A Quick Guide to Water Safety, Health & Climate

World Health Organization
REGIONAL OFFICE FOR South-East Asia

The future of safe drinking water depends on the actions we take now to reduce the risks of climate change.



Across the South-East Asia region, climate is changing the traditional hydrological cycle. This guide provides a quick overview of the implications for water safety and health, and what we can do to address them.

	CHANGING OCEANS	TOO LITTLE WATER	TOO MUCH WATER
Climate impacts	◦ Sea-level rise ◦ Increased storm intensity in coastal regions	◦ Periods of prolonged drought ◦ Declining snowfall ◦ Low river flows ◦ Hotter temperatures, with hotter days and nights	◦ Changing monsoon patterns, with extreme rainfall ◦ Glacial melting ◦ Increased risks of river, coastal and flash floods
Effects on water quality and quantity	◦ Saltwater contaminates fresh drinking water ◦ Freshwater storage and recharge is reduced	◦ Poor water quality ◦ Reduced dissolved oxygen, which increases pollutants and harmful nutrients ◦ Warm and stagnant water foster bacteria and other pathogens ◦ Increased dependence on unsafe water sources ◦ Insufficient water for agriculture ◦ More disinfection products required	◦ Poor water quality ◦ Contamination due to soil erosion ◦ Potential overload of water and sanitation systems, resulting in increased exposure to pathogens and hazardous chemicals
Effects on health	◦ Increased risk of waterborne diseases ◦ Increased hypertension and cardiovascular disease from high salt consumption	◦ Increased risks of foodborne, waterborne and vector-borne diseases such as cholera, schistosomiasis and malaria ◦ Exposure to toxins can lead to cancer, organ damage and neurotoxicity ◦ Increased risk of malnutrition from diminished food production ◦ Combined effects of undernutrition and infectious diseases	◦ Increased risks of foodborne and waterborne diseases ◦ Increased risks of exposure to toxic chemicals ◦ Increased or decreased risk of vector-borne diseases, depending on local ecology ◦ Decline in mental health

What are the concerns?

- How much water will be available in the future for human consumption and for industry?
- What is the effect on water safety: will more people be exposed to contaminated water and waterborne organisms – and get sick?

Why does this matter?

Climate change threatens the tremendous health gains made across the South-East Asia region in recent years. Example: from 1990-2015, deaths from diarrhoeal disease were cut in half, and the numbers are still moving downward. Climate changes could reverse the trend.



CLIMATE ACTION IS HEALTH ACTION

Investments in fundamentals like water and sanitation have the potential to deliver huge gains on climate resilience and improve health outcomes.

What can we do?

The challenge: reduce the demand while ensuring water quality and quantity

Prioritise planning

- Develop climate-resilient water safety plans
- Integrate management of land and water resources
- Strengthen disaster preparation

Invest in infrastructure

- Improve water source, treatment, distribution system and point-of-use controls
- Protect water sources from agricultural and industrial run-off
- Improve water storage capacity
- Restore habitats and plant vegetation
- Improve sanitation systems
- Improve water and weather monitoring to track supply and demand

Engage the community

- Educate the community about waterborne diseases and water treatment and hygiene practices
- Encourage citizen science initiatives to help monitor water quality
- Set up a water quality alert system
- Promote water efficiency and conservation

Expand disease prevention

- Strengthen disease surveillance and early warning systems
- Expand vaccination campaigns
- Strengthen health care facilities



PARTNERSHIPS ARE KEY

Planning for water resilience requires collaboration of health and public works officials, as well as specialists in climate, engineering, hydrology and disease surveillance. Input from the community will maximise impact.

WHO resources to support action

- Guidance: Climate-resilient water safety plans: Managing health risks associated with climate variability and change
- Water safety planning: A roadmap to supporting resources
- WHO/SEARO Health-Advocacy Toolkit