

Climate change and WaterAid

What is climate change?

There are many different uses of the term ‘climate change’. There is a clear **scientific** understanding of ‘climate change’ as any change in mean state of the climate or its variability¹ (for example a change to the average rainfall or a change to how much the rainfall changes from year to year).

However, official **political** understanding tends to use ‘climate change’ to refer to additional changes **caused by human activity** altering the global atmosphere², drawing a distinction between climate change attributable to human activities altering the atmospheric composition, and climate variability attributable to natural causes.

Lastly, the **public** tend to use ‘climate change’ to refer to all variations in the mean state of the climate as well as abnormal weather patterns or events.

WaterAid recognises that other people and organisations use these terms differently, so we may need to be flexible in the exact language we use, but WaterAid should always be clear what we are referring to and draw a distinction between:

- **Climate** – the range of weather that a specific location experiences. Represented by a mean and variance. For example, February might ‘normally’ be wet.
- **Climatic variability** – the changeable nature of weather patterns or events within the bounds of the present climate. February might be more wet than ‘normal’ in one year, but drier than ‘normal’ in another.
- **Climate change** – **long-term** changes to the mean and variance of the climate, which may be natural or anthropogenic (caused by human activity). The average February over 40 years might be drier than ‘normal’ (change in mean). Or over 40 years, there might be more really wet and really dry Februarys (change in variance).



Photo: passer/Demotix Images

Women carry water through the desert, Niger. A large part of Niger is often struck by droughts and therefore bad harvests.

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How is climate change affecting WaterAid's work?

By its very nature, our climate is highly variable. The people and communities WaterAid works with are very exposed and vulnerable to changes in rainfall and extreme weather. Human-induced climate change will make these existing challenges harder by changing established patterns and the likelihood of extreme events.

It is not possible to directly attribute a particular event to climate change, so we cannot yet link climate change with absolute certainty to specific disasters and impacts in the countries where WaterAid works (emerging science may update this, see below).

However, it is clear that our work is affected by climatic variability and environmental issues, regardless of whether caused by human-climate change or within existing patterns – the floods in West Africa in 2012 (which led to cholera outbreaks), the drought in the Horn of Africa in 2011 and groundwater salinity in South Asia are just a few examples. These sorts of events have a disproportionately large impact on poorer communities, and they also struggle most to recover, which can set back development by decades. Therefore, it is more important that we build resilience to these events, regardless of whether the cause is attributable to anthropogenic climate change or existing climatic variability.

What is WaterAid doing about it?

Our work on climate change is in the wider context of other significant factors that affect water security such as population growth and changing land-use patterns. Therefore, we work on building resilience to events such as floods or droughts, regardless of the cause – this is called 'no or low regrets' activity.

We do not necessarily label this work as 'climate change' (as it is not yet possible to responsibly attribute these events to climate change), but it is a critical part of ensuring that our work is sustainable. Specific activities include:

- **Community based water resource management**
 - Extending and sustaining improved water supply services.
 - Increasing water storage capacity – eg through sand dams and traditional storage.
 - Strengthening the monitoring of water availability, quality and use.
 - Facilitating community-level risk assessment and planning.
- **Disaster resilience**
 - Increasing the physical robustness of WASH assets – eg raising handpumps.
 - Rehabilitation of infrastructure – eg rehabilitating tubewells or rebuilding latrines.
 - Mitigating disaster risk through Participatory Wash Vulnerability Analysis (PWVA).
- **Policy and institutions**
 - Research to understand how people experience water insecurity in their daily lives, the consequences and where the areas of particular vulnerability are.
 - Advocating for public policy to be more responsive to these vulnerabilities.
 - Advocating for improved water and sanitation as a way of reducing vulnerability to climate change.

The world needs to reduce its greenhouse gas emissions to avoid dangerous climate change. We must take responsibility for our own activities, so we have a Director-level champion (Rachel Westcott) to develop our approach to understanding and minimising our own greenhouse gas emissions as a priority. This is a journey that we are just beginning.

We have limited comparative advantage in emissions reducing technologies or policies, so actively advocating for emissions reductions (climate change mitigation) is not currently an area of separate advocacy for WaterAid.

Key messages on climate change

WaterAid emphasises the positive role that access to sanitation and water plays in reducing vulnerability to climate change rather than the negative impacts of climate change on WASH.

- Impacts of climate change will be felt through and on water – too little, too much and wrong type (ie polluted or salty).
- The 783 million poor and marginalised people that rely on unsafe and vulnerable water sources will feel it worst because these sources⁴ are highly exposed to the effects of climate change⁵.
- The simple technologies that WaterAid use, such as handpumps, help protect poor people from the impacts of a variable climate by giving them more reliable water sources⁶. But we need to go beyond this to build resilient and sustainable models of WASH service delivery.
- Lifting people out of WASH poverty is fundamental to reducing the impact of climate change on poor communities, yet sanitation and water remain underfunded – since the 1990s, the percentage of aid going to water and sanitation has nearly halved⁷.
- The added pressure of climate change means that more than ever, we need better performing and pro-poor WASH institutions in low income and fragile countries.
- Developed countries have promised \$100bn a year in climate finance by 2020⁸ – using this money to improve sanitation and water supply provides a real ‘no-regrets’ opportunity to both reduce the impacts of climate change on poor people and help lift them out of poverty.

Where can I go for more information?

There are numerous reference materials available, of varying quality, so it is important to critically assess quality, origin and balance. However, the following is a selection of the main publications.

WaterAid publications

- WaterAid’s *Water security framework* (2012) provides more background on climate change, covering other inseparable issues such as natural climate variability, population increase, settlement of hazard prone land, environmental degradation, social exclusion and government inaction. It sets out our minimum commitments.
- WaterAid’s forthcoming *Disasters framework* will set out how we are addressing disasters through a balance of taking actions to reduce disaster risk in our work and responding to specific events where appropriate.
- *Water and climate change foundation paper* (2010) which sets out the science and background to climate change and water in more detail.

External peer-reviewed publications

The Intergovernmental Panel on Climate Change (IPCC) remains the world’s authoritative source of information and science on climate change. There are many debates around the science of climate change, but the IPCC is the only intergovernmental body that reviews all major peer-reviewed literature on climate change in a robust and scientific manner to give a balanced assessment of the science – rather than cherry-picking specific pieces of research to make a case.

- *The IPCC 4th assessment report* (2007) outlines the latest globally agreed scientific consensus on climate change. It is split into three sections, with reports from each Working Group (Physical science; impacts; mitigation options). This is currently being updated and the IPCC’s 5th Assessment Report is due to be published in October 2014 and will include a section on attribution of climate change.
- *IPCC special report on extreme events* (SREX) (2012) contains the latest science on extreme events and climate change.

- *IPCC technical paper VI on climate change and water* (2008) although quite dated, this report is still a valuable reference point.

Specific publications on WASH and climate change

- *Climate change, water resources and WASH* (2011) is an ODI scoping study that was funded by WaterAid to review the evidence on the impact of climate on WASH.
- *Groundwater resilience to climate change in Africa* (2011) is a DFID-funded study conducted by the British Geological Survey to assess the resilience of groundwater resources in Africa to climate change.

Sources of climate data

- National meteorological office – most countries Met Office will have data for various locations, this may be of varying quality, depending on how many working met stations they have.
- World Bank Climate Change Knowledge Portal – a central hub of information, data and reports about climate change, including downscaled historical data and scenarios.
- CLIMWAT – The Food and Agriculture Organisation (FAO) database of historical weather.

Endnotes

1. IPCC defines climate change as: ‘A statistically significant variation in either the mean state of the climate or in its variability, persisting for an extended period (typically decades or longer). Climate change may be due to natural internal processes or external forcings, or to persistent anthropogenic changes in the composition of the atmosphere or in land use.’
2. The UN Framework Convention on Climate Change (UNFCCC) defines climate change as: ‘A change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.’
3. By limiting the increase in mean sea-surface temperatures to less than 2°C above pre-industrial levels.
4. WHO/UNICEF Joint Monitoring Programme (2011).
5. WHO (2010) Vision 2030: The resilience of water supply and sanitation in the face of climate change – shows that ‘improved’ water sources are more resilient to climate change.
6. DARA (2010) Climate vulnerability monitor, pp120-121.
7. In the mid-1990s, water and sanitation made up about 8% of global financial aid. Between 2007 and 2009 it was just over 5%.
8. UNFCCC Decision 1/CP.16 – The Cancun Agreements, paragraph 98, p17.



WaterAid transforms lives by improving access to safe water, hygiene and sanitation in the world’s poorest communities. We work with partners and influence decision-makers to maximise our impact.

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