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GLOBAL WARMING AND DEMOGRAPHIC PROBLEMS

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Annotation:The impact on the climate is increasing as a result of anthropogenic and technogenic factors. Due to the development of industry and the increase in motor transport, a large amount of carbon dioxide gases are being emitted into the atmosphere. In this article, the author discusses climate change and demographic problems.

Keywords: Anthropogenic factor, demographic problem, heat wave, globe, continent, living organisms, weather, glaciers, climate.

After life began to form on Earth, over millions of years, weather and climate, geological processes have become moderately balanced. The Earth, which was originally a single entity, was divided into continents, seasons were formed, from unicellular to multicellular, large-leaved, flowering and fruit trees, all types of animals adapted to climate and weather, soil and water. In the growth and development of all living organisms on Earth, adaptation to certain climatic conditions and interdependence with nature have arisen. Biological cycles have adapted to each other and harmonized with each other over millions of years.

The climate is being affected by anthropogenic and technogenic factors. Due to the development of industry and the increase in motor transport, a large amount of carbon dioxide gases are being emitted into the atmosphere. In addition, a large amount of water vapor is emitted into the atmosphere as a result of the combustion of coal, oil and gas. As a result of the radiation, a layer of carbon dioxide and water vapor forms in the upper atmosphere, blocking sunlight from above, creating a humid atmosphere and increasing temperatures.

The second climate threat is Greenland, which determines the weather in Europe, or whether it is cold or hot in Europe is determined by the Greenland glaciers. Scientists studying climate have analyzed ancient glaciers and found that the air temperature was lower for a certain period of time in the past, and higher for a certain period, and that the climate has changed before. However, a sharp change in climate leads to the death of living organisms. Recently, climate scientists from the world. Ecologists report that the average temperature increase on Earth is 3 ° C. Such a warming of the climate ensures the melting of glaciers. Freshwater is added to the salty waters of the seas and oceans. The appearance of fresh water in the ocean, for example, can change the movement of the Gulf Stream in the Atlantic Ocean.

In the Greenland region of the Atlantic Ocean, a "heat wave" or plume circulates, and there is a lot of water in the upper ocean, where it circulates, cools and returns to its original position, southward. According to scientists, due to climate change, the circulation of the Gulf Stream may cease. This is because the fresh water plume formed by melting glaciers is salted, which may cause its composition to become lighter and its movement to stop. The most serious threat to humanity today is the threat of global warming. The main reason for the problem of global warming or the greenhouse effect is the large emission of various gases into the atmosphere or the impact of anthropogenic consequences. As a result of civilization, industry and technology have developed, the number of cars has increased sharply, and the amount of SO2 gas in the atmosphere has increased due to the reduction of forests and grasslands. The

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lack of recycling of industrial waste is also causing an increase in SO2 gas released into the atmosphere. This means that carbon dioxide and other harmful gases, produced in one way or another, are dispersed into the air, and their invisible particles form a haze and float in the air.
Coal mining also releases a lot of carbon dioxide into the air. China is one of the world's largest coal users, which means that it emits a lot of toxic gases into the atmosphere. According to reports, General Motors has increased its car sales by 18 percent in recent years. This means that the company sells as many cars as all the other companies in the world combined. Climate change is one of the most pressing issues facing humanity today. In 1990, 49 Nobel Prize winners wrote to the US President about the greenhouse effect or global warming. The main sources of the greenhouse effect are water vapor (which makes up 0.3 percent of the Earth's atmosphere, but increases to 70 percent due to the greenhouse effect) and aerosols. We use 6,000 km3 (610,121) of water every year, most of which is not returned. The use and discharge of large amounts of water in different places and at different temperatures only increases the humidity in the atmosphere. The ability of moisture to accumulate and store heat leads to disruption of the circulation process in the atmosphere, additional glare, the formation of clouds and precipitation. Because 61012 tons of water make up 16% of the running water of all rivers in the world and 20% of the water vapor in the atmosphere, it is the main factor in the formation of the greenhouse effect. After the atmosphere is also occupied by carbon dioxide and hot water vapor, the amount of ultraviolet rays from the Sun decreases.

So, we have an understanding of what the greenhouse effect is and how it is formed. Another reason for the large amount of water vapor being released into the atmosphere is related to the heat and energy complex. The most environmentally friendly gas (which contains 98 percent methane) reacts with oxygen in the air through combustion. In one year, an average of 2.2 trillion. m3 of natural gas (2.8 billion. tons of conventional fuel) and 3.5 billion. tons of oil are burned in the world. From their combustion, 12 billion. tons of water and heated air vapor are released into the atmosphere (this is several thousand cubic kilometers). In addition, a huge amount of oxygen is consumed for the combustion of fuels. For example, 4 kg of oxygen is consumed from the atmosphere for the combustion of 1 kg of methane, and it is clear that 11 billion. tons of oxygen are consumed for the gas produced worldwide in one year. 3.5 kg of oxygen is consumed in the atmosphere for the combustion of 1 kg of gasoline. So, to extract oil products in the world, another 11.5 billion tons of oxygen are needed. If 2.7 kg of oxygen is needed to burn 1 kg of coal, then for the 4.5 billion tons of coal mined, another 12 billion tons of oxygen are taken from the atmosphere. We see that humanity causes the consumption of 35 billion tons of oxygen from nature every year for the fuels it needs.

So, fuel energy both saturates the atmosphere with hot vapors and takes away all the oxygen in it. As the oxygen in the atmosphere decreases and becomes saturated with toxic gases, the climate changes. In addition, as a result of other industrial enterprises, cars, and various human activities, a lot of carbon dioxide is released into the atmosphere and a lot of oxygen is consumed from it. The amount of oxygen in the biosphere is not very large, 85 percent of the hydrosphere and 47 percent of the lithosphere is oxygen. Oxygen is not produced in nature on its own, oxygen is released into the atmosphere only during the process of photosynthesis. Back in the 1970s, the famous Club of Rome put forward the idea that the Earth's ecosystem is not able to restore the oxygen it takes from the atmosphere. Ordinary (corrosion) rust itself consumes billions of tons of oxygen, etc. That is why, according to the Kyoto Protocol, gas should not be used as a fuel at all. The atmosphere is kept clean mainly by obtaining energy from water, wind, and biomass. According to the Kyoto Protocol, the preservation and

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conservation of oxygen is in the first place. According to data, over the past 10 thousand years, the world's climate has been becoming more temperate, and on each continent there are plants, animals and other living organisms that have adapted to it. No one and nothing has the right to destroy this environment.

Climate change in Uzbekistan is also associated with an increase in gases emitted into the atmosphere. Like all developed countries, in our republic, industrial development, increased transport, anthropogenic factors and the drying up of the Aral Sea are causing climate change. Pollution of atmospheric air, soil microflora and drinking water, deterioration of the ecological environment, in turn, are among the factors accelerating climate change. Subsequent observations show that the climate is warming over the years or that severe consequences arise due to climate change (various hurricanes, floods, excessive rainfall, unexpected snowfall in regions with a warm climate, severe cold in the spring months or anomalous conditions).

The abundance and thickness of snow is of great importance for the rivers of Uzbekistan, since the water flowing into them is formed from melting snow. Recently, a decrease in the volume of snow in snow basins has been observed. In addition, small snow basins or glaciers in the republic are naturally disappearing, and the ice in large ones is also breaking up into larger ones. Of course, this situation can be attributed to global warming. The main snowfall in the republic is observed in January-March. However, in recent years this indicator has been relatively decreasing. The air temperature in January-March is higher than the multi-year norm. The largest glaciers are Fedchenko in the Pamir Mountains, Tuyuk-Suv in the Northern Tien Shan, and Abramov in the Khysor-Aloy ranges. In recent years, the ice reserves in these glaciers have been decreasing by 1% per year.

As a result of the reduction of glaciers, water is reduced, which, in turn, leads to the spread of ice into the environment and pollution. According to long-term data, the temperature of the earth is related to the Sun. Over the next 250 years, a slight decrease in the temperature of the Sun has been observed. Since 1960, solar activity has been decreasing, this situation will continue until 2060, and according to some data, the temperature will decrease until 2110. Solar activity leads to warming of the climate, and its decrease leads to cooling. But there are such effects in the metagalaxy that it does not fit into our idea of the atmosphere. Solar activity is sometimes divided into cycles, passing every 11 years. During explosions, the Sun spends a lot of energy. In November 2003, the Sun exploded, and a lot of energy was spent on it. This energy can provide a large city like Moscow for 200 million years. That's why the idea that the Sun's energy will run out is a complete myth.

According to calculations, the energy of the Sun may run out in 5 billion years. So, the words of the Dutch physicist are completely unfounded. According to the employees of the Hamburg Meteorological Institute, in the next 10 years, the number of hot days in Germany will increase by 10-20 days, and in Southern Europe there will be 50 days without a drop of rain. According to the following data, the air temperature on our planet is expected to increase by 1.4-5.8 ° C in the coming decades. This will lead to the expansion of deserts and deserts, the melting of permafrost, and the rise in the level of the Pacific Ocean. According to experts, as a result of an increase in air temperature by 4 ° C, all glaciers will melt. According to less accurate data, if the glaciers at the two poles melt, the water level will rise by 100-110 m, and many countries of the world will be under water. According to the journal Nature, the area and thickness of Arctic ice are shrinking. These figures are now 40 percent lower than in 1990. If the melting of glaciers continues at this rate, there will be no ice in the Arctic within the next 100 years. The water level in the Pacific Ocean will rise. This will lead to the extinction of a

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number of animal species, in particular, the polar bear. As a result of the increase in water, the strength of the Gulf Stream, which warms Western and Northern Europe, will also decrease.

So, with global warming, global cooling will also occur, and temperatures of -40°C will become commonplace. Climate change will lead to the extinction of many populations and species, and this loss will never be restored. In fact, this effect is not a consequence of nature, but of the "greatest gift" of man to nature. "Ozone hole". The "ozone hole" in the atmosphere, according to Russian scientists, has been growing larger every year, reaching an area of 25 million km2. Over the past 20 years, the ozone layer has become very thin. According to some foreign scientists, the size of the "ozone hole" has not changed. So, everyone's opinion is different, but the amount of chlorine, fluorine, carbon (freon) that destroy it in the nitrogen layer is increasing. Freon is used in refrigerators, air conditioners, and aerosols. According to the Montreal Protocol of 1987, the use of freon was banned by law in 170 countries in 2010. However, scientists disagree on this issue. Some scientists say that the "ozone hole" is caused by freon, while others say that this hole is caused by hydrogen. V.L. Sbivorotkina (MGU) writes that hydrogen leaking from the earth's crust causes an ozone hole. Scientists M. Molina and S. Roulendiar, who proved the "ozone hole" with the technogenic theory, received the Nobel Prize in 1974.

A group of scientists around the world, in particular, US scientists, say that freon destroys the ozone layer, while Russian scientists in the second group consider this idea unfounded and associate it with hydrogen. Uzbek scientists have not yet achieved great success in this regard. One thing makes humanity think: an "ozone hole" is observed in Antarctica. Unfortunately, there are no cities there or freon is almost not used. "Why did the "ozone hole" form here?" - says Russian scientist Yu.N. Eldyshev. The ozone layer is also thinning in other uninhabited areas, while in the stratosphere above large cities it is the opposite. Therefore, it is not reliable to attribute the "ozone hole" to man-made sources. In atmospheric chemistry, ozone is destroyed by three mechanisms - chlorine, nitrogen and hydrogen. The first is chlorine-freon destruction, the second - ozone mechanism is still poorly studied, and the third - the main reserve of hydrogen is underground. Ozone depletion is common over Hawaii, Iceland, and the Red Sea.

The reason for this is that there are a lot of cracks in these places, and hydrogen leakage is significant. As for the "ozone hole" over Antarctica, mid-ocean ridges that neutralize all toxic gases are concentrated here. Therefore, toxic gases escape into the stratosphere and destroy the ozone layer. Much scientific work still needs to be done in this regard. But it is necessary for humanity to protect the ozone layer of Mother Nature, where it lives, for itself and for future generations. If the ozone layer is destroyed in large cities, then people will suffer from unknown diseases under the influence of ultraviolet rays, living organisms will mutate, and some species may even become extinct. Scientific and practical work should be carried out in Uzbekistan in this regard, because everyone lives in this Mother Nature. There is a distance of 2,000-4,000 km for gases to spread in the atmosphere, which is not a large distance. As we have already noted, the greatest threat to the biosphere today is the threat of global warming. The cause of global warming is the anthropogenic factor.

Due to the increase in the number of people on Earth and their improper use of natural resources for their own needs, the amount of SO emitted into the atmosphere has increased. The problem of global warming or the greenhouse effect is caused by the negative relationship of humans to the atmosphere. There is a shortage of fresh water, salinization of soils occurs, and plant productivity decreases. As a result of civilization, industry and technology have developed,

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the number of cars has increased sharply, and forests and meadows have decreased. The lack of recycling of industrial waste is also causing an increase in SO gas emitted into the atmosphere. This means that carbon dioxide and other harmful gases formed in one way or another are released into the air. Global warming leads to climate change.

References:

1. N.F Axmedjanovna. Atrof-muhitni muhofaza qilish tabiiy resuruslardan oqilona foydalanish. International journal of scientific researchers (IJSR) INDEXING 4 (2), 532-535.
2. F Nazarova. Оқ дўнгпешона балиғи личинкаларининг озиқланиш биологияси. Центр научных публикаций (buxdu. uz) 44 (44)
3. F Nazarova. Protection of flora and fauna. Центр научных публикаций (buxdu. uz) 43 (43).
4. F Nazarova. Изменения климата в узбекистане. Центр научных публикаций (buxdu. uz) 43 (43).
5. F Nazarova. Окружающая Среда И Здоровье Человека. Центр научных публикаций (buxdu. uz) 32 (32).
6. F Nazarova. Причины снижения плодородия земельных ресурсов узбекистана и меры их охраны. Центр научных публикаций (buxdu. uz) 30 (30)
7. F.A Nazarova. O‘zbekistondagi Ramsar ro‘yxatiga kiritilgan suv botqoqlik hududlarію Science and Education 4 (5), 260-266.
8. Ф.А Назарова. Окружающая среда и здоровье человека. Амалий ва тиббиёт фанлари илмий журнали 110 (2022 махсус сон), 261-265.
9. F Fayziyeva, F Nazarova. Protection of flora and fauna. Евразийский журнал медицинских и естественных наук 2 (12), 77-82.
10. F Nazarova. Ўсимлик ресурслари ва уни муҳофаза қилиш. Центр научных публикаций (buxdu. uz) 12 (12).
11. Ф Назарова. Атмосфера, сув ва тупроқ ресурслари мухофазаси. Центр научных публикаций (buxdu. uz) 8 (8).
12. Ф.А Назарова. Атмосфера, сув ва тупроқ ресурслари муҳофазаси. Хоразм Маъмун Академияси Ахборотномаси 88 (№4-1), 61-64.
13. Ф.А Назарова. Табиий ресуруслар ва улардан оқилона фойдаланиш. Science and Education 3 (10), 114-122.
14. Ф.А Назарова. Ўсимлик ресурслари ва уни муҳофаза қилиш. Science and Education 3 (5), 154-159.
15. Ф.А.Ф., Ф.А.Назарова. Bioecology and useful properties of papaya or melon tree. academicia An International Multidisciplinary Research Journal 11 (3)
16. F Nazarova. Modern Pedagogical Technologies in Teaching Biology. Центр научных публикаций (buxdu. uz) 8 (8).
17. Ф Назарова. Охрана атмосферного воздуха и его роль в природе. Центр научных публикаций (buxdu. uz) 8 (8).
18. D.R Karshieva, F.A Nazarova, Z.H Tolibova. Atmospheric dust and its effects on human health.Academicia: An International Multidisciplinary Research Journal.
19. F.A Nazarova, O Jabborova. Protection of Atmospheric Air and its Role in Nature. Central asian journal of theoretical & applied sciences 2 (10).

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American Academic publishers, volume 05, issue 04,2025
Journal: https://www.academicpublishers.org/journals/index.php/ijai

20. F Fayziyeva. Abiotic factors and scientific-practical significance of their study. Центр научных публикаций (buxdu. uz) 50 (50).
21. Ф.Ф Абдуллаевна. Табиат ресурслари ва уларни муҳофаза қилиш. Zamonaviy ta'limda fan va innovatsion tadqiqotlar jurnali 2 (4), 35-40.
22. F Fayziyeva. Buxoro viloyatida avtotransport vositalarining sonini ortishi va ularning atmosferani ifloslashdagi ahamiyati. Центр научных публикаций (buxdu. uz) 44 (44).
23. F Fayziyeva. Buxoro ixtisoslashtirilgan “jayron” pitomnigining ekoturizmni rivojlantirishdagi o‘rni. Центр научных публикаций (buxdu. uz) 44 (44).
24. Fayziyeva Flora Abdullayevna. Buxoro viloyatida avtotransport vositalarining sonini ortishi va ularning atmosferani ifloslashdagi ahamiyati. “journal of science-innovative research in uzbekistan” jurnali.
25. I. Mirzoeva, M. Ergasheva. Use of landscapes near Tudakul reservoir eficiently. BIO Web of Conferences.
26. M.K Ergasheva, D.J Kuchkorova. Methodological basis and conceps of studying rural landscapes of the desert zone. Экономика и социум, 60-63.
27. M.K Ergasheva, I.E Mirzoyeva. Geographical characteristics agro landscapes of kuyimozor tudakul oasis. Экономика и социум, 77-80.
28. N Bobomurodova, H Rakhimovna. Conservation of water and soil resources. Евразийский журнал медицинских и естественных наук 2 (12), 72-76.
29. Н.Ж Бобомуродова. Педагогические науки задачи школы по охране природы. Вопросы науки и образования 18 (2).
30. Н.Ж Бобомуродова. Любовь к человеку-идейная основа гуманизма алишера навои. Символ науки, 40-43.