AFRICA SAND DAM FOUNDATION
IMPACT REPORT 2017/2018

BUILDING COMMUNITY RESILIENCE TO CLIMATE CHANGE
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ABOUT US
Africa Sand Dam Foundation is a registered Kenyan NGO founded in 2010, whose principle mandate is to: implement water, food and income security projects that empower communities to transform arid and semi-arid lands of sub – Saharan Africa. ASDF is currently working in three counties in Kenya: Makueni, Machakos and Kitui with a wide consultancy services to other NGOs and governments across the World.

WHAT WE DO
- Our main focus is to support communities to become independent through formalized structures like SHGs through community capacity building and water harvesting.
- Community Self Help Groups are supported to conserve soil and water by constructing sand dams, rock catchments, water tanks, digging terraces, planting trees and developing their farms to increase food production and incomes. Presently, we promote smart “climate” agriculture practices through soil conservation, farm input support by providing tools and drought tolerant crops to the farmers.
- We also offer knowledge and information support through participatory learning and action (PLA).
- We provide consultancy services to other organizations and governments within Africa and India.
1.1 Vision
To create water, food and income secure communities in arid and semi-arid lands of Africa for sustainable development.

1.2 Mission
To improve community livelihoods in arid and semi-arid lands in food production and water access through soil, water and environmental conservation.

1.3 Background / Context Information:
The rapid change in the world’s climate is translating into more extreme and frequent weather events, heat waves and droughts. The impacts of climate change on agriculture and the implications on food security are already alarming. One third of Kenya’s population depends directly on land that is being degraded. About 70 -85% of rainwater is lost through run off. Kenya loses 4310 metric tons of soil per square km annually. In rural Kenya, it takes an average of 8 - 12 hours a day to collect water. Prolonged and frequent droughts have continued to affect food production in these areas thus pushing many households into vicious poverty cycles. Coupled with the effects of climate change, life in the arid and semi - arid areas (where 40% of the world’s population live) the socio economic structures of these regions continue to depreciate. A major finding is that there is an urgent need to support smallholders in adapting to climate change.

ASDF’s development model embraces soil and water conservation as key agents to change this situation. At the very centre of its approach, ASDF empowers community organised social units (SHGs) with practical knowledge, skills and infrastructures to sustainably transform their environments in order to attain water, food, and income security.

ASDF’s water programmes support rural communities with access to clean and safe water for domestic and farming purposes. We implement water harvesting technologies that are cheap, sustainable and suited to local conditions, such as water tanks in schools, rock catchments, sand dams with shallow wells and water pipelines to community tanks. However, our main water harvesting initiative is the sand dam: the most cost-effective method of rainwater harvesting in dry lands.

1.4 What drives us
- Community needs: ASDF works towards addressing the needs of the community which are beyond their capacities such as water harvesting.
- The communities’ commitment: The commitment of the communities to address their own problems using local available resources and minimal external support. The community participation to the projects encourages us to continue supporting new communities to address their own needs.
- Vision 2030: We are working towards achieving sustainable Economic and social pillars as per the Vision 2030 plans. In economic pillar, we are geared towards addressing agriculture, food security and improving financial access through table banking promotion. In the social pillar, we focus on water, sanitation and environmental rehabilitation to contribute to the big agenda of the national government. In addition,
we are also contributing to the government’s fourth agenda of food security initiatives through the promotion of drought tolerant crops and improved farming methods.

- **SDGs:** We are contributing to SDG 1, 2, 6 and 13 through reduction of poverty, eradication of hunger, provision of clean water and sanitation and climate adaptation and mitigation through climate action respectively.

1.5 ASDF Objectives

ASDF’s general objective is to **create sustainable communities**

ASDF aims at achieving the following objectives:

- Providing improved access to safe drinking water, water for domestic use and general household hygiene. ASDF aims at improving livelihoods through creating community resilience.
- Capacity build SHGs to produce their own seedlings for reforestation and agro forestry
- Empower small holder farmers use agro forestry and organic farming methods to improve their food production
- Improve the economic situation of the target group with new income opportunities
- Improve hygiene and sanitation through WASH trainings and water quality test.
- Increase number of households reporting increased food production.
- Improve communities’ knowledge through various trainings offered e.g. Soil and water conservation.
- Promote drought tolerant crop production

1.6 ASDF Achievements

In the year 2017 / 2018, our main focus was to use an impact-oriented approach towards all the development projects such that we have a measurable impact, to be held accountable and focus not only on activities but also the results. During this year, ASDF staff checked how the delivery of the services contributed to the shifting relationship from dependency towards independence and ultimately inter-independence among the individuals, organizations and communities. There was significant growth in terms of project implementation as well as internal growth.

ASDF was able to support 68 self-help groups which is an increase of 3 SHG, from 65 SHGs which were supported in the year 2016 / 2017. The growth experienced in all these dimensions is attributed mainly to the financial support we have received from our donors

The table below shows the activities that were planned and actual output for the year.

<table>
<thead>
<tr>
<th>ASDF ACTIVITIES</th>
<th>PLANNED</th>
<th>ACTUAL</th>
<th>VARIANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017/2018</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SHG Engaged</td>
<td>Farmer (direct beneficiaries)</td>
<td>WATER SECURITY</td>
<td>FOOD SECURITY</td>
</tr>
<tr>
<td>-------------</td>
<td>--------------------------------</td>
<td>----------------</td>
<td>---------------</td>
</tr>
<tr>
<td>65</td>
<td>68</td>
<td>2103</td>
<td>2275</td>
</tr>
<tr>
<td>+3</td>
<td></td>
<td>+172</td>
<td></td>
</tr>
<tr>
<td>Target</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>beneficiaries</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**WATER SECURITY**

| Sand dams | 50 | 50 | 0    |
| Shallow wells | 50 | 50 | 0 |
| School Water tanks | 30 | 30 | 0 |

**FOOD SECURITY**

<p>| Terracing | 78,000 | 108,314 | +30314 |
| Demoplots | 65 | 68 | +3 |
|           | 65 | 62 | -3 |</p>
<table>
<thead>
<tr>
<th>Seed banks</th>
<th>ENVIRONMENT</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tree nurseries</td>
<td>65</td>
<td>68</td>
<td>+3</td>
</tr>
<tr>
<td></td>
<td>Community trees planted</td>
<td>56,000</td>
<td>86335</td>
<td>+30335</td>
</tr>
<tr>
<td></td>
<td><strong>INCOME GENERATED</strong></td>
<td><strong>$</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ksh 1,940,725</td>
<td>(income generated by the SHG in financial year 2017/2018)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2.0 Sample design
The population of the study was chosen from the project beneficiaries who were working in the ASDF projects during the financial year. The study targeted 38 SHGs in Makueni, Machakos and Kitui Counties.

The selection of the respondents was based on group membership with the project implementing groups. Some of them were new and others were scaling up previous projects. The study employed non-random sampling techniques such as *convenience and purposive sampling* because all the group members were part of the project and had similar knowledge about their needs. In addition, convenience was also used during one on one interview.

2.1 Data collection
The data collection for the project evaluation took place from **25th August 2017 to 23rd May 2018**. ASDF Monitoring & Evaluation Department carried out the data collection for the report. Individual interviews were all carried out using Digital Data Gathering (DDG) using Open Data Kit Software (ODK).

This allowed continuous monitoring of the data collection process (e.g. number of questionnaires completed by each staff officer, time and date for the data collection as well as time needed for completing each questionnaire). The use of DDG technology helped ensure data quality and consistency.
The study employed primary data sources direct from the farmers’/project beneficiaries as well as secondary data from project documents and other available documents. The M&E officers developed the Evaluation tool. Afterwards, a field testing was organized to verify the reliability, applicability and usability of the tool. M&E Manager guided all the process to influence the officers on understanding the project objectives, survey tools, instruments and methodologies.

The questionnaire was coded and uploaded on the Ona data collection platform compatible with ODK Collect Application that allows data collection using a mobile platform. Through the Monitoring and Evaluation department, data is collected for the purpose of monitoring and evaluating project performance. This is done so through the following processes:

1. Monthly metric data collection and reporting- This process deals with the collection of data on monthly activities by the field officers and the self-help group committees. The reports are then handed to field managers who verify and validate the collected data. They prepare monthly outputs, metrics against the main project targets for the month which are then reported to the M&E team. It’s the M&E team that captures the reports into the main data base of the month.

2. Annual reviews and visits- Each financial year the M&E team visits the groups and conducts annual progress reviews with the community to measure outcome results as a result of the projects. The annual progress reviews include individual surveys which ascertain individual’s outcome experience as a result of being involved in the project (direct beneficiaries) and focus group discussion with the overall group to validate outcome of the projects. The information collected from this process is then prepared and stored in form of narrative reports (qualitative) and stored (quantitative) in the main ASDF data base.

The above process involves collecting data from all the groups and beneficiaries working with ASDF. This enables the M&E team to have a strong sample size of almost all beneficiaries thus giving the reports a higher degree of accuracy and precision. The impact/outcome is measured against baseline findings that were collected before the group started working with ASDF.
2.3 Data coding, cleaning and analysis

The server did the data coding automatically after questionnaire submission by the officers. The data was generated in excel format compatible with analysis software’s. Much of the data analysis was done through MS excel and SPSS (Statistical Package for Social Sciences). Afterwards, frequencies were run to find out if there were any mistakes made during data collection. In this process, all mistakes were corrected. The analyst afterwards ran descriptive statistics analysis and parametric tests since the study used non-random sampling methods.
This section narrates the behavioural change attributed to the projects implemented by ASDF both quantitatively and qualitatively. It is the section that tries to connect the change beneficiaries have experienced through the projects implemented by validating the projects implemented against the main objectives of the project.

3.1 Water Security

ASDF’s overall project objective is to improve water security by increasing access and availability of clean and safe water. This is done through construction of sand dams, rock catchment and roof catchment storage tanks in schools.

![Chart 1: Household baseline water sources](image)

During baseline data was collected on where the community groups fetch their water for household use. 59% of the respondents said that their main source of water for household use was the river. 10% said that they buy water from water kiosk, 9% get water from boreholes, 5% from springs, 4% from protected shallow wells, 4% from other sources that is; vendors bring water to their homes, 3% unprotected shallow wells, 3% from earth dams, 2% have water piped to their homes and 1% have roof water catchments at their homes.
Chart 2 Evaluation water sources.

At evaluation, 55% of the people reported to use protected shallow wells attached to sand dams and 1% fetch from sand dams scoop holes. In the year 2017/2018 the sand dams constructed had shallow well installed hence people accessed water with ease. The shallow wells account for a higher population usage (55%) as water from this source is deemed to be of better quality than that of other sources (quality means less saline and free from animal pollution). 3% of the people interviewed fetch water from rock catchments. It should be noted that not all the groups that were interviewed have rock catchments hence the low percentage. These sources are more reliable (during the driest periods of August to October) since they provide cleaner and safer water to the communities than the other sources.

Chart 2: Distance to water source at baseline
At the baseline level 36% travelled a distance of less than one kilometre to fetch water. This distance is one way from home to the water source this shows that 64% of the members travelled a distance of more than one kilometre hence spending more than one hour each day going to the water source. 31% said that they queued for less than 30 minutes at the water source as shown in the chart below thus 69% queued for more than one hour. From the two charts of distance travelled and time queued at the water source show that the group would end up spending more than two hours each day to fetch water. This is time that the community members would have used to engage in other productive activities.
The respondents when interviewed at evaluation, 86% said that now they travel a distance of less than one kilometre to fetch water. This shows a significant change from distance travelled as recorded at the baseline level where 36% said that they travel less than one kilometre. 14% travel more than one kilometre to get water. This however, is expected to change with time as the communities constructed more sand dams and once the sand dams in their localities mature they will retain more water.

The chart below shows that 91.4% of the respondent spend less than 30 minutes at the water source to fetch water. This shows reduction in time spent by the community members each day in search of water for house hold use.
3.2 Food security
Africa Sand Dam Foundation works towards achieving food security for the communities we work with. The community groups are trained on climate smart agriculture. In the year 2017/2018 each SHG established a demonstration plot. The demonstration plots acted as Farmer Field Schools (FFS) where various agricultural technologies were demonstrated with an objective that the farmers will replicate the lessons learned into their farms. This was driven by the challenges that the farmers said that they encountered during the baseline.

The challenges included lack of knowledge on improved farming techniques, poor seed quality, lack of soil conservation and unreliable and erratic rainfall.

The groups are now trained on different farming technologies which include: inter cropping, growing of drought tolerant food crops, Agroforestry, composting and kitchen gardening.

The farmers are also embracing organic farming method since they can control pests by use of medicinal plants such as Neem. For example, last year, Fall Army Worm infested the short rains crops, the Ministry of Agriculture together with ASDF field staff advised the farmers to use Neem organic pesticide, and it worked very well.

The improvement of food production by the farmers has been achieved through diversification of crops grown, promotion of drought tolerant crops adapted to the local climatic and weather conditions and vegetable farming. At baseline the farmers were growing an average of 3 crops that included maize, beans and cowpeas. At evaluation, six drought tolerant food crops were reported to be the main crops grown by the communities. This was characterized by the distribution of the drought tolerant seeds and understanding of climatic conditions. The crops include; Sorghum, Pearl Millet, Cow Peas, Green Grams, Dolichos lab and Pigeon Peas.
3.2.1 Irrigation Farming
The communities exhibited a sense of resilience to overcoming food insecurity in their areas by utilising water from the sand dams to grow a variety of crops. During the initial baseline interviews, no group reported practising irrigation because water was a scarce commodity. As it can be seen in the photos below, some individual farmers from different self-help groups have been in a position to earn some income through the sale of vegetables and other crops due to the sand dam water utilization.

Dorcas Kimanthi, a member of Kyeni kya Karuri SHG shows off pawpaws from her shamba. “I quit my job as a security officer to start farming and it is paying off well,” says Kasyoki, a member of Masola Kaani SHG.

In conclusion, as the communities work towards attaining food security, they also increased their average group incomes. The growing of vegetables, seed multiplication and dairy farming are meant to enable the communities attain food security. They also contributed significantly to the overall increase in income. All the analysed groups had planted crops in the last season and it’s expected that the incomes will increase exponentially this year.
3.2.2 Diet Change

From the charts above, it is evident that the communities have now improved their diet with 92% of the beneficiaries reporting a change in their diet. This is as a result of the crop diversification they practice. Some farmers said that they now value some nutritional crops such as dolichos lab and sorghum. Before, the farmers viewed these crops as unfit for their consumption. During evaluation, they reported that dolichos fetch good income when sold as they are substitutes of beans.

3.3 Seed bank report

ASDF uses the mechanism of seed banking, whereby we have 1 seed bank in each SHG to store and conserve seeds for the next planting season. Each farmer is pushed to deposit at least the double of the quantity of the seeds received from the project. An accounting system is usually in place to record the list of the farmers, the quantities deposited and the date. The seed returned into the farmers’ central stores are treated for storage to ensure that pests do not destroy them. This mechanism enables the farmers to timely access quality seed the next season and at the same time promoting timely planting. During the year it was no different and seed distribution was done in October 2017 as shown below;

<table>
<thead>
<tr>
<th>Crop</th>
<th>Quantity Issued in Kgs</th>
<th>Minimum Quantity Expected in Store in Kgs = Quantity issued *2</th>
<th>Quantity in Store in Kgs</th>
<th>Variance in Kgs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearl Millet</td>
<td>32</td>
<td>64</td>
<td>364</td>
<td>300</td>
</tr>
<tr>
<td>Sorghum</td>
<td>4735.5</td>
<td>9471</td>
<td>941</td>
<td>-8530</td>
</tr>
<tr>
<td>Cow peas</td>
<td>7054</td>
<td>14108</td>
<td>2424</td>
<td>-11684</td>
</tr>
<tr>
<td>Green Grams</td>
<td>7740.5</td>
<td>15481</td>
<td>2808.5</td>
<td>-12672.5</td>
</tr>
<tr>
<td>Finger Millet</td>
<td>44.75</td>
<td>89.5</td>
<td>0</td>
<td>-89.5</td>
</tr>
<tr>
<td>Dolichos</td>
<td>4145</td>
<td>8290</td>
<td>1239</td>
<td>-7051</td>
</tr>
<tr>
<td>Beans</td>
<td>174</td>
<td>348</td>
<td>0</td>
<td>-348</td>
</tr>
<tr>
<td>Pigeon Peas</td>
<td>999</td>
<td>1998</td>
<td>0</td>
<td>-1998</td>
</tr>
</tbody>
</table>

Through soil conservation, the farmers supported crop production by digging a cumulative total of 108,314 metres of terracing on their farms. Terracing ensures fertile top soil is not washed away during the rainy season and therefore helps to conserve soil fertility and
moisture resulting to increased yields. The farmers were supported with tools by ASDF. The farmers were also trained on various topics aimed at improved crop and vegetable production at the household level.

3.4.1 Tree planting

Have you ever imagined what the world would be like without trees? The benefits of trees extend beyond their beauty. Trees planted today will offer social, environmental, and economic benefits for years to come. Tree planting by farmers is mainly for the purpose of fruits, shade and timber. The other reasons include fuel and medicinal purposes. So far farmers have started to reap the benefits of fruit trees as they are able to get income from the sale of tree seedlings or food from the fruits. Last year alone ASDF supported the SHGs to plant over 86,335 trees.

The above chart shows that 90% of the respondents interviewed at evaluation had planted trees in the previous season. This is a significant change for the communities and it is geared towards improving their livelihoods and climate change at global level. From the trainings they received on tree hole digging and tree nursery management, the farmers not only have group tree nurseries but also individual tree nurseries. Some sell tree seedlings during the rainy season to the neighbours and schools to earn income. From the evaluations conducted, the survival rate of the trees is 84.92%. The farmers are now more aware of the effective anti-termites and best practices on tree management. Thanks to the sand dams they have more water availability for irrigation purposes.

The main species of trees planted were fruit and timber/ fuel trees. This is in line with the Makueni county project of a fruit processing plant within the county which was highly welcomed as it attaches economic value to the tree planting activity.
Kyambezi SHG tree nursery

An interview with Peter Kioko reveals that his diet and that of his family has highly improved because he now has access to fruits for he has planted fruit trees such as paw paws, mangoes and passion trees. ‘Last week some friends visited our home and my wife wasn’t around, so I didn’t struggle looking for what to offer them as food because there was a Paw Paw inside the cupboard, so I just washed it and served my visitors. They really enjoyed.’

3.4.2 Energy Saving Stoves

The communities have also adopted energy saving stoves which reduces emissions and wood consumption. They are now consuming less firewood than before the project implementation. The energy saving stoves have also contributed towards conserving the environment because it is a clean source of energy. The stoves use less firewood and records less emission to the atmosphere reducing greenhouse gases responsible for the climate change.

‘The energy saving stoves consume less time while preparing a meal. Before the project implementation, my husband could not join me in meal preparation since the traditional stove used to produce a lot of smoke during food preparation. I used to cough most of the time because of the smoke also my kitchen walls do not have soot all over. The project has been of much help to us.’ Says Celine Kitundu- Mbukilye Ngukilye secretary.

3.5 HYGIENE AND SANITATION

To support communities in upgrading their livelihoods and improving the quality of their lives, the aspects of Water Sanitation and Hygiene (WASH) play a big role. All parts of WASH aim for better practices and behaviour that do affect lives tremendously.

As an organization providing water to communities is not enough, our work goes a step further to capacity build the communities on water hygiene and handling. Our WASH team supports the projects with:

• Water quality testing
• Hygiene and sanitation trainings to the SHG and schools

Trying to make a sustainable change in the area of Water, Sanitation and Hygiene the WASH trainings are planned for the group members and students as they come and participate in it with the ASDF trainer. The training for the SHGs is based on the concept of PHAST (participatory hygiene and sanitation training) while the training for the students is based on the CHAST (children hygiene and sanitation training) concept.

1704 Self-Help Group members were trained; 549 males and 1155 females. 3475 students and pupils in secondary and primary schools were also trained on CHAST with 1171 being boys and 2304 being girls.

The training is designed to have an impact on people’s everyday behaviour and it is personalized for each group’s concerns. Water treatment is a much bigger concern to the beneficiaries and therefore we train them on different solutions on water treatment, so that they are able to decide which one works best for them. By understanding the importance of water treatment and having the knowledge from the training, they decide if they rather boil, chlorinate their drinking water, use the solution of solar disinfection or even herbal treatment.

The graph above represents the number of people who reported treating their drinking water at evaluation. 78% reported that they treat their drinking water and majority use chlorination method while others boil the water. The 22% however reported that they lack the resources required to treat drinking water while others believe the water sources are safe. Of the 78% who reported treating their water, 69% use chlorination method, 26% boiling, 4% herbal treatment and 1% use other methods.
Water treatment has become a habit to the communities since 71% reported treating drinking water all the time while 8% do it sometimes. This has led to reduced waterborne disease cases reported although in the past year, 21 illness cases were reported of which 15 were waterborne related diseases and they include amoeba and typhoid. 7 members reported amoeba and 8 typhoid.

One training to the communities is not enough hence calling for follow up and refresher trainings. At the follow ups WASH team visit the group members’ households trying to check on individual implementation of the trained aspects of WASH. At the same time, we try to enhance the practices regarding water handling, garbage disposal and general household hygiene.

**Soap making and Utilization**

![Yangondi SHG soap making](image1)

![Lung’u secondary students washing their hands using soap](image2)

As part of the hygiene and sanitation training, the communities are trained on soap making. As mentioned above regular hand washing practices do go a long way and have quite an impact. As it has been proven, the promotion of hand washing with soap makes it more of a goal than going for hand washing without soap. The lack of knowledge about the importance
of regular hand washing and lack of income to purchase liquid soap is a challenge to the community. The trainings create an opportunity to reach the communities and spread the message about the importance of hand washing with soap. ASDF through WASH team train the communities on soap making so as to improve hand washing with soap as well as income generation activities at both the individual and the group levels. The soap made by the group members is sold to entire communities who replicate hand washing culture to their households.

3.6 Livestock Production
It is estimated that 10 million Kenyans living in the ASALs derive their livelihood largely from livestock. Livestock play important roles in Kenya’s socio-economic development as it contributes towards household food and nutritional security. ASDF has been supporting selected farmers with the livestock project and from the recent data collected on the goat project, the following benefits have been reported:

- The group members have off springs and their local breeds have now been improved.
- The goats are very marketable with the prices ranging from Ksh 2,500 and bucks going for as much as Ksh10,000.
- It is from this project where members sell part of the stocks to earn money to pay for their children school fees, pay traditional dowry for their daughters, cater for medical bills and so much more.

During the financial year, we also supported one Group (Kee SHG) with 37 cows in a project aimed at improving nutrition and income generation to the target families. The project is doing well since we now have 2 off springs. It is unfortunate that 3 cows and 4 calves died.
3.7 Income change

The change in income was noticeable with 98% reporting an improvement compared to 2% who reported a reduction in their income. The increase was marked due to more yield, savings and engagement in new ventures.
4.1 Lessons Learned

4.1.1 Water Security
Makueni, Machakos and Kitui Counties experienced low rainfall in the year 2017. The groups in this area in the last year had a 50% increase in the people who travel less than one kilometre to get water. While conducting the baseline reports only 36% of the respondents travelled a distance of less than one kilometre while in evaluation the number was 86%. This shows that even in the driest months of the year reduction in the distance to get water was experienced. This was attributed to the Sand Dams and the shallow wells that the communities have built.

4.1.2 Food Production
The groups have been trained on soil conservation and they have surpassed the targets they had set for terracing with 30,314 m more. Seed distribution was done to the groups and despite the groups practising early planting due to poor rainfall in the short rainy season the returns from their farms was not promising. This affected hugely the seed bank project for various groups. The groups are however utilising water from the sand dams to plant vegetables both for domestic consumption and income generation purposes.

4.1.3 Hygiene
The communities have adopted the hygiene practices that they have been trained on, with 78% of the respondents reporting to treat their drinking water often.

4.1.4 Income generation
At both individual and group level the respondents have experienced changes on their incomes through planting of vegetables, selling of trees (individually ported seedlings) and selling of livestock.
4.2 Recommendations

Support the groups continue constructing more Sand Dams to reduce the distance to water sources hence minimizing the time that people spent each day to fetch water.

Diversify in income generating activities to help the communities in cases where the rainfall fails and no harvest is realised from their farms.

Encourages the SHGs to begin utilisation of water in the sand dam in the first season to ensure that they do not rely mainly on rain fed agriculture as their main source of food production.

Enhance capacity building trainings and refresher trainings to ensure that all the members adopt the training that being delivered.