SLOVAKIA

HEALTH AND CLIMATE CHANGE
COUNTRY PROFILE 2021

World Health Organization

United Nations
Framework Convention on
Climate Change

CONTENTS

ACKNOWLEDGEMENTS

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HOW TO USE THIS PROFILE

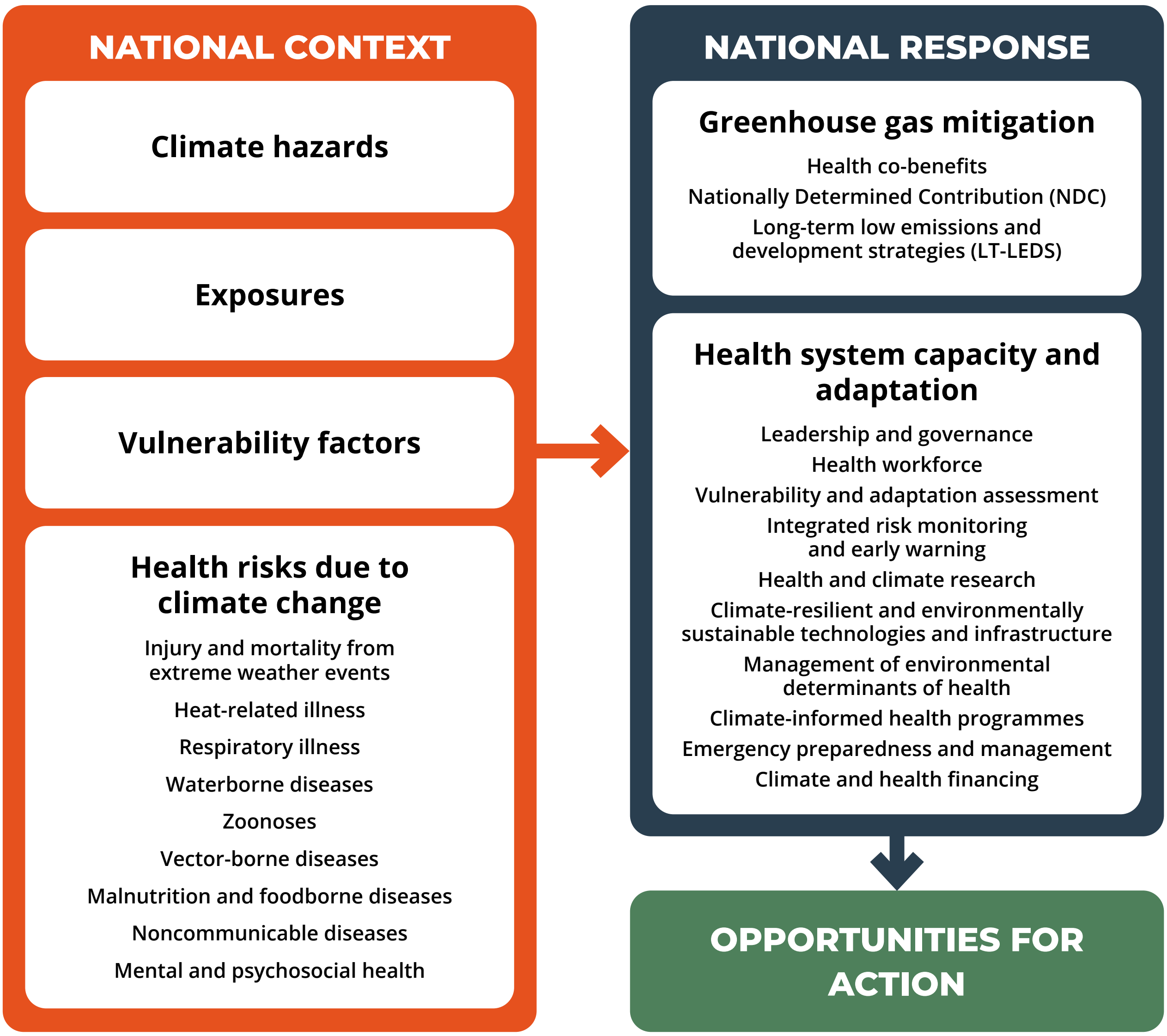
This health and climate change country profile presents a snapshot of country-specific climate hazards, climate-sensitive health risks and potential health benefits of climate change mitigation. The profile is also a key tool in monitoring national health sector response to the risk that climate variability and climate change pose to human health and health systems. By presenting this national evidence, the profile aims to:

- Raise awareness of the health threats of climate change within the health sector, other health-related sectors and among the general public;
- Monitor national health response;
- Support decision-makers to identify opportunities for action;
- Provide links to key WHO resources.

Tools to support the communication of the information presented in this country profile are available. For more information please contact: nevillet@who.int

The diagram below presents the linkages between climate change and health. This profile provides country-specific information following these pathways. **The profile does not necessarily include comprehensive information on all exposures, vulnerability factors or health risks** but rather provides examples based on available evidence and the highest priority climate-sensitive health risks for your country.

CLIMATE CHANGE AND HEALTH



COUNTRY BACKGROUND

Located in Central Europe, Slovakia varies between extensive lowlands in the south and the Western Carpathian Mountains in the north *(1)*. Classified as a high-income country, the Slovak economy has grown in recent years, mainly due to household consumption and exports of goods *(2,3)*. Slovakia's population is mainly concentrated in towns, lowlands and basins; it also has an ageing population *(1)*.

Slovakia's climate is mild and precipitation is generally equally distributed throughout the year. However, Slovakia has faced a significant increase in air temperature, changes in precipitation, desertification, and flash floods. These climatic changes have resulted in decreased agricultural production and loss of biodiversity. Health risks of climate change in Slovakia include heat stress, respiratory diseases, mental ill-health, and waterborne and foodborne diseases *(1)*.

Slovakia, as a member of the European Union (EU) is committed to the European Nationally Determined Contribution (NDC), which seeks to mitigate at least 55% of its greenhouse gas emissions by 2030 compared with the 1990 levels *(4)*. The National Strategy on Adaptation to Climate Change includes health adaptation measures, such as increasing medical facilities readiness in case of extreme events, integrating monitoring systems for foodborne diseases, and strengthening vaccination programmes *(5)*.

NATIONAL CONTEXT

CLIMATE-SENSITIVE HEALTH RISKS – SLOVAKIA

Health risks	
Health impacts of extreme weather events	yes
Heat-related illnesses	yes
Respiratory illnesses	yes
Waterborne diseases and other water-related health impacts	no
Zoonoses	yes
Vector-borne diseases	yes
Malnutrition and foodborne diseases	yes
Noncommunicable diseases	yes
Mental/psychosocial health	yes
Impacts on health care facilities	no
Effects on health systems	no
Health impacts of climate-induced population pressures	no

● yes ● no ○ unknown / not applicable

Source: List of climate-sensitive health risks adapted from the Quality Criteria for Health National Adaptation Plans, WHO (2021) *(6)*.

CURRENT AND FUTURE CLIMATE HAZARDS

CLIMATE HAZARD PROJECTIONS FOR SLOVAKIA

Country-specific projections are outlined up to the year 2100 for climate hazards under a 'business as usual' (BAU) high emissions scenario compared to projections under a 'two-degree' scenario with rapidly decreasing global emissions (see Figures 1–5).

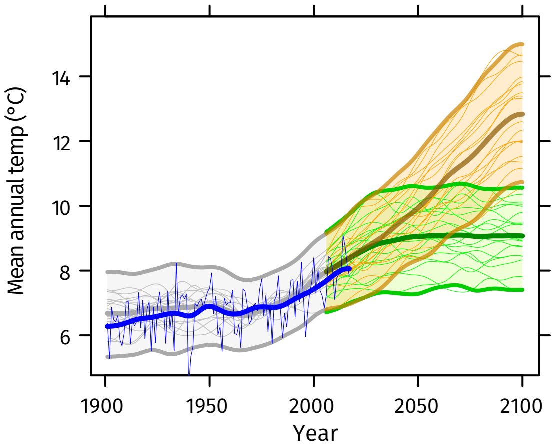
The climate model projections given below present climate hazards under a high emissions scenario, Representative Concentration Pathway 8.5 (RCP8.5 – in orange) and a low emissions scenario (RCP2.6 – in green).[a] The text describes the projected changes averaged across about 20 global climate models (thick line). The figures[b] also show each model individually as well as the 90% model range (shaded) as a measure of uncertainty and the annual and smoothed observed record (in blue).[c] In the following text the present-day baseline refers to the 30-year average for 1981–2010 and the end-of-century refers to the 30-year average for 2071–2100.

Modelling uncertainties associated with the relatively coarse spatial scale of the models compared with that of geographically small countries are not explicitly represented. There are also issues associated with the availability and representativeness of observed data for some locations.

NATIONAL CONTEXT

Rising temperature

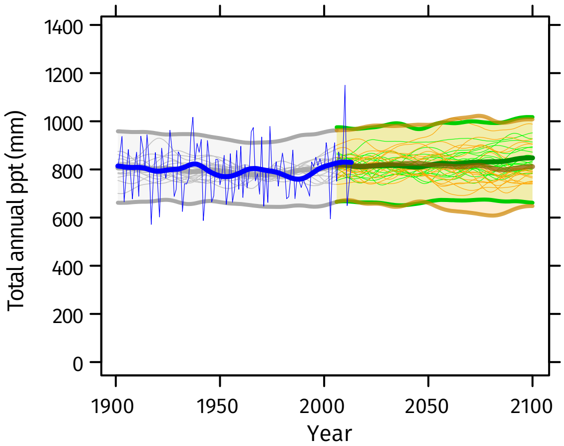
FIGURE 1: Mean annual temperature, 1900–2100



Under a high emissions scenario, the mean annual temperature is projected to rise by about 4.7°C on average by the end-of-century (i.e. 2071–2100 compared with 1981–2010). If emissions decrease rapidly, the temperature rise is limited to about 1.6°C.

Little change in total precipitation

FIGURE 2: Total annual precipitation, 1900–2100



Total annual precipitation is projected to remain almost unchanged under a high emissions scenario, although the uncertainty range is large (-10% to +15%). If emissions decrease rapidly, there is little projected change on average: an increase of 4% with an uncertainty range of -2% to +13%.

NOTES

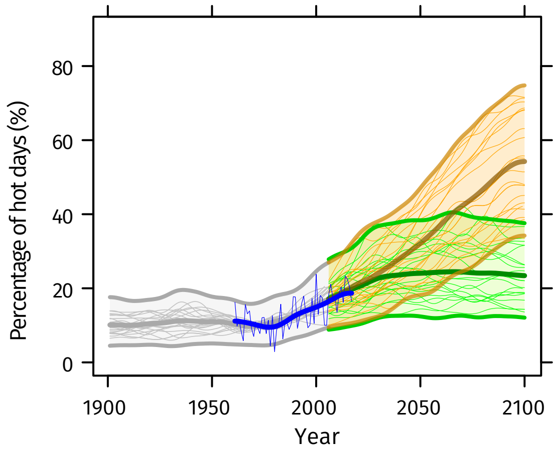
[a] Model projections are from CMIP5 for RCP8.5 (high emissions) and RCP2.6 (low emissions). Model anomalies are added to the historical mean and smoothed.

[b] Observed historical record of mean temperature and total precipitation is from CRU-TSv3.26. Observed historical records of extremes are from JRA55 for temperature and from GPCC-FDD for precipitation.

[c] Analysis by the Climatic Research Unit, University of East Anglia, 2018.

More high temperature extremes

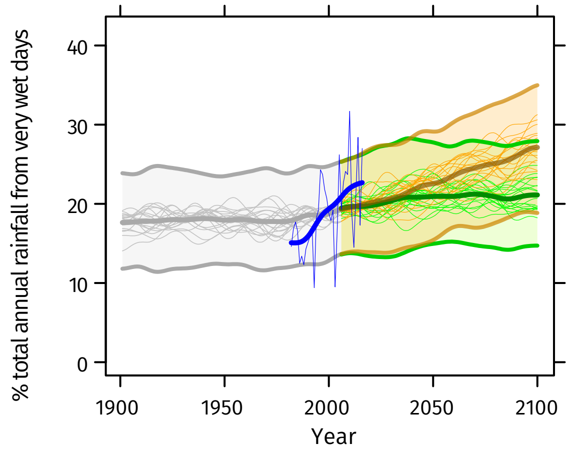
FIGURE 3: Percentage of hot days ('heat stress'), 1900–2100



The percentage of hot days[d] is projected to increase from about 15% of all days on average in 1981–2010 (10% in 1961–1990). Under a high emissions scenario, about 50% of days on average are defined as 'hot' by the end-of-century. If emissions decrease rapidly, about 25% of days on average are 'hot'. Similar increases are seen in hot nights[d] (not shown).

Increase in extreme rainfall

FIGURE 4: Contribution of very wet days ('extreme rainfall' and 'flood risk') to total annual rainfall, 1900–2100

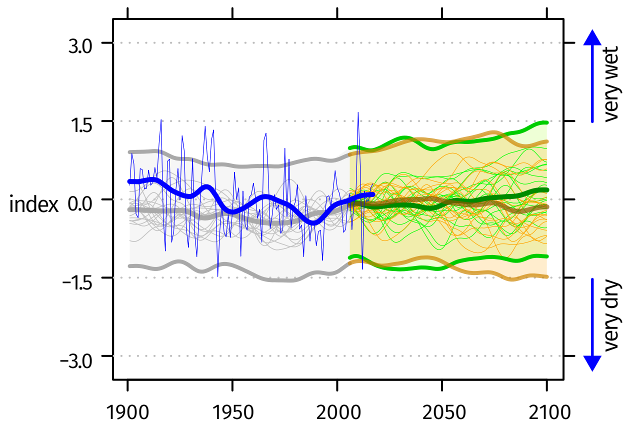


Under a high emissions scenario, the proportion of total annual rainfall from very wet days[e] (about 20% for 1981–2010) could increase by the end-of-century (to about 25% on average with an uncertainty range of about 20% to 35%), with little change if emissions decrease rapidly. These projected changes are accompanied by little or no change in total annual rainfall (see Figure 2).

Drought frequency and intensity

FIGURE 5: Standardized Precipitation Index ('drought'), 1900–2100

The Standardized Precipitation Index (SPI) is a widely used drought index which expresses rainfall deficits/excesses over timescales ranging from 1 to 36 months (here 12 months, i.e. SPI12). It shows how at the same time extremely dry and extremely wet conditions, relative to the average local conditions, change in frequency and/or intensity. SPI is unitless but can be used to categorize different severities of drought (wet): above +2.0 extremely wet; +2.0 to +1.5 severely wet; +1.5 to +1.0 moderately wet; +1.0 to +0.5 slightly wet; +0.5 to -0.5 near normal conditions; -0.5 to -1.0 slight drought; -1.0 to -1.5 moderate drought; -1.5 to -2.0 severe drought; below -2.0 extreme drought.



SPI12 values show little projected change from about -0.2 on average, though year-to-year variability remains large. A few models indicate larger decreases (more frequent/intense dry/drought events), particularly under a high emissions scenario, or increases (more frequent/intense wet events), particularly if emissions decrease rapidly.

[d] A 'hot day' ('hot night') is a day when maximum (minimum) temperature exceeds the 90th percentile threshold for that time of the year.

[e] The proportion (%) of annual rainfall totals that falls during very wet days, defined as days that are at least as wet as the historically 5% wettest of all days.

HEALTH RISKS DUE TO CLIMATE CHANGE

HEAT STRESS

CLIMATE HAZARDS[a]

Up to 4.7°C mean annual temperature rise by the end-of-century.

About 50% of days could be 'hot days' by the end-of-century.

EXPOSURES

Population exposure to heat stress is likely to rise in the future, due to increased urbanization (and the associated urban heat island effect) and climate change increasing the likelihood of severe heat waves (periods of prolonged heat).

EXAMPLE VULNERABILITY FACTORS[b]

Age (e.g. the elderly and children)

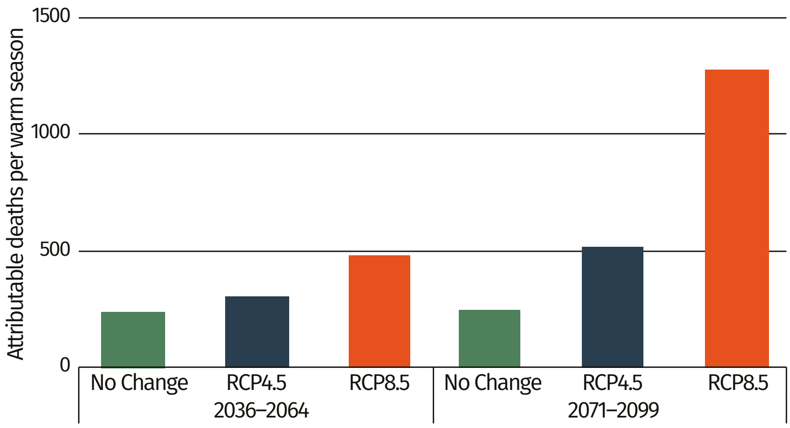
Biological factors and health status

Geographical factors (e.g. urbanization)

Socioeconomic factors (e.g. occupation and poverty)

HEALTH RISKS[c]

FIGURE 6: Attributable deaths per warm season in Slovakia expected for the future time period 2036–2064 and 2071–2099 under the reference scenario (apparent temperatures at the historical levels observed during the period 1971–2001) and additional attributable deaths in relation to this counterfactual as expected under the RCP4.5 and RCP8.5 scenarios *(7)*



The health risks of heat stress include heat-related illnesses such as dehydration, rash, cramps, heatstroke, heat exhaustion and death.

Under a high emissions scenario (RCP8.5), additional attributable deaths per warm season are projected to rise to 1276 in 2071–2099. A reduction in emissions (RCP4.5) could reduce additional attributable deaths per warm season in 2071–2099 to 517 *(7)*.

[a] For details see "Current and future climate hazards".

[b] These vulnerability factors are not comprehensive but rather examples of relevant vulnerability factors. Please see the WHO Quality Criteria for Health National Adaptation Plans for more details: https://www.who.int/publications/i/item/quality-criteria-health-national-adaptation-plans.

[c] See "National health response: health system capacity and adaptation" for the national response to heat stress.

FOOD SAFETY AND SECURITY

CLIMATE HAZARDS[a]

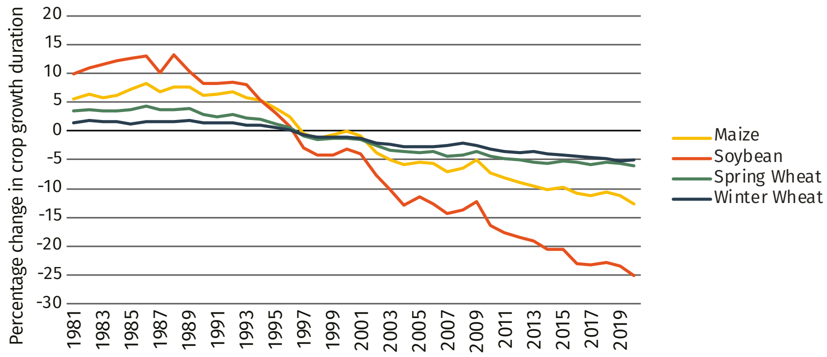
Up to 4.7°C mean annual temperature rise by the end-of-century.

About 50% of days could be 'hot days' by the end-of-century.

Large year-to-year variability in drought conditions.

EXPOSURES

FIGURE 7: Percentage change in crop growth duration in Slovakia in 1981–2020, relative to the 1981–2010 average, expressed as the running mean over 11 years (5 years before and 5 years after) *(8,9)*



Reliable food resources are essential to good health. Climate change significantly increases exposure to changes in the safety and sustainability of food systems, directly through its effects on agriculture and indirectly by contributing to underlying risk factors such as water insecurity, dependency on imported foods, urbanization and migration, and health service disruption.

EXAMPLE VULNERABILITY FACTORS[b]

Age (e.g. the elderly and children)

Biological factors and health status (e.g. pregnant women)

Environmental factors (e.g. loss of biodiversity)

Gender and equity

Socioeconomic factors

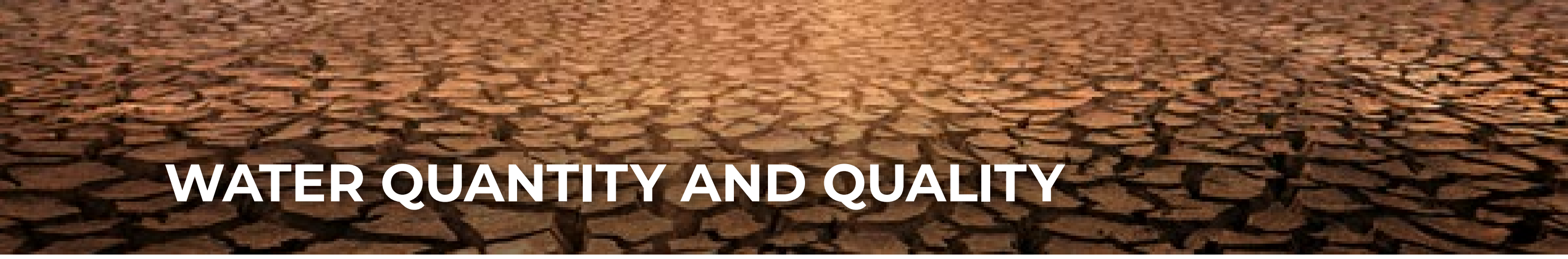
HEALTH RISKS[c]

Climate change and Emerging risks for Food Safety (CLEFSA) identified numerous issues that are driven by climate change, which may affect food safety in Europe. Climate change has the potential of causing, enhancing or modifying the occurrence and intensity of some foodborne diseases and the introduction of invasive alien species harmful to plant and animal health. It has an impact on the occurrence, intensity and toxicity of blooms of potentially toxic marine and freshwater algae and bacteria, on the dominance and persistence of various parasites, fungi, viruses, vectors and invasive species, harmful to plant and animal health. Climate change is likely to drive the (re)emergence of new hazards, increase the exposure or the susceptibility to known hazards and change the levels of micronutrients and macronutrients in food and feed items *(10,11)*.

[a] For details see "Current and future climate hazards".

[b] These vulnerability factors are not comprehensive but rather examples of relevant vulnerability factors. Please see the WHO Quality Criteria for Health National Adaptation Plans for more details: https://www.who.int/publications/i/item/quality-criteria-health-national-adaptation-plans.

[c] See "National health response: health system capacity and adaptation" for the national response to food safety and security.



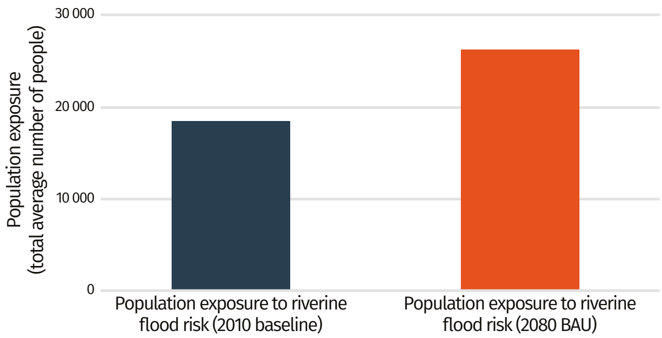
WATER QUANTITY AND QUALITY

CLIMATE HAZARDS[a]

- Up to 4.7°C mean annual temperature rise by the end-of-century.
- Annual rainfall from very wet days could increase by the end-of-century.
- Large year-to-year variability in drought conditions.

EXPOSURES

FIGURE 8: Change in population exposure to riverine flooding in Slovakia from 2010 (baseline) to 2080 (under a BAU scenario)[b] *(12)*



Climate change increases the intensity and frequency of extreme weather events including drought and floods. These events can lead to population displacement and affect water and sanitation infrastructure and services, contaminate water with faecal bacteria (e.g. *E. coli*, salmonella) from run-off or sewer overflow. Increasing temperatures and precipitation can also lead to water contaminated with Vibrio bacteria or algae blooms.[c]

EXAMPLE VULNERABILITY FACTORS[d]

- Access to clean and safe water and sanitation services
- People living near flood and drought zones
- Socioeconomic factors
- Gender and equity

HEALTH RISKS[e]

Intersectoral coordination and management related to flood is a part of the Act no. 7/2010 on flood protection *(13)*. Measures related to flood health prevention are a part of this intersectoral coordination. In case of this event the public health sector disseminates general hygiene advice and information, awareness-raising campaigns targeting different groups in areas at risk mostly through the website *(14)*. Climate change is expected to increase the risk of waterborne diseases in Slovakia, including hepatitis and diarrhoea. Furthermore, water availability itself is expected to become increasingly uneven, as temporal and regional patterns of precipitation change and extreme weather events become more common. Indeed, very strong storms, tornadoes and flash floods will be more likely in the future *(5)*. There are uncertainties in how Slovakia's hydrological conditions will change, which makes water resource management particularly challenging *(1)*.

[a] For details see "Current and future climate hazards".

[b] This analysis, conducted by Aqueduct, shows projections for changing population exposure to riverine and coastal flood risk under a BAU scenario, which reflects RCP8.5 and SSP2. SSP2 is the socioeconomic pathway representing "middle of the road", whereby global social, economic and technological trends do not shift significantly from historical patterns.

[c] Observations and measurements of Slovakia's hydrological network and meteorological network are guaranteed by Act No. 201/2009 Coll. on the State Hydrological Service and the State Meteorological Service.

[d] These vulnerability factors are not comprehensive but rather examples of relevant vulnerability factors. Please see the WHO Quality Criteria for Health National Adaptation Plans for more details: https://www.who.int/publications/i/item/quality-criteria-health-national-adaptation-plans.

[e] See "National health response: health system capacity and adaptation" for the national response to water quantity and quality.

VECTOR DISTRIBUTION AND ECOLOGY

CLIMATE HAZARDS[a]

Up to 4.7°C mean annual temperature rise by the end-of-century.

EXPOSURES

The distribution and vectorial capacity of disease vectors is expected to alter with climate change. As a result, population exposure to vector-borne diseases could also change. Populations previously not exposed to certain vector-borne diseases could be increasingly exposed in the future, as rising global temperatures shift the distribution of vectors *(15)*.

Slovakia has long been well known for tick-borne encephalitis (TBE) alimentary outbreaks *(16)*. Ticks are gradually penetrating to the north of Slovakia as well as into higher-lying areas. Indeed, whilst the upper limit of the occurrence of Ixodes ricinus was around 800 m.a.s.l. in the 1950s and 1980s, it is now commonly found up to a height of 1000 m.a.s.l. and in some rare instances up to 1200–1400 m.a.s.l. *(17)*. For example, ticks were found at an altitude of 1440 m.a.s.l. in the Low Tatras in the area of the Čertovica saddle *(18)*. Furthermore, the seasonal activity of ticks has lengthened, now extending from March to November, and milder winters in recent years are making it possible to catch ticks even during winter months *(17,19)*.

EXAMPLE VULNERABILITY FACTORS[b]

- Environmental factors
- Biological factors and health status (e.g. pregnant women or pre-existing conditions)
- Disease dynamics
- Socioeconomic factors

HEALTH RISKS[c]

The long-term increase of TBE case incidence and the number of TBE alimentary outbreaks is observed in Slovakia, where the highest occurrence of alimentary TBE is recorded in Europe *(16)*. An unpublished study by Molčányi compared the altitude of individual TBE cases for the period 2006–2010 and 2011–2015, observing a shift of the site of infection by 30 metres over 10 years (from 306 to 336 m.a.s.l.) *(20)*. Regarding mosquitoes, the first autochthonous case of the West Nile Virus was confirmed in southwest Slovakia in 2019 *(21)*.

[a] For details see "Current and future climate hazards".

[b] These vulnerability factors are not comprehensive but rather examples of relevant vulnerability factors. Please see the WHO Quality Criteria for Health National Adaptation Plans for more details: https://www.who.int/publications/i/item/quality-criteria-health-national-adaptation-plans.

[c] See "National health response: health system capacity and adaptation" for the national response to vector distribution and ecology.

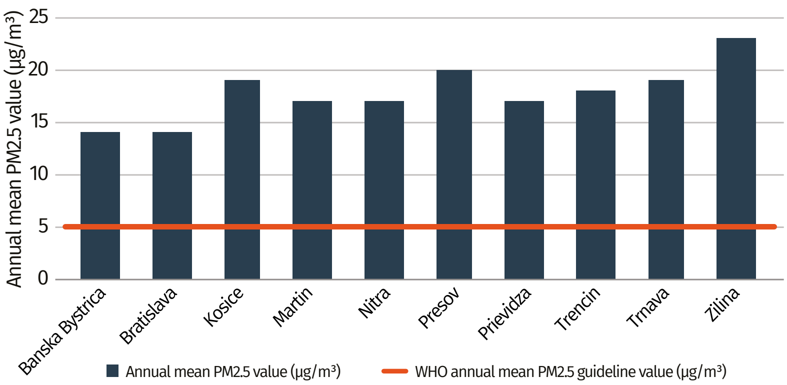
HEALTH RISKS DUE TO AIR POLLUTION

Many of the drivers of climate change, such as inefficient and polluting forms of energy and transport systems, also contribute to air pollution. Air pollution is now one of the largest global health risks, causing approximately seven million deaths every year. There is an important opportunity to promote policies that both protect the climate at a global level, and also have large and immediate health benefits at a local level.

EXPOSURES

All of the 10 most populated cities in Slovakia for which air pollution data were available had annual mean $PM_{2.5}$[a] levels above the WHO guideline value of 5 µg/m³ (see Figure 9) *(22).*

FIGURE 9: Annual mean $PM_{2.5}$ in Slovakia cities, for which data were available (2014–2016), compared with the WHO guideline value of $PM_{2.5}$ of 5 µg/m³. Source: Ambient Air Pollution Database, WHO, 2018. A standard conversion has been used on some data points, see source for further details *(22)*



EXAMPLE VULNERABILITY FACTORS[b]

Age (e.g. the elderly and children)

Biological factors and health status (e.g. pre-existing conditions)

Gender and equity

Geographical factors (e.g. rural/urban areas)

Socioeconomic factors (e.g. poverty)

HEALTH RISKS[c]

Ambient air pollution can have direct and sometimes severe consequences for health. Fine particles, which penetrate deep into the respiratory tract, subsequently increase mortality from respiratory infections, lung cancer and cardiovascular disease.

2974

deaths from ambient air pollution in Slovakia in 2016 *(23)*

7.6%

economic costs of premature deaths from ambient particulate matter pollution and household air pollution as a percentage of GDP (2010) *(24)*

[a] $PM_{2.5}$ is atmospheric particulate matter (PM) with a diameter of <2.5 µm.

[b] These vulnerability factors are not comprehensive but rather examples of relevant vulnerability factors. Please see the WHO Quality Criteria for Health National Adaptation Plans for more details: https://www.who.int/publications/i/item/quality-criteria-health-national-adaptation-plans.

[c] See "National health response: health system capacity and adaptation" for the national response to air pollution.

HEALTH CO-BENEFITS FROM CLIMATE CHANGE MITIGATION

Health co-benefits are local, national and international measures with the potential to simultaneously yield large, immediate public health benefits and reduce greenhouse gas emissions.

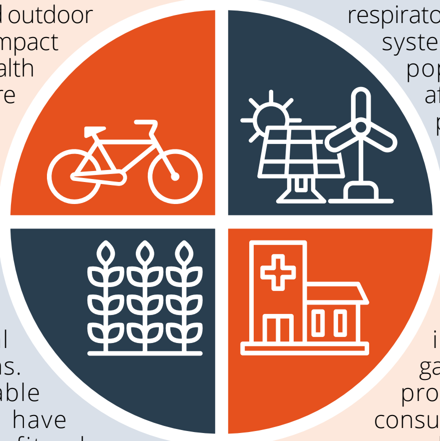
GLOBAL EXAMPLES

TRANSPORT

A shift towards active transportation and sustainable public transport systems could see reductions in greenhouse gas emissions; decreases in illnesses related to physical inactivity, reduced outdoor air pollution and noise exposure. Compact urban planning can also improve health equity by making urban services more accessible to the elderly and poor.

ENERGY

The health benefits of transitioning from polluting fuels, such as coal, to lower carbon sources and renewables are clear: reduced rates of cardiovascular and respiratory diseases; cost-savings for health systems; improved health equity where populations are disproportionately affected by household or ambient air pollution; and improved economic productivity from a healthier and more productive workforce.



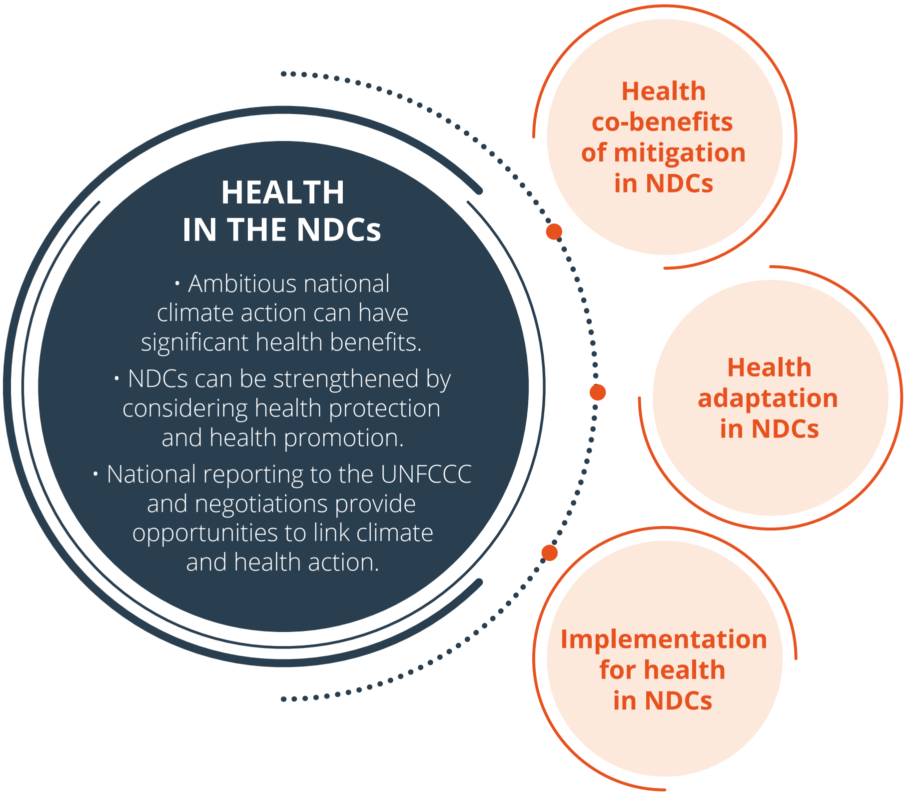
FOOD AND AGRICULTURE

Food systems emissions constitute a significant proportion of total global greenhouse gas emissions. Interventions to build sustainable and secure food systems can have significant public health benefits, by addressing malnutrition associated with food and nutrition insecurity while reducing diet-related noncommunicable diseases (NCDs).

HEALTH CARE SYSTEMS

Health care activities are an important source of greenhouse gas emissions. Major sources include procurement and inefficient energy consumption. Low-carbon and efficient energy solutions can lower the health sector's carbon footprint while improving the quality and reliability of energy services in many settings.

HEALTH IN THE NATIONALLY DETERMINED CONTRIBUTION (NDC)



Total 2018 emissions

43 348.3 kt CO_2 equivalent *(25)*

NDC target

European Union economy-wide net domestic reduction of at least 55% in greenhouse gas emissions by 2030 compared with the 1990 levels *(4)*

The EU NDC does not outline specific health adaptation targets *(4)*.

NATIONAL HEALTH RESPONSE: HEALTH SYSTEM CAPACITY AND ADAPTATION

The following section measures progress in the health sector in responding to climate threats based on country reported data collected in the WHO Health and Climate Change Global Survey *(26)*.

GOVERNANCE AND LEADERSHIP

National planning for health and climate change

Has a national health and climate change strategy or plan been developed?[a] *Title:* National Action Plan for Environment and Health *Year:* 2019	yes
Content	
Are health adaptation priorities identified in the strategy/plan?	yes
Are the health co-benefits of mitigation action considered in the strategy/plan?	yes
Have performance indicators been identified?	yes
Level of implementation of the strategy/plan	Moderate
Portion of estimated costs to implement the strategy/plan covered in the health budget	Minimally

● yes ● no ○ unknown / not applicable

Intersectoral collaboration to address climate change

Is there an agreement in place between the ministry of health and this sector which defines specific roles and responsibilities in relation to links between health and climate change policy?

Sector[b]	Agreement in place
Transportation	unknown / not applicable[c]
Electricity generation	unknown / not applicable[c]
Household energy	unknown / not applicable[c]
Agriculture	unknown / not applicable[c]
Social services	unknown / not applicable[c]
Water, sanitation and waste-water management	unknown / not applicable[c]

● yes ● no ○ unknown / not applicable

[a] In this context, a national strategy or plan is a broad term that includes national health and climate strategies as well as the health component of national adaptation plans (HNAPs).

[b] Specific roles and responsibilities between the national health authority and the sector indicated are defined in the agreement.

[c] The Ministry of Environment has established a multisectoral body, which coordinates other sectors (ministries) to participate within this agenda on the basis of their own competences. It means that each sector has defined appropriate measures in the field of climate change adaptation and mitigation. The main document Adaptation Strategy of the Slovak Republic on Adverse Impacts of Climate Change (2014), and its subsequent update in 2018, was created on the basis of multisectoral cooperation between these partners.

EVIDENCE AND IMPLEMENTATION

Vulnerability and adaptation assessment for health

Has an assessment of health vulnerability and impacts of climate change been conducted at the national level? *Title:* N/A *Year:* N/A	no

Have the results of the assessment been used for policy prioritization or the allocation of human and financial resources to address the health risks of climate change?

	None	Minimal	Somewhat	Strong
Policy prioritization	N/A			
Human and financial resource allocation				

Level of influence of assessment results

● yes ● no ○ unknown / not applicable

Integrated risk monitoring and early warning

Climate-sensitive diseases and health outcomes	Health surveillance system exists[a]	Health surveillance system includes meteorological information[b]	Climate-informed health early warning system (EWS) in place
Thermal stress (e.g. heat waves)	unknown / not applicable	unknown / not applicable	no
Vector-borne diseases	yes	no	no
Foodborne diseases	yes	no	no
Waterborne diseases	yes	no	no
Nutrition (e.g. malnutrition associated with extreme climatic events)	yes	no	no
Injuries (e.g. physical injuries or drowning in extreme weather events)	unknown / not applicable	unknown / not applicable	no
Mental health and well-being	unknown / not applicable	unknown / not applicable	no
Airborne and respiratory diseases	yes	no	no

● yes ● no ○ unknown / not applicable

[a] A positive response indicates that the health surveillance system is in place, it will identify changing health risks or impacts AND it will trigger early action.

[b] Meteorological information refers to either short-term weather information, seasonal climate information or long-term climate information.

Emergency preparedness

Climate hazard	Early warning system in place	Health sector response plan in place	Health sector response plan includes meteorological information
Heat waves	yes	no	unknown / not applicable
Storms (e.g. hurricanes, monsoons, typhoons)	yes	unknown / not applicable	unknown / not applicable
Flooding	yes	yes	yes
Drought	unknown / not applicable	unknown / not applicable	unknown / not applicable
Air quality (e.g. particulate matter, ozone levels)	yes	yes	yes

● yes ● no ○ unknown / not applicable

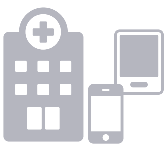
CAPACITY, INFRASTRUCTURE AND SUSTAINABILITY

Human resource capacity

International Health Regulations (IHR) Monitoring Framework Human Resources Core Capacity (2018) *(27)*	60%
Does your human resource capacity, as measured through the IHR, adequately consider the human resource requirements to respond to climate-related events?	no
Is there a national curriculum developed to train health personnel on the health impacts of climate change?	no

● yes ● no ○ unknown / not applicable

Health care facilities, infrastructure and technology



Has there been an assessment of the climate resilience of any public health care facilities?	unknown / not applicable
Have measures been taken to increase the climate resilience of health infrastructure and technology?	Partially
Is there a national initiative/programme in place to promote the use of low-carbon, energy-efficient, sustainable technologies in the health sector?	unknown / not applicable

● yes ● no ○ unknown / not applicable

OPPORTUNITIES FOR ACTION

1. UPDATE SLOVAKIA'S NATIONAL ACTION PLAN FOR ENVIRONMENT AND HEALTH

Slovakia's National Action plan for Environment and Health (NEHAP V.) was adopted on 9 January 2019 by the Slovak government resolution No. 3. The new NEHAP V. was formulated to implement the conclusions of the 6th Ministerial Conference on Environment and Health held in Ostrava (13–15 June 2017) on conditions of Slovakia. It represents an important tool for strengthening the processes for improving environmental health with the participation of relevant partners from different sectors. It was deliberated based on intersectoral cooperation, during which partners from relevant sectors of Slovakia participated: Ministry of Environment, Ministry of Agriculture and Rural Development, Ministry of Economy, Ministry of Transport and Construction and Ministry of Education, Science, Research and Sport.

Its main goal is to minimize negative environmental health impacts. We have focused on those environmental determinants that have the biggest influence in relation to health, namely: air pollution, water pollution, insufficient drinking water supplies, dangerous chemical substances, noise, contaminated sites, climate change and residential environment.

2. CONDUCT A NATIONAL CLIMATE CHANGE AND HEALTH VULNERABILITY AND ADAPTATION ASSESSMENT

Slovakia has not conducted a climate change and health vulnerability and adaptation assessment. Assess Slovakia's vulnerability to climate-related health risks. Information gathered through iterative climate change and health vulnerability and adaptation assessments can be used to inform the development of health adaptation policies and plans as well as national climate change reporting mechanisms (e.g. Nationally Determined Contributions [NDCs], National Communications [NCs], National Adaptation Plans [NAPs]). See "WHO resources for action" for further details.

Adaptation measures, as well as the activities in the field of climate change and public health, are included within NEHAP V. The Public Health Authority of Slovakia and its branches at the regional level are responsible for pollen forecast, informing the public about pollen concentrations in the air on a weekly basis. Within our competences we have monitored indicators related to climate change (pollen allergens, bathing water – cyanobacteria). Their monitoring resulted from the Act 355/2007 on Protection, Support and Development of Public Health and on Amendments and Supplements to Certain Acts Amendment. It means that we have monitored them regardless of climate change. The public health sector regularly informs the public during heat and cold waves about appropriate cooling and ventilation and heating.

3. STRENGTHEN INTEGRATED RISK SURVEILLANCE AND HEALTH EARLY WARNING SYSTEMS

Meteorological information is not currently used to inform risk surveillance of climate-sensitive diseases. The use of climate/weather information can be integrated into health surveillance systems and used to predict outbreaks of climate-sensitive diseases (i.e. climate-informed health early warning systems) to help ensure a preventive approach to specific climate-sensitive health programmes.

4. ASSESS THE HEALTH CO-BENEFITS OF NATIONAL CLIMATE MITIGATION POLICIES

Health co-benefits of mitigation are currently not included in Slovakia's Nationally Determined Contribution (NDC). Ensure that climate mitigation policies include the health risks posed by climate change, identify health adaptation priorities and measure and optimize the health co-benefits of climate mitigation action.

5. BUILD CLIMATE-RESILIENT AND ENVIRONMENTALLY SUSTAINABLE HEALTH CARE FACILITIES

Measures can be taken to prevent the potentially devastating impacts of climate change on health care facilities and health service provision while decreasing the climate and environmental footprint of health care facilities. A commitment towards climate-resilient, environmentally sustainable health care facilities can improve system stability, promote a healing environment and mitigate climate change impacts.

WHO RESOURCES FOR ACTION

- **Operational framework for building climate-resilient health systems**
  https://www.who.int/publications/i/item/operational-framework-for-building-climate-resilient-health-systems
- **WHO guidance to protect health from climate change through health adaptation planning**
  https://www.who.int/publications/i/item/who-guidance-to-protect-health-from-climate-change-through-health-adaptation-planning
- **Quality Criteria for Health National Adaptation Plans**
  https://www.who.int/publications/i/item/quality-criteria-health-national-adaptation-plans
- **Protecting health from climate change: vulnerability and adaptation assessment**
  https://www.who.int/publications/i/item/protecting-health-from-climate-change-vulnerability-and-adaptation-assessment
- **Integrated risk surveillance and health early warning systems**
  https://www.who.int/activities/supporting-countries-to-protect-human-health-from-climate-change/surveillance-and-early-warning
- **WHO guidance for climate-resilient and environmentally sustainable health care facilities**
  https://www.who.int/publications/i/item/9789240012226
- **Heat early warning systems guidance**
  https://www.who.int/publications/i/item/heatwaves-and-health-guidance-on-warning-system-development
- **Climate services for health fundamentals and case studies**
  https://public.wmo.int/en/resources/library/climate-services-health-case-studies
- **Climate-resilient water safety plans**
  https://www.who.int/publications/i/item/9789241512794

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