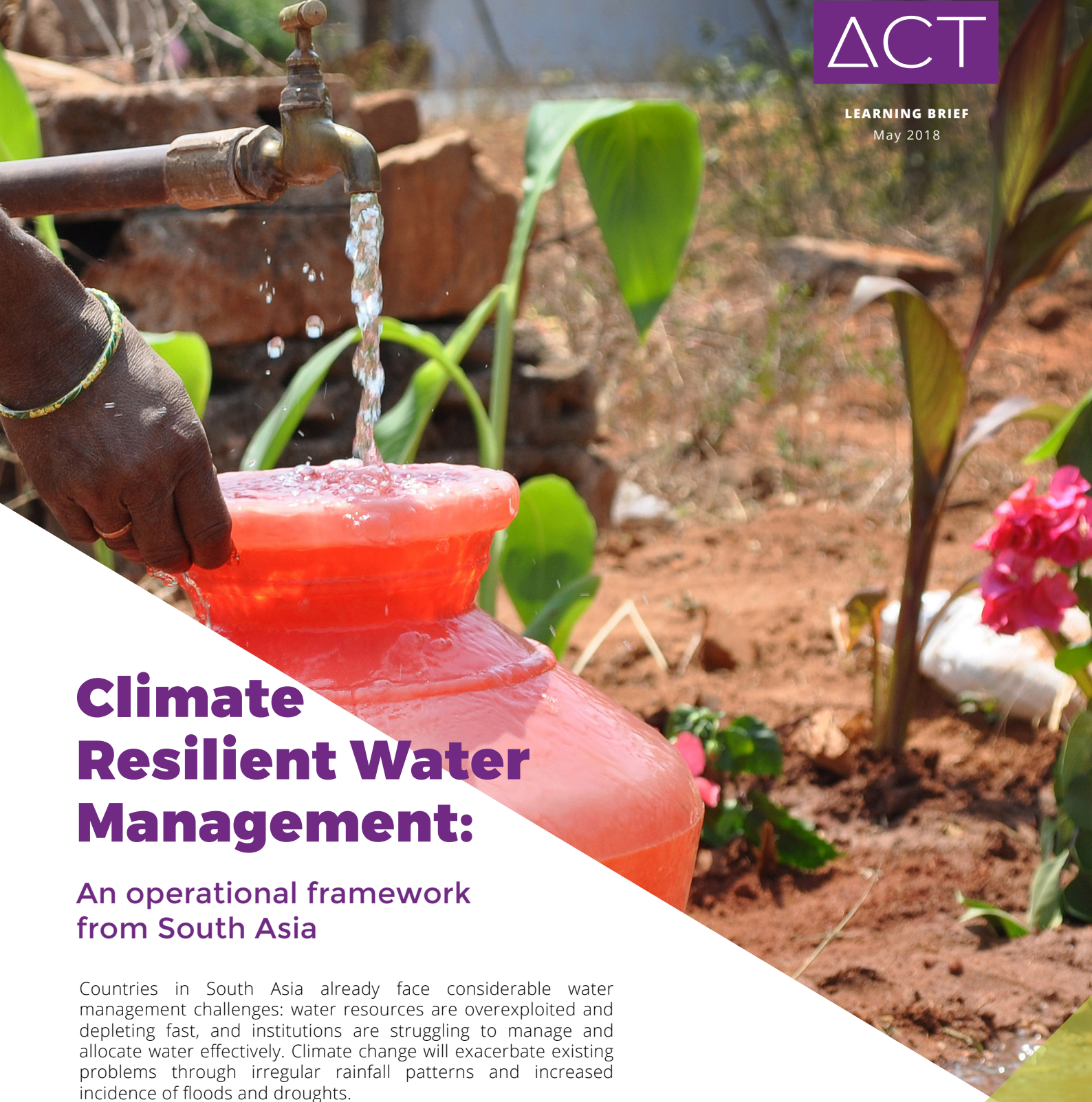


ACT

LEARNING BRIEF
May 2018

Climate Resilient Water Management:

An operational framework from South Asia

Countries in South Asia already face considerable water management challenges: water resources are overexploited and depleting fast, and institutions are struggling to manage and allocate water effectively. Climate change will exacerbate existing problems through irregular rainfall patterns and increased incidence of floods and droughts.

The Action on Climate Today (ACT) programme has been actively working in five South Asian countries to help governments plan for, and manage, the impacts of climate change in the water sector. The ACT programme has championed a Climate-Resilient Water Management (CRWM) approach as a way of increasing the resilience of water systems on which billions of people rely.

This Learning Brief outlines the core elements of the CRWM framework and provides examples from ACT's work employing the framework across the region. The methodology has been deployed in South Asia, but will be of relevance to practitioners and policy makers working in water resource management around the world.

A full description of ACT's work can be found in the associated ACT learning paper Climate-Resilient Water Management: An operational framework from South Asia.

PAKISTAN: WATER DEMAND ASSESSMENT

Pakistan has experienced unprecedented increases in temperature and high variability in precipitation over the last 10 years. Existing studies on water availability have not sufficiently explored the extent and nature of demand for water under diverse climate scenarios. The Ministry of Climate Change therefore asked ACT to fill this gap and provide information on the climate change-induced gap between supply and demand.

The Water Demand Study overlays data on water demand and projections of socio-economic change and population growth with climate change scenarios. It calculates an estimated deficit in water availability by 2025 and 2050. By using the best available climate data and information (e.g. A1 and A1B climate scenarios of the IPCC 5th Assessment Report) this case strongly aligns to Criterion 1 of CRWM.

AFGHANISTAN: CLIMATE-PROOFING THE NATIONAL WATER SECTOR STRATEGY

Afghanistan is highly prone to intense and recurring natural hazards, including floods, flash floods, landslides, avalanches, and droughts. Climate change also poses a threat to natural resources, on which most of the population depends for a livelihood.

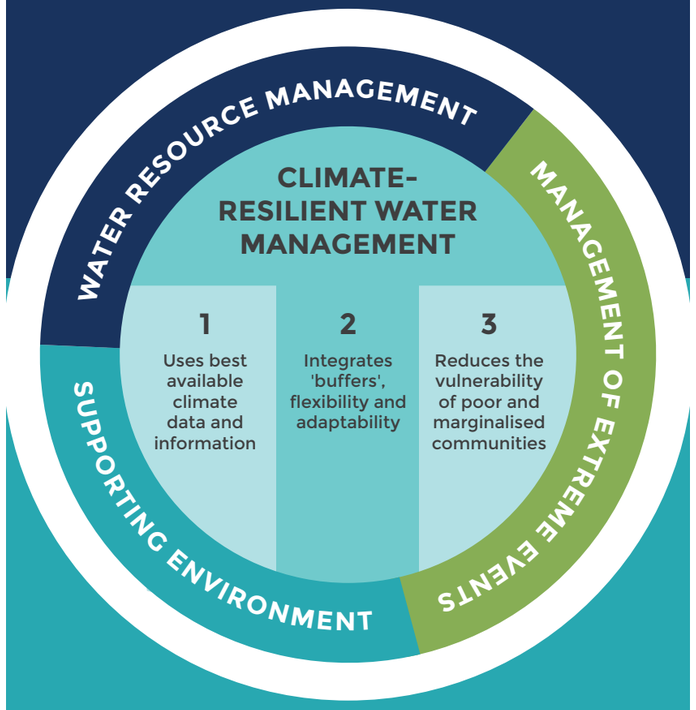
ACT is supporting the government to integrate CRWM principles within their existing Water Sector Strategy focusing on measures aimed at enhancing:

1. Persistence: The degree of disturbance Afghanistan's water sector can be subject to without critical disruption;
2. Adaptability: The ability of Afghanistan's water sector to adapt, self-organise and learn from disturbances; and
3. Transformability: The ability of the sector to transform into a new state after crisis or shock.

ODISHA, INDIA: GROUNDWATER MANAGEMENT

Agriculture in the state of Odisha is still largely monsoon-dependent. Depleting groundwater and increasing variability in rainfall has led to water demand outstripping supply.

ACT is supporting the State Water Resource Department to develop an integrated planning process that ensures the sustainable use of ground and surface water for irrigated agriculture. ACT is working in two districts to develop a demonstration toolkit for integrated planning and (long- and short-term) strategies for managing water resources more sustainably. This process is integrating a key criteria of CRWM within groundwater management practices: including the need to build flexibility and the ability to adapt to climate change into the system.



NEPAL: INCLUDING CRWM IN THE NATIONAL ADAPTATION PLAN

ACT is supporting the government to formulate the country's National Adaptation Plan, facilitating a robust, evidence-based approach – meeting a key criterion of CRWM. Defining the water resources element of the plan has entailed understanding climate impacts on the country's water resources (through modelling and scientific analysis); assessing vulnerability and risk in different sectors/sub-sectors within water resources (using both top-down analysis through national-level data and bottom-up through stakeholder engagement for validation); identifying and appraising adaptation measures (using cost–benefit analysis); and finally, developing adaptation strategies for the water sector by mainstreaming into national plans.

ASSAM, INDIA: URBAN FLOOD MANAGEMENT

Cities along the Brahmaputra and Barak rivers experience frequent flooding, due in part to human development encroaching on the watershed, and unplanned infrastructure developments increasing flood severity. ACT is supporting the State Disaster Management Authority to develop comprehensive flood management action plans for three flood-prone cities along the rivers.

The action plans provide a set of plausible interventions to enhance the preparedness of the cities to tackle and adapt to floods (e.g. solid waste management to enhance the efficacy of drainage). They are clearly focused on strengthening the resilience of low-income groups living in the flood zone, using participatory processes to include these groups in the plan preparation process. Thus, they align with multiple CRWM criteria, including the integration of redundancy, flexibility, adaptability, and provision of systematic solutions.

MAHARASHTRA, INDIA: CLIMATE PROOFING AN EXISTING DROUGHT SCHEME

In order to reduce the impact of drought on water supplies for drinking water and agriculture, the state government of Maharashtra launched the Jalyukta Shivar Abhiyan (JSA) programme in 2014. The JSA implements a range of measures to reduce drought conditions, such as rainwater harvesting and increasing storage potential.

ACT used a CRWM lens to make a range of technical and policy-oriented recommendations for the programme to integrate information on future climate change and variability. For instance, ACT advised that the JSA focus on increasing vegetative cover (for enhanced soil stability), enhance groundwater reserves, conduct water budgeting (to make efficient use of increasingly scarce water resources), and develop improved agro-meteorological services to better plan for climate variability.

Key Lessons from ACT's Experience:

CRWM is distinct from business-as-usual water management because:

1) it integrates the best available data and information to go beyond business-as-usual; 2) it integrates 'buffers', flexibility and adaptability and provides systemic solutions; and 3) it specifically aims to reduce the vulnerability of poor and marginalised communities to climate change.

Adaptive planning and stakeholder consultation is essential for successful water management under uncertain climatic conditions.

ACT's interventions bring technical experts from diverse disciplinary backgrounds in touch with members of various government departments and communities. The views of women and other marginalised groups must be kept front and centre when designing and delivering CRWM interventions.

Understanding government priorities and providing solutions that integrate with existing processes is essential.

In South Asia, as elsewhere, the dynamics of water policy are governed by complex configurations of local, subnational and national governments. CRWM must not be restricted to siloed projects that are separate from government systems.

Political context must be carefully considered when designing CRWM initiatives.

Climate change adds a layer of complexity to water management issues that are already politically sensitive. Ignoring the political economy context of CRWM initiatives will lead to failure. ACT undertakes regular, in-depth political economy analyses, through the design and implementation of CRWM projects.

Use existing climate-related impacts to engage policy makers with CRWM.

While there can be reticence amongst government officials to engage with an issue as large and complex as climate change, specific impacts such as floods and droughts are already pressing concerns. This provides an immediate opportunity to engage policy makers with the CRWM process.

A full description of ACT's work can be found in the associated ACT learning paper Climate-Resilient Water Management: An operational framework from South Asia.

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