



# **The Community Water Initiative**

**Fostering Water Security and  
Climate Change Mitigation and Adaptation**



## **The Community Water Initiative: Fostering Water Security and Climate Change Adaptation and Mitigation**

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## Foreword

Billions of people around the world are forced to deal with the effects of water stress in their everyday lives. For these people, gaining access to adequate supplies of quality water is a daily struggle. Women and children often carry the burden, walking long distances or waiting in lines to access water when they should be devoting their time to other activities that would improve their quality of life. When water is accessible, it is also often of poor quality. Family members must watch as their loved ones are afflicted with waterborne diseases. These diseases weaken the afflicted, limiting their ability to work or attend school and play, diminishing their prospects for a healthy and productive life.

Droughts and human-induced water shortages also affect the livelihoods of many people, especially in the developing world. Those dependent on farming and livestock, witness their crops shrivel and cattle perish. Cities are strained by growing populations, pollution, and finite water resources. As a result, competition and conflicts increasingly arise between groups over scarce water resources.

Climate change will exacerbate water stress in many places around the world. Local climates are already changing and will continue to in the future. The question is how much humans can limit this change, and how well we can adapt to the effects of climate change that are inevitable.

The Community Water Initiative has funded successful projects in some of the most vulnerable communities in Africa, South Asia, and Central America. Using a broad range of innovative approaches, these projects have helped increase the capacities of local people to participate in developing their own solutions to local water resource problems. By providing modest funds, CWI has helped generate large rewards for the communities in terms of water security, natural resources management, and social well being.

These activities not only provide current water security and community development benefits, but also help communities mitigate and adapt to climate change. By embracing a carbon-neutral approach in the design of projects and fostering adaptive capacity, they are reducing the threat of this global problem. The continuation of such efforts is vital for helping the most vulnerable develop and protect their water resources, and better deal with climate variability and change.



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## **List of Acronyms**

CWI	Community Water Initiative
GEF	Global Environmental Facility
GHG	Greenhouse Gas
ICRAF	World Agroforestry Centre
IPCC	International Panel on Climate Change
KVDC	Kailar Village Development Committee
KKC	Kikundi cha Kilimo, Chanyauru
SGP	GEF Small Grants Programme
STIAP	Syndicate of Independent Workers of Nueva Alianza, El Palmar
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Education, Scientific and Cultural Organization
USEP	Uganda Association for Socio-Economic Progress

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## Global Water Crisis

Water is a precious resource. However, it is not always available where and when we need it. Some regions are naturally water-scarce while others have over-used their available supplies creating chronic water shortages. Even where water is available, it is often of poor quality and people may lack the technical and financial means to fully utilize their existing resources.

Therefore, water shortages are a common problem around the world and are likely to be a growing concern in many regions during the 21st century. An estimated 1.1 billion people in developing countries (16% of the world population) lack access to adequate supplies of quality water, and 2.6 billion people (39% of the world population) lack access to adequate sanitation<sup>1</sup>. Every year, 1.8 million children die as a result of diarrhea and other diseases caused by unclean water and poor sanitation. These people have been left out of the development process, placing their lives and livelihoods at risk.



Water shortage problems are expected to continue since growing populations, increasing demands, water pollution, and governance problems continue to strain water supply systems in several regions of the world. Without considering the effects of climate change, projections show that 2.9 – 3.3 billion people could be living in water stressed watersheds by 2025<sup>2</sup>. Most of these people will be from developing countries, especially in Africa and Asia.

The result would be a greater number of people who find it increasingly difficult to meet their basic water needs. This has the potential for increasing water stress on people and the environment, as well as conflicts between water users that share aquifers, streams, and other water sources. As demands increase, people are increasingly struggling to secure their fair share of water.

## Climate Change Effects on Water Resources

*Globally, the negative impacts of future climate change on freshwater systems are expected to outweigh the benefits. By the 2050s, the area of land subject to increasing water stress due to climate change is projected to be more than double that with decreasing water stress... Increased annual runoff in some areas is projected to lead to increased total water supply. However, in many regions this benefit is likely to be counterbalanced by the negative effects of increased precipitation variability and seasonal runoff shifts on water supply, water quality, and flood risks<sup>3</sup>.*

In many cases, climate change is expected to increase current water stress. In 2007, the International Panel on Climate Change released its Fourth Assessment on Climate Change, as well as a supplemental overview of climate change and water in 2008<sup>4</sup>. The inclusion of many new studies in these documents resulted in the use of stronger cautionary language that humans are affecting our global climate. In fact, global temperature has already increased 0.74°C from 1906-2005 causing significant alterations of the water cycle, including: changing



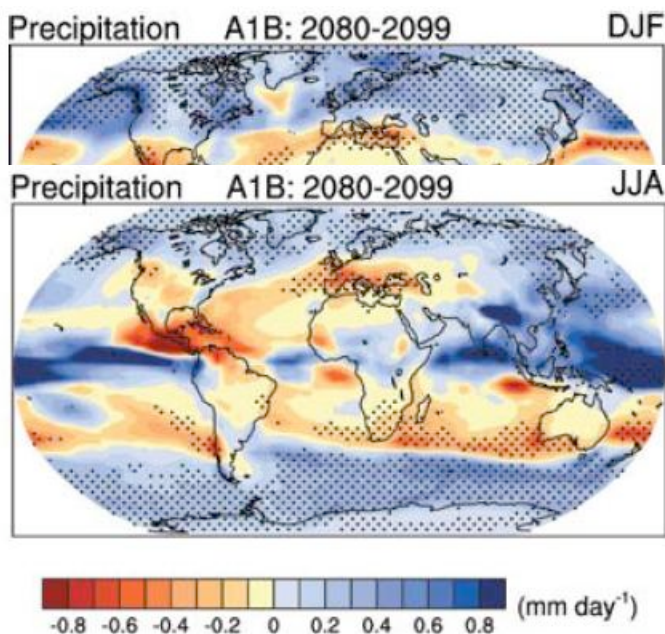
precipitation patterns, intensity, and extremes; reduced snow cover and widespread melting of ice; and changes in soil moisture and runoff.

High latitude regions have generally received more precipitation during the course of the last century, but decreases have been seen in places like the Sahel, Mediterranean Basin, southern Africa, and parts of southern Asia. In most places, when it does rain, more of it has also come in the form of heavier events with drier periods in between – more floods and droughts. Therefore, the global land area classified as dry has more than doubled in the last three decades.

These trends are expected to continue in the future. In general, precipitation is expected to increase in the high latitudes and parts of the tropics, and decrease in some subtropical and lower mid-latitude regions. This would mean less rainfall for places like Central America, West Africa, the Mediterranean Basin, southern Africa, and western Australia. It may also mean less seasonal rainfall for other regions, even though the overall trend calls for more precipitation.

Similar to current trends, rainfall and flood events are expected to be greater with more droughts in between. Changes in rainfall, increased evaporation rates, saltwater intrusion into water systems along coastal areas, and reduced mountain glaciers and snow cover will all affect the availability of quality water supplies. For example, by mid-century, annual average river runoff and water availability are projected to increase by 10-40% at high latitudes and in some wet tropical areas, and decrease by 10-30% over some dry regions at mid-latitudes and in the dry tropics, some of which are already water-stressed<sup>5</sup>. In total, the negative impacts of future climate change are expected to outweigh the benefits.

The result of these climatic changes could include the increased exposure of hundreds of millions of people to water stress<sup>6</sup> and heat waves, an increase in endemic morbidity and



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