Save the Children
USA

Emergency Water and Sanitation Project – Afar Regional State, Ethiopia

Project Evaluation and Impact Assessment Report (Final)

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Acronyms

- CMC Crisis Management Committee
- DM&E Design, Monitoring and Evaluation
- DPPB Disaster Prevention and Preparedness Bureau
- EWSP Emergency Water and Sanitation Project
- FGD Focus Group Discussion
- GC Great Change
- HDW Hand Dug Well
- HHH Head of Household
- KII Key Informant Interview
- M&E Monitoring and Evaluation
- NRM Natural Resources Management
- PHAST Participatory Hygiene and Sanitation Transformation
- PCDP Pastoral Community Development Program
- PIA Participatory Impact Assessment
- SC/Norway Save the Children-Norway
- SC/US Save the Children Federation Inc
- UHDW Unprotected Hand Dug Well
- WASH Water Sanitation and Hygiene
- WATSAN Water and Sanitation

Executive Summary

Save the Children Federation Inc is an international, non- profit relief and development organization working to create lasting, positive change in the lives of children in need. In Ethiopia, it has been actively operational since 1984 drought; and still operates in different parts of the country to improve health; education and economic opportunities for children and families with great mission of creating lasting positive change in the lives of children living in poverty through self-sustaining activities. Save the Children's strategy in humanitarian responses and development programs gives emphasis on partnership with communities, empowering them to be active participants in identifying, planning, implementing and monitoring the various interventions to be carried out in order to reach out to children with quality programs.

As a matter of fact, Save the Children has built strong relationships along with accumulated fruitful experiences in working with different regional states within the country including the Afar National Regional State, where Emergency Water and Sanitation Project has been implemented in three phases in response to the drought, that hit the Region in 2004 affecting about 303,000 people; of which vulnerable children and lactating mothers constitute about 35%.

In response to this devastating disaster, urgent humanitarian appeal endorsed by the Crisis Management Committee (CMC) of Afar Regional State has drawn the attention of Save the Children Federation Inc (SC/US) and Save the Children Norway-Ethiopia Program (SCN-E), who have conducted a rapid assessment in some affected districts of the Region, have come up with a project entitled "Emergency Drought Relief Water Development Project", which was implemented in two Zones of the region (Zone 1 and Zone 2). In the course of time; however, there was further need for extension of the emergency program so as to reach more affected people as the drought was chronic. The project "Emergency Drought Relief Water Development Project" has been realized in three consecutive phases, and yet there is an intention of extending the intervention towards alleviating the chronic water shortage in the region.

However, before any commitment to extend the project, both the donor and Save the Children Federation Inc agreed to evaluate the impact of the already implemented emergency project by external evaluator with the general objective of identifying lessons learned so as to make use of the best practices and to improve the identified gaps; (detail objectives of the external evaluation has been indicated in the TOR - *Annex 1: TOR*). In response to the invitation for technical and financial proposal from Save the Children Federation Inc, the consultant team with clear understanding of the TOR has come up with the approach and methodology pertinent to the assignment, as indicated in Section I of this report.

After accepting the consultancy offer, a team of three professionals forming the consultant team along with partners have conducted actual assessment in the field (using the participatory impact assessment approach) from November 26, 2008 to December 6, 2008.

Accordingly, data collection started with desk review covering project proposals, agreements, reports and relevant official correspondences. The desk review was verified by the information obtained from key informants, focus group discussions (FGD), household surveys through filling questionnaire, and actual observations. Finally, the assessment findings were presented and validated on a validation workshop, which was conducted on December 25, 2008 in Samara, Afar Regional State.

The analysis and interpretation of the collected data showed that the Afar Region - in general and the selected Woredas - in particular, are areas of the predominantly disaster/ drought prone and famine stricken pastoralist areas in the country, where the majority of the people live under severe poverty and food insecurity. In light of this, the project is generally found to be appropriate and relevant with regard to its purpose, strategic objectives and target area as it is aiming at improving the priority problem of the local communities. The purpose and objectives selected for the program are quite pertinent and in line with the regional government development policy and water sector policy. The effort of the project to reach remote and needy areas is contributing to its success as has been confirmed by the results of the household survey and the focus group discussions, coupled with observations and document review.

Save the Children has developed a capacity of implementing water supply schemes efficiently and timely, which has resulted in gaining a higher degree of trust and respect from the Afar Regional State offices and from the community as well, regardless of the complicated project implementation context.

The established water supply schemes were evaluated as per the SPHERE standard in terms of the travel distance, queue time, and amount of water per capita per day. The result showed that the percentage of communities used to travel for more than 4 hours a day before the project intervention has significantly reduced from 75% to 13.3% (< 32 minutes), and the percentage of families used to travel less than an hour has also been significantly increased from 6.7% to 80%. On the other hand, the daily water consumption per household showed an increment of 23.3% as 93.3% of the households collect more than 15lt/day. This amount; however, is far less than the minimum amount of water per capita per day (15lt/capita/day). Although the schemes have the capacity of serving beyond the minimum water demand of the community, the aforementioned result showed that the communities are not using that amount of water per day due to a combination of factors. The possible factors might include but not limited to using the collected water only for specific purpose like drinking, cooking and other domestic use specific to women and children. The water demand for men and grownup boys might not be included in the daily household demand as they spend their time somewhere with their cattle; besides, water demand for washing clothes might be deducted as most of the households wash their clothes either around the hand pump or at some other surface water sources. Or the level of awareness and the corresponding behavioral change towards using water might be less that the households are not using enough water on daily basis. Generally, it could be said that the established water supply schemes adhere to the SHERE standard.

Accessing water quality was one of the parameters included in the survey that has showed significant improvement in the project intervention areas that the comparison of water quality before and after intervention showed a tremendous change from 3.3 % to 76.7% and statistically significant at 95% confidence level.

Prevalence of diarrheal diseases has significantly reduced in the project intervention areas by 22.0 %. About 83.3 % of under-five children were frequently affected before intervention and reduced to 13.3% after intervention. According to FGD participants, after the construction of the water scheme and the consequence reduction of incidence of water-borne diseases, the cost that the community members used to incur for medical treatment has been decreased along with time and energy spent to get health facilities. These results have been confirmed by results of household survey, which reveals that the frequencies of occurrences of diarrheal diseases on monthly and seasonal basis were also significantly decreased by 82.3% and 62.8% respectively.

Sending children to school has also increased significantly in the project intervention areas (from 13.3 % before intervention to 30.0% after intervention).

Institutionalizing cost recovery system for water use ensures the sustainability of the developed water scheme that WATSAN committees are expected to establish the system at their respective villages. However, follow-up of WATSAN committees' performance from Woreda water office was limited mainly due to lack of budget, limited manpower and material; especially due to lack of means of transportation, it turned out to be a serious concern regarding sustainability of the schemes. Regardless, the communities willingness to pay for water services was demonstrated by the action observed from significant number of communities (31.7%) paying for water use, which was promoted, organized and managed by community leaders, who are not part of WATSAN committee members. Such follow-ups are expected to enhanced, once the Woreda water offices receive the motorcycles purchased under this project.

With regard to sanitation practice, the communities hygiene and sanitation status was challenged by lack of enough supply of water, to the extent that there were times when the community members wash their body once in couple of months. The survey result confirmed that frequency of taking bath or body wash on weekly basis has been improved in the project intervention areas which increased from bath taking on weekly basis was greater as compared to daily basis (40.0% and 36.7% respectively) before intervention. However, following the water schemes development, the frequency of taking bath shifted to daily basis (81.7%) and the weekly basis reduced to 11.7%. Habit of hand washing has also increased from 60 % 86.7% after intervention.

Generally, the first intermediate result (provision of access to clean water supply) was fully achieved as all the planned activities were implemented, and the result of the second IR (capacity building) showed 75% achievement as the established WATSAN committees were not active; whereas the third IR (promotion of good sanitation and hygiene practices) showed 40% achievement due to the indirect effect of achieving IR1, which has resulted in improved sanitation and hygiene practices from 60% to 86.7%. Thus, the project's degree of achievement in terms of planned objectives

compared to the realized ones, the project turned out to be 83% effective. Besides, the project's effectiveness was calculated in terms of cost (based on major schemes in the project) per beneficiary. The result of the cost effectiveness of the project turned out to be 72 % effective.

The projects efficiency was also calculated in terms of the number of functional schemes against the total number of established schemes in one hand, and the actual time taken to implement the planned activities against the expected project time on the other. The cumulative result of the project efficiency as compared to the number of functional schemes against the total number of implemented ones has resulted in 84%, and the cumulative efficiency of the project in terms of implementation time showed that the project was 72% efficient, which was affected by the delay in implementation of phase I and II activities.

Based on the study result, both strength and gaps have been identified and the following recommendations were made with the objective having improved program in responding similar emergencies. Thus, key recommendations include as Save the Children needs to scale up the best experience developed in drilling of boreholes, which has resulted in gaining a higher degree of trust and respect from the Afar Regional State offices and from the community as well that this should be scaled up. Selection and prioritization of interventions of WASH schemes should be extended with additional consideration of further relevant options in WASH activities; like household water treatment systems, need to be considered. However, construction of WASH schemes should be integrated with intensive promotion works of sanitation and hygienic practices that should further be integrated to the regular WASH or Health programs.

On the other hand, as WATSAN committee members were selected in a very short period of time, it is recommended that members be revised through full participation of the beneficiaries based on proper selection criteria and refresher trainings need to be conducted including fund raising mechanisms within the community for purchase of spare parts and payment of labor costs. Furthermore, the WATSAN committees need to be linked to the government institutions responsible to rural water supply management.

Some schemes might be a center of attraction for communities, which ultimately lead to environmental degradation and conflict. Accordingly, caution has to be taken to avoid these negative impacts through integrating the WASH project with NRM activities and scaling up of the project to the neighboring villages.

In terms of project staffing, it is mandatory that the project design needs to consider the qualification and number of staffs in line with the extent of the project and the corresponding geographic coverage.

Although the major determining factors in sustaining a water supply scheme like assignment of responsible body (WATSAN committees), building the capacity of the user community as well as the government staff in terms of training and provision of materials were put in place, sustainability

of the schemes found out to be one of the areas that need improvement as the communities didn't reach to the level of self contained in maintenance of the schemes. Therefore, this issue has got a serious attention during the consultative workshop and the corresponding recommendations were given as has been indicated in the recommendation part of this report and in the proceedings of the workshop (Annex- 6).

Lastly, it is also found out that branding/visibility is vital to promote the endeavors of donor and implementing organization that attention should be given to incorporate such issues.

Section I: Introduction

1. Introduction

1.1 Background

Afar pastoralists occupy much of the Greater Rift Valley in the northern Ethiopia, southeast Eritrea and Djibouti. The Afar Regional State in Ethiopia has five administrative zones, which are further subdivided into 29 Woredas. The total surface area of the Region is estimated at 97,970 Km2. According to the 2008 census, the total population of Afar region is estimated at 1,411,092 out of which 786,338 (55%) are males and 624754 (45%) are females and the average family size per household is 6.6 people. 90% of the people are pastoralists and 10% are agro-pastoralists. The Afars are Cushitic speaking people and are classified into two distinct groups depending on decent. These are the Asaimara (the 'red' and considered noble groups) and Adaimara (the 'white', considered commoners). Afar pastoralists are further classified into different clans that are lead by clan leaders.

Afar like most pastoralist communities have been practicing pastoralism for centuries in a delicately balanced manner in one of the harshest environments. Patterns of coping and livelihood strategies such as migration, uses of grazing and watering points, conflict resolution, and spreading the risk over large herd size, all have evolved over countless generations to support their lifestyle and livelihood in an adequate and sustainable manner. This balance was altered first by the intrusion of colonial rule and then by the establishment of modern national-state, regionalization and state owned interventions (plantations/park). High population pressure, conflict, and recurrent drought have so far reduced the mobility nature of Afar pastoralist, which has been threatening their livelihood.

Afar pastoralists have assumed several adaptive strategies to optimize opportunities and counteract risks. They often move to the Oromo communities, living mainly in the Oromo Zone of Amhara Region and Fentale Woredas of Oromia region, Argoba Woredas and Tigray, during dry and drought conditions for grazing lands and water sources for their herds. Oromo herders, as well, enter Afar region (mainly zone 5 and 3) during dry season in search of pasture and water. Although Afar, like other pastoralists are criticized for accumulation of livestock resource and tend to sell them during drought precisely when the terms of trade (vis-à-vis cereal price) are at their worst. There is little infrastructure to support improved marketing practices, to ensure adequate flow of price and climate information, or to provide them access to saving and credit institutions.

The 2005/06 drought in Afar area has threatened the lives of the local community as there were severe shortages of drinking water especially in Zone 2 and Zone 4 of the region. This has necessitated the emergence of the Afar Emergency Water Project. This assessment mainly deals with the impact of this project that has been implemented by SC/US and donated by Norway Ministry of Foreign Affairs through SC/Norway-Ethiopia Program.

1.2 Objective of the Assessment

The principal aim of the evaluation is to assess the extent to which the SC/US EFO was able to achieve the objectives that laid out in the ERDWD project and the sustainability of its results. Moreover, it is aimed at identifying existing gaps or areas requiring improvement and lessons learnt that helps to guide future programming of the SC/US EFO. The specific objectives of this evaluation include:

- To measure the impact (positive/negative or intended/unintended) changes generated at wider community level attributed to the project interventions;
- To measure the behavioral changes of hygiene and sanitation practices attributed to the project intervention;
- To understand how has the project impacted on child morbidity, mortality and school enrollment
- To understand the impact of this emergency water project on the lives and livelihoods of the local community based on community-defined indicators;
- To seek possible ways for further improvement and to draw plausible recommendations.

1.3 Organization of the Report

The report has structured into six sections. The first section briefly introduces the background of evaluation assessment including its objectives. The second section deals on methodological aspect of the assessment. The third section dealt on the process of project design and implementations. The fourth and fifth section deals on results of the household and participatory impact assessment respectively. The last section briefly discusses conclusions and policy related recommendations.

Section II: Methodology

2. Methodology

2.1 Study Area

The team has selected all the three phases' intervention Woredas for this assessment based on their diversity on schemes and livelihood profile. Accordingly, the assessment has been undertaken on Adaar of Zone 1, Ewa, Golina, and Yalo districts of Zone 4 of the Afar National Regional State.

2.2 Sampling Design

The sampling design used for the assessment was a multi-stage sampling design to select the representative study Woredas, and PAs. This involves selection of study Woredas from Zone 1 and 4 of Afar region, followed by selection of PAs. Woredas were selected based on the livelihood zoning profile, scheme and cultural diversity. Thus, the selected Woredas considered being as primary sampling unit and the selected PAs as secondary sampling unit. In general, all respondents were drawn from the beneficiaries, households with children under ten years old and household members giving due attention to women and children. The sampling design for household and PIA are presented as follow.

The sampling frame for all the schemes were prepared during the review of the project reports, while its geographic or spatial distributions were verified jointly with project staffs during the training in Semera town. Random sampling method was applied for the selection of PAs. Accordingly, Adaar, Ewa, Golina and Yalow Woredas selected and consensuses have been reached by representatives of the regional DPPB, Water Development Bureaus and with the project staffs. For the selected Woredas, considering the diverse water schemes, a total of 8 PAs selected for the household survey and its list attached as Annex IV.

Sample Size Determination for Household Survey

For the quantitative household survey, the sample size was determined based on the proportion of beneficiary population in the project area, designated as p, a 95% statistical confidence level and with degree of accuracy required at 5%. Therefore, the estimated sample size was computed based on the following estimation procedure:

Taking "N" as number of household respondent of in all PAs estimated as:

$$N = [Z^2 * P(1-P)/d^2] / \text{Avg FS}$$

Where: -N = required sample size
P = proportion of beneficiaries out-of affected population, which is 34%
1-P= the proportion of non–beneficiary population 76%
Z = Confidence limit, which is usually at 5% level or 1.96
d = Degree of accuracy desired, usually set at 0.05
Avg FS= Average Family Size, in Afar Region it was considered as 6 member per family.

Therefore, the required sample size was estimated at 57 households in four Woredas of Afar Region. Considering other variations, 3 households added to avoid any risks of non-responses and increased to 60 households in four selected Woredas. The estimated sample size was evenly distributed proportionally to four Woredas and a total of 15 households were interviewed a given Woredas.

2.3 Data Collection

Two major sources of data and information were used for data collection. The primary sources are using approaches of both quantitative and qualitative methods. For the quantitative approaches, the household survey was carried out, while for the qualitative, the participatory impact assessment which encompasses focus group discussions and key informant interviews were employed. Data from secondary sources were reviewed using relevant project documents.

i) Household Survey Questionnaires

The data collection instrument of household survey was developed before the start-up fieldwork through reviewing the documents of EWSP project. The drafted tools were shared to the SC/US EFO for further comments and approval. Following the commencement made by SC/US EFO, training provided to enumerators, group discussion moderators and note takers with specific to procedures and data collection process. Prior to actual fieldwork (for data collection), the questionnaire was pre-tested in November 27, 2008 at Weranso PA of Mille Woreda, in order to ensure that the household questionnaire was clear, capture the emotion's of respondent and to avoid the probability that the questionnaire might be unclear/vague to the respondents. Based on the findings of the pretest and observed feedbacks, the questionnaires were further refined and modified as per the local context. Finally, the refined questionnaires were used for the actual data collection.

The questionnaire encompasses the socio-demographic background of respondents as well as performance indicators which compares during pre-and post-project periods. Specifically, it includes:

- access to water sources for human as well as livestock population,
- physical access,
- sanitation and hygiene practices
- Operation and Maintenance cost recovery mechanisms of water use
- water management and sustainability issues

- operation and maintenance technical capacity
- water use for livelihoods diversification

Actual data collection for the household survey was carried out by two enumerators who have experience conducting interviews and speak the local language. They were assisted by two research team members. Interviewer training took place at the regional capital of Samara town for a day just before the actual data collection began and consisted of classroom training in field work procedures and proper administration of the interviewers and one supervisor. The overall fieldwork implementation was supervised by three field coordinators or research team members. Fieldwork lasted from November 30 to December 4, 2008. Completed questionnaire were reviewed in the field by research coordinators and checked the consistency and completeness of responses

ii) Participatory Impact Assessment (PIA)

Under the PIA approach the tools commonly used are mapping, timeline, FGDs, KII, Proportional Piling and Triangulation methods as has been discussed below:

A. Mapping

It is an important method to describe the spatial boundary of a project (describing the area where impact supposed to have taken place). The participants have drawn a picture showing features such as geographical boundaries, water sources (former and current), grazing areas, migration routes or seasonal movement of livestock, and other social infrastructures like school and health posts. This exercise helps to gain an impression of the assessment area.

B. Timelines

It is a data collection method that captures the important historical events in a community, as perceived by the community themselves. This exercise will help to define the temporal boundaries of a project and helps to clarify the exact time when key events occurred.

C. Focus Group discussions

Group discussions were held and participants mentioned the impact of the Afar Emergency Water Project on their lives and livelihood among others. Besides, they discussed about the shortcomings of the interventions and possible ways for improvement. Moreover, quality dimensions of participation such as timeliness, capacity, quality, demographic makeup, and geographic coverage of the interventions have been discussed. Women groups took part in the focus group discussions independently as they are the frontline beneficiary of this project. Accordingly, a total of 12 focus group discussions, of which 6 of them are women groups, have been conducted.

D. Proportional Piling

Proportional piling method has been used to know the relative contribution of the project on child mortality and morbidity, access to water sources, school enrollment, and reduced travel/cost to medical treatment prior and after the intervention.

E. Triangulation

In order to triangulate the findings of the focus group discussion various triangulation methods have been conducted. These include key informants interviews, personal observation (transect walk), and analyzing secondary data like project monitoring reports. The team has conducted key informant interviews in each Woreda with representatives of water, health, education, pastoral development, and capacity building offices. In addition, discussion has been held with the regional Disaster Prevention Preparedness and Water Resources Bureaus. In addition, personal observations (transect walk) has been conducted in 8 water schemes to verify information that are gathered from the FGD.

F. Pre-Testing

Field testing of the data collection tools was done one day before the final assessment started. This exercise was used to fine tune the tools and indicators that had been developed. The exercise took place in the neighboring Woreda, i.e. Mille Woreda.

2.4 Data Processing

For processing the raw data from household respondents, statistical software such as SPSS/PC+ Version 15.0 used for designing data entry format, entering raw data, editing, coding, transforming of the original variables were undertaken during the processing of the data. Finally, analyses were made for core performance indicators that help to compare attribution of the project interventions.

The analysis starts in simple description of uni-variate analysis with regard to socio-economic and demographic characteristics of the study population. This followed by measuring the impacts of project interventions. The relative change of impact indicators computed using comparing pre-and post-project interventions, which helps to view the magnitude of percentage change attributed due to EWSP interventions. To test the significance of change for the EWSP interventions in the target areas, statistical test were employed. Specifically, Student T-Test for means comparison and Chi-Square test for proportions were used. The results were tested at the level of significance of $p<0.05$.

For the qualitative information that were generated using the FGDs and KIIs, all information were transcribed and triangulated with other relevant findings as has been discussed in the following section (Section – 5).

Section III - Project Evaluation

3. Project Evaluation

3.1 Background

The major objective of the emergency project "Emergency Relief Water and Sanitation Project" was responding to the devastating disaster caused by the drought occurred in the Afar Region in 2004 that has affected about 303,000 people; where vulnerable children and lactating mothers constitute about 35%. The project was initiated by urgent humanitarian appeal endorsed by the Crisis Management Committee (CMC) of Afar Regional State drawing the attention of Save the Children Federation Inc (SC/US) and Save the Children Norway-Ethiopia Program (SCN-E). The project was implemented in three phases.

Implementation of the first phase formally started in October 2005 and was completed in September 31, 2006. This was followed by Phase-II project that has started in October 2006 and supposed to be completed by the end of September 2007 with same objective in four selected Woredas (Ewa, Awra, Yallo, and Gulina) of Zone 4. Finally, the third phase started in February 2008 and is expected to be finalized at the end of December 2008, that there was an overlap with phase II.

There is improvement in the quality of planning and implementation methods in terms of completion of the planned activities within the planned duration. However, as there is a serious gap in documentation; especially in the 1st phase, it turned out to be one of the major challenges to have a clear understanding of the entire project.

As a matter of fact, the project has responded to the immediate need of potable water to the drought affected people. However, in all of the three phases, it is found that sanitation and hygiene components given less attention.

3.2 Project Design

The project design was tailored towards responding the immediate need of water to the communities in those drought-affected areas of the Afar region. It covers major components of rural water supply activities in terms of provision of potable water supply and the corresponding resources; budget, manpower, materials and others have been considered. Thus, the project design found out to be appropriate in terms of responding the dire water supply needs of the drought affected people, and it also fits with the five-year water sector strategic plan of the Region contributing towards the MDG.

The project goal, objectives and activities were clearly stated in the project documents; however, structured result-frame-work of the project along with the corresponding result-indicators and their sources of verifications have not been included in the project document. The monitoring system was indicated in the project document, but needs to be restructured in terms of DM&E plan.

On the other hand, according to the Field Project Manager, the design process of Phase III was not participatory as there was no participation of regional stakeholders. Even the signatory process was conducted only with the regional Bureaus of Disaster Prevention and Preparedness and Water Resources Bureaus and there were not project launching workshop and signing of MoU with Woreda offices in order to define roles and responsibilities.

With regard to project staffing, a gap has been observed in the number and qualification of the project staffs against the extent of the project in terms of project activities and the corresponding geographic coverage. For instance, only one staff was assigned to handle community promotion activities at all the project sites, which has resulted in significant contribution towards lack of attention in addressing the soft components of the project.

The overall project design was handled in three phases showing improvements from one phase to the other including, but not limited to selection of intervention areas, types of water supply schemes, and implementation process.

3.3 Situation Analysis in the aftermath of the devastating drought

Although the first phase project was designed based on the results of the rapid assessment conducted jointly by SC/US and SCN, no baseline survey was conducted during the second and third phases regardless of the intensive field visits conducted before commencing implementation of each phase; like the those conducted from 10 to 21st of October 2005 right after the signing of the first phase project document with the donor on October 17th 2005 and the other in March 2008 to commence the third phase project. The results of these assessment visits would have been easily qualified towards baseline data through incorporation of some basic additional data during the assessment.

The level and type of emergency response should be, need and rights based as well. The corresponding needs during emergencies fluctuate due to a combination of factors, where one of the major factors being involvement of number of agencies working in this sector that unless there is regular situation updates through coordination of partners and other water actors in the area, the initial plan might be irrelevant to the context.

3.4 Project Planning, Scheme Design and Implementation

Official documents have been signed with the concerned government bodies at regional level (Water Bureau and DPPC Bureau of the Afar Regional State). The government bodies and community leaders at Woreda level and community representatives at village level have directly participated in planning and implementation of the project although there is no official MOU signed at Woreda level.

The survey result indicates that 53.3 % of the respondents answered as the project implementation process was participatory starting from site selection to actual construction that the already completed water supply schemes are being utilized in a very equitable manner as has been observed from the HHS result that 96.7 % of the respondents indicate that there is no sort of conflict.
Besides, the same percentage (53.3 %) of the respondents responded that the beneficiary communities have participated in the actual construction through sharing their ideas, labor and even cash. The contributions have been observed through opening access roads, provision of shelter to the drilling crew, loading and unloading of construction materials and so on.

Implementation Strategy:

The entire project-activities were handled in multiple approaches; own force, involving partners, private consultants and private contractors. The implementation strategy primarily gave emphasis on working with partners; especially with government offices and through community involvement; and at the same time using national contractors and consultants were considered as well, which enhances division of labor, improve work quality through involvement of specialists in the sector and ultimately to respond to the immediate community demand in time. Accordingly, the project activities were categorized based on their complexity and the level of investment cost; that drilling of boreholes were given to the national contractors with drilling capacity including drilling machineries, tools and the corresponding manpower; whereas construction of hand dug wells were given to the local contractors, and WATSAN committee trainings were handled by the selected relevant consultants.

As there was a serious problem in getting devoted and capable drilling contractors at early stage of the project, which turned out to be one of the main challenges in borehole implementation, there was a serious delay in completion of Phase II activities that was forced to be completed at the end of May 2008, which was supposed to be completed on 30th of September 2007 after 8 months of delay (8/12=66.6% of additional time consumed than the planned 12 months duration). This has created unnecessary load on the project staff, as the same staff were used for both phases although there was separate budget allocated under this specific line item. However, improvements have been observed in the implementation strategy during phase III; especially in drilling boreholes. This has showed practical improvement through retaining efficient and successful drilling contractor on site, which has resulted in reduction of time, mobilization and demobilization costs, and above all timely provision of water to the drought affected people, mainly women and children.

Construction /Installation of Water Supply Schemes

Selection of water supply scheme type was handled based on hydro-geological conditions of the area (availability of fresh water) and the corresponding feasibility of each scheme in that specific area.

Accordingly, priority was given to construction of hand dug wells wherever the aquifer is feasible for construction of hand dug wells, and drilling of boreholes were selected in areas where other sources including hand dug wells were not feasible but drilling of shallow wells. The water supply schemes implemented at each phase have been refined from one phase to the other based on the relevancy and the lessons learned from the previous phase; like replacement of construction of roof catchment systems by boreholes.

Drilling of boreholes and construction of hand dug wells were accompanied by construction of cattle troughs and water quality tests. The parameters checked during the water quality tests: include: Iron (0.3 mg/lt), Manganese (0.1 mg/lt) and Salinity test (600mg/lt). However, in some of the schemes, the water quality tests were not conducted right after completion of the wells (as there is no laboratory in the region, and samples had to be sent to the main laboratory in Addis) that the beneficiaries were given the access to use without having any information whether the water is potable. On the other hand, although the household survey results showed that 45 % from the HHI responded that they wash their clothes near the hand pump, construction of washing basins was not part of the scheme completion works.

Maintenance and expansion works at water supply schemes have resulted in resumption of the proper functionality of the schemes making the water available to the community with a very limited investment. However, the level of maintenance was not calculated in detail at initial stages as has been indicated in section 3.2.

The already drilled and completed boreholes have been found to be productive and functional. The design of wellheads in most of the sites found to be constructed as per the standard; whereas the findings at about 30% of the visited sites found to be defective that could be corrected with minimum effort. The defects have seen at the wellheads; especially the elevation, slop and drainage that have resulted in stagnant water around the hand pump, which contributes towards insanitary environment contradicting with the objective of the entire project. Some have shorter drainage lines with no cattle trough, and fencing.

In most of the sites the hand pump is fixed in stable condition with appropriate height allowing the water containers to fit under the outlet and with a very minimum wastage. Whereas in about 20 % of the visited schemes the height of the hand pump outlet is either short or higher than the standard containers (20lt Jerry Cans) used in the area. This has resulted inconveniency and unnecessary wastage of water, which consequently results in unnecessary wastage of energy and time than required to fill a container and contributing towards muddy and insanitary condition around hand pumps in those areas with no cattle trough and poor drainage lines.

With regard to completion and functionality of water supply schemes, all planned activities have been completed and functional with the exception of some of the hand dug wells constructed in three villages of Yallo Woreda. These schemes (HDW) were completed some months back (around

May / June 2008), but neither handed over to the community nor functional yet. This might be due to selection of sites in terms of implementation capacity as the selected sites were located in a very scattered way compared to the project staff, that close supervision during construction including technical and contract administration was challenging to put in place at the expected level.

The established water supply schemes were evaluated as per the SPHERE standard in terms of distance, queue time, and amount of water per capita per day. The result showed that the percentage of communities used to travel for more than 4 hours a day before the project intervention has significantly reduced from 75% to 13.3%, where as the percentage of families used to travel less than an hour has also been significantly increased from 6.7% to 80%. On the other hand, the daily water consumption per household showed an increment of 23.3% as 93.3% of the households collect more than 15lt/day. This amount; however, is far less than the minimum amount of water per capita per day, which is 15lt/capita/day. Although the schemes have the capacity of serving beyond the minimum water demand of the community, the aforementioned result showed that the communities are not using that amount of water per day due to a combination of factors. The possible factors might include but not limited to using the collected water only for specific purpose like drinking, cooking and other domestic use specific to women and children. The water demand for men and grownup boys might not be included in the daily household demand as they spend their time somewhere with their cattle; besides, water demand for washing clothes might be deducted as most of the households wash their clothes either around the hand pump or at some other surface water sources. Or the level of awareness and the corresponding behavioral change towards using water might be less, that the households are not using enough water on daily basis.

Generally, it could be said that the established water supply schemes adhere to the SHERE standard.

3.5 Promotion of Best Practices in Sanitation and Hygiene

The objective of installing WASH schemes to provide clean potable water and the ultimate goal of the project to improve the health status of the community would only be successful if and only if the established schemes are properly utilized. If the water collected from clean sources like boreholes is not properly handled starting from the source till the end use, it would be as contaminated as the water from ponds or any other unprotected sources, that proper utilization of WASH schemes along with proper handling, storage and use of the water from these sources is one of the biggest challenges to be tackled in the sector.

Although it has been indicated from the survey result that 60% of the communities (in terms of hand washing and personal hygiene) were aware of good sanitation and hygiene practices before the project, bringing about behavioral change (in terms of proper water handling and proper way of excreta disposal) were the major issues expected to be covered as part of this promotion work; and

yet this particular activity has got less attention than expected; as attention was diverted to the immediate response of water provision.

It was indicated that WATSAN committees were given basic trainings in personal hygiene and environmental sanitation as part of the scheme management courses so as to disseminate to the community, which has not been tricked down to household level. On the other hand, as promotion work needs regular and proper promotion that should be designed as per the actual context, such promotion works would have been best handled through community based promotion agents, which was not the case in this particular project as sanitation and hygiene promotion agents were not included in the project design.

3.6 Capacity Building

Although the project was implemented in emergency context, sustainability of WASH schemes was considered at early-recovery stage during which communities' capacity in terms of operation, maintenance and management of the schemes was built through formation of WATSAN committees, trainings of care takers, and provision of basic start up tools.

The survey results indicate that 94% of households don't have information about the existence of WATSAN committees in their area, which indicates that either the selection process was not participatory that the WATSAN committee members were assigned by the local leaders, or the established WATSAN committees are not active enough in handling their responsibilities.

However, WATSAN committees have been established at each water supply schemes. The number of the committee members was fixed to be five; three of them being responsible for the management and administration of the schemes, whereas the rest two are responsible for follow-up and handling the regular and occasional maintenance of the schemes, mainly hand pumps. The later members are called care takes.

After the establishment of the committees, SC/US organized specific training to both management bodies and care takers. Apart from the WATSAN committee and care takers training, further trainings were organized to the Woreda Water office staffs.

Besides, basic tool kits required for the operation and maintenance of hand pumps has been provided to the communities at Woreda level. This includes standard and especial tools together with tripods and chain blocks for maintenance of India Mark II hand pumps. The capacity building process includes provision of spare parts, which has been in a pipeline to make it available at Woreda level. The capacity building process includes provision of spare parts, which was given only one time,

As transportation was the major challenge that hinders the regular follow-up of schemes as well as the functionality of WATSAN committees, the Woreda offices were provided with one set of motorcycles to each Woreda although this has not been received yet at Woreda level.

3.7 Operation and Maintenance/ Sustainability and Phase out Strategy

Sustainability of established schemes and the corresponding smooth phase out strategy depend directly on the level of the capacity built at the user community level to easily operate, maintain, and manage the overall scheme. This process entails having responsible body with the required capacity and budget. In addition, availability of spare parts in the local market remains as part of the major challenges of rural water supply management.

The main factors influencing sustainability are: financial and management capacities of the community, socio-cultural factors regarding the acceptability of the program and technical factors as to easiness and appropriateness of the technology. Thus sustainability issue needs to be analyzed in terms of technical, social, economic, environmental and institutional dimensions.

As has been indicated in the above section (Section: 3.6) SC/US has promoted the establishment of WATSAN committees at each scheme to represent the user community acting as the responsible body to manage and administer the schemes and the corresponding capacity buildings in terms of training and provision of materials. With this process, it is clear that SC/US has achieved a lot in terms of taking the major factors influencing sustainability of the schemes; especially, the project takes care of the communities' capacity in selecting the technology that appropriate technologies were selected as the implemented schemes could be operated and maintained at community level.

Social sustainability: Water supply system will require a high level of social cohesions among pastoral communities which ensures the equity of resource sharing. The approaches used were through local community involvement in terms of site selection, water management and use. Such involvements might reduce unexpected risk such as conflict within and between neighboring communities.

Economic sustainability: In some scheme development areas, few pastoralists have started vegetable gardening which built to the benefits of supporting livelihoods. The deriving force for sustainability is the pastoralist's desire to maintain economic benefits provided by the scheme. On the other hand, indirect economic benefits; like saving money that would have been spent on treating diarrheal diseases and that of time saved to do other activities could also be considered.

Environmental sustainability: In pastoral areas, the development of water scheme might create an opportunity for settlement, which ultimately contributes for environmental degradation. However,

in this particular project, the evaluation team observed no new settlement around the developed schemes.

Thus, it is clear that the project has taken care of the major issues of sustainability.

In line with institutional dimension, regardless of the level of functionality of WATSAN committees, in some sites, it has been observed that religious leaders are highly involved in taking care of the scheme. Although the case of cost-recovery is a little bit complicated in the area, in some schemes, beneficiaries are started to put/save money, which might help in maintenance of the schemes when there are damages. For instance, in Adaar Woreda, a system of cost recovery is already started in three areas and there is a plan to start in two sites soon. However, since the money is in the hands of individuals, care has to be taken to avoid embezzlement. There is also a push by the Woreda administration to start 'payment for water service', but to put the collected money in to the account of Woreda finance, which might take another channel. On the other hand, the water bureau is developing a guideline (by-law) to implement cost recovery system.

The detail status of cost recovery system in the constructed schemes is not known yet that there is a need to have a strong monitoring system. However, in some communities like Yallo, there is functional WATSAN committee having one female member responsible for queuing and counseling the community members on proper handling, utilization of the scheme. Members of this community started paying 2 Birr per household at monthly basis per month per house hold for the last 8 months, but terminated. While, in one of the schemes at Ewa, there is payment for water service (3Birr/HH/month) and the Sheik is responsible for water and cash management. The FGD participants mentioned that the money will be used for maintenance purpose. Whereas, in Golina the community has hired a guard to protect the water source and they are contributing for this. But, there is no payment for water service and the scheme meant only for drinking water (but shoats of sick people are allowed to drink). Here, WATSAN committee members do not have any role in management of the scheme, but the scheme is managed by an elderly man that is chosen by the community. The water scheme was stared operation in June 2008 but damaged in Sept 2008; then maintained by the Woreda office at the end of Nov 2008. It has also been indicated that there is not payment for water service yet.

In almost all visited sites, the linkage between WATSAN committee members and Woreda water office found being very minimum that there is neither functional relationship nor other systematic relationship between WATSAN committee members and Woreda offices. Thus, there must be a follow-up to insure functionality of WATSAN committees and link with the government structures.

Although the Woreda's capacity has been built in terms of provision of tools and motorcycles along with training to the water technicians, the regional government has allocated no budget to support the community in case of major break downs, and the Woreda office indicated that some of the hand pumps have been maintained taking some parts from the new hand pump set leaving the set

incomplete, where such supports were expected to be extended to each scheme site although the Woreda office has only one person responsible to cover all sites within the specific Woreda with no means of transportation and with no allocated budget to cover related expenses.

In some Woredas like Adaar, SC/US has promised to establish spare part workshop as one of the exit strategies by SC/US is to ensure sustainability in making the spare parts available to the community.

Unless there would be a link between WATSAN committees and the government bodies, having gone through capacity building process to WATSAN committees alone; however, would not assure sustainability of the schemes. Sustainability issue need to be built in starting from the project design; especially, the design need to be based on local capacities and reinforcement of a minimum self sufficiency of the population that could be achieved through participatory approach.

In a couple of visited schemes (Ayga & Burtale, Golina and Genjaba,Yallo) it was reported that they have faced serious water shortage for some weeks due to breakdown of the hand pumps, which were supposed to be maintained by the community. Lack of the required capacity to handle the actual maintenance work at community level regardless of the aforementioned capacity building stages would be justified in one or the combination of the following factors:

- The selected care takers might not be the right persons in terms of having an interest and commitment, or potential to learn technical works or lack of incentive to remain as care taker for that specific scheme.
- The level of training might not be sufficient in terms of content, training method or training duration.
- Although everything turned out to be complete from care takers' side, there is still practical problem to access and transport the major tools required to lift out the pipes (Tripod and chain block).
- Furthermore, there is also a serious problem of getting spare parts in the local market.

Generally, the phase-out strategy need to be considered in terms of linking the WATSAN committees to their respective Woredas along with advocacy at regional level to give due attention in building the capacity of the Woreda water offices. Especially, to materialize planned establishment of operation and maintenance department at regional and Woreda levels so as to extend guidance and support to the WATSAN committees for the maintenance and overall management of the schemes, including cash contribution for purchase of spare parts and making the spare parts available locally. As a matter of fact, in addition to building the capacity of WATSAN committees, SC/US has taken this commitment as part of the assumptions made in the phase-out strategy.

3.8 Project Effectiveness/Efficiency

Effectiveness:

Project's degree of achievement of the planned objectives is compared to the realized objectives in terms of the three intermediate results in one hand and cost effectiveness on the other.
The first intermediate result – IR 1: Improved access to safe water sources through development of new sites and rehabilitation of existing non-functional water supply schemes was fully implemented; and the activities leading towards achieving the second intermediate result (IR 2: Improved management and maintenance of water points) was indicated in terms of number of established WATSAN committees, trainings conducted to the WATSAN committee members and to the government staff and the corresponding provision of tools and spare part; whereas the third intermediate result (IR 3: Improved hygiene and sanitation knowledge and practice in target communities) has been partly covered as access to water facilitated the practice of the already existing knowledge in terms of good sanitation and hygiene practice. Direct action regarding promotion of sanitation and hygiene; however, has not been covered in the project.

On the other hand, the percentage value given to each objective was rated in terms of the level of contribution, that specific objective contributes towards achieving the overall goal. The household survey result showed that 60% of the community had basic knowledge about sanitation and hygiene, which was challenged by lack of access to water in their vicinity. Accordingly, the first intermediate result (IR 1 – Improved access to safe water sources), which was the first and most important priority to the community, and consecutively the major objective of the project, has played an important role in responding the felt needs of the community along with facilitating materialization of good sanitation and hygiene practices. Thus, the percentage value of the first IR has been rated as 60%, while the remaining two intermediate results were rated as 20% each.

Consequently, achievement of each intermediate result was calculated based on its allocated value, as has been indicated in the following table – Table 1: Calculation of Project Effectiveness in terms of each IR.

Table 3.1: Calculation of Project Effectiveness in terms of each IR.

	Allocated Value	Achievement	Cumulative Result
IR-1	60%	100%	60%
IR-2	20%	75%	15%
IR-3	20%	40%	8%
	Weighted Average		**83%**

The first IR was fully achieved as all the planned activities were implemented, and the result of the second IR showed 75% achievement as the established WATSAN committees were not active;

whereas the third IR showed 40% achievement due to the indirect effect of achieving IR1, which has resulted in improved sanitation and hygiene practices from 60% to 86.7%.

Thus, when the project's degree of achievement in terms of planned objectives is compared to the realized ones, the project turned out to be 83% effective.

In parallel, the project's effectiveness was calculated in terms of cost (as cost per unit of scheme taking major schemes of the project) compared to the minimum possible cost of reaching the same beneficiary in terms of cost per beneficiary (cost of scheme divided to the number of the population served). Thus, the project was found to be 72% effective. (Table 3.2: Calculation of Project Effectiveness in terms of Project Cost)

Table 3.2: Calculation of Project Effectiveness in terms of Project Cost

	Project Activity	Average Unit Cost (Birr)	Maximum Population per scheme	Cost per population (Birr)		
1	Boreholes fitted with hand pump	179,238.44	500	358.48	264%	38%
2	Hand Dug wells	54,695.04	500	109.39	80%	124%
3	Motorized scheme	385,021.62	1500	256.68	189%	53%
		Weighted Average			**72%**	

Total project budget (Birr)	13,999,336.82	
Total population addressed	103000	
	135.92	Birr/person

Efficiency:

The project's efficiency was calculated in terms of realization of the planned project activities and the corresponding functionality of the implemented schemes. The hardware part of the project activity includes drilling and completion of boreholes fitted with hand pumps, construction of hand dug wells installed with hand pump, and installation of motorized schemes along with construction of public fountains. The evaluation result showed that out of the completed 43 schemes, 7 are not functional. Thus, the cumulative result of the project efficiency as compared to the number of functional schemes against the total number of implemented ones is 84% efficient.

Furthermore, time factor was considered as one of important parameters in calculation of the project efficiency, which showed that the project was 50% and 33% efficient at the end of Phase I and Phase II respectively; whereas a tremendous achievement was recorded during Phase III with

the corresponding efficiency of 133%. The cumulative efficiency of the project in terms of implementation time turned out to 72%, which was affected by the delay in implementation of phase I and Phase II activities.

3.9 Monitoring, Reporting and Documentation

The rationale behind setting-up a monitoring system could be described in triple points: first to generate regular update information so as to make informed decisions which contributes to project quality improvements; secondly to ensure accountability, where all stakeholders have been communicated on the performances achievements, and thirdly, for organizational learning which mainly focuses on documenting best lessons and practices so as to replicate and scale up in any similar conditions.

Project monitoring is part of a project plan and its design follows the project cycle management. From a project plan, a joint monitoring system to be carried out with various stakeholders need to be clearly stated. Additionally, the M&E system would have been designed jointly in collaboration with project beneficiaries and with government line departments at Woreda and regional levels. However, the modality of the project implementation lacks M&E plan, which provides roadmap for how M&E activities to be carried out, identification of M&E events with timeframe, roles and responsibilities of involved stakeholder, and allocated budgets. The stakeholders in this regard are beneficiary communities at village level, village and PA leaders, relevant government offices at Woreda and regional levels.

Findings of the filed observations and key informant interviews with government representatives at Woreda and regional levels confirmed that reporting and monitoring systems were weak; especially this was justified at regional level taking the practical context in to consideration.

According to findings from key informant interviews made with Woreda officials, at the start-up of the project, SC/US implemented the project activities in collaboration with the Woreda offices which ensures the transparency and accountability of all stakeholders. However, at later stage, the joint collaboration became weaken due to unknown reason. For instance, the joint monitoring with Woreda water office was much appreciated in phase II, while in phase-III, such collaboration efforts gradually weaken and fadeout. One can suggest that joint collaboration efforts in monitoring system should be strengthen in upcoming projects.

With regard to reporting system, the available progress or terminal reports seems good. However, there is no organized and systematic reporting structure which properly captures performance records and organizes into information system. From field observation, there was no standard recording and reporting tools.

In summary, most of the monitoring and evaluation standard systems with defined and acceptable standard tools have not been observed. Therefore, the major gaps observed in M&E system are:

- Absence of baseline data or assessment report in the second and third phase of the project was one of critical monitoring events.
- The conceptual understanding on monitoring and evaluation system by the project staffs was very limited. The M&E plan and Performance Monitoring Plan was perceived as simply as preparing progress report and sharing to stakeholders in unstructured manner.
- Standard reporting tools for documenting and recording performance data or information in the course of project implementations were not in place.
- Regular technical coordination review meetings at both region and Woreda levels were hardly conducted, which would have been used for sharing of performances or progress achievements as well as reflective processes to be shared to all stakeholders.

In general, lessons drawn from past intervention periods that monitoring and evaluation system with various stakeholders need to be strengthened so as to ensure the sustainability and other related core values of the organization (SC/US's); especially, accountability and transparency issues.

3.10 Project Relevance

According to key informants and participants of FGD, the major problems of the area in order of priority are water, human health, and livestock health although key informants in Adaar and Golina mentioned education as the third priority instead of livestock health. Although there are some people who argue that construction of water sources in pastoralist areas is affecting mobility, the situation in Afar becomes different. Due to climatic change, it becomes very difficult to continue with the customary livelihood system and people are out of the pastoral production system as mobility become much minimized due to conflict and other factors. In addition, the occurrence of recurrent drought in the past five years has highly affected the livelihood of the local community. Thus, construction of water schemes in these areas is of highly importance and this implies that the project is highly relevant in addressing the need of the community members.

3.11 Project Management

According to the project manager, the bulk of decisions that are related with the project are made at Head Office level that the project manager does not have any stake in major issues that are pertinent to the project, which include budget, bid analysis, and technical evaluation of contractors and consultants. With regard to staffing, the team understood there is serious lack of project staff to cover wider areas and various activities. This situation makes supervision of activities a serious issue. For instance, in addition to the coordination and management roles, the project manager was covering the role of drilling supervisor spending almost full time on site during the drilling process

that has resulted in lack of enough time to deal with other project management related issues. As mentioned by the project manager, although there is good horizontal relationship with line government offices, there are difficulties in vertical relationship with HO that are manifested by a delay in the recruitment as well as procurement process, rejection of ideas from the project office (the case of sign board and fencing), lack of consultation with project office on problems and lack of support, and absence of staff development opportunities to field staff were identified as some of the issues in the management system.

3.12 SWOT Analysis of the Project

Strength	Weakness
• Improved water access	• Neglecting the soft ware parts of WASH
• Reduction of water borne diseases	• Inactive WATSAN committees
• Reduced frequency of migration	• Delay in commissioning the completed schemes (Hand Dug Wells)
• Improvement on personal hygiene	• Lack of proper fencing at hand pumps (children playing or animals roaming might contribute towards early breakdown)
• Saved human life during drought	• Some hand pumps require high energy to perform
• Provision of safe water	• Some schemes have low recovery rate
• Access to clean water	• Lack of trough for shoats in some schemes
• Increment of school enrollment	• Un-matching project staff against the extent and geographic coverage of the project
• Decrement of school dropout	• Lack of linkage between the WATSAN committees and the government structure
• Access of water for shoats	• Low capacity at government offices to guide and support the operation and maintenance of the schemes
• Improvement in health status	
• Avoid the attack from bandits	
• Avoid shoats raiding	

• Avoid conflict with the communities that are living around the former water source	
Opportunities	**Threat**
• Possibility of getting fund	• Increase in settlement
• Construction of roads that ease transportation of drilling machines	• Environmental degradation
• Community participation	• Conflict
• Existence of regional water strategy	• The scheme attracts wild beasts that attack shoats
• Communities action and willingness to pay for water services	• Recurrent drought

3.13 Lessons Learned:

- The project was very relevant in its context in terms of responding the dire water supply needs of the drought affected people, and it also fits with the five-year water sector strategic plan of the Region contributing towards the MDG
- The project design underestimates the project staff compared to the set objective and the corresponding geographic coverage.
- The assessments conducted to analyze the emergency situation were timely; however, the type and depth of information collected and shared with regard to WASH activities were not specific and were not updated and shared with other stakeholders on timely basis as there was no regular forum like coordination meetings with other NGOs working in the area
- Selection of interventions in terms of WASH schemes was relevant to the context as it was based on the availability of the water source and feasibility of the schemes to the specific area.
- The implementation process of the project activities was participatory.
- Making use of readily available partner enabled to implement the actual work with no delay (Maintaining the successful drilling contractor on site has resulted in reduction of time, mobilization and demobilization costs, and above all timely provision of water to the drought affected persons, mainly women and children).
- Quality of the contract signed with partners (with drilling contractor) was strong enough that takes care of the work quality at optimized cost since it is a turn-key award.
- The qualities of works observed at most of boreholes were as per the standard.
- Lack of shoat troughs in some of the water schemes forced people to share the same water-container with their animals.
- Lack of fences around most of the water supply schemes (hand pumps) have resulted in an open access to animals resulting in contamination of the area besides the physical action on the hand pump contributing towards early and frequent breakdown of the hand pumps.
- The water quality tests need to be conducted right after completion of the scheme.
- The stretched geographic coverage minimized the efficiency and effectiveness of project implementation.
- The soft components of the project (promotion of good practices of sanitation and hygiene) were given less attention, which has directly affected the project efficiency
- The number and qualification of the project staff need to be defined and be on board as per the project activities and the corresponding geographic coverage.
- Capacity building activities include both training and provision of tools and spare parts, play significant role towards sustainability of implemented schemes. However, the WATSAN committee members' selection process, training quality in terms of methodology and duration turned out to be areas of improvement as these were reflected in the low level of input that the WATSAN committees have in maintenance and management of the water supply schemes to the extent that 94% of the surveyed households don't have information about the existence of WATSAN committees in their area. Besides, the major component of maintenance tools

(tripods) turned out to be very important to handle maintenance of the hand pumps (Indian Mark II); however, there is a serious concern from the user community to move these tools from site to site as the Woreda water offices don't have vehicles or any means of transportation that can transport these tools.

- Although the water bureau at regional level shows willingness to support Woreda water offices, there is a serious lack of budget, manpower and material at Woreda level to extend supports to WATSAN committees including follow-up of their functionality and technical supports in handling major maintenances.
- Area of improvement was also observed in monitoring and evaluation system taking the various stakeholders into considerations.

Section IV: Results of Household Survey

4. Results of Household Survey

4.1. Background Characteristics of Respondents

The demographic and socio-economic characteristics of respondents resided in project intervention areas are presented in Table 4.1. The geographic distribution of household respondents were drawn from Adaar, Ewa, Golina and Yallo woredas of Afar region and about 15 (25%) sampled households were interviewed from each woreda. The household respondents by age group found that about two-thirds of respondent (66.7%) were belong to age group 21-49, less than one-third (26.7%) was below 20 years and the remaining 6.7% fell on the category of 50 years and more.

The sex-compositions of household heads in the study area were predominantly male headed households, which account for 95%, while 5% were female headed household. Larger family size was observed with 6 and more members (58.3%), followed by households with 3-5 members which accounts for 31.7% and the reaming 10% constitutes families with at most 2 members. Majority of respondents were female accounting for 82%. Of the total respondents, about 92% of respondents are married, 7% single and 2% are widowed.

Education is one of the major socio-economic determinant factors that influence a person's behavior and attitude. In general, it is believed that the higher the education level of the individual, the more knowledgeable she/he is about the use of hygiene and sanitation services and caring of their children and other family members. According to survey results, majority of respondents (90%) do not read and write whereas the remaining 10% have attended primary school.

Table 4.1 - Percentage distribution of respondents by socio-economic and demographic characteristics, EWSP Project, 2005-08

Demographic and Socio-economic Characteristics of Respondents	Percentage
Study woreda	
Adaar Woreda	25.0
Ewa Woreda	25.0
Golina Woreda	25.0
Yallo Woreda	25.0
Age Group	
Less than 20 years	26.7
20-49 years	66.7
50 years and more	6.7

Sex of Household Head	
Male	95.0
Female	5.0
Household Size	
1-2 members	10.0
3-5 members	31.7
6 members and more	58.3
Sex of Respondents	
Male	18.3
Female	81.7
Marital Status	
Single	6.7
Married	91.7
Widowed	1.7
Literacy Status	
Do not read and write	90.0
Read and write	10.0
Education Attainment	
Never attended at all	90.0
Primary Level	10.0
Secondary Level	0.0
Total number of HH respondents	**60**

Availability and accessibility of water sources by type were asked in the survey. The result is presented in Table 4.2. Before intervention, majority of household respondents (56.7%) were collecting water from river and stream during dry and wet seasons. About 35% and 21.7% used to collect water from unprotected hand dug well in dry and wet seasons respectively. However, after the intervention, almost 98.3% and 93.3% of local communities used to collect water from

borehole/hand dug well in dry and wet seasons respectively. One can observe that majority of local communities used to access from unprotected water sources before the project intervention have directly shifted to the borehole/hand dug well after the intervention as has been presented in the following table.

Table 4.2 Percentage respondents by sources of water, The EWSP Project, 2005-08

Sources of drinking water	Before Intervention		After intervention	
	Dry season	Wet season	Dry season	Wet season
Borehole +HP	1.7	1.7	98.3	93.3
Protected HDW	0.0	0.0	1.7	5.0
Unprotected HDW	35.0	21.7	1.7	0.0
Pond	0.0	20.0	0.0	1.7
River/Stream	56.7	56.7	1.7	5.0
Other	6.7	6.7	0.0	3.3
Total No of respondents	**60**	**60**	**60**	**60**

4.2. Impacts of the Emergency Water and Sanitation Project (EWSP)

The EWSP was started as emergency response in 2005 in Zone 1 of Afar region to address the chronic water shortage and continued to next phases of II & III during 2006 to 2008 project periods. Particularly, the project efforts were to respond the immediate and chronic needs of water demands of drought affected communities in project intervention areas. The extension of the project mainly focused on mitigation so as to reduce risk/uncertainty as part of recovery through the following intermediate results of:

- **IR 1**: Improved access to safe water sources through development of new sites and rehabilitation of existing non-functional water supply schemes
- **IR 2**: Improved management and maintenance of water points; and
- **IR 3**: Improved hygiene and sanitation knowledge and practice in target communities.

However, in the project document, none of performance indicators were presented and set-up for tracking these intermediate results. Thus, in order to measure the impacts of the EWSP, the consultant team has set-up relevant, reliable and measurable performance indicators and lay down as per the corresponding intermediate results. Therefore, interpretations of the household survey results in terms of the impacts of EWSP are presented as per intermediate results of the project.

- **IR 1: Improved access to safe water sources through development of new sites and rehabilitation of existing non-functional water supply schemes**

I - Clean water supply coverage

a. Source of Drinking Water

Accesses to drinking water from various sources are the single most important provision for any population during emergency period. Thus, respondents were asked where to access water before and after project interventions and the result is presented in Table 4.3. During pre-intervention, less than 2 % of local residents' had accessed drinking water from borehole, whereas majorities were used to access from unprotected hand-dug well (UHDW) and river sources. However, after intervention, almost all respondents reported that they can access drinking water from protected sources of borehole/HDW. Accessing drinking water from UHDW and river source was decreased and the greater proportion of respondents uses the borehole/HDW to in the study areas. As a result, water access for drinking and other related purposes at household level have significantly improved in the project intervention areas. To validate this result, statistical test was employed to know the attributions of the project in the study areas. It was found to be significant at 5% level and majority of local communities confirmed that it was attributed to the project intervention.

b. Daily Consumption of Water

Daily water consumption at household level was calculated based on the volume of the water container used to collect water multiplied by the frequency of water collection, which is a crucial impact indicator for per capita water consumption. According to the survey report, before intervention, only 2% of the respondents used to consume more than 15 liters of water per day, which is within the Sphere Standard. However, after the project intervention, the households consuming at least 15 liters of water per day dramatically shifted to 98%. Thus, comparing pre-and post-interventions, the increase on water consumption by household per day has found to be statistically significant at 5% level.

c. Physical Access to Water Sources

The physical accessibility of water is determined by travel distance to fetch drinking water. This can be measured either elapsed time for round trip (from home to water points and back to home) in hours or in kilometers. In many pastoral areas of Ethiopia, potable water sources are not found at nearby, walking distances. The distance traveled varies within Woredas, PAs and seasons. Women and children walk the whole day to collect water. Before intervention, majority of local communities had (75%) traveled in search of water at least 4 hours and more. However, following the scheme development, shorter time spent in search for water, almost close to four-fifths (80.0%) of local communities walk less than one hour to fetch drinking water. The average time elapsed in search of drinking water during both pre-and post-interventions period were estimated at 5.6 hour and less than an hour respectively. This change was statistically tested at 5% level and found to be highly significant.

II - Water Quality (or Sanitation condition)

Accessing quality of water is one health indicator and the survey result showed that the water quality is significantly improved in the project interventions areas. Comparing pre and post intervention the percentage change of water quality has increased from 3.3 % to 76.7%. Greater change has observed in the project interventions areas and found to be statistically significant at 5% level.

III - Responsibility of Fetching Water

The responsibility of fetching water in pastoral areas heavily falls on women and children. The survey result revealed that 63.3% of women and 3.3% of children were responsible for fetching water before the intervention; whereas, after the intervention 76.6 % of women and 10% of children turned out to be responsible for fetching water as the water schemes are located in their vicinity.

IV – Childhood Morbidity

Water borne diseases like diarrhea are among the leading causes of illness and death in developing countries, which are associated with poor living conditions and related lack of domestic hygiene and sanitation practices. During the household survey, information on occurrence, frequency and cost of treatment for diarrheal cases were collected in the survey areas.

Comparing pre-and post-intervention periods, the incidence of diarrhea among children under-five used to be 83.3 % before intervention, whereas the incidence of diarrhea after the intervention has reduced to 13.3% in project intervention areas. Further comparison in terms of frequency on monthly and seasonal basis was also significantly decreased by 82.3% and 62.85 respectively. Moreover, the cost of diarrhea treatment was significantly reduced by 79.5%. On average, the frequency reduction of childhood morbidity was statistically tested to know whether the impact was attributed to the project. It was found to be significant at 5% level and meant that the frequency of diarrhea occurrence among children due to water born diseases has significantly reduced after the interventions.

V - School Enrollment

In some cases, the arduous task of water fetching in some rural areas forces girls (occasionally boys) to drop out of schools. This is because they spend more of their golden time in tasks related to fetching of water from long distance.

According to survey results, sending children to school is significantly increased in the project intervention areas from 13.3% to 30% before and after the intervention respectively. This improvement was statistically tested and found to be significant at 5% level.

Table 4.3: Percentage change in outcome indicators for water access under the EWSP Project, 2007-2008

IR 1: Improved access to safe water sources through development of new sites and rehabilitation of existing non-functional water supply schemes				
Impact Indicators	**Percentage**		**Relative Change (%)**	**Stat. Sig.**
	Before Interventions	**After Interventions**		
Clean water supply coverage indicators				
1.1. Sources of drinking water				
Borehole +HP	1.7	100.0	GC	P=0.000
1.2. Daily Consumption of drinking water**				
<15 Ltrs	98.0	1.7	GC	P=0.00
15 Ltrs and more	2.0	98.3	GC	
1.3. Walking distance from source of water **				
One hour and less	6.7	80.0	GC	P=.000
2-3 hrs	18.3	6.7	-63.4	
4 hrs and more	75.0	13.3	-82.3	
1.4. Sanitary Condition (Water Quality)**				
Borehole	3.3.	76.7	GC	P=.000
1.5. Responsibility to fetch drinking water*				
Male adult	1.7	-		
Female adult	63.3	76.7	21.2	P=.000
Children	3.3.	10.0	20.3	
Others	10.9	13.3	22.0	
1.6. Prevalence of Diarrhea**				
Incidence of Diarrhea	83.3	13.3	-84.0	P=.000
1.7. Frequency of Occurrences**				
Weekly	15.0	-	-	

Monthly	28.3	5.0	-82.3	P=.000
Seasonally	45.0	16.7	-62.8	
Others (irregular)	1.7	6.7	GC	
1.9. Cost of Treatment for Diarrheal Cases**				
100 Br and less	76.7	36.7	-52.2	P=.000
101-200 Br	3.3	3.3	0.0	
200+ Br	8.3	1.7	-79.5	
1.10. School Attendance Among Children*				
Sending children to school	13.3	30.0	125.6	P=.000

NS-Not Significant, * Significant at P<0.05, ** high Significant at P<0.05, and GC= More than 100%

NB: The household survey shows some families fetch water from both protected and unprotected water sources which makes the sum of the % in the table >100%.

IR 2: Improved management and maintenance of water points

I - WATSAN Committee

The WATSAN committee members at each scheme were trained for 15 days in Woldeya and Alamatta towns. In each committee there are 5 people (4 men and 1 woman), of which three are responsible for the water management and the other two are care takers. Start-up tools were also provided to water care takers to enable them operate and maintain simple damages on the developed schemes.

The care takers are expected to give services in operation and minor maintenance, and water management committee is responsible for the establishment of fee collection system and overall management of the water scheme. The fee collected from water users will be used to carry out minor operation and maintenance of the water scheme. The evaluation team observed that the functionality of WATSAN committee kept under question and payment for operation and maintenance was not effective.

In household survey, the functionality and existence of network among WATSAN committee and project beneficiaries were assessed and the result is presented in Table 4.4. The survey results showed that about 94% of the respondents have not recognized the existence of WATSAN committees in their respective village, and only 16.7% of respondents reported that women have key role in a leadership position.

Institutionalizing cost recovery system for water use ensures the sustainability of the developed water scheme that WATSAN committees are expected to establish the system at their respective villages. However, follow-up of WATSAN committees' performance from Woreda water office was limited mainly due to lack of budget, limited manpower and material; especially due to lack of means of transportation, it turned out to be a serious concern regarding sustainability of the schemes. Regardless, the communities willingness to pay for water services was demonstrated by the action observed from significant number of communities (31.7%) paying for water use, which was promoted, organized and managed by community leaders, who are not part of WATSAN committee members. Such follow-ups are expected to enhanced, once the Woreda water offices receive the motorcycles purchased under this project.

Table 4.4 Percentage change in outcome indicators for management of water points under the EWSP Project, 2007-2008

Outcome Indicators	Before Intervention	After Intervention	Relative Change (%)	Statistical Significance
IR 2: Improved management and maintenance of water points				
2.1. Existence of WATSAN Committee				
WATSAN existence	0.0	5.7	-	
Women taken leadership role	0.0	16.7	-	
2.2. Cost Recovery Scheme of Water Use				
Payment for water use	0.0	31.7		
2.3. Capacity Building on Water Management and Use				
Training for WATSAN Committee on personal hygiene and water use	0.0	5.7	-	

NS-Not Significant, * Significant at P<0.05 and ** high Significant at P<0.05

- **IR 3: Improved hygiene and sanitation knowledge and practice in target communities**

I - Hand Washing Habit

During the household survey, data has been taken on the habit of hand washing and the result is presented in Table 4.5. Due to water accessibility and availability, improvement has been recorded on habit of hand washing. About 60 % of local communities before project intervention period had

washed their hands before and after every meal, before preparing food and feeding a child, after child's bowel movement, and after use of latrine. These habits increased to 86.7 % after the scheme development. One can conclude that on average, majority of local communities previously practiced hand washing and the accessibility of water enhances hand washing at various events.

Table 4.5 Percentage change in outcome indicators for hygiene and sanitation under the EWSP Project, 2007-2008

IR 3: Improved hygiene and sanitation knowledge and practice in target communities				
A. Hygiene Practice Related Indicators				
3.1. Habit of Hand washing				
Outcome Indicators	**Before Intervention**	**After Intervention**	**Relative Change (%)**	**Statistical significance**
Before & after: every meal, preparing food, feeding & cleaning a child, and use of latrine	60.0	86.7	44.5	NS
Others				
3.2. Average frequency of taking bath (Habit of body washing)				
Daily	36.7	81.7	122.6	NS
Weekly	40.0	11.7	-70.7	
3.3. Materials used during washing**				
Soap	28.3	56.7	100.4	P=.000
Soil	8.3	1.7	-79.5	
Ash	3.3	3.3	0.0	
Only water	41.7	26.7	-36.0	
Other	18.3	11.7	-36.0	
B. Sanitation Practices				
3.4. Toilet Facility				
Latrine type	0.0	0.0	0.0	
3.5. Defecation Places				

In the bush	98.3	98.3	0.0	
Others	1.7	1.7	0.0	

NS-Not Significant, * Significant at P<0.05 and ** high Significant at P<0.05

II - Habit of Body Washing

Habits of body washing is one of the hygiene practices and the survey results showed the frequency of body wash on weekly basis has been improved in the project intervention areas. Particularly, before interventions, the weekly body washing was greater as compared to daily basis (40.0% and 36.7% respectively). However, following the scheme development, the frequency of taking bath increased to daily basis (81.7%) and the weekly basis reduced to 11.7%.

III - Sanitation Practices

One of the major sanitation components of the project was expected to include safe excreta and solid waste disposal systems. The household survey revealed that a sanitation practice in terms of using latrines is almost absent.

98% of the local communities practiced open-field defecation during both periods; before and after project interventions. Although the WATSAN committees were trained in sanitation components including improved knowledge on environmental sanitation management, the acquired knowledge and skills neither cascaded to local project beneficiaries nor to their own family members.

Overall, the enumerators also observed the cleanness of children and household compound. The result showed that about 75% of children's faces and 73.3% of their clothes found to be clean and neat respectively. Additionally, about 85.5% of respondents' compound found to be clean.

Section V: Findings of Participatory Impact Assessment

5. Findings of Participatory Impact Assessment

5.1 Mapping

Participants of the community group discussion have drawn the map of their respective areas. The map shows important features such as the location of water sources (former and current), mobility route during dry season, wet season grazing areas, settlement patterns of the beneficiaries, and other infrastructures like schools and health facilities.

5.2 Timelines

During the community discussion, participants recite important historical events that occurred during the project period. These key events include community discussion, site selection, construction of the scheme, and water provision. In some areas, participants cited important events like occurrence of drought, major conflicts, construction of schools, time of school enrollment, and construction of health centers, and veterinary clinics.

5.3 Project Impact

Research questions: Formulation of research questions is of vital in conducting a participatory impact assessment. Accordingly, this impact assessment was formulated around the following research questions:

- What impact has the project had on child morbidity and mortality that are related to water-borne diseases?
- What impact has the project had on reduction of proportion of expenditure for water borne diseases and travel time to health facilities
- What impact has the project had on reducing access to water resources?
- What impact has the project had on school enrollment?

Impact indicators:

The following indicators of project impact were identified during focus group discussion with the community members and key informant interview.

Table 1: Community defined impact indicators

Expected Project Impacts/Benefits
- Improved access to safe water for human being
- Decrement of incidence of water borne diseases
- Decrease cost of treatment for water borne diseases as well as decrease travel frequency to health facilities
- Increase school enrollment and decrease school dropout
- Increase in sanitation status
- Increase water access to shoats and increase milk availability at household level
- Provision of service to local teachers and other development actors
- Timesaving benefits

Access to safe water for human being

In several assessment areas, almost there was no water source development before the intervention of SC/US. Before this intervention, women used to travel long hours to fetch water from unprotected water source. For example, participants of the FGD in Yallo Wereda mentioned that they used to travel 12 hrs to fetch water from the river. Furthermore, FGD participants from Ewa Woreda mentioned that, except the rainy season, community members used to travel 10 hrs to fetch water. During such events, women were attacked by wild beasts like hyenas, bandits, and snake-biting, which is highly frequent.

In addition, when women traveled long to fetch water, there would be no one in the house to give water and food for elders and children so that they suffered too much from hunger and thirst. Even, according to women FGD in Yallo wereda, there are times when patients die in a house where there is no one in the house. In addition, as large number of people came from different areas to use the water source, conflicts were arising due to queuing. Even, there were frequent with communities that are living nearby the former water sources.

Some people also mentioned that there were times when women gave birth while traveling to river area to fetch water. FGD participants from Ewa Wereda have also mentioned that, while fetching water from 'ela'/pit area, children fell into the pit and getting injured. Furthermore, other participants also mentioned that, shoats used to be raided by bandits and also there is also attack from crocodiles in the river. Key informants from Addar Wereda have also mentioning that since women will travel long to fetch, there were times when children have been attacked by monkeys.

As depicted in the lower table, the intervention has contributed a lot in reducing long travel of women to fetch water. For instance, beneficiaries in the Ewa Wereda used to travel at an average of 10.67 hrs before this intervention; but now it is required now ½ hours to fetch water.

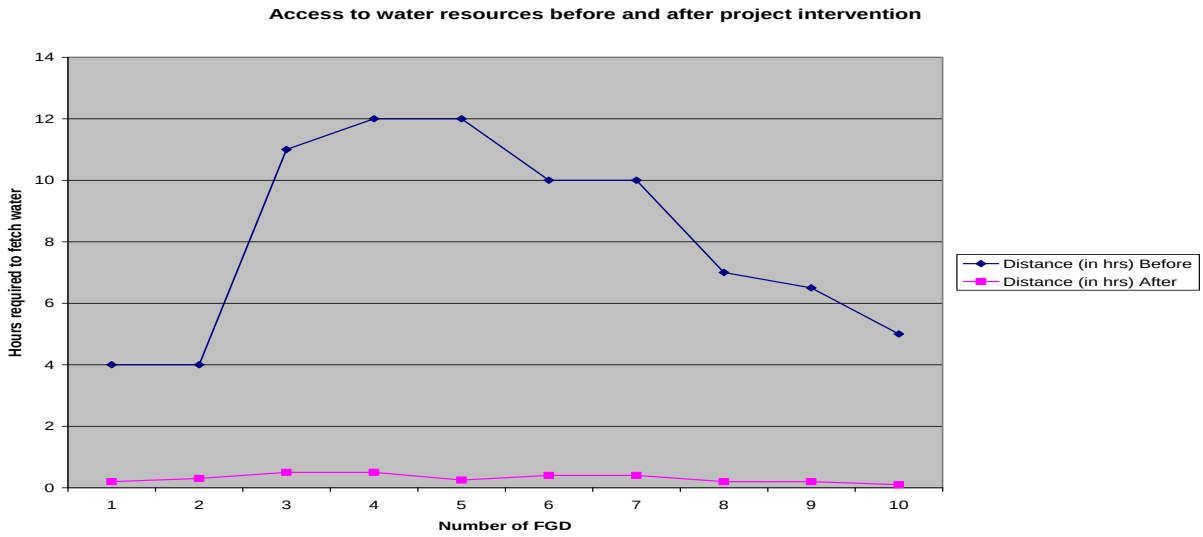

Fig 1: - Access to water resources before and after the intervention

"One of the residents of the village was in labor (child giving). The traditional birth attendant that is living in the area went to the river to fetch water. Hence, there was in the area that can help the expectant and she suffered a lot. After 10 hrs of suffering, the birth attendant arrived in the area and the woman, fortunately, can gave birth safely. Had the scheme been existed at that time, the women would not have suffered due to laboring".

Halima Mohammed, Residence of Koffo PA, Ewa Woreda

Decrement of water-borne diseases

Regarding human health, due to the unsafe water sources, community members have been exposed to different kinds of water borne-disease like diarrhea, amoeba, and kidney problem. Due to this, in Adaar and Ewa Weredas, the regional health bureau and other Non Governmental Organizations like the Afar Pastoralist Development Association (APDA) used to provide camp-based treatment for water borne diseases. In some of the assessment areas, due to severe problems of health infrastructure (health posts and drugs), these waterborne diseases were leading to death

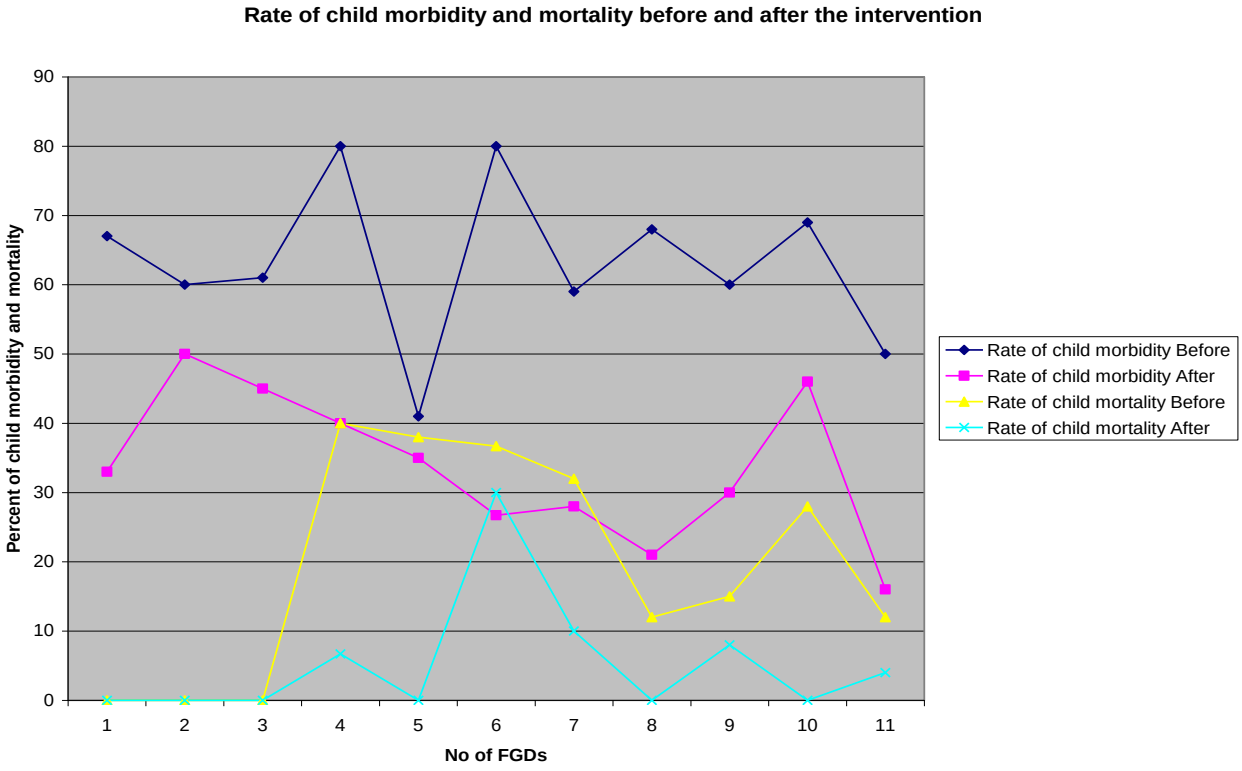

Fig 2: - Rate of child morbidity and mortality after the project

As clearly shown in the above figure, there is a significant decrement of child morbidity and mortality that are arising from water borne. In the focus group discussion, participants have mentioned that members of the community used to drink un-safe water that has been infected by bacteria and parasites so that occurrences of water-borne diseases have been common phenomena. In addition to this, lack of health facilities in the area makes things worse as it leads to child mortality. Therefore, the intervention has contributed a lot with regard to low incidence of these diseases.

Decrease cost of treatment and frequency of travel to health facilities

There is high correlation between the incidence of disease and cost of treatment and frequency of travel to health facilities. According to FGD participants, after the construction of the water scheme and the consequence reduction of incidence of water-borne diseases, the cost that the community members incurring for medical treatment has been decreased and their travel time to health facilities has been minimized.

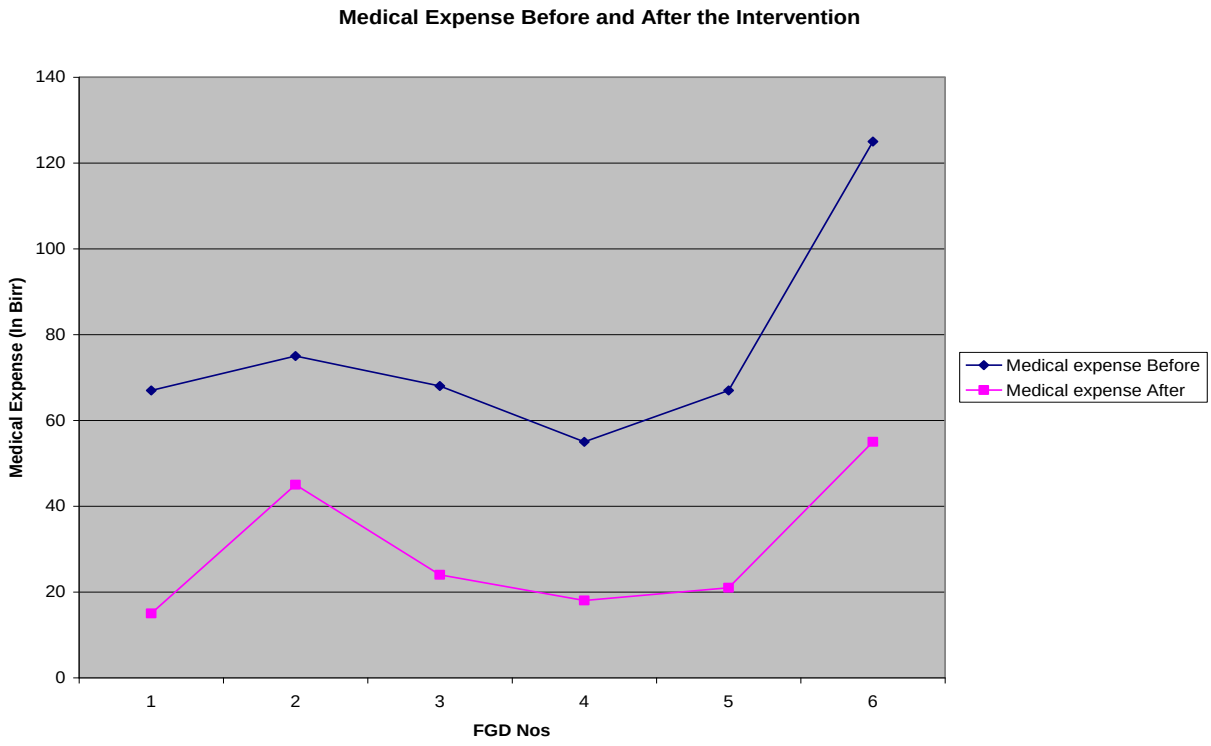

Fig 3: - Community members medical expense before and above intervention

According to the above figure, community members used to incur significant amount of their income for medical service to treat diseases that are arising from water borne diseases. After the water scheme intervention, the expense of community members for medical treatment has substantially been decreasing.

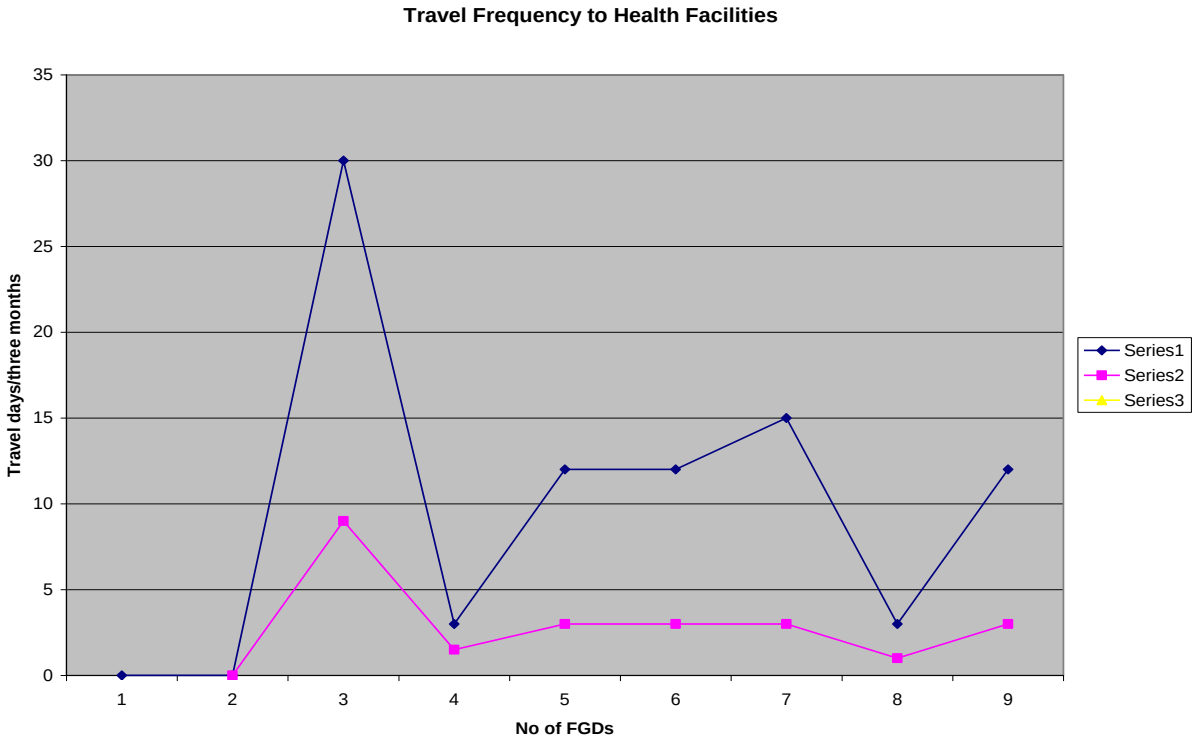

Fig 4:- Community members travel days to health facilities

Community members used to travel 10 days per month to health facilities to get medical services for water-borne diseases. As seen in the above-figure, the level of frequency has been decreased after the construction of the water scheme. Hence, this might give community members to allocate their time for other purposes.

Increase in school enrollment

In some of the assessment areas do not have schools so that it was very difficult to assess the impact of the intervention on school enrollment and dropouts. Nevertheless, the information that has been gathered from the key informants indicated that school enrollment has significantly increased in schools where water sources have established. For example, FGD participants in Golina area mentioned about the close a school (which was constructed by Pastoralist Communities Development Program) due to lack of water.

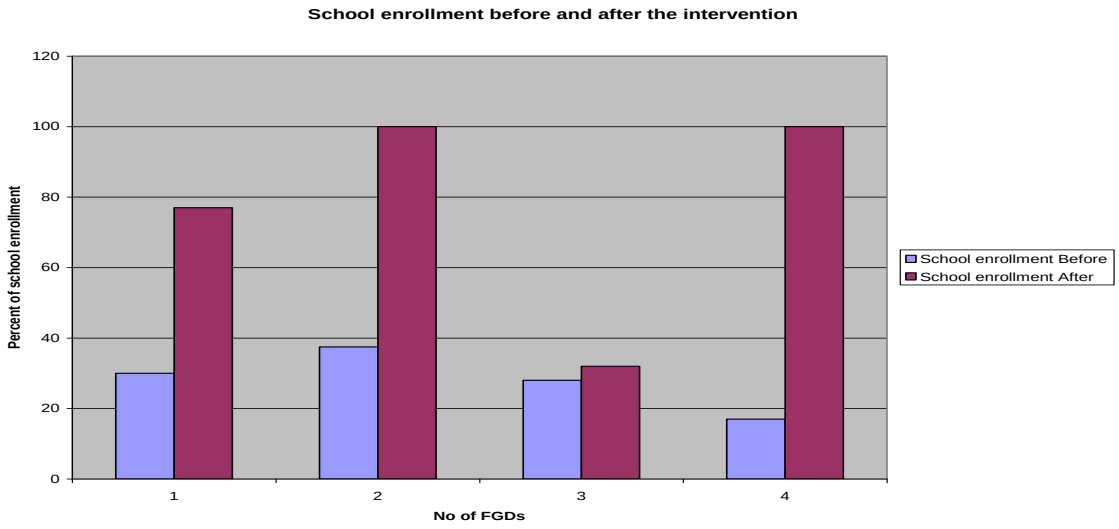

Fig 5: - School enrollment before and after the intervention

As per the above figure, there is an increment of the rate of school enrollment after the project intervention area. For instance, key informants in Adaar Woreda mentioned that there were 130 students (40 girls) last year in one site and this year the number of students increases to 150 (50 girls) and school dropout is also decreasing in this site. In Ewa area, those students (who have been dropping from school due to water problem) are now returning to school. Nevertheless, one has to note the existence of other factors like school feeding program that affect school enrollment and dropout. Although the level of increment of school enrollment is proportionate among boys and girls in most areas, participants from Golina Woreda mentioned that the proportion of girls is high in the area after the construction of the scheme.

The water schemes also have contributed in retention of teachers and other development actors. For instance, in Golina area teachers used to live in the nearby town and have to travel 1 hrs daily to come to the school. In addition, the school feeding program of the World Food Program is now commencing in many areas due to the existence of water for cooking purpose. This, in addition to reliable water supply for students, has contributed to an increment in school enrollment.

Increase sanitation status of the community

With regard to sanitation practice, the hygiene and sanitation status of the community was very poor as it is a common problem in many pastoralist areas. In the intervention areas, due lack of enough supply of water and there were times that the community members wash their body once in 2 months. In addition, as women used to wash the cloth of the family members in the river area, it was another burden for them to takeaway it to the far located river area. In addition, FGD

participants mentioned that the water scheme has also contributed to the increment of the sanitation level of teachers and other development actors in the area.

In addition to conducting exchange visits to other areas, the project has provided various trainings for WATSAN COMMITTEE members although these do not trickle down to the community in many schemes/areas. Nevertheless, participants in Golina area mentioned that WATSAN COMMITTEE members that took training on hygiene and sanitation have conducted awareness creation events to the community members, which contributed to the increment of sanitation practices of the community. In addition to WATSAN COMMITTEEs, government health extension agents are conducting awareness creation events on hygiene and sanitation.

With regard to utilization of latrines, except in schools, there are not individual or community latrines and, hence, community members are exercising open-field defecation. Although schools that are constructed by PCDP have disaggregated latrines, students are not properly utilizing these latrines.

Impact on livelihood

In many intervention areas, the project has contributed to the livelihood of the community through improving access to water to shoats. This is really significant in areas where shoat troughs are constructed along with the scheme. It is known that pastoralists are mobile communities and move in search of pasture and water with their cattle and camels. Women, on the other hand, will stay around the homestead area with shoats. Some informants of Ewa wereda has mentioned that shoats have also been benefiting from this intervention and vulnerability to water related shocks is decreasing. Theses participants also mentioned that productivity of goats is improved and there is now better milk in the household comparing with prior to the intervention. Hence, it can be concluded that the schemes have contributed to increasing milk supply by goats, which could definitely benefit children.

Training (orientation) was given on multiple uses of water resources for beneficiaries in Yallo Wereda. In addition, the team has observed that there is an initiation for multiple uses of water sources (member of the community is now trying to plant sorghum using this water source) in Golina area.

Timesaving benefits

As mentioned earlier, the schemes have given various timesaving benefits to the local communities through reduced long travel. These timesaving benefits include:

- Ample time to prepare food
- Enough time to take care of children and elders (to give food and water timely)

- Protect children from attacks by monkeys
- Feeding and watering small ruminants and breeding stock
- Enough time to conduct praying appropriately

5.4 Quality Dimension of the Intervention

During the assessment, some important quality dimensions of participation have been considered. These include participation of the community, capacity for response, timeliness for response, demographic makeup of targeting, geographic coverage of the response, perception of the community, and conflict sensitiveness of the program.

Participation of the Community

In most part of the intervention area, there is high participation of the relevant stakeholders and members of the community starting from the assessment to the actual implementation of the intervention. In most cases, severe water problem has been considered as the prime criteria for selection of intervention area. FGD participants mentioned that the schemes are community driven and there was community consultation (especially women in the overall process). Hence, community members have been participating in:

- Scheme site selection
- Collection of local materials like stone and sand
- Provision of free labor
- Clear bushes in order to enable drilling machine to reach the centers
- The community also fenced the schemes using local materials as fencing is important to avoid entrance of cattle (contamination problem)

However, in some areas, participants of the focus group discussion mentioned that there was lack of transparency in selection of WATSAN COMMITTEE members.

Capacity of the intervention in addressing the problem

Participants of the assessment mentioned that although SC/US enabled them to have safe water for drinking, the schemes do not address the need of the local community as the demand is by far higher than the supply. In addition, since these sources become a center of attraction for many people, it becomes very difficult to satisfy the demand. Nevertheless, in some areas like the Genjaba PA of the Golina Wereda, there has been noted a technical problem regarding the scheme as it does not generate enough water. In the same area, the team has learnt and observed that there are water sources (hand dug wells which are finalized but not operational)

Relevance of the program

Participants of the focus group discussions and key informants unanimously ranked lack of water as the major problem of the area followed by human health and livestock health.

Demographic make-up of targeting

There were not disparities in age, gender, and clan background regarding selection of the intervention areas.

Perception of the community

The perception of the community towards these interventions was positive since water shortage is their burning issue.

Conflict sensitiveness of the program

According to the FGD participant and key informants, the interventions do not trigger conflict among community members. However, these interventions make other non-beneficiaries to request the concerned government bodies to benefit from such kind of interventions. For instance, in Adaar Wereda, only 5 PA have been benefited out of the total 13 PAs and, following this, the non-beneficiary Woredas are critically asking the Wereda office why they are not included in the intervention. However, participants of FGD from Golina wereda have mentioned that, due to the incompatibility of demand and supply of water sources, conflict will be inevitable.

Environmental degradation

It has been observed that these water schemes become a center of attraction for re-settlement. In some areas, after the construction of the scheme, people who have fled from the area are now being returned. This condition will lead to an intensive utilization of water resources and will affect the lifetime of the intervention. In addition, these situations will lead to the accumulation of livestock in the area, which is beyond the carrying capacity of the grazing area.

5.5 Livelihood Profile of the intervention area

The livelihood of Afar communities is mainly depending on livestock and mobility in search of pasture and water has been considered as the unique character of these communities. Nevertheless,

the frequent droughts with high animal mortality, environmental degradation, and conflict are significantly contributing to restricted mobility. Drought has been, and still is a prominent factor challenging the Afar pastoral production system. In addition, population growth, land alienation, bush encroachment, absence of pastoral relevant policy, weakening of traditional institutions are now contributing to growing vulnerability to ecological, economic and cultural stress.

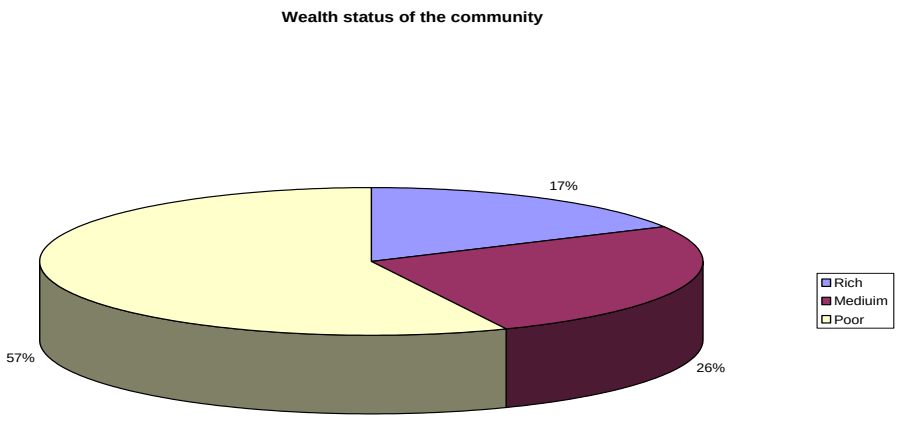

Fig 6:- Wealth status of the community

As per the above pie-chart, 57% of the community is considered to be poor with few numbers of shoats and possibly without camel or cattle. The rich communities (with an average of 10 camels and shoats) are representing only 17% of the community. This clearly shows that how the herd size as well as the pastoralist production system is affecting by various factors. Participants of the FGD have mentioned that lack of water and pasture are considered to be the prime factors that lead to depletion of pastoralist livelihoods.

Section VI: Conclusion and Recommendation

6. Conclusion and Recommendation

6.1 - Conclusion:

The intervention area, the Afar Region - in general and the selected Woredas - in particular, are one of the predominantly disaster/ drought prone and famine stricken pastoralist areas in the country, where the majority of the people live under severe poverty and food insecurity. In light of this, this project is generally found to be appropriate and relevant with regard to its purpose, strategic objectives and target area as it is aiming at improving the priority problem of the local communities. The purpose and objectives selected for the program are quite pertinent and in line with the regional government development policy and water sector policy. The effort of the project to reach remote and needy areas is contributing to its success as has been confirmed by the results of the household survey and the focus group discussions, coupled with observations and document review. Regardless of the complicated project implementation context, Save the Children has developed a capacity of implementing water supply schemes efficiently and timely, which has resulted in gaining a higher degree of trust and respect from the Afar Regional State offices and from the community as well.

In addition, the impact of the project on reducing child morbidity and mortality, increasing school enrollment, and increasing access to water resources was significant although in some intervention areas measuring of impact is 'pre-mature'. The easy access to water resources has helped Afar women to spend more time on productive purposes and taking care of children in addition to preventing them from attacks of beasts and bandits. It can be said that all these changes can be attributed to the endeavors of SC/US since there were not similar interventions by other development actors. Nevertheless, the contribution of this project to promoting the livelihood of the community is minimal as most of the schemes are designed only for safe water supply and lacks troughs for shoats.

Although the project's degree of achievement of the planned objectives is compared to the realized objectives was about 83% effective, the quality of schemes (like the hand dug wells) that are constructed in some areas need to be improved in terms of having water tight manholes to avoid surface contamination. Promotion of good sanitation and hygiene practices and other software components of the project were not met to the expected level. Whereas the efficiency of the project was significantly increased during the third phase due to engagement of the drilling contractor, who was already on site, which has avoided the costs of mobilization and demobilization in addition to the turn-key award that took care of non-productive wells. However, the efficiency was seriously affected by the travel costs incurred due to the scattered location of project sites and due to the delays of the first and second phases that have resulted in continuous expenses, manly that of regular expenses incurred beyond the expected project duration.

It has been observed that there was lack of integrated approaches in terms of sanitation and hygiene components; especially, promotion of hygiene and sanitation messages by WATSAN committee members' has not been cascaded to beneficiaries through use of locally tuned information

dissemination channels, which was so effective in terms of transferring the acquiring knowledge within the communities.

The major determining factors in sustaining a water supply scheme like assignment of responsible body (formation of WATSAN committees), building the capacity of the user community as well as the government staff in terms of training and provision of materials were put in place; regardless, sustainability of the schemes found out to be one of the areas that need improvement as the communities didn't reach to the level of self contained in maintenance of the schemes. Therefore, this issue has got a serious attention during the consultative workshop and the corresponding recommendations were given as has been indicated in the recommendation part of this report and in the proceedings of the workshop (Annex- 6).

Lack of proper monitoring and evaluation framework leads to poor supervision of project activities, tracking of changes in various indicators, and taking corrective actions. Moreover, absence of baseline survey made it difficult to measure changes that have been brought about by the intervention. Absence of learning alliance at the regional level has impeded sharing of best practices and lessons among organizations as well.

6.2 - Recommendations:

Based on the aforementioned findings and conclusion, the following recommendations would be suggested:

- Save the Children has developed a capacity of implementing water supply schemes efficiently and timely, which has resulted in gaining a higher degree of trust and respect from the Afar Regional State offices and from the community as well that this should be scaled up.
- It is recommended that SC/US needs to have more partners to increase the chance of having the best ones and/or sharing of work load among partners.
- The level of involving local contractors should be encouraged (with clear specification, clear contract and proper follow-up) as it gives the chance of building the local capacity.
- Selection and prioritization of interventions of WASH schemes should be replicated with additional consideration of further relevant options in WASH activities; like household water treatment systems, need to be considered.
- Construction of WASH schemes should be integrated with intensive promotion-works of sanitation and hygienic practices.
- Designs and specification of works should be clarified beforehand in terms of including procedures; like timing of water quality tests.
- The schemes focus on provision of water to human being although shoat troughs have been considered as integrated part of the wellhead construction. Thus, construction of shoat troughs needs more emphasis to minimize the competition for watering animals that might result in frequent breakdown of the schemes.
- As the selection process of WATSAN committee members didn't follow the standard procedure that members either need to be re-elected or given proper refresher training along with close follow-up.
- The WATSAN committees need to be linked to the government institutions responsible to rural water supply management.
- Provision of tools as part of capacity building was one of the major factors contributing towards sustainability of the schemes; however, the tripods turned out to be difficult to transport from the Woreda office to the scheme sites. Thus, replacement of tripods with portable hand pump maintenance tools would solve the transportation problem. (Annex: 7 - List of Special Tools)
- Since livestock is the main source of livelihoods of the Afar area, such kind of interventions should be complimented with other livelihoods promotion activities like forage production.

- Some schemes might be a center of attraction for communities, which ultimately lead to environmental degradation and conflict. Accordingly, caution has to be taken to avoid these negative impacts through integrating the WASH project with NRM activities and scaling up of the project to the neighboring villages.

- Multiple uses of water resources for production of vegetables will contribute to increasing the income and the nutritional status of the local community. Therefore, future WASH endeavors should consider awareness raising activities on multiple uses of water resources using overflows from the hand pumps and used water for washing water containers.

- The project has to strengthen its linkage both vertically and horizontally to conduct regular monitoring, to provide feedback/backstopping, and enhancing learning among stakeholders

- Lack of fence will contribute to damage of the scheme easily and contamination of the area by animals; that, there must be proper fencing around the water supply schemes

- Project design needs to consider the qualification and number of staffs in line with the extent of the project and the corresponding geographic coverage. Suggested organizational structure has been given as Annex 5.

- As branding/visibility is vital to promote the endeavors of implementing organization, attention should be given for this in the future.

Section VII: References

7 References

- **Project Proposal***: Save the Children Federation Inc - Phase II and III*
- **Project Agreement***: Save the Children Federation Inc & Save the Children Norway - Phase I, II, III*
- **Reports***: Save the Children Federation Inc - Phase II and III*
- **CSA (2008):** *The 2008 Population and Housing Census of Ethiopia, Preliminary Report.*
- **Alistair, H (1996):** *Cost-effectiveness Analysis, A Useful Tool for the Assessment and Evaluation of Relief Operations, Relief and Rehabilitation Network, Network No.15, London UK*
- **Catley, A. et.al (2007):** *A guide for Participatory Impact Assessment, Feinstein International Center, Medford*
- **Burns,J and Suja,O (2007):** *Impact Assessment of the Zimbabwe Dams and Gardens project, Feinstein International Center, Medford.*
- **Sara, P and Mike, W (2008):** *Improving Drought Response in Pastoral Regions of Ethiopia, HPG/ODI, London.*
- **Catley, A. and Demeke, F (2007):** *Impact assessments of livelihoods-based drought interventions in Moyale and Dire Weredas. Policy brief - Feinstein International Center, Tufts University.*
- **Andrew Chalinder:** *Good Practice Review 1 - Water and Sanitation in Emergencies; Relief and Rehabilitation Network*
- **Action Against Hanger -** *Program Evaluation Manual (Un published)*

Section VIII: Annexes

8 Annex

Annex 1: TOR

Annex 2: Understanding of the TOR and Technical Proposal

Annex3: Survey Tools

Annex4: List of Woredas and PAs

Annex 5: Proposed Organizational Structure

Annex 6: Proceedings of the Consultative Workshop

Annex 7: List of Proposed Hand Pump Maintenance Tools