ISRAEL

HEALTH AND CLIMATE CHANGE

COUNTRY PROFILE 2022

World Health Organization

United Nations
Framework Convention on
Climate Change

CONTENTS

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HOW TO USE THIS PROFILE

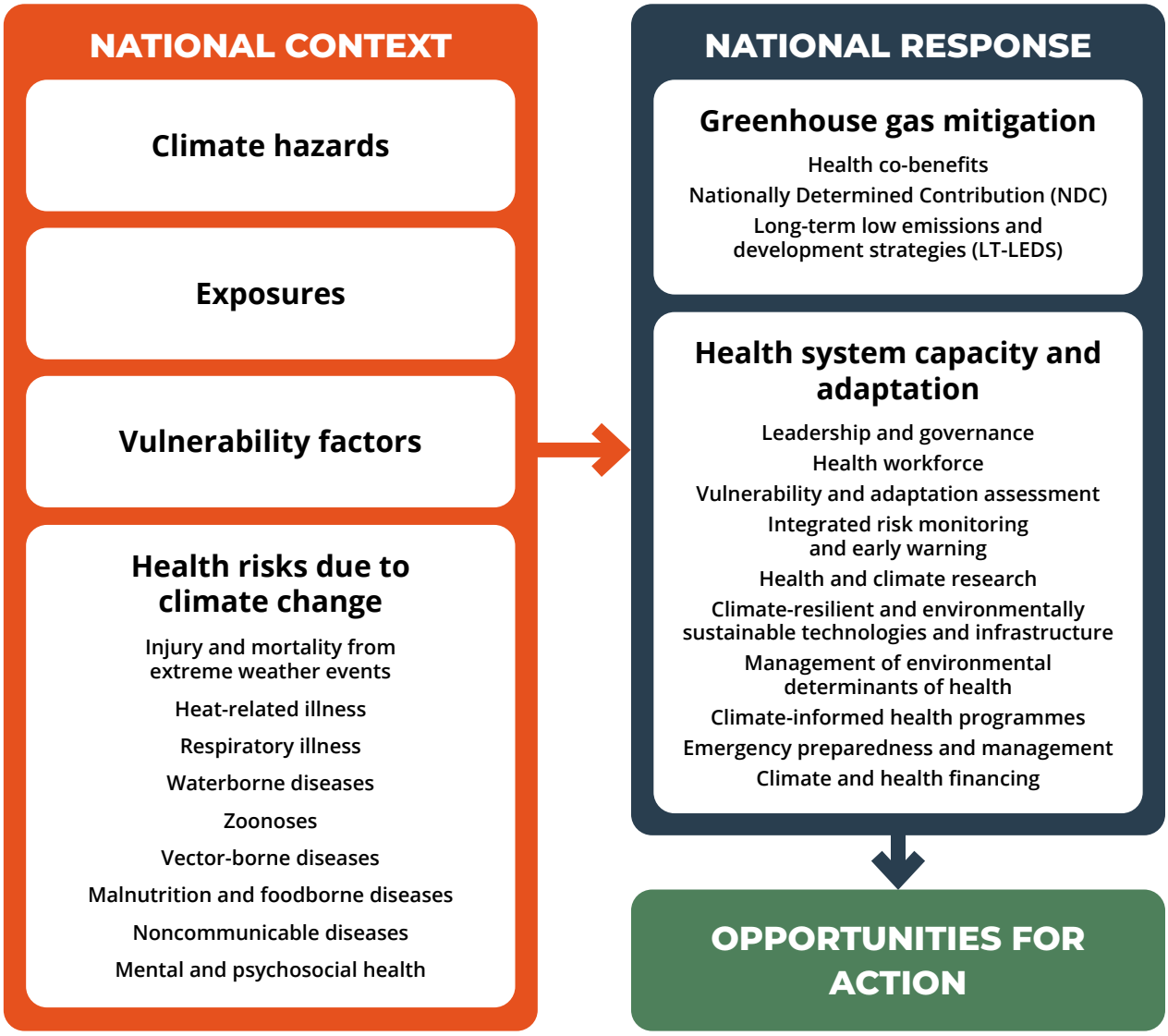
This health and climate change country profile presents a snapshot of country-specific climate hazards, climate-sensitive health risks and potential health benefits of climate change mitigation. The profile is also a key tool in monitoring national health sector response to the risk that climate variability 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 the eastern basin of the Mediterranean Sea, Israel covers a land area of 22 072 km^2 that varies between plains and valleys, mountain ranges, the Jordan Rift Valley, coastline and desert. Israel is a high-income country with sustained economic growth over recent years. Since 2000, Israel's population and population density have steadily risen, being one of the Organisation for Economic Co-operation and Development (OECD) countries with the highest growth rate *(1)*.

Lying in a transition zone between a hot and a cool region, Israel's climate varies across the country between Mediterranean, arid and semi-arid climates. Summers are hot and winters are mild, with significant changes in rainfall patterns from year to year. Israel is characterized by scarce water resources, which represents a challenge for water resource management. To cope with water scarcity, Israel has developed advanced technologies for desalination and wastewater treatment. Impacts of climate change include increasing temperatures, which could lead to drier conditions and stronger storms, as well as lower rainfall that reduce water flow. Further health risks derived from climate change include air pollution, vector-borne diseases and heat stress *(1)*.

The Nationally Determined Contribution (NDC) of Israel has an unconditional absolute greenhouse gas emissions reduction goal for 2030 of 27% relative to 2015 and an unconditional absolute greenhouse has emissions reduction goal for 2050 of 85% relative to 2015 *(2)*. Israel's National Program for Adaptation to Climate Change includes health among its 30 actions plans; the plan aims at monitoring mortality, morbidity, and treatment of high-risk groups *(3a)*. Updated recommendations were published in the first report of the national administration for climate change adaptation (2021) and aim to assist in realizing the objectives of the government decisions and improving Israel's deployment for climate change *(3b)*.

CLIMATE-SENSITIVE HEALTH RISKS – ISRAEL

Health risks	
Health impacts of extreme weather events	●
Heat-related illnesses	●
Respiratory illnesses	●
Waterborne diseases and other water-related health impacts	●
Zoonoses	●
Vector-borne diseases	●
Malnutrition and foodborne diseases	●
Noncommunicable diseases	●
Mental/psychosocial health	○
Impacts on health care facilities	●
Effects on health systems	●
Health impacts of climate-induced population pressures	●

● yes ● no ○ unknown / not applicable

Source: List of climate-sensitive health risks adapted from the Quality Criteria for Health National Adaptation Plans, WHO (2021) *(4)*.

CURRENT AND FUTURE CLIMATE HAZARDS

CLIMATE HAZARD PROJECTIONS FOR ISRAEL

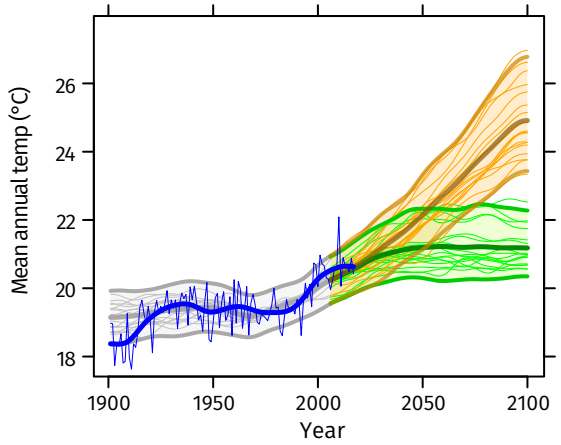
Country-specific projections are outlined up to the year 2100 for climate hazards under a 'business as usual' (BAU) high emissions scenario compared to projections under a 'two-degree' scenario with rapidly decreasing global emissions (see Figures 1–5).

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.

Rising temperature

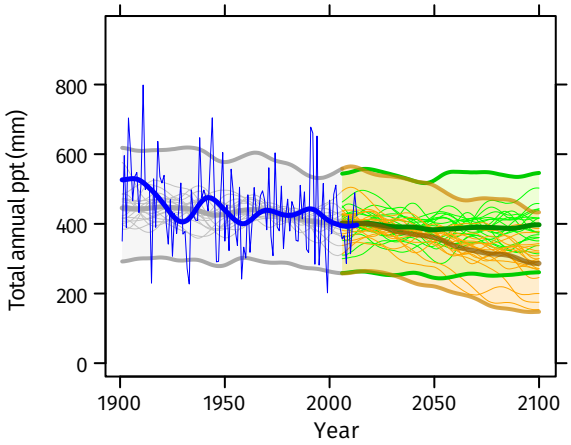
FIGURE 1: Mean annual temperature, 1900–2100



Under a high emissions scenario, the mean annual temperature is projected to rise by about 4.4°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 1.3°C.

Decrease in total precipitation

FIGURE 2: Total annual precipitation, 1900–2100



Total annual precipitation is projected to decrease by about 25% on average under a high emissions scenario, although the uncertainty range is large (-44% to -11%). If emissions decrease rapidly, there is little projected change on average: a decrease of 4% with an uncertainty range of -14% to +18%.

NOTES

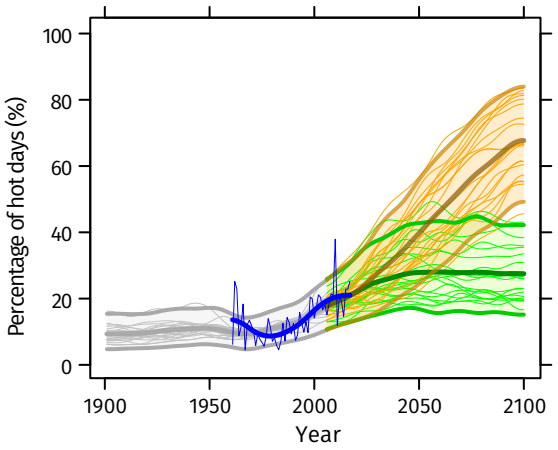
[a] Model projections are from CMIP5 for RCP8.5 (high emissions) and RCP2.6 (low emissions). Model anomalies are added to the historical mean and smoothed.

[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

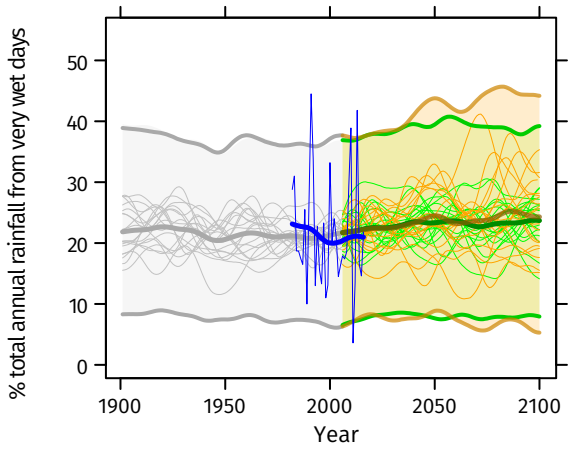
FIGURE 3: Percentage of hot days ('heat stress'), 1900–2100



The percentage of hot days[d] is projected to increase substantially from about 15% of all days on average in 1981–2010 (10% in 1961–1990). Under a high emissions scenario, about 60% of days on average are defined as 'hot' by the end-of-century. If emissions decrease rapidly, about 30% of days on average are 'hot'. Similar increases are seen in hot nights[d] (not shown).

Small increase in extreme rainfall

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



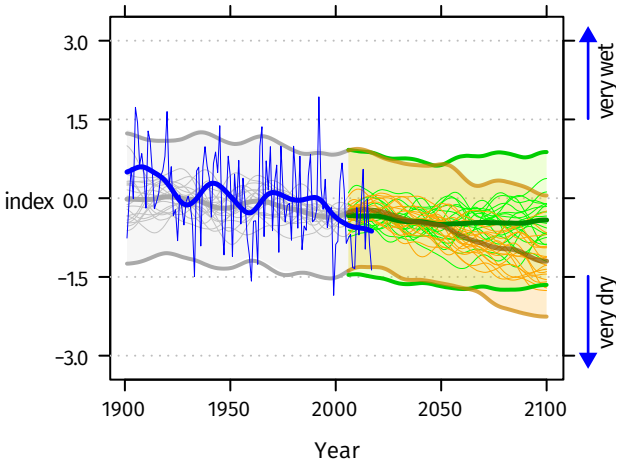
Under a high emissions scenario, the proportion of total annual rainfall from very wet days[e] (about 20% for 1981–2010) could increase a little by the end-of-century (to about 25% on average with an uncertainty range of about 5% to 45%), with similar change if emissions decrease rapidly. These projected changes are accompanied by a decrease 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.

Under a high emissions scenario, SPI12 values are projected to decrease substantially from about -0.3 to -1 on average by the end-of-century (2071–2100) indicating an increase in the frequency and/or intensity of dry episodes and drought events and a decrease in the frequency and/or intensity of wet events. If emissions decrease rapidly, there is little change although year-to-year variability remains large.



[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 4.4°C mean annual temperature rise by the end-of-century.

About 60% 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)

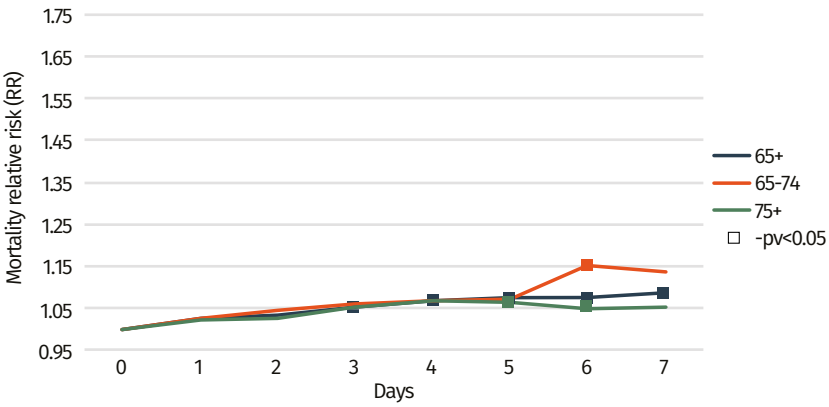
Biological factors and health status

Geographical factors (e.g. urbanization)

Socioeconomic factors (e.g. occupation and poverty)

HEALTH RISKS[c]

FIGURE 6: Mortality relative risk (RR) related to heat wave duration in population aged 65+ years in Israel. Source: Ministry of Health



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

The Ministry of Health calculated the mortality risk between 1998 to 2014 related to heat wave duration in three age groups 65+, 65-74 and 75+ years. After six days the mortality risk was 1.07, 1.15 and 1.05, respectively (statistical significance).

An additional study, examining the association between high ambient temperature and the risk of stroke/transient ischemic attack (TIA) in Israel found that high temperatures were associated with increased stroke risk, with a lag of 1–6 from exposure to the stroke event. However, larger diurnal temperature ranges were associated with reduced risk of stroke, with relatively cooler nighttime temperatures offering relief from the heat *(5)*.

[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 4.4°C mean annual temperature rise by the end-of-century.
- About 60% of days could be 'hot days' by the end-of-century.
- Total annual precipitation could decrease by about 25% by the end-of-century.
- Large year-to-year variability in drought conditions.

EXPOSURES

Climate change can damage agricultural productivity and the quality of agricultural produce by impacting physiological conditions of plants and animals, soil quantity and quality, and pests and invasive species. Additionally, climate hazards can damage accessibility and the quality of food supplies, since Israel relies heavily on imports of some food commodities and raw materials for local production.

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]

Food safety problems can lead to foodborne diseases and noncommunicable diseases (such as metabolic diseases). Increasing temperatures can also lead to increase in foodborne illnesses through spoiled food from refrigeration failure in transport/storage or changes in distribution of biological pathogens such as Salmonella, Listeria and Campylobacter growth.

Two research studies were conducted at Tel Aviv University on patterns of distribution in space and time of food-related infectious disease in Israel. The relationship between Campylobacter and Salmonella with temperature were examined. It was found that higher temperatures throughout the year affect Campylobacter morbidity, especially in younger children, and raise significantly the risk of morbidity from non-typhoid Salmonella *(6,7)*.

[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 food safety and security.

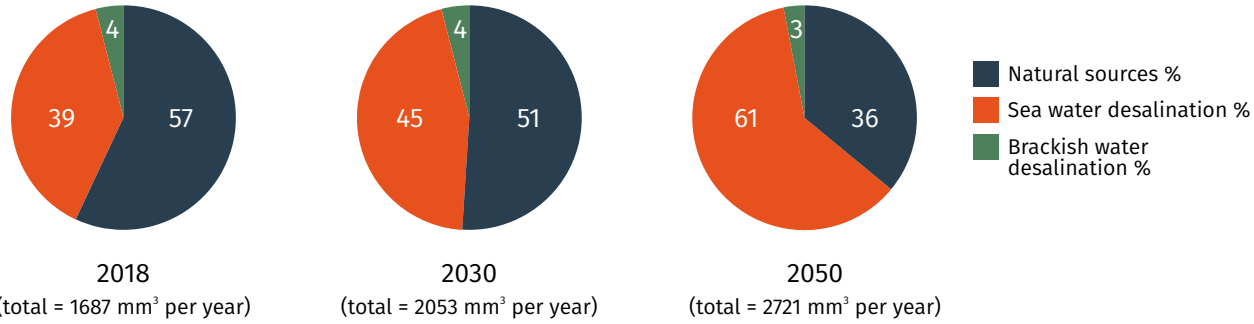
WATER QUANTITY AND QUALITY

CLIMATE HAZARDS[a]

- Up to 4.4ºC mean annual temperature rise by the end-of-century.
- Total annual precipitation could decrease by about 25% by the end-of-century.
- Annual rainfall from very wet days could increase a little by the end-of-century.
- Large year-to-year variability in drought conditions.

EXPOSURES

FIGURE 7: Water sector forecast projecting sources of water in 2018, 2030 and 2050.
Source: Israel Water Authority



Freshwater scarcity is a constant reality in Israel. The permanent challenge is to close the gap between the demand and the available water natural resources. Israel solved its water challenges by adopting a sustainable water management approach and by manufactured water resources. Over the past 30 years, water supply shifted from natural sources that has been cut by half, with the other half being recycled treated water and desalinated seawater.

EXAMPLE VULNERABILITY FACTORS[b]

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

HEALTH RISKS[c]

Tap water in Israel is of good quality and potable. The probability for waterborne disease is very low in Israel owing to continuous national monitoring and control of all drinking water sources. Mixing of water sources (ground water, surface water and desalinated water) might lead to magnesium deficiencies in drinking water and in the serum. As hypomagnesaemia has been associated with increased morbidity and mortality from cardiovascular diseases, the Ministry of Health and the Water Authority are promoting a plan to ensure restore magnesium *(8,9,10,11)*.

[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 water quantity and quality.

VECTOR DISTRIBUTION AND ECOLOGY

CLIMATE HAZARDS[a]

Up to 4.4ºC mean annual temperature rise by the end-of-century.

Total annual precipitation could decrease by about 25% by the end-of-century.

EXPOSURES

Changes in temperature, precipitation and humidity patterns have a strong influence on the life-cycles of vectors and the infectious agents that carry and influence the transmission of disease *(12).* Linkages have been detected between vector-borne diseases and the changing climate in Israel. For example, research on the link between heatwaves and West Nile virus (WNV) in Israel showed that an early extreme rise in temperature at the start of the hot season is a good indicator of subsequent increased mosquito populations *(13).* Indeed, extreme high temperatures have been found to be a driver for WNV outbreaks *(14).* Research has also been conducted on sand flies and *Leishmania tropica (15).* One such study examined temperature effects on the sand fly vectors of *Leishmania tropica;* high ambient temperatures during the early night explained the high proportion of the variance in the spatio-temporal vector activity patterns *(16).*

EXAMPLE VULNERABILITY FACTORS[b]

Environmental factors

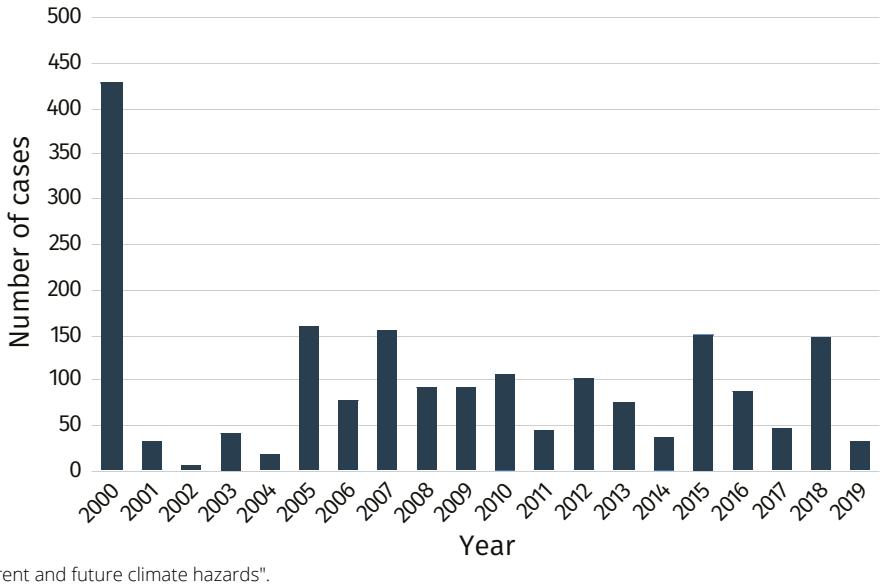
Biological factors and health status (e.g. pregnant women or pre-existing conditions)

Disease dynamics

Socioeconomic factors

HEALTH RISKS[c]

FIGURE 8: West Nile fever: number of cases in Israel from 2000–2019. Source: Ministry of Health



[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.

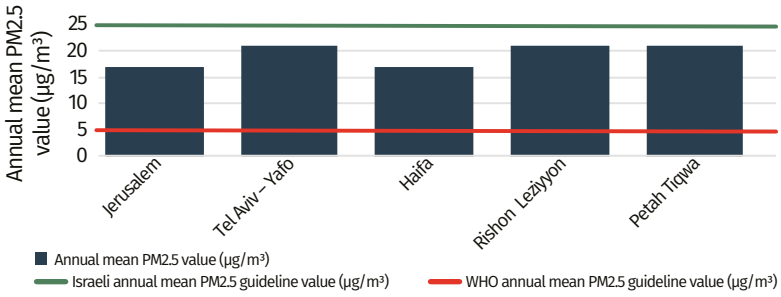
HEALTH RISKS DUE TO AIR POLLUTION

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

Sources of ambient (outdoor) air pollution in Israel include anthropogenic activity (such as energy production, industry, transportation and infrastructure) and also natural phenomena (such as desert dust). The main ambient air pollution in Israel includes particulate matter ($PM_{2.5}$, PM_{10}), ozone (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), benzene, formaldehyde, and some polycyclic aromatic compounds. Due to Israel's geographical location between the deserts of North Africa and the deserts of the Arabian Peninsula, desert dust contributes significantly to the concentration of particulate matter *(17)*. All cities in Israel have annual mean $PM_{2.5}$[a] levels above the WHO guideline value of 5 µg/m^3 but below the Israeli limit value of 25 µg/m^3 (see Figure 9).

FIGURE 9: Annual mean $PM_{2.5}$ in the five most populous Israeli cities in 2019, compared with the WHO guideline value of $PM_{2.5}$ of 5 µg/m^3 (orange line) and the Israeli limit value of 25 µg/m^3 (green line). Source: Ministry of Environmental Protection's Chemical Transport Model[b]



EXAMPLE VULNERABILITY FACTORS[c]

- 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[d]

Ambient air pollution can have direct and sometimes severe consequences for health. Fine particles penetrate deep into the respiratory tract, increasing morbidity and mortality from a range of health impacts, including respiratory infections/diseases, lung cancer, cardiovascular disease, and cognitive impairments.

1904

deaths from ambient air pollution in Israel in 2016 *(18)*

3.3%

economic costs of premature deaths from exposure to ambient particulate matter pollution and household air pollution as a percentage of GDP (2010) *(19)*

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

[b] The concentrations were derived from the annual mean concentrations calculated by a CTM (Chemical Transport Model), and corrected by the measurements at the Air Quality Monitoring Network in Israel. For details, please see: Levy I, Karakis I, Berman T, Amitay M, Barnett-Itzhaki Z. A hybrid model for evaluating exposure of the general population in Israel to air pollutants. Environ Monit Assess. 2020;192:4 *(1,4)*.

[c] 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.

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

HEALTH CO-BENEFITS FROM CLIMATE CHANGE MITIGATION

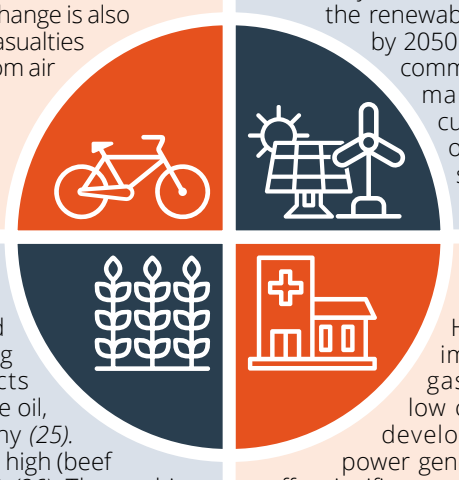
Health co-benefits are local, national and international measures with the potential to simultaneously yield large, immediate public health benefits and reduce greenhouse gas emissions. Presented here are national examples of climate mitigation action in key sectors that can bring significant health benefits for the population of Israel:

TRANSPORT

The transportation sector, and in particular private vehicles and buses, is the main source of air pollution in Israeli city centres and population centres. This pollution, emitted at low altitude near the population, is especially dangerous to public health. According to a report by the Ministry of Health and the Foundation for Health and the Environment, as well as OECD data, with approximately half of premature deaths from air pollution being caused by exposure to vehicular air pollution *(20).* In addition, the transport sector accounts for around 23% of Israel's greenhouse gas emissions; private cars account for approximately 65% of greenhouse gas emissions emitted from road transport. The Ministry of Environmental Protection and the Ministry of Transportation, in the framework of transition to a low carbon economy by 2050, prepared a plan to reduce emissions from the transport sector. It was estimated that by 2050, switching to zero emission vehicles together with reducing private car share to 30% of all trips (down from 63% in 2018) would reduce around 96% of greenhouse gases emitted from transport in Israel. For health, this change is also estimated to yield a reduction in casualties from car accidents and mortality from air pollution *(21,22,23).*

ELECTRICITY GENERATION

The electricity sector is the largest source of greenhouse gas emissions in Israel, accounting for 44% of total greenhouse gas emissions in 2020. Greenhouse gas emissions from electricity generation declined in 2020 by approximately 22% relative to a Business As Usual Scenario as a result of the ongoing fuel switch from coal to natural gas and to renewable energy. Coal will be phased out until 2026, helping further reduce greenhouse gas emissions and offering some immediate health benefits from lower levels of air pollution *(24).* Israel's electricity-related carbon intensity amounted to 560 g/kWh in 2017 and the global climate crisis is forcing Israel to align with climate policies for zero emissions. Therefore, the government has approved, in July 2021, a series of national greenhouse gas emissions reduction targets, including 27% reduction in greenhouse gas emissions relative to the emissions level in 2015 and 85% reduction by 2050. In addition, the government approved a 30% renewable energy target in the electricity sector by 2030 with the aim of increasing the renewables share to around 80% or more by 2050 *(21,22,23,24).* More recently, Israel committed to a net zero (climate neutral) market-wide target by 2050 and currently the government is working on developing its implementation strategy.



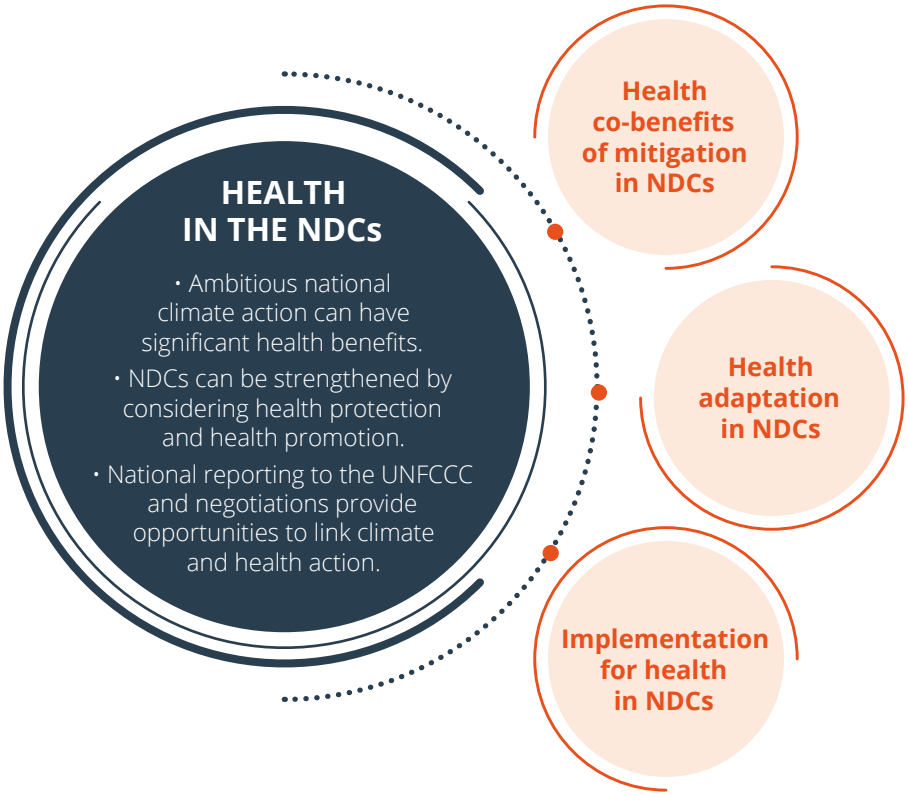
FOOD AND AGRICULTURE

The eating habits in Israel are based on the Mediterranean diet, relying on accessible fresh food products such as fruits, vegetables, fish, olive oil, have long been considered healthy *(25).* However, red meat consumption is high (beef and veal 23.2 kg per capita 2019) *(26).* The goal in Israel is to preserve the Mediterranean diet whilst encouraging a reduction in red meat consumption, which will help reduce greenhouse gas emissions, improve diets and cardiovascular health. Israel is a leading pioneer in developing innovation technologies for the replacement of animal origin.

HEALTH CARE SYSTEMS

Health care activities are an important source of greenhouse gas emissions. Modern, on-site, low carbon energy solutions and the development of combined heat and power generation capacity in larger facilities offer significant potential to lower the health sector's carbon footprint, particularly when coupled with building and equipment energy efficiency measures. In Israel, health care systems are in the process of switching to natural gas-based energy production using the co-generation method, and plan also to shift to solar energy production.

HEALTH IN THE NATIONALLY DETERMINED CONTRIBUTION (NDC)



Total 2018 emissions

64 911.27 Gg CO_2 equivalent *(27)*

NDC target

An unconditional absolute greenhouse gas emissions reduction goal for 2030 of 27% relative to 2015 and an unconditional absolute greenhouse gas emissions reduction goal for 2050 of 85% relative to 2015 *(2)*

Israel's NDC outlines plans for the Israeli Climate Change Information Center to compile data on the impact of climate change on numerous sectors, including public health, to then identify recommendations for national and local adaptation plans. The 2021 updated NDC expands upon these previous commitments to also enhance the resilience of Israel's public health system *(2)*.

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 *(28)*.

GOVERNANCE AND LEADERSHIP

National planning for health and climate change

Has a national health and climate change strategy or plan been developed?[a] *Title:* Israel's preparations for adaptation to climate change: recommendations for national strategy and action plan *Year:* 2018	●
Content	
Are health adaptation priorities identified in the strategy/plan?	●
Are the health co-benefits of mitigation action considered in the strategy/plan?	●
Have performance indicators been identified?	●
Level of implementation of the strategy/plan	Low
Portion of estimated costs to implement the strategy/plan covered in the health budget	None[b]

● 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[c]	Agreement in place
Transportation	○
Electricity generation	●
Household energy	○
Agriculture	●
Social services	●
Water, sanitation and waste-water management	●

● 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] No specific budget has been allocated to the health sector. At this stage, only non-regret policy is implemented.

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

National response: climate, agriculture and water

The Ministry of Agriculture and Rural Development defined 54 sensitivity indices for agricultural production. In cooperation with the Israel Meteorological Service, climatic trends and future projections (temperature, precipitation, and humidity) are evaluated. This will lay a foundation for risk assessment for local production. In addition, the implications of climate change on future availability and pricing of imported food, will be assessed and quantified in order to prevent bottlenecks and to meet the needs of a growing population. The products of this effort will allow better planning of food security in wake of the considerable food production challenges. Israel is a world leader in the development of innovative agricultural technologies in arid regions and implementing them enables us to cope with climate hazards.

Israel implements sustainable management of the water sector using the integrated water resources management (IWRM) approach. In addition, the Hydrological Service in the Israel Water Authority has developed a system of preparedness for the effects of climate change, and its forecasting system serves as a tool for decision-makers. The flood forecasting system can predict major flood events in Israel both in time and space *(29)*.

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

UNDER DEVELOPMENT

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?

● 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)	●	●	●
Vector-borne diseases	●	●	●
Foodborne diseases	●	●	●
Waterborne diseases	●	○	●
Nutrition (e.g. malnutrition associated with extreme climatic events)	●	●	●
Injuries (e.g. physical injuries or drowning in extreme weather events)	●	●	●
Mental health and well-being	●	●	○
Airborne and respiratory diseases	●	●	●

● yes ● no ○ unknown / not applicable

[a] A positive response indicates that the 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.

National response: heat waves, pest control management and air pollution *(30,31)*

- Formulates guidelines (Ministry of Health website)
  - Tips for the elderly: how to cope with excessive hot weather;
  - Clinical guidelines on prevention and treatment of heat health hazards;
  - A booklet (in preparation) in collaboration with the Ministry of Health and Health Maintenance Organization;
- Issues warnings to the public on impending heat waves (in collaboration with the Israel Meteorological Service);
- Research studies on heat waves impact on health.

Pest control management activities include pests (mosquitoes in particular) and pathogens monitoring, human morbidity monitoring, insecticides registration, registration guiding and supervision of pest control operators.

The Ministry of Environmental Protection is taking measures to reduce pollution from transportation (in collaboration with the Ministry of Transport), from industry and energy production (including a shift to renewable energies in collaboration with the Ministry of Energy). In addition, research is promoted on the distribution of air pollutants as well as epidemiological research (in collaboration with Ministry of Health).

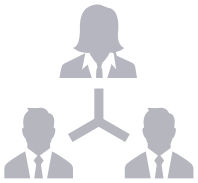
Emergency preparedness

Climate hazard	Early warning system in place	Health sector response plan in place	Health sector response plan includes meteorological information
Heat waves	●	●	●
Storms (e.g. hurricanes, monsoons, typhoons)	●	●	●
Flooding	●	●	●
Drought	●	○	○
Air quality (e.g. particulate matter, ozone levels)	●	●	●

● yes ● no ○ unknown / not applicable

CAPACITY, INFRASTRUCTURE AND SUSTAINABILITY

Human resource capacity



International Health Regulations (IHR) Monitoring Framework Human Resources Core Capacity (2018) *(32)*	80%
Does your human resource capacity, as measured through the IHR, adequately consider the human resource requirements to respond to climate-related events?	○
Is there a national curriculum developed to train health personnel on the health impacts of climate change?	Under development

● 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?	●
Have measures been taken to increase the climate resilience of health infrastructure and technology?	In progress
Is there a national initiative/programme in place to promote the use of low-carbon, energy-efficient, sustainable technologies in the health sector?	In progress

● yes ● no ○ unknown / not applicable

OPPORTUNITIES FOR ACTION

1. STRENGTHEN IMPLEMENTATION OF ISRAEL'S NATIONAL HEALTH AND CLIMATE CHANGE PLAN/STRATEGY

Implementation of the health and climate change plan/strategy in Israel is reported to be low. Assess barriers to implementation of the plan/strategy (e.g. governance, evidence, monitoring and evaluation, finance). Implementation can be supported by exploring additional opportunities to access funds for health and climate change priorities (e.g. GCF readiness proposal). See "WHO resources for action" for further details .

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

Israel is currently developing a climate change and health vulnerability and adaptation assessment. Assess Israel'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".

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

Health co-benefits of mitigation are partially included in Israel's Nationally Determined Contribution (NDC). Ensure that climate mitigation policies include the health risks posed from climate change, identify health adaptation priorities and measure and optimize the health co-benefits of climate mitigation action.

4. 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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