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ON THE ISSUES OF CLIMATE WARMING IN THE CITY OF TASHKENT

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Abstract: This article examines climate change in the city of Tashkent within the context of global climate warming. At present, the process of climate warming has become the most significant vulnerability for both the natural environment and society. The causes of climate change—both globally and specifically in the city of Tashkent—are analyzed. Furthermore, the article explores factors that exacerbate the negative impact of extreme heat on public health and the economy.

Keywords: global cooling, climate risks, Paris Agreement, Filchner Ice Shelf, temperature record, greenhouse effect, ozone layer depletion, global temperature, extreme heat.

INTRODUCTION

Discussions surrounding the issue of climate change have been ongoing for many years. Much of this subject remains a matter of debate. Furthermore, not all experts agree with the thesis of global warming; some suggest the possibility of global cooling or argue that these processes are cyclical. There is also a view that the role of "greenhouse" gases released into the atmosphere is not as significant as is commonly estimated. Given that science currently lacks sufficient, reliable data on many of the global processes occurring within the natural world—both living and non-living—the existence of conflicting viewpoints on climate change is entirely understandable.

It should be noted that the climate is indeed changing, and the consequences are already being felt: weather patterns are becoming more volatile, air temperatures are rising, the hydrological regimes of water bodies are shifting, and adverse weather events—such as droughts, mudslides, heatwaves and cold spells, high winds, intense precipitation, and dust storms—are occurring with increasing frequency. Many developing countries, which lack the necessary social, technological, and financial resources for adaptation, are currently suffering the consequences of climate change. Millions of people are already facing shortages of water and food, as well as mounting climate-related risks that threaten public health.

LITERARY RESEARCH

It is well known that climate change is one of the negative aspects of the modern world's development. Given its potential impact on many facets of human life, it arguably stands as one of the most critical issues for the future of humanity today. Wealthy, long-industrialized nations bear the primary responsibility for the emergence of climate change, while the poorest communities and countries suffer the most from its consequences; they are typically the ones to bear the brunt of severe floods, droughts, storms, and other predictable events—disasters for which they lack the resources to mount

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an effective response. In essence, by trapping people in poverty, climate change threatens to undo the progress achieved in global development.

Scientists have predicted the destruction of humanity as a result of global warming. In this context, it is important to draw public attention to climate change as it affects the city of Tashkent. In recent years, Tashkent—much like other cities around the world—has experienced shifts in its climate. It is no secret that climate change could lead to an influx of "climate migrants." Experts estimate that by 2050, Eastern Europe and Central Asia could see up to 5.1 million "climate migrants"—representing 2.3 percent of the total projected population under a pessimistic baseline scenario. Of this number, up to 2.4 million "climate migrants" would be located in Central Asia.

According to a report cited by [1], the world is set to inevitably exceed the 1.5°C global warming threshold. However, experts maintain that a path toward a solution still exists. While keeping global warming below 1.5°C is no longer possible, there is still a way forward, as outlined in a new report from the UN Environment Programme (UNEP). The report suggests that an "overshoot, peak, and decline" strategy—where temperatures temporarily exceed the limit set by the Paris Agreement before being brought back down—represents our best chance to avoid the most severe consequences of climate change. Under an optimistic scenario, the report projects warming of 1.8°C, while other scenarios point to an increase of more than 2°C. "Every fraction of a degree will cost human lives, destroy livelihoods, exacerbate inequality, and push ecosystems toward irreversible collapse," stated UN Secretary-General António Guterres. According to Guterres, to secure humanity's future, this overshoot must be kept "as small and as brief as possible."

According to source [2], meteorologist Lindzen stated that the Arctic Ocean could melt away by 2040 due to global warming. Meanwhile, the world's largest iceberg has begun to move for the first time in 30 years, drifting into open waters in the Southern Ocean. The giant block covers an area of over 4,000 square kilometers—nearly three times the size of St. Petersburg. The iceberg broke off from the Filchner Ice Shelf in Antarctica in 1986; it traveled just over 300 kilometers before becoming grounded in the central part of the Weddell Sea. In recent years, the colossus has likely melted slightly, allowing it to resume its journey.

According to materials on the website [3], the high concentration of greenhouse gases has caused the average temperature in Tashkent to rise by 1.7°C since 1890—a figure significantly higher than the global average. Major sources of air pollution and greenhouse gas emissions include the energy sector, transportation, livestock farming, and the Aral Sea crisis. These issues were discussed at a conference held to mark World Environment Day on June 4.

Based on information from source [4], it can be noted that July 2026 was recorded as the hottest period in the history of Tashkent. The city set a new temperature record, with asphalt reaching 68.7°C—a phenomenon illustrated in Figure 1 (as measured by a thermal imaging camera). The surface temperatures of vehicles and other objects exposed to the sun reached as high as 66°C. The same source notes that such extreme temperatures significantly increase the risk of heatstroke and dehydration. It is advised to remain in cool indoor spaces whenever possible, avoid prolonged exposure to the sun, and ensure adequate water intake.

As noted in another video from July 20, 2026, situations related to climate warming in the city of Tashkent are presented. The material includes a comparative analysis of temperature readings taken on the exterior and interior surfaces of vehicles (passenger cars) parked in a parking lot. Specifically, for a dark-colored vehicle, the recorded temperatures were 85°C on the exterior and 82°C inside the cabin.

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For a white vehicle, the thermal imaging readings were as follows: 55°C on the exterior and 67°C inside the cabin.

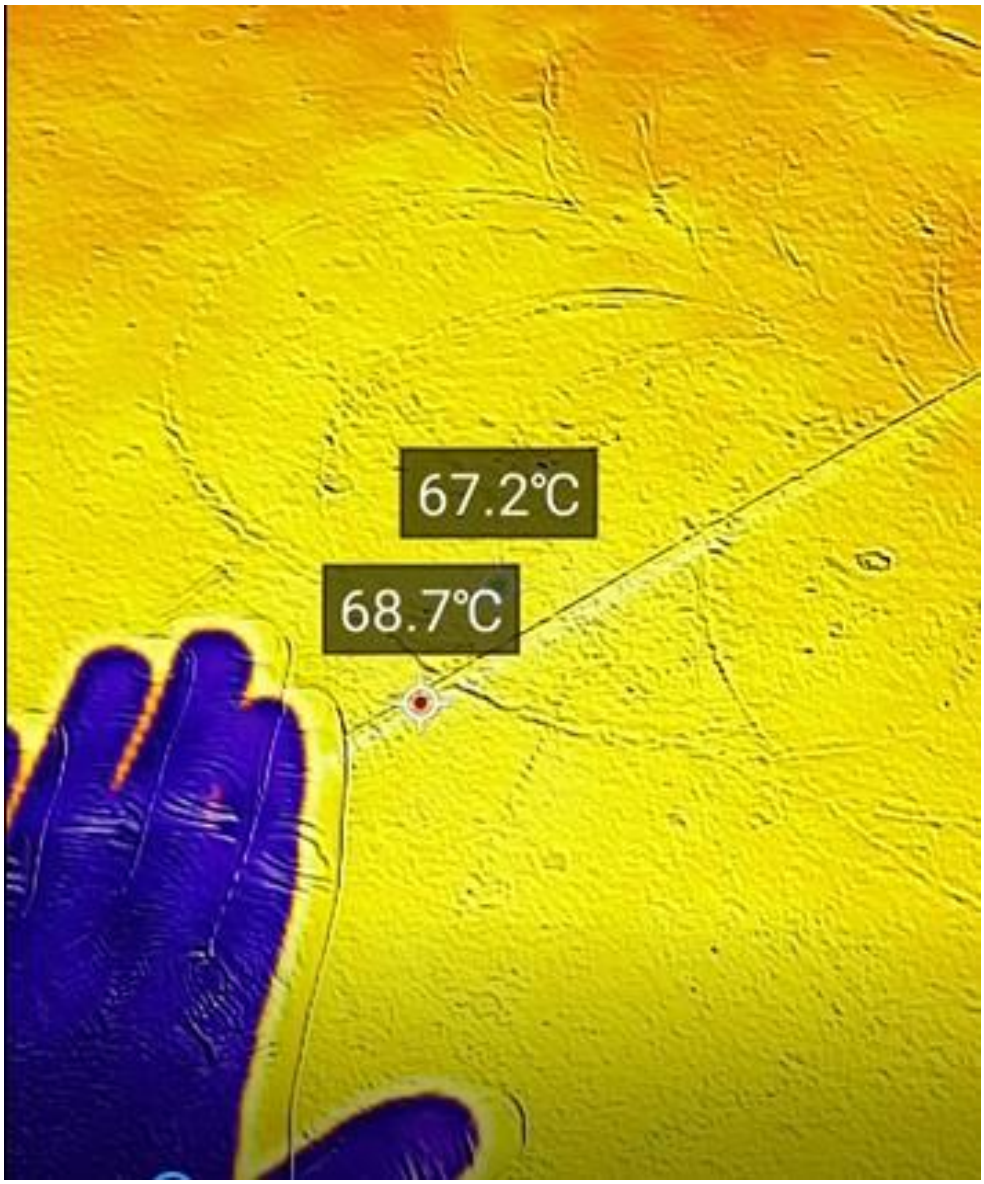


Figure 1. Illustration of high temperatures in the city of Tashkent.

Based on information from the channel 👉@SHOPIRLAR [5], it can be stated that 2025 was recorded as the hottest year in the history of Tashkent. As the channel notes, the previous year was not only dry but also exceptionally hot for the capital—not a single month throughout the year was cooler than the norm. The same source points out that in August 2023, air temperatures reached a peak of 60°C. As we can see, air temperatures in the city of Tashkent are rising with each passing year.

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Methodology

Experts emphasize that the greenhouse effect is the primary driver of climate change. The process by which heat from the Sun is trapped and retained at the Earth's surface is known as the greenhouse effect. While the Earth reflects some sunlight back into space through the atmosphere, a portion of this radiation is absorbed by various gases—many of which are released by human activity—instead of escaping into space. Because this heat cannot return to space, the Earth's surface warms beyond its normal range, creating a greenhouse effect that impacts the climate.

As a result, the difference between the highest and lowest temperatures throughout the day is insignificant. This means that both people and the natural world are exposed to the same hot, humid conditions at night as they are during the day. Such persistent heat leads to a sharp rise in temperatures. Carbon dioxide is the primary gas responsible for the greenhouse effect; it enters the atmosphere through both natural and human-made processes. Other polluting gases, such as methane and nitrous oxide, are released into the air as a result of human activity, further intensifying the greenhouse effect.

An increase in the concentration of greenhouse gases disrupts the planet's natural thermal balance and triggers an anthropogenic greenhouse effect. Experts estimate that by 2100, global gross domestic product could shrink by more than 20 percent as a result of this effect. Other major contemporary issues include the sharp decline in forest areas—which absorb carbon dioxide—the depletion of the ozone layer, and the shrinking of wildlife habitats due to anthropogenic factors and droughts.

A recently published report by the World Bank and the Global Facility for Disaster Reduction and Recovery highlights the growing threat of extreme heat to cities in Central Asia. According to the study, the region’s major metropolitan areas—Tashkent, Bishkek, Astana, and Ashgabat—experience between 19 and 28 additional deaths per 100,000 people each year due to high temperatures. Densely packed urban development, a lack of green spaces, and aging infrastructure only exacerbate the negative impact of the heat. The projections are even more alarming: by 2090, the number of heat-related deaths in the region could reach 10,000 to 23,000 annually. Large cities such as Astana and Tashkent will be particularly vulnerable, as their populations are the most exposed to climate-related stress.

A study covering 70 cities across Europe and Central Asia—including nations in the Central Asian region (Kazakhstan, Uzbekistan, Kyrgyzstan, Tajikistan, and Turkmenistan)—has confirmed the devastating impact of extreme heat on public health and the economy. The findings are alarming: by 2023, global warming had resulted in the loss of over 87,000 full-time jobs across the Europe and Central Asia (ECA) region. In Uzbekistan alone, more than 22,000 jobs were lost, while Azerbaijan saw a loss of approximately 18,000. Based on data regarding extreme heat in 2026, it can be inferred that 2026 stands as one of the most adverse years in the history of climate warming. Of particular concern is the forecast for Ashgabat; it is one of nine cities in the region where, by 2050, annual economic losses resulting from extreme heat could reach 2.5% of GDP.

The role of humans in ongoing climate change is also evidenced by a comparison between climate model projections of global temperature rise and actual observational data. Various models have been developed to simulate past and future changes in the Earth's surface temperature; some account only for natural causes of warming, while others incorporate anthropogenic factors. When direct meteorological observational data are overlaid on these model results, they align with the models that account for human influence. This indicates that, according to these models, the Earth's temperature

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today would be lower than what is currently observed, were it not for the impact of anthropogenic factors.

Conclusions

In conclusion, it should be noted that the Earth's natural environment has bestowed upon the human population a wealth of resources, providing humanity with a diverse range of food, clothing, shelter, fresh water, clean air, fertile soil for agriculture, and other essential benefits. For the human population to survive, it must adhere to the rules and laws of the biosphere. Consequently, every individual must treat the natural environment with care—taking only what is necessary rather than thoughtlessly exploiting its riches—and strive to mitigate the negative consequences of climate change, both now and in the future.

From the above, it is clear that the trend of climate warming in the city of Tashkent has reached a concerning state, which negatively impacts the health of the population—most notably that of the younger generation. Given this, every resident of the city must treat the natural environment with care, taking only what is required, avoiding the reckless exploitation of nature's bounty, and working to prevent the adverse effects of climate warming in the future.

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