

# Climate change and women's health

- Society
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## Climate change is one of the drivers of health inequalities

Abstract: Achieving gender equality and combating climate change - these are 2 of the 17 Global Sustainable Development Goals of the United Nations for the period 2016 - 2030. Different at the first glance, they are actually intertwined because climate change deepens the centuries-old social and economic inequality between the two genders. Climate change is also a driver of healthy inequalities. Women are more vulnerable to climate change because of the more fragile physiology, lower average income, dependent position in society, specific activities in fulfilling family duties, etc. Globally, natural disasters such as drought, heat waves, floods and storms kill more women than men, especially affected are women at a younger age. These consequences depend, in addition to the nature of the event, on social status – the effects of gender inequalities on life duration are bigger during severe disasters and in regions and countries where the socio-economic status of women is particularly low.

"Prince Charles visited our campus a month ago" - these words of the driver instantly woke me up from my nap in the car after the long trip from Sofia to New Delhi. We were travelling to one of India's largest research centres, the Institute of Energy and Resources, whose director, the Nobel laureate Dr. Rajendra Pachauri, was at this time chairing the UN's Intergovernmental Panel on Climate Change (IPCC).

The place visited by Prince Charles turned out to be a huge research campus that was extremely well maintained, but the hotel part was already dated, although well built. On the other hand, the university of this institute was newly built and with the most broken and interesting university architecture I have ever seen.



Photo: TERI retreat. Source: personal archive

The course I was enrolled in was devoted on climate change and sustainable development, and I'm glad it was in India because I was able to see the impact of climate change on a vulnerable group - because of the strong socio-economic contrast, widespread poverty, gender bias, the overall feeling is that you are turning 100 years back in time. It had its charm and I actually liked India a lot, but years later, working

**on a project of the Bulgarian Fund for Women "Equality and Climate Justice"**

and reflecting on inequalities and the situation of vulnerable groups, specifically women, the individual pieces of the puzzle somehow fit into the patterned picture brought as it were from India.

Here I saw and learned things that shocked me, and especially concerning the connection between climate and women's health. It was surprising, for example, to find out the reason for the early marriages there - I thought it was just like here when people had large families, married early and the average life expectancy was shorter. It turned out that due to the hot climate, not only girls' menarche occurs earlier, but also the duration of the reproductive period is greatly shortened.

Women do not tolerate heat well at all. The so-called heat waves, for example - several-day periods of high air temperatures, which become more frequent because of climate change, can cause disturbances in the menstrual cycle, and this is surely noticed by many women in our country in the summer as well.

### **Periods of unusual heat are also associated with increased mortality,**

which in women turns out to be higher than in men in all age groups. According to a study published in 2012, which analyzed heat wave mortality in 9 European cities, including London, Paris and Rome, female deaths were significantly higher. Interestingly, this observation applies to Europe, while several studies in the US and Australia have found that men are more likely to die in heat waves than women. The researchers point to the majority of time men spend working or socializing outdoors in the U.S. as an example, another reason might be the social isolation experienced by many older men in this country.

Women's lower heat tolerance is explained by the fact that they have a higher body and skin temperature, higher fat mass and are less heat tolerant than men. In countries like India, where the labor is still strictly specialized as men's and women's work, performing a certain activity outdoors or indoors (eg cooking) as well as wearing certain clothing by women (India boasts a very good weaving industry, because national clothing is adapted to the climatic conditions of the country), can further enhance the adverse impact of hot weather.



Photo: Women are more vulnerable than men to high air temperatures. Source: Pixabay

Pregnant women are especially sensitive to heat, as they are highly susceptible to dehydration. Extreme heat is also associated with adverse birth outcomes, such as premature birth, low birth weight, stillbirths and high infant mortality. Newborns and young children are also particularly sensitive to high air temperatures because their capacity to regulate body temperature is limited.

## **Droughts are a direct consequence of global warming,**

And they are expected to become more frequent and prolonged and lead to desertification of large areas. Globally, changes in the amount and pattern of precipitation, increased evaporation and population growth are projected to result in an additional 1-4 billion people affected by drought by the end of this century. Water scarcity forces people to drink from sources that may be biologically and toxicologically contaminated.

Traditionally, women provided water for the family and they experience an increased risk of contaminating water-borne diseases. Droughts are associated with more time spent searching for water sources and less time for other activities. It has been estimated that during the dry season in water-stressed areas, 30% or more of the daily energy expenditure of women in India is spent on supplementing water.

Manual labor associated with water delivery puts women at risk of cumulative strain on the spine and neck, leading to chronic pain. Venturing long distances in search of water increases exposure to heat stress and endangers women's safety due to violent crime. Lack of clean water and adequate sanitation infrastructure also pose serious health challenges for women, especially during menstruation and pregnancy when hygiene is of particular importance.

## **Disproportionate mortality rates are observed for women during natural disasters of meteorological origin,**

and in survivors, the life duration is reduced. Sometimes even cultural differences and wearing of traditional clothing can be a factor – for example, according to a study in Bangladesh, cultural expectations for women to wear a sari (a long dress that can restrict movement) can make it difficult for women to escape from floods. Another study, again in Bangladesh, found that after the 1998 flood in Dhaka, women were less likely than men to leave their homes for medical care. The researchers suggest that this is likely related to cultural norms that restrict women from leaving their homes without a male companion.

As a result of weather disasters, women and girls (especially those living in poorer socio-economic conditions) are at higher risk of physical, sexual and domestic violence. A study in New Zealand found that cases of domestic violence increased after the floods of 2004. A study for ActionAid Bangladesh also observed an increase in violence against women after the 2007 flood.

Women can be separated from family, friends and other supportive communities and often avoid shelters for fear of abuse. **Poor, single, elderly women, adolescent girls and women with disabilities are often at greatest risk because they have fewer personal, family, economic and educational resources to draw on for protection, assistance and support.** The same risk factors correlate with a higher risk of mood disorders such as depression and anxiety, from which women generally suffer more often than men.

Women are more likely to lose their jobs and have a harder time recovering economically and financially after disasters. Often the jobs available are only in construction and post-disaster recovery, which are traditionally male-dominated activities.

## **Pregnant women and newborns are extremely vulnerable to the health hazards of flooding.**

Flooding is associated with an increased risk of preterm birth and low birth weight in newborns, phenomena seen after Hurricane Katrina in 2005 and the North Dakota floods of 1997. Flooding puts pregnant women at increased risk of exposure to toxins and molds, reduced access to safe food and water, psychological stress. Other risks for mothers are anemia, eclampsia (an acute life-threatening condition in a pregnant woman characterized by tonic-clonic seizures during which there is loss of consciousness and falling into a coma) and miscarriage.

## **Food safety and food security**

Women are sensitive to the effects of climate change on food safety and food security due to increased needs during menstruation, pregnancy and lactation. These nutritional deficiencies may be exacerbated by prevailing cultural practices that prioritize the feeding of children and men. Malnutrition, with consequent anemia, is highly prevalent among women and children in India.

Micronutrient deficiency is associated with cognitive impairments such as reduced attention, poor memory, emotional and behavioral problems, and impaired sensory perception.



Women are sensitive to the effects of climate change on food safety and food security due to increased needs during menstruation, pregnancy and lactation, Source: Pixabay

In developing regions, women are the main agricultural producers responsible for producing 60-80% of food. Their livelihoods and nutrition are threatened when changing climate conditions reduce yields and compromise crops. India is the largest agrarian country in the world and it is here that the agricultural sector is expected to suffer the greatest losses from global warming, which will directly affect the socio-economic well-being of women.



Women are the main agricultural producers in developing regions. Agriculture sector in India is expected to be heavily affected by climate change. Source: Pixabay

## **Air pollution**

is a huge problem in India's megapolicies. Respiratory and cardiovascular diseases resulting from exposure to polluted air mainly affect women due to greater deposition of dust particles in lungs and more common anemia amongst women. Poor air quality affects maternal and child health as it is linked to stillbirths, intrauterine growth restriction and birth defects. A problem is created by the so-called indoor air pollution, which mainly affects women, as they are mainly engaged in preparing food for the family.



Women spend more time indoors and are disproportionately exposed to dust particles from using traditional indoor stoves for cooking and heating. Source: Pixabay

### **Women will be more affected in the future from climate migrations**

By the middle of this century, according to various estimates, between 25 million and 1 billion climate migrants are expected due to droughts, storms, floods, sea level rise, etc. disasters related to climate change.



Climate migrations will disproportionately affect women. Source: up-magazine



The described differences regarding the impacts of climate change on women's health raise again the topic of climate justice. The consequences of climate change do not affect all groups in society equally – it is often the most vulnerable and the poorest who bear the consequences of climate change the hardest and most painfully. Such groups could include low-income and economically disadvantaged people, as women often are.

The scientific evidence proves it – an analysis of 130 peer-reviewed studies found that women and girls often face disproportionately high health risks from the impacts of climate change compared to men and boys. According to the analysis, 68% (89) of the 130 studies found that women were more affected by the health impacts of climate change than men (see Fig. 1). They have higher death rates in heat waves (with examples in France, China and India) and in tropical cyclones in Bangladesh and the Philippines. In many regions of the world, women are more likely than men to suffer from poor mental health, intimate partner violence and food insecurity following extreme weather events. However, in some cases men may face a higher risk. For example, several studies have shown that men face a higher risk of suicide after extreme weather events and are more at risk of certain health problems associated with working outdoors.

According to Kim Van Daalen, a PhD student in global public health at the University of Cambridge, "this has more to do with societal roles than physiological differences...climate change is exacerbating existing inequalities, be they gender or other inequalities."

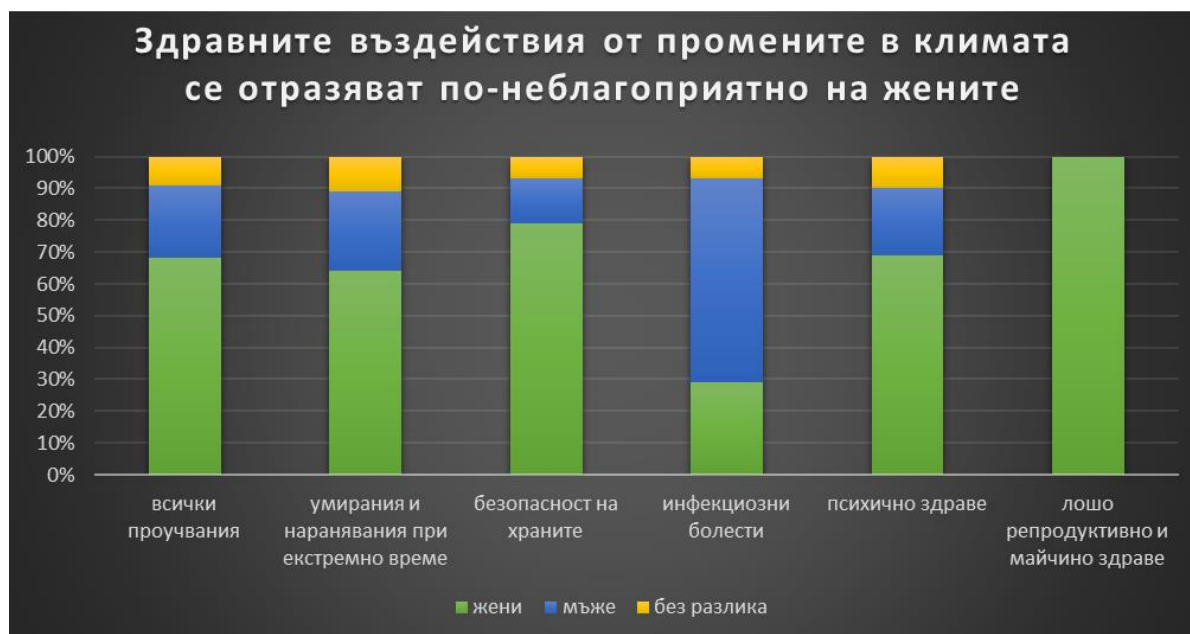


Figure. 1 Chart showing the proportion of men and women affected by the impacts of climate change. Data source: Global Gender and Climate Alliance (2016). Additional analysis from Carbon Brief.

## Climate change and women's health in Bulgaria

Women in India, as well as in neighboring Bangladesh, are among the most vulnerable population groups to climate change, but the example of India, although more vivid, applies to some extent to Bulgaria as well. Our country is the poorest in the European Union, and as we all know, adaptation to climate change requires funding. For example, air conditioning at homes can be a lifesaver in hot weather, and this especially applies to women with low tolerance to heat. At the same time, Bulgaria ranks last in terms of the provision of air conditioners in homes, which applies mostly to the low-income population, which is predominantly female.

Women predominate in the gender structure of our population, and this is especially pronounced in the older age groups, which are usually more vulnerable to climatic hazards.

In our country, the relative share of the population with chronic diseases is also high – they are a particularly vulnerable group to climate change. According to data from the third European Health Interview, 40.2% of Bulgarians suffer from chronic diseases or some long-term health problem. A leading health problem is high blood pressure (hypertension). Women are more affected by chronic diseases. The share of people with chronic diseases is highest in the over 65 age group (82.6%) and in the 45-64 age group (according to NSI data).

Moreover, we must not forget that Sofia and the other big cities, on the one hand, and the small settlements in the country affected by the depopulation process, on the other, are two different Bulgarias. Still in our country, a large number of women in agricultural regions experience the difficulties of a life more closely connected to nature and therefore more vulnerable to climate change. An additional aggravating factor is the more difficult access to qualified specialists and a good material and technical base for treatment and prevention in these parts of the country, which again affects women to a greater extent.

*The article is published based on materials from the "Climate Changes and Women's Health" project under the "Equality and Climate Justice" program of the Bulgarian Fund for Women.*

\* Cover photo: [climatevisuals.org](https://climatevisuals.org)

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