



- Recommendations for Theme 1 -

**THE STATE OF THE OCEAN – CURRENT
CHALLENGES AND FUTURE PROSPECTS
– IMPLICATIONS FOR WOMEN AND YOUTH**



Marine Biodiversity and Food Security

At the thematic session on “Marine Biodiversity/Food Security”, held in the morning of Day 2 of the Conference, a total of six presentations were made by their authors: A. Behnam (IOI), J. Kaioro (Kenya Marine and Fisheries Institute), L. Fanning (University of the West Indies), L. Sonnenschein (World Aquarium, USA), C. Pannucci (Art and Science Collaborations, Inc., USA), and L. Nyman (Man and Water, Sweden). The session was chaired by L. Sonnenschein (World Aquarium & Conservation for the Oceans Foundation)

‘Biodiversity – An Issue of Governance’ by Awni Behnam, President of IOI

The planet’s loss of biological diversity is occurring at an unprecedented and accelerating rate. To correct the current distortion, there is a need for a mindset change as the governance architecture has failed to protect the ocean and its resources, however, there is no “one size fits all” solution. It was suggested a method to lead the way to change may be to allow IOI to recommend a Goodwill Ambassador from the UN who could empanel a study on the situation to come up with a recommendation and follow-through.

‘Status of Coastal and Marine Habitats in the Western Indian Ocean – A transboundary analysis’ by James Kairo, Kenya Marine and Fisheries Institute

The Western Indian Ocean region comprises the western extremity of the world’s largest biogeographic province. The region is characterized by coral reefs, sea grass beds, mangroves, sandy beaches, sand dunes and terrestrial forests. The presentation provided for a description of the research on physical alteration and destruction of marine and coastal habitats and the environmental impacts and socioeconomic consequences. There is a need to create an economic value to the environmental services provided by mangrove and other parts of ecosystems.

‘The Caribbean Large Marine Ecosystem Project: Governance Framework, Project Structure and Challenges’ by Lucia Fanning, University of the West Indies

The CLIME has the largest amount of diversity of governance, physical area differences, and complex transboundary issues. Youth comprise a significant portion of the population and women are deeply involved in fisheries and tourism, which comprise a majority of the income derived. Money needs to be spent on establishing and developing accurate multiscale policy cycles understanding and be shared.

‘Exploring Food Security and Biodiversity’ by Leonard Sonnenschein, World Aquarium USA

Core issues on biodiversity, marine protection, education, fisheries inputs, agricultural effects on nutrient balances, aide to the poor, effects of pollution and impacts of global warming on future productivity were presented. Examples of the World Aquarium’s Conservation for the Oceans Foundation that provides small action-based grants for regional approaches to these issues with multi-stakeholder input and public awareness components were given. Recent surveys of global leaders and citizens show a need for better public understanding and actions based on regional assessment directed especially through schools, museums and media programmes geared differently depending upon the age group. “Save our oceans and we save each other.”

‘Fishes Feed Us: An Art-Science Youth Project’ by Cynthia Pannucci, Art & Science Collaborations, Inc. USA

The development of several art-science projects designed to lead with the heart, capture the imagination, and become a model for delivering marine science and ocean conservation concepts were shared: Beneath-the SEE, a multi-component program, was discussed along with a recently funded project: Fishes Feed Us. This low-cost project, that was a public performative action by and for youth about the human consequence of the collapse of ocean fisheries, took place on June 5, 2007 as part of World Environment Day at United National Plaza in New York. Results from this initiative show a need to use people’s talent through the arts to influence people’s behaviours, to visit with the schools to communicate the message with views that accurately



portray scientific findings about the destruction of the oceans, and provide actions that children and their parents can do to help.

'Poverty Alleviation and Sustainable Use of Aquatic Resources' by Lennart Nyman, Man and Water, Sweden

Biodiversity and ecosystem function are the fundamentals on which all humans base their existence. Species diversity is essential to long-term food security. With the devastation of ecosystems worldwide, poverty is a consequence. Poverty can be alleviated within communities that adopt the basic principles of sustainable use of natural resources along with the restoration of local biodiversity through protection of terrestrial and aquatic ecosystems. There is a need to certify foods and other items that come from these productive regions and that allow for effective management of ecosystems for sustainability of the stocks, with the example given of the Marine Stewardship Council relative to the creation of sustainable seafood, which involves a supply chain form of governance.

Recommendations

From the discussions that emerged during this parallel session, the following recommendations were made:

1. Coastal small-scale fisheries often constitute the poorest segment of the rural poor, yet overall their fishery grounds supply the majority of the fishing assets worldwide due to their inability to police and monitor their resource, with a resultant 1-3% being recovered by them versus the balance of trade to other areas. There needs to be a redistribution of the environmental wealth such that repayment can occur to benefit the regions from which the productivity is gained to the extent that these living systems can be provided for through direct payments, replanting of mangroves which provide over 85% of nursery area for commercially fished species, establishing ecologically representative MPAs and other means. Women and children of these communities suffer most, which means that reversing the negative trends will most strongly benefit women and children.
2. There is a need for certification systems for all fishery areas, which involve local evaluation, monitoring and wealth distribution financially and environmentally.
3. Seafood cards should be used to promote sustainable fisheries.
4. There needs to be an increased implementation of existing legal measures. We should not wait until biodiversity collapses with nothing being done until it is too late, as is the case with fossil fuel.
5. We must share the burden of environmental degradation based upon economic values, so that future measures can be implemented. People need to provide for protection of ecosystems for their own survival, with those ecosystems being monitored by a collective of entities including governmental, nongovernmental, industrial and citizen entities and seeking alternative livelihoods for people who depend upon resources, yet who are no longer able to benefit due to its disappearance.
6. Lack of biodiversity harms productivity.
7. Widespread starvation is on the rise globally due to long-term overuse of land based assets and pollution, further modulated by global warming and the overuse and abuse of the ocean.
8. Disruptions in governance lead to ecosystem abuse.
9. There is a need to better communicate to consumers, since they drive the economics of change, with those messages being developed appropriately for each age bracket towards the particular level of adoption that they can take.



10. There is a need for improved actions at all levels of society, especially those that are directed towards youth and women to ensure delivery and action.

In the light of several of these findings, it is recommended that IOI support projects that incorporate cores of these discussion points for local and regional project development, that include multisector involvement from the community including women, youth as consumers and action-oriented participants along with academic, nongovernmental and governmental representation, to define solutions that can be engaged at all levels to increase biodiversity and sustainability on a global basis by acting locally and regionally. We recommend formal recognition and support for a meeting in June, 2008 for the Biodiversity and Environmental Conservation & Oil Resources Development in the Caspian Sea and Coastal Zone to be used as a model programme to build community understanding and support for Biodiversity and Food Security.

The International Polar Year

At the thematic session on “The International Polar Year”, held in the afternoon of Day 2 of the Conference, a total of four presentations were made by their authors: E. Sarukhanian (WMO, IPY), A. Renner (British Antarctic Survey, University of East Anglia), C. Halsband-Lenk (University Centre in Svalbard) and S. Halt (UNCLOS). The session was chaired by D. Carlson (IPY International Programme Office).

‘International Polar Year – a chance for enhanced capacity building’ by Dr. Eduard Sarukhanian, Special Adviser to WMO, Secretary-General on IPY 2007-2008

Dr. E. Sarukhanian focused his presentation on the efforts planned during the International Polar Year to promote a constructive and respectful engagement of polar residents into the IPY implementation process as equal and valued partners. Special attention will be paid to the participation of youth and women in the programmes of education, community building, preservation of local knowledge, health and food security. IPY will exploit the intellectual resources and science assets of nations.

‘The Scotia Sea Region: Links Between the Marine Ecosystem and Ocean Physics’ by Angelika Renner, British Antarctic Survey and University of Anglia

The young scientist, Ms. A. Renner spoke about the first results of the IPY Project Adelie, which is considered to be a good example and an innovative approach to exploring the links between ocean physics and marine ecosystems.

‘Activities of the Association of Polar Early Scientists’ by Claudia Halsband-Lenk, University Centre in Svalbard.

An important legacy of IPY will be a new generation of polar scientists and engineers. Ms. Halsband-Lenk from Plymouth Marine Laboratory presented the Project APECS – a new initiative emerging from the polar year aiming at bringing together early career scientists and engineers from all over the world who share an interest in polar regions.

The sub-plenary session was concluded by a presentation made by *Dr. Sydney Halt*, who shared his views on ways of preserving the living resources of the ocean. He pointed out that after the Second World War expansion of marine fish catches ceased and catches started declining despite fishing operations extending to deeper waters and new species. This is almost entirely due to overfishing and the failure of intergovernmental fishery management bodies to take seriously the management objectives defined in UNCLOS.

Recommendations

The session formulated the following recommendations:



1. Capacity building and outreach components established during IPY should be preserved and strengthened to give an opportunity for the development of a new generation of professionals in the areas of polar areas research, protection and development.
2. Governments and international organizations should provide assistance in maintaining new educational and research facilities and should offer support to a new cohort of educated youth from polar regions that will constitute major professional and leadership resources for the future.
3. Close collaboration between IOI and APECS should be established to assure adequate professional development of the next generation of scientists, educators and leaders in the fields of research, protection and sustainable use of polar oceans and their resources.
4. PIM XXXII recommends that renewal efforts be made to put fully into practice the principles laid down in UNCLOS and Agenda 21. In particular, better control of operations in the deep ocean beyond national jurisdictions and in the Southern Ocean is urgently needed. Attention must also be given to the special provisions in UNCLOS regarding Highly Migratory Species and marine mammals – especially the iconic great whales – as well as to the requirements to manage the exploitation of prey species in such a way as not to impede the productivity of predators.



Marine Disasters and Coasts Vulnerability

At the thematic session on “Marine Disasters and Coasts Vulnerability”, held in the morning of Day 3 of the Conference, a total of six presentations were made by their authors: G. Pararas Carayannis (National Technical University of Athens, Greece), P. Bernal (IOC), J. J. Bogardi (UNU/EHS), Y. Ono (UN International Strategy for Disaster Reduction), and S. Goosby (Pacific Disaster Centre, Thammasat University).

“Critical Assessment of Global and Regional Marine Disaster Vulnerabilities – Strategies for mitigating adverse impacts” by Dr. George Pararas Carayannis, National Technical University of Athens, Greece.

Dr. Pararas Carayannis gave a general overview of historical tsunamis and recommended that more attention be paid to engineering considerations such as building code changes, proper construction design criteria and retrofitting of existing structures.

‘Progress in the Development of the Tsunami Warning System’ by P. Bernal, Intergovernmental Oceanographic Commission.

Prof. Bernal informed the participants of the development of the end-to-end global tsunami warning system. He paid special attention to the Indian Ocean and Mediterranean Sea subsystems, where although there is still much to be done there are member states which are ready to issue warnings in real time. He shared with the participants information about future activities and expressed concern that there are still big uncertainties regarding decision-making and sharing of responsibilities at the national and local levels. Lack of political and public awareness and preparedness continue to be key obstacles.

‘Coastal Disasters: When Marine Hazard and Terrestrial Vulnerability Meet – Risks, Reasons and Remedies’ by Janos J. Bogardi, United Nations University, Institute for Environment and Human Security, UN Campus

Prof. Janos Bogardi spoke about the increase of coastal vulnerabilities, which in turn increase the risks of coastal disasters. He demonstrated the interconnection between marine hazards and the displacement of populations from coastal areas. Results of the post-tsunami studies of UNU/EHS and the concepts addressing the environmentally forced migration issue were presented.

‘Risk Factors for the 17 July 2006 Java Tsunami Which Killed 802 People’ by Yuichi Ono, Policy and Inter-Agency Coordination Unit, United Nations International Strategy for Disaster Reduction

Dr. Yuichi Ono described the role of ISDR in building resilient communities by promoting increased awareness of the importance of disaster reduction. He presented results of the field survey to investigate the risk factors accounting for 802 deaths caused by the 17 July 2006 Java Tsunami. The risk factors included: 1) lack of warning; 2) people did not take actions because the earthquake was weak; 3) fragile building structures; 4) no places to shelter lives from tsunamis.

‘DisasterAWARE: A Comprehensive Decision Support System for the Emergency Manager’ by Stanley Goosby, Pacific Disaster Centre, Chief International Coordination, NDWC, Disaster and Emergency Management, Thamassat University

Mr. Stanley Goosby introduced a decision support system known as Disaster AWARE, which stands for Disaster All-Hazards Warning, Analysis and Risk Evaluation. It is a GIS-based system used to receive and determine whether or not received information deserves attention and to what degree. The system increases the capacity of disaster managers to synthesize multiple data streams for critical early warning and decision support.



Recommendations

The following recommendations emerged from the session:

1. Keeping awareness, making the right political decisions and readiness in the face of very rare, however, very devastating events like tsunamis, but also storm surges and hurricanes, is an extremely difficult process. However, there is no alternative but to build awareness in the political sphere and in the population and communities at risk.
2. UN Agencies, governmental and nongovernmental organizations should unite their efforts in building awareness.
3. The tasks of awareness and education are well beyond the lifespan of a single generation, not to mention a legislation period of elected officials or politicians. Therefore, the organizations of the entire humanity, first and foremost the UN System, should be enabled to keep the momentum and risk awareness alive, to service early warning systems and incessantly remind national and local governments to maintain risk awareness and preparedness all over the world's coasts.
4. The Conference calls on governments to support the efforts of the United Nations, led by the IOC, in engaging and participating in the international effort to build tsunami early warning systems in all major ocean basins at risk.
5. The Conference calls on the governments to build tsunami warning and preparedness activities into their multi-hazard national plans, and to support and sustain them as part of their development efforts.
6. There is a need to have access to new information tools for a better understanding of marine hazards, and new technology to deliver messages to communities should be widely used.
7. Improved education in marine natural hazards should become a key factor in increasing effectiveness of the preparedness efforts.
8. There is a need for technological improvements for the detailed assessment of risks and adaptations of strategies that incorporate planning for the preparedness of early warning systems, for appropriate land use, for hazard micro-zonation, for engineering guidelines and many other activities.
9. Issues of social vulnerabilities should be sufficiently addressed and mitigated by local governments to assure sustainability.



Oceans and Climate (IMarEST)

'The heat is on... young voices join the climate change debate', Dr. Bev Mackenzie, CMarSci, IMarEST

At the thematic session on Oceans and Climate, participants were divided into three teams to voice their opinions on the following three arguments: a) "Engineers are key to solving the climate problem" vs "Scientists are key to solving the climate problem"; b) "The public need to make a personal effort to combat climate change" vs "the government needs to take action to climate change"; and c) "The shipping industry is playing a part in combating climate change" vs "shipping industry is not playing a part in combating climate change".

The conclusions of the first team were:

- Emissions from inventions by Engineers contributed to climate change;
- Engineers are not ready to understand ecosystem mechanisms;
- Scientists are problem finders and Engineers are problem solvers;
- Climate science has been long understood but nothing has been done.

The second team concluded:

- Governments in developed countries assist developing nations by technology transfer of energy efficiency measures;
- Governments can introduce legislation to improve efficiencies of factories, public buildings and housing;
- (Most) Governments are elected by the public! Without the public support, governments and any policies are ineffective!
- Again, if everyone in the world moderated their transport use, made small changes to their home energy and paid attention to the food they ate, then we would achieve the Kyoto protocol 6 times over.

The results from the debate of the third team were:

- It will be difficult and more costly to use other modes of transport to replace shipping;
- There is a tendency to increase the size of ships, therefore lowering emissions and unit cost for cargo;
- There is only volunteer involvement in emission monitoring and feedback which results in biased feedback;
- Companies will simply run under less onerous flag/classification if costly legislation is implemented.

Recommendations

The following recommendations emerged from the overall session:

1. It is recommended that the interaction between scientists, engineers and technologists is encouraged in order to mitigate, and adapt to, the effects of climate change.
2. It is recommended that scientists, engineers and technologists are further encouraged to participate in cross-disciplinary fora to improve communication through debate and the exchange of ideas.