



Optimizing the Role of Rainwater Harvesting In Improving Livelihoods

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Main Objective

- To ignite a discussion on how promoting Rainwater Harvesting can Improve Rural Livelihoods and Address Environmental Challenges



Rainwater Harvesting of Malawi (RHAM)

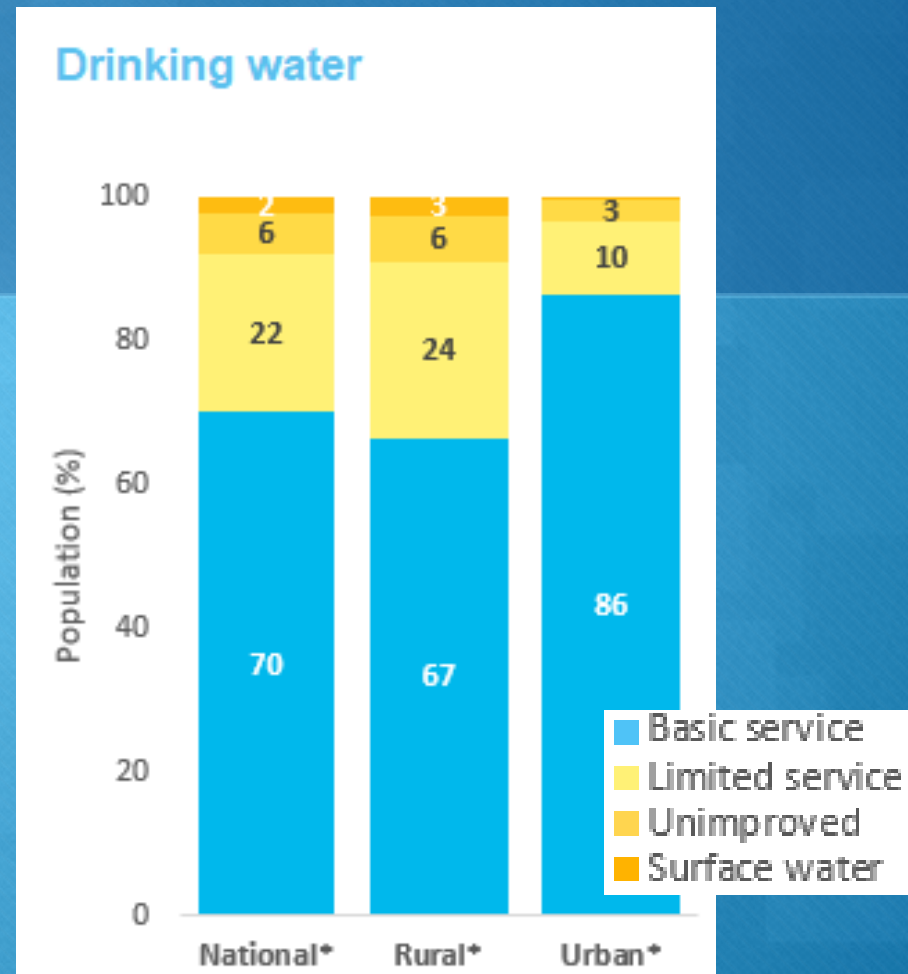
- RHAM has clocked 20 years having been established in 2003 as a development partner towards integrated water resources management initiative of the Government of Malawi (GoM) and other stakeholders
- An integral network member of the Southern and Eastern Africa Rainwater Harvesting Network (SearNet) and International Rainwater Harvesting Alliance (IRHA)
- The association aims to facilitate rainwater harvesting research, technology development and transfer and evaluation. It also To organize training workshops, demonstrations, meetings and exhibitions on the general theme of rainwater harvesting.

Key Challenges

- Water for domestic use
- Water for sanitation and hygiene
- Environmental degradation
- Floods – currently Cyclone Freddy causing Havoc
- Damage to infrastructure due to uncontrolled run off

Water Supply in Malawi, 2020 data

- 30% of the people do not have basic water supply
- 9% in rural areas and 3% in urban areas use unimproved sources
- **There may be a role for rain water harvesting!**



Source: WHO/UNICEF JMP (2021)

Evidence of Climate change in Malawi – March 2023





March 2023 Floods

12 districts affected

501,775 people affected

183,158 displaced

75,082 children under the age of 5 affected

52,211 disabled people affected

426 dead

201 missing

796 injured



Focus areas for RWH

1. RWH for domestic uses
2. RWH for increased crop production
3. RWH for Increased production of horticultural crops as
4. RWH Integrated Agriculture-Aquaculture farming.
5. RWH increase household income while protecting environment
6. RWH for increased ground water Recharge

Approaches and Scope of implementation

- **Macro Catchment to Micro Catchment**
- **Land scape and Watershed Approach**
- **Use of Integrated Participatory Watershed Development.**
- **Forest and Agricultural Landscape Restoration**

Green Schools Initiative

- 1 billion Children in countries that are at an 'extremely high-risk' from the impacts of climate change (nearly half of the world's children)
- 1 in 4 Children & adolescents under age 18 (600 million) that UNICEF projects will be living in areas of extremely high water stress by 2040.
- Nineteen percent of schools in Malawi do not have an improved water source, resulting in students drinking from unimproved sources during the school day.



Solutions

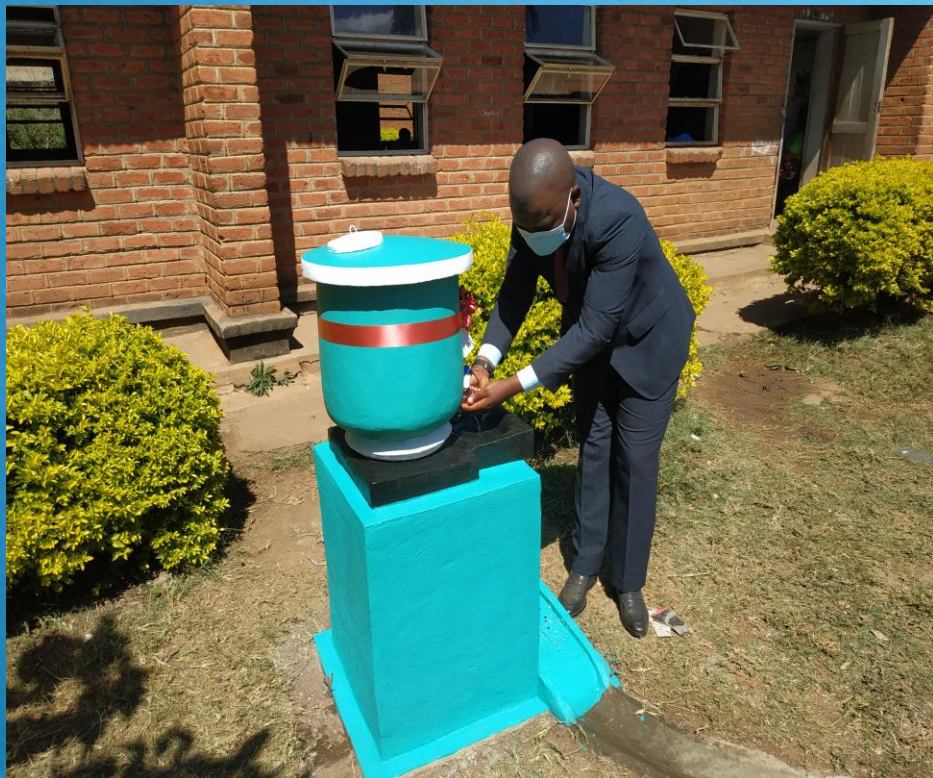
- ◊ Calabash Cisterns
- ◊ Ferro cement Tanks
- ◊ Underground Tanks
- ◊ Handwashing Basins
- ◊ Permaculture

Turning grey schools to green schools

Water Harvesting structures



Linkages with WASH



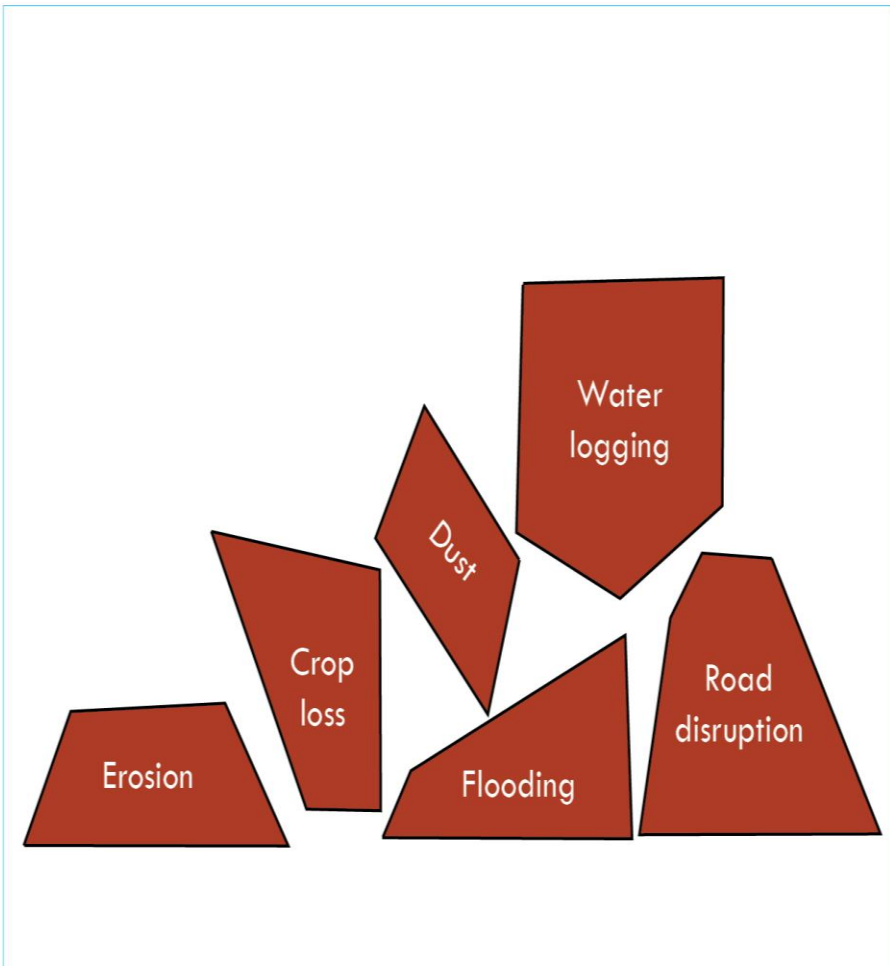


Short term pain; long term gains

- **Improved nutrition in support sustainable and equitable food systems** by growing Fruits, Vegetables and other crops around the schools, learners have access to different food types that will lead to improved health.
- **Improved school health and sanitation** - Clean and safely managed water enables sanitation and hygiene practices to prevail.
- **Improved Income** with harvested water and the ability to grow high value crops such as fruit trees and vegetables, schools are able to increase their basic economic status.
- **Improved Learning Environment** - by turning “*dusty grey schools into green schools*”. The presence of trees provides shade that reduce dust storms that can be detrimental for learners.

Green Roads Initiative

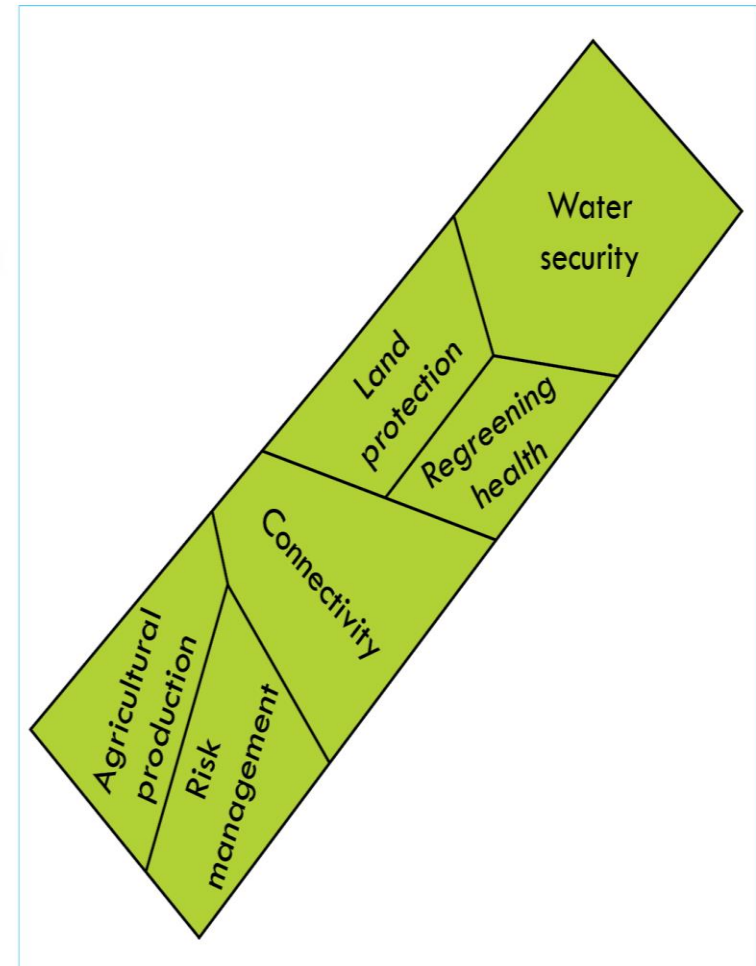
Conventional road



We need to
turn roads
into



Green road



Green Roads Network





Benefits

- Groundwater recharge,
- Landscape restoration,
- Increased road infrastructure longevity,
- Increased water availability for agricultural and domestic use.

RWH for Crop Production – Integrated Aquaculture - Agriculture



RWH for Domestic uses





Impacts and Benefits

- Reduced burden for women drawing water
- Improved sanitation and hygiene
- Increased incomes
- Diversified food sources
- Possibilities for Irrigation
- Improved nutrition due to backyard gardens



Green Village Model

- Created as a model for enhancing resilience to climate change through rainwater harvesting
- Implements a number of interventions that include road water harvesting, box ridging, Calabash Cisterns, application of organic manure, infiltration pits, swales, Drip Irrigation and Back Yard gardens

Technologies



Sustainable Land and Water Management Practises



Infiltration Pits or referred to as Fertigation Pits







Impacts and Benefits at HH Level

- Reduced burden for women drawing water
- Improved sanitation and hygiene
- Increased incomes from the sale of fish and vegetables
e.g. Fish can go up 1USD/200grams i.e. 5USD/Kg
- Diversified food sources
- Possibilities for Irrigation
- Improved nutrition due to backyard gardens

Improved nutrition through backyard gardens



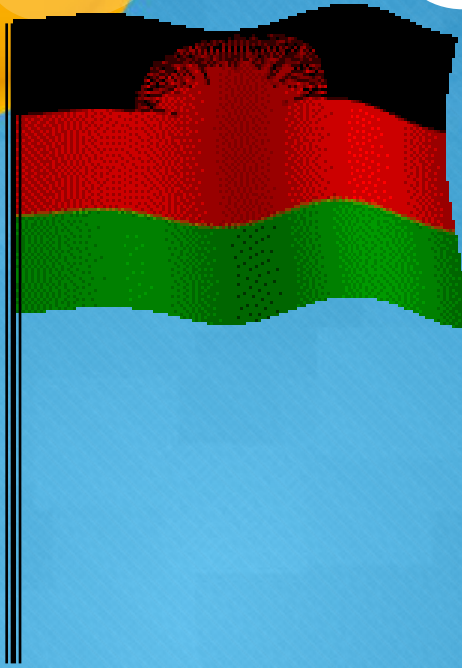


Advantages

- Backyard gardens - different types of vegetables are found (nutrient rich vegetables e.g. spinach and pumpkin leaves)
- Diversifying the family's food intake
- When their maize crop was damaged by floods this year, the crops in the backyard garden were not affected.
- improves the nutrition of not only the children but the whole family

Recommendations

- Creating a platform for coordination of RWH development to ensure investments are placed where they are needed most.
- Need to build capacity on management of RWHT to ensure sustainability.
- Both GoM together with all relevant stakeholders should provide larger and longer-term investment plans and direction with adequate involvement of and effective support to farmers and communities to demonstrate advantages of up-taking RWHT, both in-situ and ex-situ (structural) technologies.
- RWHTs should be adopted to mitigate effects of flooding to regions prone to such phenomenon. RWHT both in situ and ex situ (dams and natural pools) have capacity to create buffering mechanisms that will create storage on the upstream



THANK YOU