



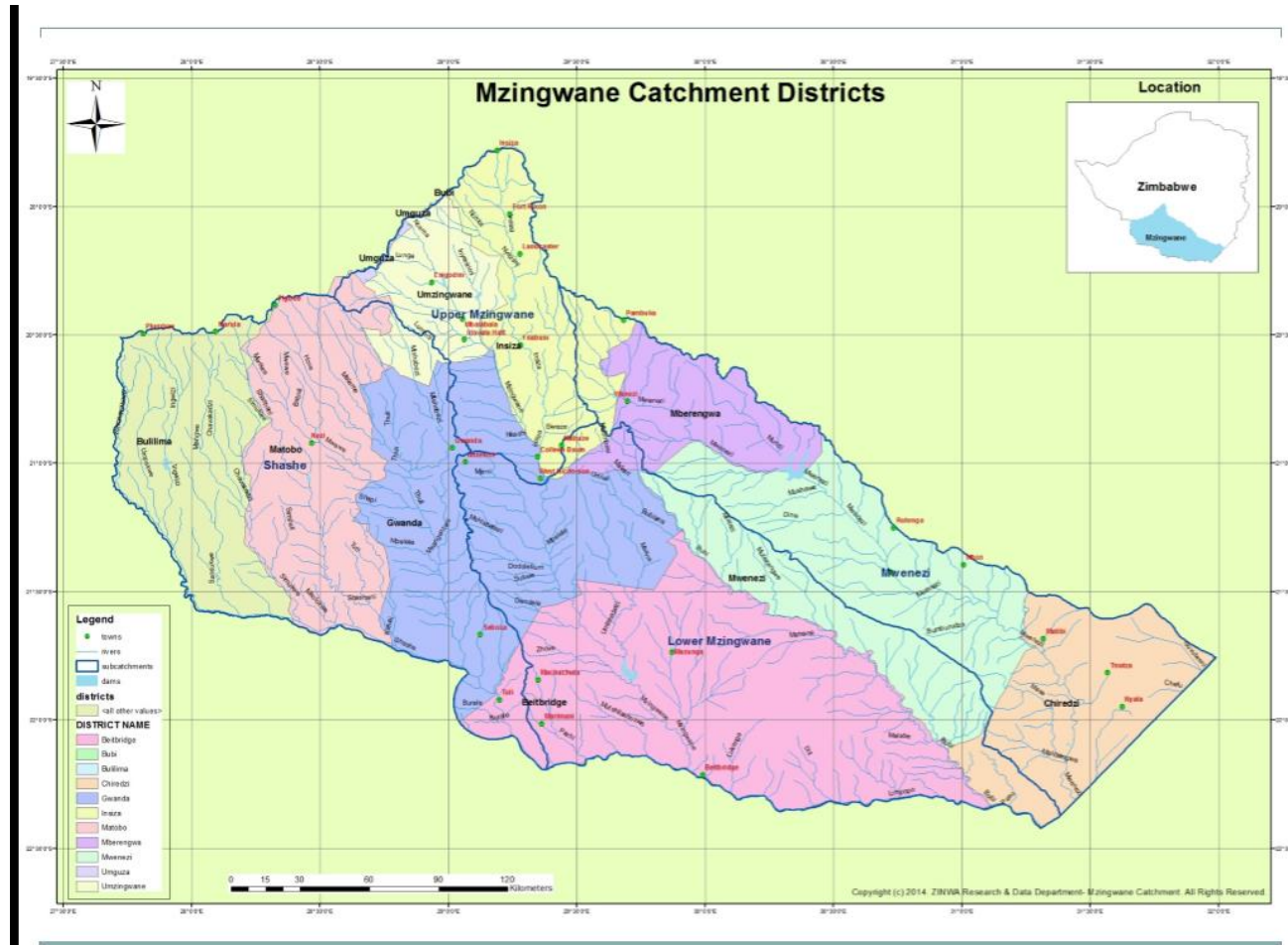
**ARID AFRICAN ALLUVIAL AQUIFERS (A4)
LABS PROJECT
Umzingwane Lab, Zimbabwe**

Innovations for African Dry lands

**19th
WaterNet/WARFSA/GWP-SA
Symposium
Livingstone, Zambia
31 October 2018**

Mzingwane Catchment

- **Catchment size:** approx. 63 000 km²
- **Bordered by 9 Districts:** Umzingwane, Gwanda, Matopo, Plumtree, Bulilima, Beitbridge, Filabusi, Mwenezi, and Mberengwa
- **4 Sub Catchments:** Lower Mzingwane, Upper Mzingwane, Shashe and Mwenezi that drain into the Limpopo
- **Population:** 693000 inhabitants – 11 people per Km²
- **Topography:** catchment relief patterns varies with districts the lowest altitude is in Beit bridge ranging from 150-300m and the highest in Gwanda district with range from 900-1 100 mm.
- **Climate:** mean annual rainfall is 300mm (October to April)
- annual mean minimum temperature 5° C and the mean maximum temperature is 30°C:
- Evaporation for the catchment ranges from 1800mm 2000mm per annum
- **River Characterization:** Extensive network of Alluvial Aquifers – average 20km in length, less than 1 km in width. Areal extents ranging from 100 ha to 255 ha in the channels and 85 ha to 430 ha on the flood plains



Hydrological & Water Use aspects of the Mzingwane River Basin



Typical Sand River (alluvial aquifer) in the low veldt of Zimbabwe within Limpopo Basin
Estimated water resources potential in the basin ranges between 175,000 m³ and 5,430,000 m³ in the channels and between 80,000 m³ and 6,920,000 m³ in the plains

VISION:

A future where people and communities in arid and semi-arid African lands realize prosperous and resilient livelihoods due to their productive, efficient and sustainable use of water from seasonal rivers

OVERALL PROJECT OBJECTIVE:

Improve access to and the efficient and sustainable use of water from seasonal rivers and their natural water storage capacity, agricultural inputs and markets to support agricultural production for additional income generation in arid and semi-arid African lands.

OUTCOME 1 - FARMER-CENTRED

Prosperous and resilient smallholder livelihoods in arid areas near ephemeral (seasonal) rivers in Zimbabwe through more effective access to and efficient and sustainable use of water from and storage capacity of shallow alluvial aquifers.

OUTCOME 2 - PRACTITIONER CENTERED

Strengthened trans disciplinary institutional space to support smallholder farming households with tried and tested novel approaches and technologies to become prosperous and resilient in arid areas of Zimbabwe

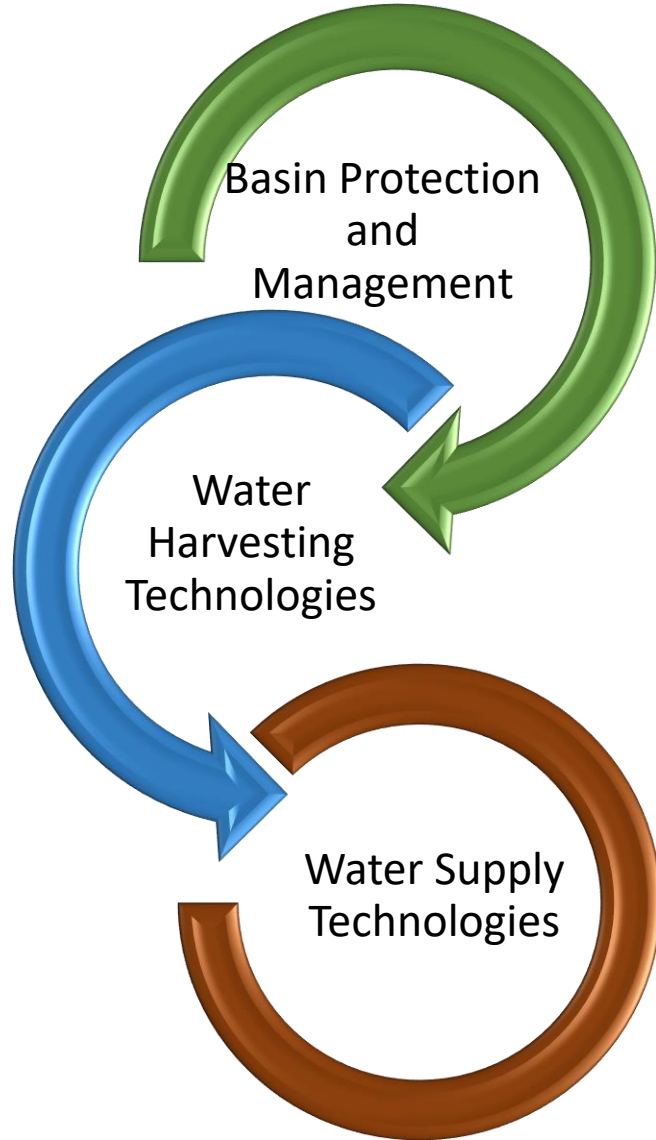


Dabane Water Workshop
Simple Technology, Long term benefits



Dabane Trust

Description of technologies and practices in use



**Land and Ecosystem Recovery and Rehabilitation –
nature based solutions**

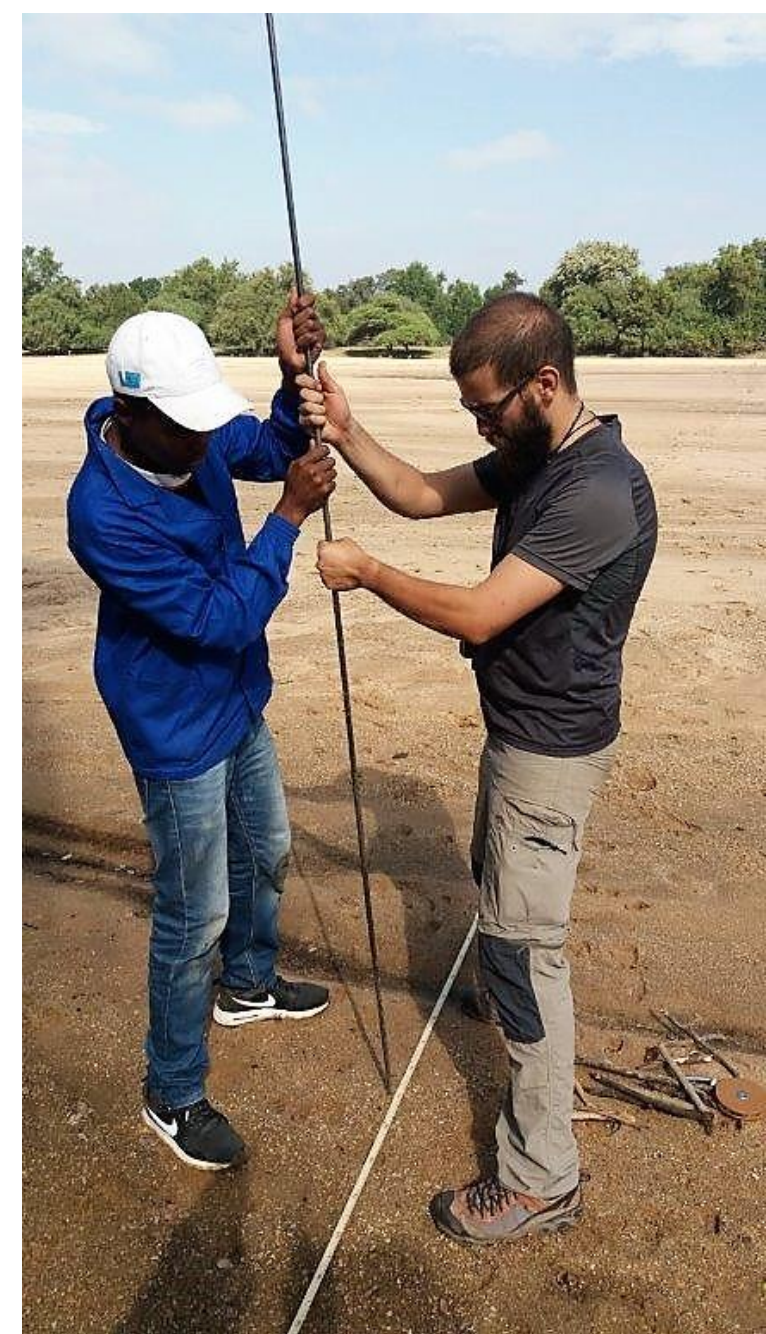
- Sand Dams
- Sub-surface alluvial sand dams
 - Open surface dams

- Rowa Hand Pump
- Joma Hand Pump
- Canzee Pump with well rings
- Photovoltaic submersible pumps for alluvial aquifers

Research and Development



- Action research based on experimentation that is demand driven and participatory
- Supporting Undergraduate and Masters Students from local universities and from IHE
- Community gets to participate and contribute towards scientific research





THANK YOU