



ROAD WATER MANAGEMENT FOR RESILIENCE



IMPROVING LIVELIHOOD CREATING RESILIENCE - KENYA

Mekelle, February 2017

Outline

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1. Introduction to Kenya
2. Research Activities
3. Tree planting
4. What do farmers do themselves?

1. Introduction to Kenya

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- 80% ASAL
- Unreliable and high intensity rainfall – Current situation:
 - Water is collected into road side ditches and discharged through culverts into seasonal rivers and finally into the Indian ocean.
 - National policy on Water Storage “aims to ensure an increase in per capita storage from 5.3m³ to 16m³.”
 - Need to harvest water and become more resilient to harsh climatic conditions.

2. Research Activities

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- Students of South Eastern Kenya University
- Topics:
 - Socio-economic impact of road water harvesting (Mbitini, Kitui)
 - Testing alternative pond-liners (SEKU farm)
 - Socio-economic impact of road side tree planting (Yatta, Kitui)
 - Water quality (Makueni)
 - Estimated run-off of road catchment for recharge (Machakos)

2. Research Activities

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2. Research Activities

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2. Research Activities

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- Ongoing monitoring activities:
 - Groundwater monitoring
 - Recharge shallow well with road-runoff harvesting



3. Tree planting

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- Partnership with Africa Wood Grow



4. What do farmers do themselves?

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4. What do farmers do themselves?

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4. What do farmers do themselves?

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4. What do farmers do themselves?

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4. What do farmers do themselves?

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- Socio-economic impact study in Mbitini, Kitui County, among 60 farmers (30 practising RRH, 30 don't)
- Road runoff harvesting practices
 - Mostly used for irrigation of crops
 - Brick-making
 - Farmers learn from each other

4. What do farmers do themselves?

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Impact on food security

- Farmers in Mbitini practicing RRH
 - More food secure
 - Could sell surplus production
 - Change of diet as reason to buy food
- Farmers not practicing RRH
 - Need to buy food because the produce could not last them until the next rain season.

4. What do farmers do themselves?

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- Income comparison from sales of farm produce

	Average total value of production in 1 season (KSH)	Average total income from sales in 1 season (KSH)
Farmers practising RRH	16.475	5.374
Farmers not practising RRH	9.735	3.358
Positive benefit of RRH	6.740 (67 USD)	2.016 (20 USD)

4. What do farmers do themselves?

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- 24 farmers indicate they get a higher yield of their crops due to RRH
 - Maize, beans, green grams, pigeon peas, cowpeas
- Average increase of farmers income
 - = Yields after RWH – yields before RWH
 - From 1 cropping season

4. What do farmers do themselves?

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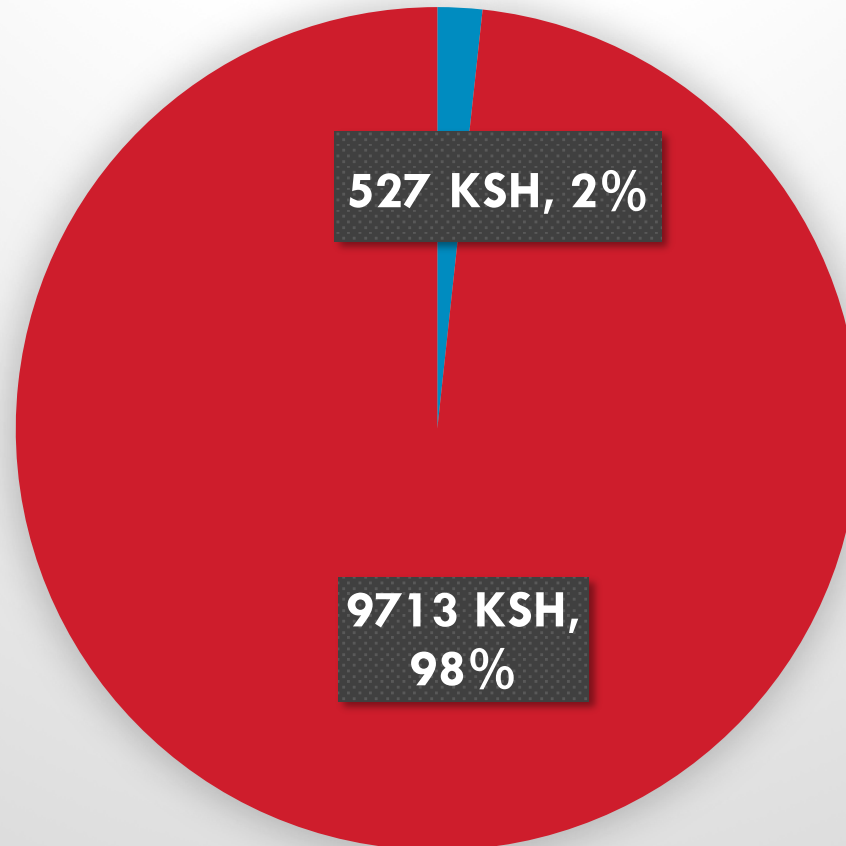
- Benefits for farmers practicing road runoff harvesting in Mbitini
 - Positive benefit of an average of 9186 KSH/person
 - Cost of construction very low, because most labour was done by household members

Examples of farmers	Average increase of farmers income (KSH)	Average Construction Cost Per Farmer (KSH)	Average benefit Per Farmer (KSH)
Average (over 24 farmers)	527	9.713	9.186
	= 5 USD	= 97 USD	= 92 USD
Benefit			= 9.186 KSH

4. What do farmers do themselves?

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**The costs of construction compared with the return on investment
after 1 growing season.**



4. What do farmers do themselves?

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- Impact analysis of 30 farmers in Kitui County
 - 4 representatives for each sub-county
 - 70% is involved in farming group and train other farmers
 - 27 practice road water harvesting

4. What do farmers do themselves?

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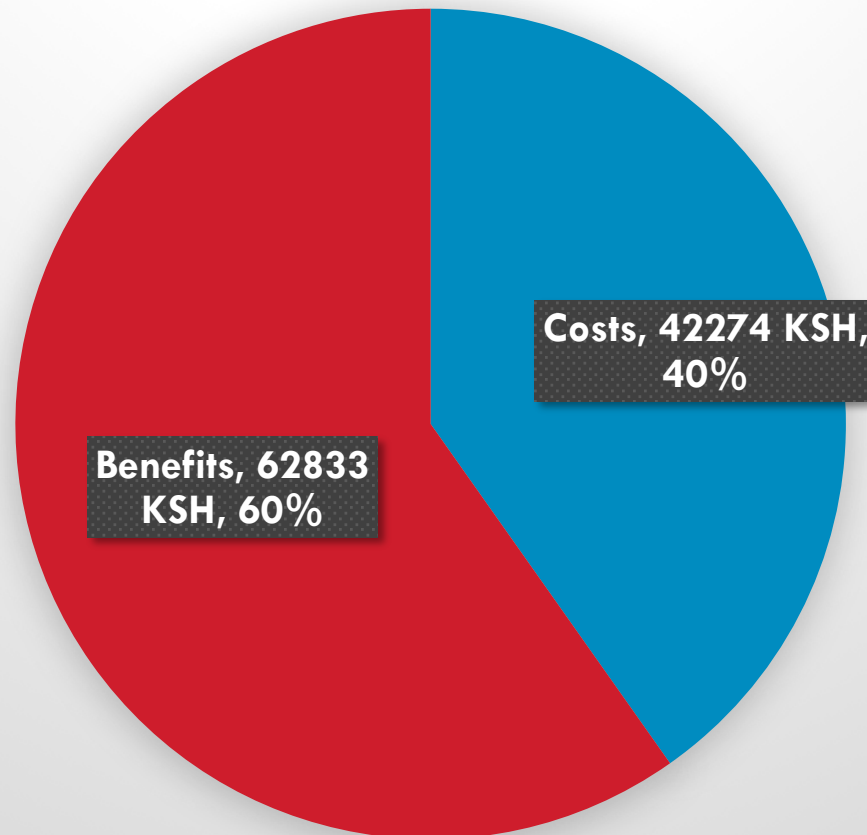
- Average increase of farmers income
 - = Yields after RWH – yields before RWH
 - From 1 cropping season

	Examples of farmers	Average increase of farmers income (KSH)	Average Construction Cost Per Farmer (KSH)	Average benefit Per Farmer (KSH)
	Average (over 27 farmers)	105.107	42.274	62.833
		= 1051 USD	= 423 USD	= 628 USD
Benefit				62.833 KSH

4. What do farmers do themselves?

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The costs of construction compared with the return on investment after 1 growing season.



4. What do farmers do themselves?

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Asante Sana
Shukran
Amesegenaluh
Nimuvea muno
Yekanyelay
Bedankt
Thank you

Contact us:

Lbosma@metameta.nl

Tkioko@metamet.nl

More information: www.roadsforwater.org