

Specific Recommendation For The Protection Of Sea Environment From Epidemic Pollutants

التوصيات الخاصة بحماية البيئة البحرية من الملوثات الناقلة للأوبئة

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ملخص:

يعتبر نقل المواد الخطرة والضارة من أهم مصادر التلوث البحري، فهو يشكل خطرا على سلامة البحارة والعاملين في هذا النشاط، ولعل حادثة توري كانيون التي وقعت سنة 1969. وما انجر عنها من انسكاب للنفط في البحر، وأكبر دليل على الحوادث البحرية التي باتت تهدد الحياة البحرية والصحة البشرية جمعا. وعلى إثر ذلك جاءت الجهود الدولية محاولة منع وانتقال المواد الضارة بحرا سواء السائبة منها أو المعبأة في عبوات.

جاءت اتفاقية ماريبول بعد مؤتمر لندن لسنة 1973 تحت إدارة المنظمة البحرية الدولية، كان الهدف منه هو تطوير القواعد الدولية الموجودة في مجال حماية البيئة البحرية من التلوث الذي تحدثه السفن، والذي نتج عنه وضع اتفاقية لندن لمنع التلوث من السفن، وبروتوكولها لسنة 1978 وملحقاتها التسعة، فهي من بين أهم وأشمل الاتفاقيات التي أبرمت لحماية البيئة البحرية من التلوث الذي تحدثه السفن بكافة صوره، فهي تهدف للتقليل إلى أدنى حد ممكن من التلوث غير العمدي بأية مواد ضارة والخطرة التي تسكب من السفن.

كلمات مفتاحية: التوصيات؛ التلوث البحري؛ المواد الخطرة والضارة؛ المنظمة البحرية الدولية؛ النقل البحري.

Abstract:

The transport of hazardous materials is considered one of the causes of sea pollution. It constitutes a threat to the safety of sailors. There is no doubt that the Tori Canyon incident which occurred in 1969 that led to oil spill in the sea is a strong evidence of marine accidents that threatened marine life and human health as

a whole. As a result, international efforts came to prevent the transfer of harmful substances by sea.

The Marpol Agreement came after the London Conference in 1973 under the management of the International Maritime Organization. The aim was to develop the existing international rules in the field of protection of the sea environment from pollution caused by ships, which led to the elaboration of the London Convention to prevent pollution from ships, its protocols of 1978 and its nine annexes. It is among the most important and comprehensive agreements concluded to protect the marine environment from pollution caused by ships in all its forms. It aims to minimize unintentional pollution with any harmful substances that spill from ships.

Keywords: *recommendations; Marine pollution; hazardous materials; International maritime organization; sea transport.*

Introduction:

Sea pollution has become a universal can of worms. It has occupied many countries due to its risks and serious problems. This led to hold scientific conferences and seminars to discuss problems related to marine pollution in order to find out solutions, and take part in international agreements and cooperate with United Nations maritime organizations in order to protect the marine environment from sea pollution and take preventive measures to secure that environment from the dangers of this phenomenon.

Sea pollution does not concern a particular country or region, because the danger of this type has become universal due to the possibility of expanding the area of marine pollution and spreading its effects to the regions of several countries. Accordingly, borders cannot stop it. This has made this phenomenon one of the biggest challenges facing the international community at the present time which calls for decisions taking to combat it to ensure the survival of humanity.

Pollution of the seas is increasing lavishly, and it differs from one place to another. Thus, the rate of pollution differs owing to the source that causes it. This phenomenon also rises as ships increase because shipping is regarded one of the main tasks, to deliver more than 80% of world trade and passenger transport. Marine pollution has been a subject of international and national concern through making international agreements, the activation of the activity of international organizations in the field of environmental protection, and the work of states to issue laws and regulations to confront the problem of marine pollution throughout many conventions and treaties.¹

The international maritime organization, thus, focused under the convention of 1948, initially on safety and maritime navigation, and in the 1960s, the world became more familiar with ocean and sea oil spills through accidents, or poor operating practices, and because of major oil pollution events,² including the Tori

Kenyon disaster, the International Maritime Organization (IMO) began implementing a marine pollution prevention programme. One of the main outcomes was the ratification of the International Convention on the Prevention of Ship Pollution in 1973 and the Protocol of 1978.³

The Convention dealt with nine annexes, in addition to pollution from ship in Annex I and harmful liquids such as chemicals shipped in large quantities and harmful substances considered to be hazardous goods, which threaten marine and human life.

The International Chamber of Shipping and the International Transport Workers' Union (ITF) have also stressed the continuity of maritime trade and allowed commercial vessels to enter ports. The International Chamber of Maritime Affairs has issued several publications in response to the crisis, including a publication entitled Coronavirus (Covid-19). The International Federation of transport workers has extended a public invitation to take actions to protect workers, prioritize health and safety, provide income protection to all workers, and maintain the sustainability of supply and supply⁴ chains.

The Algerian legislator has treated marine pollution under Articles 117 to-149 of Order 76-80 relating to maritime law⁵, by offering the ship owner's liability for damages caused by the sea pollution, as well as Chapter III from section III of Law⁶No. 03-83 on protecting the marine environment from pollution, amended under Law03-10.⁷

In this development and the massive shipment of goods, both dangerous and harmful that would devastate the environment, life and human health, the following research question is posed as a springboard to dive in this research: what are the international and national legal effective warranties that may protect the environment from marine pollution? In order to answer this research question, two sections are addressed; the first one addresses the impact of hazardous and harmful substances on the marine environment, and the legal regulation to protect the marine environment from these harmful and hazardous substances while transporting them by sea.

THE FIRST TOPIC :Impact of hazardous substances on marine environment

Environmental pollutants related to marine shipping operations involve mainly, a range of processes that may cause accidental leakages of fuel and cargo as a result of accidents during trips or during the transport of materials at sea or ports. These leaks of hazardous materials and oil are associated with collisions of bulk cargo ships and impact at sea floor, fires, explosions and deficiencies in the structure of oil tankers and ships transporting harmful chemicals.⁸ There may also be deficiencies in transport equipment during loading and unloading on board, between ships and in land structures.

Sea pollution is also caused by the indiscriminate discharge of ballast water and sediments from the vessels themselves, resulting in the transfer of harmful aquatic organisms and pathogens, which harms public health and damages property and the environment. Therefore, guidelines have been adopted to prevent the introduction of unwanted water organisms and pathogens through ballast water and draining from ships.

It has been shown that many species of bacteria, plants and animals can survive in ballast water and sediments transported by ships even after several weeks of journeys, and subsequent processes of ballast water discharge or sedimentation in the waters of the port states may reinforce harmful aquatic and pathogenic organisms. The International Marine Organization is not the only organization to acknowledge the potential for the discharge of ballast water to cause harm. The World Health Organization also recognizes this and is concerned about the role of ballast water as a medium for the spread of epidemic⁹ diseases.

.First requirement: Transportation of dangerous goods and harmful substances

The increase of international demand for chemicals used in many industries has led to the rapid growth of the trade of chemicals transported by the sea. In 2010, the International Maritime Organization (IMO) made a list of more than 20 chemicals shipped by sea, which are more likely to be involved in accidents of hazardous and harmful substances.¹⁰

Chemicals are defined as all substances known to man. Not all chemicals transported by the sea are considered dangerous. Some of them have been called "harmful materials". The protocol defines harmful substances within the international agreement on readiness, response and cooperation in the field of oil pollution as: "any material except oil, is considered dangerous if it enters the marine environment, and it is likely to cause risks to human health and to harm living resources and marine life, and to destroy recreational facilities or interfere with other legitimate uses of the seas". It identifies the risks associated with a certain chemical by its natural properties, so that it may be flammable, explosive, toxic, corrosive, or reactive¹¹.

The International Convention on Liability and Compensation for Damage due to hazardous and harmful substances by sea of 1996 defined this latter as such if they were in one or more of International Marine Organization's lists of conventions and codes. The most important of which was Annex 1 of the International Convention that forbids ship pollution of 1973, amended by the 1978 Protocol, also called the Marbol 78/73¹² Convention for the Transport of Petroleum types in a loose form. Also chapter 17 of the International Convention for the construction and equipment of ships carrying shipments of hazardous chemicals, as well as Annex 2 of Marbol 78/73, including Chapter 19 of the International Code for the construction and equipment of vessels carrying gas shipments and section 9 of the International Code of Marine carrying solids, as well as the International Maritime Code of Hazardous

merchandise. The conventions and codes have been designed to ensure safe transport of all types of chemicals. In addition to various sorts of harmful materials, it also describes the norms of design and the construction of different ships taking part in transporting harmful materials. Thus, put lists of labeling, filling and storing chemicals¹³.

The sea accident may involve a ship carrying one or more hazardous materials, such as container ships, parcel carriers or rolling boats, additional complications due to the possibility of mixing different shipments with each other, in addition to its mixture with water in case of damage of the container, tanks or trailers. It may be difficult to determine the exact contents of the tank or carrier and to present the risks it poses in some cases. Dangerous goods and storage plans may not provide sufficient details to assess the severity of the accident properly.

Sometimes even small quantities of hazardous substances may pose a great risk. The accident may result in the spill of ship fuel, or other types of oil, including other complications to the response process. If the hazardous substance poses a threat to human health, the response to oil spilled by sea or on the coast may be weak or even¹⁴ impossible.

Hazardous materials are transported by many types of sea transport such as:

Bulk transporters carry iron ore, phosphate, coal, cement, grains, chemical tankers, parcels or products, gas tankers, containerships carrying shipments of packaged goods, general cargo boats, and rolling boats.¹⁵

second requirement: Classification of the nature of the risks for materials transported by sea

Under the Coordinated Global system of Chemical Classification and its Labelling issued by the United Nations, chemicals are classified according to the types of risks they represent and are expressed through posters and safety data sheet to ensure the availability of information regarding the physical and toxic risks from chemicals to protect human health and the environment during the circulation, transport and use of these substances. There are two groups of symbols within the Coordinating World System; one of which is intended to place posters on containers to report risks in the workplace, to protect onboard, or at the port level. The other relates to the use of hazardous¹⁶ materials.

The selection of one of these groups is made according to the audience. The risks can arise according to the initial pictorial symbols of the spill of the hazardous substances or from interactions between hazardous substances and chemicals, seawater or¹⁷ air.

Four categories of those marine pollutants have been classified from the most dangerous to the least dangerous for marine resources and human health Category X, and second Category Y, and the third category less dangerous on the marine environment and human health Z, while category OS is other substances that do not

cause harm to the marine environment in general and how to deal with. In what follows a clear explanation is given regarding how to combat dangerous materials:

Sea pollution is categorized according to its main source ; its types cannot be separated since they take parts in many causes resulting from a set of decaying substances, where pollutants penetrating the marine environment determine the type of pollution which may be attributed to pollutants of a chemical nature, and others of a physical or biological nature. There are some substances whose toxicity increases at sea over time, or as a result of their accumulation or their unification with others. It is common knowledge that the role of any toxic substance in the environment may lead to the complete collapse of the food chain where oxygen, carbon, sulfur and nitrogen, in their union with hydrogen, form the bodies of all living organisms, and that any imbalance in the proportions of these components or the entry of a new substance to them activates the work materials 'composition or make them toxic to marine organisms, as well as human¹⁸ consumers.

In the shipping sector, chemical risks appear. They are related to the operations of oil tankers, fuel and chemicals, especially during loading and unloading, as well as possible exposures to chemicals through inhalation or skin contact. There is also a potential risk of fire and explosion that require companies responsible for the operation of these types of shipping operations to prepare and implement specific training and procedures to prevent or reduce chemical exposures.¹⁹.

There are many kinds of hazardous substances that threaten the marine environment and human health, that are as follows:

a. Toxic substances: they are Substances that can cause death, or harm human health in case of being swallowed, inhaled or in case of contact with the skin.²⁰.

b. Infectious substances: they are substances that are expected to contain pathogenic organisms, which can be defined as microorganisms containing bacteria, viruses, recids, parasites and fungi, or agents such as prions, which can cause diseases of humans or animals.²¹

c. Biological products: these are products derived from living organisms. They are manufactured and distributed in accordance with requirements set by national government authorities and may require special licensing requirements as well. They are used for the prevention, treatment or diagnosis of diseases in humans or animals, or for development, experiments or related examinations. They include complete or incomplete products such as vaccines.²² Biological substances may cause diseases or injuries resulting from one-time or frequent acute exposure or chronic exposure.²³.

Biological pollution includes all the pollutants whose decomposition produces nitrogen and phosphorous. Most of these decomposing organic materials are chemical compounds whose primary structure is made of carbon atoms and are often linked to

hydrogen or oxygen or halogen atoms. These organic compounds are toxic when exposed to certain concentrations in the aqueous medium due to the speed of its decomposition in water, leaving volatile gases and others dissolving directly in water. This phenomenon arises more on valleys and rivers that transport enormous quantities of anaerobic fermentation to the sea environment, carrying with it many diseases due to bacterial and viral accumulations transformed in the aqueous medium. The medium becomes contaminated with almost record levels in the coastal environment and coasts where drainage channels for wastewater connected to the sea are untreated, or with torrential floods of all solid and other degrading substances on their way for everything in their path of solid and decomposing materials, such as animal bodies and rotting substances. The most dangerous of which are the waste of health institutions such as hospitals that carry many microbes. The effects of organic contamination are summarized in Bacterial infections that pose a major threat to individuals and marine resources therefore cause serious diseases as happened in the Italian city of Naples when forty people were infected with cholera after consuming seafood.²⁴

Hazardous substances may interact with each other therefore cause a threat to marine resources and health. Chemicals may also interact with their neighbouring substances, fuel, oil or air in various forms, including corrosion, degradation, oxidation, reduction or polymeric reaction. It is important to know the reactivity of the substance so as to allow treatment because these reactions may generate heat and inflammable or toxic gases, for example, iron can interact with some strong acids or bases to release hydrogen, which generates an explosive mixture of hydrogen and air. Thus, some chemicals can be polymerized by adding heat or water, and the polymerization is usually accompanied by volumetric expansion and heat emission (exothermic) and can cause damage to the container in which the substance is stored, and the product may also decompose into secondary products due to interactions with surrounding environment. Among the great risks that occur as a result of decomposition is the formation of gases such as carbon dioxide and hydrogen sulfur, which are toxic in themselves, and can lead to low levels of oxygen, which requires safe practices to bring them into ship depots and other enclosed spaces²⁵

The interaction of hazardous substances among themselves may appear in several forms, the most important of which are:

a. Flammability: it is the easy ignition of the substances either naturally or through the presence of an ignition source through contact with the air. The fire of hazardous substances can lead to heat emissions, solid particles and toxic gases.

b. Explosibility: it is a chemical or a mixture of chemicals, so that it becomes unstable in some environmental conditions, such as heat, friction or shocks, and release its stored energy.

c. Risk of oxidation: the risk of oxidation is presented through substances that are not combustible in themselves. However, by containing oxygen, it may cause or contribute to the combustion of other substances. Powerful oxidants, such as nitric acid, can react violently with organic matter.

d. Toxicity: toxic chemicals include substances that cause death to living organisms if inhaled, swallowed or absorbed through the skin at low levels.

e. Risk of corrosion: Corrosive chemicals can irreparably destroy or damage another surface or substance in case of contact. It includes living tissue, skin, eye and lungs).

f. Harmful irritant: The chemicals under this category may be harmful to health, while substances with irritant properties may cause inflammation of the skin and mucous membranes in living organisms (e.g. eyes, throat and/or lungs).²⁶

THE SECOND TOPIC : Legal regulation for the protection of marine environment from hazardous materials during transportation

Marbel Treaty 78/73 for sea pollution prohibition resulted from ships is regarded to be the most important international conventions and treaties. It includes nine annexes that define the types of pollution occurring in the marine environment. The second and third annex address the problem and how to deal with dangerous materials and polluting seas²⁷

Some countries, such as Germany, have made a number of international and national arrangements to reduce the spread of the epidemic imposed by the Coronavirus regarding the transport of dangerous goods by signing a multilateral agreement, so that the training certificates of drivers transporting dangerous cargo cannot be renewed or extended due to the cancellation of training procedures, and training certificates can continue to be used for a transitional period that expires between March 1 and November 30, 2020, and that two other agreements can permit the continuity of using tanks and vehicles for dangerous goods if the dates of periodic examination or medium examination have been exceeded. The parties have signed a multilateral agreement to ease the supply of gases for medical purposes, especially oxygen, which allows for some gases the possibility of refilling the pressure vessels after the expiry of the periodic examination. Once agreements are signed, they are applied immediately in local traffic and in traffic with signatory countries according to Article 5, paragraph 9 of the list hazardous materials transport through land, railway, inland water and sea (GGVSEB).²⁸

As for the Algerian legislator, sea pollution was regarded under article 52 of Law 03.10 related to environmental protection as follows:

According to the applicable legislative provisions relating to the protection of the sea environment, it is forbidden within the sea waters under the Algerian judiciary to pour, submerge or incinerate materials that would:

- Harm public health and marine environment systems.
- Obstruction of maritime activities including navigation, aquaculture and fishing.
- Corrupting the quality of sea water in terms of its use.
- Reducing the recreational and aesthetic value of the sea and coastal areas and compromising its tourism capabilities. The list of articles mentioned in this article is determined by regulation.²⁹

First requirement: Prevention of pollution with hazardous bulk materials

Prevention of sea pollution is presented through a set of recommendations related to preventing the spillage, storage and control of dangerous materials or oil from ships.

Conformity of the ship operating certificate with the applicable requirements, according to the ship's purpose and capacity.

Conformity with the International Certificate for the prevention of marine oil pollution with Regulation No. 5 of Annex No. 1 of the International Convention for the prevention of pollution from Ships; Marpol 73/78 applicable to oil tankers with a total weight of 150 tons and more , and any other ships with a tonnage of 400 tons or more and the International Certificate for Pollution Prevention resulting from carrying harmful liquid bulk materials, Regulation 11 and 12 of Annex 2 of the International Convention for the Prevention of Pollution from Ships Marpol 73/78.

Preparation and implementation of measures for preventing spills resulting from ship refueling at sea or ports, and conforming the conduct of activities to transport oil cargo from one ship to another (mitigation) with regulations and guidelines to reduce the risk of spills, so that ship operators can obtain minimum standards for safe operations to mitigate the middle of the sea³⁰. through ship-to-ship transport guide for the International Maritime Symposium of oil companies.

Shipments of hazardous substances may be transported by sea into two ways; the first method is bulk and is either liquid or solid, while the second is to ship those dangerous substances in packages.

The Egyptian legislator, under Article 60 of Law 1994/04, amended by Law 2009/09, clause N 24 of Article 1 of the Egyptian Law, has stipulated that bulk materials that cause harm marine environment are provided in the International Convention Marpol 73/78, which has forbidden tankers of harmful materials to throw or drain dangerous substances or residues in a voluntary, direct or indirect manner causing damage to the marine environment. As for Article 90, it stipulated penalty in case of violating of the article.

As regards to the Algerian legislator, he delimited the list of specific and dangerous wastes in executive decree number 06-104 in the statement of the seriousness of hazardous selected wastes selections specified in annex I of this decree, so that they are: explosive, highly flammable, irritant, harmful, carcinogenic, corrosive, infectious, toxic to reproduction, altered, dangerous to the³¹ environment. Explaining waste

The Algerian legislator prohibited, according to Article 52 of Law 10-03 03, any casting, immersion or incineration that leads to damage the marine resources and human health³². He also imposed taxes on polluting or dangerous activities on the environment according to the executive decree No. 09-336 taxes on activities.³³

In the text of Article 117 of the Maritime Law, the Algerian legislator has also subjected the owner of a ship to responsibility for all damage caused by pollution resulting from a leak and release fuel from his ship, in the text of Article 117 of the Maritime Law, the responsibility of the shipowner for every damage resulting from pollution resulting from the leakage and disposal of fuel from his ship.³⁴

Along the same line, the Algerian legislator has prohibited under Article 210 of the (Maritime Law) every pouring, submerging or burning of various materials in the sea, and any spillage of polluted materials should be accompanied by a prior license granted by the relevant authorities in accordance with the provision of Article 215 of the above law and every violation thereof is punishable according to Article 216 of the Maritime Law.³⁵

In its second annex regulations Marpol Convention 73/78 has prohibited liquid and bulk shipments that may cause environmental pollution if they are discharged and thrown at sea.³⁶ They are represented in following categories:

a. Class X: Harmful liquids that, if thrown into the sea after cleaning tanks or emptying ballast, endanger marine resources and human health, are at high risk. This is the reason for its prohibition³⁷.

b. Class Y: Harmful liquids that, if thrown into the sea after cleaning tanks or emptying ballast, endanger marine resources and human health, or damage recreational facilities or other legitimate uses of the sea. This is the reason to justify restrictions on the quality and quantity of discharge to the marine environment.³⁸

c. Class Z: It concerns harmful liquid substances that, if discharged into the sea after tank cleaning or emptying the ballast, expose marine resources and human health to a secondary risk, which justifies less stringent restrictions on the quality and amount of discharge to the marine environment³⁹. They represent a limited risk to marine resources and human health, which justifies the imposition of low restrictions on the type and amount of discharge into the marine environment⁴⁰.

d. Class OS: These materials are regarded outside the previous classes and do not cause any harm to marine resources or human health, recreational facilities or

other legitimate uses of the sea if discharged after cleaning tanks or emptying ballast, and the discharge of the ship's water, ballast, waste or mixtures containing only the materials of this class is not subject to any additional⁴¹ requirements.

second requirement: Legal provisions of protection against marine pollution caused by the transport of harmful substances by packaging

The International Maritime Code of Hazardous Goods has defined harmful packaged sea substances since 1991, as substances known as marine pollutants in the International maritime code of hazardous goods, a unified standard mark for marine pollutants is placed on all packages that contain marine pollutants to be distinguished from other goods.⁴²

The positive legislations have prohibited the transport of hazardous materials in shipping containers, mobile tanks, tank or vehicles to be disposed of by discharging them into the sea.⁴³

Shipping companies are therefore required to apply a system of appropriate inspection, acceptance and transportation of harmful coated substances. The additional requirements may include the host country's obligations under the Basel Convention, on the control of the⁴⁴ cross-border transport and disposal of hazardous waste, and the Rotterdam Convention regarding the prior consent procedure for certain hazardous chemicals and pesticides in international trade. Since these materials may be supplied by others, the inspection and acceptance process should conform to the applicable requirements for packaging and⁴⁵ labelling, and the placement of data cards on containers as mentioned above in addition to the necessary certificates and shipping data provided by the shipping company in accordance with regulation 2, 3 and 4 of Annex 3 of Marpol Agreement 73/78.⁴⁶

In the same context, Annex III of Marpol Convention 73/78 deals with the provisions to⁴⁷ combat pollution caused by transported coated harmful substances, which include in their regulations that any environmentally harmful substances must be clearly marked to be known as marine pollutants and labelled as marine pollutants to be distinguished from other less harmful shipments.

To prevent marine pollution, detailed standards have been issued regarding packaging, and labelling of shipped goods and characterization of their contents, as well as documentation, how to store on board the ship, quantity limits, exceptions, data and notifications required to prevent pollution caused by harmful substances. Prohibition of dangerous goods disposal transported by sea in packages by throwing them from ships at sea except in cases of extreme necessity and for the safety and security purposes of the ship and saving lives at sea.

To limit marine pollution, procedures have been developed to be able to do packaging and storage methods on the ship in order to help recover them using clear markers to distinguish them from other cargo that may be less harmful in case of an accident. Thus, wash the deposits on the ship and take appropriate measures based on

the physical, chemical and biological properties of the harmful substance, taking into account the safety of the ship and the crews as well.

The packaging should also be suitable for minimizing risks to the sea environment in view of the specific materials it contains. The packages should also carry a fixed label or card bearing the correct technical name. Additionally, these labels should indicate that these substances are marine pollutants. Thus the nature of the contaminated substance should be determined, and the method of writing the label should ensure that this information remains clear on the packaging that is resistant to immersion for at least three months at sea, and the durability of the materials used and the surface of the canisters must be taken into⁴⁸ account.

The shipper must also provide a signed certificate or recognition stating that the shipment offered for transportation has been filled and the cards have been adequately attached to it which may reduce its danger on the sea environment.

In the same regard, each ship transporting harmful materials must be provided with a special list or a special shipping statement explaining the harmful substances on board and their locations. Thus, a detailed arrangement and organization plan may be used that specifies the locations of those materials on the ship instead of the list or statement. The owner of the ship or his representative must also keep copies of these documents on land until the harmful materials are unloaded. Another copy of one of the documents mentioned before departure should be available to the inspection experts by the port authority. It is necessary to properly organize the harmful substances to minimize their risks on the marine environment taking into account the safety of the ship and the crew and cargo.⁴⁹

For scientific and technical reasons, it may be necessary to forbidden the transport of some harmful materials or reduce the quantity that may be transported on board. When this quantity is restricted, the size, construction and equipment of this ship must be properly taken into account, along with the quality of the canisters used and the distinct nature of the⁵⁰ materials.

Conclusion

To conclude, the risks of sea pollution are still continuing to cause serious damage and transmit epidemics. Despite all attempts by international efforts and national legislations, this phenomenon has expanded its effects on the marine environment and its resources, and also caused damage to human health.

Although the efforts provided by the conventions and treaties to put an end to pollution caused by ships in all its forms in the whole marine environment whose aim is to minimize unintentional pollution of any harmful substances spilled from ships, it has not been able to impose this protection for several considerations. It has become, then, necessary to provide efforts at the international level to put an end to the marine pollution by enacting very strict legal provisions to ensure the protection of the marine environment and its resources. At the same time, countries should review their

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ways regarding their major industrial companies in obtaining quick profits, including countries rushing through international trade, neglecting the use of modern technologies necessary to improve performance that goes on a par with health and environment first, in addition to the inability of small and medium enterprises to support high costs of protecting the environment. The sea has, then, become a cemetery for various wastes, whether human or industrial, while many types of pollution appeared in this environment and affect its balance. In conclusion, we say that there is a legal arsenal, and yet the situation has remained the same because there are only recommendations and the effects of environmental pollution in general and marine pollution in particular extend over time, if not, epidemics such as the Coved 19 virus would not have emerged.

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¹ United Nations Convention on the Law of the Sea signed in 1982 within Part 12 of them under Articles 192-237 which stipulates that states are obliged to protect and preserve the marine environment; a general obligation to all coastal and non-coastal states, and to cover all marine areas under the territorial jurisdiction of coastal states and not under them.

² The Tori Kenyon accident took place in March 18, 1967. The Liberian tanker had drifted near the English coast, leaking oil from its basins into the sea, creating a dense slick that, due to the movement of storms and winds, spread over a vast area. Faced with the threat of oil invasion of the UK coast, the English government decided to bomb the wreckage and burn the remainder of the oil shipment. However, the delayed implementation of this decision, due to England's reluctance to intervene in the High Sea, has never been resolved, without causing serious damage to the English coast first and then to the French thereafter. For more details see: Mohammed Al-Sayed Al-Fiqi, Liability and Compensation for The Damage of Marine Pollution by Hydrocarbons. 1st Ed) Al-Halabi Human Rights Publications, Beirut 2002, p. 8

³ Algeria joined it in 1963 under Decree No. 63 – 344 Dated September 11, 1963, after its version was amended in 1962, As well as the second version of 1969, for more see Samia Makhoulf, State Ship Control, Master of Law, Law of Maritime and Coastal Activities, Mouloud Mamari University, Faculty of Law and Political Science, Tizi Ouzou, 2015, p. 58.

⁴ Covid-19 Crisis, Shipping and Fishing, International Labour Organization Summary, April 17, 2020, p. 3. <https://www.ilo.org> (viewed in : 11/06/2020).

⁵ Law No. 10-04 dated On August 15, 2010 amending and supplementing Decree No. 76-80 of October 23, 1976, which includes Maritime Law, CR No. 46 of August 18, 2010

⁶ Law No. 03-83 dated on February 05, 1983, relating to environmental protection, J.R. No. 06, 1983.

⁷ Law No. 03-10 of July 19, 2003, relating to environmental protection within the framework of sustainable development, J.R. No. 43, dated on July 20, 2003.

⁸ Environmental, Health and Safety Guidelines for Shipping: These are technical reference documents on environment and health and safety that include general examples of good international industries and practices in the industry sector GIIP. They are skills practices, diligence and foresight reasonably expected from professionals with skills and practical experience in the same type of work so that the set of pollution prevention and control methods available to a project is evaluated, and when one or more of the World Bank Group member institutions takes part in a project, these guidelines should be applied. on April 30, 2007 p. 2 <https://www.ifc.org> (viewed on: 11/06/2020).

⁹ Guidelines for Ballast Water Control and Management to Reduce Transport of Harmful Aquatic Organisms and Pathogens. International Maritime Organization, Assembly Session 20, Agenda Item 11, p. 3. <https://www.iwlearn.net> (viewed on: 12/06/2020)

¹⁰ Marine Chemical Accident Response, Technical Information Sheet No. 17. It is a paper issued by the Limited Union of Tanker Owners on Pollution. It is not a profit organization and is established on behalf of the world's ship owners and insurance companies that they work with to

promote an effective response to marine spills from oil and chemicals and other hazardous materials. It includes technical services to respond to emergencies, provide advice on cleaning methods, assess damage to pollution, and assist in planning for spill response, and provide training. The International Union of Tanker Owners on Pollution is a comprehensive source of information about sea oil pollution. This paper is one of a series that is adopted on the experience of the technical staff of the Union, ITOF “<https://www.itopf.org>” (viewed on: 12/06/2020).

¹¹ This goes on a par with the conventional definition which says that marine pollution is: "The introduction of any human-induced substances or energy into that environment directly or indirectly, resulting in a harmful effect on aquatic life, threatening human health or hindering marine activities, including fishing, spoiling the viability of water for use and preserving its advantages." For more details see: Mohammed Mansouri, Legal Mechanisms for the Protection of the Marine Environment between Public International Law and Internal Legislation. Journal of Legal and Political Sciences, No. 06, University of Batna 1, 2019, p. 830

¹² London Convention of 73. It is regarded as the most important convention that stipulated the pollution caused by ships in all its forms and parts of the marine environment. It aims at minimizing unintentional contamination of any harmful substances spilled from ships. www.eeaa.gov.eg (11/06/2020).

¹³ Response to marine chemical accidents, Ibid P. 2

¹⁴ Response to marine chemical accidents. Op cit. p. 6.

¹⁵ Response to marine chemical accidents. Op. cit. p. 3.

¹⁶ Response to marine chemical accidents. Op. cit. p. 6.

¹⁷ Response to marine chemical accidents. Op.cit. p. 6.

¹⁸ Karima Bourhali. Marine Pollution and its Impact on Sailors, Magister Thesis in Sociology (Environmental Specialty). Faculty of Humanities and Social Sciences, University of Constantine, 2009-2010, p. 68.

¹⁹ Environmental, health and safety guidelines. Op. cit. p.12.

²⁰ Recommendations on the transport of Dangerous Goods, Model Regulation, Revised Edition 17. Volume I, United Nations. New York. Geneva, 2011, p. 117. <https://www.unece.org> (Viewed on: 15/06/2020).

²¹ Recommendations on the Transport of Dangerous Goods, Model Regulation, 17th Edition. Op. cit. p. 117.

²² Recommendations on the Transport of Dangerous Goods, Model Regulation, 17th Edition. Op. cit. p. 117.

²³ Environmental, health and safety guidelines. Op.cit. p. 88.

²⁴ Karima Bourhali. Marine Pollution and its Impact on Sailors, Magister Thesis in Sociology (Environmental Specialty). Faculty of Humanities and Social Sciences, University of Constantine, 2009-2010, p. 74

²⁵ Response to Marine Chemical Accidents. Op.cit. p. 7.

²⁶ Response to Marine Chemical Accidents.Op. cit p. 7.

²⁷ Marpol Convention 73/78 signed on November 02, 1973 and amended under the 1978 Protocol. Initially signed by 19 Mediterranean states, and applied on October 02, 1983. It targeted accidental and operational discharges from the crew to represent international legislation in the area of pollution caused by ships in its forms and not only from oil by imposing strict measures on dangerous goods and harmful materials.

²⁸ Procedures of the Federal Ministry of Transport and Digital Infrastructure; a federal ministry in Germany based in Berlin and with a second headquarters in Bonn BMVI. <https://www.bmvi.de> (Updated: 11/06/2020).

²⁹ Article 52 of Law No. 03-10 of July 19, 2003, relating to environmental protection in the framework of sustainable development, J.R. Issue 43, dated on July 20, 2003.

- ³⁰ Environmental, health and safety guidelines for shipping. Op.cit. p. 3.
- ³¹ Executive Decree No. 06-104 dated on February 28, 2006 sets out the list of waste Including hazardous specific waste J.R. N o. 33 Dated on March ,05, 2006.
- ³² Law No.03-10 of July 19, 2003, relating to environmental protection in the framework of sustainable development, J.R. No. 43, dated on July 20, 2003.
- ³³ Executive Decree No. 09-336, dated on October 20, 2009, including taxes on contaminated or hazardous activities to the environment. J.R.
- ³⁴ Article 117 of the Algerian Maritime Law
- ³⁵ Article 210, 215 and 216 of the Algerian Maritime Law
- ³⁶ Marpol Convention 73/78 Annex 2.
- ³⁷ Marpol Convention 73/78 Annex 2. www.eeaa.gov.eg (11/06/2020)
- ³⁸ Guidelines for preventing pollution from ships.Op.cit. p. 26.
- ³⁹ Guidelines for preventing pollution from ships. Op.cit. p. 27
- ⁴⁰ Response to marine chemical accidents. Op.cit. p. 8
- ⁴¹ Guidelines for preventing pollution from ships.Op.cit. p. 27.
- ⁴² Guidelines. Op. cit., P. 32
- ⁴³ Article 60 of Law No. 1994/04 Amended by Law 2009/09 From Egyptian law On By protecting the environment. (Where i attended the dumping of hazardous and harmful substances in the territorial sea or the exclusive economic zone of the Republic of Egypt and set a penalty for each violator of this procedure in accordance with article 90 of it) Guidelines for preventing pollution from ships, previous reference, p. 27.
- Article 60 of Law No. 1994/1994 amended by Law 09/09 of the Egyptian Law on Environmental Protection (where discharge of harmful substances in the regional sea or the exclusive economic zone of the Republic of Egypt is prohibited. Penalty is set for every violator of this procedure according to the text of Article 90 thereof), guidelines for preventing pollution resulted from ships. Op. cit. p. 27.
- ⁴⁴ The Basel Convention on the control of the cross-border transport and disposal of hazardous waste, the non-transfer of hazardous waste from developed to less developed countries and the treatment of the movement of radioactive waste. The convention was adopted in 1989 and applied in 1992
- ⁴⁵ The Rotterdam Convention related to the implementation of the prior informed consent procedure for chemicals and pesticides in International Trade. It is a multilateral treaty to enhance the sharing of responsibilities with regard to the import of hazardous chemicals. It was applied on 24 February 2004. .
- ⁴⁶ Environmental, health and safety guidelines for shipping. Op.cit. p. 3
- ⁴⁷ Annex III of the Marpol Convention 73/78 applied on July 1, 1992
- ⁴⁸ Guidelines for preventing pollution from ships. Op.cit. p. 32
- ⁴⁹ Guidelines for preventing pollution from ships. Op.cit. p. 33.
- ⁵⁰ Guidelines for preventing pollution from ships.Op.cit p. 34.