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United Nations Institute for Training and Research

UNITAR SERIES ON SEA AND HUMAN SECURITY

Governance Toward a Comprehensive Security for Seas and the Ocean

Seventh Session

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Tokyo



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- Hiroshima University;
- The Japan Agency for Marine-Earth Science and Technology (JAMSTEC);
- The Ocean Policy Research Foundation (OPRF);
- Partnerships in Environmental Management for the Seas in East Asia (PEMSEA);
- United Nations University Institute for Advanced Studies (UNU-IAS);
- The University of Tokyo;
- The Ocean Alliance;
- Tsukiji Fish Market;
- Dr. Keita Furukawa, Head of the Marine Environment Division of the National Institute for Land and Infrastructure Management

Special thanks must also go to the Faculty and Participants who so graciously contributed their time and expertise to the Session. Finally, to the many friends of UNITAR in Japan and around the world whose cooperation over the years has made this Series possible, we extend our heartfelt gratitude.



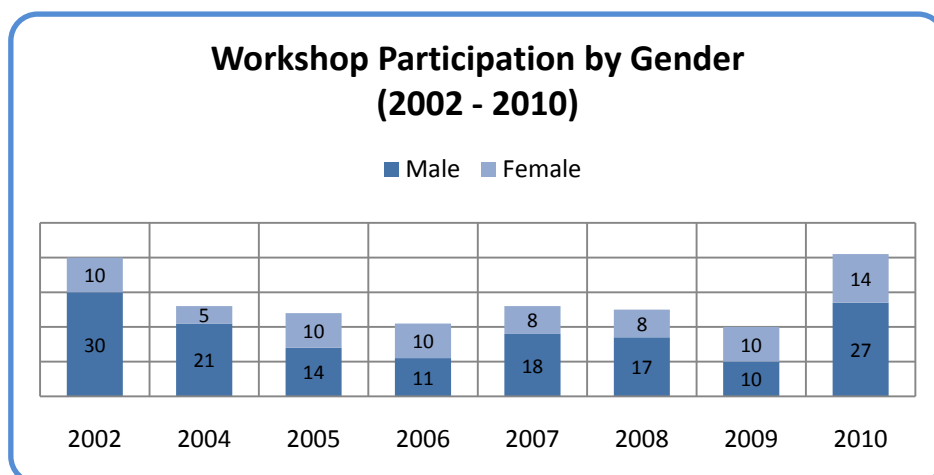
INTRODUCTION

Seas, Coasts and the Ocean are part of the human security complex. Myriad factors including social, political, environmental and economic aspects of human security depend upon the sustainable and comprehensive governance and management of these areas. Inaugurated in 2002-2003, the UNITAR Series on Sea and Human Security examines, from a comprehensive point of view, the concept of human security as it pertains to seas and the ocean.

Begun in 2002 with an International Conference¹, the UNITAR Series on Sea and Human Security has from its beginnings been focused on mainstreaming the importance of a comprehensive approach to the economic, political, environmental and nutritional aspects of human security as it pertains to seas and the ocean. The 2010 Session represented the seventh annual gathering and the first to be held in Tokyo.

The Workshop provides the conceptual grounds and practical guidelines for this comprehensive approach, as well as the attendant implications for sustainable development. The Series outlines four main areas of focus;

- The Interrelation between Habitats, Ecosystems and Human Food Security
 - marine food security;
 - marine food production and the environment.
- Strategies for Disaster Management and Risk Reduction
 - adaptation to climate change;
 - disaster management and risk reduction;
 - integrated socio-economic impact assessments.
- Training of Trainers for Integrated Coastal Management (ICM) Implementation
 - the cross-cutting theme of Training of Trainers, in particular in the context of ICM.
- 4) Ocean Governance: Awareness Creation and Implementation
 - studies on governance which enable the implementation of action items.



¹ International Conference: "Sea and Human Security" www.unitar.org/hiroshima/Pilot_Phase/IntConfSHS.htm



2010 SESSION

Underpinning the success of the Series to date is the knowledge, commitment and intellectual involvement of its Resource Persons, as well as the contact maintained with Series alumni. In the lead up to the 2009 Session, Resource People and UNITAR, utilising alumni evaluations of previous Sessions, outlined the substantive content and methodology of the Session. Series alumni assisted in identifying suitable candidates.

The Session was attended by a total of 38 Participants and Resource Persons representing 13 countries, predominantly from the Asia-Pacific region. For the first time in the history of the Series, invitations were extended to members of the diplomatic community accredited to Tokyo which resulted in 18 diplomatic participants representing 15 countries in attendance. This very interesting dynamic proved to be a very successful initiative which will be replicated in the future.

The 2010 Session, officially opened by Mr. Yasuo Hashimoto of the Hiroshima Prefectural Government built on the progress towards providing a conceptual ground and practical guidelines for a comprehensive approach to security, made since the inception of the Series in 2002-2003.

Topics and action items focused upon in the 2010 Session included *inter-alia*:

- Seafood security;
- Marine food production and the environment;
- Integrated Coastal Management (ICM);
- International Transportation and Trade;
- Sustainable Development and the Ocean;
- Regional Cooperation;
- Climate Variability;
- Adaptation to and Mitigation of Climate Change;
- Conflict Resolution;
- Governance.

In all aspects of these action items, a Training-of-Trainers approach was implemented, empowering participants to replicate the training in their respective communities and organisations.





INTERACTIVE PRESENTATIONS AND LECTURES

The interactive presentations and lectures were systematically followed by an "After Action Review" (AAR) whereby participants discussed the content delivered amongst themselves, bringing their own localised understanding and frames of reference to the subject material. Groups were then invited to outline what had been received from the presentations, or to enquire after further information or clarification of certain issues covered. The presentations consisted of;

Monday 6 September

Climate Change and Global Challenges: Science and Technology Options
Govindan Parayil
Vice Rector – United Nations University (UNU)
Director –Institute for Advanced Studies (UNU-IAS)

Dr. Parayil opened the proceedings with a thought provoking discussion in regards to the challenges posed by climate change and the relationship therein with development. Presenting a hypothetical environmental Kuznets curve Director Parayil explained the relationship between per capita ratios of pollution vs. per capita income.

Stressing that global warming is both a local and a global problem it was acknowledged that the issues arising and forecast cannot be addressed by existing environmental regulatory tools, nor can climate change can't be solved as a simple externality problem. The challenges posed to science, technology, economics, environmental sciences, and international politics and public policy to come up with solutions to the risks identified by both the existing body of evidence and growing quantitative assessments was also outlined.

In examining the issues inherent in the challenges faced by the international community in this regard, Dr. Parayil outlines the both the ethics and economics of climate change. It was presented as a tragedy of the commons on a global scale with one of the ultimate questions being who should bear the responsibility for the mitigation of climate change.

The implications of climate change for development, and therein the impact upon the United Nations Millennium Development Goals was addressed, and then focused upon with specific examinations of the impact of climate change on developing regions, in particular South and South-East Asia and North Africa and the Middle East.



In the case of South and South-East Asia the following threats were identified :

- Crucial annual monsoons would be affected
 - threat to food security
 - threat to drinking water
 - extreme climates lead to droughts and flooding
- Melting of Himalayan glaciers could affect the survival of several great rivers affecting the whole region, including China



- Rising ocean levels will threaten millions
- Hundreds of millions could be pushed into poverty, negating recent gains

In the case of North Africa and the Middle East the following threats were identified :

- More desertification and water shortages
- Hundreds of millions will be pushed into hunger
- Possibilities of intensifying conflicts over water resources
- Global population movements due to environmental catastrophes

The global reaction to the issues as outlined was then examined, in particular the areas of adaptation and mitigation, defined as;

Adaptation: *reduce the adverse impacts on human well-being resulting from the changes in climate.*

Examples:

- Transition to clean energy
- Changing consumption (zero emission) and agricultural practices
- Strengthening defenses against climate-related disease
- Building more dams and dikes

Investing in adaptation was shown to be possible through;

- Human capital (investing in health and education)
- Social capital (bringing civil society in the development process - good governance)
- Physical capital (infrastructure)
- Natural capital (protection of rain forests and mangroves)
- Technological innovation and diffusion on a global scale and sharing of these with developing nations

Mitigation: *reduce the pace and magnitude of the changes in global climate being caused by human activities.*

Examples:

- Large scale reduction of emissions of Greenhouse Gasses (GHGs)
- Enhancing "sinks" for GHGs
- "Geoengineering" to counteract the warming effects of GHGs
- New technologies

Dr. Parayil went on to describe the need for the development of markets and institutions for adaptation, which must be developed and implemented in a sustainable manner. In



concluding challenges to global innovation were outlined, before a discussion was proffered on the themes of incremental vs. radical innovation; disruptive innovation; technological catching-up vs. leapfrogging; socio-technological systems and transition; the concepts of technology transfer vs. sharing and the advantages of open innovation and a global circulation of knowledge.

UNITAR acknowledges the continued support of Dr. Parayil and UNU-IAS and thanks him for his input to the Sea and Human Security Programme.



Ocean Governance: A Comprehensive Approach
Berin McKenzie
Specialist – United Nations Institute for Training and Research (UNITAR)
Regional Office for Asia and the Pacific

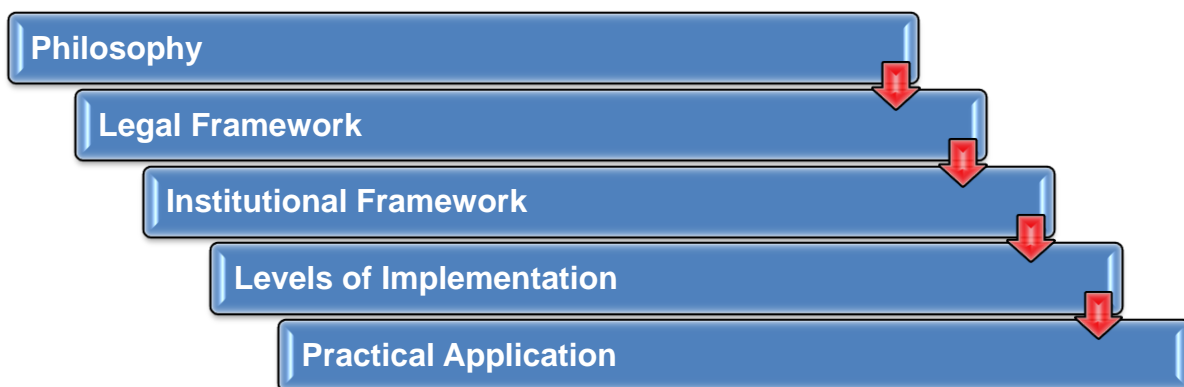
A specialist at UNITAR, Mr. Berin McKenzie is responsible for the overall development arc and implementation of the Sea and Human Security programme. Mr. McKenzie began by outlining the development of the Series to date, acknowledging the input and dedication of several long-term collaborators who were unable to attend the 2010 Workshop, namely Dr. Gunnar Kullenberg, an Associated Fellow of UNITAR; Dr. Chua Thia-Eng, of Partnerships in Environmental Management for the Seas in East Asia (PEMSEA); and Ms. Masako Otsuka of the International Ocean Institute (IOI).

The change in focus of the concept of security from a state-centric approach which dominated throughout the cold war to a human-based approach, focused, *inter-alia* on Economic; Ecological; Environmental; Social; Food; Health; Poverty; Hunger and Human rights concerns was outlined and identified as the crux of the Series to date.

Key to the new concept of security is that it must respond to the requirements of sustainable development and requires a change in perception which will only be bought about by education, by training, and by a constant reappraisal of the needs of stakeholders and the ocean itself. In regards to this, the UNITAR Series on Sea and Human Security: Governance Toward a Comprehensive Security for Seas and the Ocean, two definitions were stressed as being of paramount import.

Ocean ≠ Oceans
Governance ≠ Government

A comprehensive, multi-stakeholder approach to ocean governance must be instituted, one which follows the process outlined below:



In doing so, and with clear identification and integration of stakeholders, as well as well defined roles and responsibilities and conflict resolution measures can help to ensure an increasingly effective broad-based approach to ocean governance.

Ocean governance was defined as the means by which ocean affairs are managed by;

- Governments
- Local communities
- Industries



- NGO's
- Other stakeholders

Through;

- National and International Law
- Custom
- Traditions
- Culture
- Related Institutions and Processes

Ocean Governance was presented as imperative due to the role the Ocean plays in life-support and climate systems, in particular through the fact that it drives hydrological, carbon, nutrient and energy cycles as well as providing ecosystem services and nutrition. With some 40% – 50% of the worlds population living in a coastal zone, and with coastal areas and Exclusive Economic Zones represent enormous national resources, the importance of a comprehensive approach to ocean security and management is manifest.

The opportunities posed by comprehensive ocean management were presented as follows;

Exclusive Economic Zones, Coasts and the Ocean are multipurpose and as such the linkages provided by such an approach will help with the identification of duplication and waste, as well as of opportunities for collaboration, information sharing and support. The normative aspect of a comprehensive approach to security – whereby stakeholders, by necessity, must be identified and the rules of local, regional, and international agreements must be observed and integrated into the planning process – allows for processes and interaction to be normalised for all parties.

As part of this process, the importance of commonalities of interest above conflict, as well as the distribution of risk through interdependence and a “mesh” of stakeholder obligations and agreements also enable a comprehensive approach. Crucial to this is the fact that within such a broad-based system, conflict not only is expected, but is planned for from the beginning of the process with well defined dispute identification, avoidance and resolution measures implemented as part of the planning process.

While, it was acknowledged, this change-of-perception process would not be easy, the following methods were outlined as a means to both “sell” the concept to concerned stakeholders, as well as to assist in the development and implementation process.



Govindan Parayil



Berin McKenzie



Nobuyuki Yagi



Nancy Bermas



Joannés Berque



- Participation and Communication
Communication, both horizontal and vertical, at and between all-levels must be open, transparent and two-way in order for there to be clearly defined roles and responsibilities, as well as to assist in the aforementioned identification and integration of stakeholders, as well as conflict.
- Trans-Sectoral And Inter-Disciplinary Integrated Mandates
The concept of unity in diversity creating security was outlined, along with specific examples including;
The current necessity for unity in regards to;
 - nutrition, food production and provision
 - climate change and the market economy
- Maintenance of inter-connectedness
- System oriented management approach
- Equity of human rights and humanitarian concerns
- Sustainable development
- Trust

The importance of trust was stressed, particularly at the outset of any change of perception process that incorporates varied stakeholders. The nurturing of trust, both on a formal and informal basis is required to ensure the smooth and effective exchange of information, as well as transparency and the adoption of an accepted rule of law.

International Transportation and Trade **Nobuyuki Yagi** **University of Tokyo**

Dr. Yagi began by outlining some of the pertinent statistics in regards to the international trade in fisheries products;

- Some 37% of fishery products are exported (FAO 2009)
- Developing countries export 59% by volume (49% by value) of all fish product exports (FAO 2009)
- The European Union, Japan, and USA are the three largest markets for the world's fishery products, consuming 72% (by value) of all exported fishery products as of 2006 (FAO 2009)
- Japan is the largest single importer of fishery products, importing 16% (or \$14 billion USD) of the world traded fishery products

Following this, the current approach of the World Trade Organisation (WTO) to fishery products was outlined, with particular focus on the Non Agricultural Market Access (NAMA) negotiations process, wherein tariff and non-tariff barriers for fishery products are negotiated. While the needs of developing nations are clearly outlined in the Ministerial Declaration of NAMA, Dr. Yagi explained that there are no environmental, or resource conservation, issues mentioned.

Following this, Dr. Yagi examined the long-term supply curve (price vs. production) with examples presented of the Moroccan octopus, as well a purely theoretical approach. Before entering into a discussion of the social dimensions of free trade regimes, an explanation was made of the coolly received proposals by Japan, Korea and Chinese Taipei in regards to a species-by-species approach to fish in trade liberalisation.



The winners of free trade regimes were shown to be producers in exporting countries and consumers in importing countries, with this situation reversed, consumers in exporting countries and producers join importing countries being shown to be losers in this equation. This was supported by graphs outlining the effects if both exporting and importing on price, quantity and demand as well as the social implications of such, which were in turn supported by a graph showing the decrease in the numbers of people engaged in fisheries in Japan (1971 – 2007)

The discussion continued, incorporating a focus on the subsidy negotiations within the WTO, concluding that particularly in the area of over-fishing, new developments, if agreed to, could provide a significant first step for the WTO in the area of natural resource conservation. It was conceded however that more discussions are needed to avoid side effects against social welfare in coastal communities. Specific examples, including the WTO dispute settlement case on “shrimp-turtle” were presented, as well as the adoption of eco-labelling.

In conclusion, Dr Yagi stated that coastal countries are responsible for their own resource conservation under the United Nations Convention on the Law of the Sea and that it is very difficult for importing countries to impose import sanctions under the WTO regime. This leads to a combined effect of exporting countries having to implement resource conservation measures for sustainable use. The main issue here however is the cost of conservation with most exporting countries being developing countries, which lack both the financial and human capacities for resource management.

Integrated Coastal Management (ICM)
Strengthening Governance for Planning and Management of Coastal Areas
Nancy Bermas
Partnerships in Environmental Management for the Seas in East Asia (PEMSEA)

Ms. Bermas opened her very in-depth presentation by outlining, under the auspices of “The imperatives of ICM”, the value of coastal areas from a variety of values-based frames of reference.

These included;

NATURAL VALUES	HISTORICAL, CULTURAL AND SOCIAL VALUES
<p>Ecological</p> <ul style="list-style-type: none"> ■ Biodiversity ■ Habitats ■ Estuaries ■ Wetlands ■ Mangroves ■ Seagrass beds ■ Coral reefs <p>Resources</p> <ul style="list-style-type: none"> ■ Living resources ■ Minerals ■ Water <p>Tourism and Recreation</p>	<p>Settlement And Development</p> <ul style="list-style-type: none"> ■ Trade ■ Shipping and ports ■ Fisheries and aquaculture ■ Mining and oil exploration ■ Agriculture & forestry ■ Industrial ■ Residential



The threats to these areas were presented as

HUMAN-INDUCED RISKS	OTHER
<ul style="list-style-type: none"> ■ Pollution from land-based activities <ul style="list-style-type: none"> ■ domestic ■ industrial ■ agricultural ■ Pollution from sea-based activities <ul style="list-style-type: none"> ■ ports and shipping ■ oil exploration ■ Habitat degradation ■ Siltation and sedimentation ■ Unsustainable resource use ■ Endangered species trade ■ Introduction of exotic species ■ Coastal development 	<ul style="list-style-type: none"> ■ Natural hazards ■ Multiple use conflicts <ul style="list-style-type: none"> ■ Industry vs. fisheries ■ Reclamation vs. mangrove protection ■ Municipal vs. commercial fishing ■ Shipping vs. fishing/aquaculture ■ Climate change and sea level rise

ECOLOGICAL	ECONOMIC	SOCIAL
<ul style="list-style-type: none"> ■ Loss of biodiversity ■ Loss of habitats ■ Decreased productivity ■ Alteration of natural flow regimes of rivers ■ Contamination of water bodies 	<ul style="list-style-type: none"> ■ Increased health costs and work loss days ■ Increased public expenditures on social services <ul style="list-style-type: none"> ■ new infrastructure ■ infrastructure maintenance and rehabilitation 	<ul style="list-style-type: none"> ■ Unemployment, loss of income or livelihood ■ Work loss days, decrease in productivity ■ Loss of shoreline protection <ul style="list-style-type: none"> ■ need for infrastructure

Against this backdrop, the Coastal Resource System was introduced and shown as being at the intersection of interest between the Terrestrial and Marine Environments and Human Activities. ICM was presented also as being an operational tool for sustainable development, in particular as ICM is a recognised international approach to governance, as well as being a globally recognised management framework.

With the ultimate goal of ICM being defined as;

“To achieve sustainable development of coastal areas and improving the quality of life of the coastal population.” This was augmented by further aims which included;

- Reducing/resolving multiple use conflicts
- Maintaining ecosystem functions and services
- Enabling stakeholders
- Strengthening partnerships
- Improving interagency and multisectoral coordination
- Promoting policy and functional integration

Crucial to the achievement of these aims is an understanding that there is no quick-fix solution to coastal problems, nor is there a one-size-fits-all strategy for the foundation of ICM practice. However, key amongst all ICM processes is the need for functional integration on a horizontal and inter-sectoral basis, as well as policy integration on a vertical and hierarchical basis, as well as coordination between all parties.



Ms. Bermas went on, in a section entitled *PEMSEA Programme – From Demonstration to Replication*, to provide real world examples of ICM implementation while outlining the Framework for Sustainable development of Coastal Areas. The programme development and implementation cycle was shown as having six distinct stages, entitled Preparing; Initiating; developing; Adopting; Implementing; and Refining and Consolidating. Of particular note is that following the Sixth stage, which incorporates monitoring, evaluation and reporting, a new cycle begins once again, highlighting the constant nature of the process. Crucially for the credibility of the ICM process, science is incorporated at all of the above stages

The presentation continued - through real life examples including the ICM programme in Danang, Vietnam, and that in Guimaras, Philippines- examining the triggering point and opportunities for initiating an ICM programme, the evaluation of a potential site; the delineation of management boundaries.

The timeframe for the ICM cycle was introduced also with an ideal target being 3-5 years dependant on such issues as;

- Geographical scope
- Severity and complexity of environmental and management issues
- Institutional and financial capacity of the government
- Experience and capacity

It was stressed that it was preferable that the ICM cycle coincide with the planning cycle of the government concerned, and that any given ICM site may need several cycles programme development and implementation in order to realize its ultimate goal or vision. Ms. Bermas concluded with some further real world examples of ICM Good Practice, including Integrated land- and Sea-use Zoning in Bataan in the Philippines, and Xiamen, China; Interagency, Intersectoral Coordinating Mechanisms in Batangas in Philippines; the replication of ICM in other countries including Thailand, Singapore and Indonesia, as well as scaling up towards the future.

Sustainable Development:

Development which meets the needs of the present without compromising the ability of the future generations to meet their own needs.

World Commission on Environment and Development (1987)

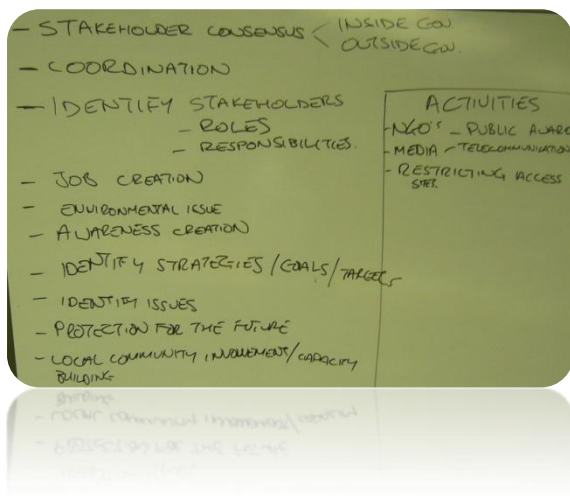
Emerging Practices in Sustainable Management of Human-Influenced Coastal Seas in Japan
Dr. Joannès BERQUE
UNU-IAS

Beginning with the question *Is nature best without humans?*, Dr. Berque outlined the traditionally exclusionary approaches to conservation, that is, removing the human element, as seen in the creation of protected areas. This was followed by a presentation of cultural landscapes, stating that pre-industrial agriculture in most countries of was sustainable, or *positive*, with each successive generation leaving a more productive land than the one it has received. The biodiversity as evidenced at these places had evolved and adapted to this strong human influence. There has been a shift, stated Dr. Berque, predominantly for terrestrial ecosystems, toward the recognition of the role of traditional culture in maintaining landscape and biodiversity.



In developing the modern Satoumi² approach there is no concern regarding a hypothetical overall positive influence of humans on coastal ecosystems, rather it is a nuanced view of human interaction with nature in the coastal zone as not always being destructive. The conservation and restoration approaches that put to use human interaction with the coastal ecosystem are active measures which must be seen as alternatives and complements to exclusionary and mitigating approaches, rather than something with which they may be replaced.

Of particular relevance to Japan is that, through its extensively human-influenced coastline, it is not possible to ward off human influence, rather, we must learn to



conserve also in places where humans live. This approach can be extrapolated to other coastal areas, particularly with coastal development accelerating worldwide and some 1.1 billion people living in the worlds 25 biodiversity hotspots.

Using examples including biodiversity restoration through the controlling of geochemical fluxes, Dr. Berques introduced activities designed under Satoumi principles that are currently being implemented throughout Japan. His examination of the Tokyo Bay artificial tidal flats had particular relevance for the Workshop as a visit to these comprised a portion of the Study visit agenda

on the third day. The benefits of this project were highlighted as;

- Locally enhanced biodiversity
- Small area but enhances environmental connectivity
- Showing the potential to reduce fragmentation of natural habitat
- Providing a good opportunity for the involvement of local communities

Another benefit of the Satoumi process was shown to be the internalization of the costs of conservation with fisher-people, under the usual exclusionary approach to conservation contributing simply by being inactive during moratoria or staying out of protected areas. Though the Satoumi approach, fisher-people are seen to engage (predominantly in-kind) resources in active conservation measures.

Satoumi is therefore a co-management approach, with fishers actively contributing to conservation, contributing therefore, stated Dr. Berque, to a less antagonizing backdrop in regards to conservation, as well as providing for community engagement in the process itself. In conclusion, the necessity of the Satoumi approach to be examined from longer and larger scales was highlighted, as was that of Satoumi being approached from a multidisciplinary perspective. The up-scaleability of the process from community-level to policy was also commented upon, as were the possibilities of international cooperation in regards to experience sharing amongst other cultures.

² "Sato" means the area where people live, and "umi" means « sea ». Sato-umi is an important sea-area which has been supporting culture and cultural exchanges through such things as fisheries and the distribution of products. It is an area which includes both Nature and human-beings, as well as an area in which both high biological productivity and biodiversity are expected

Ministry of the Environment of Japan : www.env.go.jp/water/heisa/satoumi/en/01_e.html



Climate Variability and Coastal Security
Swadhin Behera
Japan Agency for Marine-Earth Science and Technology (JAMSTEC)

Dr. Behera began his presentation by outlining some of the multiple risks posed by climate variability, with a particular focus on those related to the coast. In an effort to contextualise the discussion to follow, the scales of climate processes were then focused upon, with the following definitions proffered:



Dr. Behera then introduced the concepts of Coastal Upwelling and Primary Productivity; Interannual Climate Phenomena, including La Nina, El Nino and the El Nino *Modoki*³ and the Indian Ocean Dipole (IOD) before concentrating on the impact of climate variation on river flow, using the Tana river in Kenya, the Rufiji River in Tanzania and the orange Rover/Gariep River in South Africa as examples.

Entering then into an explanation of the role of climate variation in marine productivity, Dr. Behera outlined anomalies in world marine fish catches as identified by the FAO before linking this discussion specifically to Java/Sumatra utilising satellite imagery comparing the effects of both positive and negative Indian Ocean Dipole.

The impact of the climate on sea-level was examined thoroughly and the impact of, for example, frequent occurrences of positive IOD on Coastal Zone Management, tourism, offshore operations, ship routing and insurance were outlined before the monitoring and modelling of climate variability were discussed in further detail.

In particular the Argo observation system, a collection of some 3000 sensors deployed in the worlds ocean, that provide real-time data for use in climate, weather, oceanographic and fisheries research as well as the general applications for ocean modelling were introduced. In conclusion, an outline for Integrated Coastal Management containing a climate option was introduced, with the following recommendations; Develop a fair and transparent process working with stakeholders to identify and evaluate options and tradeoffs to arrive at solutions that maximize societal benefits for current and future generations.

- Better understanding of the impacts of climate variations on coastal communities, regional ecosystems, and species - which need to be studied under the stress of climate change

³ « *Modoki* » means « Similar, but different » in Japanese.



- Improved resilience (resilience adaptation) should be associated with improving coastal economies so that they are better able to respond to and recover from hazards
- Such resilience should include traditional wisdom
- Developing educational and public awareness initiatives to transfer research information to emergency preparedness and planning officials, local government personnel, and the public
- Able governance which should include monitoring and future anticipation – essentially with the helps of computer simulations, predictions and projections

**Climate Change Mitigation and Adaptation:
A Perspective from the Atmosphere and Ocean interaction
Takao Yamashita
Hiroshima University**

Beginning by providing an outline of climate change, Dr. Yamashita proceeded to introduce atmospheric and ocean circulation and the interaction of the two, with a particular focus on thermohaline circulation. The presentation then examined climate variability and the influence of the Pacific Decadal Oscillation (PDO), a pattern of Pacific climate variability that shifts phases on an inter-decadal time scale.

While outlining adaptation measures, Dr. Yamashita discussed the influence of the North Atlantic Oscillation (NAO) and atmospheric blocking before examining the causes of climate change and global warming. Key to the adaptation measures outline was the concept of *drivers* which in this context were defined as “fundamental processes in society, which drive activities with a direct impact on the environment.”



Key drivers include:

- Demographics
- Economic Processes: consumption and production patterns
- Scientific and Technological Innovation: 20th Century
- Cultural, Social, Political and Institutional Processes
 - economic demand, markets and trade
 - distribution patterns
 - institutional and social-political frameworks and value systems

These, outlined Dr. Yamashita, must be taken into account when examining the state and trends of environmental change. This change may be Natural, Human-induced or both:

- Natural processes
 - Solar radiation
 - Extreme natural events



- Atmospheric Tele-connection and Oscillation
- Human-induced environmental change
 - Climate change
 - Desertification
 - Land degradation
 - Biodiversity loss
 - Air and water pollution

Different forms of natural or human-induced changes interact and the following must be kept in mind when developing or instituting adaptation measures;

- Climate change will inevitably lead to ecosystem change, which may result in desertification and/or biodiversity loss
- The complexity of the physical, chemical and biological systems constituting the environment makes it hard to predict environmental change, especially when it is subject to multiple pressures
- The state of the environment and its resilience to change varies greatly within and among regions due to different climatic and ecological conditions

Key responses to climate change address the issues of vulnerability of both people and the environment, and provide opportunities for reducing human vulnerability as well as enhancing human well-being. These responses take place at various levels;

- Environmental Laws and Institutions at the national level, and
- Multilateral Environmental Agreements (MEA) and Institutions at the regional and global levels

However, the capacity to mitigate and/or adapt to environmental change differs among and within regions, and capacity building is a major and overarching component of the response components.

Dr. Yamashita continued, with an examination of mitigation measures, including carbon Capture and Storage (CCS), the development of Fast Breeder Nuclear Reactors and proposals such as the DESERTEC concept, which aims at promoting the generation of electricity in deserts using solar power plants and the transmission of this electricity to relevant consumption centres.

**Local Government and People's Participation on
Coastal Resource Management for Attaining Food Security
Dr. Masahiro Yamao
Hiroshima University**

Beginning with several statements regarding the development of a decentralised and participatory management system for attaining food security, Dr. Yamao covered Management, decentralisation and participation; Governance and its framework; and New trends before focusing on the cluster approach to Coastal resources management (CRM).

Dr. Yamao argued that top-down approaches seldom work due to;

- Poor enforcement of fisheries laws at local levels
- Not reflecting fishers opinions and attitudes
- Not fitting with the local reality of fishers
- High management costs



Following an explanation of the requirements and advantages of decentralisation, the advantages of the inclusion of local communities into Coastal Resource Management was outlined. This included:

- Making consensus and achieving agreement based on the information available by considering local knowledge
- Increasing the representation of the community or stakeholders as a way to build legitimacy
- Contributing in conflict resolution and coordination
- Improving decision making procedures
- Encouraging accountability and compliance among the participants and the outside.

The concept of Community Based Resource Management was reinforced with the explanation of the specific functions the community is expected to take in the process, which culminates in the community becoming the primary unit. Dr. Yamao was careful to stress however that the term community holds a wide variety of meanings which differ from area to area and country to country.

Successful factors in community-based and co-management projects were dependant upon three requirements;

- Target activities being clearly identified
- The level of participation
- Legal and formal support

Crucially, as Dr. Yamao pointed out, the successful projects of this type as implemented thus far have managed to implement *loosely controlled* management, with tightly controlled management not always being the target. The differing types management that have developed, including Community-based Management, Networks of such and Resource Users Group Management were outlined and supported using specific examples from Waorada Bay in Indonesias' Bima district.

Through this case Study, the necessity of the development of a partnership between Local and District fisheries services was outlined, Traditional ecological and biological knowledge and local and traditional rules are formalised from the Local side, with Scientific ecological and biological knowledge and the provision of legal frameworks being provided by the District participants.

Further examples of decentralisation and Community based Resource Management were provided through a case study presented on Banate Bay, Panay Islands, the Philippines, which has seen Municipalities increase their role in Coastal Resource Management and Conservation, as well as the creation of the Banate Bay Resource Management Council, Inc. (BBRMCI), an alliance formed by the Anilao, Barotac Nuevo, Barotac Viejo, and Banate municipalities in Iloilo province in an attempt to overcome a "tragedy of the commons" scenario, as well as contributing to Institutional Development, Law enforcement, Coastal Zone research and Data Banking, Livelihood Development and the Rehabilitation and Conservation of Mangroves.



Seafood Security
Yasuwo Fukuyo
Asian Natural Environmental Science Center
University of Tokyo

Dr. Fukuyo began his presentation by defining the terms to be discussed thus:

- Quantity: enough amount
- Quality: safe, tasty, nutritious, variation
- Price: reasonable against quality and quantity
- Accessibility: available at market nearby
- Sustainability: available anytime

It was then stressed that while the issues to be discussed were pertinent globally, the management approach must, by necessity, vary depending on region/area, because of a difference of priority of issues.

Focusing first on the growth of aquaculture and in particular the statistics behind the relative contribution of aquaculture and capture fisheries to fish food consumption, Dr. Fukuyo highlighted the massive growth from the Chinese market. The importance of the Asia region to this process was also underscored by examining the worlds top ten aquaculture producers of food fish supply, with the top 7 spots filled by Asian countries and five of these being from the Western Pacific.

This statistical analysis led into a discussion on the importance of governance, as well as the conflict between seafood security and environmental conservation, supported by an increase of concern amongst people in regards to not only areas of accepted concern: pollution, eutrophication, global warming and ocean acidification for example, but also biological change as brought on by the transfer of non-native organisms through aquaculture activities and ballast water.



Using examples of the destruction of mangrove forests in Thailand, due to the development of shrimp culture farms, as well as mega-scale shrimp culture farms in Indonesia, Shrimp and fish culture in Vietnam and fish cage culture in Japan, Dr. Fukuyo compared and contrasted the management and governance processes for each.

Statistics related to red tide cases vs. the aquaculture production of yellow-tail were also examined with related explanations given regarding the factors that contribute to the correlation outlined. In particular;

- Water quality, especially nutrients in water
- Sediment quality by accumulation of substances
- Changes in the phytoplankton community

Following outlining these statistics, a case study was presented to show successful environmental conservation in Japan related to aquaculture and incidences of red tides. It was found that lowering the amount of nitrogen (N) and Phosphorous (P) in levels in the waters of the Seto inland Sea was effective in reducing the number of red tide cases. However, Dr. Fukuyo indicated that evidence suggests that there may be a correlation between the reduction of N and P and a decrease in fishery production.



Dr. Fukuyo continued discussing the consequences of algal blooms and the impacts, both on public health and in regards to economic losses, which occur following a toxic plankton occurrence.

Ocean Governance: Policy Development
Hiroshi Terashima
Ocean Policy Research Foundation (OPRF)

Mr. Terashima provided an outline of the Japanese experience of establishing a comprehensive national ocean policy. First tracing the development of the United Nations Convention on the Law of the Sea (UNCLOS) and the Agenda 21 Action Plan, Mr. Terashima indicated that these were developed as part of a paradigm shift by the international community in response to a growing number of problems identified in regards to ocean management, including;

- The indiscriminate exploitation of ocean resources
- The increasingly serious degradation of marine and coastal environments
- Competition and conflict between nations concerning the extent of jurisdictional waters.

Mr. Terashima explained that UNCLOS, which came into effect in 1994, adopted the twelve mile territorial waters regime; the archipelagic regime; the two hundred mile Exclusive Economic Zone regime; and reformed the continental shelf system. It also established the "common heritage of mankind" system regarding the deep sea bed and the mineral resources therein. In addition, the Convention emphasized marine environmental protection and conservation and sought to strengthen international initiatives for the prevention of marine pollution; promoted scientific ocean research for peaceful purposes; and urged cooperation in the transfer of ocean-related knowledge and technology to developing countries. However, while the preamble to UNCLOS states "...the problems of oceanpace are closely interrelated and need to be considered as a whole,⁴" it neither provides concrete measures for individual States to implement nor indicates a concrete framework for how States are to coordinate and cooperate in securing a legal order on the ocean to promote peaceful use, conserve natural resources, and protect the environment.

In regards to Agenda 21, adopted at the Rio Earth Summit in 1992, Mr. Terashima outlined that it sets out detailed action plans for seven programme areas that would comprise a common global policy framework, including "Integrated Management and Sustainable Development of Coastal and Marine Areas" and "Marine Environmental Protection."

From the global perspective, the focus was shifted to Asia, and the initiative known as the Partnership on Environment Management for the Seas of East Asia (PEMSEA), which began in 1994 was highlighted as a successful project, implemented and executed by the UNDP and IMO (from 2007, UNOP).



⁴ www.un.org/Depts/los/convention_agreements/texts/unclos/closindx.htm



Turning to Japan, Mr. Terashima outlined some rapid, concrete steps Japan has recently taken to form its own comprehensive ocean policy, with a Basic Act on Ocean Policy proposal being adopted by the Diet after being submitted in April 2007 by MPs from a multi-partisan group.

Acknowledging that Japan's creation of such a Policy was "tardy", Mr. Terashima observed that its government agencies have been characterized by their vertically compartmentalized division of functions, making them particularly ill suited for addressing comprehensive nature of ocean affairs as they are outlined in UNCLOS. The Basic Law system as implemented is seen as especially useful for facilitating effective coordination in multi-faceted policy areas, such as ocean affairs, which will necessarily involve the different ministries overseeing maritime transport, shipbuilding, fisheries, energy, environment, and the like.

The Basic Act on Ocean policy establishes a basic framework and mechanism to cope with the comprehensive ocean management.

The contents of the Basic Law are as follows:

- Chapter 1: General Provision
 - Principles (6)
 - Obligations and responsibilities of;
 - National and local public bodies
 - Industries
 - The general public
- Chapter 2: Basic Plan on Ocean Policy
- Chapter 3: Basic Measures
 - 12 basic measures including:
 - Development, use and conservation of EEZ and CS
 - Integrated management of coastal zone
- Chapter 4: Headquarters for Ocean Policy
 - In order to promote measures with regard to the ocean intensively and comprehensively, headquarters for Ocean Policy shall be established in the Cabinet. The Head is the Prime Minister, with the deputies being the Chief Cabinet Secretary and the Minister of State for Ocean Policy. All Ministers of State are also members.

The Basic Policy measures are:

- Promotion of Development and Use of Ocean Resources
- Conservation of the Marine Environment
- Promotion of Development, use, conservation of EEZ and Continental Shelf
- Securing Maritime Transport
- Securing the Safety and Security of the Oceans
- Promotion of Ocean Survey
- Promotion of Research and Development of Ocean Science and Technology
- Promotion of Ocean Industries and Strengthening the International Competitiveness
- Integrated Management of the Coastal Zone
- Conservation of the Remote Islands
- Securing International Coordination and Promotion of International Cooperation
- Enhancement of Citizen's Understanding of the Oceans

The key element in the promulgation, adoption and implementation of any such policy, stressed Mr. Terashima, is the establishment of political will.



Conflict Resolution

Alex Mejia

Head - United Nations Institute for Training and Research (UNITAR)
Regional Office for Asia and the Pacific

Mr. Mejia began by discussing one of the key advantages of a comprehensive approach to policy development, namely that due to the large and varied number of stakeholders that must be incorporated into such a process, conflict must be anticipated and therefore identification, avoidance and resolution measures can also be implemented and agreed upon from the outset. Conflict can arise from *inter-alia*,

- Conflicting interests
- Conflicting values
- Conflicting levels of information
- Conflicting abilities to react

In order to avoid conflict before it becomes a hindrance, it must be ensured that all stakeholders are identified and integrated, as well as incorporated into line of communication that are open both vertically and horizontally. The principles of informed consent, accountability and openness must be nurtured throughout the process and any avenues of conflict resolution, should it become necessary, must be open and flexible. These avenues, where possible, should be a process designed and defined by the stakeholders themselves in the planning process and could contain;

- Face-to-face deliberation
- Consensus building
- Joint fact finding
- Mediation
- Education
- Training
- Trust building

A useful practice in any conflict resolution scenario, explained Mr. Mejia, is, rather than focusing on areas of disagreement, to try and identify areas of confluence, as well as the overall importance goal as identified at the outset of the relationship. In addition, an awareness of potential bottlenecks can also assist in the conflict resolution process. These can include;

- Lack of awareness/understanding over processes
- Processes overly complex
- Processes exclusionary
- Staff time commitments
- Staff skill level lacking
- Funding



**Swadhin
Behera**



**Takao
Yamashita**



**Masahiro
Yamao**



**Yasuwo
Fukuyo**

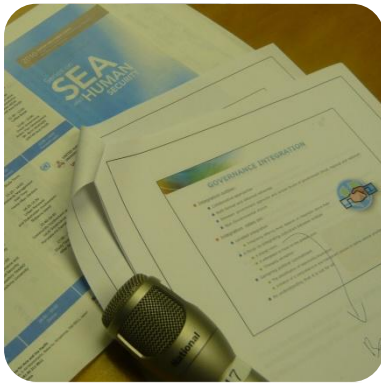


**Hiroshi
Terashima**



Action Plan Development
Mr. Berin McKenzie
Specialist - United Nations Institute for Training and Research (UNITAR)
Regional Office for Asia and the Pacific

In response to evaluations of past participants a new presentation was instituted for the 2010 session outlining the implementation of knowledge upon return to attendees home countries. In introducing the presentation and the process of Action Plan Development, Mr. McKenzie stressed that while action plans must have a clearly defined beginning and end, the development process of such can be an ongoing process, in order to accommodate changes as new information emerges.



Developing an Action Plan provides structure, focus, and control to project planning and implementation as well as helping to identify areas of duplication and waste thereby saving time, effort, resources, and reducing the risk of failure. It assists with communication, coordination, commitment and teamwork, as well as with the initial identification and integration of stakeholders, so crucial for a comprehensive approach to policy implementation. In addition, a well developed Action Plan can assist in mobilising funding through presenting a coherent and concise goal and process outline to potential donors. Following implementation, a well-developed Action Plan can assist in the evaluation of a projects implementation and impact.

Some of the key necessities in Action Plan development, according to Mr. McKenzie, include;

- Identifying and Involving Stakeholders
- Developing or approving:
 - Terms of Reference
 - Organizational structure
 - Roles and Responsibilities
 - Operating Procedures
 - Workplan
 - Timeline
 - Deadlines
- Budget – Likely/Realistically Implementable

In addition, the identification of *milestones* typically indicating the completion of a key activity or project phased assists in not only tracking the project itself, but also the accuracy and efficacy of the Action Plan itself.

Also of great importance in the Action Plan development and implementation phases is the raising of awareness of the project itself. This can assist in providing an overview of the benefits of the project, as well as in allowing the project to stand out amongst others which may be competing for political and/or financial support and approval. Linking any project through its Action Plan, to national priorities and development will also assist in their adoption and implementation.



STUDY TOURS

Study Tours allowed for further opportunities to discuss and learn and those for the 2010 Session benefited greatly from the input and assistance of Dr. Keita Furukawa, Head of the Marine Environment Division of the National Institute for Land and Infrastructure Management. The Study Tours enabled participants to witness some real world examples of a comprehensive policy approach.

Wednesday 8 September 13:00 – 17:00

Among other lectures from Tokyo's Minato Ward and private contractors, as well as from an NGO on the protection of the Spotbilled Duck, a presentation made by representatives of the Tokyo Metropolitan Government and was entitled "Environmental Regeneration of Canal Area in Ota City – A Process of Consensus and Implementation." Focusing on the Omori Furusato Beach Park area of Tokyo's Ota Ward, the presentation began with an introduction of the historical uses for the area, particularly as a focal point for seaweed production in Japan – a role that was impacted greatly by land-reclamation projects in the 1960's. After languishing for many decades, an announcement was made in 1981 of land reclamation for the development of a sewage plant at the site, something which was opposed by the local populace, forcing construction plans to be shelved in 1983.

In 2004 new plans were announced for a reduced amount of land to be reclaimed with the purpose of the land rezoned to incorporate;

- Green tracts
- Refuge space
- An ability to commune with the shore
- An improvement of the water environment

This came about following lengthy negotiations with the public of the area and a concerted effort on the part of the local government to involve them in the decision making process. Free access was made available to the construction plans and information, and public, open hearings were held to manage concerns raised by the public. These meetings were attended by:

- Related residents
- Fisheries representatives
- Nature Conservation representatives
- Representatives of academia
- Administrative officials
- Consultants
- Representatives of the construction sector





It was ensured during this process that each participant had an equal standing, which was seen to work towards consensus building. These meetings were subsequently held every 2-3 months, presided over by city officials and served as a locale for discussions regarding environmental monitoring which was carried out by the construction companies and an NPO. The benefits of such an inclusive process were outlined as;

- Participant became specialists regarding the park through participation in the Liaison Meetings
- The number of those who think about the management of the park increased due to the core members of the liaison meetings
- Seaweed wholesalers and old fishermen cooperated in the management of the park
- Universities and NPO's have used this park for a research and environmental education

This presentation was followed by a presentation, once again by representatives of the Tokyo Metropolitan Government, entitled "Canal Renaissance: Revitalisation of Canals with Citizen Partnership." This presentation examined land-use change in and around the forty canals of Tokyo, moving from commercial operations dominated by factories And warehouses, to one focused upon offices and residential construction taking advantage of the water-front areas. In addition, the possibility of utilising the canals as tourist attractions has also influenced the creation of "Canal Renaissance Promotion Districts" which are developed in consultation with the local people.

The example of Shibaura Island was presented as a successful transformation utilising this model. Floating cafes, a boat-license school, and a water-bus stop have been incorporated into the area following the deregulation of the area to allow for private use. In addition, examples of deregulation for the recreational use of waterways was also outlined as a means for local residents, through their neighbourhood associations, to better engage with their surroundings, as well as to provide a conduit for interaction between residents and the municipality.



Despite the rain the group was also able to visit Shibaura Island and examine the practices and construction that had been made in line with the ideals of the processes outlined above. It proved to be a very worthwhile – if damp – excursion.

Thursday 9 September 04:00 – 06:00

A special, optional early morning Study Tour was organised to the Tokyo Metropolitan Central Wholesale Market, more colloquially known as the Tsukiji Fish Market – the largest wholesale fish and seafood market in the world. Arriving at 04:30, participants were shown an introductory presentation, as well as advised regarding the health and safety regulations of the market before being taken on a guided tour which included the live holding tanks, the wholesale markets, the retails section and the auction stations. Throughout the process an in-depth Question and Answer period ensued with the market officials acting as guides.



SUMMARY OF EVALUATIONS FROM PARTICIPANTS

Evaluation format:

- written questionnaire
- anonymity guaranteed

Evaluation questionnaires were distributed to participants following the end of the Workshop. The results of such will be amalgamated with the results of a secondary questionnaire to be distributed in early 2011 regarding the real-life implementation of the training received at the 2010 Workshop. These will then have impact into the structure of the 2011 Workshop.

In general the evaluations were very positive for the Workshop; graphs of responses to specific questions are available in Annex One. In regards to comments received, the following are an overview of the most popular;

WHAT DID YOU FIND MOST USEFUL ABOUT THE SERIES:

- Discussions and networking between participants
- The After Action reviews (AAR)
- The Study Tour
 - In particular the relation to the topics covered in the workshop itself
- The formal group discussions
- The Action Plan Development sessions

WHAT DID YOU FIND LEAST USEFUL ABOUT THE SERIES:

- Time constraints

WHAT OTHER TOPICS/OBJECTIVES WOULD BE USEFUL TO FURTHER DEVELOP YOUR KNOWLEDGE, SKILLS AND COMPETENCIES:

- Regional integration
- The policy implementation process
- Presentations from participants themselves
- Practical exercises
- A focus on sustainable development
- Presentations regarding strategies adopted by developed countries experiences

OVERALL IMPRESSIONS UPON READING EVALUATIONS

The evaluations submitted were predominantly highly positive in regards to both the conceptual structure and goals as well as the execution of the Workshop. Difficulties encountered included the tight time-frame following the confirmation of selection, as well as at the Workshop itself. These issues are recognised by UNITAR and will be addressed. All Participants commented that the Workshop as a whole was relevant to their professional responsibilities and development. The presentations and study tours all garnered positive reviews and were considered to each provide valuable opportunities for learning and an exchange of opinions and experience.

***Berin McKenzie
Japan
2010***

***ANNEX ONE
EVALUATION STATISTICS***

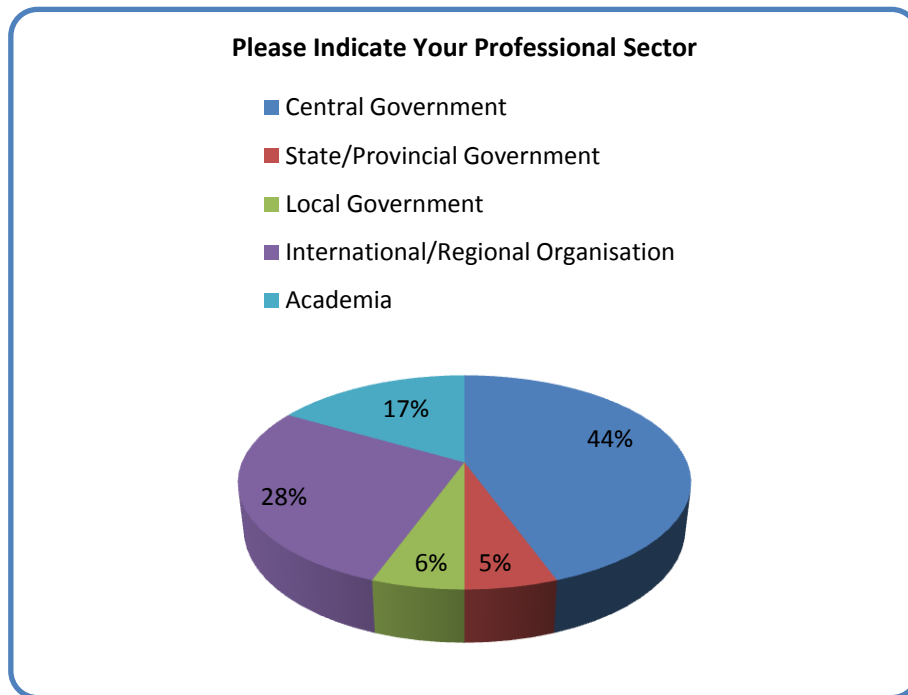




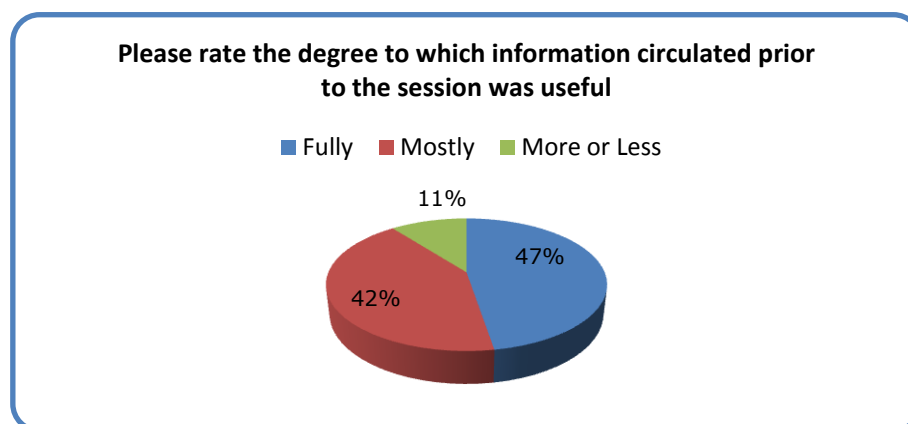
ANNEX I: EVALUATION STATISTICS

Encouragingly, participants overwhelmingly responded positively to all questions posed in the questionnaires. Responses were requested on scales of 5 – 1 with 5 being the most positive and 1 being the least. In only two instances were negative responses received. The information incorporated into the graphs below includes only gradations for which a response was received.

1) PROFESSIONAL SECTOR



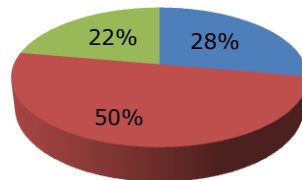
2) PRE –EVENT INFORMATION





Please rate the degree to which information circulated prior to the session was accurate

■ Fully ■ Mostly ■ More or Less

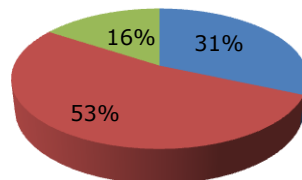


3) LEARNING OBJECTIVES

3.1 Identify key challenges in specific fields

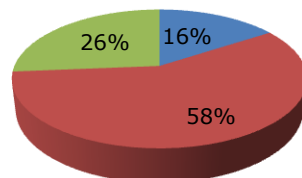
Please rate the learning objectives according to clarity

■ Fully ■ Mostly ■ More or Less



Please rate the learning objectives according to relevance to your learning needs

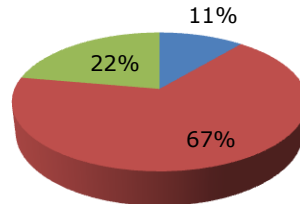
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Please rate the learning objectives according to the extent to which you met the learning objective

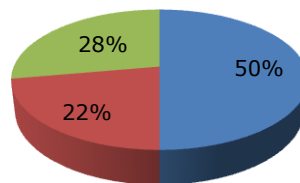
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3.2 Agree On Targets In Order To Tackle Identified Problems

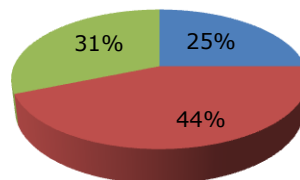
Please rate the learning objectives according to clarity

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Please rate the learning objectives according to relevance to your learning needs

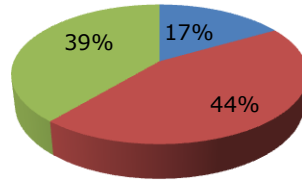
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Please rate the learning objectives according to the extent to which you met the learning objective

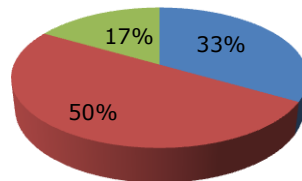
■ Fully ■ Mostly ■ More or Less



3.3 Design Feasible Action Plans For Policy Implementation

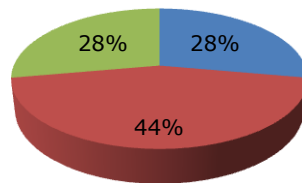
Please rate the learning objectives according to clarity

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Please rate the learning objectives according to relevance to your learning needs

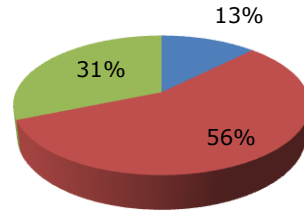
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Please rate the learning objectives according to the extent to which you met the learning objective

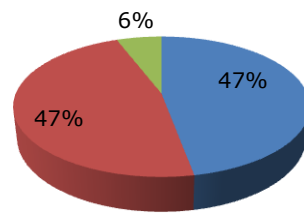
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3.4 Develop An Overall Strategy Taking Into Account Interrelations Between Subject Areas

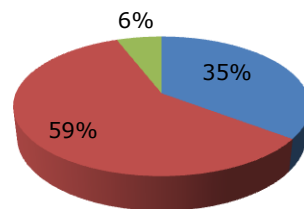
Please rate the learning objectives according to clarity

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Please rate the learning objectives according to relevance to your learning needs

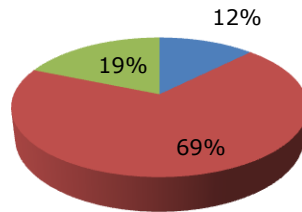
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Please rate the learning objectives according to the extent to which you met the learning objective

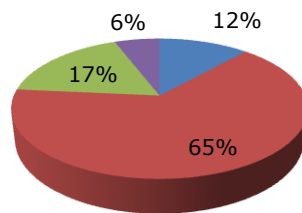
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4) VALUE, RELEVANCE AND INTENT TO USE

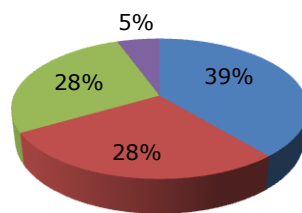
Information Presented In This Session Was New To Me

■ Strongly Agree ■ Agree ■ Neutral ■ Disagree



The Content In The Session Was Relevant To My Job

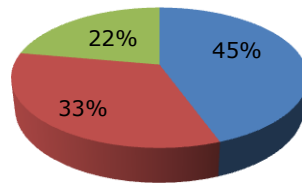
■ Strongly Agree ■ Agree ■ Neutral ■ Disagree





It Is Likely That I Will Use The Information Acquired In This Session

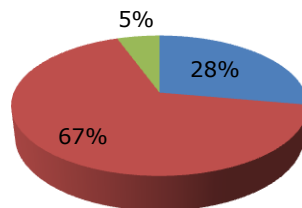
■ Strongly Agree ■ Agree ■ Neutral



5) METHODOLOGY

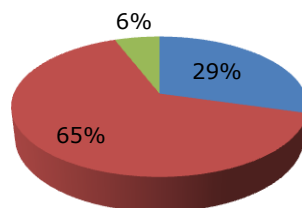
Overall, how effective was the methodology (given the learning objectives?)

■ Fully ■ Mostly ■ More or Less



Overall, how appropriate was the methodology (given the learning objectives?)

■ Fully ■ Mostly ■ More or Less

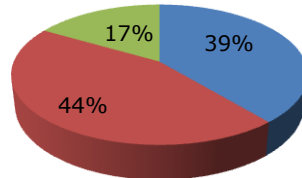




6) FACILITATORS

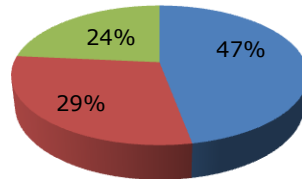
Overall, how effective were the facilitators in terms of presenting information

■ Fully ■ Mostly ■ More or Less



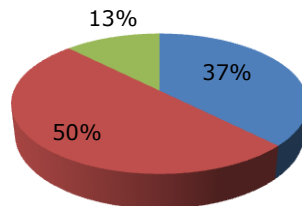
Overall, how effective were the facilitators in terms of responding to the needs/questions of participants

■ Fully ■ Mostly ■ More or Less



Overall, how effective were the facilitators in terms of summarising discussions/presentations

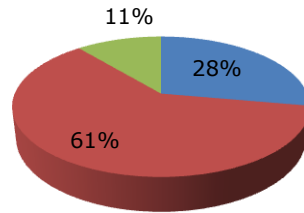
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Overall, how effective were the facilitators in terms of promoting participation and stimulating their environment

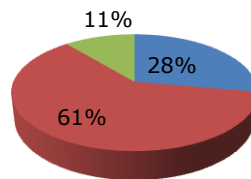
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7) ASSESSMENT

Overall, how effective was the assessment activity used in helping you understand the topics/achieve the learning objectives

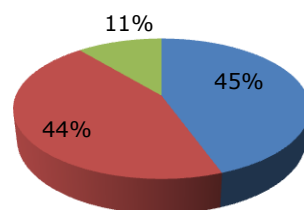
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8) OVERALL SATISFACTION

Overall, how satisfied were you with the event

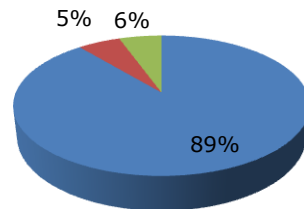
■ Fully ■ Mostly ■ More or Less





Would you recommend the event to a colleague?

■ Yes ■ Not Sure ■ No



***ANNEX TWO
PARTICIPANT BIO INFORMATION***





PARTICIPANT BIO INFORMATION

INTERNATIONAL PARTICIPANTS

Quanyou GUO

Research Associate, East China Sea Fishery Institute
Chinese Academy of Fishery Sciences, Chinese Ministry of Agriculture
China



Mr. Quanyou Guo has worked at the East China Sea Fishery Institute for over 10 years. His major is processing and storage engineering of aquatic products. He has published more than 30 technical papers covering a wide variety of topics including seafood safety, new products design and predictive microbiology. His projects mainly focus on the origin and changes of bacterial types and numbers on the raw material, pre-processing and salt-curing steps in fresh and lightly preserved seafood ('graved' fish, brined shellfish, etc); predictive models for spoilage of fresh and mildly preserved fish products; and factors contributing to antimicrobial resistance in farm and non-farm environments.

Chengchu LIU

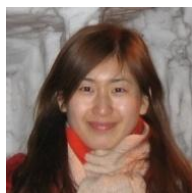
Professor
Shanghai Ocean University
China



Ms. Chengchu Liu is Professor of Food Science at Shanghai Ocean University. Her research has been focused on "Seafood and Health" with emphases on (1) innovative technologies for ensuring quality and safety of seafood, (2) isolation and application of functional components from marine plants and animals and (3) development of value-added products and formula foods. Ms. Liu is a certified trainer for Seafood HACCP and Sanitation Control Procedures (SCP) Programme issued by Seafood HACCP Alliance in cooperation with the Association of Food and Drug Officials, USA.

Huan LIU

Assistant Professor
Chinese Academy of Fishery Sciences
China



Ms. Huan Liu is Assistant Professor at the Chinese Academy of Fishery Sciences. She graduated from the China Agriculture University in Food Science and Engineering. She is taking charge of the development of national monitoring programmes and assisting the Ministry of Agriculture to develop and/or revise government policies and regulations on the safety and quality control of marine food products. She is also undertaking scientific research on the classification of shellfish producing areas and the characterisation of risk factors in shellfish producing areas.



Sheng LIU

Associate Professor

South China Sea Institute of Oceanology, Chinese Academy of Sciences
China



Mr. Sheng Liu is Associate Professor at the South China Sea Institute of Oceanology, Chinese Academy of Sciences. His research is focused on marine plankton physiology and ecology, especially harmful algal blooms (HAB) in coastal waters and their transfer along the food chain. He is the author of numerous articles, including, most recently, "Feeding Efficiency of a Marine Copepod *Acartia Erythraea* on Eight Different Algal Diets" in *Acta Ecologica Sinica*. He received his PhD in Marine Biology from the South China Sea Institute of Oceanology, Chinese Academy of Sciences.

Gulab Dattarao KHEDKAR

Assistant Professor, Paul Hebert Centre for DNA Barcoding and Biodiversity Studies
Department of Zoology, Dr. Babasaheb Ambedkar Marathwada University
India



Mr. Gulab Dattarao Khedkar is Assistant Professor at the Paul Hebert Centre for DNA Barcoding and Biodiversity Studies, Department of Zoology, Dr. Babasaheb Ambedkar Marathwada University. He works in the field of DNA barcoding. As part of these studies, he is working on a large project which will map almost all marine fish species from the Indian coast and which will identify, validate and deposit the DNA barcoding data in the public domain. He received his PhD in Zoology from the Swami Ramanand Teerth Marathwada University, Nanded (Maharashtra).

Khosrow AEIN JAMSHID

Director

Iran Shrimp Research Institute, Iranian Fishery Research Organisation
Iran



Mr. Khosrow Aein Jamshid began his work at the Iran Shrimp Research Institute in 1999. He received his PhD in Inorganic Chemistry in 2007. His specialty is in chemical and physical oceanography. He has conducted numerous research projects, most recently on the possibility of correction and rehabilitation of aquatic assemblages of Nouruz, Soroush and Abuzar oil fields affected by oil pollution. He has also taught numerous undergraduate courses in chemistry.



Reza SHAHIFAR

Director General, Protection and Rehabilitation of Marine Fish Resources
Iran Fishery Organisation
Iran



Mr. Reza Shahifar is Director General of Protection and Rehabilitation of Marine Fish Resources, Iran Fishery Organisation. He is a marine biologist in the field of fishery and environment. He has been working at the Iran Fishery Organisation (IFO) for 20 years. He started his job at the Iran Fishery Research Organisation (IFRO) but after four years moved to management of fishery activities. During the years, he has been engaged with both fishery and environmental issues in marine areas. He has been an active member of various working groups and scientific and executive committees on the national and regional levels, including the Commission of Aquatic Bioresources (CAB) and the Caspian Environment Programme (CEP).

Akira KOZUKA

Graduate Student
Graduate School of Agricultural and Life Sciences, The University of Tokyo
Japan



Mr. Akira Kozuka is a graduate student at the Graduate School of Agricultural and Life Sciences, The University of Tokyo. He belongs to the Laboratory of Global Fisheries Science and is studying fisheries economics and management.

Soichiro MOCHIDOME

Graduate Student
Graduate School of Public Policy, The University of Tokyo
Japan



Mr. Soichiro Mochidome is an MPP (Master of Public Policy) candidate at the Graduate School of Public Policy (GrasPP), The University of Tokyo. The area of his research is ocean law and policy, in particular the "Legal Status of Fisheries as Non-Geographical Relevant Circumstances in Maritime Delimitation". He received his BA in Law with a minor in International Relations from Sophia University in 2005. In graduate school, he has also been enrolled in the Interdisciplinary Education Programme on Ocean Science and Policy to conduct research into coastal policy and management.



Zaw Zin OO

Project Coordinator Assistant
Renewable Energy Association Myanmar (REAM)
Myanmar



Mr. Zaw Zin Oo obtained his BSc in Marine Science from the University of Patheingyi, Irrawaddy, Myanmar, in 2006. He joined Solidarités International Myanmar as Team Leader as well as Project Manager Assistant in 2008. He was promoted to Project Coordinator Assistant at Renewable Energy Association Myanmar in 2010 and was assigned to implement projects empowering cyclone-affected communities for long-term disaster risk reduction and environmental regeneration through people's participation and mangrove restoration processes.

Annabelle BARQUILLA

Manager, Coastal Resources Management Section
Department of Environment and Natural Resources–Provincial Environment and Natural Resource Office (DENR–PENRO) Sorsogon City
Philippines



Ms. Annabelle Barquilla is currently designated Chief, Coastal and Marine Management Section; Provincial Focal Person for Solid Waste Management; and Provincial Focal Person for Protected Areas, Wildlife and Coastal Zone Management Section of the Department of Environment and Natural Resources Office–Provincial Environment and Natural Resource Office (DENR–PENRO) Sorsogon City. She is frequently requested to be a resource person for seminars/trainings related to environmental awareness in schools and to provide technical assistance to other government agencies, non-governmental organisations, academe, local-government units and people's organisations. In 2004, she was awarded the "Gantimpala Agad Award" by the Civil Service Commission for her exemplary performance.

Richard MAGSINO

Assistant Professor of Marine Biology
De La Salle University, Lipa
Philippines



Mr. Richard Magsino is Assistant Professor of Marine Biology at De La Salle University in Lipa City, Batangas. The institution designated him as Lead Trainer of Integrated Coastal Management for Luzon Island in the Philippines. He has been in the education field for more than 10 years, including a research assistantship at UP where he studied marine biological studies in population genetics. He has international journal publications and has attended and presented research papers at local, regional, national and international symposia and conferences. He has a BSc in Biology and a degree in Marine Science from De La Salle University, Dasmariñas, and the University of the Philippines, Diliman, respectively.



Dissanayake Mudiyansele Upul Ajantha Kumara PREMARATHNE

Petroleum Geologist
Central Bank of Sri Lanka
Sri Lanka



Mr. D.M.U.A.K. Premarathne graduated with a BSc in Geology from the University of Peradeniya in Sri Lanka in 2002. In 2005, he obtained his MSc in Petroleum Geosciences from the Norwegian University of Science and Technology in Trondheim. He joined the Petroleum Resources Division in the Economic Research Department of the Central Bank of Sri Lanka as a petroleum geologist in August 2008. His main role is to review petroleum exploration in Sri Lanka and give necessary policy advice to maximise the efficiency of oil exploration in Sri Lanka. He is a life member of the Geological Society of Sri Lanka and a founding member and treasurer of the Institute of Geology, Sri Lanka (IGSL).

Sumitra RUANGSIVAKUL

Head, Socio-Economic Section
Southeast Asian Fisheries Development Centre (SEAFDEC)
Thailand



Ms. Sumitra Ruangsvakul is Head of the Socio-Economic Section of the Southeast Asian Fisheries Development Centre (SEAFDEC). She received her BSc in Biology from Burapha University, Chonburi Province, Thailand. She has been in the Socio-Economic Section since 1998, where she implemented the Integrated Coastal Resources Management Project in Thailand, Malaysia and Cambodia. She cooperated with fishermen to encourage them to establish a coastal management framework at the local level and encouraged women's groups in fisheries communities to establish local businesses to increase income in fisheries households.

Kongpathai SARAPHAIVANICH

Head, Information and Communications Technology Section
Southeast Asian Fisheries Development Centre (SEAFDEC)
Thailand



Mr. Kongpathai Saraphaivanich is Head of the Information and Communications Technology Section at the Southeast Asian Fisheries Development Centre (SEAFDEC). His responsibilities include the development and promotion of SEAFDEC projects and activities related to human resource development and ensuring food security via the use of information and communications technology in the Southeast Asian countries and worldwide. He has experience in fishery extension and fishery management. He received his bachelor's degree in fishery management from the Faculty of Fisheries, Kasetsart University, in 1998 and his master's degree from the Faculty of Business Administration, Ramkhamhaeng University, in 2006.



PARTICIPANT BIO INFORMATION

REPRESENTATIVES OF THE INTERNATIONAL DIPLOMATIC COMMUNITY IN TOKYO

Sayed Abdul Razaq LUQMAN

First Secretary

Embassy of the Islamic Republic of Afghanistan



Mr. Sayed Abdul Razaq Luqman is First Secretary at the Embassy of the Islamic Republic of Afghanistan. He works in political and cultural affairs to strengthen the relationship with the Japanese people and government.

Lulind BUSHATI

First Secretary

Embassy of the Republic of Albania



Mr. Lulind Bushati received his bachelor's degree from the Law Faculty of the University of Tirana in Albania. Before being assigned First Secretary at the Embassy of Albania, he worked in the Legal Department of the Public Procurement Agency. He is currently in charge of the Economic and Consular Section of the Embassy, focusing on supporting the increase of trade and economic cooperation with Japan.

Souhaila SALHI

Attaché Diplomatique

Embassy of the People's Democratic Republic of Algeria



Ms. Souhaila Salhi is in charge of the Cultural and Technical Cooperation Division at the Algerian Embassy. She works on promoting cultural exchange between Algeria and Japan by participating and organising artistic events in both countries. The technical cooperation entails collaboration with different Japanese institutions in order to benefit from the Japanese know-how in fields such as the environment, natural disasters management, etc.

Soledad CAPONE HUIZENGA

Second Secretary

Embassy of the Argentine Republic



Ms. Soledad Capone Huizenga has been Second Secretary at the Embassy of the Argentine Republic in Japan, Political Section, since 2009. Previously, she was Third Secretary in the International Organisations Division, Ministry of Foreign Affairs, International Trade and Worship of the Argentine Republic.



Comlan BESSAN

Minister-Counsellor
Embassy of the Republic of Benin



Mr. Comlan Bessan is Minister-Counsellor at the Embassy of the Republic of Benin. He has more than 27 years' experience in bilateral as well as multilateral cooperation. Involved in the training of young diplomats, he is interested in all areas of international politics, international relations and international economic relations.

Carlos GIRONDA

Chargé d'Affaires ad interim
Embassy of the Plurinational State of Bolivia



Mr. Carlos Gironda is Chargé d'Affaires ad interim of the Embassy of the Plurinational State of Bolivia.

Felipe FERREIRA

Head of the Environmental Section
Embassy of the Federative Republic of Brazil



Mr. Felipe Ferreira is a Brazilian diplomat (Second Secretary) and currently Head of the Environment Section at the Embassy of Brazil in Tokyo. He studied international relations at the University of Brasília. He is the author of "O Sistema do Tratado da Antártica: evolução do regime e seu impacto na política externa brasileira", a comprehensive analysis of the Antarctic Treaty System.

Thearith LIM

Economic Department Commercial Attaché
Royal Embassy of Cambodia



Mr. Thearith Lim is Economic Department Commercial Attaché at the Royal Embassy of Cambodia.

Fenny HUM

Second Secretary (Economic)
Embassy of Canada



Ms. Fenny Hum is Second Secretary in the Economic and Financial Section of the Embassy of Canada in Tokyo. Her areas of responsibility include fisheries and environment-related issues. Prior to her current posting, she worked at the Ottawa headquarters of Foreign Affairs and International Trade Canada. She has also worked at Natural Resources Canada and in the private sector.



Rosa Marcela CÁRDENAS DAZA

Press Officer
Embassy of the Republic of Colombia



Ms. Rosa Marcela Cárdenas Daza is a Colombian journalist based in Tokyo. She is currently Press Advisor for the Embassy of Colombia in Japan. She has had experience in print and broadcast journalism in Colombia, the United States and Japan. She was an anchor for the Colombian cultural radio station, Javeriana Stereo; worked as an online reporter for Caracol, one of the largest Colombian TV networks and was the international editor of her country's financial newspaper, *La Republica*. In the United States, she was involved as a PR assistant for the Miami Film Festival and participated in training programmes with CNN International and CNN en Español. She came to Japan to pursue a master's at Sophia University. Before joining the Embassy, she worked as a reporter for the Spanish newspaper *International Press* and as a radio anchor for NHK World.

Juan COLORADO

First Secretary
Embassy of the Republic of Colombia



Mr. Juan Colorado is First Secretary at the Embassy of the Republic of Colombia. He graduated in international relations from the University of Bogotá Jorge Tadeo Lozano. He has experience as a professor of foreign affairs and has been a diplomat for 13 years.

Elaf ORBIS

Counsellor
Embassy of the Republic of Djibouti



Mr. Elaf Orbis is Counsellor at the Embassy of the Republic of Djibouti.

Miguel BALAGUER

Counsellor and Chargé d'Affaires ad interim
Embassy of the Dominican Republic



Mr. Miguel Balaguer is Counsellor and Chargé d'Affaires ad interim at the Embassy of the Dominican Republic. He has a bachelor's degree in law. He is also an International Relations Analyst, having graduated from the Diplomatic Academy of the Ministry of Foreign Affairs of the Dominican Republic. He is currently in charge of Economic, Commercial, Scientific and Technological Cooperation Affairs of the Dominican Embassy in Japan.



Ahmed ELHAMSHARY

Second Secretary and Consul
Embassy of the Arab Republic of Egypt



Mr. Ahmed Elhamshary joined the Egyptian diplomatic service in 2001. Since then, he has dealt with Middle East affairs (Israeli–Palestinian issue). He completed his master’s degree in International Studies at the University of Leeds. During his studies, he gained an overview of environmental issues. He is currently in charge of the environmental file of the Egyptian Embassy in Tokyo.

Joselyn Ayeska SALADIN MOCK

Minister-Counsellor
Embassy of the Dominican Republic



Ms. Joselyn Ayeska Saladin Mock is Minister-Counsellor at the Embassy of the Dominican Republic. She is in charge of promoting Dominican culture and tourism in Japan and has worked with several Japanese cultural organisations interested in the Dominican Republic. She is a member of the Young Diplomats in Tokyo Committee, an organisation promoting social and cultural activities among diplomats in Tokyo.

Ulaiasi Tira RAVULA

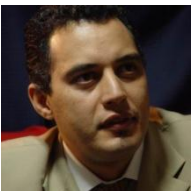
First Secretary
Embassy of the Republic of the Fiji Islands



Mr. Ulaiasi Tira Ravula is First Secretary at the Embassy of the Republic of the Fiji Islands. As Deputy Head of Mission, he provides a first line of counsel for the Ambassador’s key outputs. His key outputs include linking sectoral counterparts in the Japan/Fiji government sectors, facilitating Fiji tourism policy and Fiji–Japan trade and investment through strategic networking, providing Fiji/Japan immigration policy guidance, managing the Mission’s corporate matters and increasing Japanese awareness of Fiji.

Ahmed Muftah NAILI

Second Secretary (Press and Cultural Affairs)
People’s Bureau of the Great Socialist People’s Libyan Arab Jamahiriya



Mr. Ahmed Muftah Naili joined the Foreign Liaison and International Cooperation (Foreign Ministry) in 2007 and was assigned as Second Secretary (Press and Cultural Affairs) to the Libyan People’s Bureau (Embassy) in October 2007. Prior to that, he was Visiting Researcher in the Research Division, Tokyo Foundation, as well as a part-time Lecturer at the University of Tsukuba’s Graduate School of Humanities and Social Studies. He also served as the Director of the Libyan Pavilion at the Aichi 2005 Expo after graduating with a PhD from Meiji University. His dissertation was entitled “An Analysis of the Political Economy of Japan–Arab Relations”.



Kyaw Nyun OO

First Secretary
Embassy of the Union of Myanmar



Mr. Kyaw Nyun Oo joined the Ministry of Foreign Affairs of the Union of Myanmar in 1997 as Third Secretary/Head of Branch. His first assignment was in the Myanmar Embassy, Islamabad, from 2001 to 2005. He received his Bachelor of Arts in History from the University of Distance Education, Yangon. In 2008, he graduated with a Master of Arts in Policy Science from Ritsumeikan University, Kyoto. He is currently First Secretary at the Myanmar Embassy, Tokyo, and is in charge of the Commercial Section of the Embassy.

Marwan AYYASH

Third Secretary
Embassy of the Islamic Republic of Pakistan



Mr. Marwan Ayyash is Third Secretary at the Embassy of the Islamic Republic of Pakistan. He joined the diplomatic service in January 2005. He was previously a high school teacher and speaks Urdu, English and Japanese.

Tisha Pia DE LA ROSA

Assistant Agricultural Attaché
Embassy of the Republic of the Philippines



Ms. Tisha Pia de la Rosa works in the Agriculture Section of the Philippine Embassy. She helps facilitate agriculture and fishery trade between Japan and the Philippines, helps review and implement trade policies between the two countries and answers queries related to agriculture and fisheries in the Philippines. She also assists in arranging the logistical requirements of any government official from the capital who is visiting Japan.

Ovidiu Laurian SIMINA

Home Affairs Attaché
Embassy of Romania



Mr. Ovidiu Laurian Simina is Home Affairs Attaché at the Romanian Embassy to Japan, representing the Ministry of Administration and Interior. He has previous experience as an immigration and border police officer, a legal adviser in the Legal Department of the Ministry and personal adviser to the state secretary for liaison with the parliament and European affairs. He is a law graduate (Bucharest Police Academy), holds an MA in High European Studies [Itrnisoara] and is a PhD candidate in economics.



Faamao UALESI RIDGWAY

Counsellor
Embassy of the Independent State of Samoa



Ms. Faamao Ualesi Ridgway is Counsellor at the Embassy of the Independent State of Samoa. Under the direction of the Ambassador, she assists in promoting Samoa’s bilateral relations with Japan and its foreign relations with South Korea. She holds an MBA from the Graduate School of Curtin University of Technology in Perth, Australia (2007) and majored in political science at the Victoria University of Wellington (2001 to 2003).

Hilton Mandlenkosi MNISI

Second Secretary (Political and Economic Affairs)
Embassy of the Republic of South Africa



Mr. Hilton Mandlenkosi Mnisi is Second Secretary at the Embassy of the Republic of South Africa. His core responsibilities include political economy reporting; bilateral political reporting; regional political and economic reporting vis-à-vis Japanese policy towards the region; coordination of the Ambassador’s prefecture visits to explore cooperation opportunities on sports, culture, science and technology, education and agriculture; environmental issues (currently handling the COP 10 project); climate change issues vis-à-vis its impact on South Africa and Africa (analysis of Japanese policy response within the TICAD context); and Africa–Japan political and economic cooperation.

Mohamed SEIDAHMED

Second Secretary
Embassy of the Republic of the Sudan



Mr. Mohamed Seidahmed is Second Secretary at the Embassy of the Republic of the Sudan.

Francis MOSSONGO

First Secretary
Embassy of the United Republic of Tanzania



Mr. Francis Mossongo is First Secretary at the Embassy of the United Republic of Tanzania. He received his MA (Economics) from the University Dar es Salaam in 2005. From 2003 to 2007, he was Planning and Policy Analyst Officer in the Department of Policy and Planning, Ministry of Foreign Affairs and International Cooperation. In January 2008, he was appointed Acting Director of the same department. He has been in his current position since January 2009.



Wasswa BIRIGGWA

Ambassador Extraordinary and Plenipotentiary
Embassy of the Republic of Uganda



HE Wassawa Biriggwa has worked at Digital Equipment Corporation, Massachusetts, as an audio-visual specialist and later as Marketing Communications Manager, and at Citibank, New York, as an international institution banking officer from 1980. During the civil war in Uganda, he worked for peace (1984–1986) when the country was liberated by the National Resistance Movement. He formed Celtel Uganda Ltd. in 1995 and was later appointed by the President of Uganda to represent him as Ambassador to Ethiopia, Djibouti, and the Africa Union. He was stationed to Japan in 2006.

Kennedy M. SHEPANDE

Counsellor
Embassy of the Republic of Zambia



Mr. Kennedy M. Shepande is Counsellor at the Embassy of the Republic of Zambia.



PARTICIPANT BIO INFORMATION

FACULTY

Swadhin Kumar BEHERA

Team Leader
Frontier Research Centre for Global Change/JAMSTEC
Japan



For the last 20 years, Mr. Swadhin Behera has studied climate dynamics, physical processes of ocean and atmosphere, and ocean-atmosphere interactions using observations and model simulation results. His research interests are related to climate modelling and predictability studies, coupled ocean-atmosphere variability in tropical oceans—in particular the Indian Ocean Dipole, air-sea interactions in the subtropical oceans in relation to the subtropical Indian Ocean dipole and impact of climate variability on society and climate application studies. He has published more than 50 scientific papers in highly referred SCI journals and delivered about 150 talks, 18 of which were invited talks and 2 keynote lectures.

Nancy BERMAS

Senior Country Programme Manager
Partnerships in Environmental Management for the Seas of East Asia (PEMSEA)
Philippines



Ms. Nancy Bermas is Senior Country Programme Manager for Partnerships in Environmental Management for the Seas of East Asia (PEMSEA). She is responsible for the management of programme delivery in the Philippines and Vietnam, i.e., programme planning, development, implementation and monitoring of integrated coastal management (ICM) programmes in coordination with national and local governments and relevant stakeholders to strengthen and improve governance of coastal areas. She was a trained marine biologist working on coral reef research while connected with the Marine Science Institute of the University of the Philippines and later on specialised in ICM. She served as lecturer in a number of PEMSEA training courses on ICM at the local, regional and national levels and as resource person in various international conferences. She has authored and co-authored articles and reports related to coral reef research and ICM, such as the dynamics of ICM. She has also served as editor and co-editor of a number of PEMSEA publications.



Joannès BERQUE

Research Fellow

OUIK, Institute of Advanced Studies, United Nations University

France



Following a PhD in climate sciences from the Scripps Institute of Oceanography, Mr. Joannès Berque worked for the Capacity Development Section of the Intergovernmental Oceanographic Commission of UNESCO. For five years, he assisted in the coordination of international research and technical cooperation programmes in Africa, Asia and Latin America. Recently he joined the Operating Unit in Ishikawa Kanazawa, Institute of Advanced Studies, United Nations University, as a research fellow. His activities have focused on satoumi as a cultural approach to marine and coastal sustainability in human influenced coastal seas. He is currently coordinating a report on the satoumi experience in Japan to be submitted this fall to the Secretariat of the Convention on Biological Diversity.

Yasuwo FUKUYO

Professor

Asian Natural Environmental Science Centre

The University of Tokyo

Japan



Mr. Yasuwo Fukuyo graduated from the Department of Fisheries, Faculty of Agriculture of the University of Tokyo in 1972 and entered the Graduate School of the same university. He moved to Iwate, Japan, as an Assistant Professor at the School of Fisheries Science, Kitasato University. He received his Doctorate in Agriculture from the University of Tokyo in 1982. He returned to the University of Tokyo as an Assistant Professor in 1983 and became an Associate Professor at the Faculty of Agriculture in 1990. He moved to the Asian Natural Environmental Science Centre of the University in 1995, and was promoted to Professor in 2003. His main research subjects are the taxonomy, ecology and life cycle of toxic unicellular micro algae, which cause toxin contamination in fish and shellfish and poisonings in people, and also noxious ones, which often cause red tides and mass mortality of marine organisms. As geographical expansion of those harmful micro algae has increased in recent years, especially in the Southeast Asian region, he is studying the mechanisms of bloom recurrence and expansion in cooperation with scientists from Asia. He is a panel member of the International Programme on Harmful Algal Blooms (IP-HAB) of the Intergovernmental Oceanographic Committee (IOC) of UNESCO; Coordinator of the Regional Programme on Harmful Algal Blooms in the western Pacific (WESTPAC-HAB) of the Intergovernmental Oceanographic Committee (IOC) of UNESCO; and a Working Group Member in Working Group 3 (Harmful Algal Blooms in Japan Sea) of the Northwest Pacific Action Plan (NOWPAP) of United Nations Environmental Programme (UNEP).



Takashi ICHIOKA

General Manager, Policy Research Department
Ocean Policy Research Foundation
Japan



Mr. Takashi Ichioka graduated from the Faculty of Economics, Kyoto University, Japan, in 1988. He joined the Ministry of Transport (currently the Ministry of Land, Infrastructure, Transport and Tourism [MLIT]) in the same year. Since then, he has engaged in a wide variety of projects related to transport including maritime transport. He was involved in international cooperation in the Straits of Malacca and Singapore from 2004 to 2007. He served as Head of the Special Task Team for Public Relations of Maritime Industry as Director, Policy Planning Office, Maritime Bureau, MLIT, from 2007 to 2008. He has been General Manager, Policy Research Department, Ocean Policy Research Foundation, since July 2008.

Berin McKENZIE

Specialist
United Nations Institute for Training and Research (UNITAR)
New Zealand



Mr. Berin McKenzie graduated with a Bachelors degree in Japanese from New Zealand's Canterbury University as well as Honours and Masters degrees in International Relations from Auckland University. His MA thesis focused on multilateral initiatives as pursued by Japan in regards to its China Policy. Prior to working at UNITAR, he was employed in a Japanese local government role in Hatsukaichi City, Hiroshima. He currently works on programme development at the UNITAR Hiroshima Office for Asia and the Pacific.

Alexander MEJÍA

Head, Hiroshima Office for Asia and the Pacific
United Nations Institute for Training and Research (UNITAR)
Ecuador



Mr. Alexander Mejía earned a Masters in Finance from INCAE University in Costa Rica and a Bachelors Degree from Zamorano University in Honduras. He is also a Master in Foreign Affairs candidate at Georgetown University in Washington, DC, and holds a Diploma in Political Leadership from Harvard University's John F. Kennedy School of Government and graduated from the Political and Electoral Marketing Programme of Universidad de La Sabana in Colombia. In 2001, he was appointed Vice Minister of Economy for his native Ecuador. As such he was also appointed Governor to the World Bank, Governor to the Inter-American Development Bank and Board Member of the Ecuadorian Central Bank. In 2003 and 2004, he served as Director of the Andean Programme at the Inter-American Council in Washington, DC, an international entity chartered by the Organisation of American States.. Mr. Mejía was appointed Head of the UNITAR Hiroshima Office in October 2009.



Govindan PARAYIL

Vice-Rector, United Nations University
Director, Institute of Advanced Studies, United Nations University
India



Mr. Govindan Parayil, an Indian national, joined the United Nations University as Vice-Rector in August 2008 and as Director of the United Nations University Institute of Advanced Studies in January 2009. Prior to joining the UNU, he had been serving as full Professor with the Centre for Technology, Innovation and Culture, University of Oslo (Norway) since 2004, where his research focus was on science, technology, innovation and sustainability. He served concurrently as Director of Research and Leader of the Innovation Group for two years. Prior to that, he was the Head of the Information and Communications Management Programme and member of the Faculty of Arts and Social Sciences at the National University of Singapore (2001–2004). He was on the faculty of the Division of Social Sciences of the Hong Kong University of Science and Technology from 1994 to 2001. His previous academic affiliations include Cornell University, Illinois Institute of Technology and Rensselaer Polytechnic Institute (USA), and the University of Sulaimaniyah (Iraq). He holds a Bachelor of Science degree (Electrical Engineering) from the University of Calicut (India), a Master of Science degree (Science, Technology and Values) from Rensselaer Polytechnic Institute (USA), a Master of Arts degree (Development Economics) from American University (USA), and a Ph.D. in Science and Technology Studies from Virginia Polytechnic Institute and State University (USA). He authored *Conceptualizing Technological Change* (1999) and edited *Kerala: The Development Experience* (2000) and *Political Economy and Information Capitalism in India* (2006), and has written numerous book chapters and articles in international journals. His newest book (co-edited with A.P. D'Costa) on *The New Asian Innovation Dynamics: China and India in Perspective* was published in January 2009.

Hiroshi TERASHIMA

Executive Director
Ocean Policy Research Foundation
Japan



Mr. Hiroshi Terashima graduated from The University of Tokyo's Faculty of Law and joined the Japanese Ministry of Transport in 1965. He held positions including Director-General of the Chubu District Transport Bureau and Assistant Vice-Minister. He has been involved in many national and international maritime transportation projects and served as Executive Director of the Nippon Foundation (1994–2002). He is engaged in supporting the building of a cooperative structure to ensure safety in the Malacca and Singapore Straits, anti-piracy initiatives and human resources development for ocean governance. His ocean policy activities include steering board positions on the Global Forum on Oceans, Coasts and Islands and PEMSEA's EAS Partnership Council. He also played a leading role in the research activities leading to passage of Japan's new Basic Ocean Law.



Nobuyuki YAGI

Associate Professor

Graduate School of Agricultural and Life Sciences, The University of Tokyo
Japan

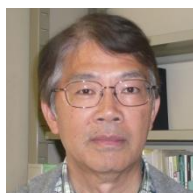


Mr. Nobuyuki Yagi is Associate Professor at the University of Tokyo. The area of his study includes marine policy and environmental economics. Before joining the University in 2008, he worked for the Fisheries Agency of the Government of Japan and represented Japanese delegations to the meetings at APEC, FAO, OECD, UNEP and WTO. He served as a bureau member for the OECD Committee for Fisheries from 2003 to 2008. From 1999 to 2002, he was First Secretary at the Embassy of Japan in Washington DC, USA. He received a graduate degree (MBA) from the Wharton School of the University of Pennsylvania, Philadelphia, USA, and a Ph.D. from the University of Tokyo, Japan.

Masahiro YAMAOKA

Professor

Department of Bioresource Science, Hiroshima University
Japan



Mr. Masahiro Yamaoka obtained his master's degree in Agricultural Economics and his PhD from Hokkaido University. Currently, he works at the Department of Bioresource Science, Graduate School of Biosphere Science, Hiroshima University, specialising in Fisheries and Agriculture Economics, and Environmental Preservation. He has accrued wide experience in studying coastal resources, utilisation and management in a number of Asian countries, with a particular focus on the responsible and sustainable use of fisheries and coastal resources. He has also worked in the field of rural community development together with citizen's groups in Thailand and Southeast Asia.

Takao YAMASHITA

Professor

Graduate School for International Development and Cooperation, Hiroshima University
Japan



Mr. Takao Yamashita has been Professor at Hiroshima University since 2006 and JICA Senior Advisor since 2008. He graduated from Kyoto University (Civil Engineering) in 1975 and received his Master of Science from Kyoto University (Civil Engineering, Coastal and Ocean Engineering) in 1977. Since 1977, he was an assistant professor and associate professor in the Disaster Prevention Research Institute of Kyoto University. He received his Dr. Eng. from Kyoto University in 1993. Currently, his research specialty is Storm Surge Dynamics and Coastal Environment Preservation. He is promoting the Research Centre for Environmental Simulator Project at Hiroshima University.



FURTHER REFERENCES

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