

Water Security for Food Security in an era of climate change

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Five Wicked Water Problems

Hunger

- Over **375.8 million people** in the Asia-Pacific region faced hunger in 2020, which is nearly 54 million more people than in 2019 (FAO & EAPRO, 2021)
- In South Asia, climate change is expected to bring a **substantial reduction** in aggregate **crop production**. On average, it is expected that rice yields will significantly decline (IPCC, 2021)



Climate Beyond 2°C

- Over **75% of Asia is water insecure**, with countries that are home to more than **90% of the region's** population already facing an imminent water crisis (ADB, 2023)
- Future projected adaptations are effective in reducing risks to a varying extent, but **effectiveness falls sharply beyond 2°C** (IPCC AR6, 2021)



Poverty & Exclusion

- In the next decade alone, climate change will drive **32-132 million more people** into extreme poverty (IPCC, 2021)
- Female extreme poverty is set to rise to **17.1 percent** under the worst climate path scenario compared to **9.3 percent** for women globally (ADB, 2024)



Deep Uncertainty

- Over **2.6 billion people** in the Asia-Pacific region live under high or severe water scarcity conditions (FAO & AWP, 2023)
- Over **90 percent** of the region's population in Asia and the Pacific is already facing an imminent water crisis, with three-quarters of the region's water being insecure (FAO, 2023)



Ecosystem Breakdown

- According to the FAO, ecosystems are **at a breaking point**
- **30 percent of the rural population** are affected by land degradation in East Asia and South Asia alone (FAO, 2023)
- Between 1990 and 2020, over **4,000 square kilometres** of mangroves were lost in Asia and the Pacific (FAO, 2023)

IWMI's Strategic Framework for 2024 - 2030



Our Strategic Framework is structured around :

- **3 Strategic Focus Areas**
- **4 Transformational Levers**

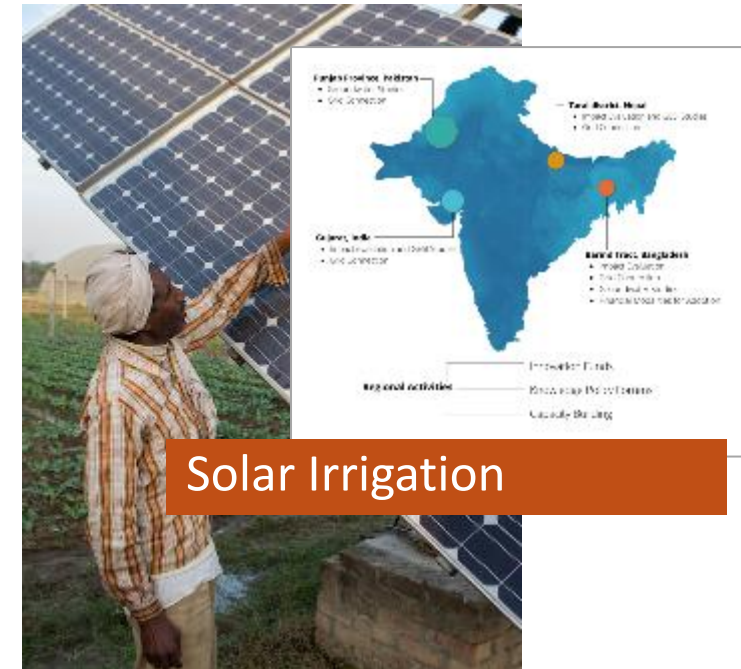
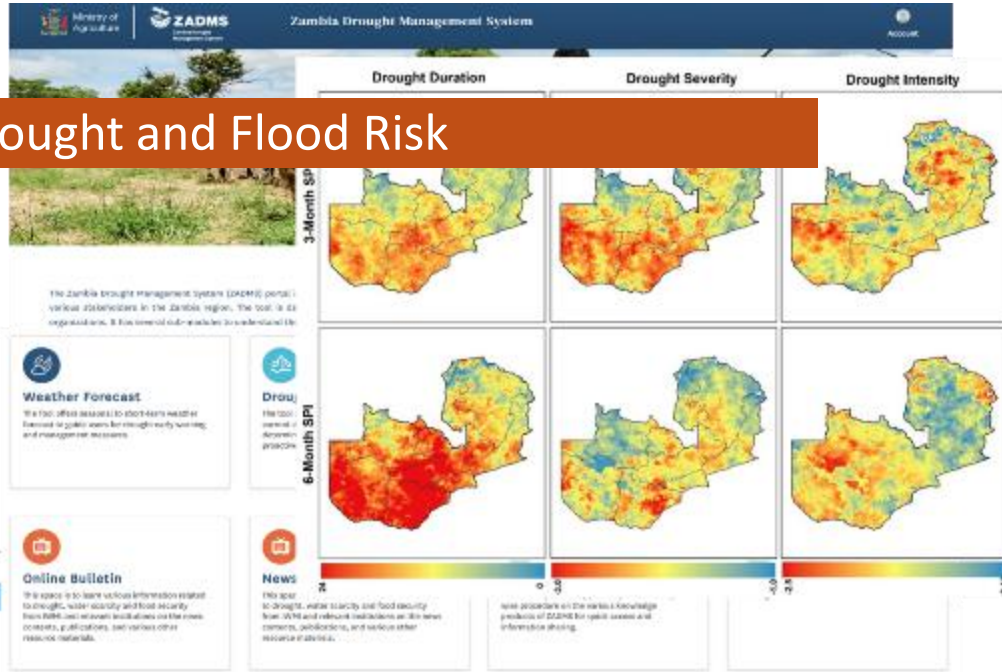
Through **research and partnerships**, we work to achieve outcomes under each of these areas.

Our **7 year strategy** contributes to increased water security for those who need it most.

Mitigating Water Risks

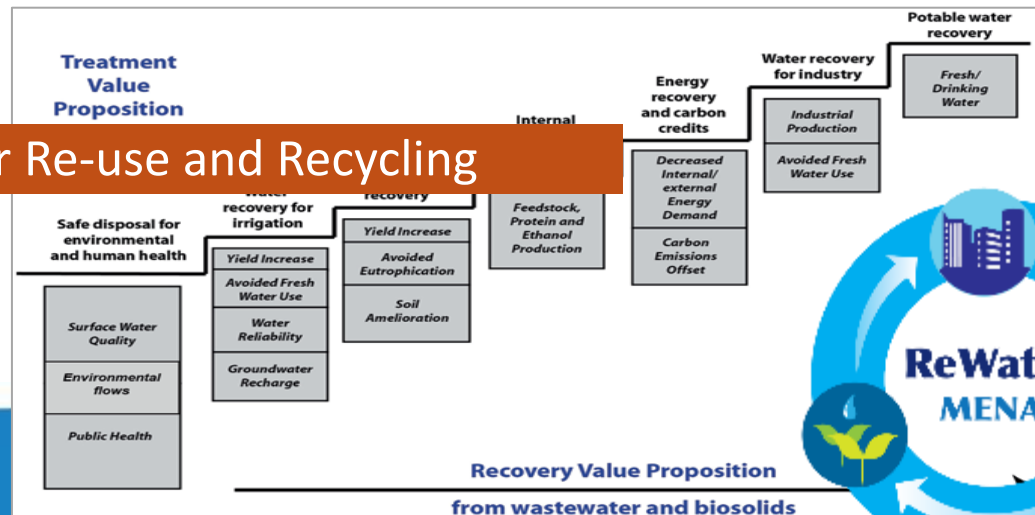


Drought and Flood Risk

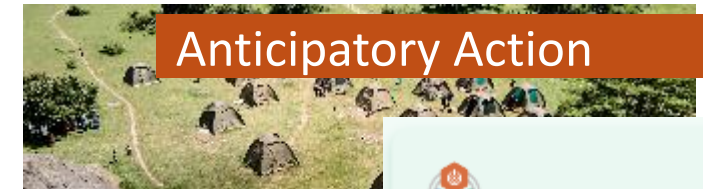


Solar Irrigation

Wastewater Re-use and Recycling



Anticipatory Action



AWARE

Aware platform supports multiscale, multipartner to equip relevant decision makers with key information for preparedness, response, advocacy and resource mobilization efforts to mitigate and manage climate risks.

Overcoming Global Inequalities





Inclusive Access to Climate-Resilient WaSH

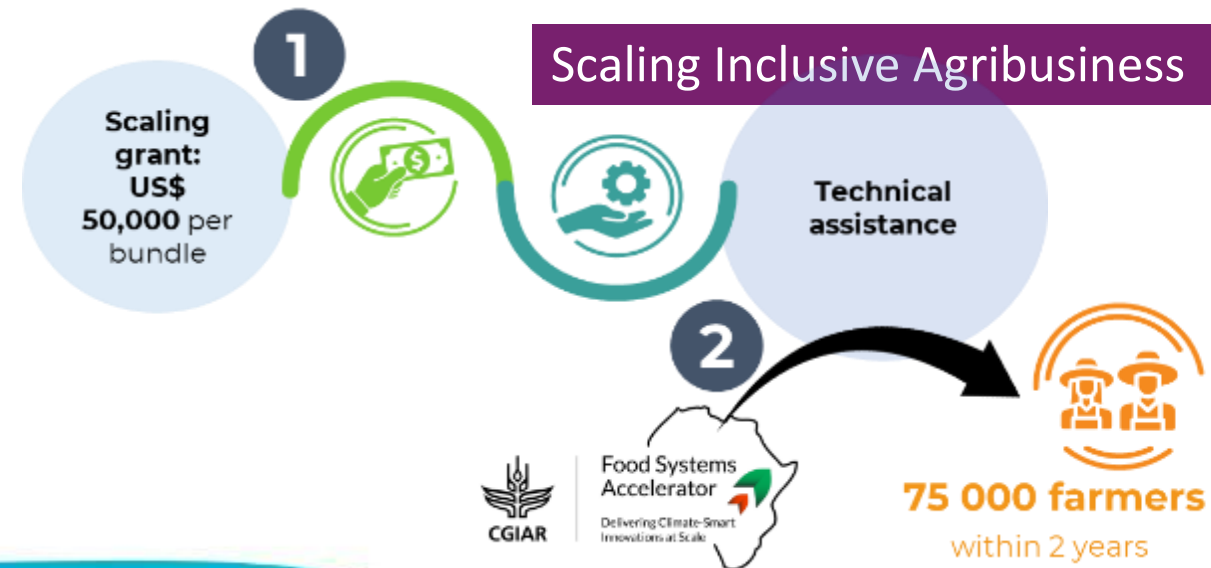


Farmer-led Irrigation



Economics and Impact Assessment

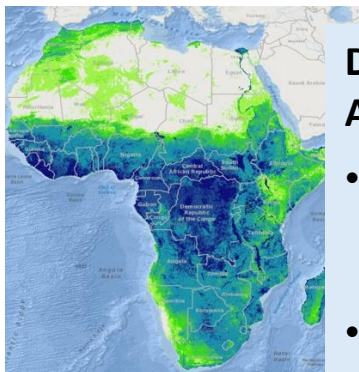
Scaling Inclusive Agribusiness



Managing Water Sustainably

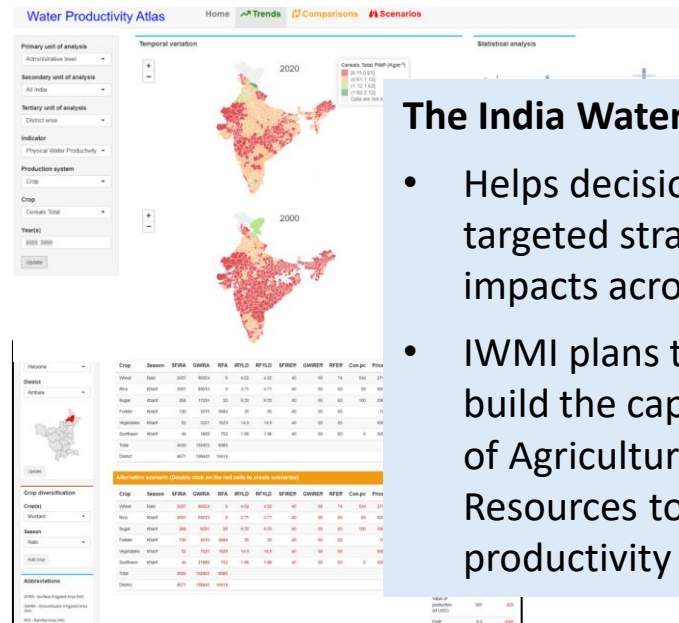


Mapping the state of water across Africa and Asia



DIWASA - Distributed and Intelligent Water Allocation for Sustainable Agriculture

- An innovative basin to boundary approach of water accounting generating water data at multiple scales across continental Africa.
- Analysis-ready water data products and applications
- DIWASA Phase 2 aims to develop and implement advanced water allocation strategies that optimize water use efficiency

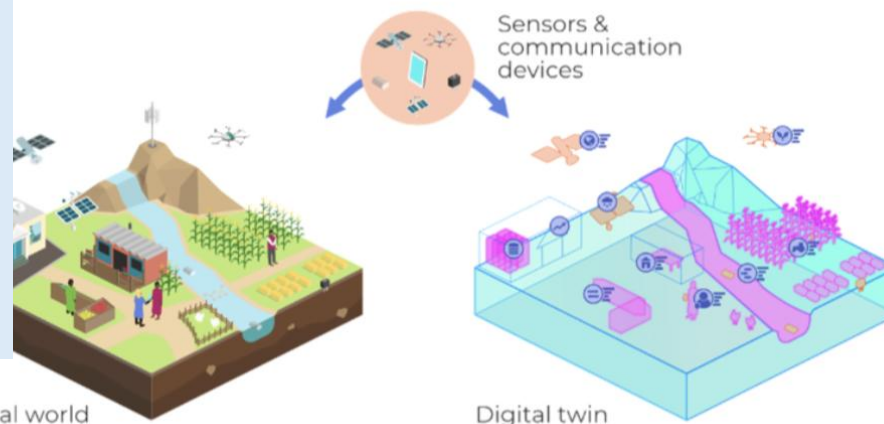


The India Water Productivity Atlas

- Helps decision-makers formulate targeted strategies that optimize impacts across the nexus.
- IWMI plans to collaborate with and build the capacity of India's Ministry of Agriculture and Ministry of Water Resources to develop water productivity scenarios

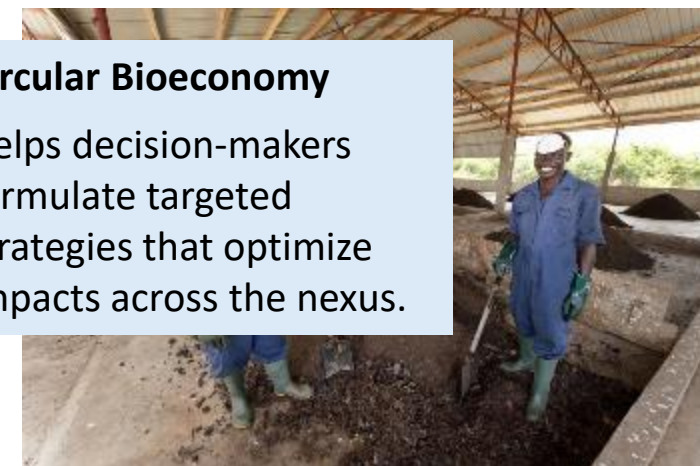
Creating Digital Twins of water basins for decision-support

Game-changer for the Limpopo River Basin, offering unprecedented potential for collaboration within the UNDP-GEF project and among LIMCOM's riparian countries



Circular Bioeconomy

Helps decision-makers formulate targeted strategies that optimize impacts across the nexus.



Supporting policymakers and negotiators to shape global agendas

IWMI

The Global Science-Policy Forum Socially Inclusive Solar Irrigation Systems



Four Thematic areas

- Groundwater sustainability
- Business models of SIPs and scaling up of solar irrigation
- Inclusive and community-led strategies
- Designing effective and inclusive policies and policy tools for solar energy transitions

The Forum's Impact

- 200 participants from 20 countries
- Special Focus on South-South Collaboration and future of SoLAR
- Positive feedback and improved donor interest

Collaboration with the African Group of Negotiators Expert Support



Putting water at the forefront of climate negotiations



- IWMI partners with AGNES, supporting strategic collaboration, national dialogues, policy advocacy, and contributions to Africa's NDCs.
- IWMI co-hosted a pre-COP AGNES strategy meeting in Nairobi to enhance Africa's representation in climate change negotiations.
- Our researchers supported the AGNES delegation at COP28.

Conclusions

- IWM's approach to adaptation planning, whether for national, river basin or city level, is based on thinking that accommodates growing uncertainties within and between sectors.
- Knowledge development that brings technical solutions linked with political and economic incentives that are developed within social and environmental contexts.
- Through digital modeling of future likely conditions, solutions may be designed to help manage the trade-offs of when, where, who and how water is allocated.

