sundararaman, Secretary, Intergovernmental Panel on Climate Change (IPCC), Switzerland

Mr. Dirk Troost, Environment and Development in Coastal Regions and in Small Islands (CSI), UNESCO, France

Mr. Ivica Trumbic, Regional Activity Centre for Priority Actions Programme, Croatia

Mr. Tamari'i Tutangata, Director, South Pacific Regional Environment Programme

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Dr. Clive Wilkinson, Global Coral Reef Monitoring Network, The Australian Institute of Marine Science, Australia

Government Sector

Chair: **Dr. Seoung Yong Hong**, Vice-Minister, Ministry of Maritime Affairs and Fisheries, Korea

Mr. Daniel Basta, National Marine Sanctuary System, U.S. National Oceanic and Atmospheric Administration

H. Victor Lichtinger, Minister, Ministry of Environment, Natural Resources, Mexico

H. Herb Dhaliwal, Minister, Department of Fisheries and Oceans, Canada

H. Rawle C. Eastmond, Minister, Ministry of Environment, Energy and Natural Resources, Barbados

Mr. Charles Ehler, National Ocean Service, U.S. National Oceanic and Atmospheric Administration

Mr. Lennox Hinds, Canadian International Development Agency

H. Robert Hill, Minister, Ministry for the Environment, Australia

H. Diane James, Chair, Victorian Coastal Council, Australia

Mr. Victor I. Kalyuzhnyi, Deputy Minister of Foreign Affairs, Russian Federation

Prof. Vladimir A. Knyazhev, Deputy Minister of Industry, Science and Technology, Russian Federation

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