
*Market Financial and Economic Consultants*

The United Nations Children's Fund (UNICEF)

# Final Report for Assessment of Revolving Funds Program to Improve Hygiene and Sanitation Practice Program (Agreement no. SSA/EGYA/2009/00000875-0)

May, 2010

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**(Continued)**

**LIST OF ACRONYMS**

| | |
|---|---|
| **CBC** | **Community Based Committee** |
| **EWRA** | **Egyptian Water Regulatory Authority** |
| **HCWW** | **Holding Company for Water and Wastewater** |
| **ISSIP** | **Integrated Sanitation and Sewerage Infrastructure Project (World Bank supported)** |
| **IWSP** | **Integrated Water and Wastewater Service Program (KFW Program)** |
| **SSHE** | **School Sanitation and Hygiene Education** |
| **MoSS** | **Ministry of Social Solidarity** |
| **PFL** | **Pour-Flush Latrine** |
| **UNICEF** | **United Nations Children's Fund** |
| **USAID** | **United States Agency for International Development** |
| **VEAP** | **Village Environmental Assistance Program** |
| **WES** | **Water Environment Specialist** |
| **WAS** | **Water Assessment Specialist** |
| **UN** | **United Nations** |
| **IDSC** | **Information Decision Center** |
| **RF** | **Revolving fund** |
| **RFP** | **Revolving Fund Program** |
| **WHO** | **World Health Organization** |
| **WTP** | **Willingness to Pay** |

**ACKNOWLEDGMENT**

Makary Consulting is indebted to the Holding Company for Water and Waste Water (HCW & WW) and UNICEF to be assigned to conduct an assessment of the Revolving Fund Program (RFP) component and build a future vision on strategy for the Revolving Funds. Makary Consulting team is highly grateful for the time and effort exerted by all relevant HCWW and UNICEF staff. Without such professional, support and cooperation, the job of the consultant would have been impossible.

Makary Consulting team would like to express sincere thanks to the heads of the Water Companies, governorates and local village unit in Sohag, Qena and Assuit for hosting and attending the round-tables. Without their support, much of the data that this research obtained would not have been possible.

We would like to thank all the officials in water companies, governorates and local village units for the time dedicated for this project.

A special thanks goes to the researchers for their devotion and effort they provided in carrying out the desk research, field work and data analysis.

## EXECUTIVE SUMMARY

### Bibliography Information

**Title:** Assessment of Revolving Fund program to Improve Hygiene and Sanitation Practice Program
**Author (s):** Makary Consulting
**Institutions:** UNICEF
**Date:** May 2010
**Region:** Sohag, Qena and Assuit
**Country:** Egypt
**Type:** Development
**Theme:** Assessment
**Languages:** English
**Partners:** n/a

### Background

UNICEF Egypt country office initiated the revolving funds concept in two key projects "Village Environmental Assistance Project (VEAP) and "School Sanitation and Hygiene Education (SSHE)" , within UNICEF WES/WASH interventions, with the objective of fostering hygiene and sanitation practices through improving access to household water connections in selected villages in Upper Egypt.

The revolving fund was introduced initially by UNICEF as a component in the VEAP, in 2000, to provide safe water connections and toilets (namely double-pit PFLs) to selected villages in three governorates in Upper Egypt, namely Fayoum, Beni Suef and Menia. The program was financed by both UNICEF and USAID and managed under the Holding Company for Water and Wastewater from the period April 2004 and onwards. The project achievements differed from one governorate to the other; however, the revolving fund concept was not thoroughly assessed.

The concept of revolving funds was also introduced as a component within the "School Sanitation and Hygiene Education (SSHE), (i.e. this project)" initiated by UNICEF in March 2006 under a cooperation between the United Nations Children Fund (UNICEF) and the United States Agency for International Development (USAID) to address issues related to safe water supply and sanitation in three governorates in Upper Egypt, namely Qena, Assiut and Sohag (i.e. the study areas).

The SSHE project aimed to catalyze a movement of sensitizing the education system about the importance of safe water, sanitation and good hygiene behavior among school children and promoting the knowledge and practices to the community at large through utilization of child-to-parents and child-to-community approaches. Accordingly, the "Revolving Fund" for water connections has been introduced as a complementary component that would build links with community and reinforce school based interventions and extend their adoption into the community through providing increasing numbers of unprivileged families with a reliable source of palatable water.

## Objective and scope of the Study

In August 2009, Makary Consulting, as an external evaluator is assigned by UNICEF to conduct an assessment study of the Revolving Fund Program (RFP) component, in terms of implementation and implication with special reference to women and children, and therefore to propose a future vision strategy through designing and proposing a simple and practical participatory mechanism, involving all stakeholders, which would ensure both institutional sustainability and financial sustainability of the revolving program.

In this respect, three governorates, Assuit, Qena and Sohag (i.e. study areas), and nine districts are included. Within each district two villages/one village are selected by UNICEF as targeted villages.

The key objectives of the study are identified as follows;

- Assess the performance of the revolving program in the study area in terms of implementation and implication and the impact of the program on hygiene practices of household, with special reference to women and children;
- **Build a future vision strategy for the revolving fund** program through designing and proposing a simple and practical participatory mechanism, involving all stakeholders, which would **ensure both institutional sustainability and financial sustainability** of the revolving program.

## Study Limitations

Quite few limitations/issues were faced and mitigated, including the following;

- The difficulty in timely implementation of field work due to the variety in research tools and target audiences;
- The project process was not documented in written format by fund manager/ implementer;
- Households do not tend to inform their actual income/expenditure;
- The field work should respect the cultural characteristics of residents in the study areas;
- Estimation/answers of respondents usually refer to the situation at the point of time of survey, which might change in case of significant changes, with special reference to Willingness To Pay (WTP);
- Estimation of demand response to price increase (i.e. price impact) assumes that expenditure on water reflects the level of consumption.

To overcome such limitations, the following measures were undertaken;

- Careful review of the economic and social parameters of the study areas including review of specific reports/studies/data relevant to revolving fund concept;

- Design different research methods to cross check each other with the objective to gain confidence of the respondents and to address the issues from various angles;

- Adopting stratified cluster random technique in order to ensure that the sample is representative of the population at large;

- Hiring the key surveyors, who worked as field coordinators for RFP in the last three years, and training of all surveyors/moderators to the questions addressed and the means to tackle the questions and the sampling approach adopted (i.e. stratified sampling techniques);

- The statistical significance of the sample is assessed to confirm that the sample represents income group at large. In case the coefficient of variation is greater than 15%, the sample is increased to ensure statistical significance and representation.

## Methodology

The study adopted a two step approach consisting of data collection and assessment. Secondary data is carefully reviewed to be intensively investigated and validated through primary data. Intensive field surveys are carried out including structured questionnaires, focus groups/round table discussions, one-to-one meetings and workshops.

The survey addresses all households whether served or not-yet-served and key stakeholders including local communities, water and water companies, donors, and governorate authority.

Data collected from both secondary and primary sources are cross checked, fed into computer software, screened and interpreted. Data assessment/analysis of both primary and secondary sources would ensure;

- Accuracy and reliability of information;
- Sampling approach ensures representation.

The approach involves data screening, interpretation and analysis. Round table discussions/focus groups/one-to-one meetings are analyzed on the basis of qualitative research, while structured questionnaires are quantitatively analyzed to arrive at concrete quantified results in tabulated format.

The significance of data is carefully tested throughout excel sheets to ensure that the sample represents the cluster at large (i.e. the population at large), with coefficient of variation within 0.15.

This study is concluded by aggregate analysis of all data sources in order to provide comprehensive analysis/assessment of the underlying revolving fund project to assess;

- The overall progress of the project;
- Selection criteria for the villages;

- The financial contribution and mechanism;
- Lessons learned;
- Hygiene awareness;
- Contribution/role of key stakeholders;
- Key arrangements, partnerships and policies;
- Capacity building and effective monitoring;
- Meeting objectives.

The impact on the project on households, with special reference to women and children is assessed, while considering human rights approach.

On the basis of the above, a proper mechanism/framework enabling financial sustainability is recommended indicating the following;

- Role of key and potential stakeholders;
- Instructional and organizational arrangements;
- Payments on the basis of measured **willingness to pay**;
- Cost recovery period.

**Key Findings and Conclusions**

Both the performance of the fund and its impact on hygiene practices, health awareness and social responsibility for children and women are tested. Field investigation reveals that selection criteria adopted for beneficiaries are basically households deprived from water with proper documentation ownership of their houses. Priorities were given to families with children at schools. Selection criteria were not consistent from one study area to the other due to the variation from one area to the other on one hand and due to inconsistency of selection criteria, on the other hand. Procedures were kept simple and straightforward and repayment terms were kept fixed (LE 20 per family per month for a period of 2 years). However, payments were not paid monthly by households due to the non-stability of monthly income, and absence of the enforcement mechanism. This is in addition to the fact that those households are known in person to the local village unit officials, who usually handle the collection process, giving room for delay in payments, given the nature of personal relationship in such communities.

To sum up, two key conclusions can be drawn: Firstly, the cost of water connection exceeds households capability to pay per month (measured on the basis of WTP), given a repayment period of 2 years. Secondly, selection criteria, program procedures, payment terms, collection process, revolving of funds (only revolved once in two years) should be closely monitored against pre-defined benchmarks and criteria. Hence, despite the positive impact of the program on social and health issues of households, it is not yet financially nor institutionally sustainable. Covering the cost of water connections from households' payments and managing the fund through an independent committee responsible solely for the fund would ensure financial and institutional sustainability, currently lacking, according to the consultant estimate.

Based on careful investigation into the underlying communities and the programs process, the study proposes set of recommendations aiming at enhancing performance of the project and ensuring its

sustainability in both institutional and financial terms. Recommendations include selection of relevant candidates, effective management and monitoring of the fund to allow for revolving over interval periods, and coordination between relevant stakeholders to allow for smooth implementation. The proposed selection criteria are based on screening criteria, aiming at selecting eligible household, ranking criteria, i.e. classification of beneficiaries on the basis of per capita housing area and prioritization of the selected candidates on the basis of children attending schools, i.e. preference criteria. The study is concluded by identifying Willingness to pay amounting to LE 32 per month (on average) or LE 96 per quarter over a period of 36 months.

**Recommendations**

Based on the conducted study, it is highly recommended to ensure both institutional sustainability and financial sustainability. It is recommended to set-up community based-committees (CBCs) by geographical location/governorate to be monitored by a revolving fund department at the HCWW at the central level, with the objective of supervising and assessing the activities of the CBCs through pre-defined performance indicators. In this respect, seven members committee is proposed for the CBC to include all involved parties, in order to ensure efficiency, i.e. capable of handling operations and effectiveness, i.e. can convert the inputs into outputs.

- Governorate representative;
- Water company representative;
- MOSS representative (sub-national level);
- Local authority representative;
- NGO representative;
- Two members of local community (Beneficiaries).

Three key tasks of the participating committee are proposed;

- Selection of relevant candidates, i.e. eligible households for the revolving funds;
- Effective management and monitoring of the fund to allow for revolving over interval periods;
- Ensure coordination between relevant stakeholders to allow for smooth implementation.

On the other hand, financial sustainability of the funds should be secured through adjusting the monthly payment. In this respect, the study proposes monthly payment as follows;

| **Housing area ($m^2$ per person)** | **Quarterly payment LE/3 month** |
|---|---|
| < 5 $m^2$ | 75 |
| 5 – 7.5 $m^2$ | 90 |
| > 7.5 – 10 $m^2$ | 120 |

These rates are expected to cover the cost, i.e. financial sustainability if they are paid over a three year period. In this respect, the following conditions should be enforced;

- Payment should be made on quarterly basis to match with the market mechanism in rural areas;

- Interest rate should be imposed on late payment to enforce beneficiaries to pay in due time and therefore to ensure continuous flow of funds;

- Cross-subsidy should be adopted to ensure financial sustainability and social support to poor families;

- Funds should be revolved on regular basis to ensure continuity of the program and increasing the number of beneficiaries.

Based on the conducted survey, not every household is willing to pay LE 32 per month. It is indeed an average payment. Hence, cross-subsidy is proposed, in that well-off households would pay more than the cost in order to subsidize poor households who cannot afford to pay the cost. These rates should be adjusted periodically on the basis of the prevailing inflation rates, taking into consideration the performance of the system on one hand and willingness to pay on the other hand.

The idea is to adopt a simple and practical criteria in the near future (0-3 years) and focus on capacity building to strengthen the proposed committees, as a transitional period. Once households are used to the system and the committees capacities are strengthened, multi-dimensional criteria could be adopted. In all cases, the benchmark for the proposed housing area should be carefully investigated by relevant stakeholders with close community participation. Both criteria and corresponding benchmarks should be revised periodically. The study aims at setting a simple and practical criteria to be easily understood and applied.

Moreover, cross-subsidy is proposed in order to ensure both financial sustainability, as well as, social support to relatively poor families. This would guarantee continuity of the program on one hand and would cover all families on the other hand. In this respect, donors' funds should be reallocated to support institutional sustainability and to enhance capacity building. In other words, it is highly recommended to channel loans/funds to capacity building as institutional support rather than to finance the connection cost. Our investigation reveals that beneficiaries are willing to pay the cost. However, relatively poorer families who cannot afford to pay for the connection installation should be supported through cross subsidy approach.

### Lessons Learnt

Key lessons learnt, from both field work and desk research, are summarized below;

- Selection of beneficiaries should be based on unified simple quantifiable screening criteria to involve stakeholders in setting criteria;
- Procedures should be linked to selection criteria and maintain unified consistent procedures;
- Monthly repayment installment should be related to both WTP (capability to pay), and to expected
- quality of services (awareness) and develop cross subsidy approach;

- Develop incentive system for collection and more effective monitoring;

- Propose payments quarterly and relate to pace of revolving
- Revolve on interval basis on village level;
- Donor contribution should ensure financial sustainability and devote contribution to institutional capacity building;
- Ensure institutional sustainability through creating Community based committees to be monitored by department in HCWW dedicated to Revolving Fund program;
- Ensure financial sustainability on basis of WTP approach.

# 1. INTRODUCTION

## 1.1 Water Sector Policy

### Current Context

In April 2004, according to presidential decree no. 135/2004, a major institutional reform in the water sector in Egypt was initiated. It involved establishment of the Holding Company for Water and Wastewater (HCWW) and later the establishment of the Egyptian Water and Wastewater Regulatory Authority (EWRA), as an autonomous regulator for the water sector.

The Holding company aims at transforming the affiliated water companies from reliance on yearly government subsidies to financially sustainable companies. Both the HCWW and EWRA are engaged in setting a water policy which enables generation of water/wastewater revenues, while providing an acceptable quality of services. Accordingly, the water sector was faced with a dilemma in the last few years, reflected in the need to increase water tariffs, in order to provide better services, while water users do not accept paying higher fees at the prevailing quality of services. This situation has been intensified due to subsidizing water tariff for a long period (more than 30 years).

In recent years, the government of Egypt realized the key limitations to the development and enhancement of Water Sector. These limitations are highlighted as follows;

1. Water tariff is not consistent with water consumption (i.e. no proper metering) implying:
    - Unawareness of actual quantity consumed;
    - Consumption levels beyond lifeline requirements;
    - Pricing is not based on demand driven approach;
    - The bulk of households are rather located on the high consumption blocks.

2. Subsidizing both the poor and the rich, leading to:
    - Over using water, i.e. rather free good;
    - Conflict between willingness to pay and quality of services (satisfaction);
    - Household resorting to other types of expenditure to ensure acceptable quality and quantity of water.

In this respect, it is important to relate water pricing to two key aspects;

1. The broader economic/social environment in Egypt, namely;
    - Subsidy policy for all basic goods and services such as electricity, bread, oil, etc
    - High water consumption patterns;
    - Family expenditure pattern;
    - Significant informal income;
    - Social attitude that water is a free good, rather than an economic good.

2. The quality of water services provided, in that subsidizing water distorted the relation between water pricing and the quality of services provided.

The concern of the HCWW is to provide safe and clean water as one of the basic needs, while maintaining independence and sustainability of water companies on the basis of efficient management and appropriate water pricing. Indeed, a sound water policy is adopted by HCWW and by key international donors.

**Continuity of supply/water scarcity**

In 2004, the total installed capacity for drinking water supply was 21 MCM (million cubic meter) per day. On average, this figure could mean that every Egyptian received 275 liter per capita and day. However, this number does not represent the final consumption since it does not include water losses caused by leakage, low operating efficiencies or the connection network. Depending on the governorate the installed capacity ranges from 70 l/c/d (liter per capita and day) in upper Egypt to 330 l/c/d in Cairo. These figures are an indicator for varying supply continuities.

Areas which suffer most are rural, peri-urban and new urban expansions. The quality of service is weak in urban areas where population density is rapidly rising. In these areas old supply networks are often not prepared to meet the rising demands. These problems occur particularly in mature informal districts where about 20% of the Egyptian population lives.

**Drinking water quality**

Egypt's second urgent problem after scarcity is water quality. The Nile is the major drinking water source. Nile water is often below the minimum quality standards. A major reason is that around 35 % of the population is connected to the sewage network. Therefore, a lot of untreated wastewater is released into the Nile. The amount of water which is released into the Nile is 3.8 billion $m^3$ per year, out of which only 35 % is treated properly.

Pathogenic pollution has been recorded since the 1980s and decreased during the 1990s. Nevertheless, it still exists in localized areas. Furthermore, the drainage return causes pollution as it increased salinity from 130 mg/l to 250 mg/l. In addition, the amount of nitrogen fertilizers has doubled in the period between 1980 and 1993. These and other issues led to the depletion of the once flourishing aquaculture. Only 17 species remained in 1995 out of 47 in 1948. The government launched a national monitoring program with 300 observation sites in order collect information. Furthermore, the government has plans to increase sanitation coverage and wastewater treatment in rural areas in order to eliminate significant pathogenic pollution by the year 2017.The contamination of water resources has a direct impact on the general condition of the drinking water quality.

Generally, it is estimated that each year about 17000 children die from diarrhea diseases. One reason is that water quality is often below standards. This problem is caused by some treatment plants and the distribution system. Some of the treatment plants were facing problems which could have led to this water quality deterioration. The water in treatment plants is usually treated with high amounts of chlorine, which lead to the growth of fungi and to the increase of amounts of nitrogenous and phosphorus salts in the sewer. Furthermore, some treatment plants are inefficient in removing parasites, viruses and other parasitic microorganisms.

Nevertheless, the Egyptian government is doing efforts in improving water quality. The Integrated Sanitation and Sewerage Infrastructure Project of the National Organization of Potable Water and Sanitary Drainage has as one of its objectives to improve water qualities in some governorates like Beheira, Gharbia and Kafr El Sheikh in the Delta.

**Policy and Regulation**

Egyptian water sector policies are set by several ministries. The Ministry of Water Resources and Irrigation (previously called Ministry of Public Works and Water Resources) is the oldest ministry in Egypt. Its responsibility is to ensure that all users receive enough water. The Ministry of Housing, Utilities and Urban Communities supervises water companies, which are responsible for the treatment and delivery of water. The Egyptian Environmental Affairs Agency is responsible for environmental affairs and the assessment and monitoring of water use. The Ministry of Health and Population is responsible for analyzing water quality.

The Holding Company for Water and Wastewater was founded by the presidential decree in 2004, charged with responsibility for financial and technical sustainability to the local Governorate-based utilities. The process of increasing financial solvency, increasing service standards, creating efficient operations and maintenance systems, and overall self-sufficiency for the local companies, has shown uneven levels of progress. The Holding Company continues to take over financial responsibility for more Governorate companies through 2009.

Three committees have been introduced in order to ensure the coordination among the different agencies and to solve occurring conflicts among them. However, the Ministry of Water Resources and Irrigation and the Ministry of Housing, Utilities and Urban Communities seem to be the main actors when it comes to policy making processes concerning water supply and sanitation. In 2006, the Egyptian Water Regulatory Agency (EWRA) has been established in order to carry out economic and technical regulation.

**Donor Partners**

USAID , KFW, GTZ , EU and World Bank are all engaged both on general policy level and on subsidiary water/wastewater company level to address tariff issues, investment planning, financing means, cost recovery and capacity building to enable financial and institutional sustainability both on company and sector level, supporting both HCWW and EWRA. All these donors are engaged in a number of programs/projects; however, they are not, in most cases, directly related to the revolving fund program, however, are related indirectly through creating a favorable environment and complement a proper alternative of financing means.

USAID (managed by Chemonics International) is highly involved in the water and wastewater sector and is engaged in the sustainable water and wastewater program, with the objective of sustaining the sector and involves supporting the water/wastewater companies from both the financial and technical point of views. USAID possesses also several programs addressing specific water/wastewater companies in the project area to address investment planning in Sohag and Assiut water and wastewater companies.

The World Bank is engaged in ISSIP project to address investment planning and enhancing financing capacities, of which phase 2 is addressing 2 water/wastewater companies in Upper Egypt (Sohag and Assiut) and 2 companies in the Delta region.

GTZ is involved in assisting EWRA on policy level through the advisory policy unit to support on the policy level, mostly concerning water law, regulatory procedures, tariff policy suggestions. It addressed both policy level and pilot case mostly in Delta and Cairo. Policy advisory unit will be ended by end 2010 and is currently involved in setting tariff structure, for a pilot water/wastewater company. GTZ is also heavily involved in technical assistance in investment planning, lab support and support for financial sustainability for Qena Company in the study area.

KFW is mostly engaged in various policy projects, in addition to interventions in Qena Company in the study area. KFW is also involved in investment planning project (IWSP). Phase 1 is concluded in Delta region and phase 2 is initiating in upper Egypt governorates (Menia, Sohag, Assiut and Qena companies).

EU is involved in assisting EWRA on policy level, with special reference to tariff structure.

All the above interventions aim at supporting HCWW and EWRA on policy level to address key shortcomings and develop the sector. Most of these programs complement UNICEF initiatives for the revolving fund through encouraging both participatory approach of relevant stakeholders and financial contribution of private sector.

USAID were directly involved in providing revolving fund program for water and wastewater connection in Menia, Fayoum and Beni Suef through the VEAP program. An attempt is made to provide wastewater connections in Kafr El Sheikh through Revolving Fund by KFW.

## 1.2 Context and Purpose of Evaluation

This section provides a background on both the initiation of the concept of revolving funds, within UNICEF initiatives, as well as, a description of the "project under study".

The idea of the revolving fund concept is to expand the number of water connections to a large number of households through initiating a grant to install water to a specific number of households in the study areas, with the intention to revolve such funds to reach a multiple number of households.

UNICEF Egypt country program initiated the revolving funds concept in two key projects "Village Environmental Assistance Project (VEAP) and "School Sanitation and Hygiene Education (SSHE)", within UNICEF WES/WASH interventions, with the objective to foster hygiene and sanitation practices to a number of most disadvantaged unconnected households in selected villages in Upper Egypt.

The revolving fund was introduced initially by UNICEF as a component in the VEAP, in 2000, to provide safe water connections and toilets to selected villages in three governorates in Upper Egypt, namely Fayoum, Beni Suef and Menia. The program was financed by both UNICEF and USAID and managed under the Holding Company for Water and Wastewater from the period April 2004 and onwards. The project achievements differed from one governorate to the other, however, the revolving fund concept was not thoroughly assessed.

The concept of revolving funds was also introduced as a component within the "School Sanitation and Hygiene Education (SSHE), (i.e. this project)" initiated by UNICEF in March 2006 under a cooperation between the United Nations Children Fund (UNICEF) and the United States Agency for International Development (USAID) to address issues related to safe water supply and sanitation in three governorates in Upper Egypt, namely Qena, Assiut and Souhag (i.e. the study areas).

The SSHE project aimed to catalyze a movement of sensitizing the education system about the importance of safe water, sanitation and hygiene behavior among school children and promoting the knowledge and practices to the community at large through utilization of child-to-parent and child-to-community approaches. Accordingly, the "Revolving Fund" for household water connections has been introduced as a complementary component that would build linkages with community and reinforce school based interventions and extend the adoption of improved water, sanitation and hygiene practices into the community through providing increasing numbers of families deprived of a reliable source of palatable water.

### 1.2.1 Project description

The revolving fund concept was intended to be a component of SSHE to complement students' hygienic practices beyond the school, within their homes; in practice this component was extended to involve other disadvantaged households and was implemented in a more comprehensive manner with the purpose of maximizing the number of connected households to safe water in the study areas.

The revolving fund is a mechanism adopted by UNICEF in order to expand household water connections to be paid on installments by disadvantaged households in the study areas. The fund was established by UNICEF with financial assistance by USAID under the auspices of the Holding Company for Water and Wastewater (HCWW) and the target governorates.

The program was implemented in 2 phases.

Phase 1 of the program initiated in September, 2007, under an agreement between UNICEF, Ministry of Higher Education and relevant governorates. Phase 1 funds were transferred from UNICEF to the governorate which in turn transferred the funds to the relevant village units. The fund was managed by the governorate and the water company in Qena was merely responsible for connecting/installing water pipes and meters, while was not established yet in Assuit and Sohag.

Phase 2 initiated in November/December, 2008. The program was managed in this phase by the relevant water company, except for Sohag and parts of Assuit governorates, as the water company was only recently established (January and March, 2009).

Implementation pace differed from one governorate to the other .The whole program targeted around 22 villages and naga'as (sub-villages), 18 local municipalities in the three governorates in Upper Egypt (Assiut, Sohag and Qena, i.e., the study area) addressing 5,740 households in the underlying three governorates; Assuit, Sohag and Qena. Detailed information on the targeted households by area and phase are shown in **Appendix 1**.

The budget for the "Revolving Fund" scheme has been set in the initial of phase 1 accordance with an estimated cost of LE 500 per connection[1], in that a monthly payment of LE 20 over 24 month period was set by the fund monitor. However, the actual cost of connections installation has much diverted from the estimated budget which in turn demanded some cost reduction interventions from the side of the water companies in phase 2. For example, Assiut Water Company pledged to cover the difference between the actual and estimated costs; a variance of approximately LE 850 thousand. Qena Water Company has also contributed to the scheme through reducing charges and providing flexibility in payments, through subsidizing water Company charges (around LE500) and selling meters on credit (Cost LE273).

The following key steps are undertaken by the project;

1. Sign an agreement between partner/manager of the fund (i.e. the responsible for management of the fund) and the donor (i.e. UNICEF), indicating key responsibilities and duties by party;
2. UNICEF grants the fund manager the loan amount;
3. In the governorate management scheme, the fund amount was transferred to the village unit according to the target number of installations. In the HCWW management scheme the funds remain with the water company;
4. The water company installs the household water connection based on the records provided by the local village units;
5. The village unit follows collection of installments and transfers to the governorate/water company, or the water company collector collects the installment on a quarterly basis when collecting the user fees;
6. The governorate/water company initiates revolving of the collected funds.

Key responsibilities are identified by stakeholder as follows;

**Table no. 1.1**
**Responsibilities by phase and by stakeholder**
**Revolving Fund Program**

| **Stakeholder involvement/Phase** | **Phase 1** | **Phase 2** |
|---|---|---|
| Receiver of funds/manager of fund | Governorate | Water Company/governorate |
| Installation of water connection | Governorate/Water company | Water company |

1

This was originally based on estimates of HH connections at the time of project start-up. The cost of the connections increased substantially with market prices, as well as based on the quality standards of materials used by HCWW in phase 2 in the governorates where water companies were established. The 500LE was therefore considered the "contribution" of the project. Accordingly the HCWWs in the governorates worked with the project to accommodate the differences between the actual cost (around 1150) and revolving fund contribution by the project (i.e. LE500).

| | | |
|---|---|---|
| Funding of connection fees | UNICEF<br>(limited to LE 500 per connection) | UNICEF<br>(limited to LE 500 per connection) |
| Monitoring of program | UNICEF jointly with consulting committee / village units | UNICEF jointly with consulting committee / village units |
| Technical responsibility | Governorate | Water Company/governorate in Sohag |
| Implementer | Village unit | Village unit/Water Company |

The consultant is basically engaged, as an external evaluator, to assess the project two phases in the study areas, as well as, to evaluate the idea of revolving fund and the potentiality of its sustainability.

### 1.2.2 Study areas description

Three governorates were selected by the project within which nine districts were included. Within each district, two villages/one villages is selected as targeted villages on the basis of careful review of relevant report/data from UN, IDSC, governorates and village units.

This section implies key characteristics of the targeted villages (i.e. study areas), with special reference to the revolving fund program.

The characteristics of the study areas for revolving fund program are shown in **Appendix 2**.

## 1.3 Scope and Limitations

### 1.3.1 Scope of Work

The consultant is an external evaluator, assigned by UNICEF, to conduct an assessment of the Revolving Fund Program (RFP) component, abiding by the TOR scope of work. Details of TOR are shown in **Appendix 3**, while the evaluation team is highlighted in **Appendix 10**.

The key objectives of the study are identified as follows;

- **Assess the performance of the revolving** program in the study area in terms of implementation and implication and the impact of the program on hygiene practices of household, with special reference to women and children;
- **Build a future vision strategy for the revolving fund** program through designing and proposing a simple and practical participatory mechanism, involving all stakeholders, which would **ensure both institutional sustainability and financial sustainability** of the revolving program.

The Study plan is shown in **appendix 12.**

### 1.3.2 Limitations

The consultant does not foresee significant limitations. However, some limitations/ issues are acknowledged and mitigated as follows;

- The difficulty in timely implementation of field work due to the variety in research tools and target audiences;
- Non availability of documentation on project process in the study areas;
- Households do not tend to inform their actual income/expenditure;
- Need to capture the cultural characteristics of the population in the study areas;
- Estimation/answers of respondents usually refer to the situation at the point of time of survey, which might change in case of significant changes, with special reference to Willingness To Pay (WTP);
- Estimation of demand response to price increase (i.e. price impact) assumes that expenditure on water reflects the level of consumption.

To overcome such limitations, the following measures were undertaken;

- Careful review of the economic and social parameters of the study areas and specific reports/studies/data relevant to revolving fund concept;
- Design of different research methods to cross check each other and questions/discussion guides are designed with the objective to gain confidence of the respondents and to address the issue from various angles;
- Adopting stratified cluster random technique for sampling of the market survey in order to ensure that the sample is representative of the population at large;
- Hiring the key surveyors, who worked as field coordinators for RFP in the last three years, and training of all surveyors/moderators to the questions addressed and the means to tackle the questions and the sampling approach adopted (i.e. stratified sampling techniques);
- A pilot survey is conducted and questions are adjusted accordingly;
- Qualitative research was conducted by the study experts;
- Survey results are received regularly in order to be fed into computer software;
- Survey results are continuously screened, interpreted, and analyzed;

- The sample is cross-checked through phone contact and results are re-screened accordingly;

- The statistical significance of the sample is assessed to confirm that the sample represents income group at large. In case the coefficient of variation is greater than 15%, the sample is increased to ensure statistical significance and representation.

## 1.4 Ethics and Independence

In recent years, the government of Egypt realized the key limitations to the development and enhancement of Water Sector. These limitations are highlighted as follows;

1. Water tariff is not consistent with water consumption (i.e. no proper metering) implying:
    - Unawareness of actual quantity consumed;
    - Consumption levels beyond lifeline requirements;
    - Pricing is not based on demand driven approach;
    - The bulk of households are rather located on the high consumption blocks.

2. Subsidizing both the poor and the rich, leading to:
    - Over using water, i.e. rather free good;
    - Conflict between willingness to pay and quality of services (satisfaction);
    - Household resorting to other types of expenditure to ensure acceptable quality and quantity of water.

In this respect, it is important to relate water pricing to two key aspects;

- The broader economic/social environment in Egypt, namely;
    - Subsidy policy for all basic goods and services such as electricity, bread, oil,etc
    - High water consumption patterns;
    - Family expenditure pattern;
    - Significant informal income;
    - Social attitude that water is a free good, rather than an economic good.

- The quality of water services provided, in that subsidizing water distorted the relation between water pricing and the quality of services provided.

The concern of the HCWW is to provide safe and clean water as one of the basic needs, while maintaining independence and sustainability of water companies on the basis of efficient management and appropriate water pricing. On the basis of the above, the HCWW and EWRA are heavily engaged in investigating the optimum water tariff, which would ensure both affordability, i.e. willingness to pay and sustainability, i.e. cost coverage.

Indeed a sound water tariff policy should be based on Willingness To Pay (WTP) by water user. On the other hand, a cross subsidy approach should be adopted in order to ensure financial sustainability among the various water users and the various consumption blocks.

## 1.5 Methodology

### 1.5.1 Approach

The approach adopted in the study is designed to meet the following objectives;

- Compliant with human rights based approach/CRC, i.e. based on the concept that household is entailed to right for clean and safe water and hence should claim this right;
- Not allowing for any discrimination against gender, sex and/or age, however, focuses on targeting most disadvantaged households in the study areas. Both men and women are targeted, aiming at understanding the responsibilities and rights of each;
- Participatory approach to involve the targeted households/beneficiaries and relevant stakeholders in the assessment process and in setting the mechanism;
- Assessing both the performance of the program in the study area, and the impact on the hygiene conditions (i.e. villages/households with and without the project).

A thorough investigation into the revolving funds program, in terms of project idea, goals, and methodology was conducted. Moreover, review of relevant UNICEF initiatives, and best practices international experiences in similar countries to Egypt was accomplished.

On the basis of such review and experience, the consultant identifies constraints and key lessons learnt, and proposes relevant solutions. In this respect, a simplified and practical mechanism ensuring both financial and institutional sustainability, is recommended.

Accordingly, the adopted approach focuses on appropriate mechanism/framework in order to ensure financial sustainability of the involved funds. Financial sustainability entails arriving at optimum payments, which would be affordable to households and at the same time would cover the installation costs involved. In fact, financial sustainability is totally dependent on household **willingness to pay** in return for **safe and clean water and sanitation, i.e. price for the quality.** Willingness to pay reflects both affordability (compensated and fair price) and satisfaction (marginal utility). In this respect, it is measured and analyzed on the basis of field survey in order to estimate the optimum payment, which would be acceptable by households (willingness to pay) and would cover the costs involved (sustainability). The mechanism to be adopted would ensure claiming for safe and clean water and that hygiene practices are adopted.

A proper institutional structure is proposed, taking into account the best practices in this field, in order to arrive at both institutional sustainability and financial sustainability.

A two step approach is therefore adopted, as follows;

Phase 1: Data collection
Phase 2: Data assessment /analysis/recommendations

**Phase 1: Data collection**

In order to ensure availability of accurate, consistent and reliable information, secondary data (desk research) is carefully reviewed to be intensively investigated and validated through primary data/field research.

**A. Secondary data (desk research)**

It includes careful review of;

- Data/documents available on Revolving Fund Program/component;
- relevant UNICEF initiatives since 2000;
- Data/statistics available at relevant stakeholders such as local communities, governorates, affiliate water companies, Holding Company for Water and Wastewater, etc;
- Data/statistics on key economic activities, income levels and family expenditure for rural families in Upper Egypt from governorates and/or CAPMAS;
- Assessment of documents concerned with UNICEF programs;
- Relevant studies/reports conducted in the target areas;
- Relevant studies/reports on best practices globally.

**B. Primary data (field research)**

It involves intensive field surveys targeting all key relevant stakeholders. In this respect, a participatory approach is applied.

The adopted research methods/tools include structured questionnaires, focus groups/round table discussions, and one-to-one meetings. The research method depends on nature of beneficiaries and the stakeholders involved.

**B.1 Beneficiaries/Households**

Beneficiaries (target households) include both served and non-served households. Served households refer to households that benefited from new water pipe installation in the study area. Non served households refer to eligible households, however, did not yet benefit from the program.

In both cases, designed structured questionnaires and focus groups are applied. In this respect, a Stratified Cluster Sampling Technique is applied to ensure that the selected sample represents population at large. The sample is broadly stratified by geographical location (i.e. villages within the governorates in the study area). Key representative locations/areas/streets (i.e. clusters) within the villages are carefully selected and all household are randomly interviewed. This approach would ensure representation of the strata (i.e. the villages) and the whole sample would represent the study area at large.

In the case of non served households, the consultant is not restricted by the study areas (served villages), however, comparable villages are selected as strata and locations clusters are selected within these villages to interview households randomly within these areas. However, non served households in served areas are also interviewed.

Sample size approached 500 and 250 for served and non served households, respectively. Such sample size would result in representative sample, however, the sample is tested statistically.

The results of the designed structured questionnaire are supported and confirmed with intensive focus groups. Focus groups are conducted in the three governorates under study. Separate focus groups are conducted for males and females separately for both served and non served households. Moreover, mixed groups (males and females served and non-served) are conducted. Gender specific and participation in decision making issues are tackled in the focus groups.

Structured questionnaires and focus groups are used to enable the following;

**Table no. 1.2**
**Key outputs of structured questionnaires/focus groups**
**Beneficiaries (Served and non-served households)**

| **Served Households** | **Non served households** |
|---|---|
| 1. Identify key benefits acquired;<br>2. Discuss accessibility to water (before and after the program);<br>3. Awareness of hygiene practices;<br>4. Awareness of the quality of services;<br>5. Assessment of the program (before and after program);<br>6. Determine capability/willingness to pay for safe and clean water;<br>7. Indicate family budget expenditure. | 1. Awareness of the program;<br>2. Awareness of hygiene practices and quality of services;<br>3. Willingness to join the program;<br>4. Accessibility of water and assessment of situation;<br>5. Willingness and capability to pay. |

**B.2 Stakeholders**

Stakeholders include key government institutions which are regarded as key partners (co-owners of the project) such as the Holding Company for Water and Wastewater (HCWW) and affiliate companies, village units, governorates and USAID and other relevant stakeholders such as local consulting committees, local communities and other donors programs.

One-to-one interviews and round table discussions are utilized to address stakeholders. Interviews with active stakeholders aim at identification of;

1. Level of involvement/role in the project;
2. Performance of the project;
3. Key difficulties;
4. Proposed recommendations to overcome difficulties.

To sum up, target audience, research methods and sample size are indicated as follows;

**Table no. 1.3**
**Research method and sample size by**
**Target audience**

| Target audience | Research method | Sample size |
|---|---|---|
| Beneficiaries<br>Served households<br>Non served households | Structured questionnaire /Focus group | <br>500 /6 groups<br>250 /6 groups |
| Stakeholders | Round table discussion/focus groups/one-to-one meetings | 7-10 meetings<br>3 round table |

The rationale for adoption of research methods is shown in **Appendix 4**.

Sampling tools (i.e. structured questionnaires, focus groups discussion guides, discussion guides for one-to-one interviews, discussion guides for round table discussions) are provided in Arabic in **Appendix 5**, while sample size by sample method is shown in **Appendix 6**, and listing of interviewed stakeholders is indicated in **Appendix 9**.

The table below indicates the sample size by research method and governorate:

**Table no.1.4**
**Sample methods and size**
**Field work**

| Sampling Method | Qena | Sohag | Assuit | Total |
|---|---|---|---|---|
| **Quantitative analysis (structured questionnaires)** | | | | |
| Served * | 98 | 198 | 150 | **446** |
| Non Served | 100 | 122 | | **222** |
| Total | 198 | 210 | 150 | **668** |
| **Qualitative analysis** | | | | |
| Focus Groups/households | 4 | 3 | 3 | **10** |
| Round Table Discussions/stakeholders | 1 | 1 | 1 | **3** |
| In-depth Interviews/stakeholders | 3 | 3 | 3 | **9** |

* More than 70% of the respondents applied for Revolving Fund in phase 1 in Assuit and Qena Governorates, while more than 75% of sample in Sohag applied in phase 2.

**Phase 2: Data assessment/analysis/recommendations**

Data collected from both secondary and primary sources are cross checked, fed into computer software, screened and interpreted. Data assessment/analysis of both primary and secondary sources would ensure;

- Accuracy and reliability of information;
- Sampling approach ensures representation.

It involves data screening, interpretation and analysis. Round table discussions/focus groups/one-to-one meetings are analyzed on the basis of qualitative research, while structured questionnaires are quantitatively analyzed to arrive at concrete quantified results in tabulated format.

The significance of data is carefully tested throughout excel sheets to ensure that the sample represents the cluster at large (i.e. the population at large), with coefficient of variation within 0.15.

This study is concluded by aggregate analysis of all data sources in order to provide comprehensive analysis/assessment of the underlying revolving fund project to assess;

- The overall progress of the project;
- Selection criteria for the villages;
- The financial contribution and mechanism;
- Lessons learnt;
- Hygiene awareness;
- Contribution/role of key stakeholders;
- Key arrangements, partnerships and policies;
- Capacity building and effective monitoring;
- Meeting objectives.

The impact on the project on households, with special reference to women and children is assessed, while considering human rights approach.

In addition, it is essential that;

- People are recognized as key actors in their own development, rather than passive recipients of commodities and services;

- Participation is both a means and a goal;

- Analysis include all stakeholders;

- Programs focus on marginalized, disadvantaged and excluded groups;

- The development process is locally owned;

- Programs aim to reduce disparity;

- Measurable goals and targets are important in programming;

- Strategic partnerships are developed and sustained;

- Programs support accountability to all stakeholders.

On the basis of the above, a proper mechanism/framework enabling financial sustainability is recommended indicating the following;

- Role of key and potential stakeholders;
- Institutional arrangements;
- Payments on the basis of measured **willingness to pay and payment approach**;
- Cost recovery period.

Summary of relevant previous research is shown in **Appendix 7.**

## 2. KEY RESULTS AND FINDINGS

Three sets of information are collected and analyzed, in order to determine the performance of revolving fund program and propose the relevant mechanism which would help in enhancing its performance. The three sets of information are:

- Review of International Experience
- Conduct Households' research analysis (Quantitative and Qualitative for both served and non served)
- Conduct Stakeholders' research analysis.

An intensive field survey is conducted to target both served and non-served households, as well as, relevant stakeholders in the study areas. The field work aims at providing greater insight on the program in order to enable assessment of the performance of the fund.

The results of the field work are mixed with the lessons to be learnt from the relevant international experiences reviewed in order to propose a relevant sustainability mechanism, which would be applicable in the study areas in Egypt.

The field work includes both quantitative (i.e. structured questionnaires. and qualitative research (i.e. focus groups) to target served and non-served households. On the other hand, round table discussions and one-to-one interviews are conducted addressing relevant key stakeholders.

Field work initiated in Sep.22, 2009 and was concluded Nov. 2, 2009. A field manager, with previous experience with the revolving fund program for the last 3 years, was assigned and a team of 15-20 surveyors and moderators were recruited and trained to carry out the field work.

Principle experts from Makary Consulting contributed positively to the field work throughout the study.

### 2.1 International Experience Findings

Key lessons learnt from various international experience reveals the following:

**(A) Financial arrangement, management and sustainability:**

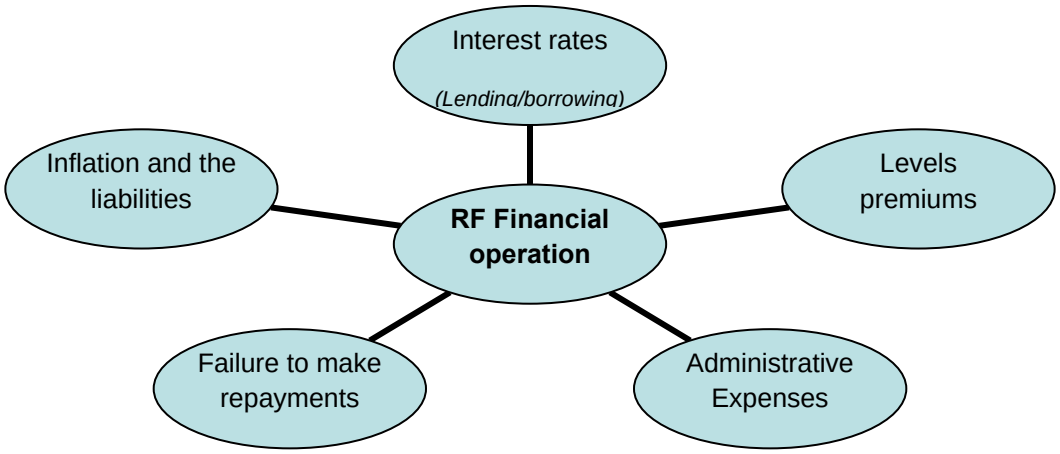
- Both financial arrangement and management are leading factors in ensuring that RF becomes self-sufficient and sustainable. In this respect, RF should have financial relationships with the financiers and the users of the fund which entail obligations to make payments and to submit reports. Price revision should be made regularly to ensure that RF is self-sufficient and sustainable. Thus, the existence of an independent legal status is a must to enforce payments, to issue a profit and loss account on a commercial basis and to conduct the aforementioned price revision. However, this has to take into account users' willingness to pay/affordability. Regular collection of bills is a key factor to ensure sustainability. Thus, enforcing payment is very important, which can be done either by

charging late interest payment for default or giving financial incentives for repayment in due time. In addition, ensuring the regular collection of installments will assist in that fund can be extended to other services such as wastewater, building toilettes and electricity. RF is expected to become self-sufficient and sustainable after an initial period. Its capital is expected to remain at a constant level more or less without any fresh external financing. Yet, Factors that affect the operation of an RF have to be taken into consideration such as: interest rates (for lending and/or borrowing), premium levels, administrative expenses, payments/repayments and failure to make them, inflation and the liabilities (illustrated in Figure 2.1). Finally, Public sector should limit/reduce subsidization of services. So that, people rationalize their use of such subsidized services (Ex, in Egypt, water is perceived as a free good).

***Key factors determine financial sustainability is identified as follows:***

- Public awareness of cost recovery principles;
- The faster credit revolves, the more profitable a credit fund is;
- High willingness to pay for improved water services;
- Setting a reasonable interest rate at least to cover inflation, operating and administrative expenses;
- Financing framework that encourages public private sector partnerships;
- Tradition of broad based consultations.

**Figure 2.1**
**Factors Affecting RF Financial Operations**




**(B) Committee Structure, Role and management efficiency:**

The institutional setup, if not properly introduced, would represent a key constraint for effective implementation. Thus, management efficiency should be improved in terms of adopting transparency, to have flexible organization structure, coordinate work between entities and specify tasks for each to avoid conflict. In addition, it is very important to develop a strong standalone legal entity, to be monitored and

supervised by HCWW. The entity is to be responsible for the fund operation and management, relying on active involvement of the community.

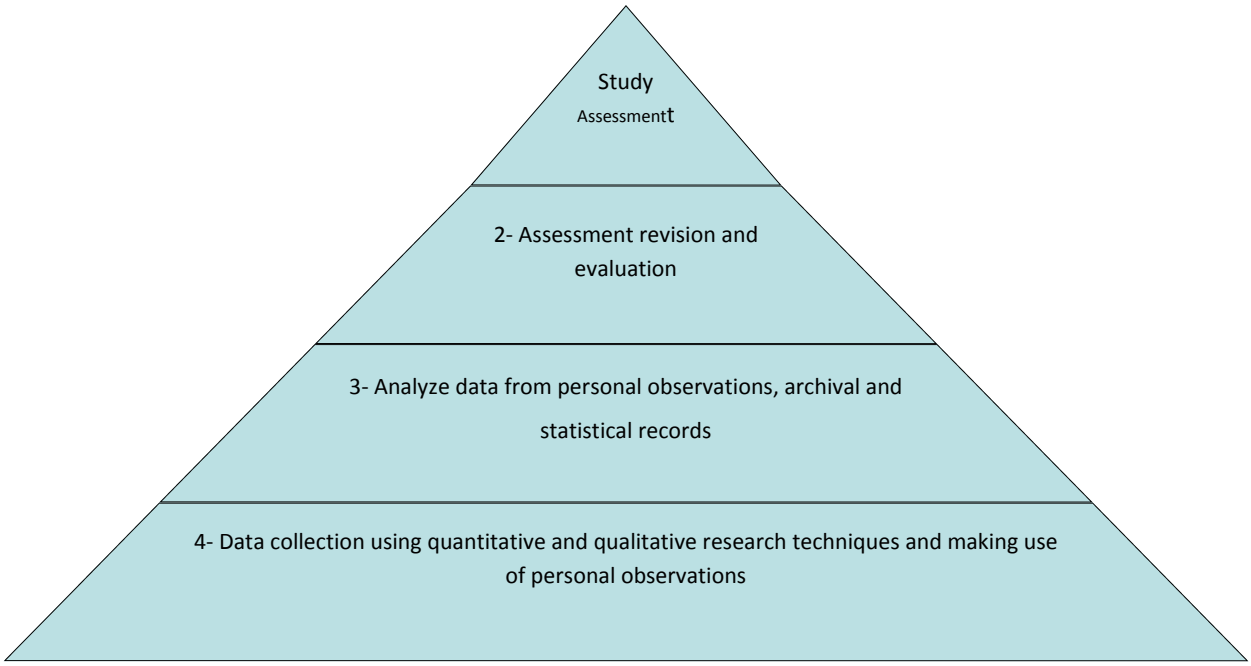
**(C) Best Way for implementing RF Mechanism:**

There has to be gradual implementation for RF program by allowing time for necessary preparation, evaluating cash collection system and proper training for the staff. In addition, there has to be a political commitment by the government to facilitate RF acceptance and eliminate any future barriers. Community acceptance is a must so that they participate seriously in the project and become willing to pay more in case of improved or extended services and to avoid funds being tied-up.

**(D) Monitoring and Evaluation Mechanism:**

Monitoring performance is a vital step in measuring the financial success of the RF idea. Accordingly, supervision and revision is a key factor to make sure that users are satisfied and to learn from mistakes, as well as, to ensure service is delivered at good quality. Assessment of the revolving fund has to be revised and done on the basis of assessment study. The study adopted usually use quantitative and qualitative research techniques to collect data from service providers and users to revise and evaluate the experience of operating RF. Data from personal observations and from archival and statistical records would also be analyzed.

**Figure 2.2**
**Monitoring and Evaluation Mechanism**




A summary of international experience reports are provided in **Appendix 7**, while a list of bibliography is shown in **Appendix 11**.

### 2.2 Households' Research Findings/Analysis

It implies quantitative analysis of market survey (i.e. structured questionnaires) and qualitative analysis to target served and non-served households. It should be noted that respondents' demographics, socio-economic status, accessibility to water (before installation of water connections), assessment of piped water quality, attitudes towards experience with Revolving Fund Program and willingness to pay do not differ significantly by phase per governorate.

#### 2.2.1 Market Survey and Focus groups Findings

**First: Demographics (Household Size and Structure):**

***A. Age and Sex Structure***

The number of males interviewed is noticeably higher in the three governorates (i.e. Qena, Sohag and Assuit), due to the social considerations and traditions, which would restrict direct

communication with women. However, the opinions reflect the opinion of the whole family and addresses gender participation and impact on women and children. Most people have been there since birth, which indicates commitment to the place and good awareness of water conditions long time ago. Average age for both served and non-served is 45 and 47 years for men and women, respectively.

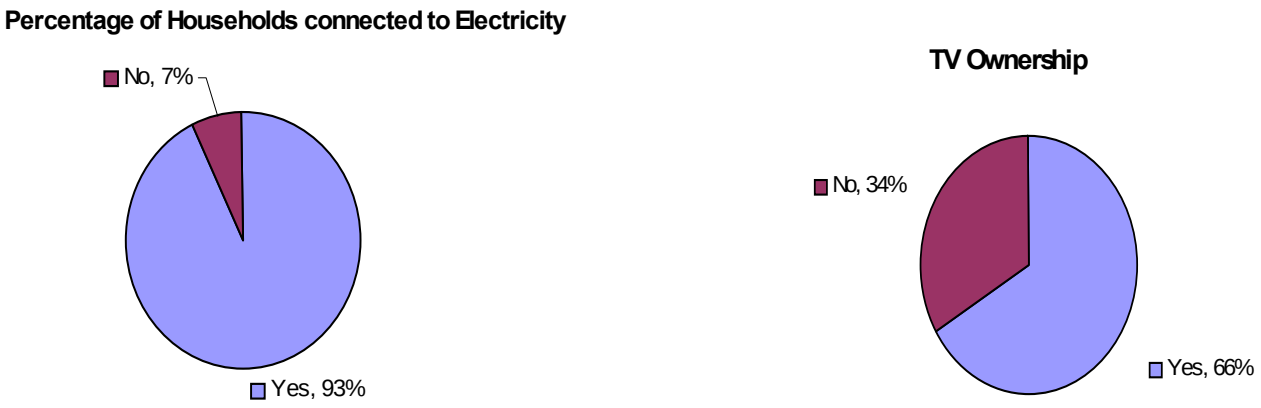
### *B. Household Composition*

According to survey results, Average total household size for both served and non-served is 6 and 5 respectively, as opposed to 4.6 in urban areas in Egypt, while focus groups conducted in Sohag and Assuit revealed that average household size for both served and non served was higher at 8.5 persons.

### *C. Marital Status*

- Percentage of married people exceeded 80% in the three governorates. Other households are either widows or unmarried. As divorce is not very common in Upper Egypt, divorced households represented 1% in the three governorates. This is mainly due to social and lifestyle traditions in upper Egypt;
- Focus groups reveal that majority of households (over 90%) doesn't own livestock and in case of ownership, a maximum of one cow is owned;
- Majority of households have from 3-4 rooms in the place where they reside and are connected to electricity, with electricity bill ranging from EGP30-50/month (as indicated in figure 2.3).

**Figure 2.3**
**Electricity connection status and TV Ownership**



A demographic comparison between served and non-served households is shown in the following table:

**Table No. 2.1**
**Comparison of demographic features**
**Served and non-served**

| | Served | | | | Non Served | | |
|---|---|---|---|---|---|---|---|
| | Qena | Sohag | Assuit | Weighted Avg. | Qena | Sohag | Weighted Avg. |
| Gender | | | | | | | |
| Male | 77% | 88% | 88% | 86% | 86% | 81% | 83% |
| Female | 23% | 12% | 12% | 14% | 14% | 19% | 17% |
| Age | | | | | | | |
| Males | 46 | 47 | 44 | 46 | 46 | 43 | 45 |
| Females | 48 | 44 | 53 | 48 | 40 | 48 | 45 |
| History in Village | | | | | | | |
| Since Birth | 88% | 78% | 97% | 86% | 92% | 95% | 94% |
| Very long period | 12% | 19% | 3% | 12% | 8% | 5% | 6% |
| Moderate period | 0% | 4% | 0% | 2% | 0% | 0% | 0% |
| Moved recently | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Marital Status | | | | | | | |
| Married | 83% | 86% | 86% | 85% | 88% | 77% | 82% |
| Un married | 6% | 9% | 2% | 6% | 7% | 13% | 10% |
| Divorced | 0% | 1% | 1% | 1% | 1% | 2% | 1% |
| Widow | 11% | 5% | 11% | 8% | 4% | 8% | 7% |
| Household Size | | | | | | | |
| Adults (First Generation) | 3 | 4 | 4 | 4 | 4 | 4 | 4 |
| Children (Under 12) | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Total Household | 6 | 6 | 6 | 6 | 6 | 5 | 6 |

**Second: Socio-Economic Status**

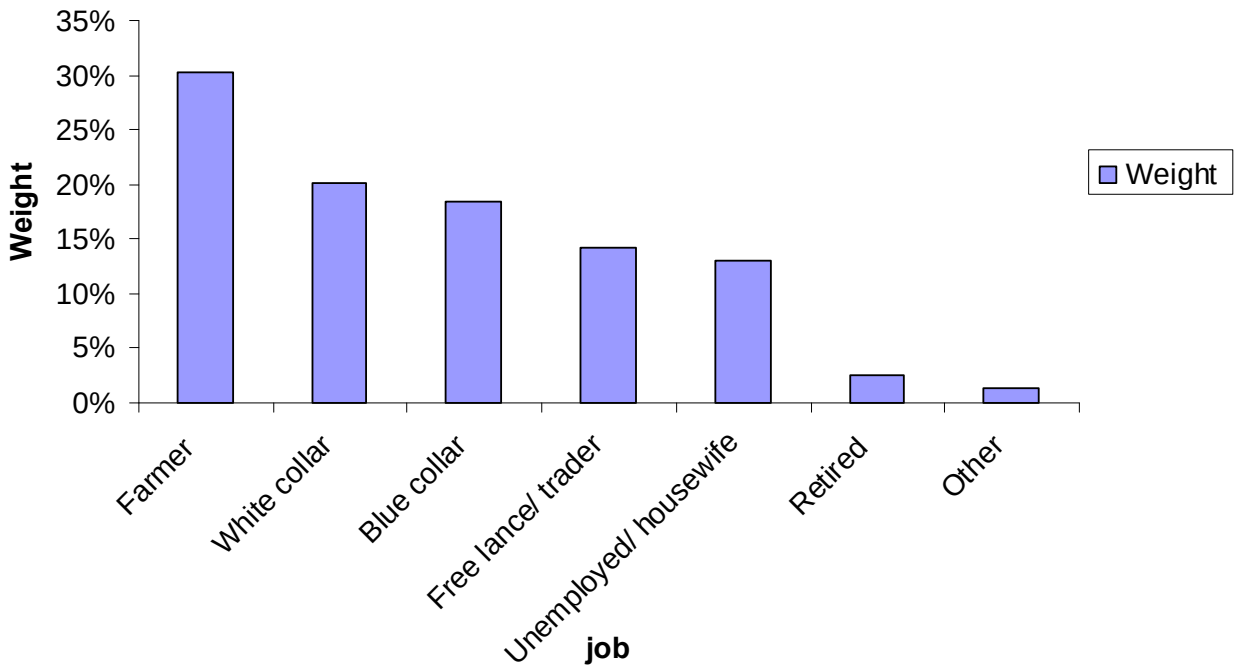
***A. Occupation Status***

- Farming is the key job occupied by respondents, with instable monthly income (as indicated in figure 2.4);
- Majority of women are unemployed/housewives and the level of illiteracy is rather high, with special reference to spouses (women). White and blue collars coming in the second place representing 20% and 19%, respectively in quantitative analysis and unemployed/housewives in the focus groups, represent 26%. The aforementioned employment work status corresponds to the level of education investigated.

***B. Education Status***

- Almost half of households are illiterate, with a particular focus on Assuit and Sohag (it is worth noting that 40% of all households in the three governorates investigated in both survey and focus groups are illiterate). Others are either literate or having secondary/technical education. Very little percentage goes for those who attended universities (from 2-3% in the three governorates).

**Figure 2.4**
**Occupation**




However, comparison between served and non-served households is conducted below as follows:

**Table No. 2.2**
**Comparison of socio-economic status features**
**Served and non-served**

| | Served | | | | Non served | | |
|---|---|---|---|---|---|---|---|
| | Qena | Sohag | Assuit | Weighted Avg. | Qena | Sohag | Weighted Avg. |
| Employment/Work | Weight | Weight | Weight | | Weight | Weight | |
| Farmer | 28% | 27% | 35% | 30% | 17% | 20% | 19% |
| White collar | 7% | 28% | 18% | 20% | 33% | 10% | 20% |
| Blue collar | 44% | 14% | 8% | 19% | 22% | 12% | 17% |
| Free lance/ trader | 6% | 12% | 22% | 14% | 4% | 17% | 12% |

| | Served | | | | Non served | | |
|---|---|---|---|---|---|---|---|
| | Qena | Sohag | Assiut | Weighted Avg. | Qena | Sohag | Weighted Avg. |
| Employment/Work | Weight | Weight | Weight | | Weight | Weight | |
| Unemployed/ housewife | 11% | 14% | 13% | 13% | 13% | 31% | 24% |
| Retired | 2% | 2% | 3% | 2% | 7% | 3% | 5% |
| Other | 1% | 2% | 1% | 1% | 3% | 6% | 5% |
| Employment/Work of Spouse | Weight | Weight | Weight | | Weight | Weight | |
| Farmer | 28% | 8% | 9% | 22% | 19% | 45% | 14% |
| White collar | 0% | 2% | 1% | 8% | 4% | 26% | 24% |
| Blue collar | 1% | 0% | 1% | 3% | 4% | 2% | 12% |
| Free lance/ trader | 0% | 2% | 0% | 9% | 1% | 5% | 4% |
| Unemployed/ housewife | 70% | 86% | 89% | 55% | 70% | 16% | 39% |
| Retired | 1% | 0% | 1% | 2% | 3% | 0% | 5% |
| Other | 0% | 2% | 0% | 1% | 0% | 6% | 2% |
| Level of Education | Weight | Weight | Weight | | Weight | Weight | |
| Illiterate | 24% | 32% | 47% | 36% | 21% | 59% | 35% |
| Literate | 35% | 21% | 9% | 20% | 21% | 14% | 24% |
| Primary | 21% | 6% | 5% | 9% | 8% | 1% | 5% |
| Preparatory | 6% | 6% | 6% | 6% | 12% | 2% | 8% |
| Secondary/ Technical Secondary | 12% | 28% | 25% | 24% | 29% | 22% | 21% |
| Institute | 0% | 3% | 4% | 3% | 3% | 0% | 1% |
| University | 2% | 3% | 3% | 3% | 6% | 1% | 6% |
| Level of Education of Spouse | Weight | Weight | Weight | | Weight | Weight | |
| Illiterate | 87% | 59% | 65% | 67% | 41% | 59% | 50.9% |
| Literate | 12% | 17% | 16% | 15% | 27% | 14% | 20.1% |

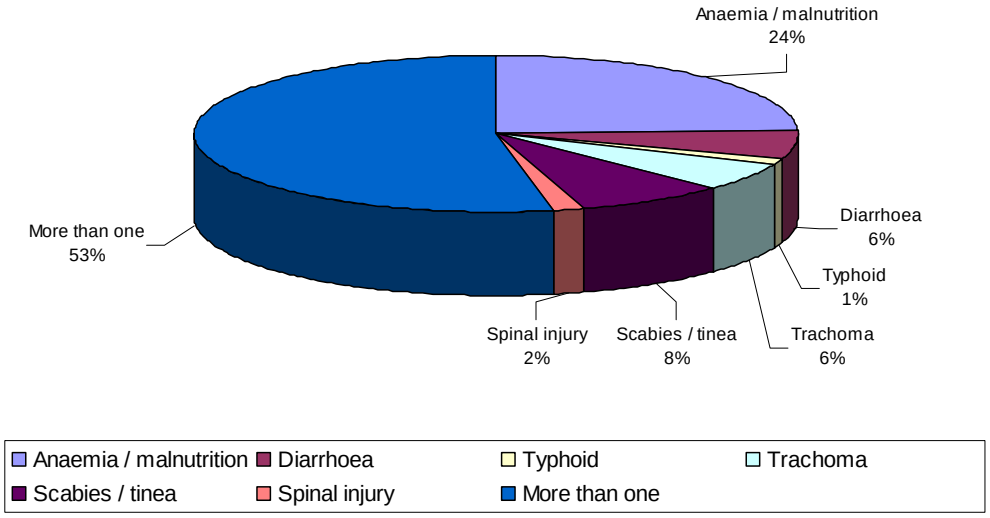
| | Served | | | | Non served | | |
|---|---|---|---|---|---|---|---|
| | Qena | Sohag | Assiut | Weighted Avg. | Qena | Sohag | Weighted Avg. |
| Level of Education of Spouse | Weight | Weight | Weight | | Weight | Weight | |
| Primary | 1% | 3% | 2% | 3% | 6% | 1% | 3.6% |
| Preparatory | 0% | 11% | 2% | 5% | 12% | 2% | 6.5% |
| Level of Education of Spouse | Weight | Weight | Weight | | Weight | Weight | |
| Secondary/ Technical Secondary | 0% | 10% | 14% | 9% | 13% | 22% | 17.8% |
| Institute | 0% | 1% | 1% | 1% | 0% | 0% | 0.0% |
| University | 0% | 0% | 0% | 0% | 1% | 1% | 1.2% |

**Third: Health feature and water/wastewater connection**

Majority of households own bathrooms, with an oriental type (over 90% in the three governorates). However, percentages of served households who own bathrooms (i.e. 96%) are higher than those Non-served (1.e 86%).

Survey analysis revealed that majority of households doesn't have health problems. However, in Qena, over 60% reported that they have health problems. A rather significant portion of respondents informed that they suffer from water related diseases; however, they claimed that it does not impact health seriously (as illustrated in figure 2.5) Diseases vary from eye infections /skin diseases in Qena, to having more than one water related disease in Sohag, to diarrhea and eye infections (trachoma). Frequency of children getting sick and water related diseases was extremely high, varying from diarrhea, stomach aches, stomach worms, and trachoma and skin allergies. However, served households in Assuit didn't understand that those common diseases children are linked to use of water sources (i.e. they didn't know there is a relation between water sources and those diseases). Despite the fact that 62% of the sample is connected to water (i.e. % of served to non served, as per sample classification), none is connected to wastewater. However, all households value the benefits of installing wastewater.

**Figure 2.5**
**Common Water Related Diseases**




## Fourth: Water accessibility and service before water connection (For Served and Non-served Households)

### *A. Water Sources, distance, cost*

There are many water sources that households count for rather than one single source. Such sources include: neighbors, private pumps (underground water), Nile and public taps. However, more than 87% of served and non served respondents depend on neighbors and private pumps (underground water), from short distances (i.e. less than 20 minutes walk), as source of water before connection. This implies that households do not incur running cost for obtaining water. However, if the sources used were from The Nile or public taps, it would be a long distance taking more than 20 minutes walk. Accordingly, water needs to be carried usually on a cargo to deliver to the household place, which requires incurring transportation costs (usually from LE10-25).

### *B. Reliability and cleanness of water sources*

Water is perceived to be clean if water source is from taps water from neighbors, while it is extremely unclean and polluted (i.e. colored, smells and mixed with wastewater), if pumps or the Nile were the sources used. Survey results indicated that reliability of such sources differs by governorate, with Qena being the least satisfied for both served and non served (I.e 80% and 100%, respectively), while in Assuit governorate, more than 90% stated that sources are reliable. On the other hand, focus groups in all

governorates, particularly in Assuit, reveal that these sources are usually available but neither clean nor reliable due to many factors including: social embarrassment from neighbors and if there is conflict/disagreement with neighbors, water would be even unavailable. Besides, Water is usually unclean, polluted and mixed with wastewater, especially if sources used were the Nile or Pumps.

Nevertheless, according to survey results, more than half of households in different governorates perceive water as clean, however, 40% of respondents perceive environment as "non hygienic", implying their urgent need for safe and clean water connection. Unavailability of water for 24 hours (53% of served households said that water was not sufficient. This leads households to control their use of water (neither showering nor washing hands regularly), washing dishes, cleaning the house and moreover children do not wash their hands nor shower regularly before or after going to schools, causing them the aforementioned common water related diseases. Above 50% of served respondents perceive source of water as reliable (i.e. stable) and clean, while 60% of non served perceive sources as not reliable. However, both served and non served suffer from social embarrassment, and would like to ensure availability of safe and clean water. On the other hand, 98% and 68% of non-served and served, respectively found difficulty in water collection and perceives water collection as cumbersome to carry.

### *C. Collection of Water processes responsible person, means for carrying the water*

Collection is usually conducted on daily basis; however, survey and focus groups results have shown that more than 50% of non served households collect water thrice a week.
48% and 40% of served and non-served households respectively stated that everyone is responsible for getting water, followed by women and children. However, focus groups for both served and non-served reveal that mostly women and children are usually the responsible for carrying water. As collection is, in most cases, conducted by women and children, much burden they have been exposed to and is a very time consuming process, sometimes taking from 5-6 hours.

Plastic drums/Containers are the common way for carrying the water, i.e. one Plastic drums= 20 Liters, while one bucket= 10 liters and one tin = 4.75 liters. Other means for carrying water tins, buckets, potteries and jars. In this respect, average daily quantity collected amount to 5.3 containers (i.e. 106 liters), which is above life line requirements in Egypt (75 lcd per family), however, significantly lower than WHO (World Health Organization) standards of 50 per capita lcd, on the basis of family size of 6. Yet, some households in focus groups are said they get an average of 7-8 containers/day. This is consistent with the fact that around 58% perceive quantity is not sufficient, merely sufficient for maximum of 1-2 days, which is confirmed by focus groups questionnaire. Households carry water on times, with an ability to carry 1-4 containers/day, with an average carries of 2-3 times per day. Main problems faced during the carrying process were; social embarrassment from neighbors, time consuming process, physical burden and some non-served households in Sohag said that women got osteoporosis from carrying heavy amounts of water.

Storing water is not common among households, which is due to color and smell changes if stored for more than two days. However, focus groups for non-served, in Sohag and Qena governorates, mentioned that they sometimes store water in containers or barrels, but this leads to water becoming more contaminated.

More than 80% of households perceive that cost of water connection is high, which is the main reason for lack of connection, especially that no one was paying any cost for water before connection.

**Fifth: Situation after water connection (through revolving fund program for served households only)**

Availability, reliability and cleanliness of connected water is highly acknowledged by Sohag and Assiut respondents, while is highly criticized by Qena respondents due to bad smell and limited availability. In addition, focus groups in Assuit and Sohag have shown that households are satisfied in terms of water clarity and availability, but water cuts are rather frequent, once or twice a week, or when there are water maintenance procedures done by the governorate, however, this is broadcasted in the media before the water cuts. On the other hand, improvements have been felt recently in Qena and hygienic environment is perceived to be much improved, compared to situation before installation of water connection. Majority of served household views that overall service quality are excellent and sufficient. According to survey results, over 50% of them have modified their bathrooms, with majority installing taps/shower or tiling bathroom. Other modifications include; installing basins or making more than one type of modifications. On the other hand, focus groups in Assuit have shown that almost no one tried to make modifications in the bathrooms. However, they expressed their need for such modifications through another revolving fund.

***A. Cost of water services and Collection of water bills***

Regular collection of bills is a key factor to ensure project's sustainability and enables the fund to be extended to other services such as wastewater, installing toilets and electricity connection. Fortunately, survey results have shown that 69% of households are paying bills on a regular basis. Respondents pay water bills every 2-3 months, with an average bill amounts to LE 8 per month. This indicates willingness to pay and awareness that water is not a free good and is rather a service – for – a fee concept; though, considerably low, especially in Qena, with lowest average bill paid amounts to LE 5 per month. Accordingly, enforcing payment is very important for those who are not paying on a regular basis, which can be done either by charging late interest payment for default or giving financial incentives for repayment in due time.

***B. Impact/benefits of water connection (For Served Households' Only)***

The conducted survey reveals that installing water connection has caused a positive turnaround in households' lives. Benefits resulted from water connection are ranked according to survey results and confirmed by focus groups, which indicated the following;

- Drinking clean water and eating healthy food resulted in less diseases than before as showering and bathing have become more regular and frequent;
- Households are very pleased and now they can drink tasty tea and coffee;
- Households have more time to be dedicated to other useful things and animals can drink whenever they want to.

**Table no.2.3**
**Ranking of benefits of Water Collection**

| Factors | Weight |
|---|---|
| Avoiding physical hardship of water collection | 33% |
| Ensure water availability | 17% |
| Cost Savings* | 3% |
| Health/Well being of the family | 23% |
| Avoiding social embarrassment | 24% |

* Cost saving factor effect is minimal due to the fact that almost no one incurs cost for water collection. However, those who are living far from water sources sometimes incur transportation cost for carrying water, which is in the average of LE10-15/carry.

**Sixth: Experience with Revolving Fund/ Cost of connection (For served households only)**

More than 70% of the selected respondents in Qena and Assiut applied for the fund in phase 1. On the other hand, around 30% of the selected respondents belong to phase 2. Phase 2 is managed by the water company. In the case of Sohag, 76% of respondents applied in phase 2, taking into consideration that both phases were managed by the governorate. **However, no significant variations are noticed by phase in all governorates.**

***A) Sources of RF awareness, joining entity and application process***

Despite the fact that the revolving fund program initiated as a component of SSHE, only 2% of served households knew about the program from the schools, whereas in case of non served households, RF awareness from schools increased slightly to 5%. Word of mouth and contacts with local village units contributed to more than 80% of source of information/awareness of the program for both served and non served households. More than 80% of served households stated that local village unit was the entity that made them join the RF program, implying the credibility of the local village unit. Opinions concerning application process varied from easy to moderate. Main documents required during application process were; Copy of ID, dwelling ownership contract or dwelling mortgage document, electricity or phone bill and buying a water installation file request for LE4/file.

***B) Total Loan Value, items covered by RF and monthly installments***

Average value of loan as reported by served respondents, amount to LE 460 in Sohag and Assiut covering mostly pipes, while Qena reached LE 773, covering pipes and meters. Whenever connection cost exceeds LE500 and is not subsidized by Water Company/governorate, the deficit has to be covered by household. Cost increased significantly in phase 2, however, was incurred by the water company through reducing connection fees. Repayment terms were fixed at LE 19-23 per month for 24 months for simplicity and consistency reasons. Covered ratio of loan by governorate is shown in the following table;

**Table no.2.4**
**Covered Ratio of Loan by Governorate**

| | Qena | Sohag | Assuit | Weighted Average |
|---|---|---|---|---|
| Value of loan received | 773 | 459 | 461 | 528 |
| Amount of loan repaid | 485 | 109 | 151 | 205 |
| **Covered ratio** | **62%** | **23%** | **33%** | **39%** |

Collection pace is rather slow, with special reference to Sohag and Assiut, due to high number of phase 2 respondents in Sohag and to the phenomena that households tend not to pay on monthly basis, but rather consistent with the flow of income (usually every 3-4 months).

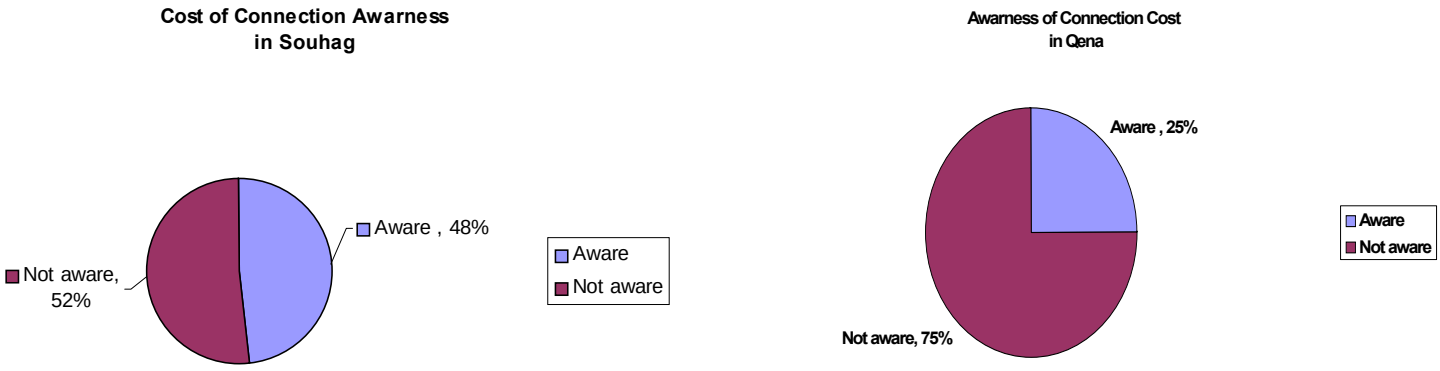
Cost of water connection and repayment terms are seen adequate in return for the quality of water services provided, in that more than 97% require extending the revolving fund to wastewater.

## Seventh: Cost of Connection and RF Awareness (non-served households)

### *A. Awareness of Cost of Connection*

Respondents are aware of cost of connection (around 38% in both Soahg and Qena governorates) through word of mouth from experiences of relatives/friends/colleagues/family. According to survey questionnaire and focus groups, Average cost of connection as informed by non served households was from LE446-652. However, in Qena governorate, awareness of average cost of connection was much higher ranging from LE1000-1200. All respondents can not afford to pay total connection cost in cash (those not aware were informed by the surveyors). However, nearly everyone can afford to pay on credit/installments as it suits their financial abilities.

**Figure 2.6**
**Cost of Connection Awareness**



***B. Awareness of RF and Households Perception***

Almost 50% of non-served households are not aware of the revolving fund program, which indicates lack of spreading for RF awareness in the three governorates, particularly in Qena. Despite that, focus groups questionnaire in Sohag reveals that households might know the "water connection project on credit" rather than knowing the term "Revolving Fund Program/project" and some think it is a project for employing people. A significant portion of households were aware that water was installed, with special reference to Juahina El Sharkeiyah Village in Sohag, as informed by focus groups' respondents.

All in All, an apparent lack of RF awareness as well as cost of connection, which indicates the importance of conducting effective marketing campaigns and publicity for RF. Key points people need to know about RF are: monthly payment amount, total cost of connection and the responsible person for collecting installments. Nearly 70% of non served households possesses ownership documentation problems (i.e. don't meet conditions for RF as they are either lives on lands that belongs to state ownership or on agricultural lands that also belongs to state ownership). Only 10% are trying to avoid paying future water bills.

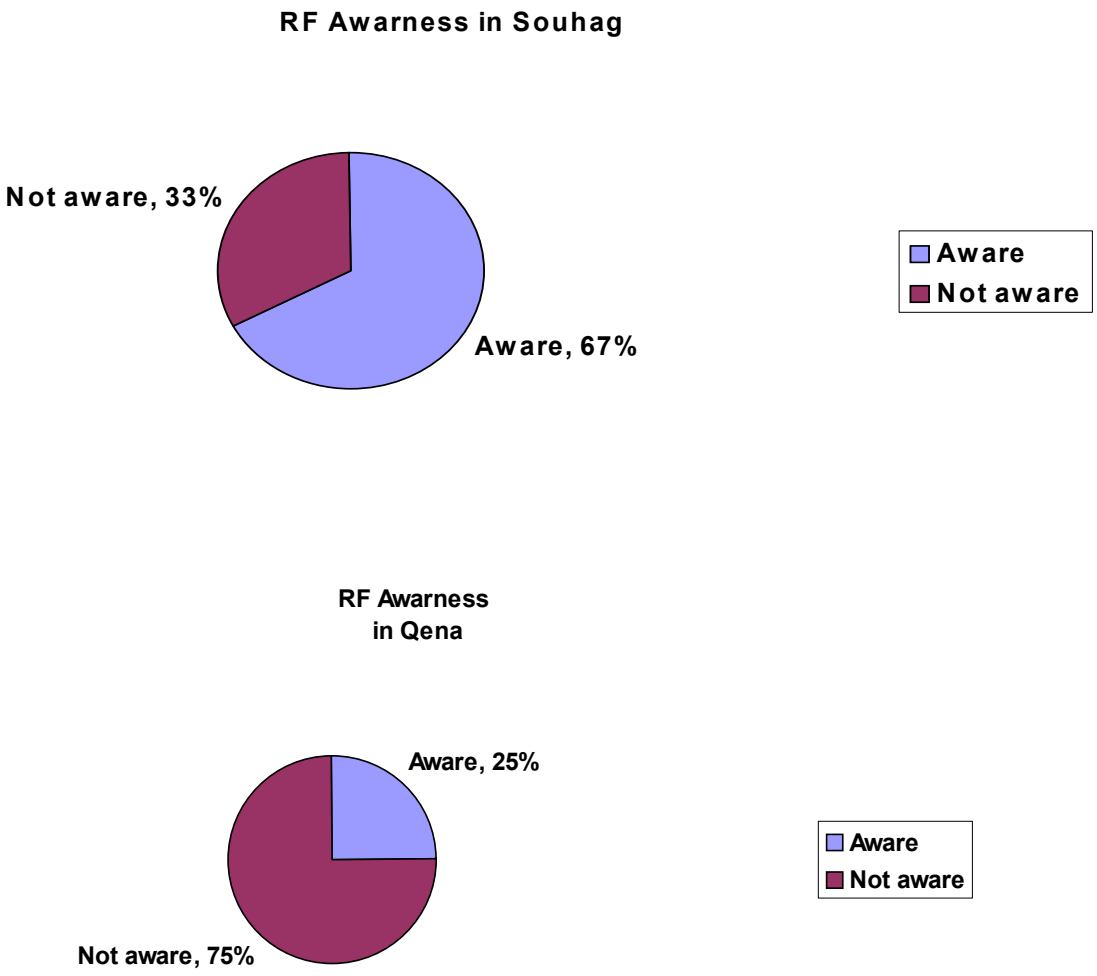
***C. RF Evaluation***

In terms of RF evaluation, everyone perceives that RF idea is excellent and everyone is willing to join. However, they hope that their problems with the governorate are to be solved. Despite having electricity connection, majority of non served can not join RF program because they are not qualified to join due to property ownership problems with state/governorate. This conflict/dispute issue has been in Qena since 10 years. Surprisingly, when asked for the reason of refusing to join RF, over 50% of households stated that because their income doesn't allow rather than joining requirements or meeting conditions. However, this might be attributed to the lack of RF awareness in addition to lack of awareness for cost of connection.

***D. The impact/benefits stated by non served households from being connected to water (from Qena Focus groups questionnaire)***

- *Using water whenever needed instead of controlling our use because if water is finished, we will not find water till next day;*
- *Available water all the time;*
- *Ability to drink clean water;*
- *Being relieved from burden of carrying water;*
- *Disease preclusion.*

**Figure 2.7**
**RF Program Awareness**




**Eighth: Willingness to pay for water/wastewater connections (Served and Non Served Households)**

***A. Willingness to pay for Water Service***

More than 97% of non-served are willing to join the program as they appreciate the benefits of water connection services. Both served and non-served respondents expressed their non capability to pay the connection cost in cash at once. Willingness to pay figures estimated by respondents is based on receiving acceptable quality of water services, in terms of color, odor and availability of water. It is noted that both served and non-served households value the importance of installing piped water. It is worth noting that willingness to pay for non served in Qena governorate is higher than Sohag, where 60% are willing to pay LE30 versus 27% only in Sohag. This observation/point is also confirmed in focus groups, where some non served households in Qena are willing to pay from LE50-100/month. In served analysis, 31% of the interviewed households in Qena are willing to pay LE30 per water connection. In Sohag and Assuit, only 30%

and 25%, respectively are willing to pay LE30 per water connection (See Chart number 2.8). In this respect, willingness to pay installment per month do not vary significantly by governorate nor by type of households (Served or non-served). Weighted average willingness to pay is LE 32 per month. WTP in served analysis is within the same range at LE32/month. The following figures elaborate WTP for both served and non served in each governorate, while figure 2.10 elaborates weighted average WTP for both served and non served per governorate.

**Figure 2.8**

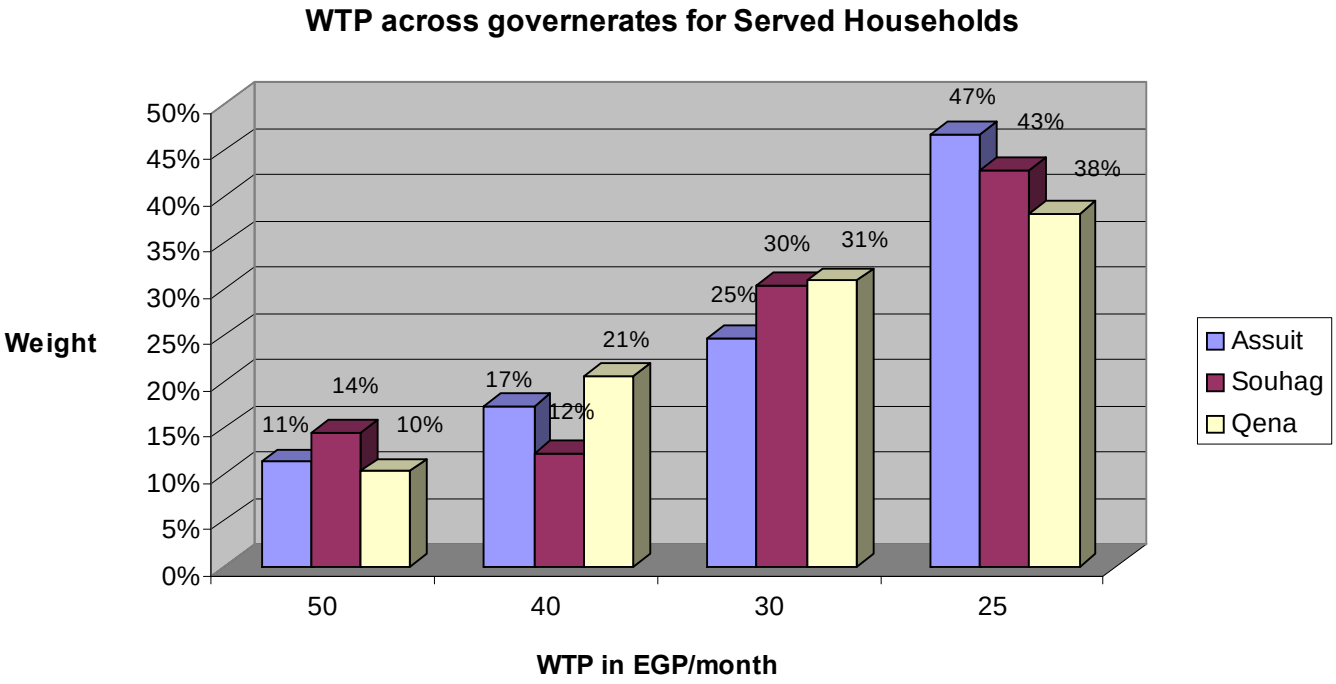


**Figure 2.9**
**WTP for Non-Served Households per Governorate**

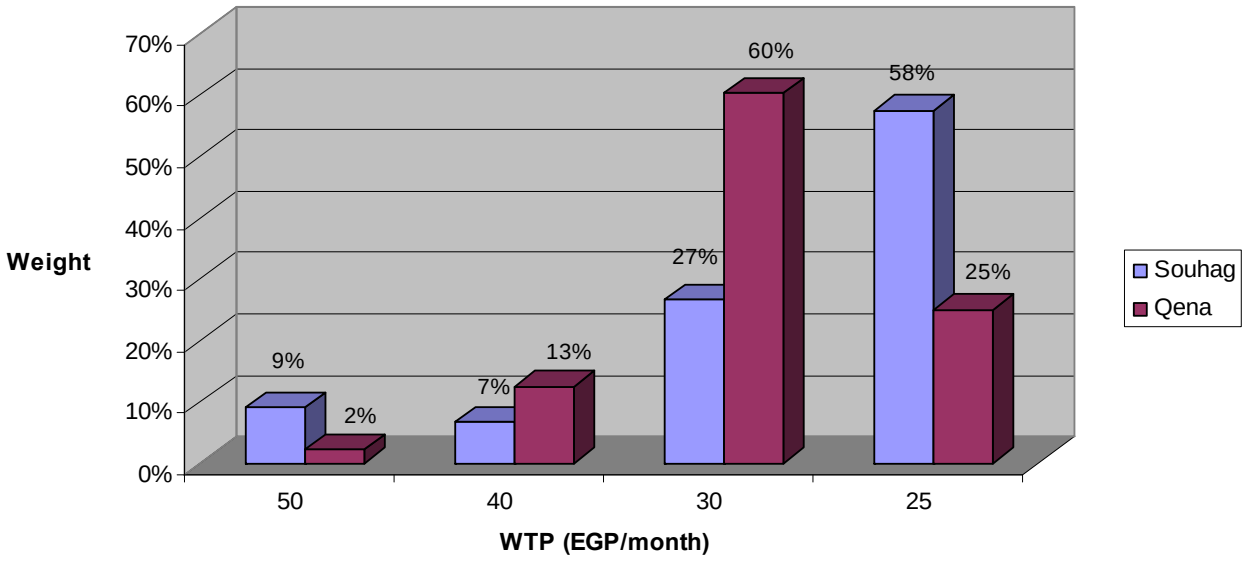
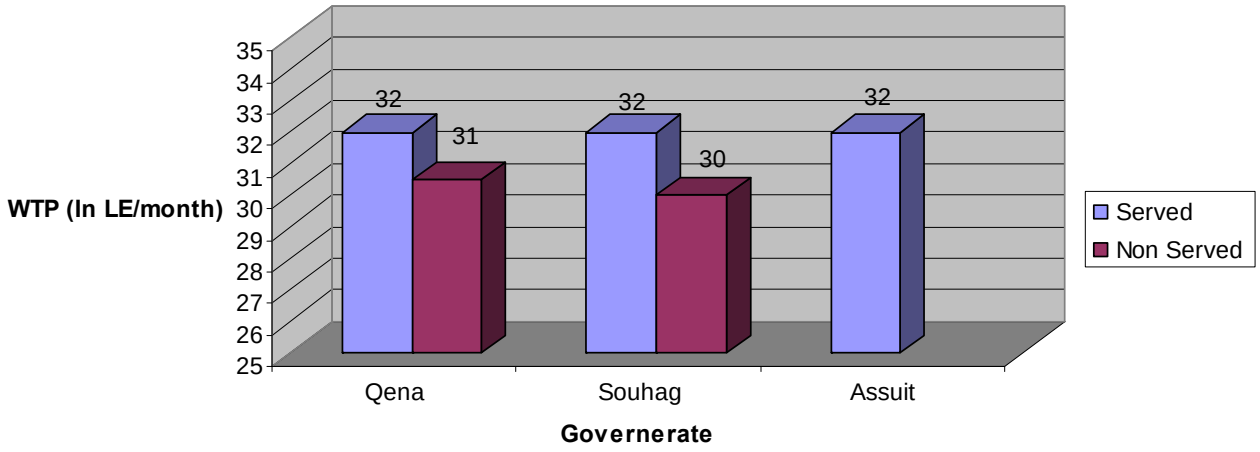


**Figure 2.10**
**Weighted Average WTP for both served and nonserved**




**It appears that both served and non-served are willing to pay 45-60% higher than actual amounts paid (i.e. LE 20-22). This would reveal the success of the Revolving Fund Program in increasing awareness of the benefits of safe and clean water/wastewater.**

***B. Willingness to pay for wastewater***

Households are willing to extend such fund to other services and requested wastewater service. They are willingness to pay LE 20 per month on average i.e. almost same payment for water connection currently. WTP for wastewater is shown in figures 2.11 and 2.12 for both served and non served households, respectively):

**Figure 2.11**
**WTP for Wastewater (Served Households)**

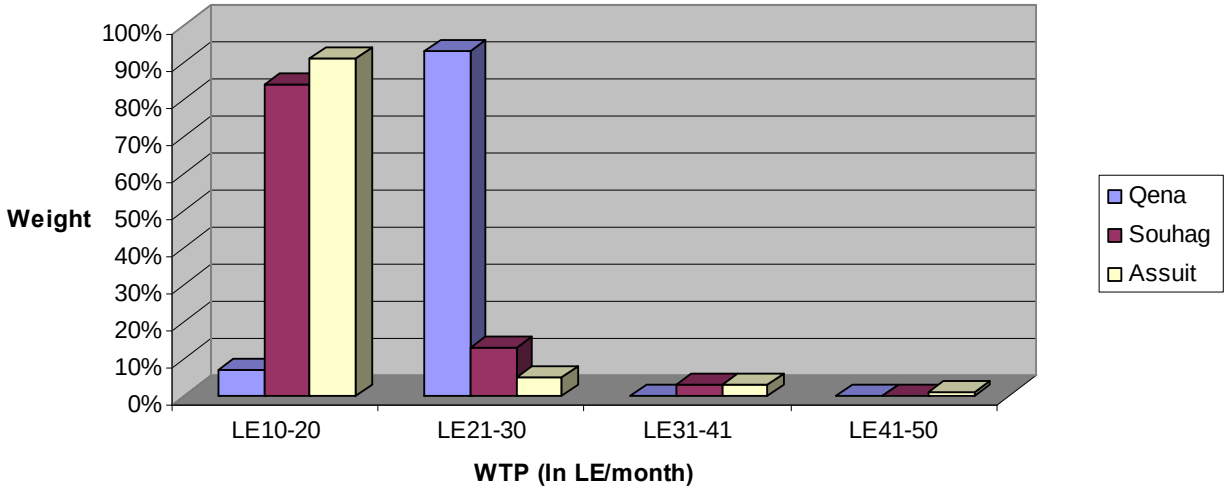
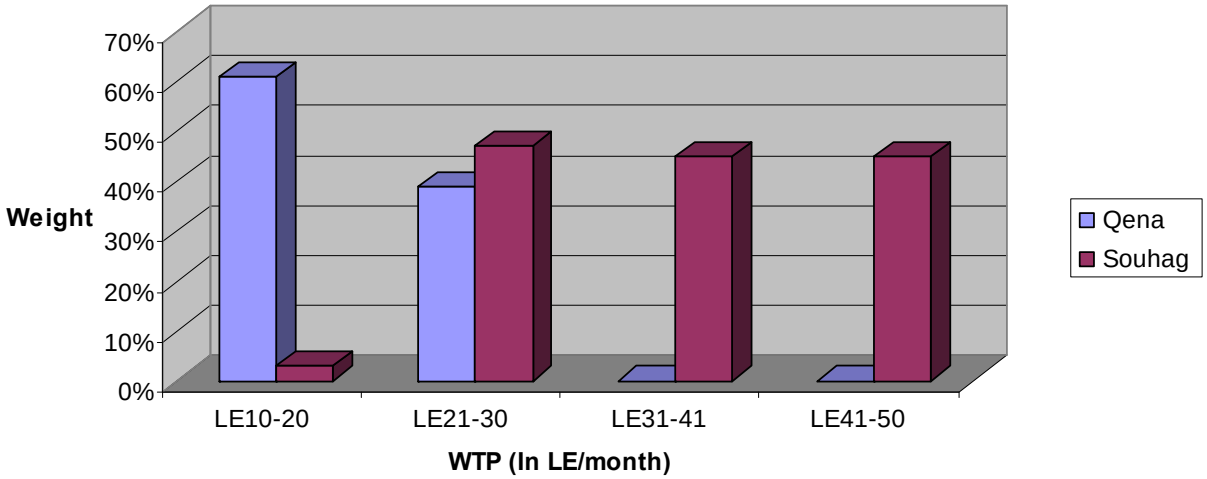



**Figure 2.12**
**WTP for Wastewater (Non Served Households)**



## Ninth: Entity Responsible for installment collection and maintenance

***A. Entity responsible for installment collection (For served and non-served Households)***

According to survey results conducted for served households, Over 95% of respondents have seen that local village unit should be the responsible entity for installment collection. This view was confirmed by focus groups for both served and non-served, as majority stated that they prefer local village units because they are familiar with and have dealt with similar agricultural loans. Besides, majority of households trust local village unit due to the fact that it belongs to governmental entity. Water Company was the second preferred entity households would like to deal with. However, quite a few of them said it should be a combination of both local village unit and Water Company, where the former is to be responsible for the administration process and the latter is to be responsible for technical-related issues such as installation and maintenance. As for the role of NGO's, majority noted that role of NGO's is very weak and not impressive and some even never heard of them. Yet, According to focus groups sessions, NGO's could participate and provide help and support (i.e. a secondary/support role), with special reference to selection of candidates and involvement of beneficiaries/communities in the process.

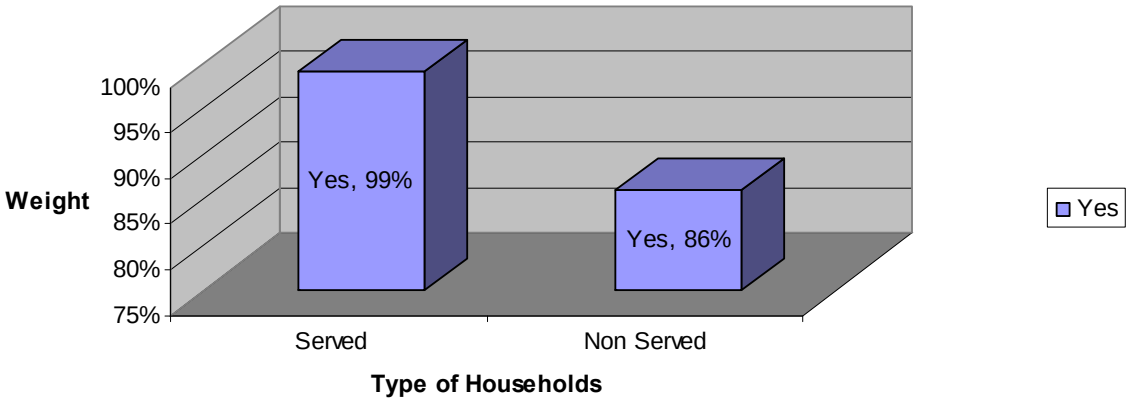
***B. Entity responsible for Maintenance (Served Households Only)***

High sense of ownership was extremely felt in Qena, in that 97% stated that they should be the ones who in charge of maintenance. In Sohag, opinions varied between Local village unit and Water Company (48% and 37%, respectively). In Assuit, over 60% said that it is the water company which should be in charge of maintenance procedures. However, Assuit focus groups reveal that users should be the responsible for maintenance and others see that Water Company is to be in charge of maintenance procedures.

**Tenth: RF Extension to other Services (For both Served and non served households)**

As illustrated in Figure 2.13, both served and non served are willing to extend RF to other services, with 86% of served households are highly interested in wastewater services. Quite a few households expressed their interest in: building toilets, electricity connection and building a complete bathroom. For non-served households, main concern focused on having water connections.

**Figure 2.13**
**Willingness to extend RF to other services**



**Eleventh: Expenditure and income levels (For Served and Non Served Households)**

***A. Expenditure Levels***

Both served and non-served households spent most of their income on food and beverages, representing around 55% of their total expenditures, followed by clothing and education spending. Average monthly expenditure of the sample amounts to LE523, implying that WTP water connection installment would represent around 6% of monthly expenditure. Average income figures according to survey results reveals that average level of income for both served and non-served is LE500-600. Total expenditure weights for both served and non-served are shown in the following table:

**Table 2.5**
**Family Expenditure Levels**

| Average Total Expenditure | Served | Non Served |
|---|---|---|
| < 100 | 0% | 3% |
| 100 - 200 | 2% | 5% |
| 200 – 300 | 10% | 16% |
| 300 - 400 | 22% | 13% |
| 400 - 500 | 21% | 11% |
| 500 - 600 | 15% | 7% |
| 600 - 700 | 10% | 16% |
| 700 - 800 | 8% | 20% |
| 800 – 900 | 5% | 5% |
| 900 - 1000 | 4% | 3% |
| > 1000 | 1% | 0% |

***B. Expenditure levels Vs. WTP for Water Connection***

It is obvious that WTP is positively related to income capabilities for served and non served analysis in Souhag. However, in the case of non-served in Qena, as shown in graph No. 2.15, expenditure levels are not directly related to WTP. This could be attributed to the fact that they are not aware of the value of the service offered to them, i.e not yet offered.

**Figure 2.14**
**WTP Versus Expenditure (Served)**

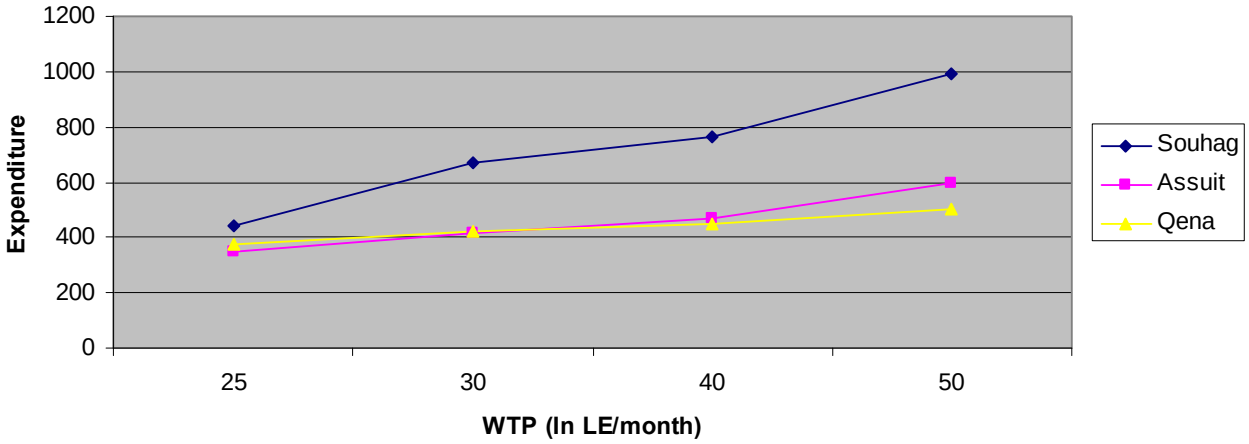
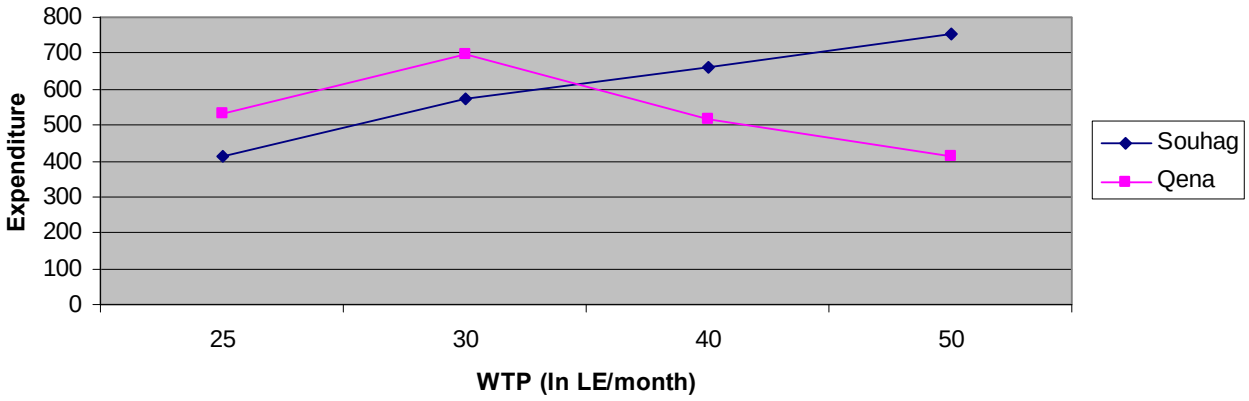



**Figure 2.15**
**WTP Vs Expenditure (Non served)**



**Twelfth: Suggestions for RF Sustainability and Developments (as informed by Served Households focus groups)**

- Loans have to be offered and extended to more households to revolve and ensure sustainability.
- RF has to be extended to other services;
- Ensure that connection charges and fees are more affordable;
- Increase loan amount to cover the higher installation charges/fees.

### 2.2.2 Key Findings

The following key findings emerged from analysis of both structured questionnaires and focus groups addressing served and non served households, are summarized as follows;

**Table No. 2.6**
**Households Research Key Findings**

| Item | Qena | Sohag | Assiut |
|---|---|---|---|
| **Accessibility to water before water connection** | | | |
| Source of water | Neighbours and underground water | Neighbours and underground water | Neighbours and underground water |
| Distance from water source | Short, however reaches 1-4 km for mountain residents | 20-300 meters | 20-300 meters |
| Time distance | 10-20 minutes except mountain residents (extend to 30-45 minutes) | 10-20 minutes | 5-10 minutes |
| Reliability of source | Average reliability | Rather reliable | Reliable |
| Quantity collected daily | 4-10 containers* | 5-8 containers* (3 times a week) | 4-8 containers * |
| Cleanliness of water | Varies | Neighbours: clean<br>Pumps: Not clean | Varies, but rather clean |
| Cost of water | None, cost of transportation LE 10-25 per one time | None, cost of transportation LE 10-25 per one time | None, cost of transportation LE 10-25 per one time |
| **Perception of water connection** | | | |
| Willingness to install piped water | Yes | Yes | Yes |
| Ability to pay total in cash | Above 50%<br>Cost estimated at LE 773- 1,200 | No<br>Cost estimated at LE 465-500 | No<br>Cost estimated at LE 500-1,200 |
| Benefits for installing water (by importance) | Avoid social embarrassment and health problems, ensure availability and avoid physical | Ensure availability and avoid physical for wife and children | Avoid physical, Avoid social embarrassment, better family health and ensure availability |

| Item | Qena | Sohag | Assiut |
|---|---|---|---|
| **Awareness/experience of RF** | | | |
| Awareness (non-served) | 25% aware | 70% aware | N/A |
| Reasons for not applying (non-served) | Do not meet conditions and connections becoming expensive (ownership documents) | Do not meet conditions (ownership documents) | N/A |
| Cost of installed connection(LE) | 773 (covering pipes and meters)<br>25% of non-served informed 1,200 | 446-512(covering mostly pipes and meters) | 451-498 (covering pipes mostly )<br>Phase 2: LE 1,000-1,500 |
| Means of repayment | LE 22-24 per month for 24 months | LE 22 per month for 24 months | LE 20-22 per month for 24 months |
| Adequacy of amount paid | Adequate | Adequate | Adequate |
| Preference for entities to deal with | Local village unit followed by water company | Local village unit followed by water company | Local village unit |
| Assessment of water services | Acceptable to good<br>Availability and odor problems | good , however, some water interruption (1-2 times a week) and problems with odor of water | Very good to excellent |
| Suggestions for improvement | Reduce connection cost | Reduce time of procedures | Incorporate role for NGOs<br>Extend RF to other services<br>Reduce connection cost |
| **Willingness to pay** | | | |
| Willingness to pay for water connection (LE/month) | Yes, 32.2 on average | Yes, 32 on average | Yes, 31.5 on average |
| Willingness to pay for other services such as wastewater (LE/month) | Yes,24 on average | Yes, 15 on average | Yes, 16.5 on average |
| Willingness to pay for water bill (LE/month) | Yes, 5 on average | Yes, 6 on average | Yes, 9 on average |

*Container capacity is 20 liters.

**2.3 Stakeholders' Research Findings/analysis**

It implies both round table discussions and in-depth one-to-one interviews. Round table discussions address the consulting committees, set by UNICEF, to monitor the fund , while in-depth one-to-one interviews target key officials/personnel involved with the fund in the last two years.

Analysis of stakeholders' research indicate the following;

**First: Establishment of committees and members**

- The pace of establishment process of the consulting committee varied from one governorate to the other, depending on the involvement of the key stakeholders, however, all were established by end of 2007 ;
- The committee is established at the village level and number of members range from 8 to 12 members per committee, which is rather large, and does not allow for smooth informative decision making process.
- All members belong to governmental institutions such as governorate, localities, local village units, water company and Ministry of Education, with no community participation (beneficiaries or active NGOs in the study areas);
- There is lack of consistency and conformity among the committees members varies from one governorate to another.

**Second: Role of the committee/monitor of the fund**

- The role of the committee is broadly defined as monitoring of the fund in terms of selection of beneficiaries, advertizing about the fund, facilitation of application procedures, setting installment terms and payment, monitoring installing of connections, collection of funds and performance of fund in the selected villages;
- Criteria of monitoring are based on initiatives of the members of the key stakeholders and relies on attempts of local village units' heads;
- Selection criteria were confined to possessing proper documentation and being deprived of piped water in practical terms. The first was a key constraint in installing water for eligible candidates, as per the governorate. The bulk of waiting list are either built in informal settlements or on agricultural land;
- Installment terms are maintained fixed, while installment amount is kept low for simplicity, consistency and conservatism with no interest charges late for payment;
- Members of the committee are themselves involved as key implementers for the project, implying that they have dual role of implementation and monitoring.

**Third: RF Characteristics**

- The idea of the program was not clear to all households. They were under the impression that it was rather a grant in the initial phases of the program;
- Lack of publicity, in that documentation on the fund is not available. Key information were relayed from local village unit and localities to households verbally or through ads in the unit premises;
- Households do not repay on monthly basis, however default in most cases does not exceed 4 months;

- No financial incentives are granted to village units/implementer employees in charge for the project;
- No charges are added to repayment allowed for administrative expenses coverage;
- Employees handling monitoring of the fund are not dedicated for the fund;
- Actual current cost of connection range from LE 773 to LE 1,500 per connection;
- Application procedures are rather simple;
- Lack of Financial means to cover the difference between the value of UNICEF donation (LE 500 per connection) and current actual cost of connection (i.e. LE 773 to LE 1,500 per connection);
- Households selection was prioritized according to possessing children at school and/or disadvantaged families;
- Relatively long procedures for application procedures and purchase of materials in phase 2 , as compared to phase 1 of the program;
- The fund has only been revolved in Sohag Governorate in Awlad Salem village;
- Similar programs identified include Child Rescue Program, Masr El Kheir and Care program, among other programs that were informed not to be as comprehensive as Revolving Fund Program;
- Generally speaking revolving fund concept is highly appreciated.

**Fourth: Key suggestions**

**A. Stakeholders Participation/Institutional Considerations**

- Maintain active involvement of local village unit due to tight relationships with households in order to ensure smooth application procedures;
- Initiate a flexible incentive system for implementers of the monitoring procedure;
- Involve the implementer in setting funds to be revolved, according to clear and precise criteria, rather than to maintain at the governorate level;
- Address the problem of ownership documentation;
- Ensure smooth cooperation between relevant stakeholders, while involving the water company intensively to be responsible for the program, with the exception of Assiut governorate due to conflict between water company and governorate;
- Accept community participation, i.e. if efficiently implemented and well monitored in order to allow for financial and institutional sustainability in absence of direct government, donors and/or NGOs direct financial support;
- Spread the fund to other non-connected villages.

**B. Repayment/collection Mechanism/Identification of participant:**

- Develop a system for collection of funds and revolving, according to unified and objective criteria rather than personal relationships, which include sanctioning/penalty procedures;
- Develop proper database for the beneficiaries and collection pace, as well as, proper ways for disseminating announcements and data concerning fund initiation, publicity and performance;
- Ensure that repayment installment and terms are both convenient and affordable by households on one hand and to include charges to cover related administrative expenses on the other hand;
- Ensure that fund would cover the prevailing market value of connection cost, and/or cover the difference through government budget, grants and/or other means;
- Collect data on beneficiaries from MOSS and allow for active role for the water company.

Key findings of field work and field reports are shown **in Appendix 8.**

## 3. LESSONS LEARNT

This section aims at highlighting the key lesson to be learnt on the basis of careful analysis of the fund performance, taking into consideration knowledge to be gained and lessons to be learned from international experiences.

Lessons learnt section can be broadly classified into;

- **Performance of the fund** and implications on achieving revolving fund objectives to indicate shortcomings / issues & lessons learnt by key area of interest,
- **Impact of the fund**, as a concept, on hygiene practices and social responsibilities of woman and children.

### 3.1 Performance of the fund

The field survey is structured to allow for careful assessment of the fund performance in both phases with the objective of depicting key lessons to be learnt.

The performance of the fund is assessed in terms of;

A. Selecting the proper beneficiaries;
B. Facilitating procedures;
C. Proposing the appropriate monthly installment and repayment period;
D. Monitoring of collection in due time;
E. Adequacy of value of initial contribution by donor;
F. Ability to reach objectives (number of water connections);
G. Level of involvement by stakeholder;
H. Overall management/monitoring of fund.

**A. Selection criteria**

The selection criteria of beneficiaries in the study areas are set by UNICEF and governorate/water Company jointly and are implemented by village unit. The two key criteria adopted are:

- no connection to the water network;
- Possession of legal ownership documents. The MOSS provided a list of disadvantaged households to help in the selection criteria.

The village unit contributed positively to setting the selection criteria through SSHE prioritizing households within the study areas, on the basis of criteria such as the marital status, social circumstances, possession of children at schools involved in SSHE program and materials of home. UNICEF is basically interested in locating households with children in schools involved in SSHE program.

Review of selection criteria basis reveals the following key issues/shortcomings and lessons learnt;

| Issues/shortcomings | Lessons learnt |
|---|---|
| 1. Selection criteria are not consistent from one study area to the other (highly dependent on initiatives and views of village unit); | 1. Unified quantifiable selection criteria should be adopted, to be closely monitored by fund manager. Develop a criterion which would ensure proper selection of beneficiaries based on screening, ranking and prioritizing; |
| 2. Basic criteria adopted were confined to compliance legal status of ownership and deprivation of water; | 2. Possession of ownership documents and deprivation of water should be pre-requisites, rather than screening criteria; |
| 3. Village unit was not involved in defining selection criteria; | 3. Involvement of village unit should be in the planning stage, rather than in the implementation phase ; |
| 4. Selection was not related to possession of children at school (SSHE). | 4.Develop the revolving program as a standalone program, taking into consideration children at school, as a key criteria as adopted in most countries; |
| | 5. Develop criteria according to a "human rights" approach rather than "human needs" approach. |

**Conclusion:**

The non adoption of a unified and non quantifiable selection criteria resulted in selection of beneficiaries with;

- No urgent need for water (households possessing a water connection);
- Households capable of paying the water connection in cash;
- Areas with a long waiting lists (households deprived from water but with legalities problems);
- Extension of the program to other villages in order to find suitable candidates;
- Weak relation between SSHE and revolving fund program.

**A simple unified quantifiable screening selection criterion should be developed, while strengthening the human based approach, to enable better hygienic practices.**

**B. Procedures**

The documentation and procedures is the responsibility of the fund manager and was implemented by the village unit.

Review of procedures reveals the following key issues/shortcomings and lessons learnt;

| Issues/shortcomings | Lessons learnt |
|---|---|
| 1. Procedures concentrated on availability of legal/ownership documentation; | 1. Maintain unified procedures and documentation (to be in written format), Procedures should be linked to the selection criteria and decide on controversial required documents such as ownership documents; |
| 2. Procedures and documentation were handled by village unit and are rather simple. | 2. Ensure documentation/procedures are handled by the fund manager according to a well defined check list and are maintained simple; |
| 3. Procedures are not documented. | 3. Procedures should be explained and documented. |

**Conclusion:**
**Maintain direct contact between village unit and households and differentiate between eligible/eliminating documents and screening documents.**

### C. Monthly repayment installment and payment duration

Monthly payments are determined by the village units and the consulting committee on the basis of subjective perceptions on "affordability" of households, derived from information available on households.

Review of monthly repayment installment and period reveals the following issues/shortcomings and lessons learnt;

| Issues/shortcomings | Lessons learnt |
|---|---|
| 1. Monthly installments do not include interest charges or administrative expenses; | 1. Do not include interest at the moment until the concept is widely introduced (unlike international experience) and in order not to create extra burden on households; |
| 2. Monthly installments are fixed at LE 20 to be repaid in 24 month, with the objective of simplifying procedures and minimizing conflicts; | 2. Maintain fixed repayment period for consistency, however relate installment value to willingness to pay; |
| 3. Installment value is not based on capability to pay nor willingness to pay; | 3. Relate selection criteria of beneficiaries to willingness to pay and adjust payment on the basis of Willingness to Pay; |
| 4. Installment value is not related to the quality of services provided; | 4. Ensure achieving the level of quality expected by households and that households are valuing the quality of services and that they understand it is their right to have access to clean and safe potable water; |
| 5. Not all families can pay installment amount. | 5. Develop a cross subsidy system to allow for relevant payment consistent with willingness to pay. |

**Conclusion:**

**Monthly repayment installment and payment duration is to be decided by the fund manager on the basis of actual capability of beneficiaries (i.e. willingness to pay price), on the basis of cross subsidy system, which would allow for financial sustainability.**

**D. Collection**

Collection is being handled in most cases by the village unit, and monitored by the consulting committee.

Review of collection reveals the following issues/shortcomings and lessons learnt;

| Issues/shortcomings | Lessons learnt |
|---|---|
| 1. Installments are being paid by households directly in village unit premises, no periodic reports are issued to monitor collection; | 1. Maintain collection process within village unit, due to friendly environment or collect with water bills; |
| 2. Lack of efficient collection system due to lack of incentives for village unit /localities/governorate to collect the value of installments; | 2. Create incentives for collectors; |
| 3. Repayment is structured to be paid monthly, however, are paid according to the cash flow of the households (usually quarterly); | 3. Restructure payments to be on wider interval basis such as quarter basis; |
| 4. Collection pace is monitored according to subjective efforts from village units personnel; | 4. Monitor collection on periodic basis and unify such procedures; |
| 5. Default ratio is not significant; however, delays are significant (3-4 months delay). | 5. Interest should be charged for delay in payment |

**Conclusion:**
**Monitor collection on the basis of effective incentive system, in order to allow for revolving on fixed interval basis.**

**E. Adequacy of initial/donor contribution**

The initial contribution by UNICEF is confined to LE 500 per connection for water pipe installations at the time, given that connections were conducted by the governorate/localities. Hence, the LE500 was basically the estimate of the governorate/locality at the beginning of phase 1. It was estimated that this would cover the initial cost of water connection.

Review of adequacy of initial contribution reveals the following issues/shortcomings and lessons learnt;

| Issues/shortcomings | Lessons learnt |
|---|---|
| 1. The initial contribution was adequate in phase 1, while was not sufficient in phase 2, due to increase in cost of water connection; | 1. Ensure that initial contribution covers current connection cost and restrict contribution to the initial phase and allow for revolving of funds. |
| 2. Phase 2 involved financial contribution by the relevant water company; | 2. Ensure that connection cost is covered by the monthly payment by households; |

**Conclusion:**

**Ensure initial contribution that would cover connection cost per household and allow for mechanism to ensure both financial sustainability and revolving of funds.**

**F. Ability to reach objectives**

It refers to the ability of the fund manager to revolve funds in order to extend water connections to a larger number of participants.

Review of ability to reach objectives reveals the following issues/shortcomings and lessons learnt;

| Issues/shortcomings | Lessons learnt |
|---|---|
| 1. Collected funds were rarely revolved; | 1. Plan for revolving of funds on pre-set interval basis and relate collection pace to revolving pace. |
| 2. Funds collected are assessed on interval basis for revolving purposes. It is a decision on the governorate/water company level; | 2. Grant fund manager authority and flexibility to use collected funds for revolving, while ensuring proper documentation; |
| 3. The funds will be assessed in beginning 2010 in order to decide on amounts to be revolved. | 3. Ensure revolving on interval basis to restrict using the funds for other purposes. |

**Conclusion:**
**Ensure that fund manager possesses authority and flexibility to revolve collected funds on interval basis, in order to meet the project's objectives.**

**G. Level of involvement by stakeholders**

Key stakeholders included the governorate/water Company, localities and village unit. The fund manager for phase 1 is the governorate, while in phase 2, is the water company/governorate.

Review of level of involvement by stakeholder reveals the following issues/shortcomings and lessons learnt;

| Issues/shortcomings | Lessons learnt |
|---|---|
| 1. The level of cooperation was smoother in phase 1, as the governorate usually deals with localities; | 1. Ensure close monitoring on the village level and strategic follow up and evaluation on the governorate/water company level; |
| 2. A conflict of interest over the overall responsibility of the program was raised in phase 2 between the governorate and the water company upon the establishment of the water companies; | 2. Ensure smooth coordination between relevant stakeholders, with special reference to water company and governorate; |
| 3. Lack of clear definition of authority and responsibilities, with respect to implementation, by stakeholder and lack of incentive for persons responsible for the fund | 3.Develop an incentive based institutional setup completely responsible for fund management; |
| 4. No community participation in decision making. | 4. Stimulate community participation and sense of ownership (human right approach). |

**Conclusion:**
**Develop simple institutional mechanism/setup with complete authority over the program management, to ensure smooth coordination of relevant stakeholders and community participation.**

**I. Overall monitoring/management of fund**

The manager of the fund differed from one governorate to the other, depending on the date of establishment of the water company. However, in principle, phase 1 was managed by the governorate and phase 2 was managed by the water company, except for Souhag governorate, as the water company is quite recent (March,2009).

In all cases, the fund was closely monitored by a committee set by UNICEF, involving a fairly large number of official employees (8-12 per district) of all the relevant stakeholders**.** The committee initiated by UNICEF aimed at ensuring smooth implementation and providing an incentive based environment.

Review of overall monitoring/management of the fund reveals the following issues/shortcomings and lessons learnt;

| Issues/shortcomings | Lessons learnt |
|---|---|
| 1. The fund was highly acknowledged and accepted by higher level of the governorate/water companies (i.e. political commitment); | 1. Ensure political commitment through proposing a simple and applicable mechanism; |
| 2. The fund manager was committed to the project; | 2. More thorough definition and identification of responsibilities/duties of fund manager. Develop a system/mechanism to be monitored and implemented by an independent entity/committee; |
| 3. UNICEF conducted close monitoring through establishing the committee and assigning field coordinators in each governorate; | 3. Create better incentive system for the fund operation. Ensure flexibility and delegation in key decisions such as selection of beneficiaries and revolving intervals. |

**Conclusion:**

**Build on the success of the idea of the revolving funds and key stakeholders awareness to grant complete management and implementation of the fund to an independent entity/committee, comprising of a rather limited, however, and representative number of participants (5-7 members).**

**3.2 Impact of the fund on children and women**

The revolving fund was introduced as a component to SSHE program. The program, since initiation of phase 1 in September 2007 achieved key positive impacts on the society in terms of;

1. Hygiene practices and better health;
2. Higher awareness of value of water connection;
3. Better quality of life of all family members;
4. Higher quality of life of children through relating to SSHE.

These positive impacts tempted key stakeholders to regard the Revolving Fund Program as an independent component/program.

On the other hand, the program was managed on the basis of active, however, subjective initiatives of all the stakeholders. In this respect, the consultant aims at developing a mechanism to ensure financial and institutional sustainability.

More emphasis has been given to the impact of water connection on both children and women since they are usually the key responsible for carrying water. However, both have been relieved from the heavy burden of getting and carrying the water. The impact is illustrated as follows highlighting the situation before and after water connection.

The impact is categorized for both children and women, by two types of impact; social responsibility and

health awareness/hygiene practices.

Accountability, availability, quality, affordability, acceptability and human rights criteria are clearly assessed.

Moreover, the assessment of impact on children and women assumes that access to water and sanitation should be in line with the principles of;

- Non-discrimination and equality;
- Implies meaningful participation in decision making and empowerment;
- Requires accountability and transparency.

### 3.2.1 Health Awareness/Hygiene Practices

| *Impact of water Connection* | *Before* | *After* | *Human Rights Obligation* | *Human Rights Principles* | *Human Rights Criteria* |
|---|---|---|---|---|---|
| ***Children*** | | | | | |
| Type and frequency of getting diseased | Usually, diarrhea, stomachaches, stomach worms, trachoma, skin allergies and gastroenteritis | Noticeably gradual improvement in health. Thanks to water cleanness and availability, children now rarely got diseased/sick and less frequent. | Human Rights Obligations are respected and protected. Fulfillment requires more awareness. | Non-discrimination and equality | **Accessibility**: accessible<br><br>**Availability**: available to a high extent.<br><br>**Quality**: quality is fine except the need to construct toilets.<br><br>**Affordable**: Depending on the phase of the program.<br><br>**Acceptability:** acceptable. |
| Washing and Showering/bathing Frequency | - Every now and then<br><br>- Showering maximum was once a week<br><br>- Not washing hands nor faces before and after going to schools or before and after eating | - Regularly and more Frequent personal cleaning<br><br>- Showering has become more than once a week<br><br>- Washing hands and faces before and after going to school and before and after eating | | | |
| **Women** | | | | | |
| Spreading clean awareness | - Lack of spreading clean awareness | - Spreading and teaching children to be aware of cleaning habits. | | | |

### 3.2.2 Social Responsibility

| | *Before* | *After* | *Human Rights Obligation* | *Human Rights Principles* | *Human Rights Criteria* |
|---|---|---|---|---|---|
| ***Children*** | | | | | |
| If the children were the responsible for carrying/getting water, what kind of activities they spent their time in before and after connection? | - Before, children were spending from 5-6 hours to get and carry water.<br>- They didn't have time to study or play like other children.<br>- Sometimes, they don't go to school to get water or from getting sick frequently. | - Now, children don't waste anytime getting water<br>- Now, time have been devoted to study, play and going to school<br>- Showering and bathing more frequent as they are more aware of cleaning and personal hygiene | Human Rights Obligations are respected and protected. Fulfillment requires more awareness. | Non-discrimination and equality | **Accessibility:** accessible<br>**Availability:** available to a higher extent;<br>**Quality:** quality is fine except the need to construct toilets.<br>**Affordable:** Depending on the phase.<br>**Acceptability:** acceptable. |
| **Women** | | | | | |
| Heavy burden relief and social embarrassment | - Heavy burden of carrying and getting water<br>- Facing noticeable social embarrassment from neighbors by entering strangers'/relatives' houses to get water | - Much burden have been relieved;<br>- No social embarrassment is faced due to the existence of permanent water source. | | | |

| | | | | | |
|---|---|---|---|---|---|
| If the women were the responsible for carrying/getting water, what kind of activities they spent their time in before and after connection? | - Before, time has been devoted getting water | - Now this time has been devote to house cleaning, washing<br>- Study for the children | | | |
| Water Storage | -Despite households don't store water frequently, if stored, it changes color and taste if stayed for more than two days | - No need to store water, water storage only if there is water cuts when broadcasted in the media. | | | |

### 3.3. Conclusion

Key lessons learnt can be summarized as follows;

| No. | Area of interest | Assessment | Lessons leant |
|---|---|---|---|
| 1 | Selection of beneficiaries | Not consistent/subjective | • Develop unified simple quantifiable screening criteria<br>• Involve stakeholders in setting criteria |
| 2 | Procedures | • Simple and straightforward<br>• However highly related to ownership documents | • Should be linked to selection criteria<br>• Maintain unified consistent procedures |
| 3 | Monthly repayment installment | Set fixed for simplicity | • Should be related to WTP (capability to pay)<br>• Should be related to expected quality of services (awareness)<br>• Develop cross subsidy approach |
| 4 | Collection | • Lack of efficient monitoring<br>• Highly related to fluctuated income of households<br>• Based on personal relationships | • Develop incentive system for collection<br>• More effective monitoring<br>• Propose payments quarterly and relate to pace of revolving<br>• Impose late charges for delay in payment |
| 5 | Donor contribution | Not consistent with cost of connection in phase 2 | • Should ensure financial sustainability<br>• Devote contribution to institutional capacity building |
| 6 | Revolving | Revolved only once in 2 years | • Revolve on fixed interval basis on village level |
| 7 | Involvement of stakeholders | Lack of clear definition of authority and responsibilities on the ground | • Create Community Based Committee (CBC) based on human rights approach |
| 8 | Overall | Positive contribution socially on hygiene practices, health awareness and social responsibility. | • Needs to be further regulated and efficiently managed;<br>• Ensure financial sustainability on basis of WTP approach;<br>• Ensure institutional sustainability (CBC). |

**In conclusion, the revolving funds project resulted in significant benefits to the rural areas in terms of health and hygiene, however, the approach system needs to be fine tuned to ensure financial and institutional sustainability of the RF benefits.**

# 4. KEY CONCLUSIONS AND RECOMMENDATIONS

## 4.1 Key Conclusions

### 4.1.1 Institutional Structure/Managerial Issues

The revolving fund program was managed by the governorate /and/or relevant water company depending on the phase, while activities were monitored by a committee established with the support of UNICEF. The committee is composed of the key stakeholders involved. The establishment of the water companies resulted in handing over the management from the governorate/localities to the water companies. Hence, the institutional setting was altered depending on the involvement of the newly established affiliate water companies.

However, no dedicated personnel were assigned to the revolving fund program, as it was not considered a standalone independent program.

### 4.1.2 Implementing partner/partnership

Institutionally quite few procedures, with special reference to selection criteria and collection procedures are rather inefficient. Indeed, procedures focused on legal/ownership documentation and deprivation of water. Possession of children at school was practically not applied. Selection procedures are rather subjective on the basis of subjective initiative and do not reflect the actual situation. In order to ensure long term sustainability, simple procedures with high efficiency should be adopted. On the other hand, the current management setup of the fund does not ensure effectiveness and consistency, for example, the collection procedures are rather loose due to social and economic constraints as well as institutional limitation in the served communities. This resulted in lack of efficiency of the current collection system, i.e. billing, frequency of collection, follow up. etc…

Key stakeholders were involved in the implementation the project, with the support of the key partners including HCWW and UNICEF. However, due to the lack of officials experience in dealing with similar social projects, a number of initiatives were adopted closely monitored by the established committee, set by UNICEF.

Such initiatives served the purpose of connecting water to around 5,800 households, while increasing awareness of hygiene practices; however, the implementing partner did not focus on institutional strengthening of the manger of the fund, nor addressing the interaction between the relevant stakeholders, including the benefiting Community.

The implementing partner strived to ensure accessibility, availability, and quality of water, however, did not test affordability in relation to the quality of water provided. The implementing partner advocated non-discrimination and equality in connecting water, however, did not encourage community participation and empowerment, and did not achieve accountability /transparency. Indeed, process adopted differed from one governorate to the other, depending on the initiatives involved.

### 4.1.3 Institutional/financial sustainability

One of the key objectives of the study is to test both financial sustainability and institutional sustainability of the underlying revolving fund program. Financial sustainability implies that revenue, i.e. beneficiaries' contribution cover the cost of installing household water connections. However, financial sustainability could involve cross-subsidy. Institutional sustainability reflects the efficiency and effectiveness of the applied system in terms of identification of the relevant households and the management of the funds including collection system. Institutional sustainability is also concerned with inter-ministerial and/or inter-sectoral coordination at the national and sub-national level.

Our investigation into the revolving funds reveals that both financial cash flow and institutional mechanism are not yet sustainable in spite of the fact that the project has significant contribution to the welfare of the underlying rural areas and succeeded in convincing farmers with the significance of clean water, i.e. health awareness, in that many farmers are now willing to pay the actual cost of installing water system. However, based on intensive interviews with financial departments of water companies in the three Governorates; Qena, Sohag and Assuit, the cost of installing the system exceeds the contribution of beneficiaries. Average cost of installing the system is estimated at LE 1,150, while the monthly payment of beneficiaries is LE 20 per household over two years, i.e. LE 480 with a significant deficit of LE 720, currently partially financed by Water Company.

One would therefore conclude that considering the potentiality of revolving fund program and its direct contribution to the welfare and health of the population in the underlying rural areas, as well as possible expansion to peri-urban and slum areas, with special reference to women and children, the program requires further development and improvement to ensure sustainability. In this respect, further improvement in both institutional setup and financial process should be undertaken to ensure both institutional and financial sustainability, with special reference to the long run.

## 4.2 Key Recommendations

It is highly recommended to ensure sustainability of the revolving funds, both institutionally and financially, and to open opportunities for possible expansions to peri-urban areas and slum areas, in order to support both women and children in both rural areas and peri-urban area. In this respect, four key parameters should be secured;

A. Efficient management of the project through establishing a proper system based on:

- An integrated approach that would ensure inter-ministerial and inter-sectorial coordination at both national level and local level
- An effective committee aiming at maximizing the benefit of the system including selection of relevant beneficiaries, and collection of fees in due time.

B. Existence of the financial system which would ensure cost coverage, in that beneficiaries' payments cover the cost. In this respect, two approaches could be applied;

- Expanding payment period in order to ensure that monthly payment is within the income capability of the beneficiary.
- Adopt cross- subsidy approach.

C. Expand the project to include peri-urban and slum areas.

D. Develop the system to include wastewater, in both rural areas and peri-urban areas.

Based on the conducted study, two sets of actions should be undertaken to enhance and develop the project and to ensure its sustainability both institutionally and financially.

**4.2.1 Proposed adjustment in institutional system (Institutional Sustainability)**

One of the key aspects to ensure efficient management of the funds is to establish participating Community Based Committees (CBCs) by governorate/area capable of coordinating among stakeholders, overseeing the management of the funds in the relevant area, including the selection procedures of the eligible candidates and the effectiveness of the collection system, i.e. collect the appropriate fees in due time. In this respect, seven members committee is proposed to include all involved parties, in order to ensure efficiency, i.e. capable of handling operations and effectiveness, i.e. can convert the inputs into outputs.

- Governorate representative;
- Water company representative;
- MOSS representative (sub-national level);
- Local authority representative ;
- NGO representative ;
- Two members of local community (Beneficiaries).

Three key tasks of the participating committees are proposed;

- Selection of relevant candidates, i.e. eligible households for the revolving funds;
- Effective management and monitoring of the fund to allow for revolving over interval periods;
- Ensure coordination between relevant stakeholders to allow for smooth implementation.

The committees would be responsible for selecting the relevant beneficiaries and would determine investment cost requirements. Follow up and regular correction and adjustment are also key responsibilities of the committees. The committee members should be carefully selected to ensure efficiency and effectiveness. The committee could be chaired by water company representative, in that he is aware with problems and has the capability and knowledge to direct the committee towards key objectives. Governorate and MOSS (Ministry of Social Solidarity) representatives should be highly involved in the committee decisions. The chair person could be rotated every three years. They should supply the committee with data concerning land ownership and income as well as demographics information.

NGOs in the village should also be involved. They can help in supporting the poor families and can contribute to the system. Local authority representative and local community members

should be highly involved in informing the committees with accurate information on income levels of households as well as family size and the size of houses.

The committees should be involved in daily management through an executive manager, and should be supported by staff, i.e. two persons to handle administrative work and collection of fees. A monthly progress report should be submitted by the committees. The committees' activities are to be supervised and assessed by a specialized department with the HCWW responsible for assessing and monitoring activities according to pre-defined performance indicators.

Institutional setup would require involvement of key stakeholders in both the planning and implementation phases. The basic idea is to form a department at HCWW level to ensure effective operation of the CBCs.

To conclude, the following should be ensured;

1. An objective and simple criterion should be set by HCWW department and applied by CBCs in selecting eligible candidates. The proposed criterion is based on three elements;

- Screening criteria: Only farmers who own less than five feddans and living in a house with an area does not exceed 10 m2 per person are eligible for the revolving funds, in that if one of the those two conditions does not apply, the household will not be eligible for the fund.

- Ranking criteria: Households are ranked on the basis of building area of house, in that households living in house with building area equal or less than 10 $m^2$ per person are eligible for revolving fund project. In this respect, three categories are proposed;

    - Less than 5 $m^2$ per person.
    - 5 $m^2$ – 7.5 $m^2$ per person.
    - > 7.5 – 10 $m^2$ per person.

- Preference criteria: Households with children in school should be prioritized/subsidized, in order to encourage families to enforce their kids to attend schools.

2. An efficient and effective procedure should be adopted in managing the committees operation at the HCWW. The following actions should be undertaken:

    - Beneficiaries should be classified according to both land ownership and housing features in order to put them into a ranking order. Priorities should be based on degree of poverty. This would ensure fair allocation of funds;
    - Social support to poor families which can not afford to pay through cross subsidy. This would guarantee continuity of the program on one hand and covering all eligible families on the other hand;
    - Donors' funds should be reallocated to support institutional sustainability and to enhance capacity building.

### 4.2.2 Proposed Adjustment in Financial System (Financial Sustainability)

It is crucial to ensure that the revolving fund program is financially sustainable, i.e. cost recovery. Until now, cost much exceeds beneficiaries' contribution, i.e. revenue. Funds will not be effectively revolved unless cost is covered through beneficiaries' contributions. In this respect, some adjustment should be made to ensure financial sustainability. Nevertheless, beneficiaries' contribution should be based on willingness to pay to reflect both affordability and acceptability of households. Based on the conducted survey, potential beneficiaries are willing to pay on average LE 32 per month, i.e. LE 768, if payments are made monthly over two year period, i.e. the prevailing period. This amount will not cover the cost LE 1,150. It is still less than the cost, in that beneficiaries contribution will not cover the cost, i.e. still not sustainable

Hence, the study proposes three options to be undertaken;

- Expand the period to three years, i.e. cost of installation would be LE 1,152; or
- Maintain the two year period, where the difference between cost and beneficiaries' contribution are added to the monthly water bill.

On the other hand, it should be noted that not every household is willing to pay LE 32 per month. It is indeed average payment. Hence, cross-subsidy is proposed, in that well-off households would pay more than the cost in order to subsidize poor households who cannot afford to pay the cost. These rates should be adjusted every three years on the basis of the prevailing inflation rates, taking into consideration the performance of the system on one hand and willingness to pay on the other hand. However, duration could be altered, depending on inflation rate and the conditions under which the fund is operated.

The general idea of cross-subsidy is to ensure both financial sustainability and social support to poor families. This would guarantee continuity of the program on one hand and covering all families on the other hand. In this respect, donors' funds should be reallocated to support institutional sustainability and to enhance capacity building. In other words, it is highly recommended to channel loans/funds to capacity building as institutional support rather than to finance the connection cost. Our investigation reveals that beneficiaries are willing to pay the cost. However, poor families who cannot afford to pay for the connection installation should be supported through cross subsidy approach.

The suggested rates are expected to cover the cost, i.e. sustainability if they are paid over a three year period. In this respect, the following conditions should be enforced;

- Payment should be made on quarterly basis to match with the market mechanism in rural areas;

- Interest rate should be imposed on late payment to enforce beneficiaries to pay in due time and therefore to ensure continuous flow of funds;

- Cross-subsidy should be adopted to ensure financial sustainability and social support to poor families;

- Funds should be revolved on regular basis to ensure continuous of the program and increasing number of beneficiaries.

The suggested payments are shown below, to be adjusted periodically;

| **Housing area ($m^2$ per person)** | **Quarterly payment LE/3 month** |
|---|---|
| < 5 $m^2$ | 75 |
| 5 – 7.5 $m^2$ | 90 |
| > 7.5 – 10 $m^2$ | 120 |

The mechanism adopted for financial sustainability should ensure;

- Beneficiaries are paying within the WTP in return for the quality of services provided;
- Initial contribution is to be allocated by HCWW to be revolved by repayment of beneficiaries according to pre-set process by HCWW and applied by CBCs.

### 4.2.3 Conclusion

Both institutional and financial setup should ensure full participation of HCWW, as well as relevant key stakeholders, as shown in the table below;

| Phase/stakeholder | HCWW | Governorate/localities/village unit | UNICEF and relevant donors |
|---|---|---|---|
| Planning phase | - Form a dedicated department for RF (Revolving Fund department) to guide the whole process to;<br>▪ Educate affiliated water companies about the concept;<br>▪ Begin the process of setting the CBCs and their role by area/governorate with the contribution of governorate/village unit;<br>▪ Set performance criteria for CBCs;<br>▪ Enhance awareness of the new institutional setup. | - Contribute by setting criteria and management process such as; Criteria for incentive system, repayment according to WTP, collection, revolving, etc.<br>- Assign individuals to be dedicated to the CBC by area/governorate | - Provide technical assistance to the process (implementation procedure) |
| Implementation phase | - Assign water company representatives to CBC;<br>- Make Initial financial Contribution available to water companies<br>- Form CBC and initiate CBC activities. | -Initiate interaction with the CBCs;<br>-Helps in selection of community participation. | - Provide support to activities of Revolving fund department and capacity building to CBCs;<br><br>Contribute in awareness of RF importance. |