

# FOOD AND BUSINESS APPLIED RESEARCH FUND (ARF)

## Rainwater harvesting from roads for indigenous pasture production and improved rural livelihoods in semi-arid Kitui, Kenya (ROFIP)

### Consortium Members

Dr. Kevin Z Mganga<sup>1,2</sup>; Dr. Aphaxard N. Ndathi<sup>2</sup>; Dr. Frank van Steenberg<sup>3</sup>; Dr. Cecilia Borgia<sup>3</sup>; Roy Hoven<sup>3</sup>; Lenneke Knoop<sup>3</sup>; Luwieke Bosma<sup>3</sup>

<sup>1</sup> Rise Against Poverty, Kenya

<sup>2</sup> South Eastern Kenya University, Kenya

<sup>3</sup> MetaMeta, Netherlands

### Project description

The overall aim of this project is to determine the potential of rainwater harvesting using roads as a catchment for improved indigenous pasture production and rehabilitation of degraded drylands in Kenya. It is envisaged that increased pasture production will generate additional income and improve rural livelihoods of pastoral communities through sale of surplus milk, hay and grass seeds. Furthermore, increased milk production and animal weight gains as a result of increased and reliable source of feed will offer a reliable source of a balanced diet thus contribute immensely to improved human nutrition.

### Progress

- Stakeholders meetings and ROFIP Workshop – several consultation meetings and workshop between the consortium members and stakeholders.
- On-farm trainings – farmers, research assistants, women/youth groups, local county government staff trainings on indigenous pasture establishment and rainwater harvesting from roads.
- Pasture sites – five (5) sites selected and pasture established in semi-arid Kitui County, Kenya.
- Monitoring and Evaluation – plant morphometric estimates (biomass, nutrient content, seed yields).
- Ecological monitoring – soil moisture, climatic variables especially rainfall.
- Construction of sheep pens for animal feeding trials

### Dorper sheep feeding trials



Two doctorate candidates (male and female) have been identified to carry out animal (Dorper sheep) feeding trials during the project period. Their topics are as listed below:

1. Influence of Enzyme Technology on Animal Performance and Production in South Eastern Kenya Rangelands – Silvestre Mutavi (SEKU)
2. Evaluating the Chemical Composition, Feed Intake and Rumen Digesta Kinetics of Indigenous Grasses – Susan Nguku (Kitui County Government)

### Opportunities and challenges

Indigenous pasture production is an innovative gateway to supplying enough forage for livestock in the drylands. Consequently, this will contribute to a healthier community from milk-based diets and increased incomes. Moreover, reseeded drylands will protect the environment e.g. through soil erosion control. Established pastures will also contribute to combating desertification and climate change mitigation through carbon, C, sequestration.

Climate variability and change especially in drylands poses the greatest challenge to rainfed pasture establishment.

