

Climate change: regional impact

March 31 2014

This is how climate change may affect the world's regions this century, as forecast in a [major report published by UN scientists Monday](#).

The report is part of the fifth overview on global warming by the Intergovernmental Panel on Climate Change (IPCC) since 1988.

The document identifies each region's key challenges; [options](#) for addressing them; and level of risk from warming of either 2 C (3.6 F) or 4 C (7.2 F) by 2100 compared to pre-industrial levels. This risk is calculated on the basis of present policies for adapting to climate change.

AFRICA

Challenge: Water stress

Risk: High at 2 C, very high at 4 C

Options: Smarter use of water resources

Challenge: Food shortages

Risk: Very high at 2 C and 4 C

Options: Stress-tolerant crops, help for small farmers

Challenge: Mosquito- and water-borne diseases

Risk: Very high at 2 C and 4 C

Option: Outbreak early-warning systems, improved sanitation

EUROPE

Challenge: Flooding in river basin and on coasts

Risk: Medium at 2 C, very high at 4 C

Options: Improve flood protection

Challenge: Water stress in dry regions

Risk: High at 2 C, very high at 4 C

Options: Reduce water waste, including through irrigation

Challenge: Heatwaves and air pollution affecting health

Risk: High at 2 C, very high at 4 C

Options: Reduce emissions to improve air quality and adapt homes and workplaces for heatwaves.

ASIA

Challenge: Flood damage to homes and infrastructure

Risk: High at 2 C, very high at 4 C

Options: More resilient buildings and "selective relocation"

Challenge: Deaths from extreme heat

Risk: Very high at 2 C and 4 C

Options: Strengthen health systems, improve city planning to reduce urban heat buildup

Challenge: Malnutrition caused by drought

Risk: Medium at 2 C, high at 4 C

Options: Beef up vigilance on food supplies, improve disaster preparedness

AUSTRALASIA

Challenge: Damage to coral reefs and, in Australia, animal and plant species loss

Risk: High at 2 C, very high at 4 C

Options: Reduce pressures on ecosystems from pollution, tourism and introduced species

Challenge: Flooding, and coastal infrastructure lost to rising seas

Risk: Medium at 2 C, very high at 4 C

Options: Smarter land use to reduce exposure to floods and [coastal erosion](#).

NORTH AMERICA

Challenge: Wildfires for ecosystems and homes

Risk: Very high at 2 C and 4 C

Options: Improve fire prevention measures

Challenge: Deaths from heatwaves

Risk: High at 2 C, very high at 4 C

Options: Encourage residential air conditioning, build cooling centres for the vulnerable

Challenge: Property and infrastructure damage from extreme rainstorms

Risk: High at 2 C, very high at 4 C

Options: Install drainage systems that allow water runoff to recharge groundwater resources, easing flood risk

CENTRAL AND SOUTH AMERICA

Challenge: Water stress in semi-arid areas that depend on glaciers for water supply

Risk: Very high at 2 C and 4 C

Options: Improve water supply and land use

Challenge: Flooding in urban areas from extreme rainfall

Risk: Very high at 2 C and 4 C

Options: Improve urban flood management, early-warning systems and weather alerts

Challenge: Decreased food production and food quality

Risk: Very high at 2 C and 4 C

Options: Develop drought-resistant crop strains

POLAR REGIONS

Challenge: Risk to ecosystems from changes to permafrost, snow and ice

Risk: High at 2 C , very high at 4C

Options: Enhanced monitoring of risk, hunt different species if possible

Challenge: Food insecurity and lack of reliable and safe drinking water

Risk: Very high at 2 C and 4 C

Options: Improve monitoring systems, shift resources, settle elsewhere

Challenge: Impact on Arctic communities if [climate change](#) happens very fast

Risk: Very high at 2 C and 4 C

Options: Improve communications, education and training, encourage co-management of ecosystem

SMALL ISLANDS

Challenge: Loss of homes, farmland, infrastructure and livelihoods from rising seas and storms

Risk: High at 2 C, very high at 4 C

Options: Boost coastal buffers and improve management of water and soil resources

Challenge: Loss of low-lying land in coastal areas from a combination of rising seas and storm surges

Risk: Very high at 2 C and 4 C

Options: Not constructing new buildings in areas at risk

OCEANS

Challenge: Decline in fish catches at low latitudes

Risk: Medium at 2 C, high at 4 C

Options: Flexible management reactive to stock variability, expanding aquaculture

Challenge: Biodiversity loss from heat-damaged [coral reefs](#)

Risk: Very high at 2 C and 4 C

Options: Reduce other human-induced stresses like pollution, tourism and fishing

Challenge: Damage to coastal ecosystems such as mangroves and sea grass from soil runoff from heavy rain and coastal erosion

Risk: High at 2 C, very high at 4 C

Options: Reduce soil runoff caused by deforestation

SOURCE: "Climate Change 2014: Impacts, Adaptation, and Vulnerability " (Summary for Policymakers)

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Citation: Climate change: regional impact (2014, March 31) retrieved 25 April 2024 from <https://phys.org/news/2014-03-climate-regional-impact.html>

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