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ON THE ISSUE OF SOLID WASTE PROBLEMS IN THE MODERN WORLD

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Abstract
This article is devoted to the study of the issue related to solid municipal waste, which is one of the undesirable negative factors at the present stage. The problems of solid waste in the modern world are considered in the context of environmental pollution, which negatively affects the health of the population. A comparative analysis of the causes of solid waste problems in the modern world due to the release of methane and other chemicals that poison the soil and air in many countries of the world is given.

Keywords: Solid municipal waste, giant landfills, mountains of garbage, UN General Assembly, International Day for a World Without Waste, pollution of the planet, plastic bottles, epidemiological danger.

Introduction

Waste has always existed – since the emergence of Homo sapiens. This problem was given importance even in the Middle Ages. It is known that there were laws prohibiting the pouring of sewage into the street. But in those years the issue was not so acute, because the garbage was of organic origin. It decomposed quickly and did not have a strong impact on the environment.

According to environmentalists, smokers leave behind a huge amount of waste. Cigarette butts are not biodegradable because they are made of acetate cellulose. When they get into water, they release toxins, poisoning plankton organisms and fish. 150 years ago, waste consisted mainly of natural products - paper, wood, food, wool and cotton. They decomposed without much harm to the environment, but over time, the garbage became increasingly toxic. The content of heavy metals,

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radioactive substances and plastics based on synthetic resins increased. Modern garbage heaps are very toxic and continue to cause harm even after elimination.

LITERARY RESEARCH

The issue of global waste accumulation was first discussed in the 19th century, when the Industrial Revolution took place in Great Britain. The first manufactories appeared, where, along with manual labor, machines began to be used. As is known, one of the dangers threatening modern civilization and humanity is environmental crises with its many components, including problems associated with solid household waste. At the present stage of human development, humanity has faced, perhaps, the most pressing problem - how to preserve nature and civilization, since no one knows when and in what form this or that catastrophe may occur.

It should be noted that a hundred years ago it was possible to bury garbage, but now it is impossible, and people simply dump it in giant piles. For example, more than 80 tons of garbage from the outskirts of Beirut, Lebanon, are taken daily to what was once a sandy beach. The height of the rubble here reaches more than 40 meters. The waste decomposes, releases methane and other chemicals that poison the soil and air that 200 thousand residents of the city breathe. Local fishermen suffer from the decomposition products that end up in the sea. This is not a local problem, since the giant dump affects the environmental situation off the coast of Cyprus, Syria and Turkey, located next to Lebanon. All these countries complain that their beaches are constantly flooded with garbage.

Sources [1] and [2] note that developed countries produce more waste per capita because they have higher consumption levels. The municipal solid waste stream contains more plastic, metal, and paper, and labor costs are higher. The United States produces more waste than any other country in the world, with 4.5 pounds (2.0 kg) of municipal solid waste (MSW) per person per day, fifty-five percent of which comes as household trash.

Based on the data from the source [3], we can state that as a result of the earthquakes that occurred in Turkey in February 2023, more than 200,000 buildings collapsed or became unusable. At the same time, the earthquakes in Turkey left behind mountains of debris in the amount of 230 million tons. According to experts, if the debris of buildings, abandoned cars, household furniture and appliances were

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collected in one place, their height could reach about 4,000 meters (Fig. 1). As we can see, the scale of the natural disaster is still devastating.

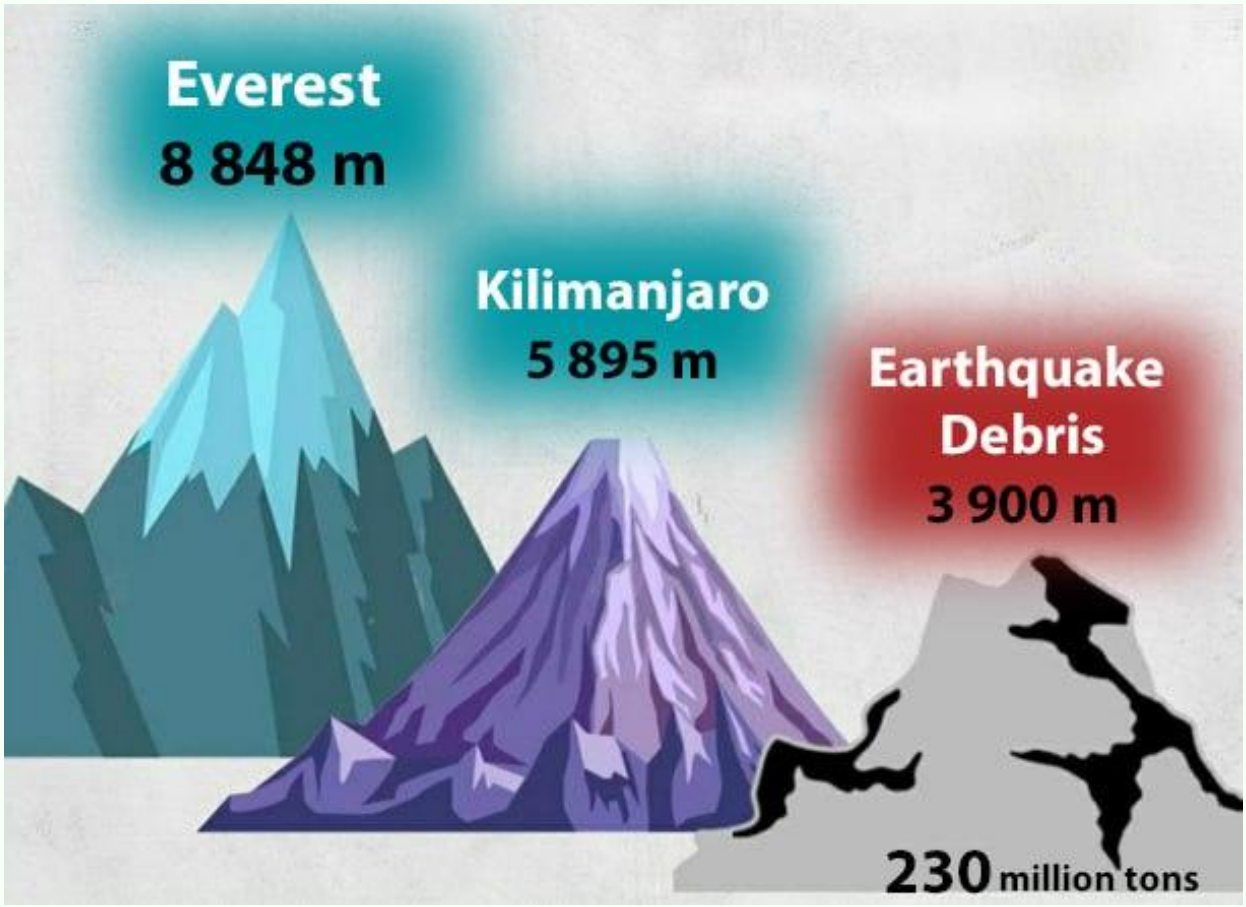

Figure 1. Illustration of a mountain of solid waste in Turkey.

According to the website [4], more than 3.5 million tons of municipal solid waste (MSW) are produced daily in the world. In all countries of the world, the amount of municipal solid waste in the form of urban garbage has increased sharply in recent decades, amounting to an average of 150-300 kg/year per capita. Worldwide, the amount of waste generated per person per day averages 0.74 kg, but varies widely - from 0.11 to 4.54 kg. High-income countries, which account for only 16% of the world's population, produce about 34% or 683 billion tons of the world's waste.

As noted in the website materials [5], it was stated that on December 14, 2022, the UN General Assembly, at its seventy-seventh session, adopted a resolution proclaiming March 30 as the International Day for a World Without Waste. Turkey,

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along with 105 other countries, put forward this resolution. It follows other resolutions dedicated to waste, including "End Plastic Pollution: towards a legally binding international treaty", adopted at the UN Environment Assembly on March 2, 2022. International Day for a World Without Waste aims to promote sustainable consumption and production patterns, support the transition of society to circularity, and raise awareness of how zero waste initiatives contribute to the advancement of the 2030 Agenda for Sustainable Development.

According to the source [6], mountains of garbage up to 36 meters high have formed in India: cleaning India of this waste could cost 13 billion dollars (Fig. 2). The Prime Minister of India announced a program to rid the country of giant piles of garbage. One of the largest solid wastes is in Mumbai, its height is equal to an 18-story building. According to experts, breathing the air of Mumbai or Delhi is equivalent to smoking 100 cigarettes a day. Every year, 1.5 million people die from lung cancer and asthma in these cities.

Figure 2. Illustration of a mountain of solid waste in India.

According to the site [7], to solve the waste problem, it is necessary to implement programs to minimize waste, sort waste, and create enterprises for its processing.

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It is also important to improve the culture of consumption and the level of responsibility of the population.

Methodology

Nowadays, the planet is littered with garbage everywhere. Solid household waste is diverse: wood, cardboard and paper, textiles, leather and bones, rubber and metals, stones, glass and plastics. Rotting garbage is a favorable environment for many microorganisms that can cause infections and diseases.

According to world statistics, more than 3.5 million tons of municipal solid waste (MSW) are produced daily in the world. In all countries of the world, the amount of municipal solid waste in the form of urban garbage has increased sharply in recent decades, amounting to an average of 150-300 kg/year per capita. Worldwide, the amount of waste generated per person per day averages 0.74 kg, but fluctuates widely - from 0.11 to 4.54 kg. High-income countries, which account for only 16% of the world's population, produce about 34% or 683 billion tons of global waste.

At the end of the 20th century, the solution to the garbage problem was very unexpected. Plastic and other hard-to-decompose items were simply taken to third world countries. Thus, entire regions emerged in Africa, drowning in the garbage of developed countries. In the 21st century, it became clear that this does not solve the problem, but only worsens it. Now the issue of ecology has become more relevant than ever.

The seriousness of the waste problem was not so noticeable before. Nature managed to process waste itself until a certain time, but the technical progress of mankind played an important role in this moment. New materials appeared, the decomposition or processing of which in a natural way can last for hundreds of years, and such anthropogenic loads are no longer within the power of nature. Yes, and an important factor is the current volume of waste produced. It is simply enormous. But today waste and garbage can be considered as raw materials. They can be processed and reused. Each city dweller produces approximately 500 to 800 kg of waste per year. In some countries up to 1000 kg. And this number is constantly growing.

Solid waste is one of the main types of pollution problems on the planet, which poses a potential health hazard to the population living in all countries of the world, as well as a hazard to the natural environment. In many countries, there is still a

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problem of misunderstanding the seriousness of the solid waste problem, and therefore, there is no strict regulation, as well as the necessary legal acts governing issues related to waste and garbage.

In today's world, we encounter garbage everywhere, and its amount is constantly increasing. Unfortunately, the amount and volume of all kinds of solid and other types of waste are rapidly increasing all over the world. Beijing, which has over 400 waste disposal sites, is already running out of space for garbage. Over the past decade, 14 landfills in the New York area have filled to capacity. Every year, people throw away more than 200 billion plastic bottles, 58 billion disposable plastic cups, and a billion plastic bags. About 3 million kilograms of garbage are removed from coastal areas around the world every day.

Until the 19th century, waste mostly represented only an epidemiological hazard. These were organic substances and materials that did not pollute the environment. With the emergence of industry, the problem of garbage arose. The more enterprises grew, the more waste there was. With the beginning of oil refining, the situation worsened. Now there is waste that does not decompose at all.

The issue of solid waste is also considered in the context of river and water pollution. It is known that most of the garbage produced by the residents of Jakarta (Indonesia) ends up in the waters of the Ciliwung, a river that has become one of the most polluted in the world. This is because the city has no organized garbage collection. All types of waste, even dead animals, decompose in the river water, releasing cadaveric poisons. According to estimates, it will take 20 years to clean the river. At the same time, the lives of millions of people depend on the Ciliwung, the main source of drinking water. But only a small part of the garbage remains in place. The river carries almost all the waste to the sea, where it causes irreparable harm to many species of marine animals.

CONCLUSIONS

In conclusion, due to the increase in productive forces and reproduction of material goods, as well as rapid urbanization and demographic growth, proper management of solid waste is of utmost importance for the creation of sustainable, healthy and inclusive environments in cities and communities. If we do nothing, the world community will go down a dangerous path, where we will see increasing volumes of waste and staggering levels of pollution. And then we will pay a much higher

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price than we do today – in lives, incomes and the quality of the environment. There are already many solutions today that can reverse this trend. But urgent action is needed at all levels of society.

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