On the frontline of climate change:

Why clean water, decent toilets and good hygiene are essential for communities affected by climate change

Floods, droughts and unpredictable weather patterns exacerbated by climate change are already making it harder for people to get clean water and decent sanitation systems. These growing threats combined with rising temperatures also make it easier for some waterborne diseases, such as cholera, to spread.

Urgent action is needed to make sure that every community has a reliable and sustainable source of clean water and a climate resilient sanitation system. This will make poorer communities better able to adapt to their changing climate.

Every day around 800 children die because of dirty water and poor sanitation. Around the world, 844 million people still do not have clean water close to home and 2.3 billion people don't have a decent toilet.

What is the link between water, sanitation, hygiene, and climate change?

UN Water has estimated that 3.6 billion people lived in water-scarce areas in 2016, a number expected to increase to around 5 billion by 2050. This is the equivalent of an additional 110,000 people a day, or at least one more person added to those living in water-scarcity every second, leaving entire communities unable to find clean water to drink or wash themselves and exposing them to fatal diseases such as cholera.

By 2040, 600 million of those living in water scarcity will be children.[2] This is nearly twice the population of the United States. We need to act now to avoid a thirsty future.

Increasing scale and frequency of droughts and floods together with sea level rises, are among the clearest signs of the impact of climate change. This affects the poor and marginalised most, especially those without reliable access to water, sanitation and hygiene.

These communities have done the least to cause climate change, but they are the ones already paying the price.

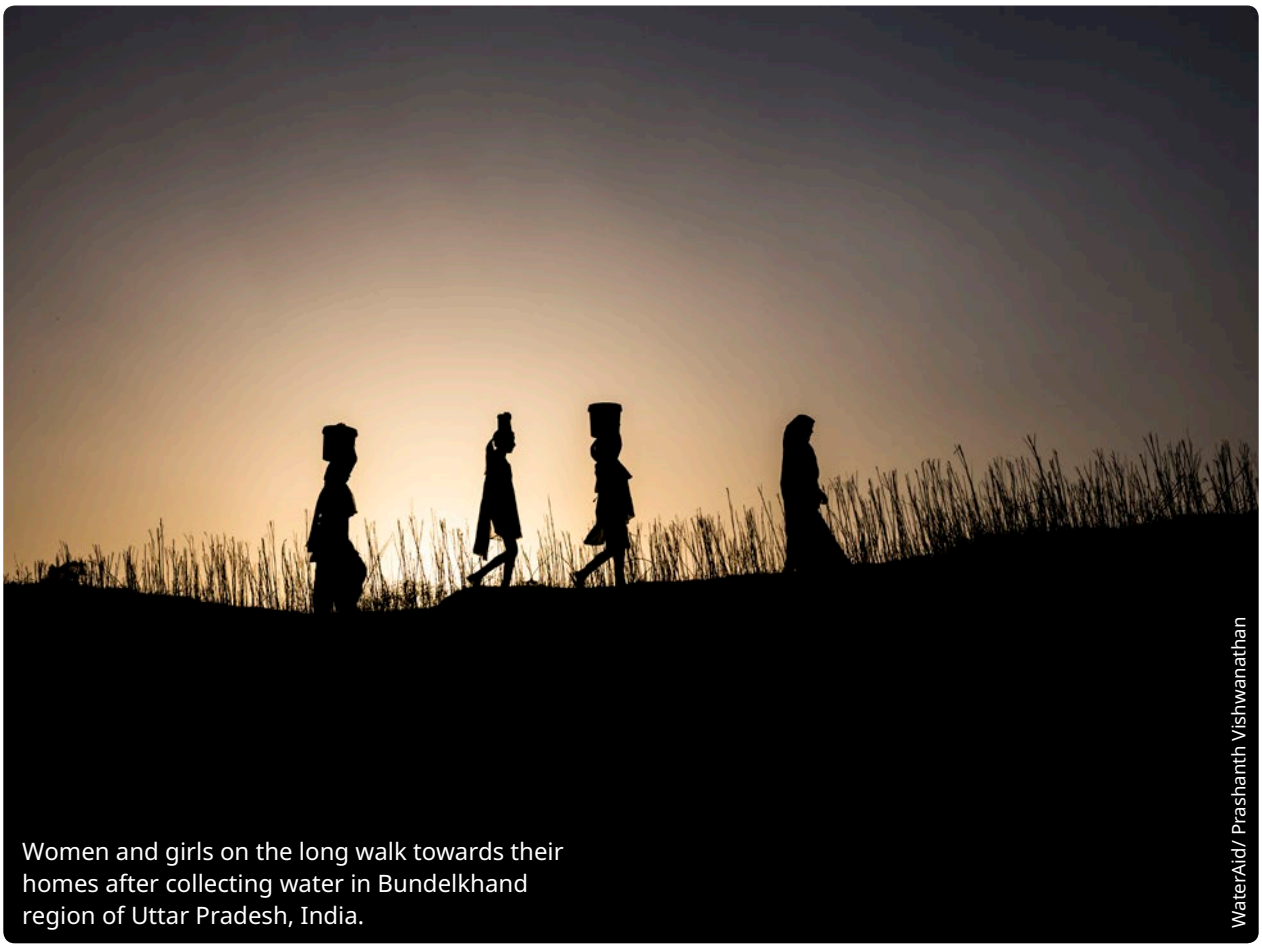
Longer droughts mean women have to walk even farther to collect water; floods spread diseases where there are no toilets, and rising seas are among the causes that pollute water supplies making the water too salty to drink.

WaterAid/ HSBC/ Abir Abdullah

WaterAid

What are the consequences of poor water, sanitation and hygiene?

- Without clean water and decent toilets, people are more likely to become ill, preventing children from attending school and workers from earning money, and forces families to spend money on medicine instead of nutritious food and other essentials. **A lack of access to clean water traps people in a cycle of poverty**.
- The contamination of water sources during floods helps spread potentially **fatal diseases**, such as cholera and diarrhoea. If toilets are not made to withstand flooding, and if disaster response plans are not properly carried out, faeces will spread and significantly increase the risk of disease. Diarrhoea caused by dirty water and lack of sanitation kills one child under five every two minutes.
- Diarrhoea prevents the body from properly absorbing nutrients and repeated bouts often leads to **undernutrition and stunting** in children – a lifelong condition that impacts a child's physical and mental development. Stunting affects 150.8 million[1] children under five worldwide.
- **Health centres** cannot provide safe patient care without water, decent sanitation and good hygiene. This risk becomes more acute during times of crisis when the health service comes under additional strain – for example a natural disaster such as flooding or cyclones, or a cholera outbreak.
- **Women and girls** are disproportionally affected by the impacts of climate change on clean water and decent toilets, as they typically bear the heavy burden of water collection – up to four hours a day in many communities.



Women and girls on the long walk towards their homes after collecting water in Bundelkhand region of Uttar Pradesh, India.

WaterAid/ Prashanth Vishwanathan

Where is the situation worst?

These low to lower-middle income countries are among those countries with the highest vulnerability to climate change concerning water, as identified by the Notre Dame Global Adaptation Initiative. Indicators include projected change in annual groundwater runoff; fresh water withdrawal rate; access to reliable drinking water; projected change of annual groundwater recharge; water dependency ratio; and dam capacity.[2]

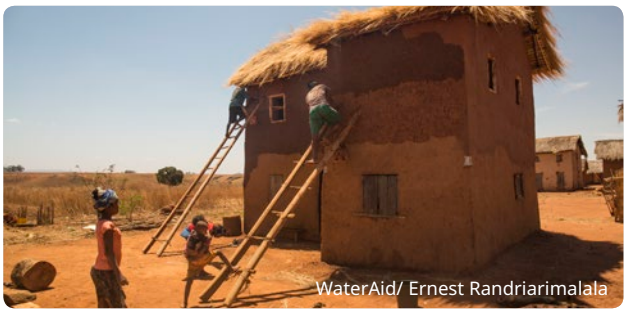
Countries most water-vulnerable to climate change: high to low

Ranking	Country	Access to basic water % (2015)*	Access to decent sanitation % (2015)*	WASH-related diarrhoeal deaths (2015)**
1	Sudan	58.9	34.6	4,420
2	Niger	45.8	12.9	11,500
3	Pakistan	88.5	58.3	19,500
4	Uzbekistan	91.5	100	115
5	Kenya	58.5	29.8	5,170
6	Afghanistan	63	39.2	3,560
7	Bangladesh	97.3	46.9	2,220
9	India	87.6	tbc***	60,700
9	Eritrea	19.3	11.3	864
11	Madagascar	50.6	9.69	3,870
11	DRC	39.3	19.7	11,100
12	Ethiopia	39.1	7.08	8,500
13	Congo	68.3	15	217
14	Philippines	90.5	75	1,660
15	Chad	42.5	9.55	9,150

*UNICEF. Progress on Drinking Water, Sanitation and Hygiene 2017. https://www.unicef.org/publications/files/Progress_on_Drinking_Water_Sanitation_and_Hygiene_2017.pdf (Accessed 26-11-18)

** www.WASHwatch.org

***The Unicef-WHO Joint Monitoring Programme report (2017)'s finding of 44.2% for national access to sanitation was collected in 2015.However, since the start of the Swachh Bharat (Clean India) Mission in 2014 with a focus on access to sanitation, India's Ministry of Drinking Water has now reported access to sanitation in rural areas at 96.6% as of November 2018.



A family plastering their house before the rain starts. Beanamamy village, Bongolava region, Madagascar.

Portraits of climate impact

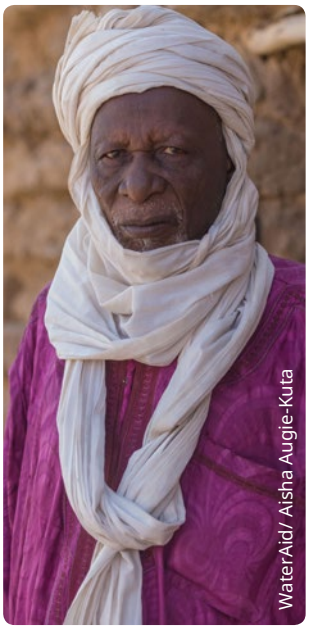
Niger

Niger is a landlocked country consisting largely of desert. Across West Africa, as a result of climate change, dry seasons have become longer, temperatures are rising and while year round rainfall has decreased, extreme rainfall has increased.

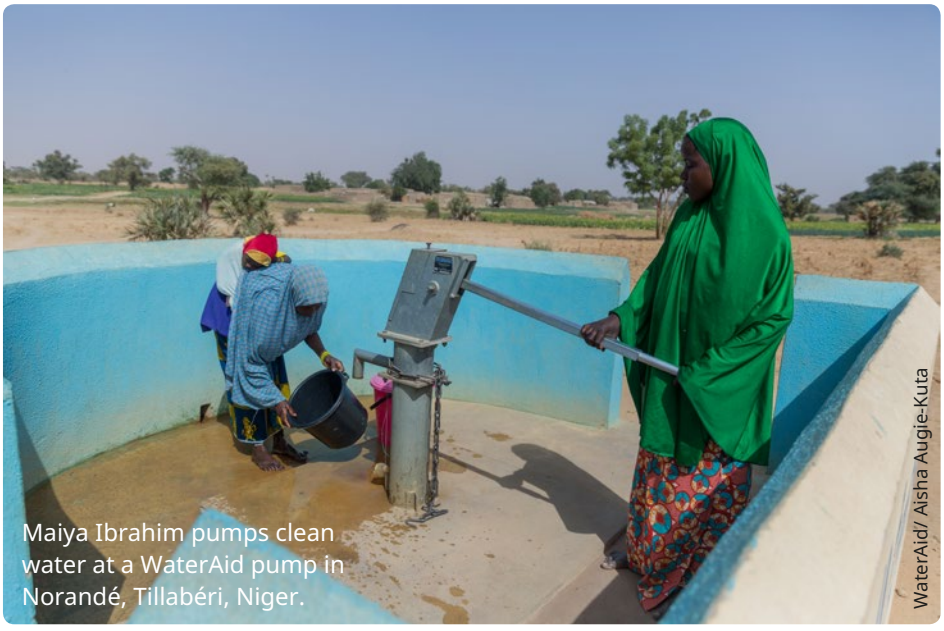
Of a population of 21.5 million, nearly half (44.5%) live below the poverty line. Up to 64 percent of the rural population does not have access to clean water. Around the country only 13 percent have access to a decent toilet.

Halidou Seydou is chief of the village of Norandé village on the banks of the Niger river in Tillabéri region. Over the past few years, heavy rains have washed away some of the community's land, leaving them struggling to grow crops.

Now that the village has a borehole for clean water, the community no longer suffers stomach pain, dermatitis, and diarrhoea, which in some cases has been fatal.



WaterAid/ Aisha Augie-Kuta



Maiya Ibrahim pumps clean water at a WaterAid pump in Norandé, Tillabéri, Niger.

WaterAid/ Aisha Augie-Kuta


WaterAid/ H&M Foundation/ Sibtain Haider

Pakistan

Communities living in the district of Thatta, are hit regularly by cyclones and floods. Tens of thousands of acres of Thatta's lands have been eroded by the sea and the encroaching sea leaves ground water brackish and agricultural lands saline.

Nearly 60 million people in Pakistan do not have access to clean water, with the largest percentage of those affected living outside of urban areas. 123 million people do not have access to decent sanitation. Nearly 60,000 children die each year as a result of diarrhoeal diseases related to poor water and sanitation facilities.

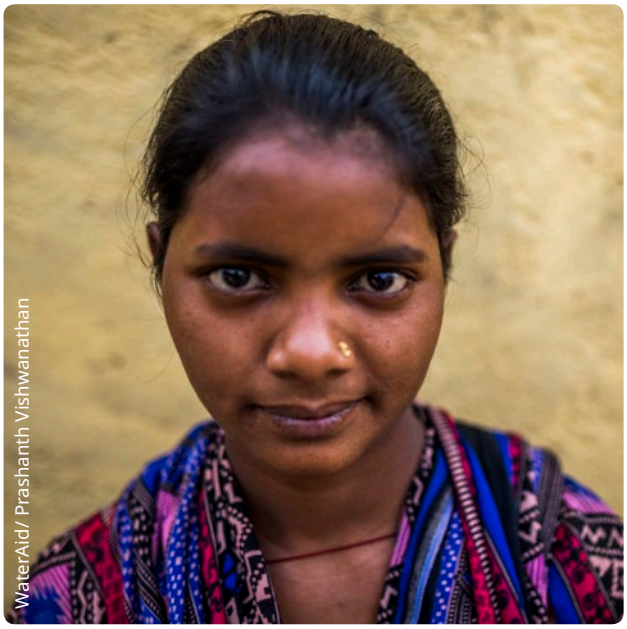
Zainab, mother of two year old Sana, says that before there was a water pump in her village, she walked for hours every day to fetch water that was often dirty and caused many illnesses in the community. With access to clean water now close to home, her mother has more time to take care of Sana and to help Sana's father to earn money for the family.

India

India is facing a severe water crisis and risks demand for water far outstripping supply by 2030. About 600 million people already face extreme water shortage and, by 2020, 21 Indian cities might run out of groundwater[3].

About 85 percent of the country's rural population has access to clean water, compared to 93 percent in cities. Currently, over 60,000 children die every year as a result of diarrhoeal diseases linked to poor water and sanitation.

Poonam, 17, lives in the dry and arid region of Bundelkhand in central India where people face acute water shortage. She had to stop attending school to collect water for her family. After walking two kilometres and waiting in the long queue, she often finds the water pump has dried up. Even when it hasn't, the water is dirty, salty, and causes sickness.


WaterAid/ Prashanth Vishwanathan

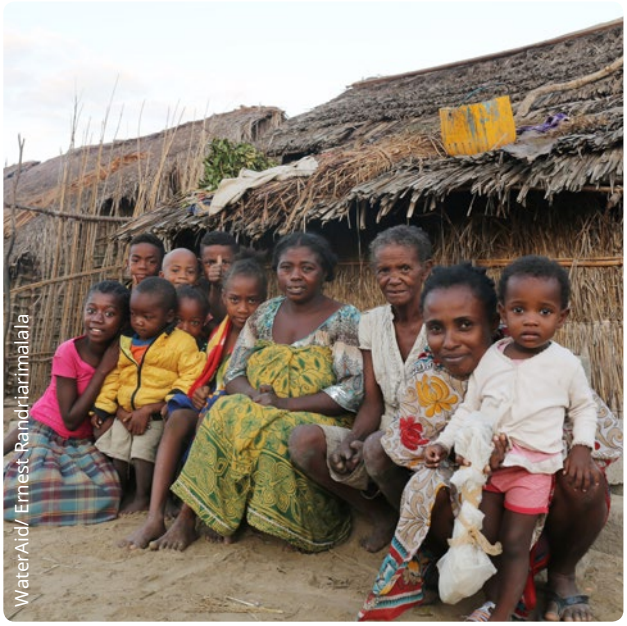
Bangladesh

Bangladesh has an abundance of water, with around 24,000 km of rivers flowing through its fertile land. Yet floods, cyclones and droughts exacerbated by climate change make it extremely difficult to reach everyone with clean water, toilet and hygiene services.

While 97 percent of people in Bangladesh have access to clean water, less than half have access to a decent toilet. Especially in areas affected by climate change, managing waste is crucial to prevent the spread of diseases.

Mouri, 45, lost her house in Dacope Upazila in the south of Bangladesh nine years ago during cyclone Aila. Before that, her neighbourhood was surrounded by fertile land. Now, with the groundwater too saline to drink, her only access to clean water is rainwater. During the dry months, she has to either travel long distances, or use water from ponds of neighbouring homes - none of which provide clean water.


WaterAid/ Abir Abdullah

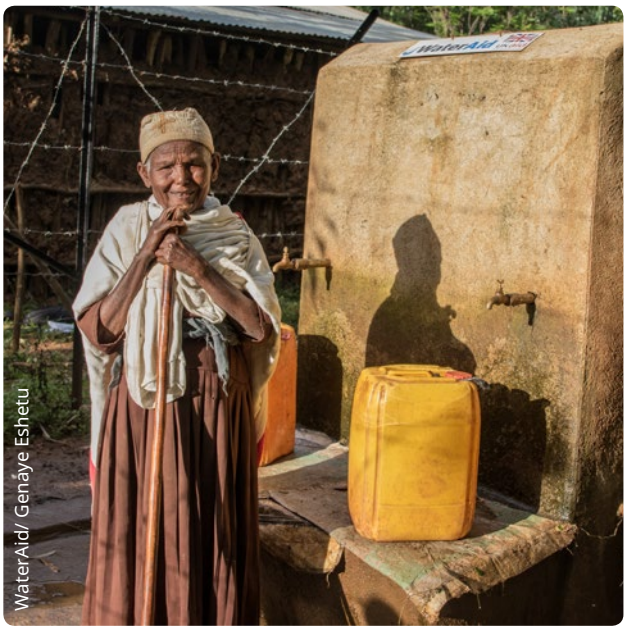

WaterAid/ Ernest Randriarimalala

Madagascar

Madagascar has the longest coastline of any country in Africa. Rising sea levels and climate change exposes its communities to cyclones and floods, which makes protecting the country's water resources that much harder.

Almost half the population do not have access to clean water, while nine out of ten people do not have a decent toilet. Nearly 4,000 children under five die a year from diarrhoea caused by dirty water and poor toilets.

Morondava in the west of Madagascar is an area popular with tourists, famous amongst other things for its baobab trees. Several areas in Morondava lie below sea-level, making it very vulnerable to flooding. Much of the population earns a living through fishing or farming rice, sugar cane, coconut and spices.



Ethiopia

Ethiopia is a dry country vulnerable to climate change. In Ethiopia and the wider Horn of Africa, the rate of child marriage increased during a drought in 2011-2012, when families would marry off young daughters to save their other children – often referred to as "drought brides".[4]

Almost four in ten of Ethiopia's 99 million people don't have clean water. A child dies every hour from the resulting diseases.

Child marriage is also a large problem in the Amhara region of northern Ethiopia, where a third of girls are married by age 15.[5] Areas of the region are affected by floods and droughts. In an area that faces food insecurity lives Emahoy, 75, who was married at 11. One of her tasks was to fetch water, which used to take her more than two hours each day. She is thrilled that her village now has a borehole and her grandchildren can go to school instead.

What is WaterAid doing?

WaterAid works with communities on the front line of climate change.

In **West Africa**, WaterAid trains local men and women to collect and interpret climate and water data in their own communities as part of a water security assessment. They monitor droughts, flooding, or changes in rainfall intensity and frequency. Their findings not only help their communities measure and manage water supplies over the dry season but also provide regional authorities with the information they need to deal with threats to the water supply. This local approach to gathering information and adapting to a changing climate is fundamental to their long-term resilience.

WaterAid is working with the authorities and utilities to manage water security in **cities**. This work is aimed at preventing crises such as the near miss of Day Zero in Cape Town – when the water supply looked likely to run dry – in other cities, such as Maputo in Mozambique. Although there are many factors contributing to Maputo's water crisis, a three year drought across Southern Africa has made the current shortage more acute. This same drought also contributed to water shortages in South Africa, Madagascar, Zambia and Malawi. It demonstrates how climate change can outpace a government's ability to manage problems, which then quickly turn into crises.

Cholera thrives in higher water temperatures, creating severe problems in communities with inadequate water and sanitation. Good sanitation, proper management of water services and promotion of hygiene help stop the spread of cholera. WaterAid is working with health authorities and ministries to bring these basic services to all healthcare facilities.

Bangladesh is one of the most climate vulnerable countries in the world with regular and severe flooding, droughts, and storm surges. WaterAid Bangladesh has built water storage facilities to relieve coastal communities of their reliance on increasingly saline ground water, introduced reverse-osmosis technology for drinking water, and constructed raised toilets which are more resilient to floods and storms to decrease the spread of disease.

What WaterAid is calling for at COP24:

The world's poorest regions and nations will feel the strongest impact of climate change, but they have, overall, done the least to cause carbon emissions. Yet, while every country has a plan for reducing emissions, helping countries to adapt has been neglected.

More than 289,000 deaths every year of under fives from diarrhoea related to dirty water and poor toilets and hygiene could be prevented if everyone, everywhere had access to clean water, decent toilets and good hygiene. The UN Sustainable Development Goal to reach this target by 2030 is attainable, but requires drastic action.

WaterAid is calling for:

- **Recognition** that water, sanitation and hygiene are essential elements in climate change adaptation. Communities that do not have sustainable water supplies and sanitation cannot recover quickly from natural disasters, and will face even greater hardships.
- **Funding beyond regular foreign aid and without removing funding from existing foreign aid budgets.** Existing overseas development aid is not enough, and additional funding needs to be made available by wealthy industrialised nations that created this crisis.
- **Support** from international organisations and climate funds to ensure all developing countries complete a National Adaptation Plan, allowing countries to lay out their priorities, so the necessary resources can be allocated to meet those needs.
- **Developed countries to keep their promises on climate finance** and ensure that investment is used for adaptation to which water, sanitation and hygiene services are essential. In 2016, only 6% of total climate spending was spent on helping countries adapt.

[1] UNWater. The United Nations World Water Development Report 2018, p.3. Released 19-03-18. http://unesdoc.unesco.org/images/0026/002614/261424e.pdf (Accessed 26-11-18)

[2] Ben Quinn, Saeed Kamali Dehghan. World Water Day: one in four children will live with water scarcity by 2040. The Guardian. 22-03-17 https://www.theguardian.com/global-development/2017/mar/22/world-water-day-one-in-four-children-will-live-with-water-scarcity-by-2040-unicef-report (Accessed 26-11-18)

1 Development Initiatives, 2018. 2018 Global Nutrition Report: Shining a light to spur action on nutrition. Bristol, UK: Development Initiatives. https://globalnutritionreport.org/reports/global-nutrition-report-2018/ (Accessed 29-11-18)

2 Notre Dame Global Adaptation Initiative. 2016 data released on 11/8/2017. https://gain.nd.edu/our-work/country-index/methodology/indicators/ (Accessed 26-11-18)

3 NITI Aayog. Composite Water Management Index. June 2018. http://www.niti.gov.in/writereaddata/files/document_publication/2018-05-18-Water-index-Report_vS6B.pdf (Accessed 26-11-18)

4 Care. Vows of Poverty. 11-10-15. http://vowsofpoverty.care.org/ (Accessed 26-11-18)

5 Care. Vows of Poverty. 11-10-15. http://vowsofpoverty.care.org/ (Accessed 26-11-18)