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Impact of Plastic Waste on The Environment and Issues of Their Ecological and Legal Management

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Abstract: Today, one of the main environmental problems in the world is pollution of the natural environment with waste. Currently, the amount of waste on earth is increasing year by year. The generation of waste is directly related to the active economic activity of mankind. Among them, the problem of plastic waste is worrying the world's ecologists and the public. Regulation of relations related to it is the demand of today's era.

Keywords: Plastic Waste, Disposable Plastic Waste, UNEP, Plastic Waste Tax

1. Introduction

Today, the world community is thinking about the problem of regulating relations related to waste. This is certainly natural. Because 430 million tons of plastic waste are produced every year by humanity, which harms the environment. These numbers show that the production and consumption of this type of waste has reached an unsustainable level [1]. The saddest thing is that instead of recycling previously produced plastics, manufacturers are focusing on the production of new primary plastics. According to statistics, in 2015, only 9% of plastic waste was processed, 12% was burned, and the remaining 79% was buried underground [2]. This means that the non-perishable object has a significant impact on the environment, and its role in climate change is significant. For this reason, several projects are being promoted by the international program United Nations Environmental program (UNEP) in this field. For example, a number of guidelines have been developed on processing existing plastic waste instead of producing it, and encouraging manufacturers to safely incinerate waste into energy.

The impact of plastic waste on the environment can be seen in the following:

- Through the effect of plastic products, it has a negative effect on the hormonal and metabolic changes of people, their mental state;
- Burning them outdoors pollutes the air;
- Threatens the lives of more than 800 species of marine life;
- By 2050, the production and use of plastic waste is expected to account for 15% of greenhouse gases;
- Almost 11 million tons of plastic waste are dumped into the ocean every year [3].

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2. Materials and Methods

In order to effectively solve the problem of plastic waste, it is advisable to consider the following 5-way issues:

A. Technological

Production of plastic waste is increasing year by year. There is not enough technology to process it. The reason for this is that the equipment in the field is very expensive, and because the opportunity and profit of the producers are not enough, it is necessary to allocate a lot of subsidies to this field;

B. Ecological

The increase in the production of plastic waste is of great importance in climate change. A large amount of resources and energy will be spent to create or destroy them. By burning it, nature and the atmosphere are being irreparably damaged;

C. Regulation

States should define the rules of behavior related to plastic waste by regulations, and prevent excess or harmful plastic production in a timely manner;

D. Economical factor

Plastic waste is a low-cost economic boost, but reducing and recycling it requires significant compensation.;

E. Social factor

It is necessary to create full conditions for citizens to be informed about the harm of plastic waste, to strengthen their place in public control, to study the situation in production enterprises.

Situations like the above call the world community to regulate this industry. In particular, an international conference on limiting the use of plastic waste was held in Nairobi in 2023 at the initiative of UNEP. In it, the initiative of the states to adopt resolutions and conventions aimed at reducing it with the participation of the Ministers of Environmental Protection was one of the important steps in the regulation of the sector [4].

The issue of regulation by limiting the use of plastic waste is of concern to the international community. After the summit in Nairobi, it was decided to hold the 4th summit in Ottawa, the capital of Canada, on April 23-29, 2024, and it was decided that the draft rules aimed at regulating the use of plastic waste would be discussed at this meeting.

By adopting this document, the negative impact of plastic waste on human health will be prevented, and it aims to regulate their use, transportation, import and export. In this case, the states are obliged to strengthen the processing of this type of waste in their territory, to regulate the relationship with it.

3. Results and Discussion

By In the Republic of Uzbekistan, on the basis of world experience, significant works on waste processing are being carried out. For example, according to the decree of the President of the Republic of Uzbekistan on the implementation of the state program of the "Uzbekistan-2030" strategy in the "Yoshlar va biznesni qo'llab-quvvatlash yili", increasing the level of waste processing to 40%, releasing waste to enterprises tasks of reduction, creation and application of types of waste that quickly decompose with the soil were assigned [5]. Despite the fact that plastic waste is included in the category of solid waste by the Law "About Waste", a separate normative legal document on their use has not yet been adopted. However, one of the many things to regulate it is the decision of the President dated 18.05.2018 "On measures to further improve the system of implementation of work related to household waste", from January 1, 2019, plastic packages will be sold in stores on a paid basis.

According to the experience of Germany, the sale of food and drink containers made of plastic products in stores with the implementation of the German Ordinance on Single-Use Plastics adopted on July 3, 2021 prohibited [6].

According to the experience of the European Union, a plastic tax has been introduced, and manufacturers are required to pay fees to neutralize their plastic waste and reduce their impact on nature [7].

In the US state of San Diego, from April 1, 2023, a procedure was introduced that prohibits the delivery of disposable dinnerware, cups, containers and the sale of products using them [8].

The Chinese state, which imports billions of dollars worth of waste from all over the world and produces ready-to-use products, is fully aware of the dangerous properties of plastic waste and has completely banned the import of this type of waste since 2018 [9].

If we stop on the question of the effect of plastic waste on marine ecosystems, the damage of one such waste to an entire individual is significant. Pieces of plastic waste have been found in the stomachs of marine animals, causing them to die by disrupting their digestive system. For example, sea turtles mistake plastic waste floating on the water for jellyfish and fill their stomachs with indigestible elements [10]. In addition, sea birds eat them because they smell like food and they get various diseases. The saddest part of such situations is the corrupt policy of dumping these human-made wastes into the ocean, and the disease in them returns to humans by hunting these marine ecosystems [11].

The damage of plastic waste to human health is sad. As a result of this, human existence on the surface of the Earth became dangerous. Microplastic particles are detected in the liver, kidneys, and internal respiratory tract of the human body through breathing and food consumption, and unfortunately, it is also detected in newborn babies.

As we mentioned above, 79 percent of plastic waste is buried underground [12], the harmful substances in it are absorbed by groundwater, and the impact on human health is significant due to drinking groundwater.

As we have seen above, the situation demands the adoption of a special law to regulate relations related to plastic waste in our country. Because, in order to improve the quality of service in our Republic, many single-use plastic boxes and containers are being used in large quantities. As a result, large piles of waste are created.

Humanity's task in this direction is to minimize the negative impact on the environment and humanity by processing the existing 9.2 billion tons of plastic waste along with reducing the production of plastic waste.

A number of things are being done to reduce waste damage, especially in the field of construction, the most important building product is cement, which is seen as a solid construction raw material that replaces cement through plastic waste [13]. This is certainly a major production line, considering that there are enough piles of plastic waste. Using this effectively, in Great Britain, Indonesia and a number of other countries, the use of plastic waste as cement in construction, construction material in brick or road construction is considered to be a very effective way. This type of construction is relatively called "Green construction", and it is the organization of work taking into account the laws of nature [14]. It is true that it costs 3 times more than the construction of a normal road, but it is seen as an important way to reduce the damage to nature by recycling plastic waste. Through this, it will be possible to save resources from the environment and reduce excess energy consumption.

4. Conclusion

Every member of the society must unite as a team to fight against plastic waste and realize the following civil obligations:

- a. Firstly, protest or report to the mass media about cases of improper use of plastic waste in the organizations and institutions where they operate;
- b. Secondly, creating a system of green construction by rejecting plastic waste in our lifestyle and getting used to using recyclable materials instead: switching to bags made of perennial fabric instead of plastic bags or chewing gum as a form of plastic element break the habit;
- c. Thirdly, volunteering to help clean up our environment: financial support for scientific research in this field, volunteering to clean up your living environment [15].

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