Climate change in Belarusian cities and its impact on women's health

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This policy brief introduces an independent study on the impact of climate change on the health of women living in Belarusian cities. It presents a review of climate emerging health risks in an urban context and analyses of interviews about women's health in Belarus. The aim is to raise awareness among Belarusian authorities and NGOs in the environmental sector about the real problems faced by the female population, which remain in the shadows due to the low level of study of this issue. The document proposes recommendations that aim to inform advocacy and implementation of more inclusive climate policy.

Climate change is one of the most serious challenges of our time. Its consequences affect every aspect of our lives: billions of dollars in losses are observed annually across various economic sectors [1,2], with rising mortality and related to adverse weather events [3]. But impact is typically assessed with a focus on economic indicators, often ignoring social aspects and the vulnerability of the people themselves. However, such assessments are still being conducted, and health is used as the most common human-centered indicator [4].

Overlooking the human dimension and focusing on economic losses is also typical for climate policy in Belarus. But even with global recognition of climate change's impact on public health [3,5], national climate policy documents contain only abstract references to it, without specific approaches to reducing risk or improving physical and mental well-being [6]. There are mentions of preventing climate-related risks through healthy lifestyle education; an assessment of the vulnerability within different population groups for NDCs; improving energy and food security through adaptation measures, including the aim of reducing damage to public health. Despite this, Belarus still lacks a national strategy for climate adaptation of healthcare. Furthermore, climate change in Belarus has never been considered from a gender perspective, which is only briefly mentioned in NDC 3.0 [6]. The latest national health statistics, from 2014, [7] take gender into account, but do not mention climate. Current data is often generic and presents averages without gendered analysis. However, global studies highlight the significant differences in health problems between genders and confirm the greater impact of climate change on women compared to men [8,9].

Climate change directly impacts women's health, primarily through extreme heat [8,9,12]. This is the main cause of increasing incidence of cardiovascular and respiratory diseases, and associated mortality. Residents of Eastern European countries, including Belarus, are most exposed to the adverse effects of warming [5,18]. Due to changing temperatures and weather conditions, women experience more significant impacts to mental health; an increased risk of injuries, emergencies and developing certain diseases; a rise in dehydration (due to higher perspiration than men [13]). Climate change is exacerbating social tensions: due to extreme weather events, forced displacement, food shortages, and economic instability, women are more likely to experience psychological, sexual, and physical violence [10]. Women with pre-existing medical conditions, those who are older or pregnant are particularly vulnerable to all of the above. The female reproductive system is extremely vulnerable to climate change: heat leads to premature births, increases the risk of miscarriages and menopausal discomfort, decreases fertility, develops

anemia, alters the menstrual cycle [11,14]. A recent example is the “June Phenomenon”: due to the abnormal heat of June 2026, women around the world complained of menstrual irregularities [15].

Climate change-related health problems affect women worldwide and therefore are relevant to Belarus as well. However, this is difficult to confirm, as no studies on the topic have been conducted. One of the most recent studies, conducted in 2025 [16], is based on survey results, but it doesn’t draw any conclusions about the connection between health and climate. However, it does indicate that 53.8% of respondents acknowledge the impact of environmental conditions on human health.

Research findings: women’s perception of climate impacts

To obtain more information, an interview study was conducted. Nearly 79% of Belarusians live in cities [17], so this study focuses on residents of urban areas. Cities themselves are quite vulnerable to climate change, making life in urbanized areas even more challenging. Furthermore, Belarusian cities lack adaptation plans, which means they constantly face a multitude of problems. This is especially true in the summer, when droughts and a strong urban heat island effect give way to torrential downpours or gales. Or in winter, when abnormal amounts of snow fall or severe temperature fluctuations lead to dangerous ice formations. In such challenging conditions, women face a wide range of physical and psychological health problems, including the worsening of existing ones and the development of new ones.

The study included 23 interviews with women aged 18 to 54 covering 10 cities: Minsk, Brest, Vitebsk, Grodno, Mogilev, Zaslavl, Stolbtsy, Baranovichi, Novopolotsk and Cherven. Every woman interviewed talked of noticing climate change effects: highly unstable weather conditions , more frequent extreme weather events, uneven precipitation, increased aridity, higher temperatures in all seasons, as well as shifting seasons and longer off-season periods.

Most participants report that urban climate is more challenging: it’s hotter and drier, the air becomes stagnant and circulates poorly, weather changes are felt more abruptly and harshly, and there are more cloudy and gray days. The women interviewed (61%) believe that winter is the hardest time to live in the city. Short daylight hours and the urban grayness, coupled with numerous cloudy days, the lack of consistent snow cover and the high temperatures create a difficult psychological environment. However, summer is also difficult: the stuffiness and abnormal heat affect various aspects of physical health, causing pre-fainting symptoms and disrupting sleep patterns.

Climate influences on women's health

The impact of changing weather on women's well-being is confirmed by the majority of respondents (83%). The most commonly mentioned are headaches (52%) and joint pain (22%) due to changes in atmospheric pressure, changes in blood pressure (43%)

in hot or cold weather, colds during periods of high humidity (35%), pollen allergies (13%), skin irritation in cold weather (13%) and dermatological conditions caused by the sun or sweat (9%). In recent years, the women have noticed both positive and negative trends in their physical health. However, they find it difficult to independently assess these changes over the long term, and many are attributed to ageing or lifestyle changes. An increase in headaches and migraines (48%) due to more frequent days with unstable weather or abnormal heat has been reported; fainting spells (35%) on hot days; a longer period of spring allergies (13%) due to the shift in plant bloom times; and an increase in tick bites (65%) due to population increase.

Reproductive health is an important issue for respondents. Unstable weather, as well as abnormal heat, disrupt the menstrual cycle (both lengthening and shortening it) (65%), change the duration of the menstrual phase (35%) or provoke its deviating from the cycle (22%), and influence the onset or worsening of menstrual pain (78%). The situation is particularly difficult for women who reported anemia, polycystic ovary syndrome, cervical erosion, and endometriosis. It's also important to note that the survey suggested the “June phenomenon” may affect women in Belarus too, primarily among young respondents under 27 – 65% of women interviewed confirmed it.

Impact on daily routine

Climate change also impacts lifestyle: respondents noted that they began walking or exercising less frequently due to unstable weather or abnormal temperatures (43%). Climate change also altered some dietary habits. For example, respondents noted an increase in mineral water consumption – 35% (due to a lack of salts in the body during the summer) or energy drinks (due to blood pressure problems during temperature fluctuations) – 52%. Respondents also frequently mentioned a loss of appetite during abnormally hot weather (87%), which could lead to hunger, weakness and fainting.

Housing conditions also affect environmental impacts on health. During unstable temperatures and unusually cold winters, city utilities turn up the heating. This reduces air humidity, which subsequently dries out mucous membranes and leads to an increase in respiratory infections and throat problems. Young women living in dormitories are also vulnerable: due to interruptions in hot water and heating during the winter, their risk of illness increases.

Climate change impacts women's mental health

Unstable weather complicates planning, which increases background anxiety – it’s relevant for 74% respondents. More frequent periods of cloudy weather reduce emotional well-being (87%). Heat waves increase irritability, apathy, fatigue and drowsiness (78%). Heatwaves also impact productivity due to decreased concentration (78%). Neurodivergent women are particularly vulnerable: abrupt weather changes and intense heat lead to severe overstimulation, physical and psychological exhaustion, a worsening sense of derealization.

Women also report frequent feelings of fear or panic during hurricanes, heavy rains or the threat of flooding (39%). The situation is exacerbated by anxiety and concern for other people or animals. In adverse weather, interwiewed women have to take on additional caregiving responsibilities (52%): monitoring and caring for others well-being, redistributing household routine, traveling to another city to help, reminding about medications and self-care, additionally monitoring the well-being of pets.

Weather changes or extreme events influence social distancing (70%): women are more likely to stay home or avoid contact with others due to extreme fatigue. Some women noted that weather instability hinders their self-expression and the creation of different beauty looks (13%), which can lead to feelings of sadness and insecurity. Global climate change also triggers deep underlying anxiety as a systemic problem (35%).

Adaptation strategies

Women use various coping strategies:

- In hot weather, they increase their water intake, carry portable spray bottles and fans, choose protective clothing, reschedule work for cooler hours of the day, change their daily routes and prioritize shady green spaces, choose air-conditioned vehicles and enjoy outdoor recreation.
- During adverse weather conditions, interviewed women can start taking vitamins (especially magnesium); women with headaches or chronic illnesses take medications in advance; cancel work and stay home.

Many respondents believe that government measures are insufficient and unsystematic:

- During hot periods in Belarus cooling measures are introduced: roads are watered to increase humidity and mitigate the urban heat island; water spray frames are installed; the number of modern air-conditioned vehicles is increased.
- Urban greenery is also actively used for this purpose: temporary roadside landscaping is installed; recreation areas in nature and near water are improved.
- Government agencies try to improve working conditions for their employees: the operating hours of state-owned enterprises are changed to avoid heat; the microclimate in workplaces is regulated.
- Social campaigns are occasionally conducted: drinking water distribution or water dousing events are organized; the Ministry of Emergency Situations provides SMS-notifications.
- During cold periods, city streets are cleared, work schedules are modified during abnormally cold weather, public transport is heated, cities are landscaped and decorated to provide emotional support.

Recommendations

The women shared their own vision of what could improve their well-being in the city during adverse weather conditions.

Category by sphere	Proposed measures
Improving transport infrastructure	• Creating more public transport stops with effective shelters and climate control; • Introducing faster and more modern transport; • Reducing waiting times in hot and cold weather.
Expanding green spaces	• Providing new residential areas with green zones; • Increasing the number of green spaces not only in residential but also in public, commercial and industrial areas; • Planting trees along roads and pedestrian streets; • Providing recreation areas and playgrounds with tall trees to create shade and coolness.
Creation and improvement of water system	• Creating a system of drinking fountains; • Increasing the number of non-drinking fountains for air aeration and swimming; • Improving urban recreation water zones.
Smart urban planning	• Proper planning with designing of ventilation corridors; • Implementing ecosystem based adaptation; • Expanding the use of eco-friendly building materials.
Public health system development	• Distributing first aid stations throughout the city; • Conducting campaigns to detect poor health at an early stage; • Allowing people to work remotely; • Conducting group activities to support mental health.

Based on this research, several recommendations can be drawn for national policy:

1. Prepare and implement an Adaptation Plan for the healthcare system to climate change;
2. Ensure emergency preparedness of the health system for extreme weather events;
3. Implement systematic measures to support the urban population during periods of extreme heat;
4. Implement awareness campaigns on self-care practices during extreme heat;
5. Conduct a series of medical studies to identify risks for women of different ages and develop targeted recommendations to improve their health.

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