



Green Roads for Water

ROAD INFRASTRUCTURE IN SUPPORT OF WATER
MANAGEMENT AND CLIMATE RESILIENCE

Makueni County Green Roads for Water Program-Building Climate Resilience into Roads Infrastructure and local communities

PMI Learning event – Green Roads for Water: Supporting and Financing Green
Development of Smallholder Farmers and Producers

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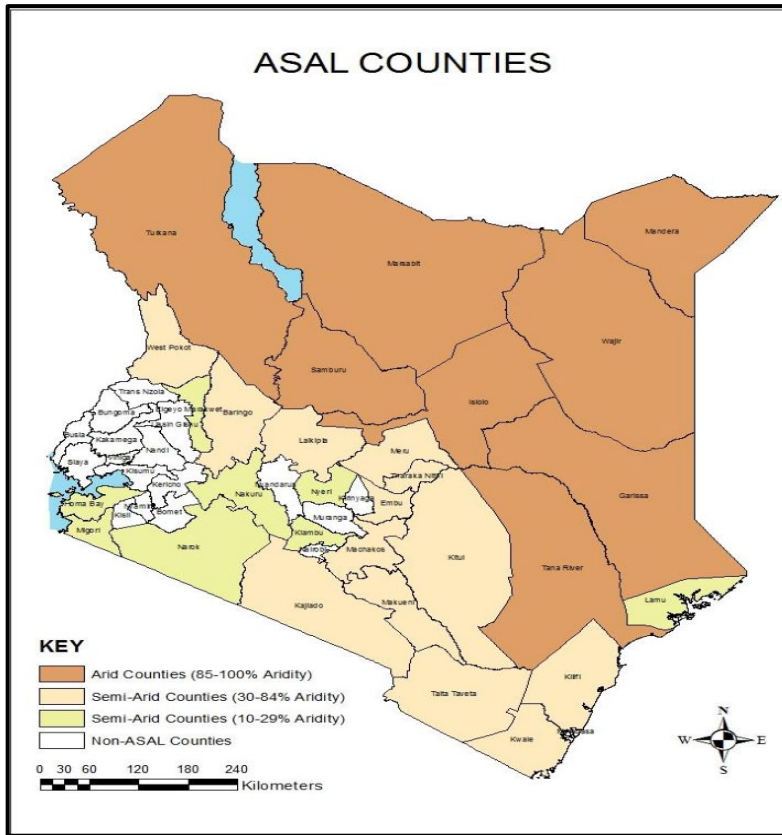
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MAKUENI COUNTY-KENYA



- Located in former Eastern Kenya with a total population of **987,653** (2019 census)
- Average temperature range between 15C to 26C.
- Total area-**8,008.9** Square kilometers
- Annual rainfall between **250mm-400mm**(Lower regions) and **800mm-900mm**(upper regions).
- The county is covered by **13,065.2kms** of road network
 - International Trunk Road(A),Bitumen-208.5kms
 - National Trunk Roads(B),Bitumen/Gravel-216.7Kms
 - Primary Roads(C,Bitumen/Gravel)-549.5Kms
 - Secondary Roads,Earth Road(D)-202Kms
 - Minor Roads(E),Earth Road-297.8 Kms
 - Urban Roads-132.7Kms
 - Unclassified Roads(Earth Road)-11,458Kms

Source <https://www.krb.go.ke>

Green Roads for Water techniques practiced in Makueni County-Kenya

- The following road rainwater harvesting approaches are being practiced in Makueni County-Kenya ;
 - Cut-off mitre drains (Roadside drains).
 - Cross-drains (Diversion from cross culverts).
 - Gravell/ quarry borrow pits for run-off harvesting.
 - Gabions check dams and Nature based System (Gully rehabilitation, prevention and reclamation).
 - Non-vented river drifts/road crossings.
 - Roadside tree planting for environmental mitigation.
 - Farm ponds/pans for run-off storage.
- Find attached Short Green Roads for Water documentary in Makueni County.
<https://youtu.be/F-CP9HtIH-g>



Makueni County GR4W Implementation model

The Green Roads for Water program has been carried out successful in Makueni County-Kenya using the following approach.

- County departmental staff capacity-building trainings and consultation forums.
- Community public participation and consultation forums on county projects.
- County interdepartmental collaborations, coordination, and integration of county programs.
- Policy formulation and linking the GR4W program to county projects such as Road maintenance programs, Youth empowerment programs, Climate Change Conservation Programs, Agricultural Soil Conservation Programs, etc.
- Continuous capacity-building and trainings for community rainwater harvesting champions across the county.
- Organising farmer exchange and benchmarking programs within the county.
- Partnerships and collaborations with Non governmental organizations such as: MetaMeta - <https://metameta.nl/> ,Green Roads for Water- <https://roadsforwater.org/about-us/>



Makueni County Green Roads for Water achievements 2017-2023

No.	Sub county	Miter/Cut-off Drains- Contracted projects, Youth and community engagement (Meters)	Installed Culverts for drainage and Road runoff harvesting -Meters	Non-Vented Drifts. No.	Roadside Gully rehabilitations using Gabions check-dams & Nature based systems No.	Community/ Framers trained on Road Run-off Harvesting.- No.	GR4W Climate proofed Kms
1	Kibwezi - East	42,000	2,200	21	460	270	60
2	Kibwezi -West	39,000	2,250	19	620	285	74
3	Kaiti	26,000	1,150	16	420	160	55
4	Kilome	21,000	1,110	14	300	225	40
5	Mbooni	98,000	3,220	36	965	435	96
6	Makueni	70,000	2,450	29	640	275	78
	TOTAL	296,000	12,380	135	2,995	1,650	403



Positive Results for Road Runoff Harvesting in Makueni County



Original road condition without GR4W structures.



Road with Green Roads for water structures for road maintenance and farming.



Roadside tree planting for dust control/Health Benefits

Benefits of Road runoff harvesting as practiced in Makueni County-Kenya for road water management and improved community livelihoods



Non-vented road Drift as a road crossing & water storage structure.



Crop farming using harvested road run-off stored in farm ponds.



Roadside farmer using roadside runoff for farming.





Thank you!

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