

A STUDY OF LOCAL LEGISLATION
FOR THE PROTECTION OF THE AQUATIC ENVIRONMENT

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"Legislation is discussed concerning the protection of marine waters from oil pollution and the control of the disposal of liquid wastes into bodies of water."

Introduction

The modern world is confronted with the problem of pollution of water, land, and air as a consequence of progress in civilization. Whatever may be the efforts of scientists in the search for scientific solutions, treatments of pollution, and the hazards and effects of pollutants, they are not sufficient in themselves. They should be accompanied by legislation, placing limitations and controls on the dispensing of wastes to prevent pollution. They should also be accompanied by a general awareness of the importance of keeping the environment clean and suitable for all living creatures.

Aquatic Pollution and the Law

Aquatic pollution can be defined as man's introduction, either directly or indirectly, of any substance or energy into the aquatic environment that harms living resources, constitutes a hazard to human health, hinders marine activities including fishing, or changes the quality of water and impairs its usefulness. The aquatic environment is subject to constantly increasing pollution from a variety of sources. Urban growth and industrial development, particularly in coastal regions, lead to increased discharge of wastes into rivers, lakes, and the sea. Agricultural wastes are also discharged into bodies of water, ultimately making their way to the sea. Further pollution comes from transport and exploration and the search and drilling for petroleum in the seas. Thermal pollution is increasing. And pollution due to thermonuclear explosions, either in the upper atmosphere or in the depths of the ocean, with its accompanying ionizing radiation, deleteriously affects marine fauna.

These pollutants not only disturb the natural biotic balance of the environment, harming marine creatures, but they also have serious consequences for mankind. These consequences were largely ignored until 1883, when Marion, the founder of the Marine Station of Marseille, drew attention to the effects of pollution on fauna and flora. Since that time, the industrialized nations, in particular, have promulgated laws for the control of pollution and the preservation of territorial waters in order to maintain chemically, physically, and biologically suitable conditions and to protect the health of man, animals, and plants.

The first laws for the protection of the marine environment were passed by Poland in 1922 and were subsequently reformulated on several occasions. The Soviet Union promulgated its own laws in 1937, followed by the United States,

Canada, West Germany, Japan, and other nations. Efforts to control pollution through international cooperation resulted in a 1954 treaty concerned with oil pollution of seawaters. This treaty was amended in 1962 and again in 1969, but its provisions have yet to come fully into effect. The Brussels Treaty of 1969 concerns measures taken by various states for the prevention of oil pollution of their shores and continental waters. The London Treaty of 1973 seeks to prevent pollution of the marine environment from the burial of wastes at sea, which endangers the marine environment as a source of food.

The world may face catastrophe in the next few years if strict control of pollution and a program of protection of the oceans and seas are not undertaken. Although efforts to reduce the harmful consequences of pollution are receiving attention, and significant technological advances have been achieved in this area, the ultimate goal is to eradicate pollution altogether. Thus far, this goal remains unattainable. However, society increasingly appreciates the vital necessity for complementing scientific and technical efforts at combatting pollution with strict legislative procedures for curbing and controlling this menace.

This study is a preliminary attempt to shed light on Egyptian legislation aimed at controlling pollution of the aquatic environment and protecting society from the consequences of existing pollution. An awareness of keeping water clean has long been part of Egyptian history. The ancient Egyptian is often depicted on monuments swearing before the gods after death that he has not polluted the river. Of course, the importance of keeping the river clean stemmed from the veneration the ancient Egyptian gave to the life-giving Nile. Thus, ancient Egyptians probably had some regulations and laws for this matter.

Existing legislation falls into two major categories: (a) that concerned with the protection of marine water from pollution caused by oil, and (b) that concerned with the disposal of liquid wastes into bodies of water.

Legislation for the Protection of the Marine Environment from Pollution by Oil

Egypt's interest in the prevention of marine oil pollution began in 1954, when the Minister of Agriculture formed a committee to study marine water pollution by oil in response to a report from the commercial attaché at the Egyptian Embassy in London on a convention held on that subject that year. Through Presidential Decree No. 421 of 1963, Egypt accepted the provisions of the International Treaty for the Prevention of Marine Pollution with Oil issued by the London Convention and later modified by the London Convention of 1962.

The 14th resolution of the London Convention of 1962 stated that countries that had not formed national committees concerned with marine oil pollution should constitute such committees in order to investigate the subject and suggest scientific procedures to prevent such pollution. Presidential Decree No. 1948 was issued in response to this resolution. Under the decree, the Egyptian committee was charged with conducting research on the prevention of marine pollution by oil; recommending systems for implementing the provisions of relevant international treaties; establishing research programs, independently or in collaboration with universities, governmental institutions, and international organizations; drawing up administrative policy; supervising the execution of programs; receiving reports from research institutions; coordi-

nating the efforts of such institutions; reporting to concerned international bodies regarding Egyptian efforts to combat marine pollution; and responding to questions and studies referred to it for comment. Initially this committee worked under the aegis of the Ministry of War. In 1973 Presidential Decree No. 691 transferred it to the Ministry of Marine Transport.

Law No. 72 of 1968 resulted from the activities of this committee, which made a comprehensive survey of the causes of oil pollution as a basis for combatting it. The survey found that some of the direct causes of oil pollution at the port of Alexandria were:

- throwing water into the sea from navigational units working in the port, even though the water was usually mixed with oil and petroleum wastes;
- throwing ballast water from petroleum tankers into the sea, even though this water also usually contained large amounts of petroleum;
- disposal into the sea of oil remaining in tanks of units being repaired in drydock;
- disposal of wastewater from petroleum refineries into the sea;
- cozing or leaking while charging and discharging petroleum pipelines in the petroleum basins;
- leaking of petroleum during the repair or removal of pipes between petroleum lines and tankers at charging and discharging stations;
- ingress of petroleum patches to the port through Nile units, factories, cottonseed compressors, and the Mahmoudia drainage canal;
- ingress of petroleum to the port due to washing of the tanks of vessels passing through territorial and international waters by wind and water currents; and
- presence of docks for petroleum tankers west of Alexandria, leading to an increase in port pollution via westward and northwestward winds during the greater part of the year.

Law No. 72 of 1968 included measures for implementing the terms of the International Treaty for the Prevention of Pollution of Sea Water with Oil, issued in London in 1954. Article I of Law 72 states that the amendments of the 1954 treaty passed in April 1962 are also included in its provisions. Other provisions include the following:

Article III fines all national and foreign vessels, whether signatories of the international treaty or not, amounts not less than 300 and not more than 3,000 Egyptian pounds for discharging oil or oily mixtures into the inland or territorial waters of Egypt. Recurrent offenses are punishable by imprisonment for not more than six months, a fine not to exceed 6,000 Egyptian pounds, or both.

Article IV requires that captains of Egyptian vessels be registered to

carry oil under the terms of the treaty. Violators will be fined not less than 100 and not more than 300 Egyptian pounds, and are liable to imprisonment for not more than one month, a fine not to exceed 600 Egyptian pounds, or both, in the event of recurrence.

Article V requires that captains of vessels of any nationality inform the port authority immediately upon discharge of oil or oily mixtures, the reasons and conditions leading to the discharge, and whether or not the disposal was required in order to save the vessel, to prevent damage to the vessel or its cargo, or to save persons at sea, or due to damage to the vessel. Falsified information is punishable by a fine not less than 100 and not more than 300 Egyptian pounds, in addition to penalties for the disposal itself.

Article VI prohibits all existing establishments on the lands and waters of the republic, including factories, laboratories, workshops, and the like, or any device used for the transport of oil from or to a vessel, from disposing of oil or oily mixtures in the inland and territorial waters of the Arab Republic of Egypt, whether this disposal be from a location on the sea or on land.

Article VII stipulates that the Minister of Transport prescribe the terms for disposal of oil refuse from vessels, naming the principal ports for receiving such refuse and the measures for its ultimate disposal.

However, Law No. 280 of 1960 authorized the Minister of War: (a) to issue orders and prescribe rules and systems to be followed in ports and territorial waters, and (b) to fix fees for port services that do not exceed 100 Egyptian pounds. Anyone contravening the rules and orders issued by the minister faces prison terms of not more than one week, fines of 100 Egyptian pounds, or both. Within this framework, the Minister of War issued order No. 56 of 1962 regarding the maintenance of cleanliness of ports and territorial waters and the prohibition of disposal of oil or fuel refuse into these waters.

Disposal of Liquid Wastes Into Water Courses

The principal items of legislation dealing with the discharge of liquid wastes into water courses are Law No. 93 of 1962 and its bylaws, issued by Presidential Decrees No. 64 and 649 of 1962.

Chapter 2 of this law defines the water courses and the discharge of wastewater into them. Chapter 4 deals with the penalties. Regulations for the implementation of the law were promulgated in the decrees.

Article 10 of the law defines the water courses as the Nile River and its lagoons; conduits, rivulets, brooks, rills, and swamps; irrigating canals and the like; drains with their primary and secondary branches; seas and lakes; and ponds, swamps, and other water masses. The decree then divides them into three classes: Class A, which refers to the first three groups as the Nile River and its tributaries; Class B, which refers to the other three groups as drainage canals; and Class C, seas and lakes. Although the Nile River traverses through African countries, no treaty has been promulgated for the conservation of the Nile environments. There are only treaties concerned with the regulation of the utilization of Nile water among the concerned countries.

Decree No. 649 of 1962 encompasses detailed criteria for wastewater discharged into water courses. These are classified as follows: Category A, wastewater from public, commercial, and industrial establishments to which are

applied the criteria for industrial wastes; and Category B, wastewater from sewage to which are applied the criteria for sewage effluents. In case of combined wastes falling into both categories, the standards for sewage effluents apply.

Disposal of Wastewater into Class A Water Courses

The regulations for implementation of the law differentiate the industrial wastewater discharged into the Nile River and its lagoons and the sewage effluents, which must not be discharged into Class A water courses. The first must conform to the following standards: (a) BOD₅ must not exceed 20 mg/liter; (b) COD must not exceed 15 mg/liter; (c) suspended solids must not exceed 30 mg/liter; (d) the pH value must be between 6 and 9; (e) sulfides (as S) must not exceed 1 mg/liter; (f) cyanides must not exceed 0.1 mg/liter; (g) the amount of oil and grease must not exceed 10 mg/liter; (h) temperature must not exceed 35°C; and (i) the wastewater must not include any materials that may adversely affect fish or other aquatic organisms or that may adversely affect the quality of the water for drinking and other domestic purposes.

Disposal of Wastewater into Class B Water Courses

Industrial wastewater discharged into drainage canals must conform to the following standards: (a) BOD₅ must not exceed 60 mg/liter; (b) COD must not exceed 40 mg/liter; settleable solids must not exceed 80 mg/liter; (c) the pH value must be between 6 and 9; (e) sulfides (as S) must not exceed 1 mg/liter; (f) cyanides must not exceed 0.1 mg/liter; (g) the amount of oil and grease must not exceed 10 mg/liter; (h) phenols must not exceed 0.1 mg/liter; (i) chlorine must not exceed 0.1 mg/liter; (j) dissolved solids must not exceed 5000 mg/liter; (k) temperature must not exceed 35°C; and (l) there must not be traces of insecticides or radioactive materials. Standards are also prescribed for arsenic, silver, copper, mercury, cadmium, beryllium, selenium, lead, and nickel.

The discharge of sewage effluents into Class B water courses is prohibited unless the effluents have first been chlorinated (the concentration of chlorine must not exceed 0.5 mg/liter after 20 minutes) and meet the following standards: (a) BOD must not exceed 40 mg/liter; (b) COD must not exceed 30 mg/liter; and (c) the suspended solids must not exceed 50 mg/liter.

Disposal of Wastewater into Class C Water Courses

All kinds of wastewater may be discharged into seas and lakes provided they do not contain any matter that may adversely affect beaches, marine installations, shellfish-breeding areas, or fish and other aquatic organisms.

Disposal of Cooling Waters

Industrial cooling waters may be discharged only into the water course from which they were derived or another water course of the same quality. Discharged cooling water must be used in a closed circuit within the processing operation without any contact with the wastewater originating from any indus-

trial or other process. Subject to these conditions, the only quality requirements are that the temperature of the cooling waters must not exceed 35°C and that the oil and grease content must not exceed 10 mg/liter.

Article 11 of Law No. 93 states that water may be discharged into water courses from private buildings, shops, commercial and industrial establishments, and the public sewage system, subject to approval by the local authorities representing the Ministries of Health, Public Works, and Industry. These local authorities are required to consult the Sewage Authority in accordance with rules issued by a decree of the Minister of Housing.

The sewage authority issues a license for the discharge of wastewater into water courses after verification that the water courses are capable of absorbing the wastewater, meet the standards approved by the Minister of Health, and are subject to the decree by the Minister of Housing.

Article 12 of Chapter 2 of this law requires the periodic analysis of samples of liquid wastes from establishments licensed for draining into water streams, in the laboratories, and at times fixed by the Minister of Public Health, according to the decree issued by the Minister of Housing.

The volume of the samples, mode of sampling, and manner of preservation have been specified in Chapter 7 of the bylaws of Decree 93 of 1962 as follows:

1. Volumes of samples should not be less than two liters.
2. Samples are to be taken in ground-glass, tightly stoppered vessels.
3. Each vessel, including the stopper, should be thoroughly washed before use. The inside of the vessel should also be washed repeatedly by the sample substance before filling. When sampling liquid wastes treated with chlorine, sterilized vessels are to be used.
4. Analyses are to be carried out immediately after sampling. When this is not possible, and the specified tests have been delayed for more than three hours, samples should be preserved in an ice chest and the vessels surrounded by a layer of ice, so that when the samples arrive at the laboratory there is still ice remaining in the chest.
5. Sampling should be carried out so that the sample is maximally representative of the nature of the water, at a suitable site at the end of the purifying process, or at the terminal contact of the laboratory, purifying process factory, and the place to which it is drained (public sewage net, common water stream, agricultural, etc.). When there is more than one outlet for any one building, separate samples should be taken for each. Each vessel should be completely filled and tightly stoppered immediately, leaving no gas bubble or unfilled space between the surface of the water inside the vessel and the stopper. Care should be taken that the opening of the vessel is placed against the direction of the water stream, and that the sampling is not made at the surface or bottom. After filling, the opening of the vessel should be covered with gauze, sealed with sealing gum or another suitable substance, and sealed with the seal of the certified sampler.
6. Periodic sampling of liquid wastes of certified establishments is to be carried out twice yearly. The decree requires the submission of a special reporting form containing the results of the analysis within one month, and names the water department of the Director General of Laboratories, Ministry of Public Health, to carry out the analyses.

If as a result of analyses, according to Article 12 of the law, the liquid wastes drained into water courses do not conform with the criteria and specifi-

cations cited in the license, those responsible must find a device for treating wastes to conform with the license within six months of notice of nonconformance. If at the end of this period of time the device has not been installed, the drainage authority may either cancel the license or undertake the installation of a device at the expense of the licensee.

Chapter 4, Article 18 of the law imposes penalties for violation of its articles and obliges the violator to cease violative acts, or to correct them within the period of time mentioned by the sewage authority. If the violations are not corrected within the stated time, the sewage authority may itself correct the violations at the expense of the licensee, cancel the license, or both.

Conclusions

These regulations cover only pollution by oil and disregard all other pollutants. At the same time, the application of the existing regulations does not fulfill the needed protection. Furthermore, there is a lack of regulations regarding marine parks in spite of their importance for scientific purposes and tourism. Many efforts are needed to cover all these areas.