



Report On
Legal Review on Issues Related to the Implementation of
The Ballast Water Management Convention
for the Republic of Trinidad and Tobago



A P R I L
2013

Commodore Garnet Best (ret'd)





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MANAGEMENT CONVENTION
FOR
THE REPUBLIC OF TRINIDAD AND TOBAGO

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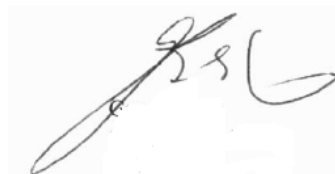
Preface

This Final Report on the Legislative Review Project of the Global Environmental Facility /United Nations Development Programme/International Maritime Organisation (GEF/UNDP/IMO) Ballast Water Management Programme of the Republic of Trinidad and Tobago has been prepared by the Consultant Commodore Garnet Best (ret'd).

It encompasses the research and writing of the Consultant, Legislative review report and the results of consultations with the National Task Force responsible for the implementation of the Ballast Water Management (BWM) Convention in the Republic of Trinidad and Tobago.

Several stakeholders also contributed to the Report and the recommendations it contains. Their ideas and expertise and willingness to work collaboratively to address the legal issues have been instrumental to the successful completion of this project.

The successful delivery of this Final Report would not have been possible without the cooperation and support of the Director, Deputy Director and Senior Legal Officer of the Maritime Services Division (MSD) of the Ministry of Transport which has been designated as the lead agency for the BWM Project nationally and regionally, Lt. Cdr. Ronald Alfred and members of the administrative staff of the Research and Development Unit of the MSD.



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Foreword

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

The immediate objectives of the Programme are to assist developing countries to implement the existing IMO Voluntary *Guidelines for the Control and Management of Ships' Ballast Water to Minimize the Transfer of Harmful Aquatic Organisms and Pathogens* (IMO Assembly Resolution A.868 (20)), and to prepare for the anticipated introduction of an international legal instrument currently being developed by IMO Member States. This is to be achieved by providing technical assistance, capacity building and institutional strengthening to remove barriers to effective ballast water management arrangements in all IMO member States¹.

International shipping has been identified as one of the key pathways for the movement of species between differing ecosystems. Organisms and pathogens found in ballast water and sediments in ballast tanks have had significant economic and ecological impact on marine biodiversity in many regions. They can also pose a threat to human health from the spread of diseases.

Unlike some forms of ship sourced environmental harm, the problem arises from an activity inherent to the ship's operation. Currently there are no entirely satisfactory means of preventing the transfer of species in ballast water and open sea ballast water exchange management techniques have raised some concerns about vessel and crew safety, and the limits of its environmental effectiveness².

The Regional Activity Centre – Regional Maritime Pollution Emergency, Information and Training Centre (RAC REMPEITC) has engaged this local consultant to carry out the following project:

¹ Globallast Programme First Legal Review Report

² Ibid

- To conduct a Legal Review in the context of the Ballast Water Management Convention:
 - Review existing, relevant legislative framework;
 - Identify deficiencies and barriers;
 - Suggests steps for implementing the BWM Convention into National Legislation;
 - Suggest the nature of proposed legislation; including determining if new legislation is needed or if amendments to existing legislation are sufficient.

Methodology

Previous studies on invasive alien species in general would be reviewed in the global, regional and national context. The relevant international, regional and national legal obligations would be identified along with the existing institutional, administrative and legislative frameworks which make up the foundation and structure for giving effect to International Maritime Conventions in general and the Ballast Water Management Convention in particular.

In a similar manner to the first ever Globallast Legal Review in 2002, this legal review would focus on developing national legislation for the control and management of ships' ballast water and sediments and identify the best practices to be adopted for the implementation of such a legal regime for the Republic of Trinidad and Tobago.

The Initial Legal Review on the Globallast Programme provided a comprehensive overview of the existing international legal obligations regarding ballast water. It also offered valuable information on different regulatory approaches around the world and provided a useful list of the basic elements to be addressed when drafting national legislation.

The Consultant fully reviewed the legislation mindful of the need to consult with technical stakeholders and legal stakeholders particularly from agencies represented on the National Task Force. In this regard feedback from legal and technical stakeholders was obtained through participation in conferences and responses to a stakeholder questionnaire. This was coordinated by the Maritime Services Division Ministry of Transport in conjunction with the consultant. The

Consultant also looked at health and quarantine regulations and at related international best practices.

The current report is the result of the cooperative efforts of the Maritime Services Division of the Ministry of Transport, the National Task Force appointed by the Cabinet for the implementation of the BWM Convention and the Consultant.

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Executive Summary

This Legal Review is essential to ensure effective implementation of governmental policy objectives. The review was in the form of a consultancy sponsored by the GEF/UNDP/IMO Global Ballast Water Management Programme Work. The project performed a number of independent tasks in accordance with the Terms of Reference of the consultant, including:

- ✓ Reviewing existing relevant legislative framework which researched legislation and legislative approaches in the global, regional and national context;
- ✓ Identifying deficiencies and barriers to successful implementation of the BWM Convention which were determined to be;
 - Lack of general public awareness of the BWM problem and the massive threat to society posed by harmful aquatic organisms;
 - Lack of general information and scientific information on the subject matter as it relates to Trinidad and Tobago;
 - Inaccessibility to general information and scientific information on the subject matter;
 - Lack of technical expertise including legal expertise as it relates to the ballast water threat and available solutions;
 - Lack of institutional and administrative frameworks to treat with solutions to the unwanted threat;
 - Inadequate existing domestic legislation;
 - Inadequate proposed domestic legislation;
 - Need for a vibrant and dedicated Secretariat with qualified personnel-supervised by the Cabinet appointed National Task Force for the implementation of the BWM Convention and related issues;
 - Need for greater coordination and collaboration between and among agencies earmarked to implement the BWM Convention;

- Need to further sensitize stakeholders including seafarers and port operators by way of inclusion of the relevant knowledge in the curricula of training institutions and by ensuring other stakeholders are briefed;
- Prioritizing of the National Ballast Water Management Strategy and implementation plan as well as the requisite legislative agenda ;

The review revisited the Report of 2002 which analyzed six (6) pilot countries (Brazil, China, India, Iran, South Africa and the Ukraine) and four (4) comparator countries (Australia, Canada, United States, and New Zealand). The approaches used were further analyzed in this document to understand their merit and whether a voluntary, mandatory or combined approach was to be useful.

The Review looked at a domestic regulatory design for Trinidad and Tobago based on international and regional obligations, rights and responsibilities before articulating three broad options for implementing the BWM Convention. Option 1 is to revise the draft Shipping (Marine Pollution) Bill (No.2) 2004 and include the provisions of the BWM Convention. Option 2 is to take administrative action without new legislation and option 3 is to adopt comprehensive environmental biodiversity protection legislation.

- ✓ Suggesting steps for implementing the BWM Convention in order to give it full effect in the national legislation

General Steps

- Identification of all agencies by the National Task Force including international agencies that play a role in law enforcement;
- Establishment of bi-lateral and multi-lateral agreements between and among neighbouring countries like, Barbados, Grenada, St. Vincent and the Grenadines and Venezuela and region as a whole to provide for cross jurisdictional co-ordination;
- Cultivation and maintenance of international relationships including sharing information, expertise and best practices as well as strengthening and harmonising agreements.

Institutional and Administrative Steps

- Re structuring the organisation of the lead agency, the Maritime Services Division (MSD), to give effect to all the maritime regimes including the BWM Convention;
- Procurement of qualified personnel by the MSD which should include;
 - The establishment of a strong and vibrant secretariat for the NTF
- Building capacity as required, which should include;
 - Participating in and contributing to international and regional strategies for the implementation of the BWM Convention;
 - Training and educating port state control officers and flag state implementation officers;
 - Procuring relevant equipment for inspections;
 - Developing the certification procedures for treatment facilities;
 - Developing a national roster of experts to contribute to technical discussions;
 - Developing mechanisms for sharing information;
 - Carrying out the necessary scientific research, risk assessments to identify vulnerable ports, port biological surveys and training in port biological surveys as the basis for decision making in BW management;
 - Developing a programme to monitor ports for changes in baseline;
 - Conducting and support research in measures to consider unique local situation;
 - Setting up a web-based mechanism for exchanging information

Regulatory Steps

- Placing maritime regimes higher on the government's legislative agenda by the Chief Parliamentary Counsel (CPC) at the Office of the Attorney General. This would

- include the Shipping Amendment Bill and Shipping (Maritime Pollution) (No. 2) Bill 2004.
- Including the BWM Convention in the Shipping (Maritime Pollution) (No. 2) Bill 2004 during the review by the CPC.
 - Employing voluntary compliance measures by the MSD. These measures should also be accordance with the **Harmonised Voluntary Arrangements for Ballast Water Management in the Wider Caribbean Region**. When this is done the industry would be preparing itself for mandatory compliance by ensuring that the institutional and administrative infrastructure are put in place and are acceptable. This could be done leading up to the Convention entering in to force. Notices to Mariners can be used to encourage compliance and encouraging education and training of all stakeholders by including the subject matter of BWM in relevant curricula.
 - Establishing a Compliance, Monitoring and Enforcement (CME) System whereby:
 - ❖ Ships collect and record information on BWM practices;
 - ❖ Ships transmit this information to MSD and to receive directions thereafter;
 - ❖ Ships' records should be available for examination;
 - ❖ Ships would provide for ballast water and sediments samples to be obtained;
 - ❖ Legal provision would be made for enforcement measures and sanctions for non-compliance with the BWM requirements.
- ✓ Suggest the nature of proposed legislation

Provision for the International Convention for the Control and Management of Ship's Ballast Water and Sediments 2004 should be made in the drafting arrangements of the Shipping (Marine Pollution) Bill.

In the interim, while appropriate infrastructure is being acquired it is recommended that administrative action be taken to implement various provisions of the Convention. This interim solution is recommended to be carried out on a voluntary basis followed by the mandatory requirements when the Convention enters into force and measures are in place to enforce the law.

Glossary

Abbreviations	Meaning
BPTT	British Petroleum Trinidad and Tobago
BWM	Ballast Water Management
CAB	Centre for Agriculture and Biosciences
CBD	Convention on Biodiversity
CARIDOC	Caribbean Dockyard Ltd
CISWIG	Caribbean Invasive Species Working Group
CAR/RCU	Caribbean Regional Coordinating Unit
CITES	The Convention on International Trade in Endangered Species of Wild fauna and Flora
CMOU	Caribbean Memorandum of Understanding
COLREGS	Convention on the International Regulations for Prevention of Collisions at Sea
DSS	Decision Support System
EEZ	Exclusive Economic Zone
EMA	Environmental Management Authority
FAL	Convention on the Facilitation of International Maritime Traffic
GATT	General Agreements on Trade and Tariffs
GBP	Global Partnership Programme
GEF	Global Environmental Facility
GISP	Global Invasive Species Programme
GORTT	Government of the Republic of Trinidad and Tobago
IAS	Invasive Alien Species
ICES	International Council for the Exploration of the Sea
ICS	International Chamber of Shipping
IHR	International Health Regulations
ILO	International Labour Organisation
IMO	International Maritime Organisation
INTERTANKO	International Association of Independent Tanker Owners
ISM	International Safety Management
LBS	Land Based Sources
LPC	Lead Partner Country
LL	Load Line
LNG	Liquefied Natural Gas
LRP	Legislative Review Project
MAF	Ministry of Forestry
MARPOL	International Convention for the Prevention of Pollution from Ships
MSA	Marine Safety Authority
MSD	Maritime Services Division
NAFTA	North American Free Trade Agreement

Abbreviations	Meaning
NCMA	National Coastal Management Bill
NIS	National Invasive Species
NFT	National Task Force
NZ	New Zealand
PCU	Project Coordination Unit
RAC- REMPEITIC	Regional Activity Center/Regional Marine Pollution Emergency Information and Training Centre
RAC	Regional Activity Center
RCO	Regional Coordinating Organisation
RTF	Regional Task force
SOLAS	International Convention for the Safety of Life at Sea
SPAW	Specially Protected Areas and wildlife
SPS	Sanitary and Phytosanitary Standards
STCW	Standards of Training and certification and Watch keepers for Seafarers
TBT	Technical Barriers to Trade
UNCED	United Nations Conference on Environment and Development
UNCLOS	United Nations Convention on the Law of the Sea
UNDP	United Nations Development Programme
UNEP	United Nations Environmental Programme
US	United States of America
VTs	Vessel Traffic System
WCR	Wider Caribbean Region
WHO	World Health Organisation
WTO	World Trade Organisation

1.0 Introduction

1.1 Background/National Policy initiatives

One of the greatest environmental threats since the seventh decade of the last century is the unintentional introduction of invasive alien species (IAS) into the marine ecosystem. There is a need to treat with the full range of effects on human health as a result of human interaction with harmful organisms, including human consumption of contaminated seafood. Apart from affecting ecosystems which contribute to the extinction of native species, there is also a significant threat to biological diversity as well as major socio-economic damage.

The Republic of Trinidad and Tobago has demonstrated its commitment to the prevention and if possible, eradication of the threat of IAS by its ratification of certain international conventions related to sustainability like the United Nation Convention on Law of the Sea⁵ (UNCLOS), the Convention on Biological Diversity⁶ (CBD) and the International Convention for the Control and Management of Ships' Ballast Water and Sediments⁷ (BWM Convention).

Trinidad and Tobago ratified the convention on Biological Diversity on August 1, 1996, and in accordance with Article 6 of this Convention, engaged in a widespread national planning project for the conservation and sustainable use of the country's biodiversity resources. The Environmental Management Authority (EMA) is the lead agency for the implementation of the convention. Similarly, the Ballast Water Management Convention was ratified on January 3, 2012 and the lead agency for its implementation is the Maritime Services Division of the Ministry of Transport. UNCLOS was ratified by Trinidad and Tobago on 25th April 1986.

The Cabinet of Trinidad and Tobago appointed a National Task Force comprising of a multi-sectorial team of stakeholders espousing the principle of public/private partnership to treat with a clearly multi-dimensional challenge which require a multi-dimensional solution.

⁵ 1982

⁶ 5 June 1992, 1760 U.N.T.S. 142.

⁷ 2004

On the global and regional front, the Global Invasive Species Programme (GISP) has articulated general principles⁸ and international best practices for treating with Invasive Alien Species (IAS) in general at the global level and (Centre for Agriculture and Biosciences) CAB International/ Caribbean Invasive Species Working Group (CISWIG) has articulated similar principles⁹ and has a framework in place for dealing with IAS at the Caribbean Regional level.

⁸ [GISP Principles wrt IAS]

⁹ [CAB International/CISWIG]

2.0 Overview of the Legislative Review Project of the GEF/UNDP/IMO Global

2.1 Global context

Shipping is an international activity that naturally crosses borders in order to facilitate trade and development. In the global context, the United Nations through its specialized agencies has sought to resolve the problem of the threat of harmful aquatic organisms and pathogens. The BWM Convention seeks to connect the United Nations Convention on the Law of the Sea (UNCLOS) which provides that all states shall take all measures necessary to prevent, reduce and control pollution of the marine environment resulting from the use of technologies under its jurisdiction or control. There are also measures to deal with the unintentional or accidental introduction of species, alien or new, to a particular part of the marine environment, which may cause significant and harmful changes thereto¹⁰. This is significantly linked to the objectives of the Convention on Biological Diversity (CBD) 1992 which deals with the transfer and introduction of harmful aquatic organisms and pathogens via ships' ballast water that threatens the conservation and sustainable use of biological diversity and the sustainable use of marine and coastal ecosystems.

The 2002 World Summit on Sustainable Development in its plan of implementation also calls for action at all levels to accelerate the development of measures to address invasive alien species in ballast water¹¹. The World Health Organisation's (WHO) Biosecurity/state responsibility agenda along with the IMO's concerns with regard to safer ships and cleaner oceans and internationally agreed standards for these are all linked to resolve the issue of uncontrolled discharge of ballast water and sediments from ships leading to the possible transfer of harmful aquatic organisms and pathogens which cause injury or damage to the environment, human health, property and other resources.

¹⁰ Preamble of the BWM Convention 2004

¹¹ Paragraph 34(b) Plan of Implementation 2002 World Summit on Sustainable Development

2.2 Regional context

The “Wider Caribbean Region” (WCR) is an important hub for maritime transportation because of its strategic location. Many developing countries of the region depend on the export of raw materials like oil and gas and the use of their natural coastal resources like fishing and tourism. Almost one third of the world’s oil traffic originates or passes through the region. Ecologically, the region consists of highly sensitive marine ecosystems like mangroves, coral reefs, and sea grass beds and it’s the home to a number of species. The region is rich in biological diversity which has prompted the populace to take positive steps to protect it. The Cartagena Convention provides for the protection and development of the marine environment in the Wider Caribbean Region (WCR). It is a comprehensive, umbrella agreement for the protection and development of the marine environment. This regional environmental convention would be dealt with further under existing relevant obligations.

The GEF-UNDP-IMO Global Ballast Partnership Project (GBP) which is the international project to reduce harmful aquatic organisms in ships’ ballast water got approval in August 2007 to assist developing countries with this threat. Five high priority regions were identified for assistance; the Caribbean, Mediterranean, Red Sea and Gulf of Aden, South East Pacific and the West Coast of Africa. The plan was to focus on enacting legal, policy and institutional reforms to minimize the impact of aquatic invasive alien species transferred from ship’s ballast water. Trinidad and Tobago accepted the challenge to become one of four (4) Lead Partner Countries (LPCs) in the Caribbean region with the attendant responsibility to commit to developing national ballast water management strategies and legal, policy and institutional reforms as well as provide co-funding for the project. The objectives also include building capacity to address the ballast water issues and implementing the 2004 BWM Convention. RAC/REMPEITC-Caribe accepted the challenge to become the Regional Coordinating Organization (RCO) and in concert with the Government of Panama and the Project Coordination Unit (PCU) established a Regional Task Force (RTF) for the Wider Caribbean.

2.3 National Context

Legislative Agenda

In terms of the national context, the process of giving effect to international conventions through national legislation in Trinidad and Tobago requires the following courses of action. It must be remembered that the convention basically speaks to member states and the national legislation purporting to implement the convention speaks to the citizenry stakeholders including the Government and the owners of ships and ports.

The Parliament of Trinidad and Tobago, comprises the President and the two Houses, the Senate and the House of Representatives. All three constituent parts of the Parliament are involved in the process of making a law. A Bill is a proposed law under consideration by the legislature. After a bill has passed both Houses it is presented to the President for assent, or approval. The grant of assent which is done in the name of the President, converts the bill into an Act of the Parliament of the Republic of Trinidad and Tobago. It is then part of the law of the land. Bills may be passed and enacted at a future date by way of Presidential proclamation. This issue is raised as it is a definite possibility for the implementation of the Marine Pollution legislation given the structures that need to be in place in order for its full effective implementation.

Most bills introduced into the Parliament are sponsored by the Government. The majority of government bills are introduced first into the House of Representatives because that is the House where the Government is based, and where most Ministers are located. A Policy Document must be prepared outlining the rationale for the legislation. This Policy Document forms the basis of the line Minister's Submission to Cabinet for approval and once approved the policy forms the basis of the instruction to the Chief Parliamentary Counsel on the need for the legislation and current lack of the same. Under the aegis of the Office of the Attorney General the Parliamentary Counsel or Legislative Drafting Department is responsible:

- a. For the drafting of original legislation, that is, written law relating to an area of activity not already covered by existing written law; and
- b. For amendments to existing written laws.

Under the Ministry of Legal Affairs the Law Review Commission's mandate is to prepare, publish and maintain a Revised Edition of the Laws of Trinidad and Tobago.

In order to ensure that a Bill when enacted is legally sound and functional, before the drafting is commenced, Parliamentary Counsel undertakes a detailed study of a number of factors including:

- a. The circumstances which gave rise to need for the legislation; and
- b. The state of the existing law on the particular subject to determine whether there is a real need for additional legislation.

While the Bill is being drafted, consultation is done with the various personnel for the Ministry at whose request the Bill is being prepared. In terms of Shipping Legislation, a Shipping (Amendment) Act, 2013 has been developed as part of the modernization of the maritime industry to ensure that the Shipping Act of 1987 is applicable and remains relevant to the needs of the current and future environment. The aim here is to establish a Maritime Services Authority of Trinidad and Tobago to make provisions for the registration and licensing of ships, matters relating to crews, security and safety of life at sea and matters incidental thereto. A draft Marine Pollution Bill has also been developed. When it is enacted it would replace the existing Oil Pollution in the Territorial Waters Act of 1951. It will also adopt several IMO Pollution compensation and liability related Conventions. The net effect would be to create a comprehensive anti-pollution regime covering all manner of marine based or vessel-source pollution.

The Port Health Administration uses an old regulation which is woefully inadequate. Although it is used along with the Quarantine Act of 1944, this regulation does not address the ballast water threat.

The time is perfect for inclusion of the relevant provisions to give full effect to the International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004, in the Shipping (Marine Pollution) Bill.

The Cabinet of Trinidad and Tobago formally approved the establishment of the National Task Force (NTF) responsible for the implementation of the BWM Convention in February 2011 comprising representatives from the following organisations:

- The Ministry of Transport (Maritime Services Division);
- The Ministry of Food Production, Land and Marine Resources (Fisheries Division);
- The Ministry of Health (Health Quarantine and Port Health);
- The Ministry of National Security (Trinidad and Tobago Coast Guard);
- The Tobago House of Assembly;
- The Institute Of Marine Affairs;
- The Port Authority of Trinidad and Tobago;
- The Environmental Management Authority;
- Point Lisas Industrial Port Development Corporation Limited;
- The Shipping Association of Trinidad and Tobago;
- The University of the West Indies; and
- The University of Trinidad and Tobago (Maritime Faculty).

It is recommended that the NTF divide its responsibility among stakeholders and focus on three (3) main areas under working groups namely; the Working Group for Technical Matters, the Legal Working Group and the Working Group for Public Awareness. This framework would ensure specialized focus treatment where the working groups dealing with this multi-sectorial threat can proffer an appropriate solution.

The Shipping Industry in Trinidad and Tobago comprises the Maritime Administration the regulatory authority for the safety and security of shipping and the prevention of vessel source pollution which deals with vessels on the local shipping register including fishing vessels and yachts; agents of visiting ships; education and training institutions; institutional arrangements for ports and harbour operations; the Pilots' and Berthing Masters Association responsible for ensuring the safe anchorage, berthing and unberthing of vessels into and from compulsory pilotage areas; the Coast Guard in its maritime law enforcement role; ship builders and ship repairers and maintenance facilities.

The maritime infrastructure includes that of the marine energy sector around the coastline and well out to sea into the Exclusive Economic Zone along with its system for operations and maintenance.

The local shipping register is relatively small as at January 2013 comprising, 77 barges, 39 tugs, 24 ferries, 60 fishing and pleasure craft, 66 supply vessels, 2 oil tankers , 6 cargo vessels and approximately 19 miscellaneous vessels.

Trinidad and Tobago has commenced steps to move to an Open Registry for ships with all the attendant legal, institutional, administrative and operational requirements. The projection for shipping in Trinidad and Tobago in the foreseeable future looks positive. When an open registry is established the duties of the Maritime Administration would increase exponentially to the size of the registry and in order to have a successfully operated open registry, Flag State Implementation for Trinidad and Tobago would need to be upgraded with regard to the institutional and administrative capacity of the Maritime Administration.

At present, there are thirty-one (31) port facilities including four (4) major ports located at Port of Spain, Point Lisas, Chaguaramas and Scarborough. There are also four (4) major oil energy ports located at Pointe-a-Pierre, Point Fortin LNG, Point Fortin and BPTT Galeota. There are several ship repair facilities ranging from Maritime Preservation in Port of Spain, CARIDOC at Chaguaramas and smaller repair and maintenance yards also at Chaguaramas.

Annual traffic comprises about 1300 ships which carry out about 6500 calls at local ports.

There are no sediment reception facilities at this time in Trinidad and Tobago. There are no ballast water tank sampling procedures at any of the ports. No ports have carried out a Port Biological Baseline Survey to detect IAS to date. These are some of the basic requirements needed to successfully give effect to the Convention.

Trinidad and Tobago ratified the BWM Convention¹² on January 3, 2012.

¹² [Article 18 of the Convention provides that the Convention shall enter into force twelve months after the date on which not less than thirty States, the combined merchant fleets of which constitute not less than 35% of the gross tonnage of the world's merchant shipping, have either signed it without reservation as to ratification, acceptance or approval, or have deposited the requisite

3.0 Overview of the Approach to Invasive Alien Species (IAS)

The spread of invasive alien species IAS is creating complex and far reaching challenges that threaten both the natural biological riches of the earth and the well-being of citizens. While the problem is global, the nature and severity of the impact on society, economic life, health, and natural heritage are distributed unevenly across nations and regions. Thus, some aspects of the problem require solutions tailored to specific values, needs and priorities of nations while others call for consolidated action by the larger world community¹³. The consolidated action from the world community naturally would be holistic and deal with a whole ecosystem approach. Any action would entail studying the threat of IAS generally at all levels of land, sea and air. The maritime threat though widespread has been recognised as requiring action in the case of ballast water transfer of harmful aquatic organisms and pathogens. The Globallast Programme through appropriate international obligations emanating from agreed international conventions have sought to combat the threat of marine IAS spread through the particular vector of ballast water.

3.1 Overview of the History of the System of Protecting Areas in Trinidad and Tobago

In 1973, the Caroni Swamp was chosen as a national park for Trinidad and Tobago based mainly on the provision of recreation for the population, rather than the protection of their resources.

The Systems Plan of 1980 identified, inter alia, the Buccoo Reef as one of the proposed National Parks selected for protection due to the nature of the floral and faunal composition of the area. The study at that time also indicated that such a park would require special management objectives that would ensure that the park be maintained in a natural and undisturbed state, to allow the biotic processes of the ecosystems to continue unimpeded. The Buccoo Reef, the Caroni Swamp, Nariva Swamp, Oropuche Lagoon and the Blue River are some accepted treasures in the natural resources inventory of Trinidad and Tobago. These areas contribute to the eco-tourism industry and therefore need to be protected from harmful invaders. These invaders can also affect aquaculture, fisheries, cause economic hardship by increased cost to

instrument of ratification, acceptance, approval or accession in accordance with article 17. As at January 3, 2012 there are thirty three (33) Contracting States to the Convention, representing approximately 26.46% of the gross tonnage of the world's merchant shipping.]

¹³ Global Strategy on Invasive Species GISP 2001 Page viii

maintain coastal infrastructure including jetties, rigs, platforms, engineering plants water intakes and vessels.

3.2 Relevant International Obligations

The final report of the Globalast Legislative Review was published in 2002. The exercise was a cooperative effort among the GEF, UNDP and IMO. Six countries were targeted for special study and all the relevant international obligations that stem from the relevant Convention out of specific provisions were articulated in that report. The main conventions and agreement which were applicable are; the 1982 United Nations Convention on the Law of the Sea (UNCLOS), the Rio Declaration and Agenda 21, the 1992 Convention on Biological Diversity (CBD) and associated instruments, the International Convention for the Prevention of Pollution from Ships, 1973 as amended to 1978 (MARPOL) 73/78, the International Convention for Safety of Life at Sea, 1974 (SOLAS) as amended including the ISM Code, the International Convention on Standards of Training, Certification and Watch keeping for Seafarers, 1978 as amended in 1995 and 1997 (STCW Convention) , Convention on the Facilitation of International Maritime Traffic, 1965 (FAL) as amended, the International Convention on the Control of Harmful Anti-fouling Systems on Ships 2001 (Anti-Fouling Convention), the International Health Regulations 1969 (IHR) and the General Agreement on Trade and Tariffs 1994 and related agreements and the ICES Code of Practice on the Introduction and Transfer of Marine Organisms,1994¹⁴.

The relevant international obligations as they relate to Trinidad and Tobago and the implementation of the BWM Convention would now be summarized.

3.2.1 The 1982 United Nations Convention on the Law of the Sea (UNCLOS)

The United Nations Convention on the Law of the Sea (UNCLOS) was adopted in 1982 after almost ten years of negotiations. The Convention came in to force in 1994. There are a number of provisions in the UNCLOS relevant to both state rights and responsibilities to act to prevent

¹⁴ Globalast Legislative Review Final Report 2002 page 6

the spread of harmful organisms and pathogens through ships' ballasting operations. Although several states have not yet acceded to the UNCLOS many of the provisions regarding the extent of state legislative and enforcement rights within the various maritime zones and the nature of state obligations to protect the marine environment and to cooperate are generally regarded as customary international law on the issue.

Each Member State has a responsibility under UNCLOS to take action to protect the marine environment¹⁵. The Convention also provides that member states take all measures individually or jointly consistent with the Convention that are necessary to prevent, reduce and control pollution of the marine environment from any source, using for this purpose the best practicable means at their disposal and in accordance with their capabilities while endeavouring to harmonize their policies¹⁶. It further provides that states take all measures necessary to prevent, reduce and control pollution of the marine environment resulting from the use of technologies under their jurisdiction or control, or 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 thereto¹⁷.

The introduction of the term 'alien or new species' gives the impression that the obligation under the Convention is not necessarily limited to identified pests or harmful organisms but could also include non-indigenous or alien species that may cause significant changes in the marine ecosystem. Whatever the term used the true impact of the pest, harmful organism, or aquatic alien invasive species, substance or marine pollution is what is contemplated by the Convention.

Traditionally the spread of diseases among humans or animals has been dealt with by quarantine regulations or border controls such as the International Health Regulations (IHR). Today, IHR legislation has been given effect in national legislation or is being used as guidance on how to treat with hazards to human health issues like even cholera. The net effect of the analysis is that there is an accepted conclusion that pollution of the marine environment from ballast water is a form of marine pollution.

¹⁵ Article 192 UNCLOS 1982

¹⁶ Article 194 UNCLOS 1982

¹⁷ Article 196 UNCLOS 1982

The UNCLOS provides for enforcement by flag states¹⁸, enforcement by port states¹⁹ and enforcement by coastal states²⁰.

Vessels flying the flag of Trinidad and Tobago must comply with applicable international rules and standards, established through the IMO, with their regulations adopted in accordance with the UNCLOS for the prevention, reduction and control of pollution of the marine environment from vessels.

Trinidad and Tobago should accordingly adopt laws and regulations and take other measures necessary for their implementation. Trinidad and Tobago should provide for the effective enforcement of such rules, standards, laws and regulations, irrespective of where a violation occurs. When a vessel is voluntarily within a port or at an off-shore terminal of Trinidad and Tobago, the state may undertake investigations and, where the evidence so warrants, institute proceedings in respect of any discharge from that vessel outside the internal waters, territorial sea or exclusive economic zone. In other words UNCLOS provides for Trinidad and Tobago to carry out its responsibility both as a Flag State and a Port State simultaneously. The UNLOS was ratified by Trinidad and Tobago on 25 April 1986.

3.2.2 The Rio Declaration and Agenda 21

Agenda 21 was unveiled in 1992 during the United Nations Conference on Environment and Development (UNCED), commonly known as the Rio Earth Summit, where more than 178 nations adopted Agenda 21 and pledged to evaluate progress made in implementing the plan every five years thereafter. Known around the world simply as Agenda 21, this initiative is “a comprehensive plan of action to be taken globally, nationally and locally by organizations of the United Nations System, governments, and major groups in every area in which there is human impact on the environment.”

¹⁸ Article 217 UNCLOS 1982

¹⁹ Article 218 UNCLOS 1982

²⁰ Article 220 UNCLOS 1982

The marine environment, including the oceans and all seas and adjacent coastal areas, forms an integrated whole that is an essential component of the global life-support system and a positive asset that presents opportunities for sustainable development. Since 1982 there has been an emergence of the concept of sustainable development and this has led to an even more holistic integrated approach based on an ecosystem view. International law, as reflected in the provisions of the United Nations Convention on the Law of the Sea referred to in Agenda 21, sets forth rights and obligations of states and provides the international basis upon which to pursue the protection and sustainable development of the marine and coastal environment and its resources. This requires new approaches to marine and coastal area management and development, at the national, sub-regional, regional and global levels, approaches that are integrated in content and are precautionary and anticipatory in ambit, as reflected in the following programme areas:

- a. Integrated management and sustainable development of coastal areas, including exclusive economic zones;
- b. Marine environmental protection;
- c. Sustainable use and conservation of marine living resources of the high seas;
- d. Sustainable use and conservation of marine living resources under national jurisdiction;
- e. Addressing critical uncertainties for the management of the marine environment and climate change;
- f. Strengthening international and regional, cooperation and coordination;
- g. Sustainable development of small islands.

While UNCLOS is still the main agreement which deals with state responsibility for protection of the marine environment, the necessity to protect the marine environment is articulated and settled in other agreements like the *Agenda 21* and *1992 Convention on Biological Diversity* obligations.

3.2.3 The 1992 Convention on Biological Diversity (CBD)

The 1992 Convention on Biological Diversity (CDB) provides for treatment of the transfer and introduction of harmful aquatic organisms and pathogens via ships' ballast water, which threatens the conservation and sustainable use of biological diversity and the sustainable use of marine and coastal ecosystems.

The Environmental Management Authority (EMA), and the local UNDP office collaborated in the preparation of the project document to access funding under the Global Environment Facility for enabling activities for Trinidad and Tobago. The project is currently being coordinated by the EMA²¹.

The priority strategies and actions of the National Biodiversity Strategy and Action Plan as it relates to legislation and enforcement include; making legislation and regulations more effective management tools through harmonization and incorporating the use of new technologies, stakeholder involvement and generally to improve law enforcement success rate and utilizing enforcement as an important tool for management and sensitization on biodiversity conservation²².

Habitat loss in Trinidad and Tobago has led to the erosion of precious biological diversity. The country is the most industrialized of the Commonwealth Caribbean. The expanding population has placed increasing pressures on the islands, which have a limited land space of only 5,123 km². The consequence of these demands means that the natural resources experience pressures that impact on the environment including the pollution of the marine environment and overexploitation of fisheries wildlife.

The loss of biodiversity holds unique concerns for islands of the Caribbean. Trinidad and Tobago are small islands and the erosion of biodiversity means that residents will feel the implications directly. Biodiversity contributes in significant ways to the economic development

²¹ Biodiversity Strategy & Action Plan for Trinidad and Tobago Foreword

²² Ibid page xi

of the country through tourism, recreation, and resources harvested from the natural environment²³. The CDB was ratified by Trinidad and Tobago on 1 August 1996

3.2.4 International Convention for the Prevention of Pollution from Ships, 1973 as amended to 1978 (MARPOL) 73/78

Marpol 73/78 is the International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978. Marpol 73/78 is one of the most important international marine environmental conventions, designed to minimize pollution of the seas including dumping of oil and exhaust pollution. Its stated object is: to preserve the marine environment through the complete elimination of pollution by oil and other harmful substances and the minimization of accidental discharge of such substances.

The original MARPOL Convention was signed on 17 February 1973, but did not come into force. The current convention is a combination of 1973 convention and the 1978 protocol. It entered into force on 2 October 1983. As of 31 December 2005, 136 countries, representing 98% of the world's shipping tonnage, are parties to the convention.

All ships flagged under countries that are signatories to MARPOL are subject to its requirements, regardless of where they sail and member nations are responsible for vessels registered under their respective nationalities.

Marpol contains 6 annexes, concerned with preventing different forms of marine pollution from ships: The table below gives Trinidad and Tobago status

Annex I – Oil	06/03/2000 Accession
Annex II - Noxious Liquid Substances carried in Bulk	06/03/2000 Accession
Annex III - Harmful Substances carried in Packaged Form	06/06/2000 Acceptance
Annex IV – Sewage	27/09/2003 Acceptance
Annex V – Garbage	06/06/2000 Acceptance
Annex VI - Air Pollution	07/09/2012 Accession

²³ Bacon P.R. 2000

A state that becomes party to MARPOL must accept Annex I and II. Annexes III-VI are voluntary annexes.

3.2.5 International Convention for Safety of Life at Sea, 1974 (SOLAS) as amended including the ISM Code

The main objective of the SOLAS Convention is to specify minimum standards for the construction, equipment and operation of ships, compatible with their safety. Flag States are responsible for ensuring that ships under their flag comply with its requirements, and a number of certificates are prescribed in the Convention as proof that this has been done.

Control provisions also allow Contracting Governments to inspect ships of other Contracting States if there are clear grounds for believing that the ship and its equipment do not substantially comply with the requirements of the convention - this procedure is known as port state control.

With flag state implementation and port state control, safety of ship operation, including ship-stability is checked. Given the variables affecting stability in a ballast water exchange while the vessel is en route, compliance may be challenging. The safety of the ship is ultimately the Master's responsibility and during ballast water exchange operations the vessel could be in danger depending on the ship design arrangements and it is understandable that the Master should not be forced by law to endanger the vessel. Ballast water exchange operation would have to be included in the safety management manuals in accordance with the International Safety Management (ISM) Code. The Government of Trinidad and Tobago maintains its obligation to fully implement the SOLAS Convention as amended which it signed originally on 7th November 1974 and was entered into force on 25th May 1980. SOLAS forms part of the national legislation under Part XI of the existing Shipping Act. On 15 December 2012 Trinidad and Tobago acceded to the new ISM amendments. SOLAS PROT 78 and 88 were also acceded to on 7 June 2012.

3.2.6 International Convention on Standards of Training, Certification and Watch Keeping for Seafarers, 1978 as amended in 1995 and its associated code.

The **1978 STCW Convention** was the first to establish basic requirements on training, certification and watch keeping for seafarers on an international level. Previously, the standards of training, certification and watch keeping of officers and ratings were established by individual governments, usually without reference to practices in other countries. As a result standards and procedures varied widely, even though shipping is the most international of all industries.

The convention prescribes minimum standards relating to training, certification and watch keeping for seafarers which countries are obliged to meet or exceed. The STCW Convention forms part of the existing National Legislation under Part VII of the Shipping Act and the regulations made thereunder.

The **1995 amendments to the Convention**, adopted by a conference, represented a major revision of the convention, in response to a recognized need to bring the convention up to date. With the new BWM Convention, there would be a need for seafarers to have the requisite knowledge to safely operate their vessels and this knowledge upgrade would have to be factored into the implementation of the convention. Trinidad and Tobago has acceded to the 1978 STCW convention on 3 February 1989 as amended and is in the process of adopting the revised amendment to the code ie the Manila Amendments to the STCW Convention and Code.

3.2.7 Convention on the Facilitation of International Maritime Traffic, 1965 (FAL) as amended

The convention's main objectives are to prevent unnecessary delays in maritime traffic, to aid co-operation between Governments, and to secure the highest practicable degree of uniformity in formalities and other procedures. In particular, the Convention reduces the number of declarations which can be required by public authorities. The FAL Convention came into force in 1967 and has been amended several times. Amendments have also dealt with the issue of commercial samples, electronic data management processing, stowaways, and illicit drug trafficking.

Currently, ballast water reporting requirements and procedures as a precondition to port entry seems to be at variance to the FAL requirements. Lawmakers would have to note that the FAL Convention may have to be amended when the BWM Convention is adopted.

Trinidad and Tobago gave acceptance to the FAL Convention on 16 March 1967 and has established a national facilitation committee in accordance with the convention.

3.2.8 International Convention on the Control of Harmful Anti-fouling Systems on Ships 2001 (NIF) (Anti-Fouling Convention)

The Anti-fouling Convention is a newly adopted IMO Convention aimed at preventing the introduction of toxic chemicals in the aquatic system, and ultimately the human food chain. The Antifouling Convention regulates the chemical content of paint that is used on ships' hulls to prevent aquatic organisms from attaching to it (fouling). Vessel fouling is also an important pathway for the transfer of aquatic species between parts of the marine environment. Paints have been developed that are very effective in preventing fouling, thereby reducing the risk of transfer posed by this pathway.

The most effective paints are also highly toxic and, once the convention comes into force, these would be prohibited. This in turn means that ship fouling may once again pose a risk of species transfer.

Trinidad and Tobago acceded to Anti-fouling Convention on 3 January 2012 along with the BWM Convention and so demonstrated its commitment to protection of the marine environment as well as human health and related food chain matters.

3.2.9 The International Health Regulations 1969 (IHR) as amended (2005)

The IHR entered into force for Trinidad and Tobago on the 15th June 2007 and Trinidad and Tobago is in the process of giving effect to the IHR in its national legislation.

The purpose of the International Health Regulations is to ensure the maximum security against the international spread of diseases with a minimum interference with world traffic. Following the increasing emphasis on epidemiological surveillance for communicable disease recognition and control, the new regulations are intended to strengthen the use of epidemiological principles as applied internationally. It would seek to detect, reduce or eliminate the sources from which infection spreads, improve sanitation in and around ports and airports, prevent the dissemination of vectors and, in general, to encourage epidemiological activities on the national level so that there is little risk of outside infection establishing itself²⁴.

The IHR require that the master of a vessel making an international voyage assess the state of health on board and file the standardised Maritime Declaration of Health Forms with the first port of call in a territory (unless not required by the country) (Article 77). It will be recalled that IHR requirements are explicitly recognised under FAL. If satisfied, the relevant health inspection authority of the port will grant the vessel “free pratique” that is, permission for the ship to enter the port, disembark and commence operations. The IHR are intended to protect health security with a minimum of interference with world traffic.

3.2.10 1995 Food and Agricultural Organization (FAO) Code of Conduct for Responsible Fisheries and subsequent Technical Guidelines

Fisheries, including aquaculture, provide a vital source of food, employment, recreation, trade and economic well-being for people throughout the world, both for present and future generations and should therefore be conducted in a responsible manner. The 1995 FAO Code of Conduct for Responsible Fisheries sets out principles and international standards of behaviour for responsible practices with a view to ensuring the effective conservation, management and development of living aquatic resources, with due respect for the ecosystem and biodiversity. The Code recognises the nutritional, economic, social, environmental and cultural importance of fisheries, and the interests of all those concerned with the fishery sector. The Code takes into account the biological characteristics of the resources and their environment and the interests of

²⁴ The IHR 1969

consumers and other users. States and all those involved in fisheries are encouraged to apply the Code and give effect to it²⁵.

One option of a regulatory framework that was considered by the initial legislative review was to include the BWM issues in the Fisheries legislation. It was felt because of its monitoring and surveillance role with databases and network systems once it is well established it could make a significant contribution to prevention of the threat of harmful organisms in the marine environment²⁶.

3.2.11 General Agreement on Trade and Tariffs (GATT) 1994 and related Agreements

All states party to the World Trade Organization (WTO) and the agreements it administers, need to consider the scope and operation of legislation and procedures, particularly border control measures for ballast water that may directly or indirectly have a discriminatory impact on international trade.²⁷ The relationship between environment and trade and sustainable development is high on the international trade agenda with the establishment of the WTO in 1994. The WTO and the main trade agreement it administers, the General Agreement on Trade and Tariffs 1994 (GATT) are core elements in the complex international economic regime. The regime comprises numerous sector specific agreements, protocols and understandings that have been negotiated in a series of rounds amongst a growing number of countries.

The general objective of the WTO regime is to facilitate the development of an open, equitable and non-discriminatory multilateral trading system, particularly in goods (now including some services) by reducing domestic barriers to the free movement of goods and services. Initially the GATT was focused on reducing tariffs, many of which were designed to protect domestic industries, on imported goods. Increasingly the scope of inquiry under the trade regime has deepened and it now considers a range of regulatory measures that may negatively impact on the competitiveness of traded goods and services. The GATT has long recognized the validity of

²⁵ 1995 FAO Code of Conduct for Responsible Fisheries and subsequent Technical Guidelines, Introduction

²⁶ Globallast Legislative Review Final Report 2002 page 38

²⁷ The full text of all WTO and earlier agreements and helpful commentary describing these texts and their relationship to each other are available on the WTO internet site at: <<http://www.wto.org>>

non-discriminatory domestic measures to protect and conserve, *inter alia*, a State's natural resources and human, animal or plant life and health, however there is no specific environmental agreement²⁸.

Two crucial agreements affecting the design of domestic legislation to protect human health and the environment are the 1995 Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement) and the Agreement on Technical Barriers to Trade (TBT). The SPS Agreement is relevant to concerns about alien species that are classified as pests or diseases. This categorisation is being dealt with by other international standard setting organisations.

How trade is affected by agreements would have to be considered by lawmakers once new legislation seeks to control movement of ships which is generally accepted as the transport of over 90% of the world's goods worldwide. Trinidad and Tobago became a member of the WTO on 1 March 1995.

3.2.12 The International Council for the Exploration of The Sea (ICES) Code of Practice on the Introduction and Transfer of Marine Organisms, 1994

The ICES Code of Practice sets forth recommended procedures and practices to diminish the risks of detrimental effects from the intentional introduction and transfer of marine (including brackish water) organisms. The Code is aimed at a broad audience since it applies to both public (commercial and governmental) and private (including scientific) interests. In short, any persons engaged in activities that could lead to the intentional or accidental release of exotic species should be aware of the procedures covered by the Code of Practice.

This Code of Practice provides a framework to evaluate new intentional introductions, and also recommends procedures for species that are part of current commercial practices to reduce the risk of unwanted introductions, and adverse effects that can arise from species movement.

²⁸ Globallast Legislative Review Final Report 2002 page 39

The Code is of relevance to this Legislative Review in that it signifies international opinion as to the necessity for well thought out prevention measures. Although not discussed in the Code it is arguable that designating ballast water discharge zones for high risk water or as an alternative to open seas exchange constitutes intentional introduction of marine organisms. However, part of the difficulty in addressing the problem of ballast water discharges resides in the fact that in many cases no organisms will survive the discharge. Thus it does not fit neatly into the developing rules governing intentional introductions.²⁹

²⁹ibid page 43

4.0 Existing Relevant Regional Obligations

4.1 The Revised Treaty of Chaguaramas 2001

The Treaty of Chaguaramas established the Caribbean Community and Common Market, later known as CARICOM. It was signed on July 4, 1973 in Chaguaramas, Trinidad and Tobago. It was signed by Barbados, Guyana, Jamaica and Trinidad and Tobago on 4 July 1973 in Chaguaramas and came into effect on 1 August 1973. The Treaty also established the Caribbean Community including the Caribbean Single Market and Economy, replacing the Caribbean Free Trade Association which ceased to exist on 1 May 1974.

In addition to economic issues, the Community instrument addressed issues of foreign policy co-ordination and functional cooperation including issues related to economic integration and trade arrangements.

Policy coordination is imperative where a regional strategic action plan is contemplated. The Wider Caribbean Region is poised to establish one such plan. The existing framework of CARICOM and the Caribbean Memorandum of Understanding (CMOU) on port state control will no doubt assist member states in their regional strategic objectives of successfully implementing the BWM Convention. The Revised Treaty of Chaguaramas 2001 was ratified by Trinidad and Tobago 3 July 2003.

4.1.1 The Cartagena Convention 1983

The Cartagena Convention was adopted in Cartagena, Colombia on 24 March 1983 and entered into force on 11 October 1986, for the legal implementation of the Action Plan for the Caribbean Environment Programme.

The Convention for the Protection and Development of the Marine Environment in the Wider Caribbean Region (WCR) is a comprehensive, umbrella agreement for the protection and development of the marine environment. This regional environmental convention provides the legal framework for cooperative regional and national actions in the WCR.

The Convention is supplemented by the Oil Spills Protocol, the SPAW Protocol and the LBS Protocol. Although the Contracting Parties designated United Nations Environmental Programme (UNEP) – Caribbean Regional Co-ordinating Unit (CAR/RCU) as the Secretariat of the Cartagena Convention, Contracting Parties may use Regional Activity Centres (RACs) for the coordination and implementation of activities in support of the Cartagena Convention and its Protocols and Regional Activity Networks (RANs) for the provision of expertise.

The Convention is supplemented by three Protocols:

1. Protocol Concerning Co-operation in Combating Oil Spills in the Wider Caribbean Region which was also adopted in 1983 and entered into force on 11 October 1986.
2. Protocol Concerning Specially Protected Areas and Wildlife (SPAW) in the Wider Caribbean Region which was adopted on 18 January 1990. The Protocol entered into force on 18 June 2000.
3. Protocol Concerning Pollution from Land-Based Sources and Activities which was adopted on 6 October 1999. The Protocol entered into force on 13 August 2010.

Trinidad and Tobago ratified the Cartagena Convention 1983 on 24 January 1986.

4.1.2 The SPAW Protocol 1990

The Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (the Cartagena Convention) is a legally binding environmental treaty for the Wider Caribbean Region. The Convention and its Protocols constitute a legal commitment by the participating governments to protect, develop and manage their coastal and marine resources individually or jointly.

The Protocol Concerning Specially Protected Areas and Wildlife (the SPAW Protocol) has been internationally recognised as the most comprehensive treaty of its kind. Adopted in Kingston, Jamaica by the member governments of the Caribbean Environment Programme on 18 January 1990, the SPAW Protocol preceded other international environmental agreements in utilising an ecosystem approach to conservation. The Protocol acts as a vehicle to assist with regional

implementation of the broader and more demanding global Convention on Biological Diversity (CBD).

The objective of the Protocol is to protect rare and fragile ecosystems and habitats, thereby protecting the endangered and threatened species residing therein. The Caribbean Regional Coordinating Unit pursues this objective by assisting with the establishment and proper management of protected areas, by promoting sustainable management (and use) of species to prevent their endangerment and by providing assistance to the governments of the region in conserving their coastal ecosystems.

Trinidad and Tobago ratified the SPAW protocol 1990 on 10 August 1999.

5.0 Existing relevant Trinidad and Tobago Legislative frameworks

Several government organisations in Trinidad and Tobago are involved in marine environmental protection with national laws and regulations defining their responsibilities and authority. There are numerous national environmental laws that may be relevant to the transfer of harmful organisms and pathogens in ships and so a summary of the legislative framework compared to a brief description of the six pilot countries would give a better foundation for recommendations and a conclusion as it relates to a regulatory design for the control and management of Harmful Aquatic Organisms and Pathogens (HAOP).

Flag state implementation and port state control provide for inspection of ships both for national ships and foreign ships, respectively. This framework is managed by the Maritime Services Division of the Ministry of Transport. Port state control programmes are of a regional nature, that is, several countries sharing common waters have grouped together under a Memorandum of Understanding (MOU) to ensure that vessels trading in their area are not substandard.

The main regional legislative framework is the Memorandum of Understanding on Port State Control in the Caribbean Region. This was signed in Christ Church, Barbados on February 9, 1996 by nine States namely; Antigua & Barbuda, Barbados, Dominica, Grenada, Guyana, Jamaica, the Netherlands Antilles, Suriname and Trinidad and Tobago. The membership has since increased to fourteen States, with St. Kitts and Nevis being the most recent addition.

The framework provides for a ship inspection programme whereby a target rate of fifteen percent (15%) of foreign vessels entering a sovereign state's waters are boarded and inspected to ensure compliance under various major international maritime conventions, namely :-the International Convention for the Safety of Life at Sea (SOLAS), the International Convention for the Prevention of Pollution from Ships (MARPOL), the International Convention on Standards of Training Certification and Watch keeping for Seafarer (STCW), Load Lines (LL), the Convention on the International Regulations for Preventing Collisions at Sea (COLREG) and the International Labour Organization Convention No. 147 Merchant Shipping (Minimum Standards) (ILO 147).

With the regional approach to the management of Ballast Water from ships it is recommended that the Caribbean Memorandum of Understanding would assist the regional effort with its inherent cooperation and collaboration of activities at that level.

5.1 Existing Relevant Legislation

The following are the existing relevant legislation:

Act	Purpose
Shipping Act Chap 50:01 Act No. 24 of 1987	An act to make provision for the registration and licensing of ships, matters relating to crews, safety of life at sea and matters incidental thereto.
Harbours Act Chap 50:06	An Act to provide for the power of the Harbour Master to direct any vessel to a specific location within the confines of a Harbour in the interest of safety and security of shipping and the convenience of the public.
Quarantine Act Chap 28:05 Act No. 19 of 1944 as amended	An Act relating to Quarantine and similar matters.
Carriage of Goods by Sea Act Chap 50:02	An Act to amend the law with respect to the Carriage of Goods by Sea.
Territorial Sea Act Chap 1:51	An Act to make provision with respect to the Territorial Sea of Trinidad and Tobago
Continental Shelf Act Chap 1:52 Act No. 43 of 1996	An Act to make provision as to the exploration and exploitation of the Continental Shelf; to enable effect to be given to certain provisions of the Conventions on the High Seas done in Geneva on 29th April 1958; and for matters connected with those purposes
Archipelagic and EEZ Act No. 24 of 1986	An Act to declare the Republic of Trinidad and Tobago an archipelagic State, and to define the new areas of marine space appertaining to Trinidad and Tobago in the exclusive economic zone, and in the archipelagic waters, and the nature and extent of the jurisdiction to be exercised by it in each of these areas and to make provision for matters connected therewith in accordance with the United Nations Convention on the Law of the Sea, done in Montego Bay, Jamaica on 10th December 1982.

From the review of the aforementioned relevant existing legislation it is concluded that the domestic legislation in Trinidad and Tobago where provisions could have been included to treat with the threat of IAS that emanate from ships would need a great deal of amendments and is therefore considered inadequate. In other words, although these pieces of legislation can be amended to provide for combating the IAS threat, at present on their own they provide little or no value to the fight.

The Shipping (Marine Pollution) Bill was draft legislation specifically prepared to provide for powers and jurisdiction in relation to vessel source pollution of the seas, intervention on the high seas in cases of oil pollution, dumping of wastes at sea, preparedness and response for oil pollution emergencies, liability and compensation for pollution damage and matters incidental thereto. The Bill was first introduced into Parliament in 2000 and again in 2004; on each occasion the Bill lapsed before debate could be concluded and its passage effected. The Bill is now being reviewed in order to factor in the various amendments to the conventions it seeks to give effect to that have come into force since 2004. The review process affords the opportunity to make additional provisions adopting Ballast Water IAS measures.

6.0 Legislative Approaches of the Six Pilot Countries Pursuant to the Legislative Reviews

The six countries (Brazil, China, India, Iran, South Africa and the Ukraine) in the Globallast Project have very different legal and administrative systems and histories. What follows is a brief description taken from the Final Report of the Legislative Review 2002. This comparison is significant as it underscores the importance of an integrated coastal management approach, regional integration and the need to have a possible two-step approach while preparation to give full effect to the BWM Convention is being contemplated.

Country	Legislative Approach
Brazil	At the time of the 2002 report, the legislative approach was that new Federal law and environmental rules be adopted to address the major environmental concerns and principles including the need for harmonization of Brazilian law on the issue. More specific rules to implement the law were to be issued as a Decree by the Executive. It was proposed that, stand alone, comprehensive legislation be adopted.
China	Under Chinese law any changes to STCW, the FAL Convention and other IMO conventions (such as the future International Convention on Ballast Water and Sediment Management, if a stand-alone Convention or as MARPOL, Annex VII) will automatically become part of the existing national law on these matters. General law already existed under the Law of Marine Environment Protection. Regulations to deal with ballast water management were recommended to be promulgated at the State Council level with further implementing and detailed regulations issued at the Ministerial level and by administrations responsible for specific aspects
India	At the time of the 2002 report, it was recommended that changes to the Merchant Shipping Act, 1958 take the form of implementation of an International Convention on ballast water and sediment management, once it comes into force for India. However the IMO Guidelines as they relate to reporting and ballast water discharge and concerns regarding pathogens could be implemented by amendments and regulations under the Indian Ports Act, 1908. Further the Ballast water reporting form prescribed in the IMO Guidelines were recommended to be included as one of the mandatory forms handed over by the Master to the Pilot or Boarding Officer or the other officer of the Port, before free pratique is granted by the port authorities. It was desirable that appropriate amendments are made in the Indian Port Health Rules, 1955.

Country	Legislative Approach
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South Africa	At the time of the 2002 Report in light of the priorities of the South African legislature, the most pragmatic option for rapid implementation of the IMO Guidelines, taking into account the likely direction of the proposed International Convention, was to develop regulations on ballast water management under an existing Act rather than to enact new dedicated legislation.
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Country	Legislative Approach
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Ukraine	At the time of the 2002 Report, the Ukraine's approach to legal regulation of environmental issues had a complex (integrated) nature: not only did the regulatory process cover current problems at that time, but it also included laws aimed at preventive and long-term effect (preventive measures to be taken by sanitary and epidemic services, quarantine measures, health care, systematic monitoring, supervision, collection and dissemination of information, etc.).
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The complexity and length of time required to develop a new domestic legal instrument that had the status of a law suggested that the best approach was to amend provisions in the existing legislation relevant to Guidelines, even though at that time a considerable amount of work had to be done to bring them into compliance with standards and rules set by the Guidelines.

7.0 Other Domestic Regulatory Approaches

- The Final Report of the Legislative Review 2002 recorded observations of the consultants in four desk studies of how Ballast Water was managed. The countries included Australia, Canada, the United States of America and New Zealand. A summary of how these four developed countries treated with Ballast Water would be instructive when developing new legislation or amending old legislation in order to solve the problem of invasive alien species. This process was done so as to understand specific and deliberate approaches to the threat of marine IAS and whether or not a voluntary, mandatory or combined approach had merit. Additional information is provided at Annex 111 page 58.

Country	Regulatory Approach
Australia	<p>1990 Australia introduced voluntary guidelines for Ballast water.</p> <p>In 1994 Australia adopted a coordinated national approach to this problem, including support for research into management techniques. In addition, a computer based decision support system (DSS) for targeting high risk vessels was designed to avoid unnecessary inspections.</p> <p>In 2000 Australia amended the Quarantine Act 1908 to include the requirements for ballast water.</p>
Canada	<p>Introduced guidelines that required every ship that carried ballast water should be provided with a ballast water management plan</p>
United States	<p>At the time of the 2002 Report legislation regulating the intentional introduction of plant and animal species had been in place in the USA since the turn of the century.</p> <p>In 1990 The Nonindigenous Aquatic Nuisance Prevention and Control Act (NANPCA) was adopted setting in place voluntary guidelines for ballast water management (modeled on the then IMO Guidelines) for ships entering the Great Lakes from outside the US EEZ.</p> <p>In 1996 the National Invasive Species Act, 1996 (NIS), which established a ballast water management programme administered by the US Coast Guard was passed. This Act amended and modified the Nonindigenous</p>

Country	Regulatory Approach
United States (Continued)	Aquatic Nuisance Prevention and Control Act, 1990. The NIS continued the Great Lakes requirements and extended the guidelines to vessels "with ballast tanks" (as opposed to vessels that carry ballast water) and directed the Coast Guard to develop voluntary guidelines on a national basis.
New Zealand	<p>In 1992 voluntary guidelines consistent with the IMO Guidelines were put in place, while the Government carried out research and developed its strategy and carried out public consultation.</p> <p>Import health standards for Ships'Ballast water from all countries, 1998 was incorporated into the 1993 Biosecurity Act.</p>

8.0 Analysis

8.1 Domestic (Trinidad and Tobago) Regulatory Design Based on International and Regional Obligations

The analyses surrounding the aforementioned international and regional obligations as well as national law and practice illustrate quite clearly that Governments and many other organisational structures have been set up to deal with sustainability in the field of Marine IAS control and management.

The Constitution of the Republic of Trinidad and Tobago provides, inter alia, for the right of the individual to life, liberty, security of person and enjoyment of property. Guarantees under the Constitution are the responsibility of the sitting government. The safety and security of the citizenry as well as the enjoyment of property falls high on the agenda of any government.

The Government of the Republic of Trinidad and Tobago (GORTT) has, by its mandate and by its acceptance to govern, effectively agreed through its authority to abide by international and regional obligations. It has acquiesced to the overriding principles and international best practices related to sustainable development and to play its part in the conservation and preservation of the earth including the various ecosystems.

The GORTT has demonstrated this strategic objective through the commitment related to the ratification and accession to several international conventions in particular; the Convention on Biological Diversity 1992, the International Health Regulations IHR(1969), the United Nations Convention on Law of the Sea (UNCLOS) 1982, the Ballast Water Management Convention 2004 along with all other related Conventions that provide for health, conservation and preservation of ecosystems by prevention of degradation by intentional and unintentional threats to life now and in the future.

The Convention on Biological Diversity specifically at Article 8(h) and UNCLOS at Article 196 provides for preventing the transfer of alien or new species that may be harmful between parts of the marine environment.

What is of the greatest importance is the classification of the harm in domestic legislation so that the appropriate national legal and administrative systems can be brought to bear on the problem.

Whether it is environmental legislation related to pollutant discharge under management by the holistic approach or regulating regimes for shipping only, domestic regulatory design has relied essentially on international standards and technological solutions along with the facilitation of trade (trade being the main reason for shipping) to ensure preservation of the environment and safety and security at sea.

It is noteworthy that the domestic regulatory design for countries which have approached the threat of IAS by adopting a quarantine solution or countries that have adopted a vessel source pollution solution, the requirements for ship reporting ballast water and sediment management and treatment arrangements are much the same.

Developed countries like Australia, Canada, New Zealand and the United States have different regulatory approaches but to the same end: preserving ecosystems and saving humanity.

The recommended national regulatory approach to managing ships' ballast water operations currently endorsed by IMO member States is set out in the IMO Resolution A.868 (20).

In conclusion, it can be accepted that states have an existing legal obligation to respond and prevent the spread of harmful aquatic organisms and pathogens in ships' ballast water and sediments.

The BWM Convention presents nation States with the opportunity to cooperate and provide a uniform framework for national and global action.

9.0 Options for implementing the Ballast Water Management Convention

In Trinidad and Tobago implementing legislation has to be viewed in the context of institutional and legislative framework upgrade. The following options are recommended as a way forward:

Option 1.

- (a) Draft new legislation to replace the existing vessel source pollution prevention legislation;
- (b) Draft amendments to the existing vessel source pollution prevention legislation;
- (c) Revise amendments to draft vessel source pollution legislation.

Option 2.

Take administrative action without legislation.

Option 3.

Adopt comprehensive environmental biodiversity protection legislation.

Under Option 1

- (a) A Final Draft Model Ballast Water Management Act is drafted and can be readily adapted.
- (b) The existing vessel source pollution prevention legislation is inadequate and relates to the vessel source pollution from oil only.
- (c) The draft vessel source pollution legislation has been under consideration in the form of Shipping (Marine Pollution) Bill since 2004. This Bill could be reviewed and updated to include all outstanding relevant IMO Conventions on the subject of vessel source pollution including the BWM Convention. .

Under option 2, administrative action can be taken without legislation. Trinidad and Tobago may choose not to embark on any formal legislative action until the BWM Convention enters into force. The country may still implement many aspects of the Guidelines by carrying out port baseline surveys and requesting ships, on a voluntary basis, to submit ballast water reports and samples.

In addition Maritime Training Institutions in the region and country can be encouraged to include ballast water management issues in their curricula. Trinidad and Tobago as a Flag State and Classification Societies can also work with industry associations to encourage ships to develop and implement ballast water management plans. The fact that a number of economically significant countries have developed laws requiring ballast water management will mandate this industry response in any event. As a country that is party to a regional marine protection agreement, legislative activity can be focused on developing a regional response to the problem, perhaps through a "first port of call" documentation and inspection process.

The Draft Regional Strategy for the Wider Caribbean Region (WCR) is still under consideration. Notices to Mariners out of the Office of the Harbour Master can be developed requesting ships to undertake ballast water management and otherwise comply with the Guidelines. The advantage of this approach is that it puts in place some of the necessary data collection and administrative structures and develops greater local expertise and research capacity. This will make implementation of the Convention much easier. The disadvantage is that it is likely that the necessary studies, research and monitoring will not be done, without a legislative imperative and the associated budget. Failure to respond proactively may conflict with State obligations to protect the marine biodiversity and human health, create risks to the environment of the State and its trading partners and cause harm to other coastal water users. Failure to take action may also impact negatively on the competitiveness of products or ships travelling with ballast water from Trinidad and Tobago in that they may be subject to greater scrutiny or even be prohibited from entering ports or discharging ballast in some countries.

Under Option 3, Trinidad and Tobago may also choose to adopt legislation that addresses the issue comprehensively within the larger framework of biodiversity or environmental protection

under biodiversity/security/or other border control-quarantine legislation. Such an approach has some advantages in that it may generate new administrative arrangements and will allow for comprehensive implementation of rules pertaining to both the unintentional import and export of harmful aquatic organisms and pathogens. Such legislation would, therefore, constitute either one chapter within a comprehensive invasive species legislative framework or a regulation under such a law. The disadvantage of this approach is that it needs a high level of inter-agency cooperation in order to ensure an efficient and coherent ship-port interface. It may also result in some uncertainty as to how to align this process with existing ship entry approvals.

Depending on the administrative structure chosen for this option it may also require significant resources and training of personnel. Some difficulty, largely for reasons of agency expertise, may also be encountered in the implementation of flag State responsibilities if the international convention survey/certificate requirements are adopted. The law or regulations adopted under this approach would need to be designed to ensure that they are not in conflict with the State's other international trade and shipping related obligations and any future obligations that it may enter into.

Recommendation

The legal review conducted in the context of the implementation of the Ballast Water Management Convention considered the three (3) options mentioned above.

The preferred option which is strongly recommended is Option 1 (c), which is now reiterated:

“The draft vessel source pollution legislation has been under consideration in the form of the Shipping (Marine Pollution) Bill 2004. This Bill could be reviewed and updated to include all outstanding relevant IMO Conventions on the subject of vessel source pollution including the BWM Convention.”

The process leading to Parliament³⁰

On completion of the draft the official process would then be as follows:

- A Stakeholder's Consultation

³⁰ Interview with Senior Legal Officer Maritime Services Division Ministry of Transport Mr Brent Williams , 14 March 2013

- This consultation may pre-empt the need to hold joint Senate/House Committee reviews of the legislation as was done previously, particularly given the highly technical nature of the subject matter.
- The Pre-Legislative Review Committee process
 - At this stage a review is completed by the Chief Parliamentary Counsel (CPC) together with the relevant technocrats from the various Ministries/stakeholders agencies involved in the drafting of the Bill.
 - The aim at this stage would be to resolve any drafting/policy problems with the Bill prior to submission to the Legislative Review Committee (LRC).
- The Legislative Review Committee process
 - At this stage the Bill is reviewed by the LRC which is a sub-committee of the Cabinet comprising Ministers. The Minister of Transport is responsible for the Bill and so he presents it to his colleagues in order to sort out any policy/drafting issues that may arise.
- Submission to the Parliament
 - Once the bill is approved by the Law Review Committee, a Cabinet Note is prepared by the Attorney General recommending that the Bill be laid in Parliament at the earliest opportunity after which the bill is placed on the Parliamentary schedule.

10.0 Deficiencies and Barriers to the successful implementation of the BWM Convention

An analysis of the regional deficiencies to treat with IAS in general and harmful aquatic organisms and pathogens in particular has shown that the national landscape is no different. The research has indicated that the following are the deficiencies and barriers to successful implementation of the BWM Convention;

- Lack of general public awareness of the BWM problem and the massive threat to society posed by harmful aquatic organisms;
- Lack of general information and scientific information on the subject matter as it relates to Trinidad and Tobago;
- Inaccessibility to general information and scientific information on the subject matter;
- Lack of technical expertise including legal expertise as it relates to the ballast water threat and available solutions;
- Lack of institutional and administrative frameworks to treat with solutions to the unwanted threat;
- Inadequate existing domestic legislation;
- Inadequate proposed domestic legislation;
- Need for a vibrant and dedicated Secretariat with qualified personnel-supervised by the Cabinet appointed National Task Force for the implementation of the BWM Convention and related issues;
- Need for greater coordination and collaboration between and among agencies earmarked to implement the BWM Convention;
- Need to further sensitize stakeholders including seafarers and port operators by way of inclusion of the relevant knowledge in the curricula of training institutions and by ensuring other stakeholders are briefed;

- Prioritizing of the National Ballast Water Management Strategy and implementation plan as well as the requisite legislative agenda ;

The Institutional framework for the implementation of the BWM Convention needs re-vitalisation. The Maritime Services Division, Ministry of Transport over the last couple of years has attempted to re-engineer itself into an authority with vibrant qualified human resources and the necessary infrastructure required to carry out its responsibilities. The Maritime Services Division is mainly responsible for the cost effective Maritime Administration for Trinidad and Tobago; to ensure the safety and security of shipping and prevention of vessel source pollution, and to facilitate the growth of the national maritime sector through the essential regulatory, administrative, advisory and developmental framework.

Further, the Cabinet appointed National Task Force has already etched out a preliminary road map under the leadership of the Maritime Service Division which has noted the stated deficiencies and barriers in order to successfully implement the Ballast Water Management Convention.

11.0 Steps for implementation

Steps for implementing the BWM Convention in order to give it full effect in the national legislation would be dealt with generally, outlining institutional and administrative imperatives, setting out the administrative, legislative and regulatory actions required including a compliance, monitoring and enforcement system:

General Steps

- Identification of all agencies by the National Task Force including international agencies that play a role in law enforcement;
- Establishment of bi-lateral and multi-lateral agreements between and among neighbouring countries like, Barbados, Grenada, St. Vincent and the Grenadines and Venezuela and region as a whole to provide for cross jurisdictional co-ordination;
- Cultivation and maintenance of international relationships including sharing information, expertise and best practices as well as strengthening and harmonising agreements.

Institutional and Administrative Steps

- Re structuring the organisation of the lead agency, the Maritime Services Division (MSD), to give effect to all the maritime regimes including the BWM Convention;
- Procurement of qualified personnel by the MSD which should include;
 - The establishment of a strong and vibrant secretariat for the NTF
- Building capacity as required, which should include;
 - Participating in and contributing to international and regional strategies for the implementation of the BWM Convention;
 - Training and educating port state control officers and flag state implementation officers;
 - Procuring relevant equipment for inspections;
 - Developing the certification procedures for treatment facilities;

- Developing a national roster of experts to contribute to technical discussions;
- Developing mechanisms for sharing information;
- Carrying out the necessary scientific research, risk assessments to identify vulnerable ports, port biological surveys and training in port biological surveys as the basis for decision making in BW management;
- Developing a programme to monitor ports for changes in baseline;
- Conducting and support research in measures to consider unique local situation;
- Setting up a web-based mechanism for exchanging information

Regulatory Steps

- Placing maritime regimes higher on the government's legislative agenda by the Chief Parliamentary Counsel (CPC) at the Office of the Attorney General. This would include the Shipping Amendment Bill and Shipping (Maritime Pollution) (No. 2) Bill 2004.
- Including the BWM Convention in the Shipping (Maritime Pollution) (No. 2) Bill 2004 during the review by the CPC.
- Employing voluntary compliance measures by the MSD. These measures should also be accordance with the **Harmonised Voluntary Arrangements for Ballast Water Management in the Wider Caribbean Region**. When this is done the industry would be preparing itself for mandatory compliance by ensuring that the institutional and administrative infrastructure are put in place and are acceptable. This could be done leading up to the Convention entering in to force. Notices to Mariners can be used to encourage compliance and encouraging education and training of all stakeholders by including the subject matter of BWM in relevant curricula.
- Establishing a Compliance, Monitoring and Enforcement (CME) System whereby:
 - ❖ Ships collect and record information on BWM practices;
 - ❖ Ships transmit this information to MSD and to receive directions thereafter;
 - ❖ Ships' records should be available for examination;

- ❖ Ships would provide for ballast water and sediments samples to be obtained;
- ❖ Legal provision would be made for enforcement measures and sanctions for non-compliance with the BWM requirements.

12.0 Suggested nature of proposed legislation

Trinidad and Tobago for over fourteen (14) years has been incrementally developing maritime legislation and regulations to meet the ever changing scenarios in the maritime industry. The Shipping Act of 1987 is due for an overhaul to meet modern day demands of safe and secure shipping.

The Shipping (Marine Pollution) Bill 2004 has been a work in progress for over the last eight (8) years. It will provide for the implementation of several International Maritime Conventions when enacted.

At this stage of Trinidad and Tobago's maritime development with due regard to the inter-relatedness of the subjects of integrated coastal zone management, maritime safety, maritime security including bio-terrorism, some level of priority is recommended in the development of the maritime related regimes in order to combat unwanted threats to life, property and related systems.

Taking into account all the circumstances, it is understood that the draft Shipping (Marine Pollution (No.2) Bill 2004 is being surgically reviewed and the BWM Convention included to provide for the Control and Management of Ships' Ballast Water and Sediments. This approach is endorsed as a positive way forward.

In the interim, while appropriate infrastructure is being acquired it is recommended that administrative action be taken to implement various provisions of the Convention. This interim solution is recommended to be carried out on a voluntary basis followed by the mandatory requirements when the Convention enters into force and measures are in place to enforce the law.

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Guiding Principles for the Prevention, Introduction and Mitigation of Impacts of Alien Species

All of these principles mentioned below are relevant to implementing the IMO Guidelines.

However, the work of this Legislative Review is specifically relevant to Guiding Principle 1, the precautionary approach, Guiding Principle 2, -Three-stage hierarchical approach, first level of response, prevention, Guiding Principle 4, -State responsibility, Guiding Principle 5, -border control to prevent entry and Guiding Principle 11, -development of legislation to prevent unintentional introduction.

A. General

Introduction

These guiding principles provide all Governments and organizations with guidance for developing effective strategies to minimize the spread and impact of invasive alien species. While each country faces unique challenges and will need to develop context-specific solutions, the Guiding Principles provide governments with clear direction and a set of goals to aim toward. The extent to which these Guiding Principles can be implemented ultimately depends on available resources. Their purpose is to assist governments to combat invasive alien species as an integral component of conservation and economic development. Because these principles are non-binding, they can be more readily amended and expanded through the Convention on Biological Diversity's processes as we learn more about this problem and its effective solutions.

Also, while applying these Guiding Principles, due consideration must be given to the fact that ecosystems are dynamic over time and so the natural distribution of species might vary without involvement of a human agent.

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Guiding principle 1: Precautionary Approach

2. Given the unpredictability of the impacts on biological diversity of alien species, efforts to identify and prevent unintentional introductions as well as decisions concerning intentional introductions should be based on the precautionary approach. Lack of scientific certainty about the environmental, social and economic risk posed by a potentially invasive alien species or by a potential pathway should not be used as a reason for not taking preventative action against the introduction of potentially invasive alien species. Likewise, lack of certainty about the long-term implication of an invasion should not be used as a reason for postponing eradication, containment or control measures.

Guiding principle 2: Three-stage hierarchical approach

3. Prevention is generally far more cost effective and environmentally desirable than measures taken following introduction of an alien invasive species. Priority should be given to prevention of entry of alien invasive species (both between and within states). If entry has already taken place, actions should be undertaken to prevent the establishment and spread of alien species. The preferred response would be eradication at the earliest possible stage (principle 13). In the event that eradication is not feasible or is not cost-effective, containment (principle 14) and long-term control measures (principle 15) should be considered. Any examination of benefits and costs (both environmental and economic) should be done on a long-term basis.

Guiding principle 3: Ecosystem approach

4. All measures to deal with alien invasive species should be based on the ecosystem approach, in line with the relevant provisions of the Convention and the decisions of the Conference of the Parties.

Guiding principle 4: State responsibility

5. States should recognize the risk that they may pose to other states as a potential source of alien invasive species, and should take appropriate actions to minimize that risk. In accordance with Article 3 of the Convention on Biological Diversity, and Principle 2 of the 1992 Rio Declaration on Environment and Development, states have the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other

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states or of areas beyond the limits of national jurisdiction. In the context of alien invasive species, activities that could be a risk for another state include:

(a) The intentional or unintentional transfer of an alien invasive species to another state (even if it is harmless in the state of origin); and (b) The intentional or unintentional introduction of an alien species into their own State if there is a risk of that species subsequently spreading (with or without a human vector) into another State and becoming invasive.

Guiding principle 5: Research and monitoring

6. In order to develop an adequate knowledge base to address the problem, States should undertake appropriate research on and monitoring of alien invasive species. This research should document the history of invasions (origin, pathways and time-period), characteristics of the alien invasive species, ecology of the invasion, and the associated ecological and economic impact and how they change over time. Monitoring is the key to early detection of new alien species. It requires targeted and general surveys, which can benefit from the involvement of local communities.

Guiding principle 6: Education and public awareness

7. States should facilitate education and public awareness of the risks associated with the introduction of alien species. When mitigation measures are required, education and public-awareness-oriented programmes should be set in motion so as to inform local communities and appropriate sector groups on how to support such measures.

B. Prevention

Guiding principle 7: Border control and quarantine measures

8. States should implement border control and quarantine measures to ensure that:

(a) Intentional introduction is subject to appropriate authorization (principle 10);

(b) Unintentional or unauthorized introduction of alien species is minimized.

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9. These measures should be based on an assessment of the risks posed by alien species and their potential pathways of entry. Existing appropriate governmental agencies or authorities should be strengthened and broadened as necessary, and staff should be properly trained to implement these measures. Early detection systems and regional coordination may be useful.

Guiding principle 8: Exchange of information

10. States should support the development of database(s), such as that currently under development by the Global Invasive Species Programme, for compilation and dissemination of information on alien species that threaten ecosystems, habitats or species, to be used in the context of any prevention, introduction and mitigation activities. This information should include incident lists, information on taxonomy and ecology of invasive species and on control methods, whenever available. The wide dissemination of this information, as well as national, regional and international guidelines, procedures and recommendations such as those being compiled by the Global Invasive Species Programme should also be facilitated through, inter alia, the clearing-house mechanism.

Guiding principle 9: Cooperation, including capacity-building

11. Depending on the situation, a State's response might be purely internal (within the country), or may require a cooperative effort between two or more countries, such as:

(a) Where a State of origin is aware that a species being exported has the potential to be invasive in the receiving State, the exporting State should provide information, as available, on the potential invasiveness of the species to the importing State. Particular attention should be paid where exporting Parties have similar environments;

(b) Agreements between countries, on a bilateral or multilateral basis, should be developed and used to regulate trade in certain alien species, with a focus on particularly damaging invasive species;

(c) States should support capacity-building programmes for States that lack the expertise and resources, including financial, to assess the risks of introducing alien species. Such capacity-building may involve technology transfer and the development of training programmes.

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C. Introduction of species

Guiding principle 10: Intentional introduction

12. No intentional introduction should take place without proper authorization from the relevant national authority or agency. A risk assessment, including environmental impact assessment, should be carried out as part of the evaluation process before coming to a decision on whether or not to authorize a proposed introduction. States should authorize the introduction of only those alien species that, based on this prior assessment, are unlikely to cause unacceptable harm to ecosystems, habitats or species, both within that State and in neighbouring States. The burden of proof that a proposed introduction is unlikely to cause such harm should be with the proposer of the introduction. Further, the anticipated benefits of such an introduction should strongly outweigh any actual and potential adverse effects and related costs. Authorization of an introduction may, where appropriate, be accompanied by conditions (e.g., preparation of a mitigation plan, monitoring procedures, or containment requirements). The precautionary approach should be applied throughout all the above-mentioned measures.

Guiding principle 11: Unintentional introductions

13. All States should have in place provisions to address unintentional introductions (or intentional introductions that have established and become invasive). These include statutory and regulatory measures, institutions and agencies with appropriate responsibilities and with the operational resources required for rapid and effective action.

14. Common pathways leading to unintentional introductions need to be identified and appropriate provisions to minimise such introductions should be in place. Sectoral activities, such as fisheries, agriculture, forestry, horticulture, shipping (including the discharge of ballast waters), ground and air transportation, construction projects, landscaping, ornamental aquaculture, tourism and game-farming, are often pathways for unintentional introductions. Legislation requiring environmental impact assessment of such activities should also require an assessment of the risks associated with unintentional introductions of alien invasive species.

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D. Mitigation of impacts

Guiding principle 12: Mitigation of impact

15. Once the establishment of an alien invasive species has been detected, States should take steps such as eradication, containment and control, to mitigate the adverse effects. Techniques used for eradication, containment or control should be cost-effective, safe to the environment, humans and agriculture, as well as socially, culturally and ethically acceptable. Mitigation measures should take place in the earliest possible stage of invasion, on the basis of the precautionary approach. Hence, early detection of new introductions of potentially invasive or invasive species is important, and needs to be combined with the capacity to take rapid follow-up action.

Guiding principle 13: Eradication

16. Where it is feasible and cost-effective, eradication should be given priority over other measures to deal with established alien invasive species. The best opportunity for eradicating alien invasive species is in the early stages of invasion, when populations are small and localised; hence, early detection systems focused on high-risk entry points can be critically useful. Community support, built through comprehensive consultation, should be an integral part of eradication projects.

Guiding principle 14: Containment

17. When eradication is not appropriate, limitation of spread (containment) is an appropriate strategy only where the range of the invasive species is limited and containment within defined boundaries is possible. Regular monitoring outside the control boundaries is essential, with quick action to eradicate any new outbreaks.

Guiding principle 15: Control

18. Control measures should focus on reducing the damage caused rather than on merely reducing the numbers of the alien invasive species. Effective control will often rely on a range of integrated techniques. Most control measures will need to be regularly applied, resulting in a

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recurrent operating budget and the need for a long-term commitment to achieve and maintain results. In some instances, biological control may give long-term suppression of an alien invasive species without recurrent costs, but should always be implemented in line with existing national regulations, international codes and principle 10 above.

SOURCE: FINAL REPORT OF INITIAL LEGISLATIVE REVIEW 2002 PAGE 95 -
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Legislative Approaches of the Six Pilot Countries pursuant to the legislative Review

The six countries (Brazil, China, India, Iran, South Africa and the Ukraine) in the Globallast Project have very different legal and administrative systems and histories. What follows is a brief description taken from the Final Report of the Legislative Review 2002. This comparison is significant as it underscores the importance of an integrated coastal management approach, regional integration and the need to have a possible two-step approach while preparation to give full effect to the BWM Convention is being contemplated.

Brazil's Legislative Approach

At the time of the 2002 Report Brazilian environmental laws reflected a modern ecosystem based approach that is focused on recognizing the relationship between economic activity and environmental concerns. Ballast water issues should not be circumscribed within such a specialised context as international shipping rules; instead, these discussions should be held within the broader realm of environmental rules. The more stringent rules ensuing from this approach, however, should not be seen as an obstacle to maritime transportation activities, but rather as an effective tool for sustainable development. Legislating on this issue is a very complex task because the Brazilian legal system provides for concurrent jurisdiction of the Federal government, States and Municipalities over environmental protection issues. It is recommended that a new Federal law and environmental rules be adopted to address the major environmental concerns and principles including the need for harmonization of Brazilian law on the issue. More specific rules to implement the law should be issued as a Decree by the executive. It is proposed that, stand alone, comprehensive legislation is adopted (see LLC draft) that addresses the full range of State responsibility under the Guidelines and the future Convention.

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China's Legislative Approach

At the time of the 2002 Report, there are already general principles in the law of China dealing with protection of the Marine Environment that provide the legal authority and responsibility for taking action to deal with ballast water management to protect marine biodiversity and prevent pollution of the marine environment. However, there is a need for specific regulations to implement these principles.

There should be a two-step process of legislative implementation, which necessarily entails allocation of administrative authority. The best way to implement the IMO voluntary Guidelines for ballast water management is to:

1. Adopt regulations at a State Council level and include an Article (now draft Article 33) in the amendments to the Regulations governing Prevention of Pollution from Ships, which implement Chapter 8 of the Law for Marine Environment Protection. This Article will be dedicated to ballast water management to provide general requirements under the law (as set out above under Observations) regarding: reporting and requirements for approval of discharge of ballast water onboard by ships; record keeping for ballast water operations; ships ballast water management; other measures, as appropriate, to minimize introduction of aquatic harmful organisms and pathogens.
2. Develop provisions at a Ministerial level to include the detailed and more specific requirements, which are recommended by IMO Guidelines. These would be specific Regulations, perhaps developed jointly by the MSA in the Ministry of Communications and the State Quarantine Administration. These regulations are already under development by both administrations and are likely to include the following: reporting procedures and reporting form, record making and record keeping onboard; measures taken by ships to minimize the introduction of aquatic harmful organisms and pathogens; ballast water management plan on board; control and inspection (including sampling); education and training. Regulations or amendments to respond to the other issues such as land based disposal of sediments, fishing vessels and designation of alternate discharge zones would be undertaken by the relevant administrations.

Under Chinese law any changes to STCW, the FAL Convention and other IMO conventions (such as the future International Convention on Ballast Water and Sediment Management, if a stand-alone Convention or as MARPOL, Annex VII) will automatically become part of the existing national law on these matters.

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China's Proposed Legislative Response: general law already exists under the Law of Marine Environment Protection. Regulations to deal with ballast water management should be promulgated at the State Council level with further implementing and detailed regulations issued at the Ministerial level and by administrations responsible for specific aspects (i.e., designation of alternate discharge zones, fishing vessels).

India's Legislative Approach

At the time of the 2002 Report the Merchant Shipping Act, 1958 of India is the most appropriate law to address flag and port State obligations on this issue. However, changes to national legislation take a long time. Therefore, it is recommended that changes to the Merchant Shipping Act, 1958 take the form of implementation of an International Convention on ballast water and sediment management, once it comes into force for India.

However the IMO Guidelines as they relate to reporting and ballast water discharge and concerns regarding pathogens could be implemented by amendments and regulations under the Indian Ports Act, 1908. The proposed amendments would also cover the ships engaged in coasting trade, an issue that is not addressed in the draft Convention or the proposed amendment to the Merchant Shipping Act. Since India has an extensive coastline that is rich in biodiversity it needs to address this issue.

The Ballast water reporting form prescribed in the IMO Guidelines should be included as one of the mandatory forms handed over by the Master to the Pilot or Boarding Officer or the other officer of the Port, before free pratique is granted by the port authorities. It is desirable that appropriate amendments are made in the Indian Port Health Rules, 1955, to that effect and to ensure that free pratique is not granted to the vessel if the Master of the vessel fails to comply with this requirement.

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Iran's Legislative Approach

At the time of the 2002 Report the best way to implement the IMO Guidelines and to minimize the transfer of harmful aquatic organisms and pathogens is, first, a uniform regional legal response all countries bordering the Persian Gulf and Oman Sea, through an agreement which could be an additional protocol to the existing Kuwait Convention. A similar agreement may be reached in the Caspian Sea.

Secondly, national regulations should be adopted by amendment to existing national legislation. The most practical and immediate approach to implementing the IMO Guidelines is to amend the Act of Protection of the Sea and Internal Water Bodies Against Oil and Oil Products Pollution (1975) administered by the PSO, to include the IMO Guidelines. This Act presently reflects the many of the mandatory regulations of MARPOL and, with some modification and additions, can include the ballast water management regulations and the future International Convention, when it is in force Ballast water reporting forms are already being collected in connection with the GloBallast demonstration site, Khark Island Port. This procedure should also be followed in the Caspian Sea.

South Africa's Legislative Approach

At the time of the 2002 Report At the time of the 2002 Report, questions relating to legal characterization of the problem of the transfer of harmful organisms in ships' ballast water are key in determining the nature of the regulatory regime. This is particularly the case with respect to the issue of ballast water discharge and whether water quality standards would apply. There are a number of legislative options possible, however, for practical purposes; ballast water release should be treated as a pollution matter and ballast water management and on board operations as shipping/ship source pollution prevention matter. In light of the current priorities of the South African legislature, the most pragmatic option for rapid implementation of the IMO Guidelines, taking into account the likely direction of the proposed International Convention, is to develop regulations on ballast water management under an existing Act rather than to enact new dedicated legislation. The Regulations would need to reflect an integrated management approach.

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Ukraine's Legislative Approach

The IMO Guidelines are based on the requirements in the marine environmental protection Conventions to which the Ukraine is party (UNCLOS, the Convention on Biological Diversity, MARPOL 73/78). Accordingly they are, in principle, acceptable for implementation in the Ukraine's legal system.

At the time of the 2002 Report, the Ukraine's approach to legal regulation of environmental issues has a complex (integrated) nature: not only does the regulatory process cover current problems, but it also includes laws aimed at preventive and long-term effect (preventive measures to be taken by sanitary and epidemic services, quarantine measures, health care, systematic monitoring, supervision, collection and dissemination of information, etc.). The IMO Guidelines reflect a similar precautionary and preventative approach. It is of crucial importance, therefore, that the activities undertaken to harmonize the current legislation with the requirements in the Guidelines should embrace all of these domains of environmental, health, shipping and safety regulation.

The complexity and length of time required to develop a new domestic legal instrument that has the status of a law suggests that the best approach is to amend provisions in the existing legislation relevant to Guidelines, even though a considerable amount of work is yet to be done to bring them into compliance with standards and rules set by the Guidelines. When a Convention is adopted and ratified by the Ukraine it will easily become part of the law of the Ukraine and any consequential amendments or legislation can be adopted accordingly.

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Other Domestic Regulatory Approaches**

The Final Report of the Legislative Review 2002 recorded observations of the consultants in four desk studies of how Ballast Water was managed. The countries included Australia, Canada, the United States of America and New Zealand. A summary of how these four developed countries treat with Ballast Water would be instructive when developing new legislation or amending old legislation in order to solve the problem of invasive alien species. This process was done so as to understand specific and deliberate approaches to the threat of marine IAS and whether or not a voluntary, mandatory or combined approach has merit.

Australia

Australia was one of the first countries to seek international action this issue through the IMO. Australia, as an island continent, is heavily dependent on international waterborne transport for its international trade. It has a small flag fleet and relies on foreign shipping services for 95% of its trade. It has a fragile marine ecosystem with important coral reefs and rare species. Australia also has a marine capture fishery and a coastal aquaculture industry with a particular focus on shellfish. Concern about invasive species in ballast water and on ships hulls was triggered by its impact on the aquaculture industry and the human health risk posed by toxic organisms transported to Australia in ships' ballast water and entering the human food chain. Australia's Ballast Water Management

Strategy deals with ballast water/sediment and hull fouling.

Australia implemented Guidelines in 1990, which are said to be the model for the 1991 IMO Guidelines. In 1994 Australia adopted a coordinated national approach to this problem, including support for research into management techniques. In addition, a computer based decision support system (DSS) for targeting high risk vessels was designed to avoid unnecessary inspections.

Australia's Regulatory Characterization: pest control, quarantine.

Legislation: Quarantine Act 1908, Act. No.3 as amended to Act No. 137 of 2000. Quarantine Regulations 2000, No.129 as amended. The ballast water reporting requirements are not a single chapter or a separate regulation but are simply one aspect of quarantine inspection system.

Legislative objectives: avoid adverse economic, environmental and public health impacts of unwanted marine organisms by reducing the risk of introduction from international ships' ballast water without unduly impeding trade or compromising ship safety....

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Rationale for implementing mandatory domestic legislation: voluntary approach insufficient and unduly burdensome to low risk vessels, non-compliance with true and accurate reporting requirements, slow rate of progress in IMO to develop mandatory international ballast water arrangements.

Canada

At the time of the 2002 Report it was stated that Canada and Australia were the earliest countries to raise concerns about ballast water in connection with invasive species. In 1988 Canada presented a study report to IMO entitled 'The Presence and Implication of Foreign Organisms in Ship Ballast Water Discharged in the Great Lakes'. As was the case in Australia, Canadian concern was triggered by the significant economic impact of the introduction and spread of a non-native mussel species in the St Lawrence Seaway and Great Lakes. Parts of this water system are shared with the United States of America with the result that a cooperative approach was developed to deal effectively with the problem.

Finally, it should be noted that Canada has formally adopted and is in the process of implementing integrated ocean management in Canada. The Minister responsible for this activity is the Minister of Fisheries and Oceans.

Legislative objectives: protection of waters under Canadian jurisdiction from non-indigenous aquatic organisms and pathogens that can be harmful to existing ecosystems; minimize the probability of future introductions of harmful aquatic organisms and pathogens from ships. Ballast water while protecting the safety of ships. Other objectives include allowing for ecosystemic and trade activity differences in the various regions. Protection of the neighbouring country's ecosystem is also an objective.

Description of requirements

- The Canadian Guidelines require that every ship that carries ballast water should be provided with a ballast water management plan to provide safe and effective procedures for ballast water management. The ballast water management plan must be included in the ship's operational documentation. The Model Ballast Water Management Plan developed by the International Chamber of Shipping (ICS) and the International Association of Independent Tanker Owners (INTERTANKO) is suggested as an appropriate reference document when developing the plan.
- All vessels bound for Canadian ports are required to file a ballast water report form (IMO format) with the appropriate Marine Communication and Traffic

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- Services Centre (VTS) prior to entry into waters under Canadian jurisdiction. The VTS requires filing 24 hours prior to arrival (96 hours prior if over 500 gross tonnes). This does not appear to be cross referenced to the quarantine reporting system.

United States of America

At the time of the 2002 Report legislation regulating the intentional introduction of plant and animal species has been in place in the USA since the turn of the century.¹¹⁰ Concern about invasive aquatic species transfer in ships' ballast water developed in the USA at the same time as Canada when the zebra mussel invasion of the Canadian and US Great Lakes was discovered in 1986. In 1990 The Nonindigenous Aquatic Nuisance Prevention and Control Act (NANPCA) was adopted setting in place voluntary guidelines for ballast water management (modeled on the then IMO Guidelines) for ships entering the Great Lakes from outside the US EEZ. A Task Force was also created. These requirements became mandatory in 1993. Concern was increased when cholera bacteria were detected in ships ballast water in this period. In 1996 the National Invasive Species Act, 1996 (NIS), which established a ballast water management programme administered by the US Coast Guard was passed. This Act amended and modifies the Nonindigenous Aquatic Nuisance Prevention and Control Act, 1990. The NIS continued the Great Lakes requirements and extended the guidelines to vessels "with ballast tanks" (as opposed to vessels that carry ballast water) and directed the Coast Guard to develop voluntary guidelines on a national basis. A special programme was also set up under the NIS to create, in cooperation with other agencies and IMO, ballast water management programmes for all Department of Defense and Coast Guard vessels.

Legislative objectives: prevent unintentional introductions and spread of nonindigenous; coordinate federal research; develop and encourage environmentally sound methods to prevent, monitor and control introductions, minimize economic and ecological impacts, establish research and technology and assist state governments, international cooperation NAFTA partners and IMO.

Rationale for implementing mandatory domestic legislation: National levels - address serious concern about issue but also meet concerns about ship safety. Voluntary exchange preferred for safety reasons however it may be mandatory if there is a lack of compliance. Subnational legislation based on a concern about lack of compliance with national programme.

Application: mandatory management for Great Lakes and Hudson River destinations, for all vessels with ballast tanks. Mandatory reporting and voluntary exchange (safety allowance) all vessels with ballast tanks coming from outside 200nm. Some exemptions apply for the crude oil

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coasting trade and for passenger vessels with equipment no less effective than ballast water exchange.

New Zealand

At the time of the 2002 Report it was stated that New Zealand, like Australia, is an island nation that is heavily dependent on regional and international shipping for its economic survival. It also has a small Merchant Navy. Also like its neighbour and trading partner, Australia, New Zealand has a long history of ecological concern and concerns about loss of its biodiversity. In addition NZ policies and laws specifically seek to protect the interests of the Maori people of NZ. Invasive species can and have had a negative impact on the Maori's traditional foods. In 1989, concurrent with Australian concerns the Government created a Working Group to develop a strategy to minimise the risk of introduction of exotic species in ballast water. Given the close regional ties with Australia it is not surprising that the Australian approach to the issue has been influential, particularly in the characterization of the issue. In 1992 voluntary guidelines consistent with the IMO Guidelines were put in place, while the Government carried out research and developed its strategy and carried out public consultation.

The lead agency is the Ministry of Fisheries, however implementation is carried out by multiple agencies. The Ministry of Fisheries is responsible for implementing ballast water discharge policy. The Quarantine Service of the Ministry of Agriculture and Forestry (MAF) has within it a Biosecurity Authority and its quarantine services provides front-line services, including checking of ships' logs and interviewing ships' masters, under an agreement with the Ministry of Fisheries. The Maritime Safety Authority (MSA) a crown corporation, is responsible for ship safety. The Department of Conservation and Ministry for the Environment works with the Ministry of Fisheries to examine options for policy regarding hull de-fouling and cleaning, the disposal of hull scrapings to the marine environment, and possible protection for special marine areas.

Regulatory Classification: biosecurity- quarantine -pest control.

Legislation: Biosecurity Act, 1993; Import Health Standard for Ships. Ballast Water from All Countries, 1998.

Legislative objectives: prevention based measures adopting a risk assessment approach, consistent with IMO resolutions, risk minimization. Controls to be environmentally acceptable, practicable to implement and cost effective compared to alternatives. Impacts on trade are to be

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explicitly considered; avoid compromising ship and crew safety, regulatory controls to be enforced where there is risk from specific species.

Rationale for implementing mandatory domestic legislation: Establishment of invasive species in Tasmania posed a specific threat.

Application: all ships entering to NZ territorial seas and internal waters.

Administratively, a Maritime Administration appears to be the better area to deal with some aspects of the issue, for example, certification of crew and flag State responsibilities. However Maritime Administrations are not well placed to deal with issues relating to designating discharge zones, a process that should in principle require consultation with other States and other affected users/stakeholders (i.e. fishing) likely in countries where there is an EIA process.

- Regardless of how legislation is characterized, it appears reasonable that one reporting centre be identified for all documents required by the port.
- Most legislative models set in place some level of State control over discharges through reporting and requiring a ballast water management plan. The question of flag State responsibilities seems markedly less advanced, although there is no reason for countries to fail to implement this aspect of the Guidelines.
- In the Legislative Reviews there are differing views regarding the need to incorporate environment law standards and practices relating to permitting for discharges. This issue may be linked to larger questions regarding the interface between shipping/ ports and environmental practices for regulating domestic industries.