

CLIMATE CHANGE AND HUMAN HEALTH

Climate change in Europe is already affecting public health, and will continue to do so in the future. How does it affect Europeans today? What does the future look like? We asked these questions to Bettina Menne from WHO Europe.

Does climate change affect human health?

Climate change affects public health in many different ways. There are direct and indirect impacts, as well as those that occur immediately and those that occur over a longer period of time. We estimate that 150,000 deaths worldwide were caused by climate change in 2000. According to a new WHO study, this is projected to increase to 250,000 deaths per year worldwide by 2040. This estimate would have actually been higher if we had not factored in the reduction of child mortality expected in future years.

Extreme weather events are already among the top climate-change impacts that affect public health. In addition, mortality related to heatwaves and flooding is expected to increase, in particular in Europe. And changes in the distribution of vector-borne diseases will also affect human health.

How do extreme weather events affect public health?

Different types of extreme weather events affect different regions. Heatwaves are mostly a problem in southern Europe and the Mediterranean, but they are also a problem in other regions. According to estimates, the heatwave of 2003 caused 70,000 excess deaths in 12 European countries, mostly among older people. As people get older, the thermal regulation of the body is impaired, which makes older people more vulnerable to high temperatures.

By 2050, heatwaves are projected to cause 120,000 excess deaths per year in the European Union, and to have an economic cost of EUR 150 billion if no further measures are taken. This higher estimate is not only due to more frequent and higher temperatures but also due to Europe's changing demographics. Currently, around 20% of EU citizens are over 65 years of age, and their share in the population is expected to increase to around 30% in 2050.

High temperatures are also often associated with air pollution, and ground-level ozone pollution in particular. Air pollution can cause respiratory and cardiovascular problems, especially among children and older people, and can result in premature deaths.

Other extreme weather events — such as high precipitation events that might cause floods — also affect public health.

How do floods affect our health?

To give a concrete example, the devastating floods in 2014 in Bosnia and Herzegovina, Croatia, and Serbia caused 60 deaths and affected more than 2.5 million people. In addition to the immediate health impacts, rescue operations and public health services were also affected. Many hospitals, especially lower floors where heavy medical equipment is often kept, were flooded. This reduced the capacity of health services to cope with the disaster and to care for existing patients.

In the aftermath of such a disaster, displaced people who lost their homes are also likely to suffer from other long-term health problems, including stress.

There are also indirect health risks, largely due to deterioration or contamination of the environment. For example, floods can carry pollutants and chemicals from industrial facilities, waste water, and sewage water. This can lead to the contamination of drinking water and agricultural land. When there is no secure faecal and chemical disposal, floodwaters or greater run off can carry contaminants to lakes and the sea, and some might enter our food chain.

What other kinds of health risks are associated with climate change?

The health risks come from a variety of sources. Higher temperatures facilitate forest fires. Around 70,000 forest fires occur every year on the European continent. Although the large majority are man-made, high temperatures and droughts often worsen the overall damage. While some fires might result in loss of lives and property, they all cause air pollution, especially from particulate matter. This in turn triggers illness and premature death.

Higher temperatures, milder winters, and wetter summers are expanding the area where certain disease-carrying insects (such as ticks and mosquitoes) can survive and thrive. These insects can then carry diseases — such as Lyme disease, dengue, and malaria — to new areas where the climate was not suitable to the disease previously.

Climate change could also mean that some diseases might no longer be able to thrive in the areas they currently affect. For example, future warming could mean that ticks — and consequently tick-borne diseases — will be found at higher altitudes and further north, closely linked to the changing distribution of their natural hosts, such as deer.

Seasonal variations — some seasons starting earlier and lasting longer — might also have adverse impacts on human health. This could have a particular effect on people with allergies. We might also experience peaks in asthma cases, triggered by combined exposure to different allergens at the same time.

There are also other long-term health risks associated with climate change. Changes in temperature and precipitation are expected to affect food-production capacity in the wider pan-European region, with significant reductions expected in Central Asia. A further reduction of production capacity in the region could not only exacerbate the malnutrition problem, but also could have widespread impacts by raising food prices worldwide. Climate change is therefore a factor we have to take into account when we look at food security and access to affordable food. It can aggravate existing social and economic problems.

How can public authorities prepare for the health impacts of climate change?

Compared with many other regions, European health services are relatively better equipped to deal with the health impacts of climate change. Malaria, for example, is not likely to re-establish itself in the European Union. Nevertheless, single events such as floods or long-lasting heatwaves will continue to exert increasing pressure on the health services in affected areas. European countries will need to strengthen and adapt their health services to cope with the potential impacts of climate change in their area. Some measures could involve relocating and refitting hospitals to prepare against possible floods. Other measures could include better tools for sharing information with vulnerable groups to prevent their exposure to pollution.

WHO Europe has been working on the health effects of climate change for more than 20 years. We develop methods and tools, carry out impact assessments, and provide assistance to Member States to adapt to climate change. In our recent report, we recommend adaptation measures, but we stress that adaptation measures will not be enough on their own.

It is quite clear that countries also need to undertake measures to mitigate climate change to protect public health. Some of these measures can have significant health co-benefits. For example, the promotion of so-called 'active transport' (such as cycling and walking) can contribute to reducing obesity and non-communicable diseases. And renewable energy such as solar energy can help to provide continuous energy to health services in remote areas.

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