MALTA

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

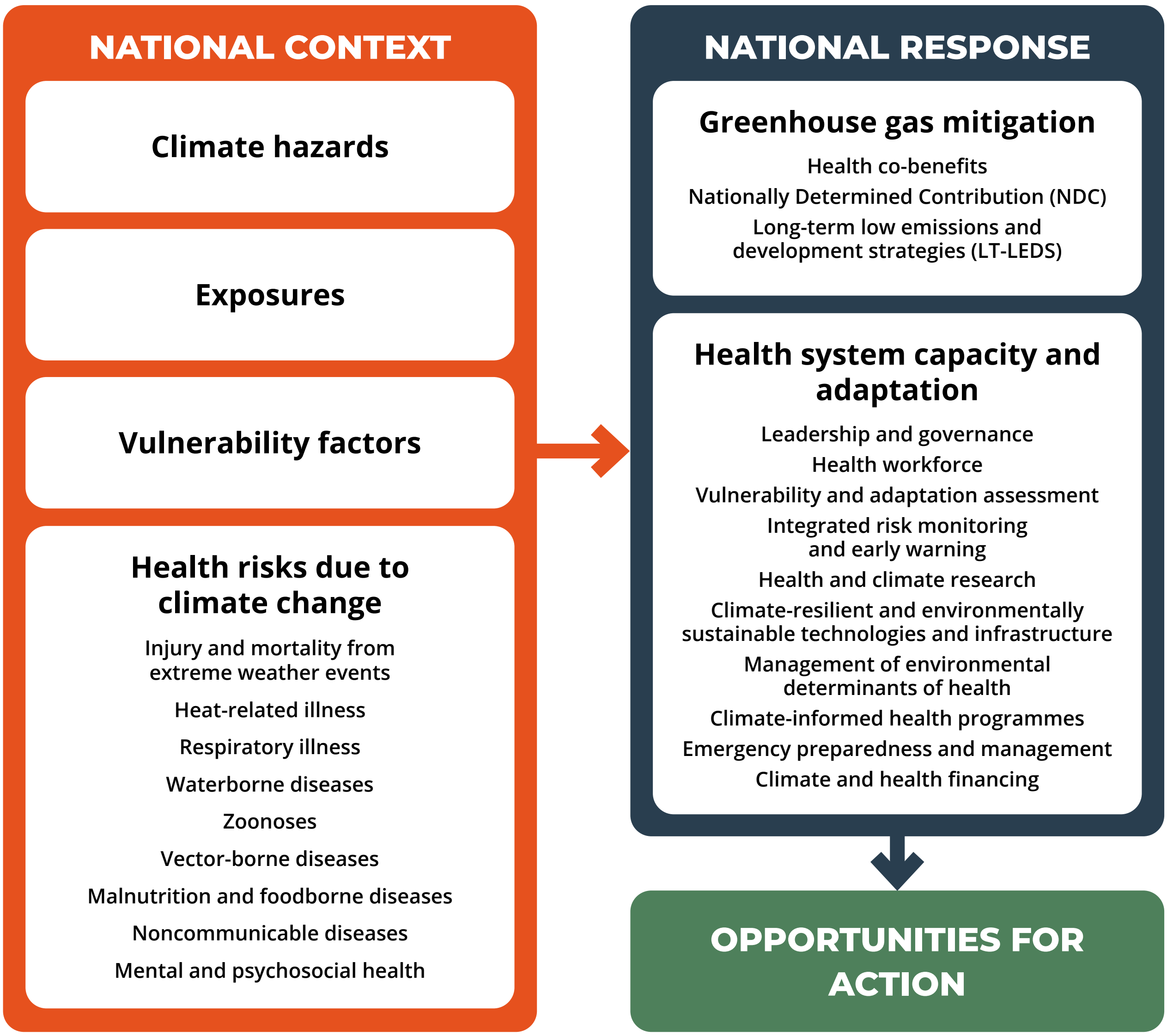
This health and climate change country profile presents a snapshot of country-specific climate hazards, climate-sensitive health risks and potential health benefits of climate change mitigation. The profile is also a key tool in monitoring national health sector response to the risk that climate variability 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 the Mediterranean Sea, the Maltese Archipelago is composed of six islands of which Malta is the largest. The Malta and Gozo islands are characterized by low hills in the north and plains in the south *(1)*. Classified as a high-income country, Malta's economy predominantly depends on foreign trade, services and tourism *(2,3)*. The Maltese population is one of the smallest in the world, yet it is one of the most densely populated countries worldwide *(1)*.

Malta's climate is typically Mediterranean with dry, hot summers and rainy, mild winters. The highest precipitation rates occur between November and February. Malta has experienced increasing air and sea surface temperatures, decreasing annual precipitation, and more frequent intense rainfall events that cause flooding, threaten water resources, agriculture and infrastructure. Climate-sensitive health risks include heat stress, vector-borne and foodborne diseases (such as salmonellosis), and increased risk of deaths and injuries from flash floods *(1)*.

Malta, 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 Maltese National Adaptation Strategy includes health adaptation measures, such as surveillance of vector-borne diseases, reducing risks associated with food safety, and education campaigns on climate and health issues *(5)*.

CLIMATE-SENSITIVE HEALTH RISKS – MALTA

Health risks	
Health impacts of extreme weather events	no
Heat-related illnesses	yes
Respiratory illnesses	yes
Waterborne diseases and other water-related health impacts	no
Zoonoses	no
Vector-borne diseases	yes
Malnutrition and foodborne diseases	no
Noncommunicable diseases	unknown / not applicable
Mental/psychosocial health	no
Impacts on health care facilities	no
Effects on health systems	yes
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 MALTA

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).

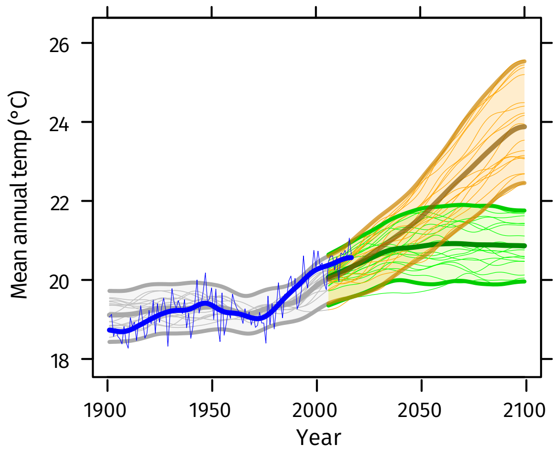
The climate model projections given below present climate hazards under a high emissions scenario, Representative Concentration Pathway 8.5 (RCP8.5 – in orange) and a low emissions scenario (RCP2.6 – in green).[a] The text describes the projected changes averaged across about 20 global climate models (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

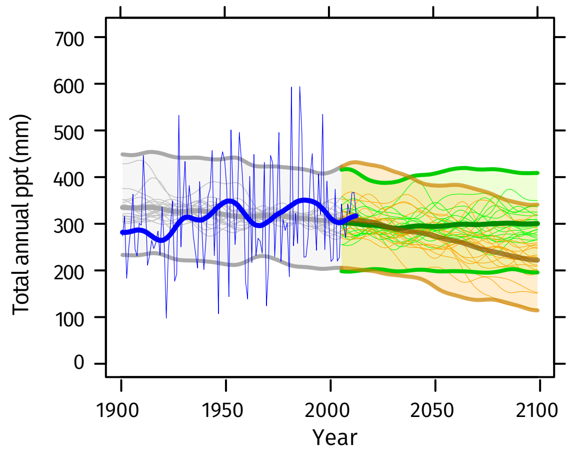
FIGURE 1: Mean annual temperature, 1900–2100



Under a high emissions scenario, the mean annual temperature is projected to rise by about 3.7°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 1.2°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 (-46% to -2%). If emissions decrease rapidly, there is little projected change on average, with an uncertainty range of -13% to +8%.

NOTES

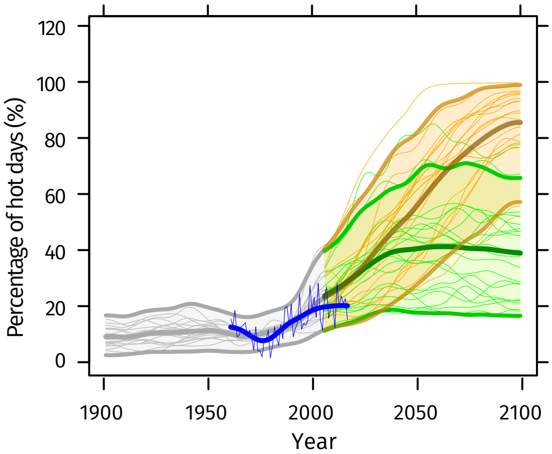
[a] Model projections are from CMIP5 for RCP8.5 (high emissions) and RCP2.6 (low emissions). Model anomalies are added to the historical mean and smoothed.

[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

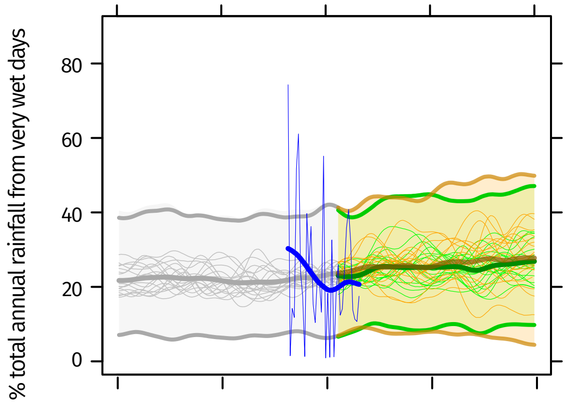
FIGURE 3: Percentage of hot days ('heat stress'), 1900–2100



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 80% of days on average are defined as 'hot' by the end-of-century. If emissions decrease rapidly, about 40% 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

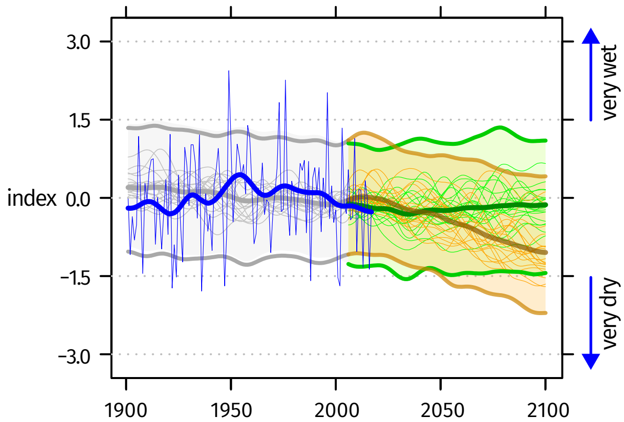


Under a high emissions scenario, the proportion of total annual rainfall from very wet days[e] (about 25% for 1981–2010) could increase a little by the end-of-century (to about 30% on average with an uncertainty range of about 5% to 50%), with little change if emissions decrease rapidly. These projected changes are accompanied by a decrease in total annual rainfall under a high emissions scenario (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 to -0.9 on average by the end-of-century (2071–2100) indicating an increase in the frequency and/or intensity of dry episodes and drought 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 3.7°C mean annual temperature rise by the end-of-century.

About 80% of days could be 'hot days' by the end-of-century.

EXPOSURES

Population exposure to heat stress is likely to rise in the future with 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]

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

Modelling of daily mortality rates in Maltese adults over 65 years of age indicated an optimal temperature between 25°C and 27°C, which results in minimum death rates. In the case of Malta, a warmer country, the optimal temperature is higher than other Northern countries due to the physiological adaptations of people living in these conditions *(7)*. High and low temperature extremes were found to increase the number of deaths, particularly in those aged over 65 years of age, since their thermoregulation is less effective than their younger counterparts *(7)*. Indeed, annual premature deaths due to long-term exposure to heat are projected to increase in Malta as a result of climate change *(8)*.

Projected change in annual premature deaths due to long-term exposure to heat in Malta *(8)*

50
deaths (2010)

113
deaths (2050)

[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 3.7°C mean annual temperature rise by the end-of-century.

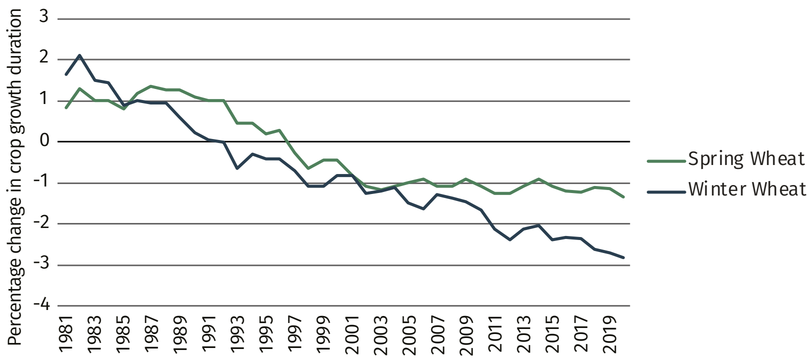
Total annual precipitation could decrease by about 25% by the end-of-century.

About 80% of days could be 'hot days' by the end-of-century.

Large year-to-year variability in drought conditions.

EXPOSURES

FIGURE 6: Percentage change in crop growth duration in Malta in 1981–2020, relative to the 1981–2010 average, expressed as the running mean over 11 years (5 years before and 5 years after) *(9,10)*



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]

Food safety and security problems can result in: malnutrition and foodborne diseases, zoonoses, noncommunicable diseases (NCDs) and mortality. As food security decreases due to climate change, metabolic and lifestyle risk factors for diet-related NCDs are likely to be exacerbated. Increasing temperatures can lead to increases in foodborne illnesses through spoiled food from refrigeration failure in transport/storage or changes in patterns of salmonella growth. The quality and quantity of Malta's agricultural output is likely to be negatively affected by reduced water availability; more frequent extreme weather events; higher summer temperatures; invasive pests and species; and deteriorations in soil quality *(1)*. Expected reductions in future precipitation will require water from winter rains to be conserved to ensure the maintenance of summer water supplies, vital for agriculture *(11)*. In Malta, the availability of polished treated sewage effluent to farmers, marketed as 'new water', is also intended to provide farmers with a readily available source of third class water for irrigation.

[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 4.3°C mean annual temperature rise by the end-of-century.

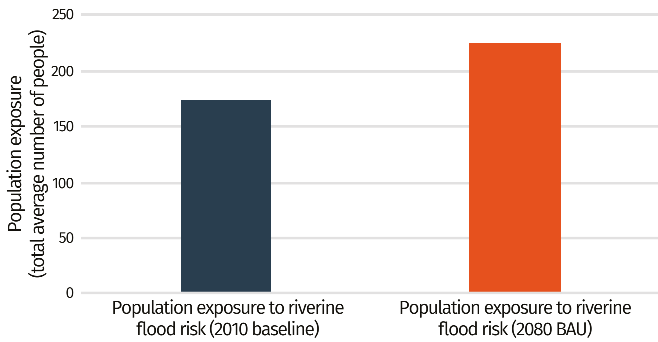
Total annual precipitation could decrease by about 25% by the end-of-century.

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: Change in population exposure to riverine (including surface water) flooding in Malta 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. Rising sea levels can lead to storm surges, coastal erosion, saltwater intrusion of groundwater aquifers, and ecosystem disruption. 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.

EXAMPLE VULNERABILITY FACTORS[c]

Access to clean and safe water and sanitation services

People living near flood and drought zones

Socioeconomic factors

Gender and equity

HEALTH RISKS[d]

Malta has a water shortage problem. The response to date has been the introduction of reverse osmosis to increase water resources. The government has committed to a range of adaptation actions to protect water security in Malta, which climate change threatens. These actions include a range of measures such as borehole monitoring; building rainwater catchment measures; recycling waste-water for irrigation purposes; and restricting the use of groundwater resources *(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] 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 water quantity and quality.

VECTOR DISTRIBUTION AND ECOLOGY

CLIMATE HAZARDS[a]

Up to 3.7°C mean annual temperature rise by the end-of-century.

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

EXPOSURES

Climate change is having a direct impact on vector-borne diseases. For instance, the Asian tiger mosquito *Aedes albopictus* was discovered in Malta in 2009. Surveillance confirmed that the mosquito was present over both Malta and the sister island Gozo by 2012. This mosquito is a known vector of many infectious diseases, including West Nile fever, dengue fever, chikungunya fever and yellow fever amongst others. This species of mosquito is now endemic to Malta since the climate provides the ideal environment for it to breed. Together with the increase in travel internationally and increased migration to Malta, the risk of vector-borne disease outbreaks becomes a priority for the Maltese islands *(13)*.

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 *(14)*.

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]

Vector-borne diseases are a major public health issue in Malta. This continued surveillance is required locally to promptly identify the introduction of new vectors and implement effective control measures where high density populations are found. As a result, a vector-borne disease strategy needs to be prepared, along with a preparedness and control plan to deal with an outbreak on the islands. It is also important to increase the awareness of vector-borne diseases amongst doctors working in the clinical field to ensure detection of new cases, along with increasing the awareness amongst the general public on mosquito control measures. Surveillance of vector-borne diseases by screening human samples (for example, at a blood bank) can also be considered *(13)*.

[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.

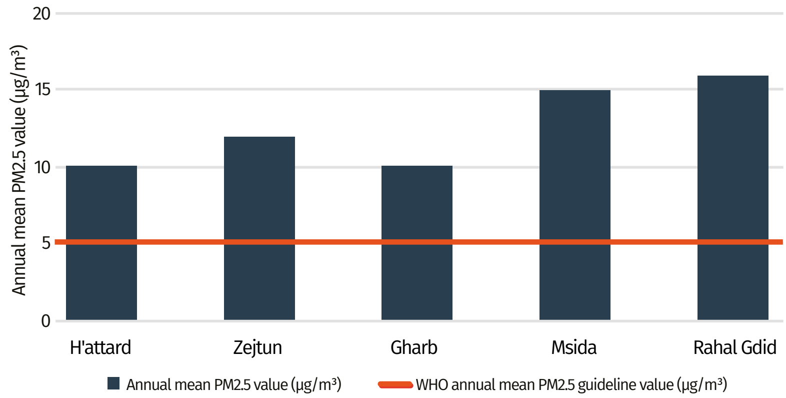
HEALTH RISKS DUE TO AIR POLLUTION

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 cities/towns in Malta for which air pollution data were available had annual mean $PM_{2.5}$[a] levels above the WHO guideline value of 5 μg/m^3 (see Figure 8) *(15)*.

FIGURE 8: Annual mean $PM_{2.5}$ in Malta cities, for which data were available, compared with the WHO guideline value of $PM_{2.5}$ of 5 μg/m^3. Source: Ambient Air Pollution Database, WHO, 2018. A standard conversion has been used on some data points, see source for further details *(15)*



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.

187

deaths from ambient air pollution in Malta in 2016 *(16)*

5.4%

economic costs of premature deaths from ambient particulate matter pollution and household air pollution as a percentage of GDP (2010) *(17)*

[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.

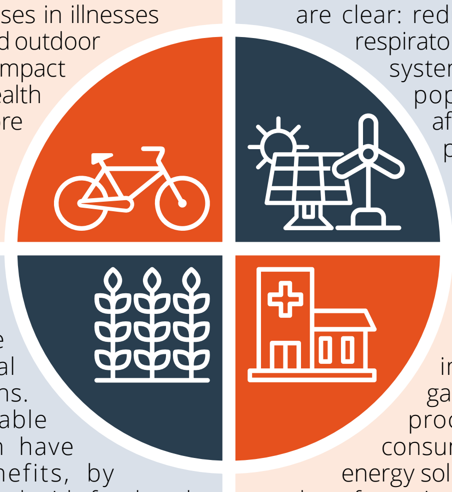
GLOBAL EXAMPLES

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.



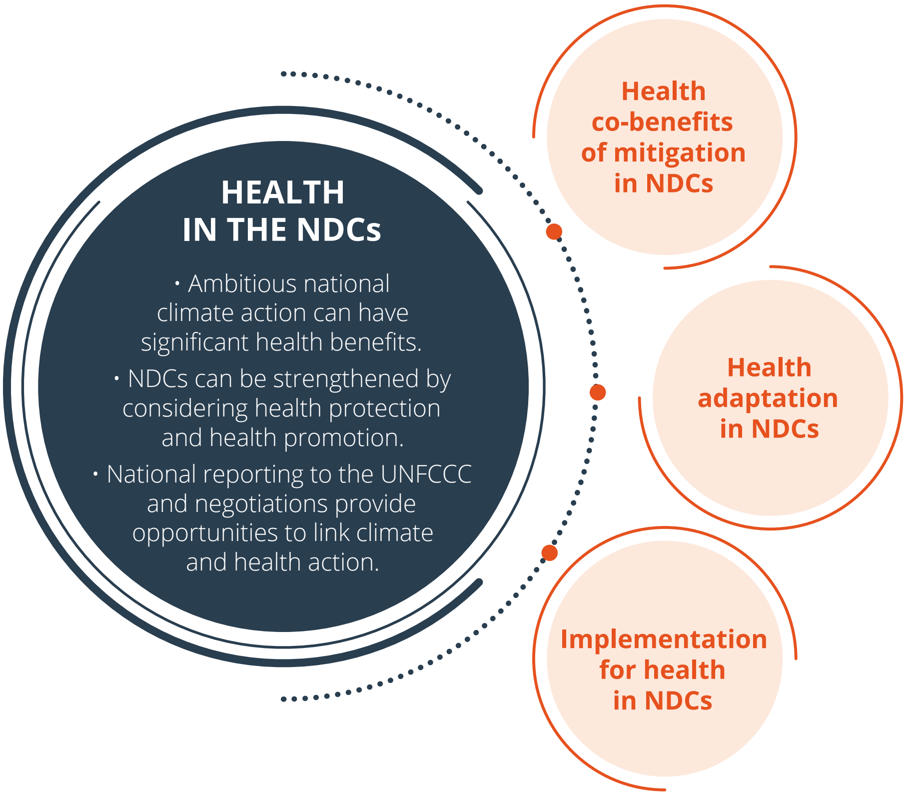
FOOD AND AGRICULTURE

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

2190.5 kt CO_2 equivalent *(18)*

NDC target

At least a 55% domestic reduction 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 Country Survey *(19)*.

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 Climate Change Adaptation Strategy *Year:* 2012	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?	no
Level of implementation of the strategy/plan	Moderate
Portion of estimated costs to implement the strategy/plan covered in the health budget	None

● 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	yes
Electricity generation	no
Household energy	no
Agriculture	no
Social services	no
Water, sanitation and waste-water management	yes

● 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.

NATIONAL RESPONSE

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	N/A			

Level of influence of assessment results

● yes ● no ○ unknown / not applicable

Integrated risk monitoring and early warning

Climate-sensitive diseases and health outcomes	Monitoring system in place[a]	Monitoring system includes meteorological information[b]	Early warning and prevention strategies in place to reach affected population
Thermal stress (e.g. heat waves)	yes	yes	yes
Vector-borne diseases	yes	no	unknown / not applicable
Foodborne diseases	yes	no	unknown / not applicable
Waterborne diseases	yes	no	unknown / not applicable
Nutrition (e.g. malnutrition associated with extreme climatic events)	unknown / not applicable	unknown / not applicable	unknown / not applicable
Injuries (e.g. physical injuries or drowning in extreme weather events)	yes	no	no
Mental health and well-being	unknown / not applicable	unknown / not applicable	unknown / not applicable
Airborne and respiratory diseases	yes*	yes*	no

● yes ● no ○ unknown / not applicable

* Air monitoring

[a] A positive response indicates that the monitoring 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	yes	yes
Storms (e.g. hurricanes, monsoons, typhoons)	unknown / not applicable	unknown / not applicable	unknown / not applicable
Flooding	yes	yes	yes
Drought	no	no	unknown / not applicable
Air quality (e.g. particulate matter, ozone levels)	no	no	no

● yes ● no ○ unknown / not applicable

CAPACITY, INFRASTRUCTURE AND SUSTAINABILITY

Human resource capacity

International Health Regulations (IHR) Monitoring Framework Human Resources Core Capacity (2018) *(20)*	100%
Does your human resource capacity, as measured through the IHR, adequately consider the human resource requirements to respond to climate-related events?	Partially
Is there a national curriculum developed to train health personnel on the health impacts of climate change?	yes

● 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?	no
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?	no

● yes ● no ○ unknown / not applicable

OPPORTUNITIES FOR ACTION

OPPORTUNITIES

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

Implementation of the health and climate change plan/strategy in Matla is reported to be moderate. 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

Malta has not conducted a climate change and health vulnerability and adaptation assessment. Assess Malta'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.

3. STRENGTHEN INTEGRATED RISK SURVEILLANCE AND HEALTH EARLY WARNING SYSTEMS

Meteorological information is not currently used to inform risk surveillance of all 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 Malta'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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