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ENVIRONMENTAL PROBLEMS OF RIVERS AT THE PRESENT STAGE

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Abstract: This article examines the environmental problems of rivers today in the context of socioeconomic development, energy and food production, healthy ecosystems, and human survival. It also considers environmental issues related to the pollution of river oases due to anthropogenic activities. Furthermore, attention is focused on the shortage of clean water, which is considered the most serious environmental problem in modern cities, causing significant damage to the health of citizens and green spaces. Furthermore, an analysis of river pollution by various wastes and pollutants in different regions and countries around the world is provided. The article examines the factors polluting rivers and the problems of drinking water shortages, and provides recommendations for maintaining clean rivers.

Keywords: river pollution, industrial waste, Club of Rome, sustainable development, University of York, Ramayana epic, Citarum River, water issues, ecosystem pollution, chemical waste.

INTRODUCTION

It should be noted that humanity undoubtedly impacts various ecological systems through its activities. Examples of such, often dangerous, impacts include draining swamps, deforestation, depleting the ozone layer, reversing river flows, and dumping waste into the environment. In doing so, humans disrupt the established connections within a stable system, potentially leading to its destabilization and, ultimately, to an environmental catastrophe.

Social factors, such as the human population's excessive abuse of natural resources, play a significant role in the worsening environmental situation worldwide. Although humans are considered rational beings, they are unable to adequately control their actions. Hence, situations encountered in everyday life shock us all: first and foremost, this concerns rivers, which we typically expect to be fresh and clean.

Currently, river pollution is occurring worldwide. The problem of river pollution worldwide is becoming increasingly pressing. Since the last decade of the 20th century, river pollution and the accompanying shortage of drinking water have been considered one of the global challenges of our time. As the global population grew, the scale of river pollution and, consequently, water shortages increased significantly, subsequently leading to deteriorating living conditions and slowing the economic development of countries experiencing water shortages.

LITERARY RESEARCH

An unfavorable situation is observed in the coastal zones of all the world's seas and oceans, where rivers and canals carrying wastewater flow into them. Liquid industrial waste, oil industry waste, and other household waste from nearby waters enter the world's water bodies (lakes and seas). Human intervention in natural processes has led to the pollution of even such large rivers as the Mississippi, Marilao, Yellow River, Matanza-Riachuelo, Ganges, Dnieper, Danube, Rhine, and Volga, reducing the volumes of transported water masses (river discharge).

Among the environmental problems that, according to the report “Global Environment Outlook 2000” (GEO-2000) published by the United Nations Environment Programme (UNEP), will be the

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main ones in the 21st century, are named climate change as a result of greenhouse gas emissions, shortage of fresh water and its pollution, deforestation and desertification, reduction of biodiversity, population growth and its migration, the need for waste disposal, air pollution, degradation of soils and ecosystems, chemical pollution, depletion of the ozone layer, urbanization, depletion of natural resources, disruption of biogeochemical cycles, the spread of diseases (including the emergence of new ones), etc. Almost each of these environmental problems can, if the spontaneous development of civilization continues, lead to the destruction of humanity and the biosphere.

The author's work [1] notes that the course of human history changed dramatically and suddenly in the 20th century. The renowned Italian scientist and public figure, founder of the international non-governmental environmental organization, the Club of Rome, A. Peccei, wrote: "The essence of these changes is that in just a few decades, a period of slow human development that lasted for many millennia has ended, and a new dynamic era has begun... All these changes, in essence, concern precisely the altered position of man himself on Earth. If previously he was no more than one of many living beings inhabiting the planet, now man has transformed it into his undivided empire."

The website [2] indicates that by the 1970s, the world recognized the need to urgently address the planet's ecological balance. This issue was first raised at a high political level in 1972 in Stockholm, at the UN Conference on the Human Environment. It was recognized that environmental problems had reached alarming proportions and that their solution required the combined efforts of the entire global community. The Stockholm Conference significantly intensified environmental action at all levels. However, it soon became clear that the degradation of the global biosphere was proceeding at a faster rate than the efforts being undertaken. To analyze the causes of this situation, in 1987 the World Commission on Environment and Development prepared the Report "Our Common Future," also known as the Brundtland Report, which first coined the term "sustainable development"—that is, development that preserves resources for future generations while meeting the needs of current generations. The Report identified overconsumption in developed countries and poverty in developing countries as key causes of environmental degradation and highlighted the need for the global community to join forces and help the developing world to preserve our planet.

Jonah Fisher [3] believes that the world's rivers are heavily polluted with various medications and other pharmaceutical products, posing a threat to both the environment and human health, according to the findings of a major study conducted by British scientists. In a large study conducted by the University of York, scientists discovered that traces of paracetamol, epilepsy and diabetes medications, as well as nicotine and caffeine, are most frequently found in the world's rivers. The most polluted rivers are in countries such as Pakistan, Bolivia, and Ethiopia. The least polluted are in the rivers of Iceland, Norway, and the Amazon basin. The York University study, published in the journal Proceedings of the National Academy of Sciences, is one of the largest in its field: 258 rivers in 100 countries, with more than a thousand sampling sites. Furthermore, the report states that river pollution with antibiotics can lead to a decrease in their effectiveness: antibiotic-resistant bacteria develop in water contaminated with antibiotics. This is one aspect of the threat that river pollution with drugs poses to human health.

According to the website [4], the Ganges River (Fig. 1) is one of the most polluted rivers in the world. The Indian epic Ramayana recounts that the waters of the sacred Ganges River are imbued with the power to bring the dead back to life and cure illnesses. Unfortunately, reality is far from the myth: India's main river is among the most polluted bodies of water in the world. Waste from numerous industries and feces from overcrowded cities flow into it. Even bathing in the Ganges, where enterobacteria counts are 120 times higher than normal, leads to infectious diseases and is the cause of

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thousands of deaths annually. Ritual burials in Varanasi add to the problems hindering the purification of this sacred body of water.

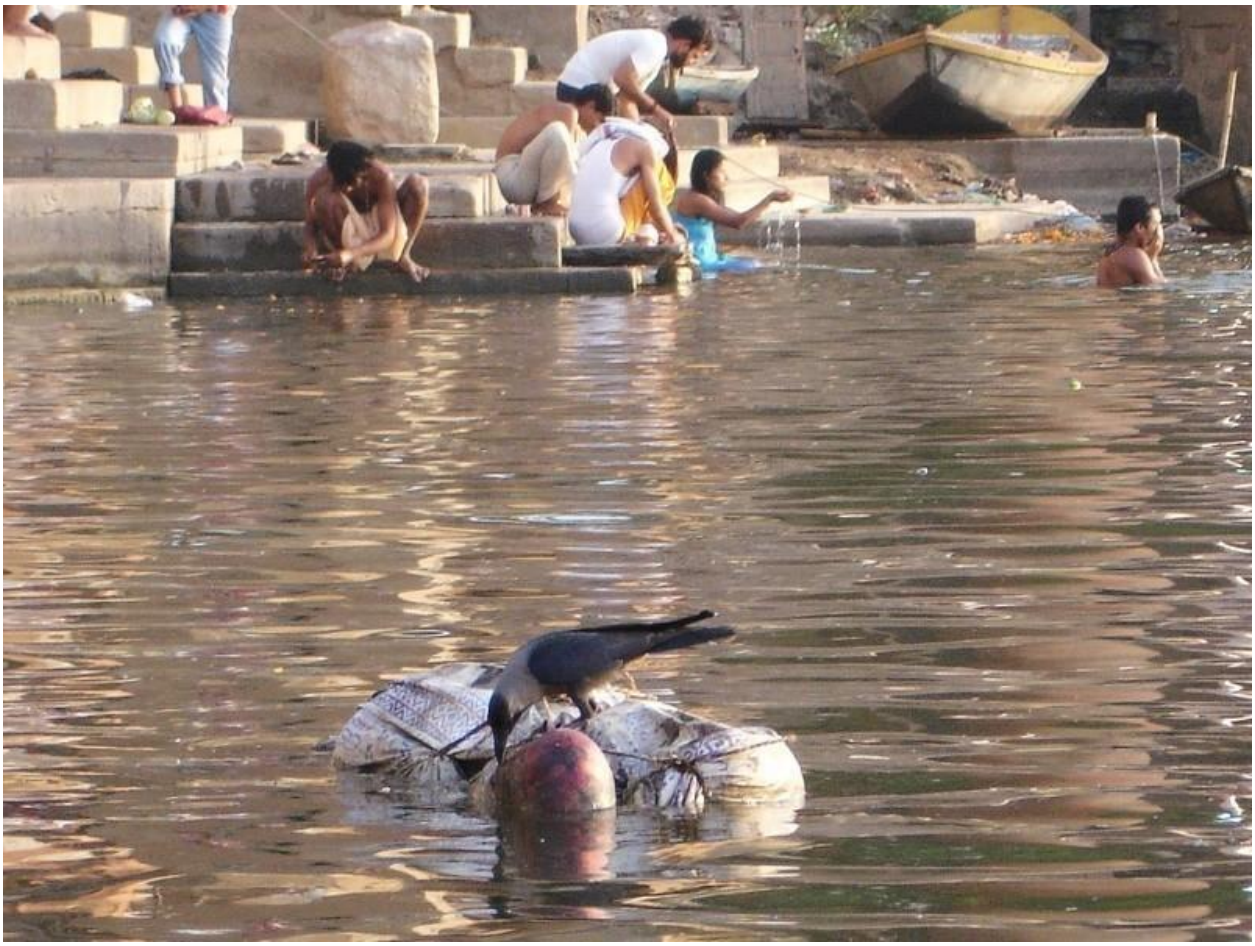


Figure 1. Illustration of the pollution of the Ganges River (India).

Based on data from the website [5], we can conclude that tourists visiting Indonesia should be aware that it is home to one of the most dangerous rivers in the world. Man-made. Many years ago, the Citarum River (Fig. 2) was clean and supplied water to all nearby settlements and fields. But with progress, factories began to be built along its banks. Currently, there are more than 500 of them. All waste and slag are dumped into the Citarum, and the once-clean river has become one of the dirtiest and most dangerous waterways in the world. In places, the water is obscured by the trash. The Citarum is a breeding ground for many pathogenic bacteria, and even a single swim in it can lead to a terrible infection. The most terrifying thing is that people living along the river still use it for drinking water and for irrigation. This is due to desperation, as they have no other source of water. The garbage floating in the Citarum also poses a significant pollutant to the hydroelectric power station on Java. Scientists predict that this could soon lead to complete clogging and the plant's shutdown.

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Figure 2. Illustration of pollution of the Citarum River (Indonesia).

Methodology

The pollution of river oases due to anthropogenic factors is currently becoming a global environmental problem, the consequences of which negatively impact the health of people worldwide. This problem is relevant today in all regions of the world where the energy, mining, metallurgy, chemical, and other economic sectors are rapidly developing. Increasing air pollution is the main cause of various diseases worldwide. Air pollution from fine aerosol particles, ash, and dust negatively impacts human life, animals, plants, soil, and water bodies.

According to global statistics, excessive and unplanned consumption of drinking water is occurring in all regions of the world. The main reasons for this are the rapid expansion of production and the growing global population. Reducing unplanned water consumption is no longer feasible, as doing so would require drastically curtailing the production of material goods and foregoing many of the benefits of civilization. Pollution also contributes to drinking water shortages, as the volume of potable water is declining. Therefore, greater attention must be paid to maintaining the cleanliness of rivers. In this regard, we can note that the life and health of all inhabitants of planet Earth depend on the quality of water.

Water is essential for human and ecosystem well-being, agriculture, energy, and healthcare. No one can deny that water is essential for life, and access to it is becoming increasingly difficult, especially for the poor and communities that survive on the margins of society, with meager resources and little political influence. Urbanization is known to be the main cause of the worsening water crisis for humanity. To adapt the Earth to its needs, humanity disrupts and pollutes ecosystems, worsening the situation. Population growth, particularly in regions with the most challenging conditions, also

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contributes to the problem. The greenhouse effect also contributes, as water evaporates without a trace from the planet's surface. Furthermore, each person wastes water thoughtlessly, in much greater quantities than they need.

We can now confidently state that it's impossible to boast of a single river in the world that would meet ideal conditions, because humanity is too ignorant of nature's gifts. Despite humanity's desire for rivers to be ecologically clean and unpolluted, we nonetheless face the process of widespread pollution by all manner of human waste. This seems to be an absurdity in human thought and action. Currently, the entire world is treading water, unsure how to address the dangers that arise, as if by magic, one after another. The global problems facing humanity, which remain unresolved, pose significant threats to the security of civilization and humanity, and collectively constitute the systemic crisis facing states and the global community in the 21st century.

Conclusions

In my opinion, one way to reduce river pollution and the associated shortage of drinking water is through careful management of water resources and the use of clean technologies in all production processes. At the same time, it is necessary to tighten regulations for monitoring compliance with water quality standards. All these measures will ultimately yield much more significant results, which in turn will help resolve the environmental problems of river pollution at this stage.

In conclusion, I would like to note that the growing severity of the threats posed to human civilization by various global problems, including environmental catastrophes, is undeniable. However, no single state, no matter how powerful, nor group of states, can cope with these problems on their own. Only the cooperation of all countries in a peaceful environment, only an awareness of universal interdependence and the prioritization of universal human goals will allow people to gain confidence in the future, prevent social and environmental disasters, and ultimately, simply survive.

REFERENCE

1. Peccei, A. (1980). Human Qualities. Moscow: Progress, 1980. P. 35.
2. (http://www.un.org/russian/conferen/wssd/agenda21/).
3. Millennium Ecosystem Assessment // Ecosystems and Human Well-being: Desertification / World Resources Institute. Washington, DC, 2005. - 36 p.
4. http://www.cawater-info.net/all_about_water/?p=10052
5. https://megatopof.ru/priroda/strashnye-reki.html
6. Toshov J., Baratov B., Sherov K., Mussayev M., Baymirzaev B., Esirkepov A., Ismailov G., Abdugaliyeva G., Burieva J. Ways to optimize the kinetic parameters of tricone drill bits // Material and Mechanical Engineering Technology, Kazakhstan, 2024, No. 1, pp. 35-45.
7. Toshov, Javokhir & Toshov, B.R. & Baratov, Bakhtiyor & Haqberdiyev, A.L.. (2022). Designing new generation drill bits with optimal axial eccentricity. Mining informational and analytical bulletin. 133-142. 10.25018/0236_1493_2022_9_0_133.
8. Baratov B. N., Umarov F. Ya., Toshov Zh. B. Assessment of the performance of tricone drill bits / Mining Journal - Moscow, 2021. - No. 12. – P.60-63.
9. O.V. Tuyboyov, N.F. Raxmanova, B.N.Baratov. Investigation into sustainable innovations in mining engineering for resource optimization and environmental efficiency// “Kon mashinalari va tekhologilar” Ilmiy-technik magazine, Toshkent, 2024, No. 1(7), pp.51-58.
10. Toshov, Z.B., Rahutin, M.G., Toshov, B.R., Baratov B.N. Tracking prevention in roller cone bit drilling // Eurasian Mining, 2024, 41(1), pages 62–66. DOI:10.17580/em.2024.01.15
11. Toshov, Javokhir & Baratov, Bakhtiyor & Baynazov, Umid. (2020). Method of calculating the gear ratios of the cones of tricone drill bits. E3S Web of Conferences.

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http://houghtonstreetreview.com/index.php/hsr

201.01012.10.1051/e3sconf/202020101012.
12. Toshov, B. & Toshov, Javokhir & Akhmedova, L. & Baratov, Bakhtiyor. (2023). The new design scheme of drilling rock cutting tools, working in rotation mode pairs. E3S Web of Conferences. 383. 1-6. 10.1051/e3sconf/202338304069.