

Enhancing Water Access and Food Security for Poverty Reduction and Peaceful Coexistence in Loitokitok District, Kenya



Figure 1—Drilled borehole cased and ready for equipping

AGENCY: Agency for Cooperation and Research in Development (ACORD)

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Introduction

The above project was undertaken in Enkusero Enkiteng' village which is located within Kuku group ranch in Loitokitok District, Kajiado County. The area is categorised as arid and semi arid. Its inhabitants are predominantly Maasai pastoralists who depend on livestock for their livelihood. Water and pasture are key resources in ensuring the sustainability of their livelihood. Unique to the area is that the residents are also agro-pastoralists. Thus, the project which aimed at reducing water stress while promoting alternative sources of income and livelihood was very critical. Key components of the project were:

- Borehole Drilling
- Construction of borehole infrastructure
- Borehole equipping
- Election and training of water management committee
- Enhancing rainwater harvesting in schools
- Management of resource (water and pastures) based conflict among target communities
- Facilitating skills training on beekeeping targeting Maasai women.
- Tree planting around the borehole site

The activities planned under this grant have been implemented. However, a small part funded by a French organisation known as '*Breizh Solidarité Maasai*' (BSM) encompassing equipping of the borehole is yet to be implemented.

1.1 Borehole drilling.

The team engaged the community to share the projects intention and get their support and ownership of the project. Having gone through several community sensitization meetings whose major output was securing a written consent for setting aside land for water development, legal requirements were met and permission for drilling the borehole was given, various impact and environmental impact assessments were conducted to meet the government's legal requirements in-line with drilling of boreholes.

Our local partner the Neighbours Initiative Alliance (NIA) in consultation with the District Water Office developed a bill of quantities for the drilling works. The driller was sought through a competitive bidding process in which NIA, ACORD and the Loitokitok District Water Officer participated and awarded the tender for the drilling of Enkusero Enkiteng borehole to Waterman Drilling Africa. The drilling is now complete and construction of borehole infrastructure is nearing completion for community usage.

Having completed the drilling and struck the water we had to ensure the water struck was safe and clean for human consumption and therefore water samples were collected and submitted to government agency for analysis. The analysis indicated the water was fit for human consumption and therefore paved way for construction of the water infrastructure.

1.2 Construction of Borehole Infrastructure

NIA and the Loitokitok District Water office developed the bill of quantities for the construction of borehole infrastructure for Enkusero. The Civil works whose bills of quantities were developed and which were tendered included:

- Masonry water tank of capacity 50m³
- Cattle trough
- Communal water point
- Sanitation facilities consisting of pit latrines and bathing cubicles for both men and women
- Pump house

For the above items, engineering drawings were provided and artistic impressions were given for the items where appropriate.



Left - the contractor and a local resident (a young Maasai Moran) inspecting the cattle trough and water tank under construction.

1.3 Borehole Equipping

Enkusero Enkiteng Community water project is being funded partly by BSM for the reasons explained in Section 2 (below). Apart from co-funding of the project BSM are also providing technical support

through secondment of a hydrogeologist. The hydrogeologist has been helpful in reviewing the environmental impact assessment report and geological report.

The component being co-funded by BSM is the equipping of the borehole.

This involves supply and installation of:

- Generator set
- Submersible pump
- Control panel
- All wiring accessories including borehole pipes.

A bill of quantity has been developed and shared with the District Water Officer Loitokitok for review. This will eventually be shared with suppliers in a competitive process.

1.4 Election and Training of Water Management Committee

During community sensitization meetings, the community elected members whom they proposed to be the borehole committee members. A total of eleven members were elected. NIA organized training for the elected water committee members. The trainers were drawn from NIA, Ministry of Water and Ministry of Gender and Social Services.

Some of the sectors learnt included group dynamics, borehole operation and maintenance, book keeping among others.

Sustainability was the major aim of this training and as a result the members have registered with the ministry of social services and are already operating an account they opened after the training as a cost recovery mechanism for the community to ensure sustainability. The committee is also involved in supervising the ongoing construction works on a daily basis.

1.5 Enhancing Rain Water Harvesting in Schools.

After assessment and review the team realised that most schools had some initiatives on water harvesting but they were incomplete and there was a consensus to support the schools to complete the initiatives, two schools were selected. The schools targeted for this intervention were Olkaria and Shokut primary schools, both benefited from 10 cubic metre tanks.

Shokut is next to a murrum road which is busy. The road connects Kuku and Loitokitok. The area being very dusty means during the dry season the roof is usually covered with dust which can amount to a health risk for the pupils and teachers. The school has a pipeline whose flow is not consistent. They have a tap which serves the main school and a 3000 Litre tank serving the ECD nearby. The school has benefited from the 10 cubic meter tank and for their contribution, erected a platform for the same.

The second school, Olkaria, has a new building suitable for rain water harvesting. It also has piped water whose flow is not consistent hence the need for storage tank. This school has benefited from the 10 cubic meter tank and guttering for the newly constructed building.

1.6 Management of resource (water and pastures) based conflict among target communities

The team targeted and engaged key opinion leaders from the pastoral and crop farmers, for community meetings and areas of discussions were to foster peaceful coexistence within the community this is due to continued conflict between the pastoralists and the crop farmers. The community agreed to set aside key areas for grazing and watering to ensure livestock do not stray into areas with crops. Various community meetings preached mutual respect and understanding among communities.

1.7 Facilitating skills training on beekeeping targeting Maasai women

NIA has been facilitating this process. With the help of the District Livestock Office in Loitokitok, a women's group was identified and targeted for training. The training captured aspects of bee keeping including value addition for honey and milk.



Consequently, 20 bee hives were purchased from African Bee Keepers limited through a competitive process and given to the women's group.

Beekeeping is an alternative livelihood among the pastoral communities, however despite the day to day rearing of the bees, the communities have not considered it in the perspective of key income generation for the community. In this regard, six bee keeping groups were trained on value chains and how they can improve their income from honey and wax. This initiative aimed at helping the community targeting the women to be able to diversify their livelihoods and consider other sources of income in addition to the livestock.

The training revolved around how to conduct market mapping, understanding market trends and competitiveness, access to market, understand group growth, their potential and managing group dynamics. From the trainings the groups were in agreement that for them to scale high they needed to implement a number of learnt skills among them: identifying a central collection point for the honey & wax from group members. This suggestion aimed at ensuring that these groups are able to gain a footing and increase bargaining power since they will be able to market in bulk as opposed to individuals marketing individually. The groups that benefited from the training include: Maparasha Environment Group, Inkitoip Women Group, Inkisaruni Women Group, OloshoLoltinga women Group, Inkidotu Women Group, Dupotoee-maa Women Group.

1.8 Tree Planting around the borehole site.

This activity was deferred until after borehole equipping to ensure the trees are able to be watered when water is available. The water management committee has captured this and other activities i.e. crop production for revenue generation in their plans.

2.0: Challenge Encountered

The project was approved at a time when the country was recovering from the hard hit drought which ravaged East and Horn of Africa Kenya being part of the affected countries. The most affected areas were Upper Eastern and Northern Kenya, this resulted to a slowed economy and subsequently a weakened Kenyan shilling against other internationally recognised currencies. Linked to the above statement, the project faced challenges which resulted to delayed implementation and therefore resulted to a prolonged period of implementation, beyond the planned duration. Some of the major challenges that were encountered included:

2.1 Inflation: The major setback faced by the project was weakening of the Kenya shilling against the internationally recognised currencies in the international market and this resulted in financial loss due to the high rates of exchange and secondly, due to high inflation rate the local service providers increased the charges to be able to meet their costs accordingly. This hindered the successful completion of what the project intended to accomplish in the community within the stipulated timelines because it meant re-costing all the items/budget-lines which were to be given by a service provider, the most affected budget line was borehole drilling, construction of its infrastructure and equipping with generator set for community to access water. After further cost analysis,

while appreciating the implications of inflation, it was concluded that there was a deficit of around 10,000 Euros (around £8,500) towards a fully complete and operational borehole.

The team therefore delayed launching this component of the project until sufficient funds were secured.

2.2 Sourcing Co-Financing: The team (ACORD and partner) agreed to first engage in prospecting on a possible donor who would step-in and co-fund the Enkusero Enketing project to see it through to completion, opting to have their last resort as approaching GOAC for additional funds to complete the project. The team was successful and managed to get a buy-in from a French organisation known as '*Breizh Solidarité Maasai*' (BSM) who had been working with ACORD's partner in Kajiado supporting the course of increasing access to water for the maasai Community. BSM committed to support the project with 10,000 Euros to ensure the project was successful. With the commitment, the team rolled-out the drilling procurement process and a tender was awarded to the successful contractor, however, before the contractor could mobilise his machinery to the site of the borehole, the project was faced by yet another major challenge, another borehole water analysis result indicating a salty borehole, near Enkusero borehole.

2.3 Inchakita Borehole water analysis results-a challenge: Both Enkusero and Inchakita areas are in Loitoktok District and more importantly they border each other, BSM had funded a borehole to be drilled in Inchakita but after the borehole had been drilled, the water analysis indicated the borehole was saline/ over mineralised and therefore not fit for human consumption. This made the Enkusero process stall as the team wanted to minimise any risk of striking another saline borehole. With the help of BSM, the team re-deployed an independent hydro-geologist to analyse the hydro-geological surveys for both Enkusero and Inchakita and give findings on any possible geological similarities which may point to same results as Inchakita. When the report was completed, the independent geologist recommended that the topography of the two areas was slightly different and therefore different results would be possible. This report gave the team the confidence to mobilise the contractor to sink the borehole. Therefore the previous experience with the Inchakita Borehole also to a great extent delayed the decision making process of during the Enkusero borehole for fear that the water might also be equally saline.

2.4 Rainy season: The above challenges were compounded with the complexity of the rainy season which was experienced. This is because during the rainy season no drilling or construction works can be undertaken whatsoever as the machines are heavy and the soils are loose hence can result to the collapse of the borehole and no construction because rains would compromise the quality of construction being undertaken and for this reason, any borehole work had to stop during the rainy season for quality assurance and for the safety of the community and the environment as a whole.

With all the above challenges the time anticipated to accomplish the Enkusero Enketing water project was no longer realistic.

2.5 Financial Report

ACORD received £40,000 from GOAC for the implementation of this project. All funds were fully spent during the reporting period as demonstrated in the financial report below.

Description	Budget	Actual
	£	£
Income	40,000	40,000
Expenditure		
Drilling & Equipping borehole	30,254	32,864
Rain water harvesting in Schools (Guttering & Plastic water tanks)	3,840	2,368
Peace building Community Meetings	400	189
Langstroth beehives	2,400	2,251
Skills training on beekeeping	150	137
Tree planting at borehole area	500	0
Project monitoring & supervision costs	756	728
Livestock officer	700	615
Vehicle running costs	900	900
Communication	100	94
TOTAL PROJECT COST	40,000	40,145

3.0. Conclusion

Apart from the equipping and tree planting which is still pending, all the other activities were implemented well and are contributing to diversification of livelihoods and improving access to clean drinking water for vulnerable communities in Loitokitoki district. Once the BSM component of the project is completed (equipping the borehole) access to clean drinking water for both human and livestock consumption will be significantly improved for the target community with related health outcomes.

Despite the challenges and unavoidable delay the communities are very appreciative of the project which took the necessary time to ensure that the borehole would produce good quality water fit for human consumption. The project was extremely owned by the community, they understood the challenges that were faced through the process which to a great extent only cemented the community ownerships and appreciation of drilling the boreholes.

Annex 1 - photos



Figure 2 Water Tank nearing completion



Figure 3 Cattle trough in the foreground and Tank in the Background



Figure 4 Sanitation Facilities under Construction (these are part of equipping the borehole to facilitate the communities as they use the boreholes and bring the animals to take water.)



Figure 5 Toilets and Bathrooms under construction



Figure 6 Pump House under Construction