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2 GROUNDWATER

IMPORTANCE

Groundwater is needed to ensure food security, especially in drought-prone areas. With groundwater, farmers can grow crops year-round and take steps to adapt to climate variability and change. In many areas of the world, rainfall and surface water is too unreliable to support year-round farming.

PROBLEM

Groundwater is over-exploited in some areas of the world and in other areas it is abundant. The key constraint however is farmers don't have adequate access to the resource because of drilling, market and policy constraints.

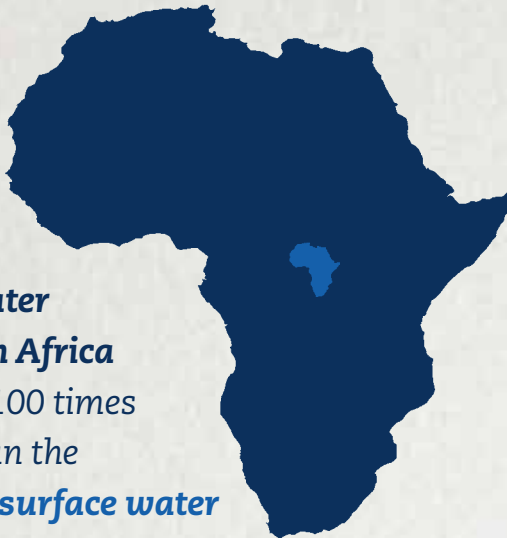
“ Sub-Saharan Africa has ample groundwater resources to improve the livelihoods of tens of millions of people – the development challenge is to help farmers access the water through key investments, technical support and policy changes. ”

T. OLALEKAN WILLIAMS, AFRICA DIRECTOR, INTERNATIONAL WATER MANAGEMENT INSTITUTE

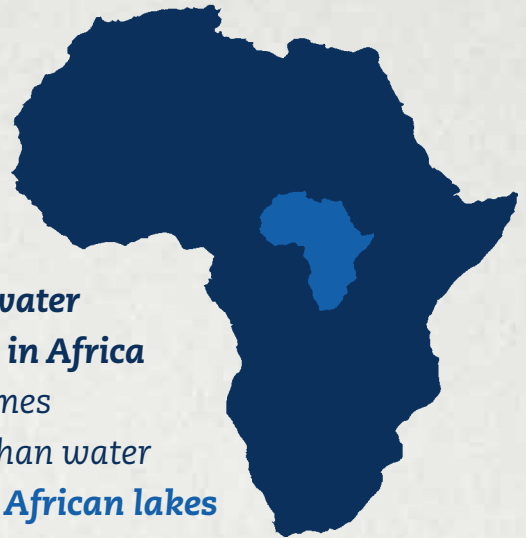


Only 5% of arable land in Africa is irrigated, compared with 37% in Asia

Groundwater reserves in Africa are about 100 times greater than the amount of **surface water**



Groundwater reserves in Africa are 20 times greater than water stored in **African lakes**



WHAT WLE IS DOING

WLE researchers are localizing known solutions that help farmers and communities better manage and improve access to groundwater resources.

- ◆ **In Gujarat, India:** Researchers recommended separating power lines to farms and villages and proposed a rationing system to replace a system in which electricity was heavily subsidized, groundwater over pumped, and the local utility in financial trouble. The policy changes helped recharge groundwater resources, assured a steady supply of irrigation water, and became a model for other areas of India.
- ◆ **In Sub-Saharan Africa:** Tariffs on small pumps are one of the major impediments to unlocking groundwater potential. WLE is working with farmers and farmer associations to remove tariffs and other market constraints to accessing groundwater. An investment analysis tool developed recommends best-bet water management options and the estimated impact

for smallholder farmers in Sub-Saharan Africa and South Asia. In Sub-Saharan Africa alone, researchers estimate that improved access to motorized pumps could benefit 185 million people and generate USD 22 billion of additional agricultural revenue.

Expected Outcomes

- ◆ By 2017: help bring about changes in at least 10 national or state policies in South Asia and Sub-Saharan Africa that lead to more government investment in smallholder land and water management.
- ◆ By 2025: double the incomes of at least 1 million smallholder farmers in South Asia and sub-Saharan Africa through actions informed by WLE research.

Sources Water, Land & Ecosystems, International Water Management Institute, International Food Policy Research Institute, Agricultural Water Management Solutions project, research by the British Geological Society and University College in London. Rockefeller Project on Groundwater in sub-Saharan Africa.

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