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FACTORS THAT SERIOUSLY AFFECT ENVIRONMENTAL

*Tukhtaboev M. R., Senior Lecturer
Satimova S. E., student
Namangan State University, Namangan*

The issue of environmental pollution at the present time is one of the most difficult challenges facing the world, due to the high rates of pollution in its various forms, air, water and soil, and one of the most important causes of pollution is the increase. In the use of fossil fuels in general and oil in particular. Because they leave residues in the environment consisting of liquid waste, gaseous and solid materials that have a negative impact on the elements of nature and contribute to the disruption of natural structures and thus affect and reflect on life in general and on human health. and other livelihoods. It led to the death of living organisms, increased global warming, the widening of the ozone layer gap, acid rain, the spread of fires and high temperatures. Poisoning and other diseases that threaten human life, as well as heavy losses resulting from those phenomena related to pollution directly and indirectly.

The world is witnessing a noticeable increase in the phenomenon of pollution that has taken many forms, which has caused negative effects in the formation of natural elements. The pollution of water, soil and air has increased, and the effects of environmental pollution have been reflected on life in general, and on humans and living organisms in particular, and one of the most important causes of environmental pollution In its various forms is the oil industry, which includes multiple stages starting from exploration and extraction, through transportation, refining and end use, and the volume of pollutants that each stage leaves in nature. Environmental pollution is an economic and social phenomenon before it is a biological or chemical phenomenon, because pollutants are unused resources and energies, either for technological, technical or financial reasons. The research focuses on an important aspect of pollution related to the oil industry, with its multiple stages of exploration and extraction from the ground, and then transportation, assembly, refining, manufacturing, marketing and final use. The oil industry plays an important role in the economic aspects of producing and consuming countries alike, and through what it achieves of revenue and added value as an important source of energy that contributes to the operations of

factories and machines, and contributes to advancing the growth and prosperity of society. The research discusses the role of the oil industry in environmental pollution in a brief and focused manner, and explains the effects of pollutants generated from the oil industries, and suggests solutions that contribute to reducing the severity of pollution and reducing the damage resulting from it [1].

The importance of the research is related to the importance of the issue of the environment and its direct connection to life, and the environmental imbalance that the world suffers from as a result of the pollutants formed by the oil industry, which led to anger. Nature, increasing global warming and increasing the rate of incurable diseases, death and deterioration of the lives of many organisms[2].

1- Shedding light on the impact of the oil industries' stages on environmental

pollution. A statement of the forms and types of pollution for each stage of the oil industry and the extent of the negative effects. Putting forward some proposed solutions to reduce the negative effects of oil pollution[3].

2 - The concept of the environment: Given the urgent need for specialized studies, which resulted from environmental developments in recent decades, specialists tended to find a new branch of economics, which is environmental economics, which is concerned with environmental affairs and their economic effects, using different standards and influences, and is concerned with the optimal use of material and human resources. In order to achieve greater followers of needs and achieve prosperity at the lowest costs. Ecology is defined as the field or spatial environment in which man lives, including natural phenomena, elements and living organisms that he is affected by and affects [4].

And the scientist divided the environment into four groups

(a) The natural environment: includes the land and its resources, as well as the climatic conditions, animals and plants.

b- The social environment: represented by the population, its structure and distribution, and the services related to society, including cultural, health and political ones

C - Economic environment: concerned with the various economic activities resulting from the interaction of the factors of production (capital, labor, land, technology) and the pursuit of prosperity.

D - Aesthetic environment: It includes public parks, recreational areas and green spaces.

2 - The concept of pollution.

A polluted thing is the opposite of a clean thing that causes damage and health problems to human life and other organisms. Pollution is defined as a change in the environment surrounding living organisms by human action and its various activities that leads to the generation of harmful substances that are not appropriate to the place where the organism lives, and can be avoided. This is done by finding technical ways to exploit these materials and waste, make them useful, or dispose of them in ways that prevent or reduce their negative impact. There is a relationship between the environment and pollution, where the environment represents a group of living and non-living factors and all that man has created

from different facilities, and pollution is the thing that affects the elements and compounds that make up the environment. Pollution is of two types: the first is a physical type, which is the mixing of any foreign component of the substance with the substance itself. The other type is non-physical pollution, which is intended to contribute to spoiling the thing and changing its properties. The basis of environmental degradation is human intervention, the use of methods that do not correspond to the characteristics of nature in production processes, equipment and even in everyday life [5].

Specialists divide environmental pollution into two main types:

1- Natural pollution: It is caused by pollutants emitted from nature without human intervention, such as volcanic smoke, gases, carbon dioxide, carbon monoxide, it is the result of the forces of nature [5].

2- Industrial pollution:

It is produced as a result of human agricultural, industrial, service, and recreational activities, and it is concentrated in what is issued from factories of waste, automobile exhaust, use of pesticides and noise, and industrial and agricultural waste. Pollution is divided according to the environment as follows:

Water pollution.

The hydrosphere occupies (73%) of the Earth's area, and water pollution results from defective and damaged water quality so that it becomes unusable by its primary use, and the types of water pollutants are divided into surface water pollutants and these pollutants. A - Infectious pollutants that are present in the intestines of animals and humans, such as bacteria and viruses.

b - Waste that consumes oxygen, such as food waste and sewage water.

C - Increasing the concentration of phosphorous or nutritional enrichment that contributes to the growth of harmful substances.

D - Sediments brought by wind and running water.

E - Toxic organic materials that are used in industry and agriculture.

f- Thermal pollution through the water used in the generation of electricity.

As well as groundwater pollutants and ocean pollutants.

Soil pollutants

It includes pollution with heavy metals such as lead, chromium, mercury, cadmium and arsenic, as well as pollution with pesticides that are used frequently and indiscriminately, as well as the use of some locally and internationally banned pesticides and damaged pesticides as well as insecticides. Radioactive contamination, especially with the use of prohibited weapons in wars.

Third: oil pollution

Oil is a mixture of hydrocarbons, nitrogen, sulfur, oxygen, and some metal compounds. Some organisms can use some hydrocarbons, such as lubricating oils, paraffin, kerosene, and methane, and convert them into compounds that contribute significantly to environmental pollution. The composition of oil helps the growth of some organisms and is a suitable medium for them. The use of oil and its derivatives by humans in various fields, and this is at the same time a means to increase pollution due to the high percentage of toxic pollutants that are put into nature in the form of sulfur oxides, ammonia, nitrogen and others[6].

Oil pollution is one of the most prominent pollutants of the marine environment, the reason for the wide movement of transport and marine fleets and the throwing of pollutants into the sea. Therefore, the most important areas of impact of oil pollution will be discussed.

Table (1) Sources of marine oil pollution

| Source | the reasons |
|--|---|
| 1- ships -Container ships and commercial transport Passenger ships oil tankers | - Deviation and collision - Fire, coup and drowning - During the refueling process - Operational operations during loading and unloading |
| 2- Export terminals and ports | - Leaks from storage - Disposal of waste motor oil |
| 3- Oil and offshore wells | - Leakage from marine pipelines and their breaks |
| 4- Tourist boats and fishing | - Leakage during extraction from offshore wells |

From the above table, it is noted that there are multiple sources of oil pollution, and the diversity and different causes, all of these paragraphs give indications of a high rate of oil pollution in seawater, and pollution affects sea water by creating insulating fatty layers that prevent the insulating exchange from reaching the light, and because of a defect in the food chain, which It causes damage to all marine organisms, and this is an economic loss, especially with regard to fisheries, and affects the ecosystem because the substances thrown into the sea are some of them toxic and lead to the death of animals, seabirds and fish and affect coral reefs [7].

Fourth: the effects of oil pollution on the air.

The combustion process of oil and its derivatives leads to the emission of dangerous and toxic gases, and causes harm to the public health of humans. Among the toxic gases that are emitted into the environment are carbon dioxide, sulfur dioxide, nitrogen oxide and hydrogen, and a high percentage of salts such as sodium chloride and calcium, and amounts up to (20- 25%) of the soot and all of these materials pose a danger to the environment due to their high toxicity levels.

Oil pollution costs are divided into two groups:

The first: quantifiable damages, and they can be expressed in monetary amounts, and they are either direct or indirect costs and include direct costs.

a- The value of the resources emitted as a result of production processes and causing pollution.

b- The costs of the health sector resulting from health damage.

c- The value of the decrease in production due to the increase in the consumption of natural resources.

d- Costs of rising prices of substitute items.

E - Decreased factors of production and labor in particular. F- Decreased return on capital.

g- Pollution control costs.

As for the indirect costs, they represent the losses resulting from the occurrence of pollution and include:

1- The costs of avoiding the effects of oil pollution. 2- Opportunity costs.

The costs of the second group include:

A- Physical and psychological pain and aches resulting from pollution. b- Losses resulting from the protection of nature.

c- Damage resulting from oil pollution in agriculture, birds and water bodies.

4 - Important Incidents of Oil Spill Operations in the World

Eco-nature, eco-nature, eco-nature, eco-nature, nature, nature, nature, nature, nature, nature.

Maritime transport is one of the most important industries that cause accidents, and then comes the transport pipelines and manufacturing industries in offshore waters, in the deep sea, in the deep sea, in the deep sea, and back at the beginning of the estimated oil spills. About (30) accidents, causing a leak of (10) million gallons or perhaps more for each accident, and the leakage incidents were recorded, and after the world witnessed in the nineties of this century nearly (346) accidents of oil spills, and the amount of oil spilled (1.1) million tons, of which the largest share was ten (75%) of those leaks>

It is clear that the international oil companies did not assume their overall environmental responsibility, and their actions were not at the level of the imminent danger. The global environment in all its details, and even the government's measures were not deterrent to companies operating in the oil sector and the weakness of supervision and follow-up. As for the historical studies on oil leaks incidents, they show leaks estimated at (10) thousand gallons from the territorial waters of the countries, which were identified by the statistic (112) countries. regions of the world [8].

Table No. (6) Important leaks in the world by regions

| Region | The number of Accidents | Region | The number of Accidents |
|----------------------------|-------------------------|--------------------------|-------------------------|
| The Gulf Of Mexico | 267 | Korea | 32 |
| United States (North-East) | 140 | France south coast | 33 |
| The Mediterranean Sea | 127 | coasts of southern Spain | |
| The Arabian Gulf | 108 | Britain | 49 |
| North Sea | 75 | Baltic | 52 |
| Singapore and Malaysia | 39 | Japan | 60 |

It is noted from the above table that the oil spill accidents are distributed over most regions of the world, and the most important sites for these accidents are the Americas, especially the Gulf of Mexico, the Mediterranean and the Arabian Gulf, because these oil regions are important in the world, and there are oil investments in them and attract giant international companies working in The oil sectors in all its stages, from the stage of extraction to marketing, including Bb and

ExxonMobil, but they did not give the topic of oil pollution importance at the global level, and the statements and speeches did not match the practical reality.

Conclusions and Recommendations:

First: the conclusions

1- Through the course of the research, it is possible to prove the hypothesis of the research according to which oil countries and companies operating in the oil sector do not adhere to the procedures for reducing pollution and preventing its effects in a serious and effective manner, but rather there is negligence and inaction due to the low level of control and accountability.

2- The increased production of oil and its derivatives and the increase in use as a main source of energy increased the volume and effects of pollution in various aspects of nature such as soil, water and air, in addition to the establishment of some companies that burn gas associated with oil.

3- Oil companies bear most of the violations and environmental oil accidents, and in return, they do not take effective measures for treatment, and avoid reducing pollution by using advanced technologies and increasing combustion to reduce emissions, fumes, and toxic and harmful materials to the environment.

4- The use of different and cheap technologies and technologies by some companies, especially in developing countries, to produce oil led to an increase in the severity of pollution and the spread of harmful effects.

5- There are treatments, methods of prevention and periodic maintenance capable of reducing pollution rates by reducing catastrophic accidents on the environment.

6- Some countries lack strict procedures and contingency plans, as well as shortcomings in legislation and laws that deter violators of nature.

7- Oil environmental pollution requires the concerted efforts of all oil-producing countries, both producing and consuming, so those countries should take the issue of environmental danger at the forefront of priorities and strive to put an end to environmental violations, and urge companies operating in the oil sector to abide by environmental regulations and laws, as well as find modern legislation that rises to the level of dangers.

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