

The most functional city in the world – despite weather and climate change

Main results of weather and climate change risk assessment

Climate change in Helsinki by 2050



Temperature

- Helsinki will become warmer in all seasons, more in winter than in summer.
- In winter, extremely low temperatures will become less frequent and temperature variation will decrease.
- The highest summer temperatures will increase at the same rate as the mean temperature does.



Precipitation

- In winter, precipitation (both mean and maximum) increases substantially and there will be more rainy days.
- In summer, the mean precipitation will remain largely unchanged, while heavy precipitation events will intensify.



Sea

- The sea level will rise in the Gulf of Finland of the Baltic Sea.
- Sea ice will become thinner on average and its extent will diminish.



Wind

- On average, wind speed will remain largely unchanged.
- Uncertainty exists about the direction of change of the strongest winds.

Main weather and climate risks in Helsinki by 2050



Flooding

- The risk of urban and sea flooding will increase – economic impacts may be significant.



Biodiversity

- Biodiversity is threatened by several factors – combatting invasive alien species creates significant costs.



Traffic and slipping injuries

- The risk of injuries will increase in winter – road maintenance costs and injury compensations are likely to rise.



The cross-border impacts

- The cross-border impacts of climate change will reach Helsinki – security of supply must be paid attention to.



Heat-related health problems

- Heat-related health risks will increase – the well-being of the vulnerable groups must be looked after.



Storm impacts

- The risk of damages caused by strong winds and thunderstorms will not change significantly – it is still important to prepare for them.



Tick-borne diseases

- Tick-borne diseases, e.g. Lyme disease (borreliosis) will become more common – human behaviour is a decisive factor.

The risk of climate change must be considered in all decision making of the city – improved weather and climate risk management requires knowledge and adaptation measures.

Societal exposure and vulnerability factors increasing the risks

- **Urbanisation** increases flood risk.
- The increasing utilisation of **home care services for the elderly** can, in turn, increase heat stress and mortality risk.
- **Insufficient resources for anti-slip measures** increases accident risk.
- **The lack of preparedness** among urban citizens increases accident and fatality risk.
- **The outsourcing of services** can lead to lack of control which increases the need for monitoring.



Photo: Antonin Halas/Studio Halas



Key measures for climate risk management

- ▶ Incorporation of **urban green** in land use planning should be encouraged to reduce urban flood risk.
- ▶ **Road maintenance and anti-slip measures for bicycle and pedestrian routes** should be efficiently organized and resourced in winter.
- ▶ **Procedures used during heatwaves** should be developed, especially for elderly care services.
- ▶ Risks associated with the **cross-border impacts** should be investigated.
- ▶ Citizens' preparedness level for urban risks should be increased through improved **communication**.
- ▶ **Weather and climate risk management should be integrated at all levels of decision making.**

Helsinki, the capital city of Finland

- Total area: 719 km², of which land 217 km²
- Shoreland (mainland): 123 km
- Islands: 315
- Population (2017): 635 000
- Population density: 2 934 inhabitants per km² land

Climate in Helsinki (Kaisaniemi) in 1981–2010:

- Annual mean air temperature 5.9 °C:
 - Max 30.8 °C, min -34.3 °C
 - The warmest month: July, mean temp. 17.8 °C
 - The coldest month: February, mean temp. -4.7 °C
- Annual total precipitation 655 mm
 - Daily maximum 79.3 mm



References:

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Helsinki

