

1st East Asia Regional Workshop on Ballast Water Control and Management

BEIJING, CHINA, 31 OCT-2 NOV 2002

Workshop Report

Ed. Steve Raaymakers
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The Global Ballast Water Management Programme (GloBallast) is a cooperative initiative of the Global Environment Facility (GEF), United Nations Development Programme (UNDP) and International Maritime Organization (IMO) to assist developing countries to reduce the transfer of harmful organisms in ships' ballast water.

The GloBallast Monograph Series is published to disseminate information about and results from the programme, as part of the programme's global information clearing-house functions.

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The 1st East Asia Regional Workshop on Ballast Water Control & Management was hosted by the People's Republic of China; and opened by Mr Zheng Heping, Deputy Director-General, on behalf of Captain Liu Gongchen, the Director-General of the China Maritime Safety Administration.

Special thanks must go to Mr Zhao Dianrong, the GloBallast Country Focal Point Assistant for China; for coordinating all in-country arrangements. Thanks must also go to Miss Xu Xiaoman and Ms Song Chunchun, for the vital support provided by themselves and their respective organizations.

The workshop could not have been a success without the active and enthusiastic participation of all delegates from the East Asian region, including in addition to China; the Democratic People's Republic of Korea, Japan, the Republic of Korea, the Philippines, Singapore and Vietnam.

The workshop was funded by the GEF/UNDP/IMO Global Ballast Water Management Programme (GloBallast) and the China Maritime Safety Administration, and facilitated by Steve Raaymakers. This report was prepared by Steve Raaymakers and Christine Gregory.

Delegates Photograph



Workshop Resolution

East Asia Regional Workshop on Ballast Water Control & Management

RESOLUTION

Adopted on 1 November 2002

The **1st East Asia Regional Workshop on Ballast Water Control and Management**, held in Beijing, People's Republic of China from 30 October to 1 November 2002 and attended by representatives from PR China, DPR Korea, Japan, Republic of Korea, Philippines, Singapore and Vietnam, as well as by representatives from the International Maritime Organization (IMO) and the shipping and ports industries;

WELCOMING the ongoing activities of the GEF/UNDP/IMO Global Ballast Water Management Programme (GloBallast) and in particular its regional component;

RECALLING that the 1992 United Nations Conference on Environment and Development (UNCED), in its Agenda 21, requested countries to consider the adoption of appropriate measures to prevent the spread of non-indigenous organisms, and further to the appeal, in its Declaration on Environment and Development, that States apply the precautionary approach according to their capabilities;

RECALLING ALSO that the 2002 World Summit on Sustainable Development (WSSD) in its Plan of Implementation called for acceleration of the development of measures to address invasive species in ballast water and urged IMO to finalize the draft international ballast water Convention.

RECALLING ALSO that Article 196 of the United Nations Convention on the Law of the Sea (UNCLOS) provides, *inter alia*, that "States shall take all necessary measures to prevent, reduce and control . . . the intentional or accidental introduction of species, alien or new, to a particular part of the marine environment, which may cause significant and harmful changes thereto";

RECALLING FURTHER the objectives of the Convention on Biological Diversity (CBD) and that the transfer and introduction of harmful aquatic organisms and pathogens through ships' ballast water threatens the conservation and sustainable use of biological diversity as well as decision IV/5 of the Conference of the Parties to the CBD concerning the conservation and sustainable use of marine and coastal ecosystems;

RECALLING FURTHER Resolution A.868 (20) of the Assembly of the IMO by which it was recognized that the uncontrolled discharge of ballast water and sediments from ships has led to the transfer of harmful aquatic organisms and pathogens, causing injury to public health and damage to property and the environment;

RECOGNISING the recent and ongoing significant increase in shipping activity in the seas of East Asia and the associated risks of new invasions of harmful species and pathogens;

RECOGNISING ALSO the necessity of close cooperation between the countries of the Region and with adjacent regions, and the need for effective mechanisms to ensure sustainable implementation;

- .1 RECOMMENDS that, within the framework of existing regional structures and programmes, the participating countries agree, as a matter of priority;
 - .1.1 to adopt a Regional Strategic Action Plan (SAP) for Ballast Water Control and Management in the East Asian Seas Region;

- .1.2. to support the rapid adoption and entry into force of the new international legal instrument on ballast water control and management being developed by the Marine Environment Protection Committee (MEPC) of IMO;
- .2 RECOMMENDS ALSO that the participating countries develop cooperative activities with adjacent regions that may be species donors to the East Asian Seas Region, specifically the North West Pacific Region, the North East Pacific Region, the Pacific Islands Region, the South East Pacific Region and Australia and New Zealand;
- .3 RECOMMENDS FURTHER that participating countries, relevant regional programmes including the GEF Yellow Sea LME project, PEMSEA, GloBallast, UNDP, IMO and others consider funding and/or otherwise supporting the implementation of technical cooperation projects on ballast water control and management under the framework of the Regional SAP;
- .4 RECOMMENDS FURTHER that GEF, UNDP and IMO secure continuation and replication of the GloBallast Programme within the timeframe needed to ensure a seamless introduction of the forthcoming international legal instrument on ballast water management and control in the East Asian Seas Region.

Beijing, PR China, 1 November 2002

Map of the Region



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1 Opening Statements

By Mr. Zheng Heping

Deputy Director-General, China Maritime Safety Administration

Good morning. The *1st East Asia Workshop on Ballast Water Management and Control* is opened today. We have with us representatives from our neighbouring countries of the Democratic People's Republic of Korea, Japan, the Republic of Korea, the Philippines, Singapore and Vietnam. We also have with us the Country Focal Points from Brazil, India and South Africa. I would like, on behalf of the Director-General Mr. Liu Gongchen, to express my welcome to all delegates. Welcome to Beijing to this Regional Workshop.

This Workshop is held just after the 4th Global Task Force of the GloBallast Programme, which closed yesterday. I believe this Workshop will provide a good opportunity for us to learn from each other, to exchange and share experience in this field.

The introduction of invasive marine species into new environments via ships' ballast water as well as other media has been identified by the Global Environment Facility (GEF) as one of the four biggest threats to the world's oceans. The world is taking action to tackle the ballast water issue. IMO Resolution A.868(20) requests Governments to take urgent action in applying these Guidelines and development of the new International Convention for Ballast Water Control and Management is well under way.

The GloBallast Programme was launched by GEF, UNDP and IMO to assist the developing countries to overcome the barriers to effective implementation of ballast water control and management measures. Brazil, China, India, Iran, South Africa and Ukraine have been participating in the Programme.

The Programme has been successfully implemented in the six countries for two years. Now it is time to carry out Regional Cooperation according to the Programme Implementation Plan, for exchange and sharing of information and the development of our Regional Action Plan.

East Asia is an active part of the world economy in which shipping, fishing and marine farming play an important role. We all rely on the ocean. It's our responsibility to take international efforts to protect the marine environment. Ballast water management is part of it.

China is changing rapidly in recent years. You can see these changes in Beijing as well as in other parts of the country. I hope you will take this opportunity to see and to know a bit of Beijing, and have a good time during your stay. October is a busy month of the year. Our Workshop also has a busy schedule. I wish the Workshop a great success and everybody a happy and healthy stay in Beijing.

By Mr. Dandu Pughiuc

Chief Technical Adviser, Global Ballast Water Management Programme

It is a great pleasure for me to be able to convey my sincere appreciation to the organizers and to the participants at the *1st East Asia Workshop on Ballast Water Management and Control* and to wish you every success in obtaining tangible results that lead to "Safer Ships and Cleaner Oceans".

The East Asia Seas form one of the most sensitive large marine ecosystems of the world, and the coastal and marine environments of the countries of the region are inextricably linked. The area, which is one of the most populated of the world, is vulnerable because of its geographical characteristics and the massive shipping trade that it receives. As if this was not enough, East Asia may now be at threat from alien invaders; marine species transported beyond their natural range and dispersed across the globe by shipping.

The region possesses significant marine resources including biodiversity, fisheries and coastal and marine tourism. These values are likely to increase in economic importance in the future, and therefore they need to be protected now. I am informed that the region has already suffered from the effects of marine bio-invasions, including harmful algal blooms and increased fish mortality.

The management of ballast water has become an important issue in international efforts to reduce degradation of marine habitat. Alien species that have no natural enemies can reproduce dramatically and cause tremendous damage. The Marine Environment Protection Committee of IMO is currently working towards convening a Diplomatic Conference to adopt a Convention on the management and control of ballast water and sediments in February 2004.

The proposed new instrument is based on a so-called "two-tier" approach. Tier One includes requirements that would apply to all ships, such as mandatory requirements for a Ballast Water Management Plan, a Ballast Water Record Book and a requirement that new ships carry out ballast water and sediment management procedures to a given standard or range of standards. Tier Two includes special requirements which may apply in certain areas and would include procedures and criteria for the designation of such areas in which additional controls may be applied to the discharge and/or uptake of ballast water.

In response to the threat of unwanted species in ships' ballast water, IMO has initiated, together with the United Nations Development Programme and the Global Environment Facility, a Programme to assist countries to tackle the ballast water problem. The title of this new co-operative initiative is: Global Ballast Water Management Programme or more simply "GloBallast".

The success of any measures regarding ballast water management is largely dependent upon Member States understanding the impact of transfers of unwanted species in ships' ballast water and the need for concerted common action.

Examination of shipping arrival patterns for countries in the East Asia Region will enable the identification of the source ports from which ballast water is imported. This will be key to establishing the levels and types of risks of introductions each port faces and will enable more appropriate management responses. From the opposite perspective of exporting ballast water, it is essential to advise ships about the possible risks posed by invasive species from East Asia transferred into new environments. Monitoring procedures for the marine flora and fauna should be developed and exchange of information among the countries should be encouraged. Research and development efforts in the region should be co-ordinated to avoid duplication and should be based on the IMO Guidelines and on the future Convention.

Training of ship and shore personnel is another important measure towards regulation of ballast water operations. I would like to encourage the East Asian countries to take advantage of the training package currently being developed under the GloBallast Programme when it is ready.

I am pleased to see that the efforts made under the GloBallast Programme have materialised in the Workshop, which has started today. Regional co-operation is crucial for the success of any measures to minimize the transfer of harmful aquatic organisms in ballast water and the participation of representatives of the eight countries of the region encourages me to believe that the Workshop will be a success and will open the doors to future cooperation.

I would like to thank the Chinese Government for its hospitality and the Maritime Safety Administration for their efforts to make this event a success.

I would also like to wish you every success with your work towards the adoption of the Regional Action Plan and to assure you that the International Maritime Organization is committed to supporting the development and implementation of a standardized global ballast water management regime and continues to take the lead in addressing this challenge.

2 Introduction & Background

The International Maritime Organization (IMO), with funding provided by the Global Environment Facility (GEF) through the United Nations Development Programme (UNDP), has initiated the Global Ballast Water Management Programme (GloBallast).

The programme is aimed at reducing the transfer of harmful marine species in ships' ballast water, by assisting developing countries to implement existing IMO voluntary guidelines on ballast water management (IMO Assembly Resolution A.868(20)), and to prepare for the new international convention on ballast water management currently being developed by IMO member countries.

The programme aims to achieve this by providing technical assistance, capacity building and institutional strengthening to remove barriers to effective ballast water management arrangements in developing countries, through six initial demonstration sites. These six sites are Sepetiba (Brazil); Dalian (China); Mumbai (India); Kharg Island (Iran); Saldanha (South Africa) and Odessa (Ukraine). The initial demonstration sites are intended to be representative of the six main developing regions of the world; South America, Asia/Pacific, South Asia, ROPME Sea Area and Red Sea, Africa and Eastern Europe respectively. As the Programme proceeds it is intended to replicate these initial demonstration sites throughout each region.

The GloBallast demonstration site for East Asia is located in Dalian, on the Yellow Sea. This site is an important port along China's 18,000 km long coastline.

It was proposed that a regional workshop focusing specifically on ballast water management would be a useful starting point to initiate co-operative regional arrangements on this issue and GloBallast responded to this need by organizing the 1st East Asian Regional Workshop on Ballast Water Management, in Beijing, China, from 31 October to 1 November 2002. The workshop was organized and held with significant support and assistance from the Government of the People's Republic of China, in particular the China Maritime Safety Administration.

3 Workshop Objectives

The workshop objectives were as follows:

- To undertake initial awareness raising about invasive aquatic species, the ballast water problem, IMO ballast water activities and the GloBallast programme amongst key stakeholders in the East Asian Sea Region.
- To establish the current status of invasive aquatic species and ballast water management arrangements in the East Asian countries.
- To consider a draft Regional Strategic Action Plan (SAP) to minimize the transfer of harmful aquatic organisms and pathogens in ships' ballast water.
- To consider the machinery necessary for the implementation of the SAP including an appropriate regional coordination mechanism.

4 Workshop Participants

The workshop was attended by:

- several delegates from each of Democratic People's Republic of Korea, Japan, Republic of Korea, Philippines, Singapore and Vietnam, being representatives from each country's maritime administration, environmental and port authorities;
- three additional delegates from the host country (China);
- observers from three other GloBallast Pilot Countries: Brazil, India and South Africa; and
- the GEF/UNDP/IMO GloBallast Technical Adviser (workshop facilitator), Chief Technical Adviser and Principal Administrative Assistant.

A complete list of participants is provided in Appendix 1.

5 Workshop Proceedings

The workshop proceeded according to a three-day programme (Appendix 2). Flexibility was retained and the programme amended as required, as the workshop proceeded. The China Maritime Safety Administration Deputy Director-General, Mr Zheng Heping, gave an opening address, on behalf of the Director-General of the Maritime Safety Administration, affirming China's commitment to implementing IMO ballast water management requirements and to regional cooperation on the issue. This was followed by an opening address by Mr Dandu Pughuic, the GloBallast Chief Technical Adviser.

The technical sessions on the first day commenced with background presentations by the GloBallast Technical Adviser, covering the nature of the ballast water problem and aquatic bio-invasions and the IMO response to the problem, including the IMO Guidelines, the new Ballast Water Convention and the GloBallast Programme.

The remainder of the first day and the beginning of the second day were used for the presentation of Country Status Reports from China, Japan, Republic of Korea, Philippines, Singapore and Vietnam. The Country Status Reports are contained in Appendix 3.

The Country Status Reports were followed by presentations on two of China's Demonstration Site activities; the Ballast Water Risk Assessment as applied to Dalian; and the Bohai Sea Red Tide Reporting system. The delegates from the Democratic Republic of Korea also gave brief, oral reports. Unfortunately, representatives from the GEF Yellow Sea Large Marine Ecosystem Project and PEMSEA did not attend the workshop, and the presentations allocated to these bodies were therefore not given.

The afternoon of the second day was used to break into three groups, to undertake a fictitious exercise scenario testing regional cooperation in ballast water management. A copy of the exercise scenario is contained in Appendix 5.

The workshop concluded with group discussion of the draft SAP and unanimous adoption of the Workshop Resolution. The GloBallast Chief Technical Adviser advised that the SAP was a declaration of intention, not a binding legal document, and could be subject to periodic revision. It was agreed that all countries would consider the draft SAP back in their administrations and send any comments to the Programme Coordination Unit in London by 30 December 2002.

6 Workshop Outputs & Outcomes

General

The Outputs and Outcomes of the Workshop include:

- A Workshop Resolution calling for the adoption of a Regional Strategic Action Plan for Ballast Water Control and Management in the East Asian Seas Region as a matter of priority and to support the rapid adoption and entry into force of the new international legal instrument for the control and management of ships' ballast water and sediments, being developed by the Marine Environment Protection Committee (MEPC) of IMO.
- A Country Status Report (Appendix 3) from China, Japan, Republic of Korea, Philippines, Singapore and Vietnam outlining:
 - Coastal and marine environments.
 - Status of marine bio-invasions.
 - Existing institutional arrangements for ballast water management.
 - Shipping and port data, including ballast water discharges and uptake.
- A draft Regional Strategic Action Plan for Ballast Water Control and Management to be considered by the authorities in the countries of East Asia (Appendix 4).
- Identification of possible opportunities for sub-regional and regional cooperation.
- Increased awareness of the problem of ballast water and marine bio-invasions, both amongst workshop delegates and the broader community.

Summary of Country Status Reports

The Country Status Reports (Appendix 3) showed that all East Asian Region countries have significant marine resources and environmental values, rapidly expanding maritime sectors and increasing concern about marine environmental issues. They also indicated that many East Asian Region countries need better co-ordination between several different government agencies in addressing the ballast water issue, which can incur some duplication and lack of clarity as to who should be dealing with the issue. The IMO Ballast Water Guidelines (A.868(20)) are known and followed to various degrees in the countries, although some countries stated that finalization of the anticipated international Convention would enable more defined arrangements to be made at the national level. China stated that the existing Guidelines may be included in national regulations.

Some delegations stated that the exercise of developing a Country Status Report had played an important role in bringing various government and industry sectors together for the first time to discuss ballast water and marine bio-invasion issues, and had highlighted the lack of co-ordinated action to date and the need for action. The workshop and the in-country preparations for the workshop thereby played an important role in raising awareness and catalysing concerted action in each East Asian country.

The Democratic People's Republic of Korea whilst having had limited awareness of the ballast water issue understood the importance of the issue and undertook to report to the outcomes of the workshop to relevant authorities.

Japan expressed support for GloBallast's efforts and included in their presentation a demonstration of a 'special' pipe being developed for ballast water treatment. It was suggested that the design of a non-ballast water carrying ship, was also under consideration. Singapore reported that it was also involved

in testing ballast water treatment systems, in particular filtration equipment, and was awaiting standards set by Convention.

There was general interest in the GloBallast risk assessment software and methodology as being applied on a demonstration basis at Dalian, and the Republic of Korea was keen to proceed with risk assessment. The PCU outlined the fact that software, hardware and methodology would be made available to all.

Exercise Scenario

The fictitious exercise scenario proved extremely popular and clearly demonstrated the complexity of the issue, the need for monitoring and early warning systems, and the need for highly effective regional cooperation mechanisms for ballast water control and management. It was emphasized that this was a fictitious exercise and place names did not relate to actual conditions and were chosen randomly.

Consideration of the Draft Regional Strategic Action Plan (SAP)

During workshop discussions, all countries unanimously agreed that the problem of ballast water and marine bio-invasions must be addressed in the East Asian Sea Region on a regional basis involving cooperation between all countries in the region. The reasons given for this position were:

- The marine and coastal environments of all the East Asian countries are inextricably linked.
- Shipping is an international industry and ships routinely cross jurisdictional lines to conduct trade.
- Action by an individual country would therefore be of limited effectiveness.
- There is a strong history of effective regional cooperation in East Asia on maritime and marine resource management matters.

It was unanimously agreed that regional cooperation on ballast water control and management should be developed under the framework of the draft Strategic Action Plan (SAP) as contained in Appendix 4, coordinated through existing regional structures and mechanisms, and should link wherever possible with existing marine resource management and environmental protection activities. PEMSEA, APEC and the Tokyo MOU were identified as the most suitable entities.

It was agreed that all regional activities on ballast water control and management should be consistent and coordinated with the international IMO regime, and should seek to implement the IMO Ballast Water Guidelines (A.868(20)) and to support rapid adoption and entry into force of the new international legal instrument being developed by IMO.

Countries viewed the SAP as important in catalysing action and regional co-operation and Japan suggested that regional SAPs should be provided for in the new international Convention.

The PCU emphasized the need for sustainability and the fact that GEF funding would only be available initially.

It was agreed that delegates would consult with the relevant authorities in their countries and send any comments on the draft SAP to the PCU in London by the end of the year. Lack of comments would be taken as tacit acceptance of the current draft. It was also agreed that a higher level meeting would be held in China in early 2003 to officially adopt the SAP.

The Workshop Resolution was unanimously adopted.

Prospects for Funding

It was agreed that funding is necessary in order to further develop the outcomes and outputs of the workshop, and to commence implementation of the Regional SAP

The SAP would be used in support of application for funds to GEF as a next stage. Pilot Countries have demonstrated that major recommendations and guidelines on ballast water management and control can be implemented and institutionalised and this needs to be replicated on a regional level to be truly effective.

It was recognized that support would be needed from GEF to establish a minimal Secretariat. Existing regional structures could be used so that minimal input is needed from the GEF until countries' governments are ready to support and budget for implementation of the Convention.

Regional action examples:

- Black Sea – Istanbul Commission has put the issue on its agenda and regional officer in Commission;
- ROPME Sea Area – ROPME instrumental in incorporating ballast water activities, logistic and communications support.
- East Asia/Pacific – PEMSEA (1½ years left) could provide offices and leadership from Manila for next year.

As it was agreed that such regional activities should be undertaken within existing regional frameworks, PEMSEA was identified as a potential source of funding/partner.

The GloBallast Programme itself, in particular its future regional focus, was also identified as a potential source of additional funding in the initial stages of the activities. The GloBallast PCU undertook to follow-up on these sources, considering that GloBallast and the Maritime Safety Administration of China had funded the workshop in order to initiate the process, and the need for alternative sources to be secured.

Finally, whilst it was recognized that Governments were often unwilling to commit resources, the sustainability of the SAP could only be ensured if the countries of the region undertook to ultimately support this activity in full. It was agreed that where potential for significant economic harm and impact on human health from invasive aquatic species was a reality it would become a priority for some Governments.

Increased Awareness

Many workshop delegates expressed that their own awareness of the issues had been greatly increased as a direct result of the workshop, and many requested additional supplies of the GloBallast awareness materials to be sent to them for use in their countries. Ballast water was a new issue for some countries.

7 Conclusions

It can clearly be concluded that the 1st East Asia Regional Workshop on Ballast Water Control and Management was a success in achieving all of its stated objectives.

The foundation is now laid for the adoption of a Regional Strategic Action Plan for Ballast Water Control and Management, consistent with the IMO Guidelines and the emerging Convention.

Concerted action by all of the countries in East Asia is now required in order to turn the workshop outputs and outcome and in particular the Workshop Resolution and draft SAP, into reality.

It was decided that the official meeting to adopt the Regional Action Plan would take place after April 2003.

7 Further Information

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Appendix 2: Workshop Programme

Thursday, 31 October

08:30 Registration

Session 1: Introduction & Background, Country Status Reports

09:00	Workshop opening and welcoming statements	PR China & IMO
09:45	Organization of the work of the meeting & adoption of the Agenda	GloBallast PCU
10:00	<i>Tea/coffee</i>	
11:30	The People's Republic of China National Work Plan	GloBallast- China
Country Status Reports		
12:00	Japan	Country Rep
12:30	<i>Lunch</i>	

Session 2: Country Status Reports (cont.)

14:00	DPR Korea	Country Rep
14:30	Republic of Korea	Country Rep
15:00	Philippines	Country Rep
15:30	<i>Tea/coffee</i>	
16:00	Russian Federation	Country Rep
16:30	Vietnam	Country Rep
17:00	Discussion Panel	All participants
17:30	Close of Day 1	
18:30	<i>Welcome Dinner</i>	

Friday, 1 November 2002

Session 3: Presentations from other Organizations

09:00	GEF Yellow Sea Large Marine Ecosystem Project	UNDP
09:30	Activities of PEMSEA	PRC SOA
10:00	<i>Tea/coffee</i>	
China Demonstration Activities		
10:30	GloBallast Risk Assessment applied to Dalian	GloBallast - China
11:00	Bohai Sea Red-tide Monitoring and Ship Reporting	GloBallast - China
11:30	Discussion Panel	All participants
12:00	<i>Lunch</i>	

Session 4: Draft Regional Action Plan and Workshop Resolution

13:30	Presentation of the Draft Regional Action Plan (RAP)	GloBallast China
14:00	Discussion of the draft RAP	All Participants
15:00	<i>Tea/coffee</i>	
15:30	Summary discussion on the draft RAP	All Participants
16:00	Consideration and adoption of the Workshop Resolution	All Participants
17:00	Close Day 2	

Saturday, 2 November 2002

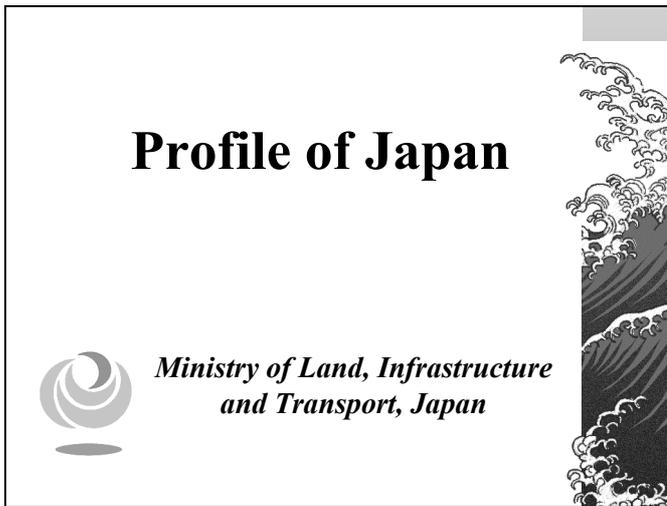
08:30	<i>Tour to the Great Wall</i>	<i>All Participants</i>
13:00	<i>Re-convene at workshop venue</i>	

Session 5: Discussion and Closing Ceremony

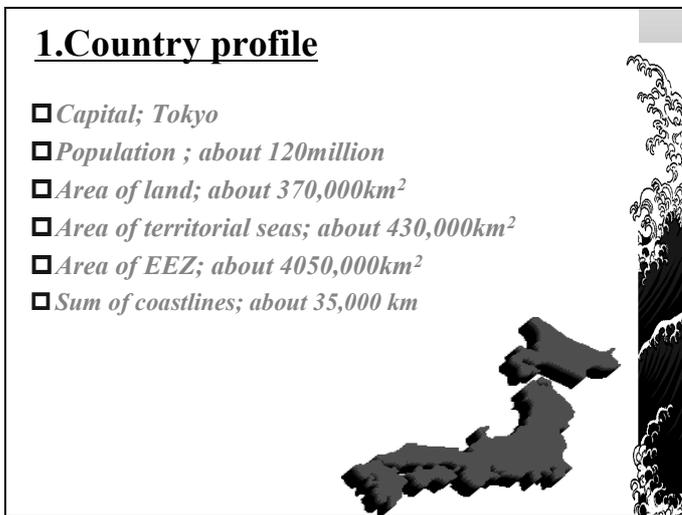
14:00	Wrap-up discussions	All participants
14:00	Closing ceremony and addresses	
15:00	Close	

Appendix 3: Country Status Reports

Japan

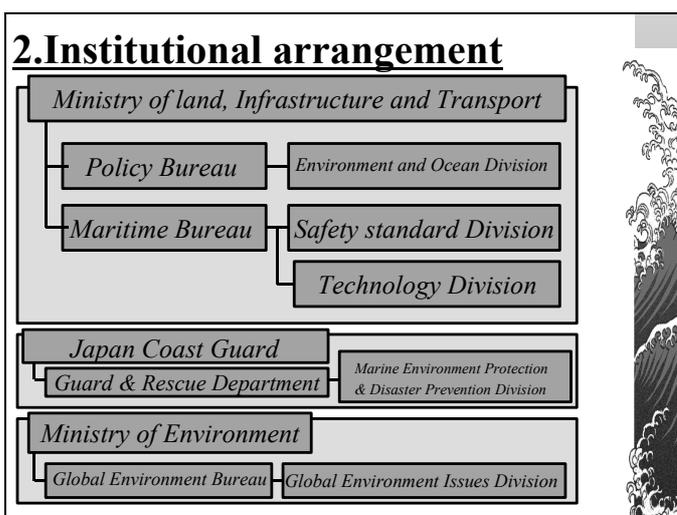


First of all, Japan highly appreciates the great preparation and work of Mr. Zheng of the China Maritime Safety Administrations.



1. Country Profile

The main Japanese profile is shown on this page. Japan has a population of 120 million. Area of land is about 3.7 km³ very small countries and so on. In these dates although Japan is a small country you can see Japan has a large area of territorial sea and EEZ.



2. Institutional arrangement

Concerning BW issues, the Japanese institutional arrangement is shown on this page. Environment and Ocean Division in MLIT mainly treats BW issue.

Safety Standard Division treats safety aspects concerning BWE.

Technology Division mainly develops BW treatment System.

And other institutional arrangements are Japan Coast Guard and Ministry of Environment.

3. Shipping and ports

❑ **Characteristic; Japan has few natural resources and the land is surrounded by sea, as a result Japan imports so much amount of foods and resources from oversea through international shipping.**

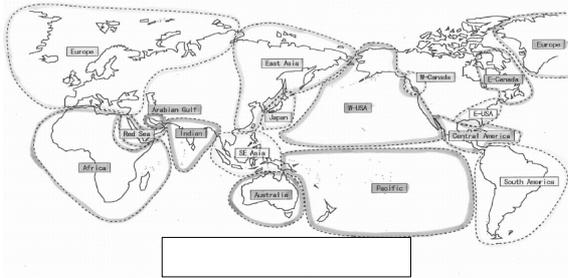
❑ **Export and import amount in trade at sea (2000)**

Export amount	101million t /year
Import amount	788 million t /year

3. Shipping and ports

Characteristic; Japan has few natural resources and the land is surrounded by sea, as a result Japan imports so much amount of foods and resources from overseas through international shipping.

Each Region used for the BW Movements Studies



Amount of ballast water discharged annually

First of all, we will show you on the movements of ballast water between Japan and overseas regions, under our studies.

This map showing each regions in the whole world which used for our studies on ballast water movements.

Australia estimated that 150 millions k/t of ballast water were being discharged in their ports annually and 50% of them are from Japanese ports.

The Netherlands estimated that 7.5 millions k/t of ballast water were being discharged, and loaded 70 millions tons of ballast water in their ports annually.

Annual Ballast Water Movements between JPN and Overseas Regions

Zone	Imported	Exported
	Millions k/t /ships	Millions k/t /ships
E Asia (incl. E Russia)	9.5/25,771	41/27,334
SE Asia	2.7/6,345	66/5,890
West U.S. and Canada	2.2/3,650	34/3,673
Australia	0.4/2,279	80/2,356
Gulf	0.2/1,410	78/1,123
Others	1.7/3,127	19/2,553
Total	16.7/42,582	318/42,929

* Such as passenger ships, fish carriers, fishing boats, and research ships are not included.

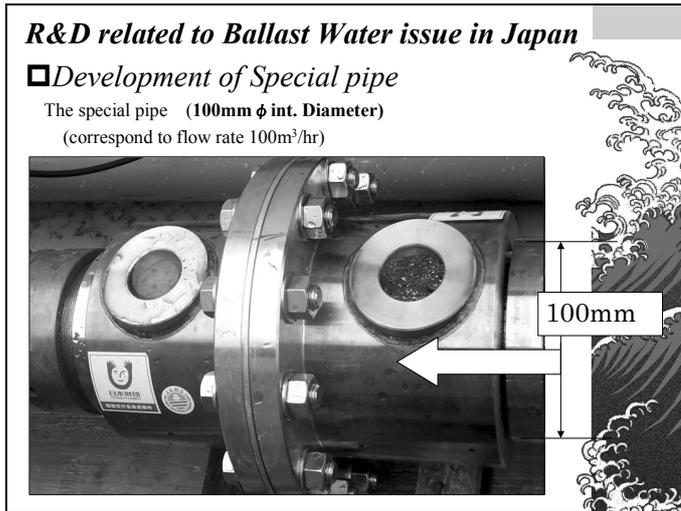
This graph shows annual ballast water movement between Japan and overseas regions in the whole world.

In Japan, it is estimated that approximately 17 millions k/t of ballast water are imported and discharged into Japanese ports, and exported more than 300 millions k/t of ballast water into foreign ports, by the merchant ships of 500 G/T and more engaged in foreign trade called Japanese ports in 1997, through the studies by the Japan Association of Marine Safety, based on the Lloyd's data.

Such as passenger ships, fish carriers, fishing boats, and research ships are not included.

This graph is showing that the numbers of these ships engaged in voyages between Japan and East/SE Asian ports are reaching more than 75% of the ships calling Japanese ports.

73% of the ballast water discharged in Japanese ports is coming from E/SE Asian ports, comparing with 34% of ballast water loaded in Japanese ports is discharged in E/SE Asian ports.



Then we would like to explain on a pipe under developing for the ballast water treatment system on board ship.

Various treatment technologies of ship's ballast water, such as physical and chemical processing methods are under development in various countries in the world.

The Japan Association of Marine Safety has been pushing forward research and development of ballast water treatment technology since 1992, under the assistance of **the Nippon Foundation**, and conducted experiments in chemical, heat, ozonization, electro-chemical and mechanical treatments respectively.

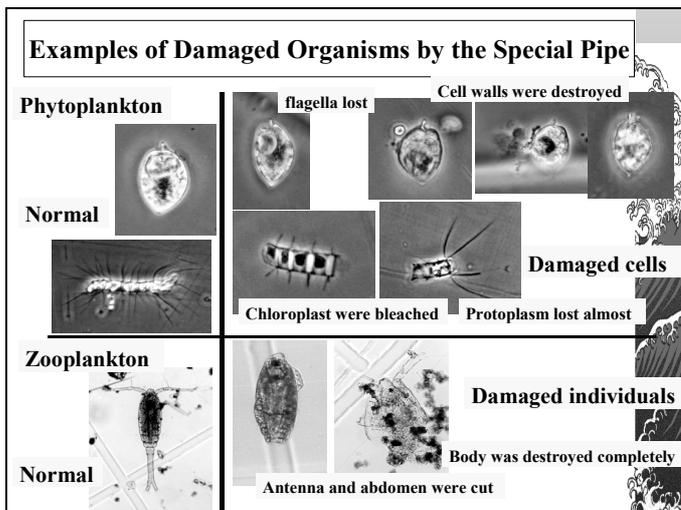
The results through our experiments by these methods are showing that they can remove, inactivate or kill aquatic organisms in ballast water.

We also found out through our experiments that the mechanical processing method using a pipe with special structure in ballasting system was to be the most suitable system, based on these aspects such as installation and operational utility on board ship, i.e. easy operation, effectiveness on marine organisms, safety on operating, cost effectiveness and environmental impact.

We are pushing forward the development of a prototype of the pipe with special structure so called "special pipe", which could be effective and convenient, while watching and participating international discussion on ballast water treatment standards.

The pipe and device shown in this photograph, with capability of water treatment by 100m³/hr of flow rate was designed and produced, for our field experiment.

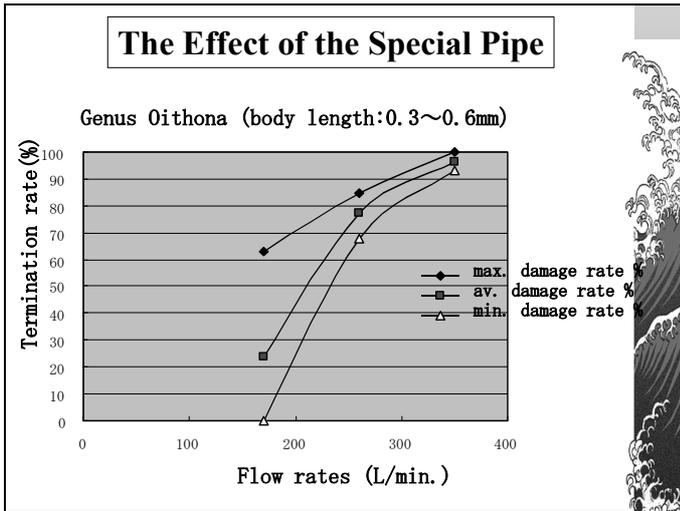
The special pipe could be remodeled to improve mechanical efficiency such as shear stress and cavitation to the organisms in water.



Organisms in the water are terminated or rendered harmless while loading and/or discharging ballast water, as shown in these pictures.

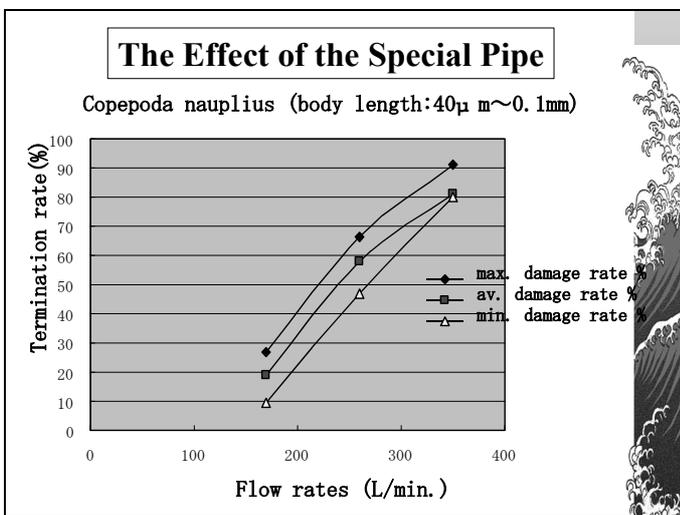
We are now conducting experiments on effectiveness on various aquatic organisms, and on solving blockade problem of the device by particle matter in the water passing through the pipe.

Although we observed that no blockade of the device did not occur during our experiment by using natural seawater in a harbor, the pipe has a device to solve such blockage easily.

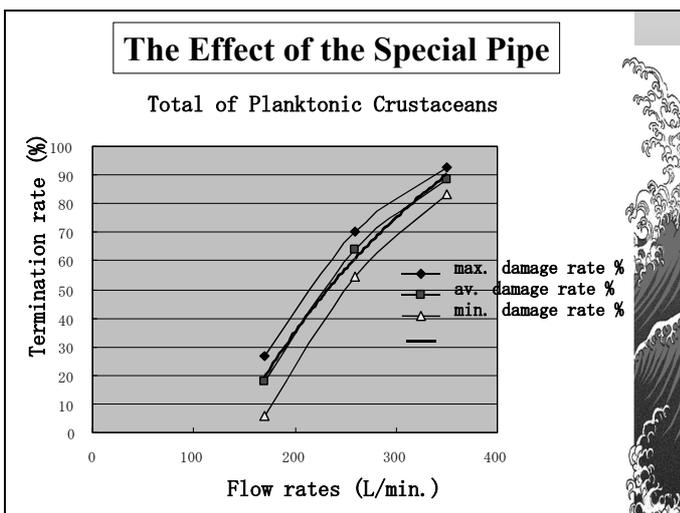


During our experiment, we observed that this system showed enough effects on most phytoplankton and zooplankton, including *Meroplankton*, such as *Planktonik* larvae stage of *Benthos*, by one-time treatment.

This graph shows the effectiveness against *Genus Oithona* as a representative from Zooplankton, indicating maximum/average/minimum damage rate, corresponding with the flow rates



This graph shows the effectiveness against *Copepoda nauplius* as a representative from Zooplankton, indicating maximum/average/minimum damage rate, corresponding with the flow rates.



This graph shows the effectiveness against *Planktonic Crustaceans* as the representative from Zooplankton, indicating maximum/average/minimum damage rate and logarithmic average damage rate, corresponding with the flow rates.

Each result showing that higher flow rate can obtain higher effectiveness against aquatic organisms.

Development of Ballast Water exchange manual

Japan established last year a technical committee to examine and study safety aspects related to ballast water exchange at sea.

Technical committee plans to develop a guidance for the shipmaster’s judgments on weather ship safely can undertake the ballast water exchange.



4. Development of Ballast Water Exchange Manual

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Technical committee plans to develop guidelines for the shipmaster’s judgments on whether a ship can safely undertake the ballast water exchange.

Fishery production Volumes and Production Value and Fishery workers by type of Fishery (2000)

Type of fishery	Production volume (1 million tons)	Production value (100million yen)	Fishery workers (persons)
Distant water	85	2,120	39,600
Offshore	259	4,456	
Coastal	281	11,037	220,590
Inland water	13	1,133	
total	638	18,746	260,190

Fishery production Volumes and Production Value and Fishery workers by type of Fishery

This Figure shows Fishery production Volumes and Production Value and Fishery workers by type of Fishery. The fishing industry is greatly dependent on the environment and ecosystems, and conserving these in good condition is very important in order to achieve healthy and sustainable development of fisheries and to produce and supply safe fishery products.

Information on the introduction of unwanted species into waters in Japan



Information on the introduction of unwanted species into waters in Japan

Representatives from the foreign aquatic organisms found in Tokyo Bay

- ① *Mytilus galloprovincialis* (origin: the Mediterranean)
- ② *Xenostrobus securis* (origin: Oceania)
- ③ *Perna viridis* (origin: SE Asia)
- ④ *Balanus eburneus*
(origin: the Atlantic coasts of N-America)
- ⑤ *Molgula manhattensis* (origin: ditto)
- ⑥ *Carcinus aestuarii* (origin: the Mediterranean)
- ⑦ *Pyromaia tuberculata*
(origin: Northern Central of the Pacific)

In Japan, it is not acknowledged the “damage” immediately caused by the alien species introduced into Japanese waters so far.

There are some reports such as Tokyo and Osaka bays on alien species invaded, reproduced and established in these waters.

Although the processes for invading are not ascertained, it is considered that the invasion of aquatic organisms through ballast water discharges into these waters could be one of the processes.

These are the photographs of some of the species discovered these areas.

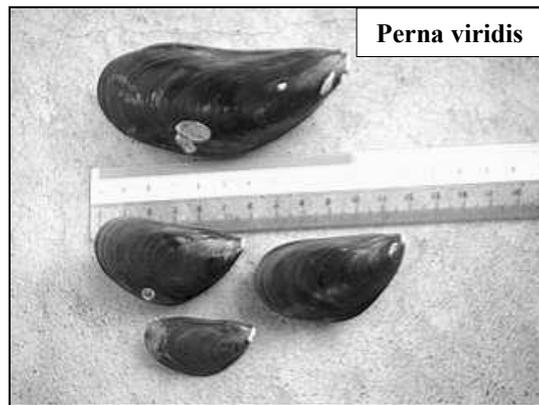
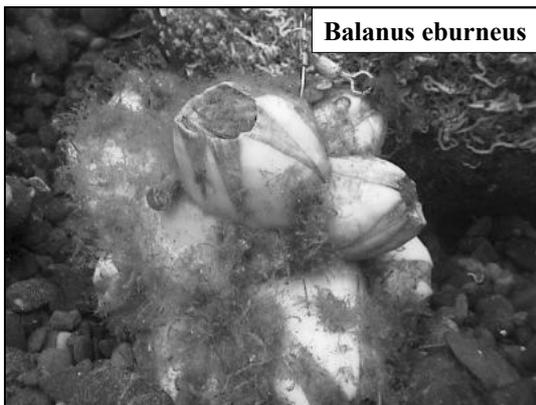
Representatives from the foreign aquatic organisms found in Osaka Bay

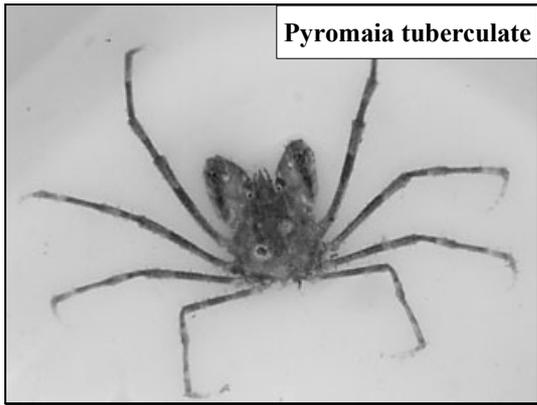
- ① *Mytilus galloprovincialis*
- ② *Pyromaia tuberculata*
- ③ *Xenostrobus securis*
- ④ *Crepidula onyx*
- ⑤ *Ficopomatus enigmaticus*
- ⑥ *Perna viridis*
- ⑦ *Balanus eburneus*
- ⑧ *Balanus improvisus*
- ⑨ *Molgula manhattensis*
- ⑩ *Ciona intestinalis*
- ⑪ *Mytilopsis sallei*
- ⑫ *Caicinus aestuarii*

At present, research on environmental impact by discharging ballast water into Japanese waters has not been conducted so far.

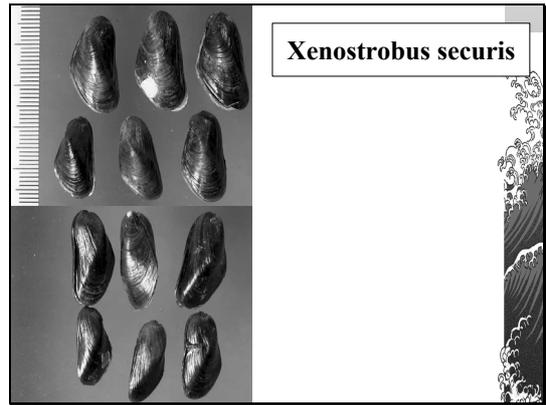
The general situation with respect to the national distributions of wild animals and plants on land and in fresh waters in Japan, including the animals and plants introduced into this country is being conducted.

From the next year, we will conduct the biota research at tidal flats and in under water forests, and are considering the research on the condition of introduced aquatic organisms in the sea area, however these researches are not limited to the ballast water issues.

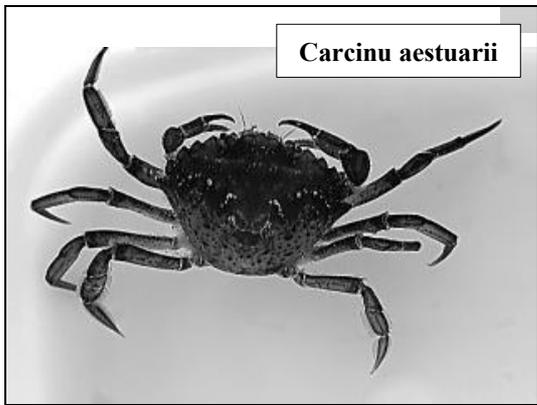




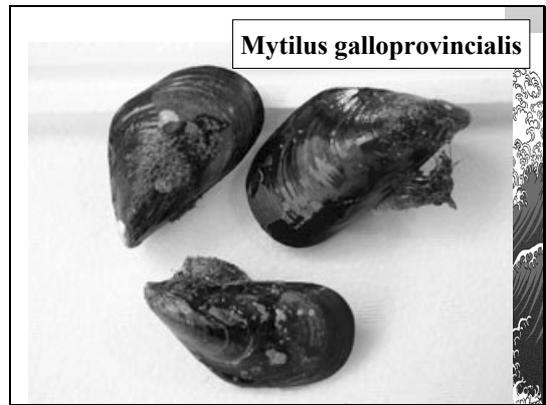
Pyromaia tuberculata



Xenostrobus securis



Carcinu aestuarii



Mytilus galloprovincialis

5. Implementation of IMO instrument

	Date of adoption	Date of entry into force in Japan
MARPOL73/78AnnexI/II	9June1983	2October1983
MARPOL73/78AnnexIII	9June1983	1July1992
MARPOL73/78AnnexIV	9June1983	-
MARPOL73/78AnnexV	9June1983	31December 1988
London Convention 72	15October 1980	14November1980
OPRC Convention 90	17October 1995	17January1996

5. Implementation of IMO instrument

This table shows implementation of IMO instruments related to protection of marine environment that are implemented in Japan. Japan also implements not only these IMO instruments but also domestic regulations for protection of marine environment.

❑ *Japan does not implement A868(20)*
"Guideline for the control and management of ship's ballast water to minimize the transfer of harmful aquatic organisms and pathogens"

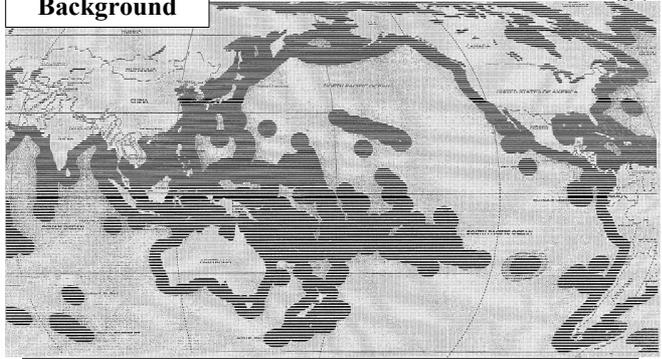
❑ *Japan has no regulation rated to control of ballast water . After Ballast Water Convention is adopted, Japan will consider measures including legal aspect.*



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6. Conclusion

Background



Outlines the Sea Areas within 200 nautical miles off the land

6. Proposals

We understand environmental protection is very important.

However Japan thinks requirement should not damage international trade since Asian countries depend on international trade. Japan has concerns that stringent requirement might damage international trade in this region.

Japan believes the requirements of ballast water may apply only for ships from other than E/SE region in principle if proof based on coming biological study results is available.

We could understand the outline of sea areas beyond 200 nautical miles from the nearest land by this map.

When ships will be required ballast water exchange at more than 200 nautical miles off the land under the international instruments being developed at IMO, it could be very difficult or impossible to obtain the sea area to conduct ballast water exchange on board ship engaged within E/SE Asian trade.

We should pay special attention to this issue.

About fore-mentioned issue Japan considers that when we establish exemption of control on ballast water in case of geographical difficulty. Japan is welcome to any comments from neighbouring countries or others on this issue.

Thank you for your silent attention.

Republic of Korea



Thank you Mr. Chairman for introducing me to everybody. And good afternoon to all of the participants present at this workshop. I'm very pleased and honored to be given a chance to make a presentation in front of such experts.

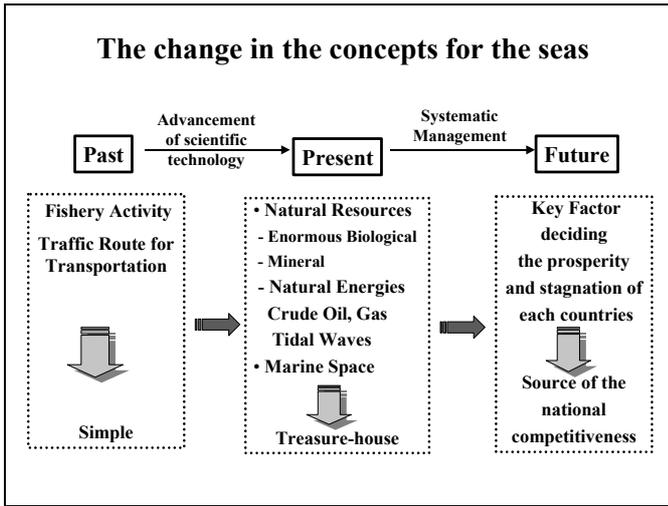
As already introduced by Mr. Chairman, I'm the Manager of Maritime Technology Division in Safety Management Bureau of MOMAF (the Ministry of Maritime Affairs and Fisheries).

Currently, I am in charge of the policy related to the Ballast Water Management and Control.

Personally, I have much interest in this workshop because I believe that this kind of initiative gives each nation a chance to improve their marine environment protection policy and facilitates the international cooperation by providing a forum for discussion and consideration.

Introduction
<ul style="list-style-type: none"> ▪ Country's Profile ▪ Institutional Arrangement ▪ Shipping and Ports ▪ Coastal and Marine Environment ▪ Implementation of Regulations ▪ Conclusion
<i>Republic of Korea</i>

In my presentation, I'd like to briefly touch upon the current marine environment situation, the relevant policies, institutional arrangement, Shipping and Ports, Coastal and Marine Environment, Implementation of Regulations in Korea.

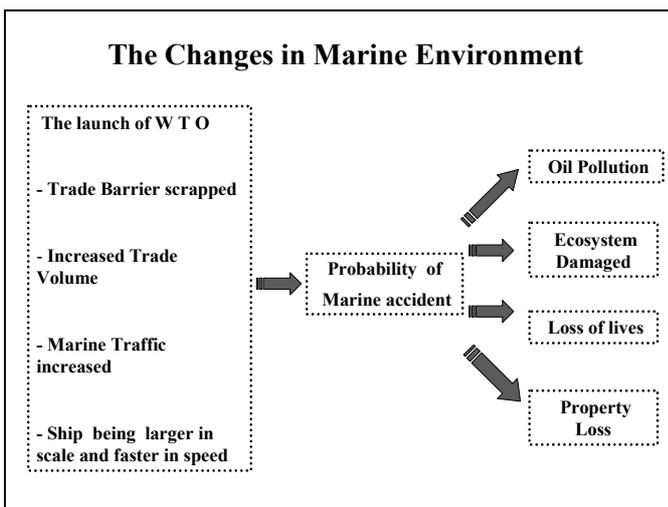


In the past, the sea was merely considered as a fishing ground and the traffic route for marine transportation. The past concept of sea was so simple.

However, with the rapid advancement of scientific technology, we are beginning to realize that sea is vast and rich reservoir of natural resources like enormous biological resources, minerals, and natural energies like the crude oil, natural gas and tidal waves as well as the utilization of marine spaces.

So, nowadays the sea is considered as the treasure house.

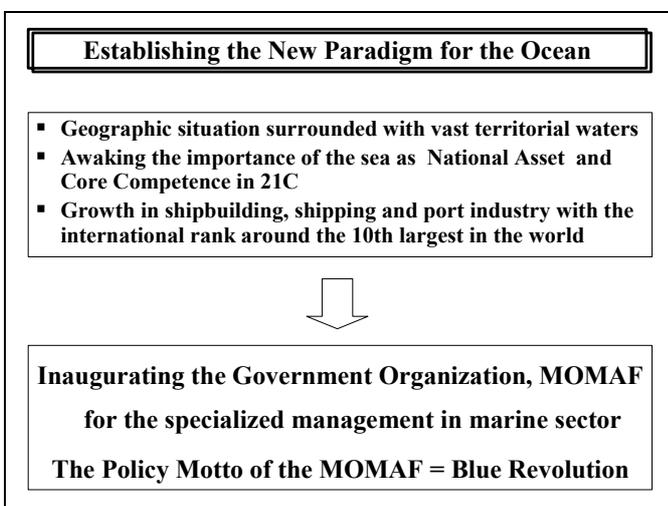
According to the development of systematic Management, the sea will be one of key factor whether the nation will become the prosperity or stagnation in the future. Namely, the utilization of sea is the source for national competition which may ultimately determine the economic future of a nation in the future.



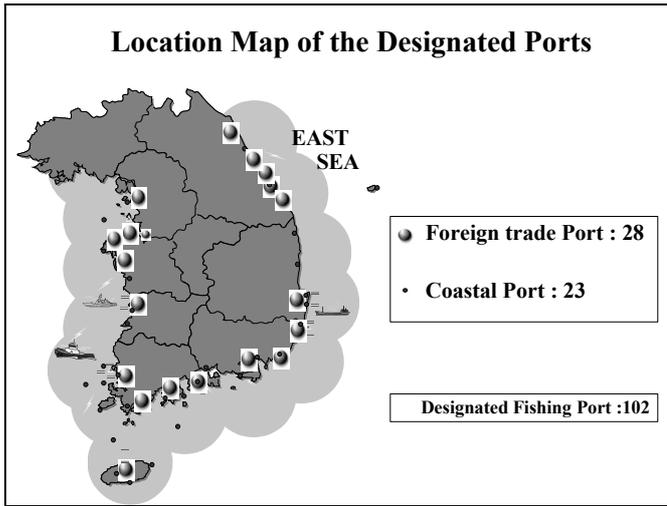
On the other hand, the change in the way we perceive the sea has also brought many changes in the economic sector.

The launch of WTO has brought down many trade barrier and has led to increase in the maritime traffic and volume of trade between nations. As a results of this increase in trade, the ships employed in the transportation of goods have also been increasing in their size and speed.

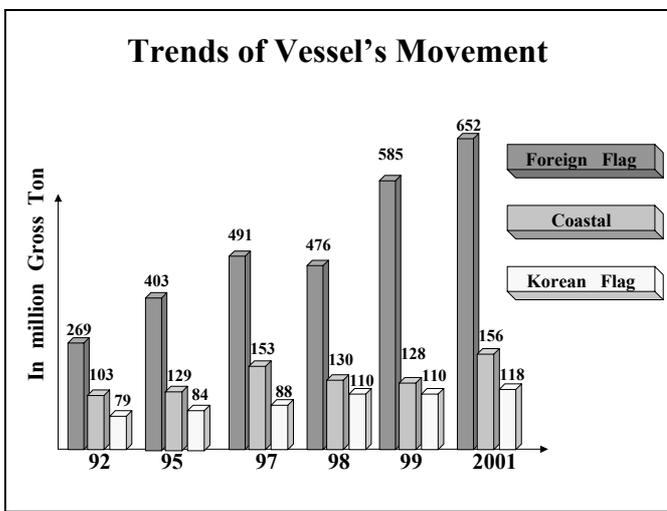
Unfortunately, as a consequence of increase in trade, we are also increasingly face with the problem of oil pollution, damaged marine ecosystem, loss of lives and property, etc.



In accordance with the changes, Republic of Korea has been establishing the new paradigm for the ocean such as....



There are 28 foreign trade ports and 23 coastal ports in Republic of Korea.

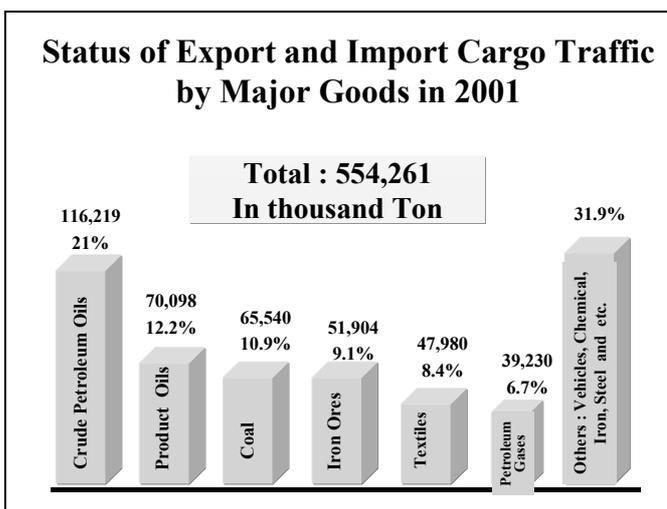


This slide shows the trends of vessel's movements from 1992 to 2001 in Republic of Korea.

We can see that the foreign flag ships have been responsible for a large portion of transportation in Republic of Korea.

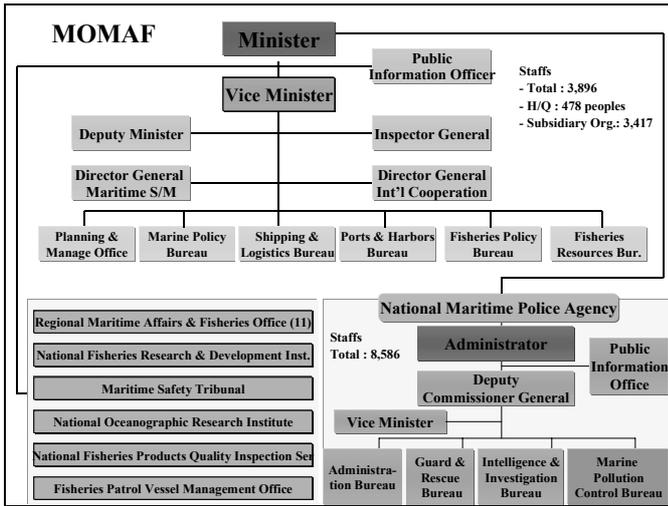
As results of the huge amount of marine transportation, it was reported that about 500 million tons of ballast water are discharged into the coastal area of our country every year.

Fortunately, it has reported that very few unwanted species have been introduced in our country.



The status of export and import cargo traffic according to major goods in 2001 is like this.

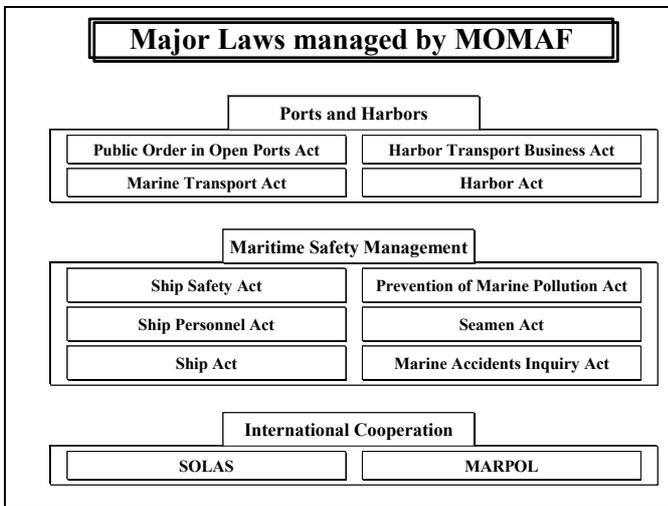
Total quantity are 554,261,000 tons like show in this figures.



In order to provide a framework for the establishment and implementation of an integrated and efficient marine policy that actively corresponds to the changes in the world marine environment, the Republic of Korean government launched the Ministry of Maritime Affairs and Fisheries on August 8, 1996.

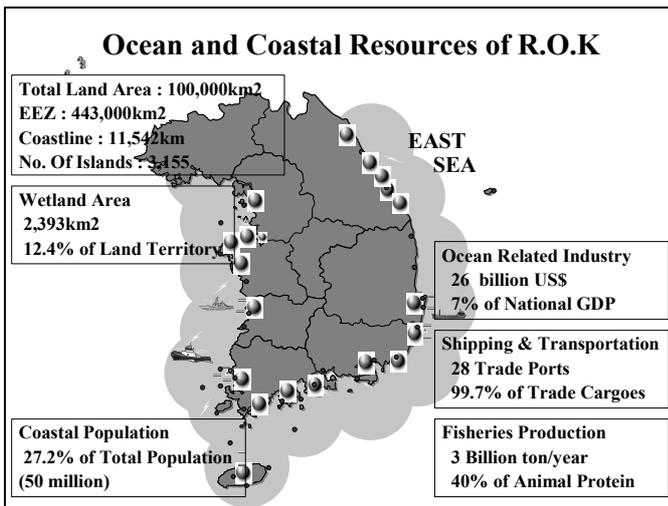
This slide shows the organization of our ministry and marine environment affairs related in Director General Maritime Safety Management.

The other organization, National maritime police agency controls the marine pollution. Also marine pollution control bureau is responsible for this work.

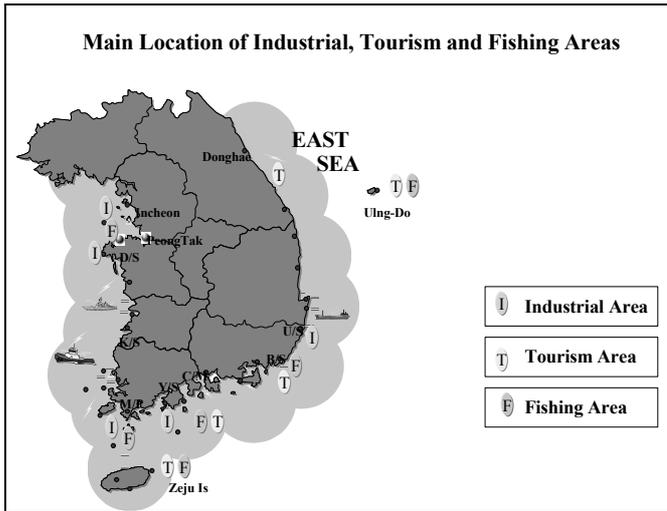


Major laws managed by our ministry are shown here.

In particular, prevention of marine pollution act is directly related to the marine environment protection.



Korea has the natural conditions for favorable development of the seas, with approximately 10,000km of coastline.



This slide shows the location of main industrial, tourism and fishing areas.

Status of Ship Registered

Total	Passenger Ships	Cargo Ships	Tankers	Others	Barge	
Number	6,586	175	706	697	3,375	1,633
Gross Ton (1000G/T)	6,593	95	4,384	1,098	235	781

Republic of Korea

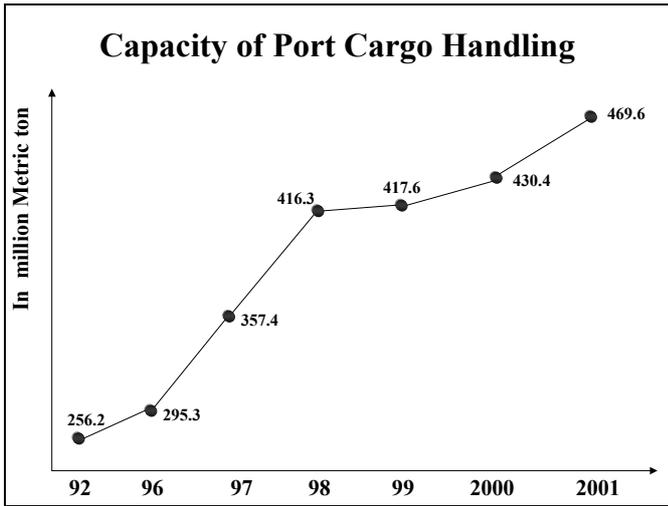
This table is status of ship registered in Republic of Korea, excluding fishing vessels.

Status of Fishing Fleet

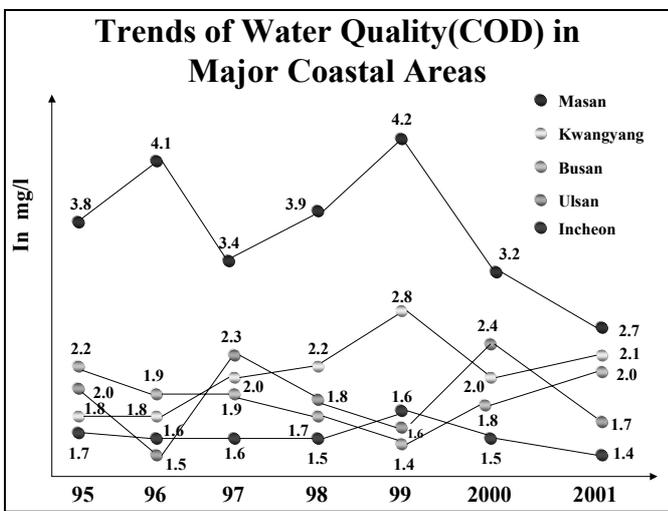
Total	Steel	Wooden	FRP	
Number	94,935	3,286	34,702	56,947
G/T	884,853	618,962	95,058	170,833

Republic of Korea

This table is status of our fishing fleet.



This figure is capacity of port cargo handling

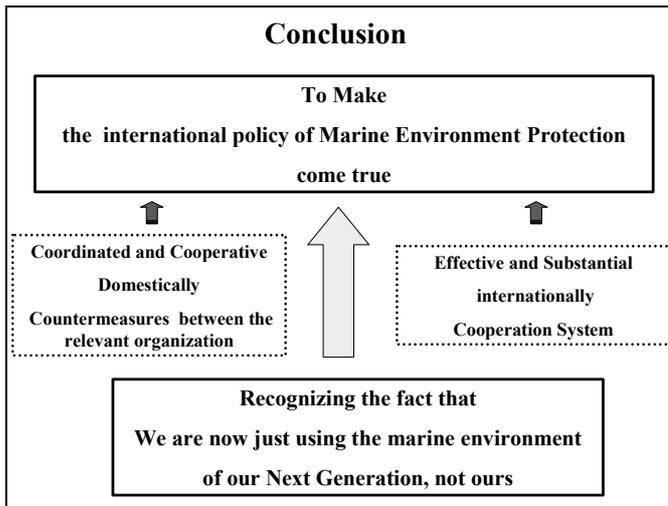


This slide shows the trends of water quality in major coastal areas In Republic of Korea.

Biological Group	Number of Species	Abundance	Dominant Species
Bacteria in water column	174 (Diatoms > 150)	379 ~ 549,444 cells/l	Chaetoceros curvisetus Prorocentrum Compressum Skeletonema costatum
Zoopankton	Copepoda > 19	Avg. 1444 indiv./m3	Noctiluca scintillans Palacalanus sp. Copepodid(larvae) Acartia clausi
Larvae and Juvenile fishes	25 taxa	5 ~ 277 / 1000m3	Repomucenus sp. Sillago japonica Engraulis japonicus
Benthic Macroalgae	66	+++	Ulva Pertusa Ishige Okamuai Undaria Pinnatifida
Benthic Animal (Soft bottom)	105 ~ 137	882 ~ 3110 ind/m2	Chaetozone Sectosa Lumbrineris Longifolia Ophiopholis Mirabilis
Benthic Animal (hard bottom)	55 ~ 222	100 ~ 200,000/m2	Chthamalus Challengeri Septiper Virgatus Patellidae Indet.
Fishes	28 ~ 42	++	Leiognathus Nuchalis Chaeturichthys Hexanema Thryssa Kammalensis

The Republic of Korea investigated the biological group of all coastal areas.

For instance, this figure shows the outcome of investigation of biological group in Yosu coastal area



- **Proposals**
- **Investigating and gathering of data concerning the marine environment, biological resources and alien species be done by each nation**
- **Using the existing organizations such as PEMSEA for efficiency/effectiveness to carry out the risk assessment of and monitoring the IMO control policies for protecting the marine environment related in ballast water management**

Proposal

In considering of the fact that the marine environment of Japan, China, Russia Federation and Korea is very similar and that the sailing route between the nations are relatively short, we would like to propose that investigation and gathering of data concerning the marine environment, biological resources and alien species be done by each nation and into a database for the common usage.

We should especially concentrate our efforts on the investigation of alien species and pathogens introduced by the uncontrolled discharge of ballast water and conduct risk assessment on environment damage caused by such alien species and pathogens.

For this purpose, we can consider to utilize the following organization instead of establishing a new one to save cost and to enhance effectiveness.

- Asia-Pacific Economic Cooperation (APEC)
- NDP/GEF Programme on Prevention and Management of marine Pollution in East Asia Seas (PEMSEA)
- Tokyo MoU

Philippines

Country Profile

The Philippines is an archipelago of 7,107 islands. It has an extensive coastline of 17,460 km. and about 26.6 million hectares of coastal waters and 193.4 million hectares of oceanic waters. The country exercises authority over 2.2 million hectares of territorial ocean waters including its Exclusive Economic Zone.

Location

The country is located south of Taiwan and north-east of Brunei and East Malaysia (Borneo/Sabah). It is surrounded by the South China Sea in the west, the Sulu Sea at the south and the Pacific Ocean at the East

Seasons

- Cooler, dry season - from November to February.
- Hot, dry season (marks the summer) - March to June.
- Rainy seasons – June to October.

Geographical Areas (main regions)

- Luzon
- Visayas
- Mindanao



All regions offer premier destinations for scuba divers and marine enthusiasts, have warm crystal clear waters with underwater visibility of up to 60 meters, over 2,000 species of fish and more than 800 species of soft and hard coral

Fisheries Sector

An estimated 2% of the total world catch is drawn from the Philippine waters: the Philippines is ranked 12th among the 80 fish-producing countries in 1995 and fourth biggest producer of seaweeds and other aquatic plants, contributing six percent to world production

Fisheries tossed in P2, 662.4 billion at current prices to the country's Gross Domestic Product

The sector provided direct and indirect employment to over one million people or about 5 percent of the national employment figure

Institutional Arrangements

National Marine Policy:

- developed in the mid 1990s;
- aims to promote a future for the management of the Philippine marine environment and its issues;

- calls for a shift in the current development policy and introduced the common principles of marine resource usage.

Four Departments of the Marine Environment:

- Agriculture
- Natural Resources and Environment
- Transport and Communications
- Science and Technology

Table 1: Government Authorities

Department: Agency/Bureau	General Role
<i>Bureau of Fisheries and Aquatic Resources (BFAR)</i> - Fisheries Regulatory and Quarantine Division - Fish Health Section <i>Department of Science and Technology</i> - Philippine Council for Aquatic and Marine Research and Development (PCARMD)	Ensuring long-term sustainability of fisheries and aquatic resources.
<i>National Committee on Biosecurity of the Philippines (NCBP)</i>	Administering general Biosecurity guidelines and for international releases of harmful exotic species and GMOs
<i>Department of Environment and Natural Resources</i> - Environmental Management Bureau	Administers biodiversity, environmental impact assessments. Administers biodiversity, environmental impact assessments.
<i>Department of Transportation and Communications (DOTC)</i> - Maritime Industry Authority (MARINA)	Supervisory and regulatory authority for maritime operations. (Central Office and ten Regional Offices)
<i>Department of Agriculture (DA)</i> - Committee on the Introduction of Exotic Aquatic Organisms - National Agriculture and Fisheries Council (NAFC)	Quarantine Matters regarding aquatic organisms Advisory body to DA through policy recommendations
<i>Department of Trade and Industry</i> - Philippine Shippers Bureau	Licensing and accreditation, consumer protection and advisory and promotion of shipping activities and related issues
<i>Department of Health</i> - Bureau of Food and Drugs	Biosecurity aspects regarding human pathogens and harmful exotic species. Responsible for the registration of animal feeds
<i>Economic Intelligence and Investigation Bureau</i> <i>Philippine Ports Authority</i> <i>Bureau of Customs</i> <i>Local Government Units (LGUs)</i>	Law enforcement functions in territorial waters and coastal areas Law enforcement functions in territorial waters and coastal areas Enforcing import/export restrictions Management of coastal resources within municipal waters

Some legislation addressing the environment

Marine And Pollution Decree of 1976 (Presidential Decree 979)

Aims to prevent and control pollution of the waters within the territorial jurisdiction of the Philippines by making it illegal to dump wastes and other materials which is hazardous to human health, harm living resources and marine life, or damages or interferes with the use of waters.

Philippine Environment Code of 1977 (Presidential Decree 1151)

This Code has been responsible for the development of a comprehensive environmental protection and management program and established standards for air quality, water quality, land use management, natural resource management and conservation, and waste management. It requires environmental impact statement from private corporations and government entities for any project that will have significant effect on the environment.

Shipping and Ports

Sea transportation is indispensable because of the need to move from place to place and to bring commodities nearer to the consumer

In 1994, the Philippine government mandated the deregulation of the industry and required that each route should have at least two operators. Monopolies institutionalized by the Public Service Act were threatened by the entry of the new operators with faster and more efficient vessels. International standards were imposed on new importation and classed vessels replaced aging fleet. New operators entered existing liner routes encouraged by the healthy economic climate and three shipping firms opened up to public ownership.

Industry Statistics

Vessels (as of 1999):

<i>Type of Vessel</i>	<i>Number</i>	<i>Total GRT</i>
Merchant Marine	5040	1,239,246
▪ Passenger Ferry	227	11799
▪ Passenger Cargo	1,101	317,124
▪ General Cargo	1426	509,971
▪ Container	11	28,226
▪ Liquid Cargo / Lighterage	27	17,636
▪ Barge	236	124,910
▪ Tanker	187	176,720
▪ Towing / Salvage	420	33,530
▪ Pilotage	8	105
▪ Others	1397	19,225

Other domestic shipping industry statistics (as of 2000)

Total Revenue	P 22,000,000,000.00
▪ Passage	P 5,000,000,000.00
▪ Freight	P 17,000,000,000.00
Total Volume	
▪ Passengers (Persons)	P 22,000,000
▪ Containerized (TEU)	P 1,500,000
▪ Oil (Barrels)	P 77,000,000
▪ Bulk & Breakbulk (MT)	P 52,000,000
Total Value Of Goods Carried	P 1,285,000,000,000.00
▪ Containerized	P 300,000,000,000.00
▪ Bulk & Breakbulk	P 850,000,000,000.00
▪ Oil	P 135,000,000,000.00
Total Employment (Persons)	220,000
▪ Sea-based	140,000
▪ Land-based	80,000

Domestic fleet inventory (As of 31 December 1999)

<i>Type of Service</i>	<i>Number</i>	<i>Average Age</i>	<i>Average GRT</i>	<i>Total GRT</i>
Merchant Fleet	5,694	12.08	273.62	1,553,605
▪ Passenger Ferry	307	9.98	52.82	16,111
▪ Passenger Cargo	1,439	9.98	326.59	469,633
▪ General Cargo	1,745	13.12	338.30	588,645
▪ Container	21	24.65	2,647.21	55,591
▪ Liquid Cargo / Lighterage	28	15.36	459.37	12,862
▪ Barging	217	17.53	588.83	127,776
▪ Tanker	197	16.1	915.95	180,443
▪ Towing / Salvaging	475	19.37	8,049	38,151
▪ Pleasure	101	7.27	18.62	1,880
▪ Pilotage	12	33.09	13.84	166
▪ Others	1,151	6.05	54.48	62,329
▪ No Information	1	9.00	14.50	14
Fishing	22,128	8.88	13.82	302,912
<i>Total</i>	<i>27,822</i>	<i>9.92</i>	<i>67.28</i>	<i>1,856,518</i>

Overseas shipping vessels (as of 1999)

<i>Type of Vessel</i>	<i>No.</i>	<i>Total GRT</i>
Merchant Marine	251	5,057,940.68
▪ General Cargo	54	842,618.11
▪ Bulk Carrier	128	3,369,126.00
▪ Tanker	5	34,898.06
▪ Log Carrier	4	117,653.00
▪ Multi-Purpose Carrier	8	68,816.00
▪ RO-RO	7	52,479.00
▪ Reefer	9	54,649.85
▪ Livestock Carrier	11	52,398.96
▪ Car Carrier	13	296,482.70
▪ Container / GC	4	86,001.00
▪ Passenger	1	24,690.00
▪ Dry Cargo	1	4,028.00
▪ LPG Carrier	5	19,932.00
▪ Vehicle Carrier	1	34,168.00

Type of Ownership (as of 2001)

Bareboat Chartered Vessels	189
Vessels under Lease Purchase	1
Owned Vessels	12
<i>TOTAL</i>	<i>202</i>

Type of Service (as of 2001)

Liner Service	4
Tramp Service	198
<i>TOTAL</i>	<i>202</i>

Seafaring (as of 2000)

Total Deployment (Persons)	198,324
Total Remittances (US Dollars)	US \$ 1,000,000,000.00
Other Contributions (Pesos)	P 10,025,020,688.00
▪ Government Fees	P 305,648,688.00
▪ Medical Examination Fee	P 165,253,600
▪ Airfare	P 3,045,835,000.00
▪ Training Fees	P 1,749,744,000.00
▪ School Fees	P 529,992,000.00
▪ Manning Fees	P 486, 040,000.00
▪ Remittance Fees	P 3,742,508,000.00

Shipbuilding and ship repair (as of 1999)

Total Number Of Shipyards	341
▪ Shipbuilder and Ship repair	100
▪ Ship Repairer	11
▪ Afloat Ship Repairer	141
▪ Boat Builder	88
▪ Ship Breaker	1
Total Building Capacity (Dwt)	1,529,041
▪ Luzon	1,300,579
▪ Visayas	185,712
▪ Mindanao	42,750
Total Employment (Persons)	38,600
Total Vessels Constructed	479
▪ Passenger Ferry / Banca	37
▪ Tanker	1
▪ General Cargo	3
▪ Bulk Carrier	4
▪ Landing Craft	4
▪ Barge	3
▪ Fishing Boat	396
▪ Tugboat	2
▪ Patrol Boat	10
▪ Speedboat / Sports Craft	8
▪ Pleasure Yacht	11

Marine Resources

1	Total Territorial Water Area (including the EEZ)	2,200,000 sq. km	
	a. Coastal	266,000 sq. km	
	b. Oceanic	1,934,000 sq. km	
2	Shelf Area (Depth 200 m)	184,600 sq. km	
3	Coral Reef Area	27,000 sq. km	(Within the 10-20 fathoms where reef fisheries occur)
4	Coastline (length)	17,460 km	

Inland Resources

1	Swamplands	246,063 ha
	a. Fresh water	106,328 ha
	b. Brackish water	139,735 ha
2	Existing Fishponds	253,854 ha
	a. Fresh water	14,531 ha
	b. Brackish water	239,323 ha

3	Other Inland Resources	250,000 ha
	a. Lakes	200,000 ha
	b. Rivers	31,000 ha
	c. Reservoirs	19,000 ha

Coastal and Marine Environment

Philippines extensive coastal and marine biodiversity provide highly significant values to the socioeconomic development of both Philippines and the world.

Through proper management, the benefits that can be derived from these resources can be utilized to develop and maintain conservation practices and also, to enhance the development of sustainable industries and livelihood systems.

As the development of the biotechnology increases, the role of coastal and marine biodiversity in sustainable economic development will be even more prominent, especially in the field of food, cosmetics and pharmaceutical industries.

Implementation of Regulations

IMO Resolution A.868 (20) 1997

Guidelines for Control and Management of Ships' Ballast Water to minimize the transfer of harmful aquatic Organisms and Pathogens.

MARPOL 73/78

The MARPOL Convention covers all the technical aspects of pollution from ships, except the disposal of waste into the sea by dumping, although it does not apply to pollution arising out of the exploration and exploitation of sea-bed mineral resources.

The Convention has two protocols:

1. Dealing with reports on incidents involving harmful substances and arbitration.
2. Six Annexes which contain regulations for the prevention of various forms of pollution.
 - Annex I: Prevention of Pollution by oil.
 - Annex II: Control of Pollution by noxious liquid substance in bulk.
 - Annex II: Prevention of Pollution by harmful substances carried by sea in packaged form.

Table 2: Marine pollution prevention conceptual framework

	Prevention	Measures Response	Compensation
INSTRUMENTS	MARPOL 73/78	OPRC	CLC / IOPC
ADMINISTRATION	Flag State Implementation / Port State Control	Port / Coastal State	Court / Maritime Authority (quasi-judicial)
CONTROL	Surveillance / Monitoring Enforcement	Surveillance / Monitoring	Enforcement

Activities relating to the protection of the Marine Environment can be seen as a continuum: Prevention, Response and Compensation

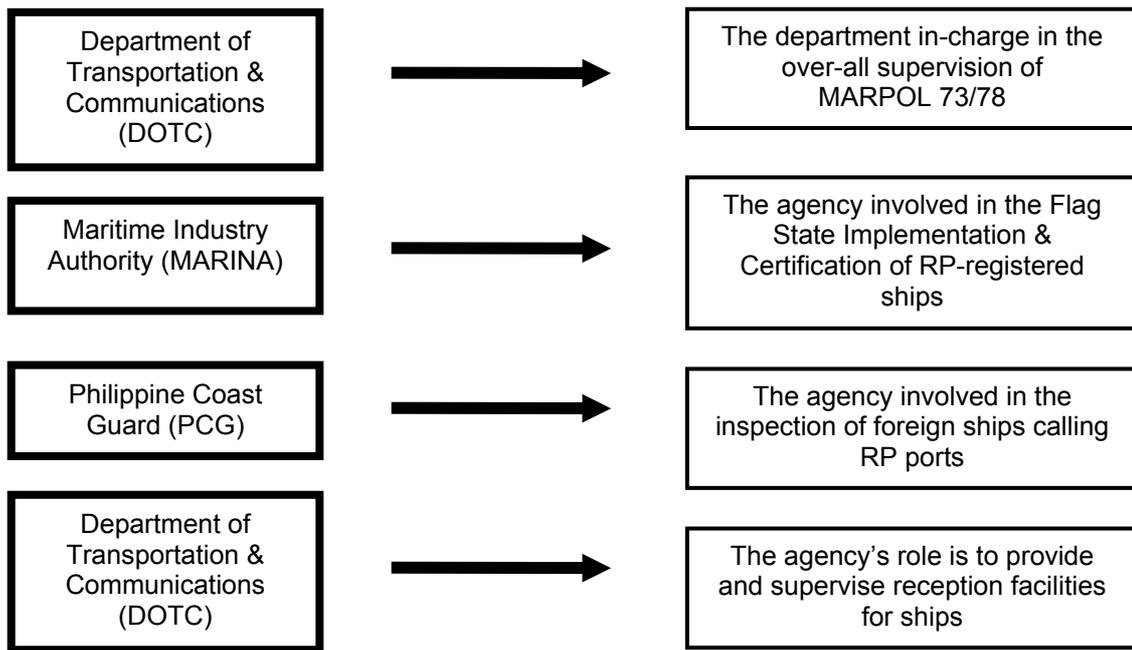


Figure 1: Responsibility center of MARPOL

Proposals

There is a need to come up with a more logical and efficient arrangement of functions and activities between and among agencies that invariably would be involved in marine pollution prevention.

- This re-orientation will allow the agencies to focus on their respective area(s) of concern.
- These agencies will permit them to develop their strengths and capabilities thereby engendering the need to reach out to cooperate with other agencies in order to complete a well-coordinated chain in the prevention of marine pollution.

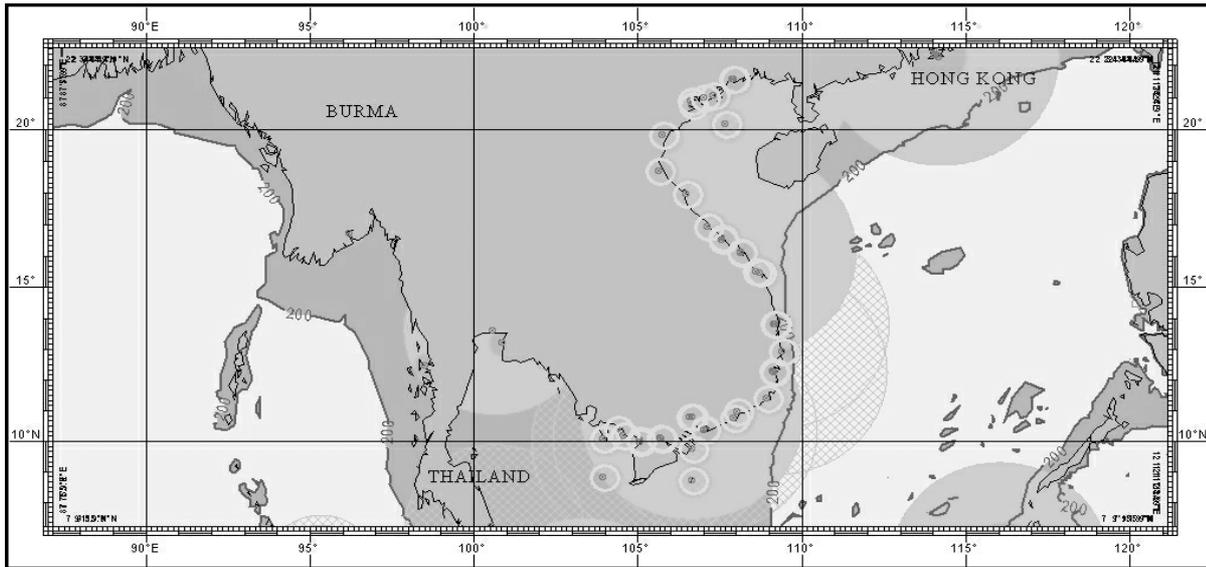
We therefore propose to have legislation that will create the environment for a global maritime industry and reduce the cost of doing business in the Philippines.

Vietnam

Country Profile

Vietnam is situated in the South East of Asia with an area of 329,000 square kilometres and a population of nearly 80 millions. Facing toward the Pacific Ocean in the East, Vietnam has a coastline of more than 3,000 kilometres long and is situated closely to the world's shipping routes:

- The route connects the North East Asia and the Mid-east;
- The route connects the South East Asia and the America.



After long years of difficulty under the bureaucratic policy of centralized planned economy, in the middle of eighties of 20th century, the “open door” reform policy was launched and it made the economy market-oriented. The socio-economic situation has been gradually considerably improving. The growth rate of economy is remarkable year by year in the period from 1991 up to now (1991 increased by 6%; 1994 - 8.8%; 1997 - 8.1%; 2001 - 6.8%).

The improved commercial relations create the amazing increase in the annual volume of cargo throughput in the commercial seaports. The data are 16.8 and 83.043 million tons for 1991 and 2000 respectively. Cargo throughputs are highly different for the different areas of the country. While in the southern ports, the cargo throughput accounts 66 percent of the country's total throughput, the data are 24 and 10 percent for the northern and central ports respectively.

The tourism industry has also been strongly developing in recent years. In 2001, there were 403,464 passengers visited Vietnam through seaports. The passenger cruise ships are calling at Phuquoc island, Honchong and Ho Chi Minh city in the south; Nhatrang and Danang in central Vietnam; and Halong bay in the north. The duration of staying in the Vietnam ports of the passenger vessels are not long, often within a day long. Vietnam has not passenger vessels so far. The people usually take cars, trains for movements within the country, fly planes to go abroad.

Fishery is comparatively developing. Fishing vessels are basically operating in the near coastal seas. The annual gross output of sea products exploited by the fishery fleet is about 1 million tons. According to the Ministry of Fishery's Registry Book, there are 64,000 fishing boats of 20 horse power and above, of which 6,000 ones are of 90 horse power and above.

Vietnamese life style is much affected by the Chinese. It is also affected by the Western European culture at a certain level. At present, over 70% of Vietnam population are either Buddhist or strongly

influenced by Buddhist practices. Besides, Catholicism, Protestantism, Islam are followed by the considerable numbers of citizens in the country. Vietnamese speak their own language. They are friendly and harmonious.

Institutional arrangements

Vietnam is a party to United Nation Convention on the Law of the Sea, 1982. It has become member of the International Maritime Organization (IMO) since 1983 and acceded the following Conventions related to Maritime Safety and Pollution Prevention: SOLAS 1974, MARPOL 73/78 (Annexes I, II), LL 1966, STCW 1978, COLREG 1972. The country is also a party to the TONNAGE 1969. Furthermore, in coordination and cooperation with the regional states in controlling and eliminating operation of the sub-standard ships, Vietnam has participated the Tokyo MOU.

Belonged to the Ministry of Transport, Vietnam National Maritime Bureau (Vinamarine) is the governmental agency acting the role of Maritime Administration. Vinamarine is set up in accordance with the provisions of the Government Decree No. 239-HDBT, issued on the 29 June 1992. The Government also issues the Decision No. 31/TTg on the 02 February 1993 adopting "The Regulations on organization and operation of the Vietnam National Maritime Bureau". The above-said instruments defined that Vinamarine is specialized in administration of not only the ships' compliance with the provisions in respect of maritime safety and marine environment protection but also the shipping industry's activities. Vinamarine is assigned to draft the policies, strategies and the plans which would be passed to the Ministry of Transport (MOT) for consideration and then submitted to the Government for adoption. Vinamarine undertakes the Flag State Implementation (FSI) and the Port State Control Performance (PSC).

Vinamarine is structured as follows:

In the Headquarter, there are the following consultative bodies:

1. Maritime Safety Division;
2. Personnel Division (comprising STCW Implementation Section);
3. Registry of Ships and Seafarers;
4. International Relation Division;
5. Maritime Legislation Division;
6. Marine Science and Technology Division;
7. Planning & Investment Division;
8. Finance & Account Division;
9. Sea-port Management Division;

In the localities, there are 19 branch Maritime Administrations which are basing along the coast and beside the sea ports. They directly administer, control and supervise the proper compliance and enforcement of ships, sea ports and the maritime transport service providers in respect of national and international instruments related to either maritime safety and pollution prevention or the shipping activities. The important responsibility of the branch Maritime Administrations is to undertake FSI and PSC activities. In accordance with provisions of Tokyo MOU, they control the domestic flag and foreign flag vessels in respect of complying with international instruments on pollution prevention.

Inter-agency coordination and cooperation:

A number of governmental agencies such as Vietnam Environment Agency (belonging to the Ministry of Natural Resource and Environment), Vietnam Sea Coastal Police (belonging to the Ministry of

Defense), National Committee on Search and Rescue, are involved in marine environment protection but Vinamarine is mainly responsible authority.

It is practical that there are lots of duplications in the responsibilities, functions, and powers among the involved agencies. And it is the said duplications that have created the unspecific responsibilities among the agencies. Consequently, the interagency coordination and cooperation and the effectiveness of law enforcement appears imperfect.

In respect of ballast water, there have not been specified measures and arrangements to prevent and mitigate the introduction of unwanted species into the waters. The teaching programs and syllabus of the maritime education and training institutions are compulsorily containing ballast water management based on the IMO Assembly Resolution A.868(20) "Guidelines for the control and management of ships' ballast water to minimize the transfer of harmful aquatic organisms and pathogens".

Recently, the International Maritime Organization (IMO) send a questionnaire concerned to applying the guidelines of Resolution A.868(20), most answers should be negative.

It is also in this field, there still have not been Research and Development (R&D) to be done.

Shipping and Ports

Sea ports are busily operating:

After a long time of centralized planning of the economy, the Doi Moi policy was launched in 1986. Then Vietnam's economy has been shifted to market-oriented economy. By undertaking the so-called "open door policy" to call for foreign investments and practicing equitization/privatization at levels, the economy has been considerably improving. The growth rate of economy is remarkable year by year. The growth rate in 1997 is 8.1%, in 2001 is 6.8%. Certainly, the cargo throughputs are high in the sea ports.

Table 1: Total cargo throughputs in the years 2000 and 2001

Cargo	Unit	Throughput	Cargo	Unit	Throughput
2000			2001		
Combined	ton	83,043,013	Combined	ton	91,415,974
of which:			of which:		
1. Containers:	TEUs	1,147,572	1. Containers:	TEUs	1,345,587
	ton	11,685,010		ton	15,125,172
▪ Exported:	TEUs	497,332	▪ Exported:	TEUs	577,946
	ton	3,858,980		ton	6,357,406
▪ Imported	TEUs	512,958	▪ Imported	TEUs	651,026
	ton	5,791,324		ton	7,690,044
▪ Domestic transport	TEUs	137,282	▪ Domestic transport	TEUs	116,615
	ton	2,034,706		Ton	1,077,722
2. Liquefied:	ton	28,640,459	2. Liquefied:	ton	31,198,434
▪ Exported:	ton	14,944,909	▪ Exported:	ton	17,643,202
▪ Imported	ton	7,999,119	▪ Imported	ton	7,222,347
▪ Domestic transport	ton	5,696,431	▪ Domestic transport	Ton	6,332,885
3. General	ton	32,994,325	3. General	ton	35,465,521
▪ Exported:	ton	10,206,620	▪ Exported:	ton	12,531,269
▪ Imported	ton	9,327,455	▪ Imported	ton	13,830,352
▪ Domestic transport	ton	13,460,250	▪ Domestic transport	ton	9,103,900
4. Transit	ton	9,091,585	4. Transit	ton	9,626,847

As mentioned above, Vietnam has a long coastline with the ideal shelters. The commercial seaports have been established along not only the seaside but also the riversides deeply upstream. The major ports managed and operated by the Vietnam National Shipping Lines (VINALINES) - biggest state-owned Group of Companies - are ports of Quang Ninh, Hai Phong, Nghe An, Da Nang, Quy Nhon, Nha Trang, Sai Gon, Can Tho... The other ports are owned by the province state-owned enterprises and there also are few ports operated by the joint ventures. In respect of port operation, joint ventures are not encouraged to establish.

The totally combined length of berths and terminals is approximate 20,000 metres.

Table 2: Throughput cargoes in some major ports in recent years
(Unit: thousand tons; source: national year statistics book)

PORTS	1995	1997	1998	1999
Hai Phong	4,515.0	4,588.0	5,446.0	6,509.0
Sai Gon	7,212.0	6,820.0	7,601.0	6,971.0
Quang Ninh	704.0	798.0	1,011.0	676.4
Nghe An	310.0	480.0	480.3	474.3
Da Nang	830.2	882.2	829.5	1,023.4
Quy Nhon	447.0	838.1	955.0	974.6
Nha Trang	343.4	424.0	500.0	486.0
Can Tho	125.9	202.1	332.3	310.0

The exported cargoes mainly are crude oil, rice, coal, rubber, refrigerated seafoods and garments.

Annually, the country exploits approximately 15 millions tons of crude oil, almost all of which is exported. And regretfully the said quantity of crude oil is almost totally carried by non-Vietnam-flagged tankers. The oil is mainly exploited in the coastal waters in south Vietnam.

Maritime transport carries more than 90 percent of the whole exported and imported goods. In recent 10 years, the rail and road transport systems are so much developed that facilitate the improvement of the multimodal transport.

Besides cargoes, a big number of passengers are visiting Vietnam. In 2001, the passenger throughput in Vietnam ports were numbering 403,400.

The National Merchant Fleet

In regard of the national merchant fleet, the table 3 hopefully shows some helpful data statistics (up to the December 2001):

Table 3

No	Type of Ship	Unit	State-run	Non-state-run	Total
1	Container Carriers	- No. of Carriers	13	0	12
		- TEU	8,800	0	8,800
		- Average Age	14		
2	Tankers	- No. of Tankers	59	23	82
		- DWT	394,787	29,500	424,287
		- Average Age	20	20	
3	General Cargo Ships	- No. of Ships	252	253	505
		- DWT	775,153	198,483	973,636
		- Average Age	15	14	

The cargo volumes transported by the national merchant fleet in the years 2000 and 2001 (Source: Vinamarine) are mentioned below:

Table 4: Cargoes transported by the National Merchant Fleet

	2000		2001	
	General	Container	General	Container
1. Exported cargo	13,110,000 tons	425,000 TEUs	13,498,000 tons	382,000 TEUs
2. Cargo circulated among the domestic ports	5,666,000 tons	132,300 TEUs	5,860,000 tons	100,600 TEUs

Coastal and marine environment

We are sharing Bac Bo Gulf with China in the north where where fishery and shipping is busy.

In central Vietnam, there are many locations with safe shelters which are ideals for setting up sea ports being able to receive deep-draft vessels visiting. In Dung Quat, an oil refinery is under construction. VLCCs will arrive the location to discharge crude oil. Tankers and cargo vessels of 60,000DWT will be able to get alongside the wharves to load the oil products and different exported cargoes.

Van Phong, Nha Trang and Cam Ranh bays are also fully promising. In Van Phong, a shipyard has been operating for couple of years. Tankers of 500.000DWT may enter it for being dry-docked, surveys and repairs.

In south Vietnam, operations of oil-exploiting, mooring and unmooring, oil storage, transfer of exported crude oil... in the off-shore area are actually incompletely controlled by the Maritime Administration because of long distances. In the above-mentioned areas, the sea is deep in general and the entry passages to the ports and terminals are short. Therefore, the threat of introduction of harmful aquatic organisms, pathogens by transfer of ballast water is not so concerned.

There is no information on serious introduction of unwanted species into the country's waters

Implementation of regulations

Being a party to MARPOL 73/78, Vietnam has carried out a lot of actions to fulfil the obligations of a Convention member state. National legislation has tried to incorporate the fundamental provisions of the Convention. Maritime Administration has applied measures to control the vessels to be in compliance with the provisions of MARPOL 73/78. However, we have to do much more. Especially there are no considerable activities to follow IMO Resolution A.868(20) on "Guidelines for the control and management of ships' ballast water to minimize the transfer of harmful aquatic organisms and pathogen"

Supporting the Regional Action Plan drafted by GloBallast

We are strongly convinced that ships' activities concerned with intake, discharge, exchange of ballast water must be severely managed and controled by ships themselves and by port states and coastal states worldwide. It is necessary to adopt and enforce a relevant international Convention legally binding all the ships regardless of flags to implement.

The draft Regional Action Plan (RAP) is well structured, its objectives are clear and practical. It is helpful that RAP has indicated the principal actions to be jointly carried out by regional countries and regional shipping communities which are (i) Communication and Public Awareness-raising; (ii) Port Biota Baseline Survey; (iii) Regional Risk Assessment; (iv) Legislative Review for Ballast Water

Management and Compliance; (v) Database; (vi) National Action Plan; and (vii) Cooperation with Other Regional Cooperative Schemes.

This time we are conferring to adopt the Regional Action Plan. But it is more important that we should act well to aim at fulfilling the Plan.

Appendix 4:
Draft East Asia Regional Strategic Action
Plan

**to minimize the transfer of harmful aquatic organisms
and pathogens in ships' ballast water**

1 Introduction and Background

East Asia is an active part of the world economy, in which shipping plays an important role. Shipping carries more than 80% of the world's commodities and is essential to the global economy. For so many years ships have been using ballast water to keep their balance, stability and structural integrity. Ballast water is essential for the safety of ships, especially for those unloaded ships.

It is estimated that about 12 billion tons of ballast water is transferred globally each year, and that 7,000 species of bacteria, plants and animals are carried each day in ships' ballast water around the world. Species contained in ballast water taken on board in one country may be discharged into the waters of another country as the ship is going to take its cargo. While many of these non-indigenous species introductions have been and continue to be innocuous, some have had disastrous economic and environmental consequences. Faster ships mean greater economy in the transport of goods. Unfortunately, faster ships and the consequent reduction in travel time between ports increase the likelihood of the survivability and introduction of potentially damaging non-indigenous species. The results caused by these invasions are:

- Whole ecosystems are changing. The native biodiversity and/or ecological processes may be disrupted by the invading species.
- Economic impacts exceed billions of dollars. Fisheries, coastal industry and other commercial activities and resources may be disrupted by the invading species.
- People are falling ill and even dying from toxic organisms, diseases and pathogens introduced through ballast water.

Once established, it is virtually impossible to control invasive marine species

The introduction of invasive marine species into new environments via ships ballast water as well as other media has been identified by the Global Environment Facility (GEF) as one of the four biggest threats to the World's oceans. The other three are:

- Land-based sources of marine pollution.
- Overexploitation of living marine resources.
- Physical alteration and destruction of marine habitat.

The introduction of harmful aquatic organisms through ballast water has drawn more and more attention of the world. Ballast water control and management have become an important agenda of the International Maritime Organization (IMO). IMO adopted the voluntary Resolution A.868(20) in *1997 Guidelines for the control and management of ships' ballast water to minimize the transfer of harmful aquatic organisms and pathogens*. The Resolution requests Governments to take urgent action in applying these Guidelines. The management and control options recommended by the guidelines include:

- Reporting and record-keeping of ballast water operation on board.
- Development of ship-specific ballast water management plan.
- Minimizing the uptake of organisms during ballasting, by avoiding areas in ports where outbreaks or populations of harmful organisms are known to occur, in shallow water and in darkness, when bottom-dwelling organisms may rise in the water column.
- Cleaning ballast tanks and removing mud and sediments that accumulate in these tanks on a regular basis, which may harbour harmful organisms.

- Avoiding unnecessary discharge of ballast water.
- Undertaking ballast water management procedures.

Although the Guidelines are implemented in a number of countries, they are of a voluntary nature. To tackle the problem internationally, we still need a legally binding instrument, an international convention. The new Convention will be mandatory and provide legally binding provisions on ballast management. Through the efforts of the Marine Environment Protection Committee (MEPC) of IMO over several years, great progress has been made in the development of the International Convention for Ballast Water Management. Member countries of IMO are discussing the draft text of the new convention and hoping that the new convention will be adopted by a diplomatic conference in 2003.

In addition to the initiatives above, IMO together with the Global Environment Facility (GEF), the United Nations Development Programme (UNDP), member governments and the shipping industry has launched a project to assist developing countries to tackle the ballast water problem. The full title of this new programme is “Removal of Barriers to the Effective Implementation of Ballast Water Control and Management Measures in Developing Countries”, or more simply the “Global Ballast Water Management Programme” (GloBallast). The GloBallast Programme is being implemented successfully.

2 Objectives of this Regional Action Plan

The Objectives of this Regional Action Plan are:

- to provide a framework for the activities that need to be developed and implemented within the East Asia Region in order to minimize the transfer of harmful aquatic organisms in ships’ ballast water, in accordance with the IMO recommendations and GloBallast Programme;
- to exchange information and experiences among the participating countries and with the other regions, and to enhance the regional cooperation in protection of the marine environment; and
- to facilitate the preparatory process within the Region for the new legally binding international convention on ballast water management and control.

3 Description of the Region

3.1 General

So far as this Action Plan is concerned, the Region of East Asia involves the seven countries: Democratic People’s Republic of Korea, People’s Republic of China, Japan, Republic of Korea, Republic of Philippines, Russian Federation (not present at Workshop), Singapore and Republic of Vietnam. For millennia the ecosystem of the ocean areas semi-enclosed by the above mentioned countries have provided food and livelihood to the civilization of the Region. Its waters are very favorable for coastal and offshore fisheries. The region embraces the large marine ecosystems (LME) of the Yellow Sea, South China Sea, East China Sea, and Sulu Celebes Sea, The Region is also remarkable for its massive population and active shipping activities. Fishing, marine farming and international shipping are of great importance for the people’s living and economic development of the six countries. There are quite a number of ports along the coastlines, which provide a sea link with other countries.

Globalization of the economy has brought great changes to the shipping in the Region. Ships are becoming bigger and faster, which means that more ballast water is carried by ships from and to the countries. The environmental concerns are trans-boundary. Any environmental problem within any part of the region, because of its semi-enclosed nature, can no longer be considered an isolated or localized incident, but a matter with potentially far-reaching ecological and socio-economic implications.

All seven countries are member states to IMO and contracting parties to the International Convention MARPOL 73/78 and have the common interest in protection of the marine environment. They all have shown great concern on the threats of the human activity to the world ocean, particularly the biological invasion through shipping activities.

3.2 Existing cooperation schemes

There are several cooperation schemes in this Region at present. These include,

PEMSEA

Partnerships in Environmental Management for the Seas of East Asia (PEMSEA) is a regional programme under GEF executed by IMO. It was launched in October 1999 with contributions from GEF, participating countries and other partners. PEMSEA has 11 members, namely Brunei Darussalam, Cambodia, Democratic People's Republic of Korea, Indonesia, Malaysia, People's Republic of China, Philippines, Republic of Korea, Singapore, Thailand and Vietnam.

Among the objectives of PEMSEA, seven are of particular importance for the Regional Action Plan. These objectives are to:

1. Build national and regional capacity to implement integrated coastal management programmes;
2. Promote multi-country initiatives in addressing priority transboundary environment issues in the Gulf of Thailand, Bohai Sea and Manila Bay;
3. Reinforce and establish a range of functional networks to support environmental management;
4. Identify environmental investment opportunities, promote mechanisms such as public-private sector partnerships, and package environmental projects for financing and other forms of developmental assistance;
5. Enhance scientific and technical inputs to support decision making;
6. Strengthen national capabilities for developing integrated coastal and marine policies as part of the state policies for sustainable socioeconomic development; and
7. Promote regional commitment for implementing international conventions and strengthening regional and sub-regional cooperation and collaboration using a sustainable regional mechanism.

The partnerships share a common vision, and will implement strategies and action plans to ensure that the seas of East Asia can continue contributing to the well being of the people of the region.

APEC

Asia-Pacific Economic Cooperation (APEC) was established in 1989 in response to the growing interdependence among Asia-Pacific economies. Today there are 21 member economies comprising some 2.5 billion people. APEC has become a formidable regional forum. Its goal is to advance economic dynamism and sense of community within the Asia-Pacific region. APEC has established

itself as the primary regional vehicle for promoting open trade and practical economic and technical cooperation.

Apart from other Ministerial Meetings, APEC has ministerial-level meetings on fishery, environment and transportation respectively. There are different Working Groups under the ministerial-level meetings.

The Marine Resource Conservation Working Group (MRC) was formed in 1990 in recognition of the importance of marine resources to food supply and economic development. In 2001, the group plans to work on a wide range of issues: the management of red tide and harmful algal bloom; the establishment of an ocean research network and an ocean model and information system; the use of biochemical indicators to assess environmental safety of aquaculture farms; and the development of APEC mechanisms for integrated coastal management. These activities will contribute to capacity building, training and education, the exchange of information, research promotion, and the introduction of technology and expertise in environment protection.

The Transportation Working Group (TPT) was established in 1991 with a view to increasing the efficiency and safety of the regional transportation system. The TPT focuses on three main areas: more competitive transportation industry (including infrastructure), safe and environment-friendly transportation systems (including technologies), and human resources development (including training, research and education). Covering all types of transportation systems, the group has published surveys, directories, best practice manuals and databases, as well as an inventory on regional cooperation on oil-spills preparedness and response arrangements.

At its last session held in Manila Philippines, the TPT discussed the issue to support a port baseline biota survey in the East Asia. The Group agreed the initiative and requested the Ministerial Meeting to consider and approve.

Tokyo MOU

The Memorandum of Understanding on Port State Control in the Asia-Pacific Region, known as the Tokyo MOU, was signed on 3 December 1993 at its final preparatory meeting in Tokyo and became effective on 1 April 1994.

The Tokyo MOU has 18 Member Authorities. The governing body of Tokyo MOU is the Port State Control Committee, which is composed of a representative of each of the member Authorities and an observer from relevant organizations.

The Tokyo MOU is focused on the cooperation and coordination in Port State Control to ensure that ships arriving at their ports are in compliance with the relevant IMO and ILO instruments, such as SOLAS 1974, as amended, and MARPOL 73/78, as amended. According to Tokyo MOU, Port State Control inspection conducted on ships is based on the existing Relevant Instruments which are in force. It is expected that the new International Convention for Ballast Water Management will be included in the Relevant Instruments under the Tokyo MOU, once the Convention comes into force.

4 Principal Actions

4.1 Legislative Review for Ballast Water Management and Compliance

Considering the IMO Resolution 868 (20) has been implemented by more and more countries and the development of the new legally binding International Convention for Ballast Water Management is well under way, it is suggested that countries carry out Legislative Review on Ballast Water Management and comply with the IMO Guidelines and the future Convention when developing national regulations.

4.2 Communication and public awareness-raising

Although some work has been done in this aspect, information about the danger of transfers of harmful aquatic organisms and pathogens through uncontrolled discharge of ballast water is not well known in the Region. This lack of information and low level of general awareness of the ballast water issue is seen as an extremely important, early priority of this Action Plan to address.

To increase the level of public awareness, the following actions will be taken at the regional and national level:

- Dissemination of communicative materials, including IMO Resolution 868, posters and documents prepared by PCU and MEPC of IMO.
- Holding seminars at Regional and National level.
- Using the INTERNET web sites.
- Establishment of a Regional Task Force.

To facilitate information exchange among the participating countries, an information exchange mechanism is considered necessary for the region. This mechanism will receive and provide information on the unwanted species and measures to prevent and control the species.

Under the GloBallast Programme, a database is planned to be established in Dalian, the Demonstration Site of GloBallast China. This database will include the results of the activities, which have been completed, and the findings in the research and survey. The information of the database will be linked with the information exchange mechanism and available to the countries.

4.3 Port Biota Baseline Survey

Port Biota Baseline Survey is considered vital for assessing existing natural conditions and the presence or absence of introduced marine species. Such survey should be conducted in accordance with an internationally adopted protocol and should be conducted on an ongoing basis, as a long-term biological monitoring programme for the port. This will allow any existing introductions to be tracked and managed and any new introductions to be detected and responded to.

Under the GloBallast Programme, the Port Biota Baseline Survey has been completed in Dalian, China. The findings of the survey will be used for assessing the existing local natural conditions and the risks of ballast water. The results of the survey and the protocols/manuals used will be shared among the participating countries. The Transport Working Group of APEC was discussing at its last session to support a baseline survey to be conducted in this Region. It is considered necessary that one port biota baseline survey be conducted in each participating country for assessment of the natural bio-conditions as general. The use of standardized protocols and methodologies will ensure inter-compatibility at the regional level.

4.4 Regional risk assessment

In order to take right actions in ballast water management, each country needs to know the level and types of risks of introductions that its ports may face, as well as the most sensitive resources and values that might be threatened. Risk assessment at national/port level can meet the needs. It is proposed that the more simple method of comparing source and receiving ports be used for this purpose. This should look at shipping arrival patterns and identify the source ports from which ballast water is imported. Once these are identified, source port/discharge port environmental comparisons should be carried out to give a preliminary indication of overall risk. This will greatly assist the port state to assess which approach to take.

The ballast water risk assessment by using GIS system was conducted from May-September 2002 in Dalian, the Demonstration Site of GloBallast in China. Geological and environmental information was collected, and 2200 ballast water reporting forms were analyzed. The method and results of this activity may provide a model for similar risk assessments to be carried out in the Region. This will differ from site to site, and will determine the type of management response that is required.

4.5 Database

A database of the existing information on ballast water management will be established. The information included in the database should include, findings and results of risk assessment and baseline biota surveys, ships compliance, research and development directory, and other information as deemed necessary. The database should serve the purpose of regional cooperation.

The database mentioned above in Paragraph 4.1 will be used for this purpose after being updated.

4.6 National Action Plans (NAP)

Each of the participating countries will develop their National Action Plan that will support, and generally follow, the RAP activities.

4.7 Cooperation with other regional cooperative schemes

The PEMSEA, APEC and Tokyo MOU, as mentioned above, are all big regional schemes, which are related to ballast water management and protection of marine environment in one way or another. GloBallast Programme should seek supports and cooperation from those strong schemes and be linked with their relevant activities.

5 Implementation and Funding of RAP

To implement the RAP, a Regional Task Force (RTF) should be established. The RTF should include National Focal Points (NFP). The NFP will be supported by National Task Forces consisting of representatives of the Maritime Administration, Ministry of the Environment, the scientific community and industry. It is recommended that a contacts directory (e-mail, telephone, fax, etc.) is maintained for communication between RTF members. The secretarial support for the RTF could be initially provided through the GloBallast Demonstration Site with the possibility of transferring this responsibility in future to one of the existing cooperation schemes.

The RTF should meet every year to review the implementation of the National and Regional Action Plans and make recommendation and decision on relevant matters.

It is recommended that the shipping industry (including ports of the region) is fully aware of the issue and involved in the RAP activities.

Funding for implementation of the RAP may be explored from different resources including national, regional and/or international ones. The GloBallast Programme may use its available budget to prepare and start the RAP.

(Subject to the consideration and alteration by the Regional Workshop and Conference on Ballast Water Management)

Appendix 5: Ballast Water Management Exercise Scenario

Scenario

- 1 The *M.V. Invader*, a 40,000 DWT container ship, arrives in Singapore on 9 September 2001.
- 2 Containers are unloaded and loaded at the Singapore Container Terminal, which is one of the major container transfer hubs of the world.
- 3 As containers are unloaded, ballast water is taken up, into the ship.
- 4 Unknown to the ships captain and crew, the ballast water taken on contains numerous *Vibrio Cholerae* cells, the bacteria that cause cholera epidemics. This is present in the port waters of a ship that has discharged ballast water several hours before the *M.V. Invader* arrived.
- 5 The *M.V. Invader* departs Singapore en route to Dalian, China.
- 6 During the voyage, the vessel stops in Manila to unload and load some containers. During these cargo transfer operations, some ballast water is discharged and some taken on in the Manila port area in order to maintain stability and trim of the vessel.
- 7 The vessel continues to Dalian, stopping in Kaangyang, Republic of Korea on the way, again to transfer containers. Ballast water is once again discharged and taken on.
- 8 Several days before the *M.V. Invader* arrives in Kaangyang, another vessel (that arrived from San Francisco) discharged ballast water containing larvae of a highly toxic alga. Numerous cells of this alga are taken up by the *M.V. Invader*.
- 9 Some days later the *M.V. Invader* arrives in Dalian, unloads its containers, discharging ballast water containing both cholera and toxic algae in the process.
- 10 During the voyage of the *M.V. Invader* no ballast water management measures have been followed, no sampling, inspections or record keeping and reporting has been undertaken, as none of the port States visited are implementing the IMO ballast water Guidelines, apart from Dalian.
- 11 At Dalian a Ballast Water Reporting Form is submitted to the port State authorities, as China has implemented this requirement as a part of the GloBallast Programme.
- 12 The day before the ship arrives in Dalian, a cholera epidemic breaks out in Manila.
- 13 One week after the ship leaves Dalian, a harmful algal bloom occurs in Liaodong Bay, threatening nearby fish farms. Several cases of cholera are also reported in Kaangyang, Republic of Korea.
- 14 The vessel is now visiting ports in Japan.

Exercise Task

With your group, discuss and decide on the following:

- 1) What actions could have been taken in the port States to prevent this from happening?
- 2) What actions could have been taken by the ship to prevent this from happening?
- 3) What actions should be taken by the port States to respond to the cholera outbreaks and harmful algal blooms?

Record your decisions and nominate a rapporteur to present to the workshop.



More Information?

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