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AN APPRAISAL OF INTERNATIONAL MARITIME INSTITUTIONS IN THE PROTECTION OF MARINE ENVIRONMENT: INITIATIVES AND CHALLENGES

By

Abdulkadir Bolaji Abdulkadir (PhD)*

Abstract

The protection of marine environment is fundamental to human existence for obvious reasons. For instance, the marine environment is a source of food, a medium of transportation and a source of economic exploitation of such mineral resources as crude oil. This has therefore made the subject of marine protection, a national and international concern. The marine environment is a vast, diverse, dynamic, complex area with major environmental issues. There is continuing pressure on the marine environment from conflicting activities including aquaculture, agriculture, fisheries, urbanisation, industrial developments, shipping, conservation and tourism. Therefore, the international community has put in place some institutions to enhance maritime safety and protection. This is because the successfulness of maritime legislations rests on the institutional frameworks put in place to regulate activities likely to affect the marine environment. Without the aid of institutional frameworks, maritime legislations will be reduced to mere tissue papers. Thus, no amount or quantity of legislations can effectively protect the environment without the support of institutional frameworks. It is on this premise that this paper examines some international institutions involved in the protection of marine environment.

Introduction

Maritime waters cover over 70% percent of the planet's surface area and a vast majority of the total volume that is known to sustain life.¹ Human activities everywhere are depleting marine and coastal living resources and degrading ecosystems in sometimes irreversible ways, threatening the economic well-being and health of communities and states throughout the world.² The major threats to the health, productivity, and biodiversity of the marine environment result from human activities that take place on land, in coastal areas, and even further inland, but the marine environment is also under threat because the traditional uses of the sea have

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¹UNEP, Regional overview of land-based sources and activities affecting the coastal African region, (1999).

²Bortei-Doku, A. E. (2002). Socio-economic aspects of artisanal marine fisheries management in West Africa. In J. Mcglade, P. Cury, K. Koranteng, and N.J. Hardman-Mountford (eds), The Gulf of Guinea Large Marine Ecosystem--Environment Forcing and Sustainable Development of Marine Resources. Elsevier, 392.

intensified and diversified.³ The vast number and size of ships, often carrying hazardous products, heightens the risk of serious marine pollution.⁴ Fishing has been transformed into an industry which today impacts upon biological resources in the farthest and most inhospitable ocean reaches. With annual total catches of many stocks decreasing, it appears that the limits of sustainable exploitation of marine biological resources are close to being reached or in some instances being exceeded.⁵ Those fish that are caught are increasingly showing signs of contamination and damage from pollution, including concentrations of carcinogens, tumors, wounds, and malformations, which render them unsuitable for consumption and which threaten their ability to reproduce. Massive utilization of the sea as a dumping ground for waste can involve thousands of tons of matter dumped by a single ship in one voyage.⁶ It is on this premise that the international community put in place some notable institutions to see to the protection of marine environment and biodiversity. On this note, this paper is divided into seven major parts. This introduction which set the tone of the paper is the first part. The second part discusses the concept of maritime safety and protection in order to order scores the need for adequate measures to protect the marine environment. The third part looks into major causes of threat to the marine environment. The fourth and the fifth part examined institutions whose roles are sacrosanct in the protection of marine environment. The sixth part discusses some of the major constraints hindering the performance of the discussed institutions.

Maritime Safety and Protection

Depending on the context, 'maritime' may be defined as matters relating to ships or shipping or navigation or seamen in a nautical or marine sense or, bordering on or characteristic of those near the sea.⁷ By inference then, those who utilise the sea off the coasts are included in this definition.⁸

³ Abam T.K.S, "The 1998 Floods in The Niger Delta, the case of Kaiama" *Proceedings of the International Workshop on Natural and Man-made Hazards in Africa*, 119-130 (NMGS publication, 1995); Ajiboye Olanrewaju Emmanuel, Jawando Jubril Olayiwola and Adisa Waziri Babatunde, "Poverty, Oil Exploration And Niger Delta Crisis: The Response of The Youth" Vol. 3 (5) *African Journal of Political Science and International Relations*, 224-232 (2009)

⁴ UNEP/GPA (2005b). Handbook on the Development and Implementation of a National Programme of Action for the Protection of the Marine Environment from Land-based Activities. Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA)

⁵ Nils Petter Gleditsch, "Beyond Scarcity vs. Abundance: A Policy Research Agenda for Natural Resources and Conflict" in *Understanding Environment, Conflicts and Cooperation*, United Nations Environment Programme, 16-19 (UNEP, 2004)

⁶ Eva Ludi and Tobias Hagmann, "Pastoral Conflict Resolution in the Horn of Africa" in *Understanding Environment, Conflicts and Cooperation*, United Nations Environment Programme, 19-21 (UNEP, 2004).

⁷ World Bank (2007) World Development Indicators: Population Dynamics, Washington D. C, World Bank, 42. Available at http://siteresources.worldbank.org/DATASTATISTICS/Resources/table2_1.pdf [visited last April 12]

The term 'maritime safety' is defined as the freedom from or absence of those acts which could negatively impact on the natural integrity and resilience of any navigable waterway or undermine the safety of persons, infrastructure, cargo, vessels and other conveyances legitimately existing in, conducting lawful transactions on, or transiting through territorial and international waterways. In other words, maritime security incorporates unhindered oceanic trade, safe navigation, the safeguarding of coastal communities and their livelihoods, protecting the food chain and preserving the oceanic contribution to the health of the planet.⁹ Gilpin defines it simply as the 'prevention of unlawful acts in the maritime domain, whether they directly impact the country or region in question, or the perpetrators are in transit.'¹⁰ Thus, the maritime domain encompasses all areas and things of, on, under, relating to, adjacent to or bordering on a sea, ocean or other navigable waterway, including all maritime-related activities, infrastructure, people, cargo and vessels and other conveyances. Geologically, the maritime domain of a coastal state includes territorial waters, calculated as 12 nautical miles from the coast, the contiguous zone or coastal waters, measured as 24 nautical miles from the coast, the exclusive economic zone, which is 200 nautical miles from the coast, and last, the continental shelf, which can widen up to 350 nautical miles from the coast.¹¹

There are two major approaches to maritime safety. The first is the inherent approach, which has to do with the intrinsic integrity of all components that made up of the essential and indispensable features of the maritime zone, such as the immaculate quality of the waters and the quantity of fish and other marine resources.¹² Plausibly, the dilapidation of the intrinsic integrity of the marine

2013] *FAONewsroom*(2007) 'Aquaculture Only Way to Fill the Coming Fish Gap: Top Ministers Debate the Future of Fish Farming' *FAONewsroom*, Rome: FAO, Available at <http://www.fao.org/newsroom/en/news/2007/1000701/index.html> (accessed November 30, 2013).
World Bank (2007b) *World Development Report 2008: Agriculture for Development*, Washington: World Bank, p. 1. Available at <http://siteresources.worldbank.org/INTWDR2008/Resources/2795087-1192111580172/WDROver2008-ENG.pdf> (accessed December 1, 2013).

⁸ World Bank (2007b) *World Development Report 2008: Agriculture for Development*, Washington: World Bank, Available at <http://siteresources.worldbank.org/INTWDR2008/Resources/27950871192111580172/WDROver2008-ENG.pdf> (accessed December 1, 2013).

⁹ Michael Pugh, Towards a Maritime Regime?, in Michael Pugh (ed), *Maritime security and peacekeeping: a framework for United Nations operations*, 24 (New York: Manchester University Press, 1994)

¹⁰ Raymond Gilpin, Enhancing maritime security in the Gulf of Guinea, *Strategic Insights* 6(1) (2007), <http://www.ccc.nps.navy.mil/si/2007/Jan/gilpinJan07.asp> (accessed 12 July 2012).

¹¹ Frank C van Rooyen, Africa's maritime dimension: Unlocking and Securing the Potentials of its Seas - Interventions and Opportunities, *African Security Review* 16(2) (2007), 112.

¹² Worm, B., "Impacts Of Biodiversity Loss On Ocean Ecosystem Services" *Science* 314, 787-790 ; Thompson, R.C., Crowe, T.P., Hawkins, S.J. "Rocky Intertidal Communities: Past Environmental Changes, Present Status And Predictions For The Next 25 Years" 29(2) *Environmental Conservation*, 168-191 (2002) ;Hawkins, S.J., Corte-Real, H.B.S.M., Pannacciulli, F.G., Weber, L.C. & Bishop,

ecological unit by such activities as dumping/leakage of toxic waste and poaching amount to threats to the natural dimension of maritime security.¹³ The second approach is the extrinsic aspects of maritime security, which comprises of the safety of all 'foreign' objects existing in or making use of the maritime domain. This then relates to the safety of vessels, persons and infrastructure, which do not constitute part of the fundamental and vital features of the marine ecosystem but which are of importance to a state or entity which has the permissible and lawful right to make use of the maritime domain.¹⁴ Against this background, it becomes apparent to examine measures and initiatives put in place by maritime institutions to ensure the safety and protection of maritime environment.

Threat to Marine Environment

Maritime waters cover over seventy percent of the planet's surface area and a vast majority of the total volume that is known to sustain life.¹⁵ Despite the importance of the marine environment, human activities everywhere are depleting marine and coastal living resources and degrading ecosystems in sometimes irreversible ways.¹⁶ The oceans possess great natural capacity for self-purification, but there are limits to this process that are being reached and exceeded as the amount of harmful substances flowing directly or indirectly into the seas has increased along with growing world population and expanding industrialization.¹⁷ In fact, the major threats to the health, productivity, and biodiversity of the marine environment result from human activities that take place on land and in coastal areas.¹⁸ Marine environments are under threat from various factors. These factors are briefly discussed below:

i. Over Exploitation

Overexploitation or overfishing is the removal of marine living resources to levels that cannot sustain viable populations. Ultimately, overexploitation

J.D.D. "Thoughts On The Ecology And Evolution Of The Intertidal Biota Of The Azores And Other Atlantic Islands" 440 *Hydrobiologia*, 3-17, (2000)

¹³ Ibid.

¹⁴ Jennings, S. & Kaiser, M. "The Effects Of Fishing On Marine Ecosystems" *Adv. Mar. Biol.* 34: 201-352 (1998); Sydow, J.S. "Cruise Report Experiments On The Interaction Fishing Gear" *BEON Rapport* 8, 1-57 (1990); Pauly, D.; Christenen, V.; Dalsgaard, J.; Froese, R.; Torres, F. Jr. "Fishing Down Marine Food Webs" *Science* 279: 860-863, (1998); Shears NT, Babcock RC "Continuing Trophic Cascade Effects After 25 Years Of No-Take Marine Reserve Protection" *Marine Ecology Progress Series* 246: 1-16 (2003).

¹⁵ See the Resolution 51/189 of the UN General Assembly on Institutional Arrangements for the Implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities, reproduced in 27/2 E.P.L. 132 (1997).

¹⁶ Abdullahi, B. (2010) "70% of Illegal arms in West Africa are in Nigeria -NATFORCE boss," *Daily Trust*, 9 November.

¹⁷ Alessi, C. (2012), "Combating Maritime Piracy", *Council on Foreign Relations*, 13 March, <http://www.cfr.org/france/combating-maritime-piracy/p18376>

¹⁸ Anene, L. (2006) 'Gulf of Guinea: A Growing Strategic Profile', *Nigerian Army Quarterly Journal*, 2 (1):39-51.

can lead to resource depletion and put a number of threatened and endangered species at risk for extinction.¹⁹ A greater variety of species at a higher trophic level is exploited in the sea than on land: humans exploit over 400 species as food resources from the marine environment; whereas on land only tens of species are harvested for commercial use.²⁰

According to the United Nations Food and Agriculture Organization (FAO) over 25% of the entire world's fish stocks are either overexploited or depleted and 52% are fully exploited.²¹ Thus a total of almost 80% of the world's fisheries are fully to overexploited, depleted, or in a state of collapse. Though these estimates are considered rather conservative, recently, a study showed that 29% of fish and seafood species have collapsed (i.e. their catch has declined by 90%) and are projected to collapse within by 2048, and worldwide, about 90% of the stocks of large predatory fish stocks are already collapsed.²²

All fishing activities, if not conducted in a sustainable non-destructive manner, can lead to overexploitation of marine living resources.²³ Overexploitation of marine resources has major impacts on marine systems as a whole, but target species are generally the most impacted. Overfishing not only has direct effects on target populations but also results in indirect effects such as ghost fishing.²⁴ Ghost fishing

¹⁹ Worm, B., "Impacts Of Biodiversity Loss On Ocean Ecosystem Services" Science 314, 787-790 ; Thompson, R.C., Crowe, T.P., Hawkins, S.J. (2002) "Rocky Intertidal Communities: Past Environmental Changes, Present Status And Predictions For The Next 25 Years" Environmental Conservation 29(2): 168-191 ; Hawkins, S.J., Corte-Real, H.B.S.M., Pannacciulli, F.G., Weber, L.C. & Bishop, J.D.D. (2000) "Thoughts On The Ecology And Evolution Of The Intertidal Biota Of The Azores And Other Atlantic Islands" Hydrobiologia 440: 3-17.

²⁰ Jennings, S. & Kaiser, M. (1998) "The Effects of Fishing on Marine Ecosystems" *Adv. Mar. Biol.* 34: 201-352; Sydow, J.S. (1990) "Cruise Report Experiments on the Interaction Fishing Gear" BEON Rapport 8, 1-57.

²¹ Sala, E., Boudouresque, C.F., Harmelin-Vivien, M. (1998) "Fishing, Trophic Cascades, And The Structure Of Algal Assemblages: Evaluation Of An Old But Untested Paradigm" *Oikos* 82:425-439; Duggins, D.O. (1980) "Kelp Beds And Sea Otters: An Experimental Approach" *Ecology* 6:447-453

²² World Bank (2007) *World Development Indicators: Population Dynamics*, Washington D. C : World Bank, p. 42. Available at http://siteresources.worldbank.org/DATASTATISTICS/Resources/table2_1.pdf [Accessed last April 12 2013]; World Bank (2010) *World Development Indicators & Global Development Finance 2010*. See the section on Population total. Available at <http://search.worldbank.org/data?qterm=population&language=EN&format=html> (accessed 3 September 2013).

²³ Iudicello, S., Weber, M. and Wieland, R. (1999) *Fish Markets and Fishermen: The Economics of Overfishing*, London: Earthscan Publications Ltd., p. 8.

²⁴ See Walker, G. K. (2005) —Defining Terms in the 1982 Law of the Sea Convention IV: The Last Round of Definitions Proposed by the International Law Association (American Branch) Law of the Sea Committee, *California Western International Law Journal*, Vol. 36, No. 1, pp. 133-183, 178-179.

occurred from fishing nets that have been left or lost in the ocean by fishermen. These nets, often nearly invisible in the dim light, can be left tangled on a rocky reef or drifting in the open sea. They can entangle fish, dolphins, sea turtles, sharks, dugongs, crocodiles, seabirds, crabs, and other creatures, including the occasional human diver. Acting as designed, the nets restrict movement, causing starvation, laceration and infection, and in those that need to return to the surface to breathe suffocation.²⁵

ii. **Growth in Population**

The exponential growth in human population experienced in last decades has led to an overexploitation of marine living resources to meet growing demand for food. The rise in the world population from about 5.2 billion in 1990 to 6.6 billion people in 2007 puts additional demands on all marine natural resources.²⁶ The world demand for fish is estimated to reach 186 million tonnes in 2030, which is nearly 90 million tonnes more than the 1999 demand and unfortunately, the total world fish supply is more likely to be in the range of about 150 – 160 million tonnes.²⁷ The FAO envisages that by 2030 an extra 37 million tonnes of fish per year will be required to sustain present levels of fish utilization for an intensifying world population.²⁸ This disparity continues to rise on a day by day basis as the world population grows.²⁹ This is a clear indication of the need to protect the marine ecosystems in order to meet the continued increase in the world population.

iii. **Pollution**

Pollution is the introduction by man, directly or indirectly, of substances or energy into the marine environment resulting in deleterious effects of such nature as to endanger human health, harm to living resources and

²⁵Babcock, R.C., Kelly, S., Shears, N.T., Walker, J.W., Willis, T.J. (1999) "Changes In Community Structure In Temperate Marine Reserves" Marine Ecology Progress Series 189: 125-134 ; Ballantine, W.J. and Langlois, T.J. (2007) "Marine Reserves : The Need For Systems" Hydrobiologia 606, 35-44.

²⁶ World Bank (2007) World Development Indicators: Population Dynamics, Washington D. C , World Bank, p. 42. Available at http://siteresources.worldbank.org/DATASTATISTICS/Resources/table2_1.pdf [Accessed last April 12 2013]; World Bank (2010) *World Development Indicators & Global Development Finance 2010*. See the section on Population total. Available at <http://search.worldbank.org/data?qterm=population&language=EN&format=html> (accessed 3 September 2013).

²⁷ Ibid.

²⁸ Marine Biodiversity Wikki, "Environmental Risk Assessment of Marine Activities" retrieved from http://www.marbef.org/wiki/Environmental_risk_assessment_of_marine_activities [accessed on November 2013].

²⁹ See Walker, G. K. (2005) Defining Terms in the 1982 Law of the Sea Convention IV: The Last Round of Definitions Proposed by the International Law Association (American Branch) Law of the Sea Committee, *California Western International Law Journal*, Vol. 36, No. 1, pp. 133-183, 178-179.

ecosystems, hinder marine activities including fishing and impair or interfere with amenities or other legitimate uses of the environment. Coastal and estuarine ecosystems have been, and still are, heavily influenced by the human species through pollution and habitat loss throughout the world. This coastal pollution and its impacts have resulted in a number of environmental issues including the enrichment of enclosed waters with organic matter leading to eutrophication, pollution by chemicals such as oil, and sedimentation due to land-based activities or sea level rise due to the global change.³⁰ Over 80% of all marine pollution originates from land-based sources which are primarily industrial, agricultural and urban. Pollution accompanies most kinds of human activities, including offshore oil and gas production and marine oil transportation.³¹ Point and non-point source pollutions continue globally, resulting in the steady degradation of coastal and marine ecosystems.³²

The ability to remotely detect and monitor oil spills at sea is becoming increasingly important due to the constant threat posed to marine wildlife and the economy.³³ As the demand for oil based products increases, shipping routes will consequently become much busier and the likelihood of slicks occurring will also increase. If applied correctly, remote sensing can act as a beneficial monitoring tool. It can allow for early detection of slicks, provide size estimates, and help predict the movement of the slick and possibly the nature of the oil.³⁴ This information will be valuable in aiding clean-up operations, and will not only help save wildlife and

³⁰ Marine Biodiversity Wikki, "Environmental Risk Assessment of Marine Activities" retrieved from http://www.marbef.org/wikki/Environmental_risk_assessment_of_marine_activities (accessed on November 2013).

³¹ *Ibid.*

³² Robbe N. and T. Hengstermann (2006) "Remote Sensing Of Marine Oil Spills From Airborne Platforms Using Multi-Sensor Systems" WIT Transactions on Ecology and the Environment, Vol. 95, 347.

³³ Winegrad, G. W. (2003) —Sudden Death on the High Seas: Seabird Mortality in Longline Fisheries, *ALI-ABA Course of Study Materials No. SJ011*, pp. 1-8, at p. 1.

³⁴ Bache, S. J. (2002) Turtles, Tuna and Treaties: Strengthening the Links between International Fisheries Management and Marine Species Conservation, *Journal of Wildlife Law and Policy*, Vol. 5, No. 3, pp. 49-64 at p. 49. From 1992 to 2001, fishers discarded an average of 7 million tonnes of fish. See generally Kelleher, K. (2005) Discard in the World's Marine Fisheries: An Update, *FAO Technical Papers No. 470*, Rome: FAO, p. 17; Agardy, T. (2005), An Environmentalist's Perspective on Responsible Fisheries: the Need for Holistic Approaches, in Sinclair M. and Valdimarsson, G. (eds.) *Responsible Fisheries in the Marine Ecosystem*, Chuan, FAO & CABI Publishing, pp. 65-85 at p. 74; Freire, J and Garcia-Allut, A (2000) —Socioeconomic and Biological Causes of Management Failures in European Artisan Fisheries: the Case of Galicia (NW Spain), *Marine Policy*, Vol. 24, Issue 5, pp. 373-384 at p. 376. Bailey and Steele identify management failure as the crucial factor that led to the collapse of North Sea herring. See Bailey R. S. and Steele J. H., (1992) North Sea Herring Fluctuations, in: Gnanamichael H. (ed.) *Climate Variability, Climate Change and Fisheries*, Cambridge: Cambridge University Press, pp. 213-230 at pp 221- 222.

maintain the balance of the local ecosystem, but will also provide damage assessment and help to identify the polluters.

International Maritime Institutions

A. International Maritime Organisation (Imo)

In 1948 states meeting at an international conference in Geneva agreed to establish an institution for the regulation of international commercial navigation. The founding treaty entered into force in 1958 and the new organization, originally called the International Maritime Consultative Organization, met for the first time the following year. IMO's first important responsibility was safety at sea and it adopted a number of legal instruments on this topic, most importantly, the 1960 International Convention for the Safety of Life at Sea (SOLAS).³⁵ By the late 1960s, however, the increasing amount of oil being transported by sea in ever-larger oil tankers became a particular concern, especially after a number of major tanker accidents. IMO has introduced a series of measures designed to prevent accidents and to minimize marine pollution due to oil. It also has tackled the environmental threats caused by routine operations such as the cleaning of oil cargo tanks and the disposal of engine room wastes a bigger menace than accidents in terms of tonnage. Measures introduced by IMO are concerned with the safety of containers, bulk cargoes, liquefied gas tankers and other ship types. Special attention has been paid to ship crews, including the adoption of a convention on standards of training, certification and watch-keeping.

IMO's mandate includes establishing a system to ensure redress for those who suffer financially as a result of pollution. It adopted treaties in 1969 and 1971 to enable victims of oil pollution to obtain compensation simply and quickly, later followed by conventions on liability and compensation for other shipping hazards. The IMO has benefitted from technological advances that allowed major improvements to the maritime distress system. In the 1970s it initiated a global search and rescue system and began use of the International Mobile Satellite Organization (INMARSAT) which greatly improved radio and other ship communications. In 1992 the Global

³⁵ June 17, 1960, replaced 1 Nov. 1974. The first version of the SOLAS Convention was adopted in 1914, in response to the Titanic disaster, the second in 1929, the third in 1948 and the fourth in 1960. The 1960 Convention was the first major task for IMO after the Organization's creation and was adopted to modernize regulations and keep pace with technical developments in the shipping industry. The IMO intended to adopt periodic amendments to maintain the Convention, but in practice the amendments procedure proved to be very slow. As a result, a completely new Convention was adopted in 1974 which included not only the amendments agreed up until that date but a new amendment procedure - the tacit acceptance procedure - designed to ensure that changes could be made within a specified (and acceptably short) period of time.

Maritime Distress and Safety System became operative.³⁶ With it, a ship in distress anywhere in the world can be guaranteed assistance even if its crew does not have time to radio for help, because the distress signal is transmitted automatically.³⁷ The adoption of maritime legislation is still IMO's most visible responsibility.³⁸

The Organization has sponsored approximately forty conventions and protocols, most of which have been amended on several occasions to ensure that they keep up with changes in world shipping. The most important treaties for environmental protection are the 1954 Convention for the Prevention of Pollution of the Sea by Oil (OILPOL); the 1972 Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter; the 1993/78 Convention for the Prevention of Pollution by Ships (MARPOL); the 1969 Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties; the 1990 Convention on Oil Pollution Preparedness, Responses and Co-operation; the 1969 Convention on Civil Liability for Oil Pollution Damages; the 1971 Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage; the 1971 Convention relating to Civil Liability in the Field of Maritime Carriage of Nuclear Materials (Nuclear); the 1976 Convention on Limitation of Liability for Maritime Claims; the 1996 Convention on Liability and Compensation for Damage in connection with the Carriage of Hazardous and Noxious Substances by Sea. IMO has created a Marine Environment Protection Committee that discusses the on-going issues of revising MARPOL annexes and other environmental problems such as harmful aquatic organisms in ballast water. The question of IMO's constitutional competence has arisen with the adoption of the Global Program of Action for the Protection of the Marine Environment from Land- Based Activities (GPA). UN General Assembly Resolution 51/189, on Institutional Arrangements for the Implementation of the GPA, adopted in December 1996, called upon the IMO to develop a clearing-house mechanism for oils and litter in the marine environment that originate from land-based sources. The IMO Assembly responded that the IMO had a mandate to prevent marine pollution from sea-based sources only and that the subject matter of the request lay outside its constitutional responsibilities. When no voluntary resources were provided by member states, the Assembly concluded that the IMO should not undertake the work.

To become a member of the IMO, a state ratifies a multilateral treaty known as the Convention on the International Maritime Organization. As of 2013, there are 170 member states of the IMO, which includes 169 of the UN members and the Cook Islands. The first state to ratify the convention was the United Kingdom in 1949. The most recent member to join was Palau, which became an IMO member in 2011.

³⁶McGlade, J. M., et al (2002) *The Gulf of Guinea Large Marine Ecosystem: Environmental Forcing & Sustainable Development of Marine Resources*, Amsterdam: Elsevier, p. xxii.

³⁷ Ibid.

³⁸ Ibid.

IMO is the source of approximately 60 legal instruments that guide the regulatory development of its member states to improve safety at sea, facilitate trade among seafaring states and protect the maritime environment. The most well-known is the International Convention for the Safety of Life at Sea (SOLAS), as well as International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC). Others include the International Oil Pollution Compensation Funds. It also functions as a depository of yet to be ratified treaties, such as the International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea, 1996 (HNS Convention) and Nairobi International Convention of Removal of Wrecks (2007).

IMO regularly enacts regulations, which are broadly enforced by national and local maritime authorities in member countries, such as the International Regulations for Preventing Collisions at Sea (COLREG). The IMO has also enacted a Port State Control (PSC) authority, allowing domestic maritime authorities such as coast guards to inspect foreign-flag ships calling at ports of the many port states. Memoranda of Understanding (protocols) were signed by some countries unifying Port State Control procedures among the signatories.

Maritime security initiatives taken by the IMO following the 9/11 attacks include those which seek to increase transparency in the identity of vessel owners and charterers, and of cargo shippers and consignees. The International Ship and Port Facility Security Code (ISPS Code), promulgated under the auspices of the IMO in 2002 and entering into force in 2004, established a mandatory international framework to detect security threats to port facilities and vessels employed in international trade and to take preventive measures against them. The ISPS Code provides a methodology for security assessments and procedures for the early and efficient collection and exchange of security related information. The Code requires port facilities and vessels to submit security plans for government approval and to appoint trained security officers.

IMO has successfully provided maritime assistance to developing countries in all its fields of competence. The following are examples of some of the achievements of IMO's technical co-operation programme:

- Preparation of model maritime legislation that countries can adapt to their circumstances;
- Establishment and upgrading of national maritime administrations;
- Establishment and upgrading of national, regional and global maritime training institutions;
- Support for regional networks of maritime authorities;
- Development of regional port State control mechanisms;
- Establishment of regional coordinator offices in Côte d'Ivoire, Ghana, Kenya and the Philippines, and the position of a regional maritime adviser for the Caribbean in Trinidad and Tobago;

- Development of national and regional contingency plans and related training courses for marine pollution preparedness and response in partnership with Governments and the industry at national, regional and international level;
- Establishment of and support to networks or associations for women employed in maritime sector;
- Promotion of regional strategies for maritime safety, marine environment protection, modernization of maritime legislation, and facilitation of international maritime traffic;
- Assistance in the development of global search and rescue plans and training of personnel to operate them;
- Development of demonstration sites for multidisciplinary activities relating to the protection of the marine environment;
- Provision of fellowships for specialized "on the job" maritime training and for studies at the IMO's global maritime training institutions;
- Development of a programme of training model courses to assist with the implementation of the International Convention on Standards of Training, Certification and Watch keeping for Seafarers, 1978;
- Establishment of 5 Regional Maritime Rescue Coordination Centers (MRCCs) in Africa;
- Adoption of a Code of Conduct concerning the Repression of Piracy and Armed Robbery against Ships in the Western Indian Ocean and the Gulf of Aden;
- Development of and strengthening partnership arrangements for technical co-operation;
- Addressing the goals of the Millennium Development Goals (MDGs) by establishing a linkage between the Integrated Technical Co-operation Programme and the MDGs;
- Provision of human and institutional capacity-building to assist developing countries with the compliance of international regulations for the reduction of greenhouse gases from ships;
- Development of regional and national ballast water management strategies; and development of safety regulations for non-Convention vessels.

B. World Custom Organization

The WCO was established in 1952 as the Customs Co-operation Council. Sometimes called the global customs community, the WCO is an independent inter-governmental body headquartered in Brussels, whose mission is to enhance the effectiveness and efficiency of customs administrations by promoting an honest, transparent, and predictable customs environment.³⁹ With 171 member governments, it describes itself as the only inter-governmental worldwide organization competent in customs matters.

³⁹See World Customs Organization, available at <http://www.wcoomd.org/ic/index.html>.

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Among its institutional competencies, the WCO lists development of global customs standards, simplification and harmonization of customs procedures, security and facilitation of the trade supply chain, and trade facilitation and sustainable customs capacity building initiatives.

The WCO's Revised Kyoto Convention on Simplified Customs Procedures was adopted in 1999 and entered into force in 2006. While it is not a supply chain security measure, the Revised Kyoto Convention does establish a modern set of uniform procedures for simple, effective, and predictable customs procedures that facilitate effective customs control.⁴⁰ Through its international standards and best practices, the revised convention seeks to promote customs modernization, transparency, accelerated procedures, and harmonization. The convention calls for the use of appropriate risk management principles in targeting objects for inspection and the electronic submission of customs related documents.

At the 2006 Ministerial Conference on International Transport Security, the ministers formally invited the IMO and WCO to cooperate in the development of appropriate measures to enhance the security of the maritime transport of containers in the international supply chain. The two IOs hardly needed to be prompted to coordinate their actions. The 2002 SOLAS Conference delegates at the IMO (at which the ISPS Code was adopted), agreed that the SOLAS Convention should be amended, if and when appropriate, to give effect to relevant decisions taken by the WCO and endorsed by Contracting Governments to the Convention insofar as these related to the carriage of closed CTUs by sea.⁴¹ That same year, the WCO and IMO entered into a memorandum of understanding to facilitate cooperation in maritime transport matters, including cargo security initiatives.⁴² For its part, the IMO's Maritime Safety Committee had also begun to consider proposals for integrating into an international regime appropriate cargo security procedures based on or compatible with the standards of the WCO's SAFE Framework.⁴³

The WCO's SAFE Framework embraces four core principles: (1) a commitment to harmonize the advance electronic cargo information requirement on inbound,

⁴⁰ International Convention on the Simplification and Harmonization of Customs Procedures, May 18, 1972, 950 U.N.T.S. 269, 1974 UST. LEXIS 284, S. TREATY DOC. NO. 97-23 (1982) (entered into force Sept. 25, 1974).

⁴¹ Conference of Contracting Governments to the International Convention for the Safety of Life at Sea, 1974, London, Dec. 2-13, 2002, Conference resolution 9 (Enhancement of security in co-operation with the World Customs Organization), operative paragraph 3.

⁴² IMO-WCO, Memorandum of Understanding (July 2002) (calling for Cooperation on Issues of Mutual Interest in the Maritime Transport Sector, Including Container Examination and Examination and Integrity of Multimodal Transport and Matters Relating to Ship/Port Interface).

⁴³ See Enhancement of security in cooperation with the WCO, IMO Doc. MSC/81/5/4, Feb. 6, 2006. See also Measures to Enhance Maritime Security, Report of the Working Group in Maritime Security (Part I), MSC 81/WP.5 of May 17, 2006.

outbound and transit shipments, (2) the application of a consistent risk management approach to address security threats, (3) a preference for the use of non-intrusive detection equipment to effect customs examinations of high-risk containers and cargo, and (4) the provision of benefits to businesses that meet minimum supply chain security standards and best practices.⁴⁴ The SAFE Framework rests of two pillars: a customs-to-customs pillar, which defines the cooperative relationship among customs authorities of the participating States, and a customs-to-business pillar, which seeks to establish a collaborative partnership with the private sector.⁴⁵ In addition, it includes a capacity building component.

The Framework, which will require considerable fleshing out by the States that adopt it, is to be implemented through a phased approach, determined in part by each participating member-State's capacity and legislative authority. Australia, Canada, China, Japan, Mexico, the United States, and the European Union agreed to the Framework almost immediately. By February 2007, 144 States had signed letters of intent indicating their intention to implement the SAFE Framework. Five States (Japan, Norway, Sweden, United States and United Kingdom) have made voluntary contributions to the WCO capacity building fund.

Other International Maritime Institutions

A. IMO International Maritime Law Institute

One of the essential requirements for operating a shipping or maritime programme is the ability to implement international conventions and instruments adopted by IMO and other relevant international organizations. For this purpose, States need to have appropriate legal infrastructure which incorporates the provisions of the respective conventions and instruments into national law and which has well-established procedures for applying and enforcing the requirements of the applicable law in all relevant situations.

The appropriate legal infrastructure in each State should consist of an up-to-date legislative regime, with a suitable machinery for the review, revision and modification of that legislation, to keep it in line with changes in international maritime law and the latest developments in marine technology and shipping practices. For this purpose the State, as well as the shipping industry, requires the services of well-trained legal personnel with specialization in maritime and shipping law. There is also need for persons with expertise and skills in the preparation and drafting of legislative instruments, including the preparation of primary legislation

⁴⁴See World Customs Organization, *Framework of Standards to Secure and Facilitate Global Trade*, done at Brussels, Belgium, June 23, 2005 [hereinafter SAFE Framework1 or Framework1] available at <http://www.wcoomd.org/ie/En/en.html>.

⁴⁵ *Ibid.*

(codes, statutes, etc.) as well as the necessary subsidiary legislation (regulations and rules) for implementing the principal instruments at State and industry levels.

Although many developing countries have reasonable numbers of legally trained persons, they do not always have the required numbers of persons with the necessary specialization or expertise in maritime law. To meet these needs, IMO has included, as a vital part of its technical co-operation programme, projects for the provision of technical advice and assistance in maritime law and legislation. Under this programme, advice and assistance have been provided on request to States on the planning and preparation for new or updated maritime legislation. Such advice and assistance have been provided by IMO's interregional advisers or, where appropriate, by short-term consultants or experts recruited in consultation with the Government concerned.

Interregional advisers prepare their recommendations after one or several short visits to the countries, whereas consultants and experts are recruited for relatively longer periods, usually of three to six months' duration.

While advisory services along these lines have been useful to many States, it is generally recognized that such assistance can only be of limited benefit and cannot provide an effective long-term answer to the needs of these countries. What each developing country needs is not only a good maritime law regime, but also a reasonable cadre of national legal personnel who are available to oversee, on a systematic basis, the implementation of existing law, to review and evaluate the provisions and arrangements for their implementation, to advise on the need for new or revised laws and regulations and, as necessary, to prepare suitable texts for consideration and adoption by the relevant legislative bodies. This is a crucial role, which must necessarily be discharged on a continuous basis if it is to be effectively discharged. It is therefore a need which cannot be met by occasional visits of advisers, or even by experts who can only stay for limited periods. Therefore, the IMO International Maritime Law Institute was established in 1988 through an international agreement between IMO and the Government of Malta.

The IMO International Maritime Law Institute was established under the auspices of the International Maritime Organization, a specialised agency of the United Nations.

The Institute is an international centre for the training of specialists in maritime law. It also contributes to the development and dissemination of knowledge and expertise in international maritime law, with special reference to the international regulations and procedures for safety and efficiency of shipping and the prevention of marine pollution.

B. World Maritime University

The World Maritime University (WMU) in Malmö, Sweden is a postgraduate maritime university founded by the International Maritime Organization (IMO), a specialized agency of the United Nations. Established by an IMO Assembly Resolution in 1983, the aim of WMU is to further enhance the objectives and goals of IMO and IMO member states around the world through education, research, and capacity building to ensure safe, secure, and efficient shipping on clean oceans. WMU is truly an organization by and for the international maritime community. The university was established thanks to the generosity of both the Government of Sweden and the City of Malmö, both of which provide significant annual financial support. Other donors and benefactors provided both operating funds and student fellowships, enabling the University's first class to be inaugurated on 4 July 1983.

The University operates on the basis of a Charter adopted by the IMO Assembly, and is accountable to the IMO Secretary-General, Council and Assembly, and to an international Board of Governors composed of representatives of some 50 different governmental, industry, labour and educational bodies. The University presents its annual report and budget to the IMO Council and also reports to the biennial session of the IMO Assembly. WMU receives the status, privileges and immunities of a UN institution in Sweden. The vision of WMU is to be the world's leading maritime university for postgraduate education and research. As a center of excellence for postgraduate maritime education, our mission is to serve the global maritime community through education, research and capacity building to ensure safe, secure and efficient shipping on clean oceans. WMU:

- ☐ Contributes to maritime capacity building and the development of effective policies for the global maritime community
- ☐ Helps build a sustainable world through maritime education and research
- ☐ Educates future global maritime leaders, experts and professionals
- ☐ Provides a forum for international collaboration on maritime transportation

Today, there are over 3,300 WMU graduates from 163 countries across the globe who are shaping the maritime sector of today and leading its development into the future. They hold senior positions top managers, ministers of transport, directors of shipping companies, heads of maritime academies as well as representing their home countries at international forums and organizations.

Today, World Maritime University is:

- an institution that provides its students with privileged access to and understanding of the operation and decisions of IMO
- an institution where over 100 international experts and professionals – both resident and visiting staff – from around the world provide high-level technical education and research

- an institution which gives its students direct and extensive access to the most modern technologies and methods in marine transportation and administration used in the industrial world
- an institution which carries out a wide range of research, with many projects involving partners from around the world
- an institution at the centre of the global network of maritime institutions, experts and practitioners

C. **International Institute of Marine Surveying**

The International Institute of Marine Surveying (IIMS) is an independent, non-political organization promoting the professionalism, recognition and training of marine surveyors worldwide.⁴⁶ The IIMS defines marine surveying as:⁴⁷

The service provided to maritime and transport organizations in general and the production of guidance reports for all other bodies connected with maritime operations or maritime trade.

The IIMS is a membership organisation and since 2004 has increased its membership worldwide to cover 98 countries. It is the largest organisation of its kind in the world, and seeks to represent its industry to government and non-governmental organisations such as the International Marine Organisation (IMO), Coastguards, insurance companies and ship owners.

The IIMS provides services to its members and Allied Organisations, the commercial shipping sector and the boating public. Services include:

- Comprehensive database of qualified surveyors to carry out
 - Commercial Surveying
 - Leisure craft surveying
- Professional training courses for marine surveyors
- Quarterly publication highlighting key marine surveying topics
- Conferences and symposiums around the globe: providing a platform for the marine surveying industry to meet, influence developments and network
- The Marine Surveyor's Register: a global register of qualified and accredited marine surveyors
- Technical Helpline to enable marine surveyors to resolve problems

⁴⁶ See more at: <http://www.iims.org.uk/about.asp#sthash.umzWjDxd.dpuf> accessed 26th February 2013.

⁴⁷ Ibid.

Commissioning marine surveying work is a crucial part of ensuring that vessel(s), whether commercial or private leisure, are seaworthy, comply with the relevant maritime standards and meet insurance and finance requirements.

Choosing the right surveyor can be fraught with difficulty. The IIMS makes identifying the right surveyor very easy. Through their global register, one can browse the profiles of hundreds of marine surveyors around the world and ensure that the surveyor chosen has the right qualifications and experience for your job.

Membership of the IIMS is open to professional marine surveyors. The benefits of membership include access to industry knowledge and peer networking alongside professional development opportunities and the global recognition of the IIMS as a standard bearer within marine surveying.

Challenges

One of the most notable challenges facing the marine security is the lack of enforcement power on the part of concerned institution. For instance, the IMO has no enforcement powers and there are no binding mechanism in place at the international level to force flag states to apply international standards to their ship. As a result, there are great differences in the way rules are implemented and enforced.

Despite the articulated international frameworks, the maritime transport of oil continues to represent a threat to the marine environment and maritime disasters continue to occur. The main problem is that certain flag states have so far been unwilling or simply unable to exercise effective control over their vessels and to fully implement and enforce their international obligations most of the time, indeed poor performance is the result of a lack of necessary expertise, experience and resources to comply with the highly technical standards set by the IMO or other institutions involved in maritime protection.

Also, the whole process of negotiating and renegotiating maritime conventions can be very slow. For instance, the 1989 Salvage Convention took eleven years to negotiate, the HNS Liability Convention took almost twenty, and ten years later it was still not in force. This long process of negotiating agreements or conventions is likely to affect the performance of maritime institutions such as IMO especially in matters of urgency.

Among the challenges, IMO inevitably finds it difficult to act against the opposition of flag of convenience states, many of which coordinate their positions in advance and are influential members of the IMO Council. This has been a significant factor in its inability to deliver stronger regulation and better compliance mechanism. Thus, IMO is open to the criticism that it too often serves the interest of the industry it is meant to regulate.

Other challenges are: financial constraints and lack of commitment on the part of members' state in the implementation of international maritime rules, standards and conventions. This continue to be a great challenge due to inadequate power of enforcement on the part of the institution such as the IMO.

Conclusion

IMO has effective and efficient mechanisms in place for the elaboration, development and adoption of international treaties, rules and regulations and their implementation through the tacit acceptance procedure adopted for amendments to most fundamental international conventions. During 2007, IMO has continued focusing its activities on the adoption and implementation of international rules and standards for the safety of navigation, prevention of the pollution of the marine environment and maritime security. Other international maritime institutions have ensured the implementation of IMO rules, conventions and standards. These institutions are not without their challenges. Notable among them are financial constraints and lack of commitment on the part of members' state in the implementation of international maritime rules, standards and conventions. Also, a number of factors such as the lack of required resources and skills in many developing countries influence the levels of global maritime safety, while others such as poor management, incompetent manning of vessels or physically substandard ships continue to threaten the safety of life at sea, the security of shipping and the marine environment. However, these challenges are surmountable if states are fully committed to the implementation of their international obligations and there is a political will on the part of states parties. The whole world has become a global village and in spite of our differences and ideologies, the safety of marine environment is of universal concern. Therefore, there is the need for mutual cooperation and understanding by states to further enhance safety and protection of maritime environment.