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Integrating Water Resources and Demand to Improve Drought Resilience and Build Water Strategies: a Pilot Approach in Kenya's Arid Lands

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Agenda



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- I. Overview of The Kenya Arid Lands Disaster Risk Reduction (KALDRR-WASH) Program
- II. The Challenge: Building Resilience in Water Scarce Areas
- III. Integrated Approach to Matching Water Supply and Multiple Use Demands
- IV. Promising Findings and Initial Successes from the Pilots
- V. Next Steps



I. The KALDRR-WASH Program





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Strategic Partnership



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II. The Challenge

- In Kenya's ASALs, total demand often exceeds water supply. Problem is compounded by competition for resources.
- Interventions have typically been short-term and do not take into account the interdependency of issues revolving around water scarcity and water use.
- Large portion of water disappears through surface runoff, flooding, and evaporation.



III. Integrated Approach to Matching Water Supply & Demand

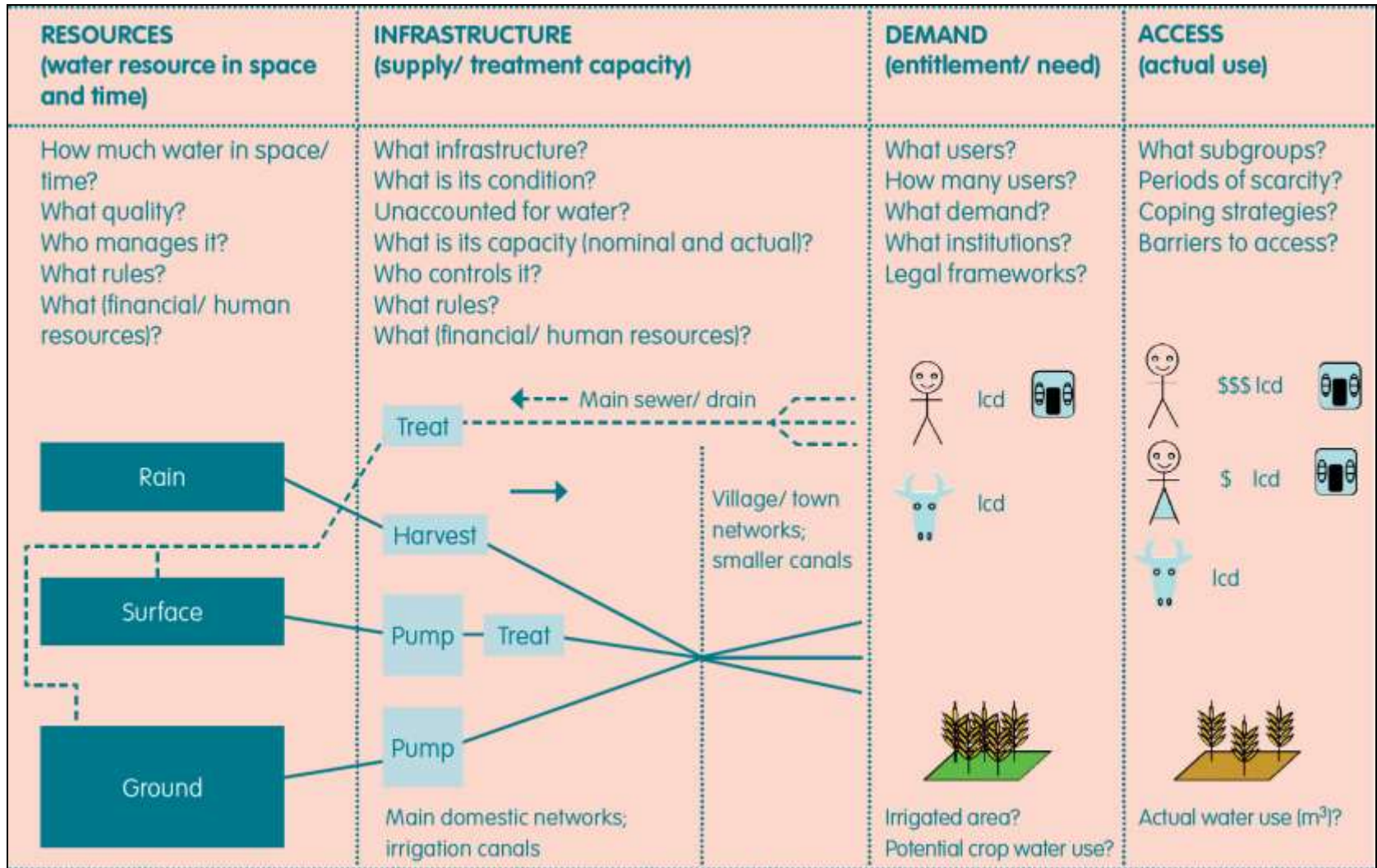


Sand dam in Turkana County

- ALL local water uses (domestic, livestock, agriculture)
- ALL local water resources
- ALL local water stakeholders (operators, users, government)



RIDA Framework





Resources and Infrastructure: the 3R Approach

GROUNDWATER STORAGE

Riverbed infiltration

- Gully plugging
- Sand dams
- Subsurface dams
- Retention weirs
- Controlling sand/gravel mining

Land surface infiltration

- Infiltration ponds
- Trenches/ditches/drains
- Floodwater spreading/spate irrigation
- Wetland protection

Direct infiltration

- Infiltration wells/tube recharge
- Injection wells
- Riverbank infiltration
- Dune infiltration

SOIL MOISTURE STORAGE

Run off reduction

- Grass strips
- Bunds and ridges
- Terraces
- Planting pits

Land surface infiltration

- Deep ploughing
- Half moons
- Using invertebrates
- Intense controlled grazing

Evaporation reduction

- Use of compost/biochar
- Mulching
- Conservation agriculture

CLOSED STORAGE TANKS

Rainwater harvesting

- Rooftop tanks
- Small tanks
- Underground cisterns

Fog harvesting

- Fog shield and tank

OPEN RESERVOIR STORAGE

In stream storage

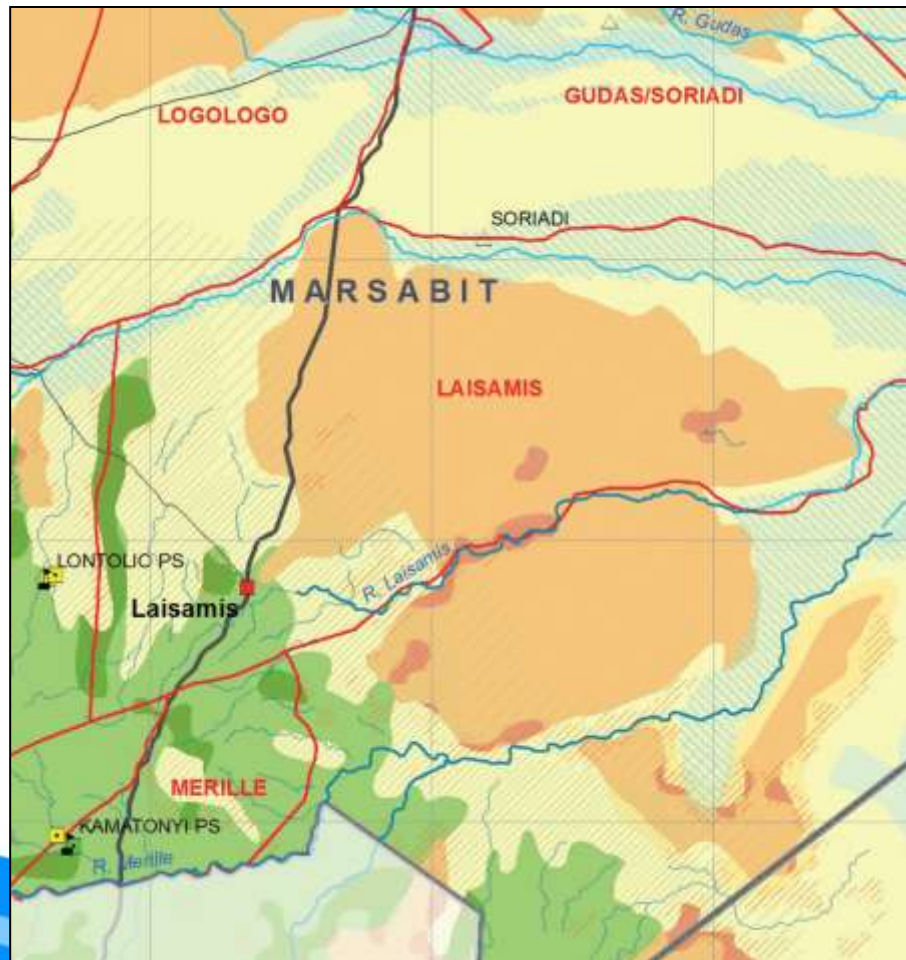
- Small storage reservoirs

Off stream storage

- Off stream storage reservoirs
- Road water harvesting
- Trapezoidal bunds
- Rock outcrops/hillside storage



Resources and Infrastructure: the 3R Approach





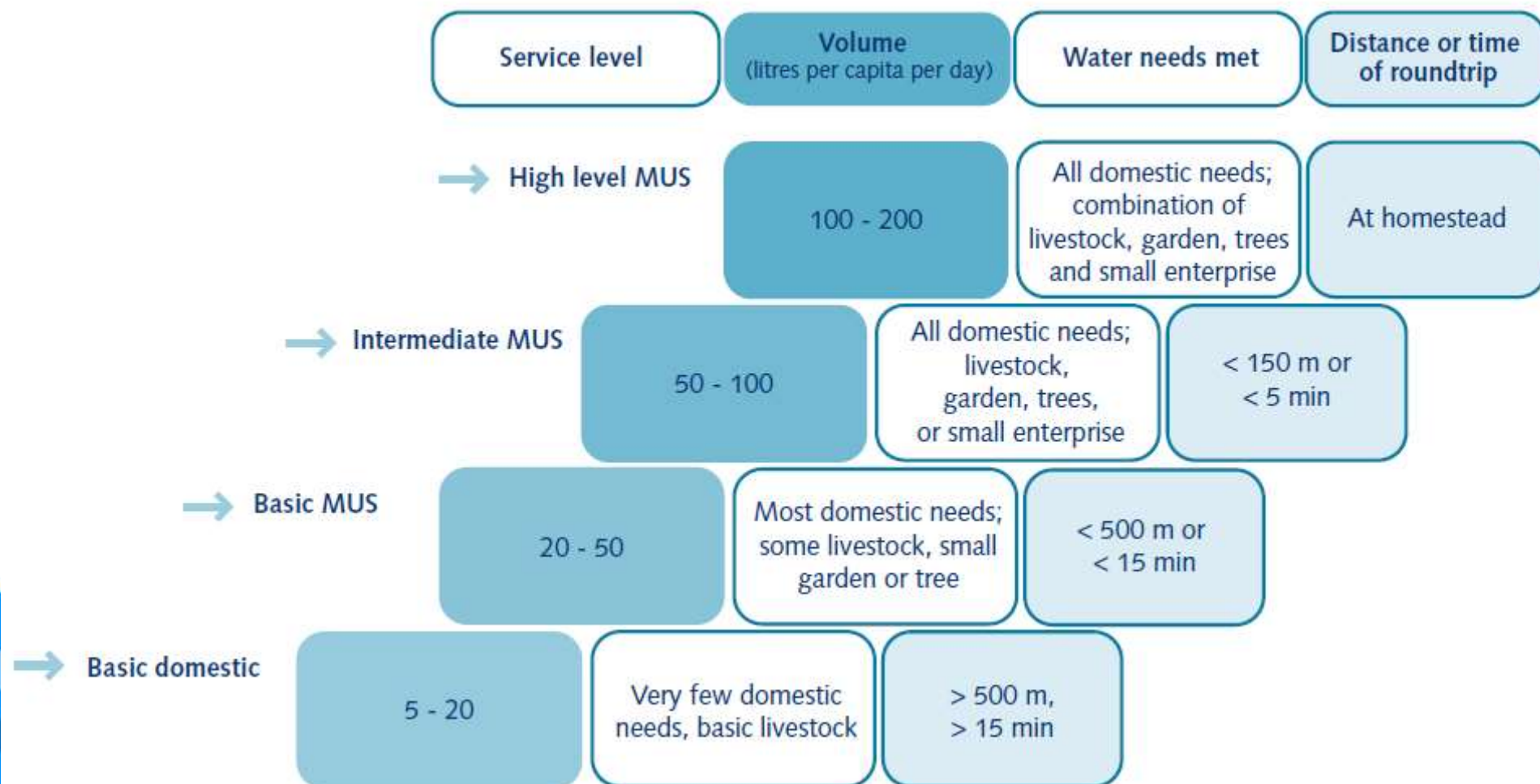
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LOG KAMBOE AREA MAP





Demand and Access: the MUS Approach





IV. Promising Findings and Initial Successes

- There is enough rainfall to meet demand. It just needs to be stored.
- Local, participatory water master planning is a strong tool for guiding interventions and building resilience to drought
- Government representatives recognized link with Kenya planning mechanisms and said new tools would help the to translate county plans into actions.



IV. Promising Findings and Initial Successes



IRC

Water Master Plan
Kalemgorok and Katilu sub-locations Turkana
Kenya Arid Lands Disaster Risk Reduction (KALDRR-WASH)
program

Mélanie Carrasco

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V. Next Steps

1. Linking methodology to government's existing water management planning approach and institutions;
2. Streamlining participatory processes for small sub-catchments, catchments and/or country admin levels;
3. MWA and Dutch partners will continue to develop, test, and expand this approach in collaboration with ASAL stakeholders.