

## Module 2d: Health, WASH and Climate

### Frequently asked questions

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Frequently asked questions

## Introduction

There are a lot of questions around climate change, climate change adaptation, and how to incorporate these concepts into Red Cross Red Crescent work.

Below we provide answers to some of the most frequently asked questions related to *health and climate*.

If you have comments or your questions are not addressed in this document (or other FAQs), please e-mail them to: [kit@climatecentre.org](mailto:kit@climatecentre.org) (referencing FAQ Module 2d).

### Frequently Asked Questions

#### 1. What are the direct and indirect health impacts of climate change?

Some of the health impacts of climate change are considered "direct" because they result directly from weather events - which may become more severe or frequent with climate change. A good illustration of that is heat-related mortality in case of a heatwave, or injuries due to hurricanes.

But most of the health impacts of climate change are called "indirect" because they arise through complex pathways. For example, flooding reaching higher levels than ever before due to climate change might cause a vector-borne disease outbreak because it creates more breeding sites for mosquitoes.

Finally, some indirect health effects of climate change are mediated through socio-economic systems. Longer droughts attributable to climate change might decrease food availability and trigger a surge in prices and result in food and nutrition insecurity causing severe health effects.

Sources:

- [PAHO - Climate Change and Health](#)
- [WHO Global Strategy on Health, Environment and Climate Change](#)

#### 2. How many additional deaths is climate change going to cause?

A study published by WHO in December 2018 estimated that climate change will cause 250,000 additional deaths each year between 2030 and 2050. Of those, 95,000 (38%) are projected to result from childhood undernutrition, 60,000 (24%) from malaria, 48,000 (19%) from diarrheal diseases and 38,000 (15%) from heat exposure in elderly people.

However, those estimations are considered to be highly conservative as they do not take into consideration some major indirect pathways such as the health impacts of economic damage, heatwave events, river flooding or water scarcity exacerbated by climate change. It also does not take into account the health impacts of conflicts and migration that could be induced by a changing climate.

Source:

- [WHO - Quantitative risk assessment of the effects of climate change on selected causes of death, 2030s and 2050s](#)

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### 3. How does climate change affect nutrition?

More than 800 million people lack food worldwide and over 2 billion people suffer from micronutrient deficiencies. Across the globe, climate change drastically affects the conditions in which agricultural activities are taking place (increased average temperatures, shifts in rainfall patterns, soil pollution, etc.). While in some regions agriculture might benefit from warmer weather and increased rainfall, according to the FAO, crop yields are expected to drop by 17% at global level in 2050 as a result of climate change. The impacts of climate change on food production are particularly strong for poorest households, 70% of which depend on agricultural activities.

In addition, studies have shown that crops are less nutritious as CO<sub>2</sub> concentration increases. Ocean acidification due to increasing CO<sub>2</sub> in the atmosphere will affect coastal fisheries, adding to livelihoods and nutrition challenges for millions of people in coastal regions. It is therefore going to be increasingly difficult to provide food both in adequate quantity and quality for a growing population.

Sources:

- [FAO - Food Security and Nutrition in the Age of Climate Change](#)
- [Harvard T.H. School of Public Health, C-Change Center for Climate, Health and the Global Environment - Climate Change & Nutrition](#)

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### 4. How does climate change affect Non-Communicable Diseases (NCDs)?

According to WHO, NCDs constitute the largest and fastest growing global health burden. 80% of NCDs are taking place in low- and middle-income countries (LMICs).

Some of the environmental factors that are linked to NCDs are affected by climate change. The formation of many air-pollutants is determined in part by climate factors such as temperature and humidity. Climate change may therefore influence pollutant concentrations, which in turn may affect health as air pollution is related to cardio-respiratory health.

Air pollution has been identified by WHO as "the single largest environmental health risk". Every year, 7 million people die prematurely because of indoor and outdoor air pollution. The main non-communicable diseases attributable to air pollution are lung and heart diseases (ex: lung cancer, stroke, ischaemic heart diseases and chronic obstructive pulmonary disease).

In addition, extreme weather events associated with climate change increase the risk of exposure to dangerous products. For example, if an industrial site is affected by flooding, carcinogenic chemicals could be released into the environment.

It is also important to consider that people with NCDs can be more heavily impacted by climate change: physical injuries can exacerbate NCDs, forced displacement can result in a lack of access to medication, the destruction of a health facility can cause the interruption of a treatment.

For those reasons, reducing air pollution not only contributes to mitigating climate change by reducing greenhouse gas emissions, but also has some health co-benefits.

Sources:

- [Bulletin of the World Health Organization - Climate change, air pollution and noncommunicable diseases](#)
- [WHO - Ambient air pollution](#)
- [The Lancet Oncology - Climate change and non-communicable diseases](#)
- [UN Environment Program - Air pollution and climate change: two sides of the same coin](#)

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### 5. How does climate change affect infectious diseases?

Infectious diseases include zoonotic diseases (transmitted to humans by animals), water-borne diseases (transmitted through water) and vector-borne diseases (transmitted through a vector such as a mosquito). Climate change affects the conditions in which vectors, pathogens and hosts survive and reproduce, which is why it has an impact on infectious diseases.

In certain regions, an increase in temperatures can allow mosquitoes to fly further, survive longer and bite more, which can increase the spread of vector-borne diseases. In regions that are already very warm, higher temperatures could increase mosquito mortality, however, the vast majority

environmental changes associated with climate change allow mosquitoes to be more effective vectors.

Droughts also can represent an increased risk for water-borne diseases because the pathogens are more concentrated in the water available. In addition, water shortages can force households to lower their hygiene standards, which increases their exposure to infectious diseases; or to store water in their homes, which create breeding sites for mosquitoes.

Source:

- [WHO - Climate change and infectious diseases](#)
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## 6. How does climate change affect Neglected Tropical Diseases (NTDs)?

Neglected tropical diseases (NTDs) affect more than one billion people living in tropical and subtropical conditions in 149 countries. Low-income populations that do not have access to safe water and sanitation services and are in contact with animals and insects that can be potentially infectious vectors are the most at risk.

NTDs are infectious diseases, hence they are affected in the same way as described above. The impact of climate change on NTDs is expected to differ across different diseases and regions.

Sources:

- [WHO - Climate change and infectious diseases](#)
  - [M. Booth, Climate Change and the Neglected Tropical Diseases, Advances in Parasitology Volume 100, 2018, Pages 39-126](#)
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## 7. How does climate change affect Mental Health and Psychosocial Support (MHPSS)?

Mental health is an integral part of health and well-being and a fundamental human right for all people. Over one billion people are estimated to suffer from mental health disorders worldwide.

The degree to which climate change will affect a person is often related to how directly their environment is altered or threatened. Survivors of extreme weather events can experience post-traumatic stress disorder (PTSD), anxiety or depression. Climate change can also exacerbate poverty and fuel conflict and migration, which have tremendous mental health impacts on populations.

Even in countries that have not yet experienced devastation as a result of climate change, studies show a rise of subclinical depressive emotions, despair, and guilt associated with the climate crisis and other global environmental issues. The term "eco-anxiety" relates to the fear associated with the existential threat that the climate and ecological crises represent.

Sources:

- [IFRC Solferino Academy - The future of mental health and psychosocial support](#)
  - [The Lancet Planetary Health - Mental health and climate change: tackling invisible injustice](#)
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## 8. What are the effects of climate change on WASH / diarrheal diseases?

Water is the primary medium through which we will feel the effects of climate change.

Higher temperatures as well as more extreme and less predictable weather conditions are projected to negatively affect water availability, water quality and water systems.

Some regions are expected to face increased risk of water scarcity and drought, which hampers food production and threatens access to safe water and sanitation services.

Climate change also increases the risk of heavy rainfall and floods which can destroy water infrastructure - such as water points and sanitation facilities - as well as pollute water sources.

The main health risk associated with the consequences climate change on WASH services is diarrhoeal diseases. A conservative report issued by the WHO estimates that 48,000 additional people might die from diarrhoeal diseases every year as a result of climate change after 2030.

Source:

- [UN Water - Water and Climate Change](#)
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## 9. Is reproductive health an effective strategy to combat climate change?

In 2020, the global population was estimated to be 7.8 billion people. It is estimated to reach 9.8

billion in 2050 and 11 billion by 2100.

There is increasing debate on the planet's ability to provide for a growing population in the context of climate change and finite resources. In that context, some people might argue that reducing population growth through better access to sexual and reproductive health services should be a priority in addressing climate change.

The Red Cross and Red Crescent Movement is supporting and implementing health initiatives related to reproductive, maternal, newborn and child health as part of its efforts to protect the health of mothers and children as well as reduce poverty. However, this is not directly linked to its efforts to combat climate change.

Environmental impacts are a result of population growth combined with consumption. While the ecological footprint of an American citizen is on average more than 10 times greater than that of a Rwandese citizen, it appears that addressing consumerism might be a fairer and more effective way to address the root causes of climate change.

However, there is increasing evidence that climate change affects maternal and child health. Pregnant women are vulnerable to extreme heat temperatures which can affect fetal development.

Sources:

- [UN Department of Economic and Social Affairs Population - World Population Prospect 2019](#)
- [The Lancet Editorial - Sexual and reproductive health and climate change](#)
- [Global Footprint Network](#)

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## 10. How does urbanization affect the health impacts of climate change?

Urban areas concentrate disaster risk due to the aggregation of people, infrastructure and assets, urban expansion and inadequate management. Worldwide, it is estimated that 800 million people will live in cities where they may be at risk from the impacts of rising sea levels and storm surges by 2050. In some regions, a proportion of the people moving to urban areas tend to end up in dense unplanned and sometimes illegal settlements, often located in flood-prone or otherwise at-risk zones unsuitable as residential areas.

In addition, 1.6 billion people living in cities are expected to face average daily peak temperatures of at least 35 degrees Celsius (95 degrees Fahrenheit) for three months a year by 2050. The impact of heatwaves is greater in cities due to the « heat island effect »: the heat is absorbed during the day and re-radiated during the night, which increases heat-stress on human bodies. In addition, heat greatly exacerbates the negative health effects of urban air pollution, with almost all cities in low- and middle- income countries failing to meet WHO guidelines on air quality.

Source:

- [City Heatwave Guide for Red Cross Red Crescent Branches](#)

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## 11. Are there some positive health impacts of climate change?

First of all, it is important to note that the negative health consequences of climate change outweigh *by far* its positive consequences.

However, as the effects of climate change are not equally distributed throughout the globe, it could have some positive health consequences in some regions. For example, the rise in minimum temperatures might lead to a reduction of cold-related morbidity and mortality. The overall increase in global temperatures might also make certain environments unsuitable for mosquito development, which could lead in a decline in vector-borne diseases in certain parts of the world. Increased temperatures and rainfall might also increase agricultural production and fisheries in some regions. Some areas might benefit from a decreased risk of flooding as a result of climate change.

The regions that could “benefit” from climate change to a certain degree are mostly located in the far north of the Northern hemisphere. Those regions are far less populated than the ones which will suffer from the negative consequences of climate change.

Source:

- [IPCC \(2014\) AR5 Chapter 11 – Human Health - Impacts Adaptation and Co-Benefits](#)

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## 12. Why do we need to assess and monitor the health impacts of climate change? (local, national, regional)

Climate change affects human health directly through exposure to extreme weather amongst others as well as indirectly by altering health determining factors such as WASH access, income and livelihoods losses etc. Impacts are a function of exposure, vulnerability as well as coping capacity and the access to adaptation action. Given inter-annual variability of weather parameters and the dynamic nature of risks and vulnerabilities which evolve continuously it is necessary to regularly update health impacts assessments and monitor them over time. Up to date information can help identify high impact areas and key vulnerable populations to optimize the limited resources in shaping a response in immediate, medium as well as long term.

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### 13. What are the health co-benefits of climate mitigation?

Mitigation measures aim at reducing the causes of climate change - mainly by reducing release of greenhouse gases. Many of those measures have benefits not only the environment but also for health - referred to as “co-benefits”.

Here are some examples of such interventions:

- Fuel-efficient cookstoves reduce the emission of greenhouse gases that contribute to climate change while also protecting households from indoor pollution.
- Programmes encouraging “active transport” such as walking or biking instead of motor vehicles are a way to reduce greenhouse gas emissions while promoting physical activity leading to health benefits.
- Meat production is a significant driver of climate change. Encouraging diets that are less intensive in meat and dairy (in regions where they are over-consumed) reduces the use of natural resources as well as the release of methane (a greenhouse gas) that ruminants produce as part of their digestive process. Reduction of meat and dairy consumption is associated with a reduction in ischemic heart diseases and some types of cancer.

Source:

[IPCC \(2014\) AR5 Chapter 11 – Human Health - Impacts Adaptation and Co-Benefits](#)

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### 14. How can National Societies improve adaptive capacity for health?

There are a couple of actions that National Societies can take in order to increase their adaptive capacity for health.

First of all, conduct a ‘climate risk assessment’ of the National Society’s programming based on available secondary information (see guidance in CTK module 1a). A first step can be to get in touch with the weather forecasts, early warning systems, water, hydrological and climate services available in the country - “HydroMet” services. Those services will be able to provide an overview of historical changes as well as projected trends as a result of climate change for the coming decades. It is important to note that projections for the future are not available accurately at local scale and therefore can’t be used for guiding site selection or to help identify site-specific adaptation measures. HydroMet services might also have information about disease outbreak patterns which can be helpful to inform the health programmes of National Societies.

National societies should also engage a dialogue with health authorities to have access to information on disease outbreak and other health consequences of climate change.

Conducting a risk assessment can allow a National Society to have a better understanding of differentiated risks, vulnerabilities and exposures related to the health consequences of climate change. That assessment can be a good tool to prioritize the climate risks and health outcomes to focus on within your country / region, and to design an action plan accordingly.

National Societies can then have two different approaches in order to address the health consequences of climate change:

- Mainstreaming a climate risk approach into existing health programs through climate-smart smart programming (cf. below)
- Design specific programs aiming at reducing the health consequences of climate change such as a Heat Action Plan or a specific Forecast-Based financing program targeting Health or WASH.

In addition, it is helpful to engage with the National Adaptation Plan efforts (see CTK module 3a) that are ongoing in your country. The health consequences are too often left out of those adaptation

efforts, which is why National Societies can play an important advocacy role.

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### 15. What are climate-smart health and WASH programs?

Climate-smart programming is planning is not only based on past and current risks, but also prepares for future changes and variability. That requires incorporating climate and weather information in assessing and addressing climate risks and vulnerabilities. It enables early warning early action and empowers people to anticipate, absorb and adapt to climate shocks and changing risks.

In the health sector, examples of climate-smart programs include:

- Building on and adjusting existing health outreach programs and encouraging scale-up of successful health practices to existing and / or new geographical areas to anticipate an increase in vector-borne diseases
- Building raised pit latrines, septic tanks and relocating latrines to areas where they are not at risk of flooding if needed.
- Engage in climate-smart agriculture through the cultivation of climate-resilient and water-efficient crops in order to limit the risk of undernutrition.

Source:

- [IFRC & Climate Centre: What is climate-smart programming and how do we achieve it?](#)
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### 16. Climate change and COVID-19

There are no direct links between climate change and the current COVID-19 pandemic – climate change did not cause the outbreak.

However, the current COVID-19 is an illustration of those complex interactions between humans, animals and the environment: The combination of changing landscape (such as deforestation) and interactions between humans & the environment and animals (such as intensive agriculture and marketing of wildlife products) and population growth has increased the risk of “spillover events”, where a pathogen is transferred from one species to another - which is what triggered the current COVID-19 pandemic. Those factors are enhanced by and / or contribute to climate change.

Just like climate change, the COVID-19 pandemic is a “vulnerability accelerator”: low-income communities, minorities, people with pre-existing health conditions, etc. are disproportionately affected.

This pandemic also illustrates that we need to be better prepared to prevent and respond to dual disasters: over 430 million people in vulnerable groups have been exposed to extreme heat while facing sanitary restrictions due to the COVID-19 pandemic.

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#### More Q & A

See more questions and answers in the ‘*Fact Sheet on WASH & Climate Change*’ in this module