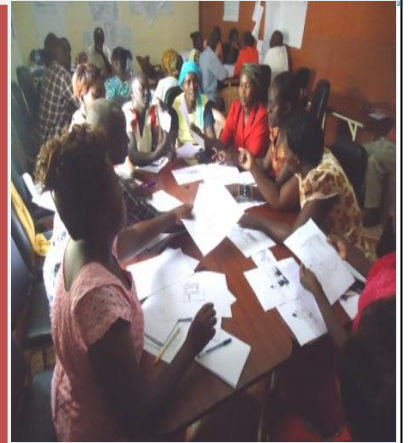


KUJENGA MAISHA EAST AFRICA-KUMEA

EASTERN KENYA WATER & SANITATION IMPROVEMENT PROJECT -EKEWASIP (Makueni & Kitui Counties)

PROJECT COMPLETION REPORT

“Improving access to safe water, hygiene and sanitation for improved quality of life”



Aug.2016



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ABBREVIATIONS

CHAST-Children Hygiene and Sanitation Transformation

CLTS-Community Led Total Sanitation

KUMEA-Kujenga Miasha East Africa

MDG-Millennium Development Goals

SARAR-Self esteem, Associative Strength, Resourcefulness, Action Planning and Responsibility for follow-up

SANPLAT-Sanitation Plat form

SODIS-Solar Disinfection of Water

VIP-Ventilated Improved Pit latrine

WSMC-Water and Sanitation Management Committee

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We are looking forward to having another opportunity to renew these acquaintances, and hopefully participate in similar assignments in the near future.

Be blessed richly.

Peter Okaka-Project Coordinator/Consultant

1.0 EXECUTIVE SUMMARY

The Eastern Kenya Water and sanitation Improvement project has been under implementation for the last one year as from May, 2015 and expected to end in September, 2016 implemented by Kujenga Maisha East Africa (KUMEA). The project covers Makueni and Kitui Counties of South Eastern region of Kenya.

The project aims at Improve the health status of the residents of Makueni and Kitui Counties respectively by facilitating improved community access, management and utilization of clean drinking water sources, sanitation and hygiene promotion. The project intended to avail water and sanitation facilities to schools and communities. The project implementation process is meant to enhance participatory approaches in project planning and capacity building. Implementation of school health was based Child to child methodology while community management approaches was based Self-esteem, Associative strength, Resourcefulness, Action planning and Responsibility for Follow-up concept (SARAR).

Participatory Monitoring and Evaluation process was initiated to enhance benchmarking project indicators to measure changes in people's lives including quarterly reviews and reports to assess implementation progress in communities and schools.

The choice of technology for the project's water supply implementation has been roof catchment tanks for schools and hand dug wells for the villages. For sanitation, the technology applied was Ventilated Improved Pit latrines (VIP) for school and promotion of SANPLAT as low cost appropriate sanitation technology for household sanitation improvements at village level. Capacity building and the training components of the project included on-site and workshops, follow-ups, demonstrations which have enabled the communities to operate, maintain and manage the installed facilities, collaborate with other stakeholders to facilitate sustainability and replication.

The Project has performed very well in achieving over 100% of the construction targets for water and sanitation facilities in both counties. Capacity building has been carried out for community hygiene and sanitation promoters, School health coordinators, Head teachers and Education officers, water and sanitation management committees. There has been improved capacity for needs prioritization by community members, improved personal hygiene among school children, improved access to safe water close to communities, reduced conflicts for water use and access, reduced time for fetching water enhanced community participation for household sanitation improvements, reduction of water and sanitation related diseases, evidence of behavior change and improved socio-economic base.

In conclusion, the Eastern Water and Sanitation improvement project has achieved its objectives by maximizing respective contributions from all the parties. Sanitation was given a higher priority than water hence the replications of household sanitation facilities which will ensure hygiene and sanitation transformation at village level. The project has provided assistance to 15 villages (9 in Makueni and 6 in Kitui counties respectively) and 33 schools (17 in Makueni and 16 in Kitui counties respectively). 27no. 2door VIP latrines have been completed in 12schools in Makueni County. 32 no. 2door VIP latrines have been completed in 16schools in Kitui County. 14no. 20,000litres Ferro-cement tanks have been constructed in 11 schools in Makueni County. 7No. 20,000litres Ferro-cement tanks have been constructed in 7 schools of Kitui County. 14 hand dug wells have been completed and 1hand dug well is under construction (8 in Makueni and 6 in Kitui counties respectively with 1 under construction in Makueni County).

2.0 INTRODUCTION

2.1 Background of the Project

Eastern Kenya Water and Sanitation Improvement was initiated in May, 2015 with funding from [Help Hilfe Zur Selbsthilfe](#) and [NAK-Karitativ](#) of Germany after approval of the water and sanitation proposal. The project has been working in 2 counties of Makueni and Kitui respectively. The project aims to improve the health of residents of the two counties through provision of safe water sources, improved sanitation and hygiene promotion through partnership with various county institutions and involvement of communities. Funding of the project is expected to end in September, 2016.

2.2 Water and Sanitation program

The water and sanitation project envisioned to address the Millennium Development Goals (MDG's) of reducing by half the people without water through sustainable access to safe drinking water and basic sanitation by 2016. The project has enhanced economic viability for women and improved quality of life through time reduced for fetching water and reduction in diarrheal diseases.

2.3 Final Goal

To improve the health status of the residents of Makueni and Kitui Counties by facilitating improved community access, management and utilization of clean drinking water sources, sanitation and hygiene promotion.

2.4 Intermediate Goals

- 1) Improve community access, management and utilization of safe drinking water sources
- 2) Improve household access to and management and utilization of safe excreta disposal.
- 3) Improve household utilization of personal and domestic hygiene practices related to the reduction of diarrheal diseases.
- 4) Effective collaboration with County Institutions and other agencies involved in primary health care activities within the water/sanitation/hygiene sector for improved coordination and sustainability of water sector activities and benefits.

2.5 Key Project Strategies Applied

- a) Integrated Project for Improving Water, Sanitation and Domestic Hygiene and Home Management of Childhood Diarrheal Diseases
- b) Full Community Participation in All Project Activities
- c) Community Implementation of All Community Level Activities
- d) Utilization of Community Participatory Methodologies

- e) Use of Locally Appropriate, Environmentally Safe Technology
- f) Gender Fairness
- g) Targeting Children
- h) Partnership with County Institutions

3.0 THE PROJECT IMPLEMENTATION PERFORMANCE

3.1 THE PROJECT COMPONENTS

The Eastern Kenya water and sanitation improvement project had 5 key components. These are: Hygiene and Sanitation promotion in schools and villages, Construction of water points in schools and villages, Sanitation improvements in schools and households, Community capacity building and liaison and partnership with County institutions.

3.1.1 Construction

This component involved construction of Ferro-cement water tanks, shallow wells, and Ventilated Improved Pit Latrines (VIP) and San-plats-Household latrines. Table below provides progress of construction activities;

Table 3.1.1a .Construction progress in the different Project areas

| TYPE OF WATER & SANITATION SYSTEM | PROJECT AREA | PLANNED | ACHIEVED | UNDER CONSTRUCTION | % ACHIEVED |
|-----------------------------------|------------------------------------|------------------|------------|--------------------|------------------|
| SHALLOW WELLS | MAKUENI COUNTY | 6 | 8 | 1 | Over 100% |
| | KITUI COUNTY | 6 | 6 | 0 | 100% |
| | TOTALS | 12 | 14 | 1 | 108% |
| FERRO-CEMENT WATER TANKS | MAKUENI COUNTY | 6 | 14 | | Over 100% |
| | KITUI COUNTY | 6 | 6 | 1 | 100% |
| | TOTALS | 12 | 20 | 1 | Over 100% |
| VIP LATRINES | MAKUENI COUNTY | 6 | 27 | 0 | Over 100% |
| | KITUI COUNTY | 6 | 32 | 0 | Over 100% |
| | TOTALS | 12 | 59 | 0 | Over 100% |
| SANPLATS | MAKUENI COUNTY | 60 | 70 | | Over 100% |
| | KITUI COUNTY | 45 | 50 | | Over 100% |
| | TOTALS | 105 | 120 | | Over 100% |
| | OVERALL TOTALS & RATING | Over 100% | | | |

Table 3.1.1b Summary of village sanitation implementation for households

| Project Area | Villages | Target | Achieved | % |
|--------------|---------------|-----------|-----------|------|
| MAKUENI | Katulani | 15 | 15 | 100% |
| | Ndivuni | 15 | 20 | 133% |
| | Kamunyiri | 15 | 20 | 133% |
| | Katangini | 15 | 15 | 100% |
| | TOTALS | 60 | 70 | |
| KITUYI | Kwa Amutei | 15 | 20 | 133% |
| | Kanguli | 15 | 15 | 100% |
| | Mutulini | 15 | 15 | 100% |
| | TOTALS | 45 | 50 | |

Table 3.1.3 Implementation Progress for Schools in Makueni County

| NAME OF SCHOOL | NO. OF VIP LATRINES CONSTRUCTED | NO. OF FERRO- CEMENT TANKS (20,000 Litres) CONSTRUCTED | POPULATION | | | |
|-------------------------------|---------------------------------------|--|-------------|-------------|------------|-------------|
| | | | BOYS | GIRLS | TEACHERS | TOTALS |
| 1. Mbeetwani primary school | 2No.2Door | 1No. | 164 | 167 | 11 | 342 |
| 2. Kambu primary school | 4No.2Door | 3No. | 362 | 325 | 24 | 711 |
| 3. Matulani Secondary School | | 1No. | 90 | 120 | 12 | 222 |
| 4. Nzoila Secondary school | | 1No. | 44 | 47 | 8 | 99 |
| 5. Kalulini primary school | 2No.2Door | 2No. | 349 | 321 | 18 | 688 |
| 6. Thamba-Aume primary school | 2No.2Door | 1No. | 166 | 148 | 12 | 326 |
| 7. Yikivala primary school | 4No.2Door | | 192 | 225 | 12 | 429 |
| 8. Nthongoni secondary school | | 1No. | 71 | 51 | 4 | 126 |
| 9. Katulani primary school | 2No.2Door | | 252 | 229 | 10 | 495 |
| 10. Syumile primary school | 2No.2Door | | 153 | 165 | 10 | 328 |
| 11. Makasa primary school | | 1No. | 60 | 57 | 12 | 129 |
| 12. Mweini Secondary school | 2No.2Door | 1No. | 152 | 129 | 14 | 295 |
| 13. Itiani primary school | 2No.2Door | | 205 | 201 | 13 | 419 |
| 14. Mii primary school | 2No.2Door | | 300 | 249 | 17 | 566 |
| 15. Vololo primary school | 2No.2Door | | 162 | 137 | 11 | 310 |
| 16. Mii secondary school | | 1No. | 61 | 84 | 8 | 153 |
| 17. Kyaani Primary school | 1No.2Door | 1No. | 122 | 114 | 14 | 246 |
| Totals | 27No.2Door | 14No. | 2905 | 2769 | 210 | 5884 |

Table 3.1.4 Implementation Progress for Schools in Kitui County

| NAME OF SCHOOL | NO. OF VIP LATRINES CONSTRUCTED | NO. OF FERRO-CEMENT TANKS (20,000 Litres) CONSTRUCTED | POPULATION | | | |
|-----------------------------------|---------------------------------|--|-------------|-------------|------------|-------------|
| | | | BOYS | GIRLS | TEACHERS | TOTALS |
| 1. Zombe primary school | 2No.2Door | 1No. | 245 | 250 | 13 | 508 |
| 2. Kwa-Amutei primary school | 3No.2Door | 1No. | 160 | 150 | 10 | 320 |
| 3. Kavaani primary school | 2No.2Door | 1No. | 93 | 112 | 8 | 213 |
| 4. Hon. Kiema Primary school | 1No.2Door | 1No. | 99 | 96 | 8 | 202 |
| 5. Mangola primary school | 1No.2Door | 1No. | 101 | 88 | 11 | 200 |
| 6. Kanguli primary school | 1No.2Door | 1No. | 49 | 41 | 7 | 97 |
| 7. Itiko primary school | 2No.2Door | | 199 | 186 | 11 | 396 |
| 8. Itiko Secondary school | 2No.2Door | | 112 | 138 | 15 | 265 |
| 9. Malatani primary school | 4No.2Door | | 134 | 135 | 12 | 281 |
| 10. Mutuluni primary school | 2No.2Door | 1No. | 105 | 126 | 7 | 238 |
| 11. Kwaombe primary school | 2No.2Door | | 65 | 75 | 5 | 146 |
| 12. Ilamba primary school | 2No.2Door | | 61 | 69 | 5 | 135 |
| 13. Inyuu primary school | 2No.2Door | | 236 | 226 | 11 | 473 |
| 14. Ithangati primary school | 2No.2Door | | 208 | 212 | 18 | 438 |
| 15. Winduma Primary school | 2No.2Door | | 102 | 97 | 9 | 208 |
| 16. Kibwea mixed secondary school | 2No.2Door | | 34 | 42 | 5 | 81 |
| Totals | 32No.2Door | 7No. | 2003 | 2043 | 155 | 4201 |

Table 3.1.4 Accomplished trainings

| Type of training | No. of trainings planned | County | Actual no. of trainings conducted | No. of participants | | | Rate of implementation |
|-------------------------------------|--------------------------|---------|-----------------------------------|---------------------|------------|------------|------------------------|
| | | | | Male | Female | Totals | |
| 1. Leaders Orientation | 2 | Kitui | 1 | 40 | 10 | 50 | 100% |
| | | Makueni | 1 | 30 | 9 | 39 | |
| 2. School health promotion | 2 | Kitui | 1 | 15 | 7 | 22 | 100% |
| | | Makueni | 1 | 16 | 8 | 24 | |
| 3. Community Hygiene & Sanitation | 2 | Kitui | 1 | 20 | 6 | 26 | 100% |
| | | Makueni | 1 | 9 | 14 | 23 | |
| 4. Water & Sanitation Mgt Committee | 2 | Kitui | 1 | 9 | 12 | 21 | 100% |
| | | Makueni | 1 | 12 | 25 | 37 | |
| 5. Pump Attendant training | 2 | Kitui | 1 | 2 | 12 | 14 | 100% |
| | | Makueni | 1 | 2 | 18 | 20 | |
| Totals | 10 | | 10 | 155 | 121 | 272 | |

3.1.5 Analysis of Project sites and beneficiary for various village water points (Shallow wells)

| PROJECT AREA | SITES/VILLAGES | NO.OF HOUSEHOLDS | NO. OF PEOPLE SERVED |
|---------------------|----------------|------------------|----------------------|
| Makueni | 1. Ndivuni | 85 | 850 |
| | 2. Kiso | 60 | 600 |
| | 3. Kamunyiri | 60 | 600 |
| | 4. Katulani | 60 | 600 |
| | 5. Nzouni | 80 | 800 |
| | 6. Syandani | 60 | 600 |
| | 7. Katangini | 100 | 1000 |
| | 8. Kwa Musyoki | 75 | 750 |
| | 9. Bellia | 65 | 650 |
| | Totals | 645 | 6450 |
| Kitui | 1. Kavaani | 80 | 800 |
| | 2. Kwa Amutei | 60 | 600 |
| | 3. Mutuluni | 100 | 1000 |
| | 4. Zombe | 90 | 900 |
| | 5. Kabati | 85 | 850 |
| | 6. Itangani | 100 | 1000 |
| | 7. Malatani | 80 | 800 |
| | Totals | 595 | 5950 |
| GROSS TOTALS | 16No. | 1240 | 12,400 |

Outcomes of the project interventions

a) Hygiene and sanitation promotion at household level

Village hygiene and sanitation promotion was adequately implemented after the training of community resource persons on hygiene and sanitation promotion using the participatory hygiene and sanitation transformation tools (PHAST). The local public health officers participated in the training and planning for hygiene and sanitation implementation. Community Led total sanitation process was adapted by the project in some villages i.e. Kwa Amutei, Mangola and Mutuluni thus scaling up implementation of village sanitation and improved latrine coverage. The basis of hygiene and sanitation promotion facilitated the implementation of village sanitation process in the target villages in each of the project areas.

b) School hygiene and sanitation promotion

Hygiene and sanitation promotion in schools through methods of active learning such as songs, poems and skits have enhanced behavior change and effective use of water and sanitation facilities in schools. Some schools have adapted the process to enhance peer learning to improve academic performance. The project initiated the school hygiene and sanitation promotion to enhance effective use of water and sanitation facilities in schools. All the target schools had their teachers oriented on the process to enhance disease prevention among school children at home and at school levels. All the target schools received water and sanitation facilities to improve school health and promote hygiene.

3.1.3 Training and Capacity building sessions

This focused mainly on the key trainings for Community resource persons at village level and schools for implementation of school hygiene and sanitation activities

- a) Participatory Hygiene and Sanitation Transformation initiative training including community led total sanitation for community hygiene promoters
- b) Child to child training for school hygiene and sanitation implementation in schools-school based on CHAST and child to child methodology including SODIS application
- c) Water and Sanitation management training for 2 project areas-Training based on Self-esteem ,Associative Strength, Resourcefulness ,Action planning and Responsibility for follow ups (SARAR Concept) to enhance community management of water points.
- d) San-plat household sanitation training for 7no.villages(Kwa amutei, Mutuluni and Mangola for Kitui County and Ndivuni, Katangini, Kamunyiri and Katulani for Makueni County
- e) Pump attendants training for care takers of the hand dug wells pumps to equip them with village level operation and maintenance skills for sustainability and effective use of the water points. Participants able to carry out pump repairs on their own and replacement of worn out pump components /parts.

4.0.0 KEY PROJECT IMPACTS

4.1.0 Community Contributions and participation

Community contribution and participation has been an important component in the implementation of the project. Community contributed local materials and unskilled during project implementation. The active participation enabled the project to achieve the desired objectives and even the physical development of facilities. The higher achievements in physical development are attributed to active community participation and contribution which enhances project sustainability and replication. The concept of community participation and contribution was in built in project implementation process.

Table 4.1.1 : Community contribution ratio for Water and Sanitation facilities

| Type of water and sanitation facilities | % Community/school contribution | % Project Support by KUMEA |
|---|---------------------------------|----------------------------|
| 1. Shallow Wells | 30% | 70% |
| 2. School water Tanks for 23 m ³ | 40% | 60 |
| 3. Institutional Sanitation for Schools | 45% | 55% |
| 4. Households Sanitation-San plats | 70% | 30% |

The implementation of the above projects have been successful and cost effective due to the flexibility of using various local available materials for construction of tanks i.e. Rough stones, sand and use of mud/wattle in case of Sanplat latrines.

4.1.2 Ferro-cement Water tanks Construction

The project adapted a standard design of tanks of 23 m³ irrespective of the roof size. Initial project plans indicated construction of 10 m³ tanks but due to the Water needs of schools the project undertook to construct 23 m³ at lower costs due to increased community contributions. The use of local available materials i.e. hardcore, sand and props promotes the replication of water tanks at community level and in some schools i.e. Nzoilla mixed secondary school.

4.1.3 Hand dug/ Shallow wells Construction

All the completed shallow wells have been fitted with Afridev hand pump and have been sited in water occurrence sites. The wells are functional and in good condition. They are serving households by providing adequate water for drinking, watering animals and washing. The hands dug wells have been lined with culvert rings in Makueni County due to unstable soil formation and trapezoidal blocks in Kitui county. Community participated in digging of the wells up to the water level and assisting the artisans in construction of the wells.

4.1.6 Ventilated Improved Pit Latrines (VIP) Construction

Ventilated pit latrines have been implemented for schools to facilitate improved access to sanitation facilities. Initial project design was to construction 1no. 2door latrines for the target schools but the sanitation needs and demands for schools enabled the project to increase to between 2no.2door latrines to 4no. 2door VIP latrines. However the schools made impressive contributions by contributing all the local materials and digging the pit latrines. The bricks contributed by schools were used for lining of the pits from the base due to collapsing soils and construction of the superstructures.

4.1.7 San-plat latrines Construction

The project is promoting household sanitation based on San plat technology. The implementation of the household sanitation has been encouraging. Interested households from identified villages are trained on slab manufacture and construction. Also in the villages the project targets disadvantaged households i.e. the elderly for assistance. 7no. villages were targeted in the project areas (3no. for Kitui County and 4no.for Makueni County.)

4.1.8 Cost benefit analysis and value for money aspects for completed water and sanitation projects

| Type of water & sanitation system | Cost per unit (Project support costs) | No. of completed facilities | Total expenditures (direct project support costs) | No. of beneficiaries | Cost per unit/beneficiary |
|--|---------------------------------------|-----------------------------|---|----------------------|---------------------------|
| 1. Shallow wells fitted with hand pump | 200,000 | 16No. | 3,200,000 | 12,400 | Kshs.258 per beneficiary |
| 2. Ferro-cement Water tanks | 120,000 | 21No. | 2,520,000 | 5,115 | Kshs.493per beneficiary |
| 3. VIP Latrines | 127,500 | 61No. | 7,777,500 | 9,667 | Kshs. 805 per beneficiary |
| 4. San plat latrines | 800 | 120No. | 96,000 | 1200 | Kshs.80 per beneficiary |
| | | 218 | 13,593,500 | 28,382 | Kshs.479 per beneficiary |

4.1.9 Impacts of the various water and sanitation facilities

The community contribution and participation at project level has been encouraging and therefore contributed to over achievement of the project targets on physical development of water and sanitation facilities. The hand dug wells completed in the project areas have provided community members with access to safe. Schools have been able to access safe water from the completed tanks hence reduction in time for fetching for school children and the initiation of school feeding programs in schools. Also reduction in water related diseases in schools and high enrolment of school children.

Due to improved sanitation girl child enrolment has improved and also improved academic performance due to reduction in absenteeism.

Some schools have also started replicating the same projects at their own costs to improve water and sanitation situation in schools i.e. Vololo primary school constructed 1no.2 door VIP Latrine on their own while Nzoilla secondary school constructed additional Ferro-cement tank of 23 m³ at their own costs.

4.2.0 Appropriate Technology

San-plat sanitation technology has been adapted by communities to enhance sanitation coverage. The project has done well to introduce the technology at village level for household sanitation. Eventual community replication will be achieved with time in the neighboring villages.

Appropriate technologies have been adapted for most of roof catchments for schools water projects. Community members develop sense of ownership during the construction due to their involvement in providing labour and local materials.

Shallow/Hand dug well technology adapted by the project is very appropriate for village level. Capacity building has been done for community resource persons to undertake village level operation and maintenance. Ferro-cement water tank technology has been adapted easily due to affordability and use of local materials.

SODIS water treatment application is appropriate technology that the project has promoted at both village level and schools. The application has been attributed to increasing safe water uptake at household level. The project expects the scaling up of SODIS application to enhance replication by all the community members to reduce incidences of water related diseases and diarrhea. The project developed operation and maintenance manuals to facilitate effective use and sustainability of the water points.

4.2.1 Village Level Operation and Maintenance (VLOM)

All the shallow wells constructed had pump attendants orientated on various operation and maintenance schedules. The objective of the process is to attain sustainability in operation and maintenance of the water points. The trained women pump attendants have the ability to identify and repair faults for the hand pumps hence reducing dependency of external support. After the initial training the pump attendants were able to various stalled projects in their respective community by fixing the hand pumps.

4.2.2 Networking and Collaboration

Ministry of Education staff participated in the project implementation process from leaders' orientation sessions to various capacity building sessions and has been key to enhancing school hygiene and sanitation process and also providing support to communities willing to set up schools next to the water points. Therefore good working relationship noted with the various institutions at county levels hence providing adequate support in key technical aspects during implementation. The department of public health at county has participated actively in assisting the project towards implementation of household sanitation through the community led total sanitation process.

4.2.3 Project Impacts in relation to Millennium Development Goals(MDG's)

- a) The Millennium Development Goal 7: Ensure environmental sustainability –Target 10 of the MDG 7: Halve by 2015 the proportion of people without sustainable access to safe drinking water and sanitation(Improved water supply includes the following; Household connection, public stand pipes, boreholes, protected dug wells , protected springs and rain water harvesting/collection)-Improved sanitation includes the following; connection to

- sewer, connection to septic tank, pour flush latrines, simple latrines-san plats and ventilated improved pit latrines (VIP)
- b) The incidence of water-related diseases is directly relevant for improvements in the health situation (MDG 4: Reduce child mortality, MDG 5 Improve maternal health and MDG 6: Combat HIV, AIDS, malaria and other diseases) and has an impact on school attendance (reduced time and health constraints for attendance due to improved water supply and sanitation services).
 - c) The time saving potential of improved services for women and children (both directly in terms of reduced transport time and costs, and indirectly in terms of time for caring for sick family members) can contribute not only to the education goal (MDG 2) but also to improving chances for participation in development by engaging in income-earning activities (MDG 1).
 - d) The provision of adequate water and sanitation services furthermore has positive impact on the general health and nutritional situation. Research studies show that frequent and severe cases of diarrhea have negative impacts on nutrition and that home produced food—such as vegetables, eggs, milk and meat—is related to the availability of land and water.
 - e) Providing for effective and sustainable water supply and sanitation services requires adequate governance structure and includes a commitment to good governance (MDG 8).
 - f) Sanitation is enshrined in the Millennium Development Goals and is a cornerstone of the fight against poverty. Lack of basic sanitation puts millions of lives at risk and is responsible for a quarter of all child deaths in developing countries every year. Lack of sanitation and poor hygiene also severely limits the impact of other development interventions in education, health, rural and urban development.

4.3.0 Other Project impacts.

- a) Improved personal hygiene among the community members with access to water points since they can easily bath at home and also for school children due to the influence of child to child concept which promotes personal hygiene and improved sanitation i.e. leaky tins, access to safe water.
- b) Replication of School water and sanitation has been noted in some of the project areas i.e. Vololo primary school for VIP Latrines and Nzoilla secondary school for Ferro-cement water tank.
- c) Increase awareness on water and sanitation needs. Communities are able to prioritize their water and sanitation needs on their own.
- d) The community in the project areas reported saving time for fetching water hence able to undertake livelihood economic activities.
- e) That there has been reduction in diarrhea disease occurrence in the various communities due to access to safe water, improved sanitation and hygiene promotion activities.
- f) That most of the schools implementing school health activities based on the Child to child methodology have reported improved performance in the national exams due to peer learning process.

- g) Increased enrollment especially for the girl child has been noted in primary schools that received assistance of water and sanitation facilities through KUMEA support. The burden of fetching water for Girl has been reduced since the schools have water for preparation of school feeding programs.
- h) The provision of sanitation facilities to some schools i.e. Mutuluni in Kitui County and Yakivala in Makueni County saved the schools from closure by public health authorities due to inadequate sanitation facilities. Latrines for both schools had collapsed during the rains and the children were using the nearby bushes when the project intervened to construct sanitation facilities.
- i) **The Dublin Principles emphasizes on the need to involve women in water management as follows: Principle No. 3 - Women play a central part in the provision, management and safeguarding of water** “This pivotal role of women as providers and users of water and guardians of the living environment has seldom been reflected in institutional arrangements for the development and management of water resources. Acceptance and implementation of this principle requires positive policies to address women’s specific needs and to equip and empower women to participate at all levels in water resources program, including decision-making and implementation, in ways defined by them.”

5.0.0 KEY CHALLENGES

5.1.1 Slow pace of community contributions in some communities and prevailing poverty levels.

Poverty levels are high in some of the project areas therefore the community capacity to raise the local available materials is quite challenging given that they have other competing needs in the homes. The project rationale is to reach the poor yet in this case cannot afford the required materials hence delay in starting and completing the planned project activities.

5.1.2 Unmet community needs and demands

The community has various needs that have not been addressed adequately. In some areas the demand for water and sanitation facilities is quite high that the project is not able to address the demands in time. As the project comes to completion or phase out period addressing the unmet demands has proved to be a major challenge due to overstretched project resources and the time limitation.

5.1.3 Vast project areas and scattered households affecting project implementation

The project has been experiencing difficulties to access effectively all the project areas due to the vastness of the villages. During implementation it has been difficult for key resource persons to access all the households for hygiene and sanitation promotion. Construction of water point to serve the communities that is vast can compromise project impacts. Due to this vastness project effectiveness may not be realized in short time.

5.1.4 National teachers’ strikes

The national teachers strike affected the project greatly at the on-set of the project due to schools closure therefore slowing down project implementation process in the project areas.

6.0 CONCLUSIONS

6.1.1 Good collaboration at community level and other key stakeholders

This is based by the level of community participation at community level with other stake holders enabled the projects to be implemented on schedule. Public health department provide support promotion of village level sanitation by facilitating with project staff community led total sanitation. The Ministries of Education and water officials have provided adequate support to the various project activities from inception to completion.

6.1.2 Community management for water and sanitation facilities

All the water and sanitation management committees have been adequately trained in various aspects for effective use and sustainability of the projects therefore the communities are able to undertake village level operation and maintenance of the water points with minimal external support. Operation and maintenance manuals have been developed to enhance effective sustainability.

6.1.3 Construction of institutional VIP latrines in schools with difficult formation

In the course of implementing sanitation in schools the project has encountered difficulties in schools with weak formation. This situation required additional materials for pit lining from the base which was not catered for in the initial plans and design of the project.

7.0 LESSONS LEARNT IN PROJECT IMPLEMENTATION

7.1 That hygiene and sanitation promotion has been successful in villages that had women community health workers as compared where men dominated in hygiene and sanitation promotion.

7.2 That households involved in sanitation implementation have realized the need for having bathing hides to improve their personal hygiene and also use them effectively.

7.3 That school hygiene and sanitation promotion has increased peer learning in schools and enhanced academic performance.

7.4 School health implementation requires active involvement of all teachers or a committee of teachers to succeed. Schools which have both female and male teachers in the task force committees have been impressive in facilitating hygiene and sanitation promotion in schools.

7.5 Replication of water and sanitation facilities has been attributed to the use local materials and simplicity of technologies adapted by the project.

7.6 The trained pump attendants have been able to restore some of the old water projects done by other agencies through application of their new skills hence facilitate sustainable water points at village level.

8.0 KEY RECOMMENDATIONS

8.1 Due to the successful implementation of the project components the project request additional funds to address some of the unmet needs in both counties especially funding for the on-going and in-complete component/ facilities and pending labour costs.

ANNEX 3: COMPLETED SANITATION FACILITIES IN MAKUENI COUNTY

1.



2.



1. Old latrines for Mii Pri. School 2. New VIP Latrines at Mii Pri. School

3.



4.



3. Old latrines for Thamba-Aume P.School 4. New VIP Latrines at Thamba-ume P.Sch.

5.



6.



5. Completed VIP Latrine for Kyaani P.School 6. Completed VIP Latrine for Mweini sec. School

7.



8.



7. Completed Kalulini Pri.School VIP Latrine 8.Completed Kambu Pri. School VIP Latrines

9.



10.



9. Completed Vololo Pri.School VIP Latrines 10.Completed VIP Latrines for Itiani Pri. School

11.



12.



11. Completed VIP Latrines for Katulani Pri. School 12. Completed VIP Latrines for Yakivala Primary school

ANNEX 4: COMPLETED WATER FACILITIES IN MAKUENI COUNTY



1. Nthongoni Sec. School Ferro-cement Water Tank



2. Matulani Sec. school Ferro-cement Water Tank



3. Completed Kalulini School Ferro-cement tank



4. Completed 3rd Ferro-cement tank for Kambu primary school.



5. Thamba-Aume Pri.School Ferro-cement tank school



6. Completed 1st Ferro-cement Tank for Kambu Pri.



7.

7. Completed ferro-cement tank at Kyaani P.School.



8.

8. Completed tank at Mii secondary school



9.

9. Completed Syandani village Hand Dug well



10.

10. Completed tank at Mweini sec. School



11.

11. Completed Ferro-cement tank at Nzoila Sec. School



12.

12. Replication tank under construction



13.

13. Completed Kwa Musyoki hand dug well in use



14. Completed Ndivuni village hand dug well in use



15. Completed Katulani village hand dug well in use

16.

17.



16. Completed Kamunyiri village Hand dug well in use



17. Completed Nzouni village hand dug well in use.

use.

use.



18. Completed Kisoo village hand dug well in use



19. Completed Katangini village hand dug well in use

ANNEX 5: PUMP ATTENDANTS TRAINING IN MAKUENI COUNTY



1.



2.



3.

Photos 1-3 Participants being oriented on pump functions and operations



4.



5.



6

Photos4-6: Participants being taken through the pump parts

7.

8 .

9.



Photos 7-9: Pump Installation sessions

ANNEX 6: COMPLETED SANITATION FACILITIES IN KITUI COUNTY

1.

2.



Photos 1-2: Completed and in use 2No. 2door VIP latrines for Zombe Primary school

3.

4.



Photos 4-3: Completed and in use 1No. 2door VIP –Ventilated Improved Pit latrines for Kwa Amutei Primary school.

5.

6.



Photos 5-6: Completed and in use 1No. 2door VIP –Ventilated Improved Pit latrines for Hon Kiema Pri. School

7.



7. Completed VIP Latrine for Kanguli pri. School

8.



8. Completed VIP Latrine for Mangola Pri. School

9.



9. Completed VIP Latrines for Malatani Pri. School

10.



10. Completed VIP Latrines for Kibwea sec. school

11.



11. Completed VIP Latrines for Winduma Pri. School

12.



12. Completed VIP Latrines for Kavaani Pri. School

13.



14.



Photos 13-14: Kwa Amutei Pri. School 1No. VIP Latrine 2.Rear view of the VIP Latrines

15.



16.



Photos 15-16: Kwa Amutei Pri. School 1No. VIP Latrine-2nd Latrine 4.Side view of the VIP Latrine

17.



17. Mutuluni Pri. School 2No.VIP Latrines

18.



18. Old latrines for Inyuu primary school in Kituyi County

19.



19. New VIP Latrines completed for Inyuu primary school in Kituyi County

20.



20. Old latrines for Ithangati primary school in Kituyi County

21.



21. New VIP Latrines completed for Ithangati primary school in Kituyi County

22.



22. New VIP Latrines completed for Itiko mixed secondary school in Kituyi County

23.



23. New VIP Latrines completed for Itiko Primary school in Kituyi County

24.



24. 1st Completed Malatani primary school VIP Latrines

25.



25. 2nd Completed Malatani primary school VIP Latrines in Kituyi County

26.



26. New VIP Latrines Completed for Kwa-ombe primary school

27.



27. New VIP Latrines Completed for Ilamba primary school in Kituyi County

ANNEX 7: COMPLETED WATER FACILITIES IN KITUI COUNTY

1.



2.



1. Completed Kwa Amutei village Hand dug well in Kitui County 2. Kabati hand dug well in use

3.



4.



3. Completed Mutuluni village well 4. Completed Itangani village hand dug well in Kitui County

5.



6.



5. Completed Kavaani village Hand dug well in use 6. Completed Zombe village hand dug well

ANNEX 8: HYGIENE&SANITATION TRAINING FOR MAKUENI COUNTY



1.



2.



3.

Photos 1-3: Group discussions using PHAST tools



4.



5.



6.

Photos 4-6: Group and plenary presentations of various hygiene sessions



7. Gender Analysis Presentation 8.F-diagram discussions 9. Drama presentation



ANNEX 9: WATER USER COMMITTEE TRAINING-MAKUENI COUNTY



1.



2.



3.

Photos 1-3: Group discussions on Leadership styles and qualities



4



5.



6.

Photos 4-6: Group discussions on Health and Environment



7



8.



9.

Photos 7-9: Group presentations on various sessions

ANNEX 10: SCHOOL HEALTH TRAINING FOR MAKUENI COUNTY



1.
Photos 1-3: Participants discussing participatory Assessments of hygiene, water and sanitation in schools



4
Photos 4-6: Plenary discussions and presentations on various issues



7.
Photos 7-9: Group Discussions using CHAST tools for hygiene and sanitation promotion



10



11



12

Photos 10-12: Group presentations based on 3T Concepts of CHAST methodologies



13



14



15

Photos 13-15: Preparation of School Health Implementation plans per zones



16



17



18

Photos 16-18: Various group presentations on issues discussed

ANNEX 11: HYGIENE & SANITATION TRAINING FOR KITUI COUNTY



1.



2.



3.

Photos 1-3. Group discussions using PHAST Tools



4.



5.



6.

4. F-Diagram Presentation 5. Drama presentation on Story with A Gap 6. Plenary presentations



7. Sanitation Ladders presentation 8-9 Work plans preparations

ANNEX 12: WATER USER COMMITTEE TRAINING –KITUI COUNTY



1.



2.



3.

Photos 1-3: Group discussions on various subject issues



4.



5.



6.

Photos 4-6: Plenary and Group presentations



7.



8.



9.

Photos 7-9: Preparation of Action plans for Water User Committee Implementation

ANNEX 13: SCHOOL HEALTH TRAINING FOR KITUI COUNTY



Photos: 1.Facilitators Preparing for sessions Photos 2-3: Group Discussions 3.



Photos: 4-6 Group Discussions with CHAST tools /posters 5.

6.



Photos: 7-9 Plenary presentations 8.

9.