

Improvement of Water Supply and Hygiene in Drought Prone Areas in Kenya

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The results of the evaluation and the report are the sole responsibility of the evaluator and can in no way be taken to reflect the views of Welthungerhilfe.

Cologne, Nairobi, June 2015

List of abbreviations and acronyms

ASAL(s)	Arid and semi-arid land(s)
BMZ	Federal Ministry for Economic Cooperation and Development
CFW	Cash for Work
CHAST	Child Hygiene and Sanitation Training
CPA(s)	Community project attendant(s)
DAC	Development Assistance Committee
DeGEval	Gesellschaft für Evaluation e.V.
DSG	District Steering Group
DWO	District Water Office
ECOSAN	Ecological Sanitation
GDP	Gross Domestic Product
GoK	Government of Kenya
HDI	Human Development Index
HH	Household
HoP	Head of project
HQ	Headquarters
KAP	Knowledge Attitude and Practice
KES	Kenya Shilling
lpcd	litres per capita and day
MoH	Ministry of Public Health
MoWI	Ministry of Water and Irrigation
NGO	Non-governmental organisation
O&M	Operation & Maintenance
ODF	Open defecation free
PPM	Project Planning Matrix
CO	Welthungerhilfe Country Office Nairobi
RWH	Rain Water Harvesting
TFC	Total faecal coliform
TG	Target group
ToR	Terms of Reference
VIP	Ventilated Improved Pit
WASH	Water, Sanitation and Hygiene
WHH	Welthungerhilfe / German Agro Action
WHO	World Health Organization
WSB	Water Service Board
WSP	Water Service Providers

1. Brief description of the project and framework conditions

The BMZ funded project *“Improvement of Water Supply and Hygiene in Drought Prone Areas in Kenya”* is a community led program for communities affected by extended dry spells and recurring droughts in the counties of Kajiado, Makueni and Kitui. The program located in the water, sanitation and hygiene (WASH) sector aims at improving water availability through enhanced rain water harvesting (RWH) and storage to bridge dry season drinking water gaps and to mitigate the over use of alternative water sources especially in dry periods. The project initially targeted around 60.000¹ individuals in the three counties and the implementation is being carried out between August 1st 2012 and July 31st 2015 with an allocated budget of € 2.200.000,00².

2. Relevance

The effects of the severe drought in 2011 and the extended dry spells in the following years have shown the low resilience of local communities in the Eastern Province of Kenya.

With less water available for use as well as the high concentration of people and livestock at water points, hygiene standards also deteriorate.

Despite the fact that in many areas the 2011 drought situation eased due to some rainfall, resilience towards future droughts and water scarcity remains low and insufficient.

Hence, the interventions under KEN 1100 aiming at improving the resilience of drought prone rural communities through water, sanitation and hygiene initiatives are expected to reduce the populations’ vulnerability to future shocks.

3. Effectiveness

Welthungerhilfe maintains good relationship with all relevant line agencies in the country such as the Ministry of Water and Irrigation (MoWI) under which the Water Service Boards (WSB) on the regional level, the Water Service Providers (WSP) and the District Water Officer (DWO) on the local level are operating. The selection of the target group, actors and context was based on broad experience working in the region. The early involvement of the local leaders such as provincial and local administrations (e.g. chiefs of the different locations) as well as community elders safeguarded the acceptance and the active participation of the communities.

A logical framework was developed with all the necessary information. The goal or purpose of the project was described adequately. But a major concern is the development of indicators against which the achievement of the results is to be assessed: The indicators provided are more outputs against which an achievement of the results (better described as objectives) cannot be assessed. It is advisable to plan for refresher trainings on the development of a comprehensive project planning matrix and the development of meaningful indicators.

The staffs have close and longstanding experience with the target groups from previous projects and hence have credit of trust in the communities.

¹ Number as specified in the project proposal

² A budget amendment was approved in July 2013 adding another € 220.000

The financial administration is transparent and the liquidity planning tool allows for a timely monitoring of the financial resources. Project steering was supported by monitoring and evaluation sheets as well as operation plans to track the achievement of activities and the set milestones.

The targeted communities were all actively involved in the project execution, either in supplying local material or unskilled labour.

Potential risks jeopardising the project implementation were assessed to be minor.

4. Efficiency

After the budget amendment, the project aimed at supporting ~72.000 individuals. With total costs of 2,216,000 (30.05.2015) this results in costs per beneficiary of ~€ 31 (at the time of the evaluation).

Around 27% of the budget was allocated directly to the beneficiaries (WASH infrastructure, Greenhouses and trainings) whereas 43 % of the budget was allocated for personnel costs.

Welthungerhilfe uses various instruments for an efficient project monitoring and steering which proved successful as well in earlier projects.

5. Outcomes and impacts

New rock catchments

The rock catchments do not exploit the technically feasible potential in terms storing the run-off water from the catchments. In terms of figures more storage capacity would be required to collect the total runoff from the catchment area. Although no quantitative indicators on the potential improvement of the water supply situation of target group were given in the Logframe, the rock catchments contribute to an improvement of the water availability during dry seasons. Given the large number of beneficiaries, in the case of a rock catchment these are the families living in its vicinity, the rock catchments can only complement the traditional water supply for these families. Welthungerhilfe has to be very clear on the fact that the rock catchments neither provide a safe water supply for such large target groups throughout a dry season nor a drought.

The design of the 225m³ tanks needs a critical review since some of the newly constructed tanks are leaking in the lower third of the height. Taking into account the high expenses for the tanks, in Kajiado they account for around 70% and in Ukambani more than 40% of the total costs of a rock catchment, the money to commission a structural calculation would be well invested.

Roof catchments

The existence of a standard design and experiences from previous projects on the construction of the 50m³ storage tanks resulted in a good quality work. Although the majority of schools know how to maintain the system well; it is advisable to conduct refresher trainings for those schools lacking knowledge on O&M and M&O need to be conducted.

Welthungerhilfe should promote the roof catchments as a complete system to which a functional roof belongs to. Setting up a roof catchment system should always incorporate a budget for rehabilitating the roofs to safeguard the capital investment for the water storage tank and hence safeguarding the sustainability of the whole system.

VIP & ECOSAN latrines

Different designs for the VIP latrines were introduced in Kajiado and Ukambani. Since the use of toilets is a delicate issue among the pastoralists communities in Kajiado, one decided not to introduce the rather new design of the snail shaped door less latrines, but rather stay with a traditional design to which the people might be more familiar with. Technical drawings, produced by the engineer of Welthungerhilfe, served as a basis for the artisans. The drawings are not comprehensive and left too much scope for interpretation by the artisan. This resulted in different quality of the construction work. The large number of project sites posed a challenge for the project staffs to supervise the workmanship as often as they should have. Welthungerhilfe has to find ways to support the field officers, who are predominantly not technicians, in their duties on supervising the workmanship.

5 ECOSAN latrines were constructed in the 'Ukambani part' of the project. It can be anticipated that the systems will perform well, since the teachers interviewed accepted the pilot latrines and understood the functioning well. Welthungerhilfe has to monitor the medium- to long-term performance of these latrines and the operation and management by the schools.

Greenhouses & dry land agriculture

Greenhouse farming is a new approach to farmers in Kajiado and Ukambani where rain-fed agriculture is traditionally practiced. With the greenhouses the farmers are able to plant vegetables which are usually not cultivated in the area and hence supplement their nutrition and sell the surplus produce on the local markets. In the project design, a defined clear roll-out strategy was missing.

Also dry land farming practices are new to the farmers in the project area. According to the farmers, they lack information where to purchase the right seeds for drought resistant crops.

Although the provision of seeds to families was accompanied with information and training on dry land farming techniques, there still is uncertainty whether the farmers are willing to invest a higher price for certified seeds when those of lower quality are available as well. For a further roll out of the dry land farming Welthungerhilfe has to enhance their information and training events for the target groups jointly with the local representative of the Ministry of Agriculture which is taking initiative in the same direction.

6. Sustainability

Rock catchments

The "older" rock catchments, implemented in previous projects are still functioning and being used by the communities and the same can be expected for the new rock catchments under KEN 1100. Against the background of population growth the systems are designed to cater for extension. Water tariff systems are in place and communities plan to use the revenues for additional income generating activities and maintenance. Although the communities are aware that the systems require ongoing maintenance they would not be able to finance larger rehabilitations, e.g. for leaking tanks or broken pipes. Here a post construction support will be crucial for the sake of functionality over time.

Rain water harvesting has without a doubt a good potential to improve the resilience of drought prone rural communities in the project region. A transparent and meaningful assessment of the number of

people benefitting from the water supply systems and comprehensive water management plans for the dry season, are crucial for an appropriate service delivery over time.

Rock catchments have to be understood as supplementary water sources, which cannot deliver safe water throughout the dry seasons to all of the targeted HH.

Roof catchments

The RWH systems function and the schools are using them intensively. The weak point of the systems are the roofs. The roofs have to be considered a part of the whole system and Welthungerhilfe has to promote it as such.

Most of the schools do not have any financial contingency reserves to cover maintenance and repair costs, which is a threat to the functionality and hence the sustainability of the systems. Each school receive 5KES per pupil and year for water supply by the government, which is by far not enough to cover repairs at the system and makes it even challenging to replace parts prone to wear and tear such as taps. Especially the repair of tanks would require external post construction support since the schools would be overwhelmed with the rehabilitation costs.

VIP latrines

Despite the shortcomings in the quality of the latrine construction they can be used for their intended purpose. According to the calculations the latrines can be used for a minimum time of around 3 years before filling up to the maximum, with unchanged pupils' enrolment. The schools do not know how to proceed with full latrines. There is no exhausting service available to the rural settings where the schools are located. Therefore the latrines will be abandoned after they have filled up.

Some schools struggle to properly maintain the latrines. Broken vent pipes were observed which could not be replaced by the school due to a lack of knowledge and financial means.

7. Most important recommendations

The most important recommendations are:

1. Conduct trainings on the development of SMART indicators and a comprehensive logical framework matrix.
2. Provide more training to artisans prior to and during the construction of latrines.
3. Commission a structural analysis for the 225m³ water storage tanks.
4. Promote the Welthungerhilfe roof catchments system as a complete system where the roof is a crucial part of and convince donors that rehabilitating the roof should be included in the budget.
5. Organise refresher trainings on O&M and M&O for those responsible at the rock catchments and the institutional roof catchments.

6. Be clear on the fact that rainwater harvested at the rock catchments can only supplement other water sources and will not be able to provide water to all beneficiaries throughout the dry season.
7. Develop a clear and comprehensive roll-out strategy for the greenhouse- and dry land farming

8. General conclusions and "Lessons Learnt"

The lessons learnt are:

1. The rainwater collected at a rock catchment can only serve as supplementary waters to drought affected communities. Alternative sources have to be made available to the people for their different water uses.
2. Post construction support is necessary when it comes to major rehabilitation works and refresher trainings on O&M, M&O.
3. Incomplete technical drawings and a low understanding of construction specification by the artisans lead to a lower implementation quality of the latrines.
4. Greenhouse farming would need more sensitisation and information and a clear roll-out strategy.
5. The Kenyan Water law does not identify community based groups as regular water service providers and therefore they remain operating as a community initiative.

