

# Enhancing adaptive capacity and improving water security through water storage in South Asia

Natural and built stores of freshwater (Figure 1) are critical for both ecosystem vitality and societal development, enabling natural and human systems to cope with temporal variations in water supply and demand. For societies, the importance of water storage has grown as human population has increased and socioeconomic development has advanced. The significance of water storage will continue to grow as the impacts of climate change become more pronounced.

In South Asia, as elsewhere, the capacity to store water is decreasing, even as the demand for water is rapidly increasing. Though largely unrecognized, declining water storage is a major contributor to local and regional water crises, ultimately threatening millions of people and many ecosystems throughout the region. Decades of degradation of lakes, wetlands, watersheds and soils, sedimentation of reservoirs, and overabstraction of groundwater have undermined both natural and built water stores. In many locations, the widening water storage ‘gap’ (i.e., the difference between what is needed

and what is available) undermines water security with serious implications for system resilience, water-related risks and long-term sustainability.

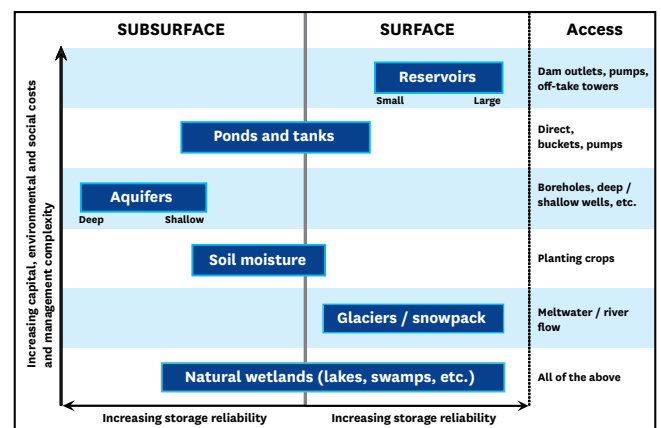


Figure 1. Different types of water storage.



A dam on the Narmada River in India (photo: Hamish John Appleby/IWMI).

## Project overview

In response to the burgeoning, but largely unrecognized, freshwater storage gap, the United States Department of State has funded the 3-year project titled *Built Water Storage in South Asia* to enhance water security in the region. This regional project – implemented by the International Water Management Institute (IWMI) in partnership with the Global Water Partnership South Asia (GWP SAS) – will contribute to a sustainable transformation in the way water storage is perceived, planned and managed. Working in Bangladesh, Bhutan, India, Nepal and Pakistan, the project aims to achieve the following:

- Strengthen national capacities for integrated water storage planning and management.
- Enable relevant ministries and line agencies to make better use of data and approaches for understanding water storage gaps and the options to fill them.
- Facilitate cross-border and regional dialogue to address water storage gaps.
- Address historical inequalities, especially in terms of who benefits from water storage, and the technical and management personnel planning and implementing water storage.

## Project engagement

In close collaboration with relevant government ministries and other stakeholders, the project is built around three interlinked work streams. The first work stream, *understanding water storage gaps and options to fill them*, will develop tools and approaches to map and investigate the seasonal dynamics and trends in different types of water storage. It will identify critical water services provided by different water storage options and determine future water demand across sectors. It will also conduct economic analyses to determine monetary and non-monetary benefits and trade-offs accruing from different mixes of water storage.

The second work stream, *capacity development for sustainable, integrated water storage*, will work with a cohort of 30 technical staff (at least 40% women) from different government ministries on awareness raising and building technical skills.



Batura Glacier in Pakistan (photo: Karen Conniff/Water Alternatives).

There will be regular workshops, co-designed with the cohort, to share knowledge and experiences on issues that they prioritize, including topics such as data collection, storage mapping and modelling, water resource implications of climate change, and optimizing water use and infrastructure management.

The third work stream, *transboundary water storage cooperation*, will work in three small river basins to facilitate engagement and explore cross-border water storage issues. Working with relevant national stakeholders, this work stream will identify blockages to international cooperation and convene technical dialogues on specific topics to build trust and enhance cooperation. A high-level political roundtable will be convened to discuss water storage options in the context of transboundary water management.

In contexts where women have very little agency to voice their needs, and the adverse impacts of poorly planned water infrastructure often affect them more than men, gender will be a key facet of the project, crosscutting all work streams. The project will develop and promote action-oriented recommendations for policies and strategies that enhance water security through better planning and management of water storage and improved regional cooperation.

**Disclaimer:** This project is funded by a grant from the United States Department of State. The opinions, findings and conclusions stated herein are those of the author[s] and do not reflect those of the United States Department of State.

**IWMI**  
International Water  
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IWMI is a CGIAR Research Center

The International Water Management Institute (IWMI) is an international, research-for-development organization that works with governments, civil society and the private sector to solve water problems in developing countries and scale up solutions. Through partnership, IWMI combines research on the sustainable use of water and land resources, knowledge services and products with capacity strengthening, dialogue and policy analysis to support implementation of water management solutions for agriculture, ecosystems, climate change and inclusive economic growth. Headquartered in Colombo, Sri Lanka, IWMI is a CGIAR Research Center with offices in 14 countries and a global network of scientists operating in more than 30 countries.

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