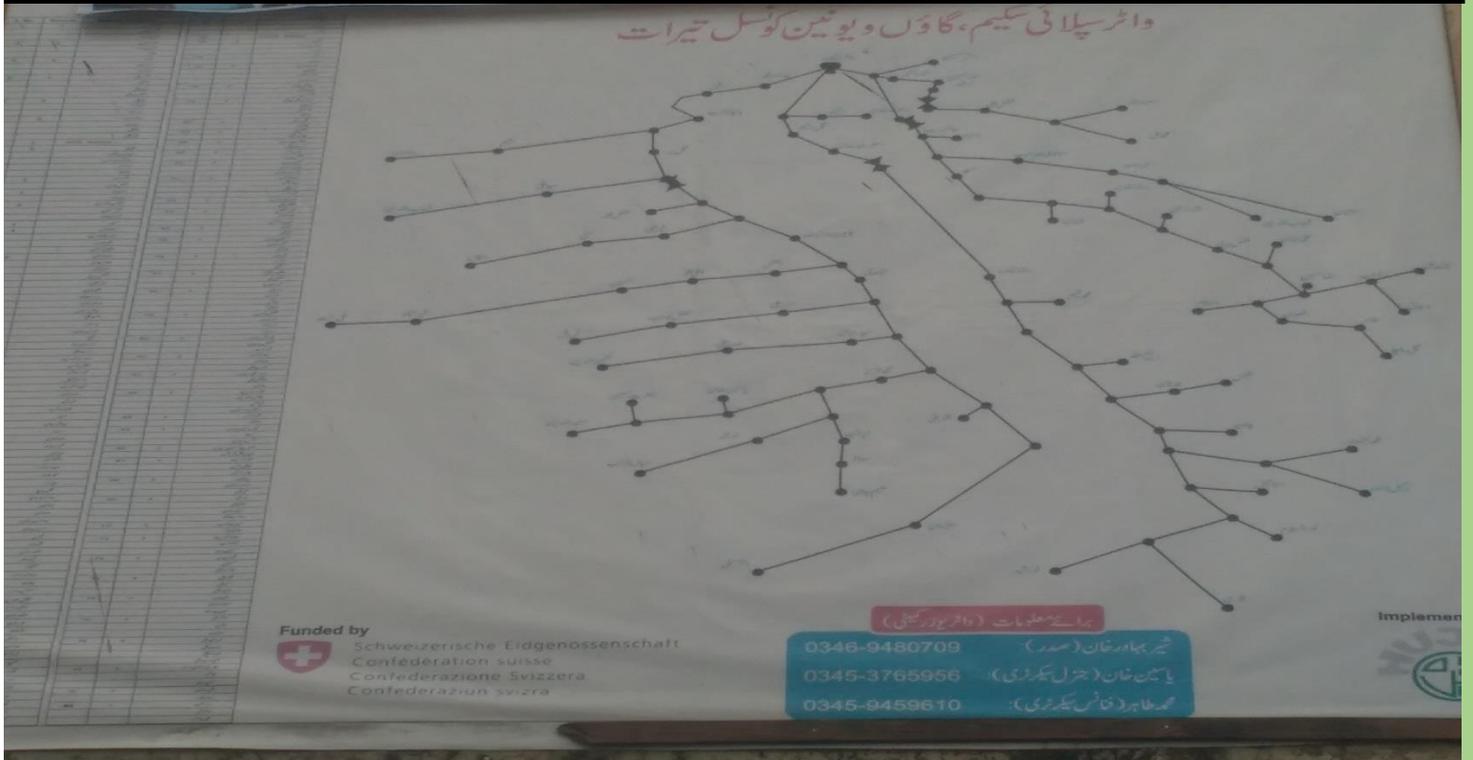


2016

Impact Study Report

Project: Improved Water Supply Scheme for Proper Tirat, UC Tirat, District Swat



HUJRA VSO

Near Allah-o-Akbar

Masjid, Said Sharif

Mingora Swat.

3/15/2016

1. Executive Summary

Tirat is main settlement of union council Tirat. This is located in the northern-most parts of the Swat district. This zone is semiarid temperate and receive average rainfall around 450-700 mm/year. The high mountainous upland region is located at 30°- 22' to 32° 38' N latitude and 70°- 10' to 70°- 42' East Longitudes. The community is mostly engaged in farming, some are government servants and many of them are daily wagers.

Like other parts of the country, Tirat UC received irreparable damages in 2010 devastating floods. The floods not have only affected the socio-economic fabric of the people but also severely damaged the infrastructures of the area. The floods have played havoc with the basic life facilities including clean drinking water, health facilities, electricity, sanitation, drainage systems, transportation and communication system, nutrition and food security etc.

In walk of rehabilitation of affected area, after relief stage, NGO and INGOs have accessed to the area for intervention. Swiss Agency for Development & Cooperation (SDC) choose to work for rehabilitation of drinking water supply scheme of Tirat village. SDC selected HUIRA as local partner for implementation of the scheme. The schemes was started in December 2013 and completed in October 2014.

The underpin report is the impact study of this scheme. The study is being conducted after 16 months of the project completion. The overall goal (impact) of the project was submitted to donor in project proposal was; **“Improvement of health situation of the population in Village Tirat, through improved access to safe drinking water”** while in the Logical Framework Analysis (LFA) of this project performance indicators were given as below;

- Child mortality rate reduce
- Morbidity rates reduced

The study was designed to gauge the level of achievement of these objectives. It is pertinent to note that the study findings disclosed that significant achievement had made against the set targets/objectives. The health status of the most vulnerable groups of the village Tirat, i.e. Women and children, is now improved. According to the statistics of local health practitioners, the water borne diseases, which had been mostly occurred in women and children, are reduced by 60% to 75%. This change not only improved the health condition but also reduced the financial burden from the shoulders of the male group of Tirat.

Prior to this scheme only 5% population had access to tap water with irregular intervals of water supply. Many social conflicts had been regularly occurring during fetching of water from a nearby well and a spring. Women and children were the main sufferers of the shortage of water and they had the responsibility of fetching water from different sources like river, spring and well. Now 100% houses have the availability of clean water. Every household gets water for 3 hours in morning and for 3 hours in evening times. The cumbersome duty of women and children to fetch water from spring, well and river has now finished and they have enough time to study and work at home. The O&M mechanism is effective and water users committee (WUC) has hired a permanent valve-man for operation of scheme with full responsibility. WUC has PRS. 6000/ in cash for any repair in the scheme however the entire village showed strong consent for contribution of money for major repair of any damage if occurred. The

physical condition of the scheme was found excellent and all tap stands with stainless steel taps were properly maintained however plaster of the storage tank was mildly damaged. All pipes of distribution network are still buried under the ground. Training material of health & hygiene sessions were still exist and displayed on the walls inside the houses.

2. Methodology

For the data collection various techniques were used during interaction with the community and other stakeholders.

2.1. Focus Group Discussion:

Following the importance of this approach in providing a broad base discussion for exchange of ideas between participants. Such discussions can often lead to greater insights into people's perceptions

The process was realized through meetings of elders (both men and women) and younger people alike. However, precaution was taken into consideration over the composition of the group so that as many participants as possible feel free to express their opinions, especially those with less status who were better interviewed in a separate group or individually.

2.2. Key informants Interviews:

This technique was used with medical professionals who are serving the population of this village for the last many years and have good record of diseases and trends of different epidemics.

2.3. Field Visits and Transects Observations:

Different parts of the village were visited while observing functionality of the installed stand-posts and distribution network. Water storage tank also visited to assess the quality of construction and its sustainability.

2.4. Photographing:

Photographs were taken so as to get the first hand visual impression of the scheme and to gauge the rate of wear & tear.

2.5. Sampling

Tirat village is divided in tow parts *Kuzcham* and *Barcham*. Both parts have collectively 210 houses. Four male and female FGDs were conduct in the village in which people of different professional background have participated. About 30 house hold heads attended the FGDs which makes 14% of total population.



Key Informant Interviews were also conducted with local health practitioners and WUC member bearers.

Study findings

3. Situation before Construction of DWSS Tirat

While conducting FGDs and individual interviews the informants of this study painted the picture of village' issues and complexities related to drinking and washing water. These discussions are summarized under the headings of Quality & Quantity (sufficiency and cleanliness) of water, Social conflicts and Situation of water borne diseases.

3.1. Quantity and quality of drinking water before Hujra intervention

Public Health Engineering Department (PHED) has constructed a water supply scheme in 1989. But this scheme was designed for limited number of population. This scheme was meeting the requirement of only 5-7% population of the village. The relevant government department was not properly managing the scheme in term of cleanliness and pipe maintenance. 80% of pipes of distribution network were rusted and in broken condition losing huge quantity water. Most of the pipes were passing through highly contaminated water of village drains and garbage dumps. The source of scheme was not safe and water was collected from the open stream. The stream water has numerous pollutants. As the quantity was too low to force the people to additional plastic pipes in the same stream to meet their washing needs. In 2011 Pak Army has approved water supply scheme but it was partial support for the improvement of PHED scheme and this support was not enough to solve the problem.

As water fetching was the sole responsibility of women so they were fetching water from the well, spring and stream. The well and spring water was hardly sufficient for one *Mohalla* (2-4%) of the village. Therefore most of the population were using stream water for their home requirements. Children were also involve with women in water fetching which was a kind of support providing to their mothers and sisters. Among the children, girls involvement was more than boys.

3.2. Social conflicts

Apart from the quantity and hygienic issues, the PHED scheme had also created social conflicts among the people. Houses on the upper altitude of the village were always annoyed on the people of lower part of the village because the houses of lower end enjoyed high pressure of water supply and upper end houses were deprived of this advantage.

As mentioned above, water fetching was one of the main responsibilities of females and children, so at the time of severe need of water at homes, children used to go to *Masjid* for fetching water which resulted shortage of water in *Masjid*. During water fetching from a well and a spring, which were

situated at two ends of the village, females exchanged harsh words with each other because every female was in hurry to get water first and reach back to home.

In this situation 80-85% people have installed plastic pipes on the stream to get water for drinking and washing.

3.3. Water Borne Diseases

There are four private clinics which are functional for the last 5-15 years in the village. The practicing health professionals are either retired health technicians/paramedics or still on jobs in Government-owned health facilities.

During Key Informants Interviews (KIIs) with health practitioners in Tirat Village, there were numerous water borne diseases in the village. Acute diarrhea, dysentery, typhoid fever, skin infections and intestinal parasites (tape worms, round worms, thread worms) were major diseases in the village. The most affected portion of the population was children and female. The graph of these diseases was high in monsoon or summer seasons.

According to Feasibility Study of the scheme conducted by HUIRA in 2013, the population of Tirat was 2417, where 50% (1200) were female and 14% (338) were children (below 7 years). In the context of water borne diseases, women and children were the most affected group of population. Every female and child had been the patient of diarrhea, typhoid and dysentery at least once in a year.

During KIIs with health professionals for this study, average cost of treatment of mild typhoid patient is PRs. 550 to PRs. 600. And the cost of diarrhea's treatment, in its initial stage, is PRs.250-PRs.300. Considering only the 64% (women and children) of population who suffered from mild typhoid and diarrhea, the expenses of treatment of typhoid fever and diarrhea was PRs. 2.10 million per year.

4. Situation after Construction of DWSS Tirat

The FGDs participants and individual interviewees, explained the situation emerged after construction of this scheme. Discussion has categorized in the following lines on the same pattern.

4.1. Quantity and quality of drinking water before HUIRA intervention

After implementation of Drinking Water Supply Scheme (DWSS), the quantity of water has



increased many fold. Every house received four to six hours duration fresh tap water at their door step. They store water in the plastic tank and plastic barrels for dinking and bathing purposes.

Quality of water is safe from all contaminations because the water source is protected and covered with concrete wall of stone masonry with plasters protection.

The topography of Tirat is sloping and houses situated at the last end enjoy full pressure of water and houses on the upper face shortage of water. This issue also highlighted by a member of O&M committee Zakir, "hence we have got a huge water supply scheme but still sometimes some of houses complaint for not receiving sufficient water".

Commenting on this situation, Muhammad Tahir finance secretary of WUC said, "We (organization office bearers) regularly check the taps and tap stands and wherever we find broken taps we ask the benefiting houses for repair, but sometime due other social conflicts among the neighboring houses in a street, they do not cooperate with each other which causes water shortage for few people. It is not common problem".

4.2. Social Cohesion

The scheme has positive impact on the social cohesion among the people of the Tirat village. The scheme reduced burden from the women and children who were supposed to meet the water requirements of their houses in any case but they have got clean water at the door step.

According to the project design one stand post was allocated to 5-3 houses and each house will fetch water from tap in the street. But presently people have fixed plastic pipes with stand post and getting water inside the houses. They have divided the duration of water among themselves. Since the commencement of the scheme no serious conflict among the people have reported to WUC (Water users Committee). Street houses cooperate with each other and allow every household to fetch water through plastic pipe for mutually agreed time.

4.3. Prevention of Water Borne Diseases

Water borne diseases were common features of the health history of Tirat village. Women and children were the main victims of such diseases. Every house hold was paying a significant amount for the treatment of their family members and this burden got doubled in monsoon season.

During the FGDs and KIIs, the participants admitted the dropping of diseases especially related to contaminated water. Such diseases are reduced to 60-70% among the children and women. Diarrhea, and typhoid

is reduced significantly in the village and other disease like intestinal parasite and skin diseases are also reduced.



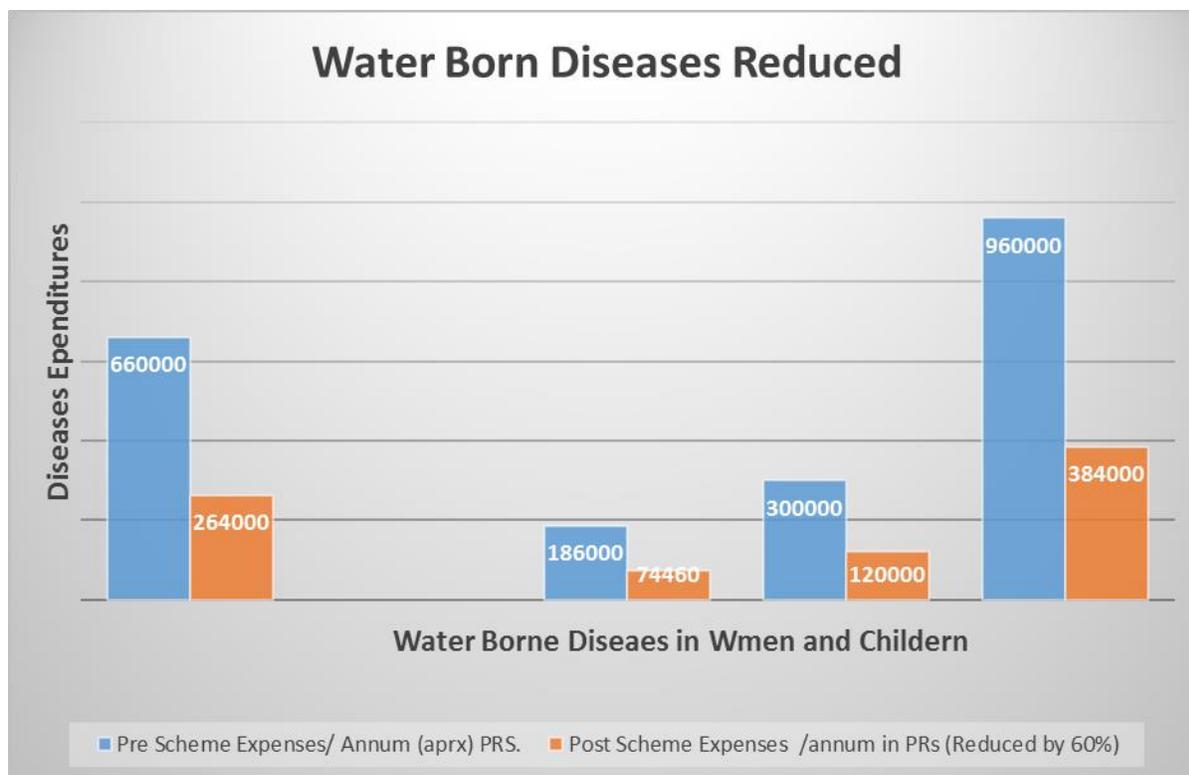
Interview with Hazrat Jamal Senior health practitioner in Tirat

In table #1, calculations of reduction of financial burden from the inhabitants of the village are given. The population of Tirat was recoded 2417, where 50% (1200) were female and 14% (338) were children (below 7 years). In the context of water borne diseases, women and children were the most affected group of population. Every female and child had been the patient of diarrhea, typhoid and dysentery at least once in a year.

During KIIs with health professionals for this study, average cost of treatment of mild typhoid patient is PRs. 550 to PRs. 600. And the cost of diarrhea's treatment, in its initial stage, is PRs.250-PRs.300. Considering the only 64% (women and children) of population who suffered from mild typhoid and diarrhea, the expenses of treatment of typhoid fever and diarrhea, the people bore every year was PRs. 2.10 million. Following calculation is only for the most vulnerable group of the village i-e women and children (64% of the total population). Expenses of other disease are not included in the table. Table shows the cost of expenses reduces by 60 % however in some families this percentage is 70%

Table 1 Pre and Post Expenditures on Water Born disease

4Major Diseases	Major affected group	Population X Cost of disease	Pre Scheme Expenses/ Annum (aprx) PRS.	Post Scheme Expenses /annum in PRs (Reduced by 60%)
Typhoid fever	Women	1200*550	660000	264000
	Children	338*550	186000	74460
Diarrhea	Women	1200*250	300000	120000
	Children	338*250	960000	384000
Total			2106000 (2.10 million)	842460 (0.84 million)



5. Operation and Maintenance (O&M)

O&M mechanism was an inbuilt component of the project. Training was imparted to O&M committee and equipment were granted to the trained team.

Instead of collecting cash amount from each hose hold, a traditional methodology has adopted. A permanent technician has assigned the responsibility of valve keeping. This valve-man was responsible for opening the distribution lines twice a day and keep each valve open for three hours. He checks the distribution network in the village and give information to WUC for any irregularity.

Traditionally in rural areas of Swat, services of local professionals like carpenters, blacksmith, barber etc. were being availed against the in-kind service charges. Each service-availing house was supposed to give a specific quantity of food grain, like wheat and maize, to such service providers on every crop harvesting season.

The same pattern has adopted in Tirat village where every household is now giving 5 kg wheat and 5 kg maize on each harvesting season to the valve-man. There are 210 houses in Tirat and each house hold gives 10 kg grain (5kg wheat and 5kg maize) every year. This is handsome quantity of wheat (26.25 mand) and maize (26.25 mand)

Apart from this arrangement WUC has some cash amount allocated for minor repair of the scheme. This amount was contributed by the all beneficiaries to establish the initial O&M system. The amount still available with the WUC is PRs. 6000/=.

6. Social Mobilization

During implementation of the scheme vigorous social mobilization was carried out. Both women and men were equally included in different meetings. Women had participated effectively in meetings. Their opinion was included in scheme designing and layout plan of Tap stands. Some of the Tap stands were moved on recommendation of female members of the WUC.

The impact of social mobilization is presently visible in the management of scheme. All households are strictly following the rules of water-use set by the committee and project staff in combine meetings. Every user takes care the timely of other users and keep the tap closed after fetching the required quantity of water. Every user took the 5 kg of wheat and maize regularly to valve-man house. WUC members regularly check the all the distribution network in order to avoid any irregularity/misuse if water. Training material related to health-hygiene training sessions were still displayed in the houses.

7. Physical Condition of the Scheme

During transit walk, it was observed that all distribution lines were still safe and covered under the ground. Still installation of pipes and stand post no major defect/repair reported by the people of the village. However in the main storage tank, the lower half of two walls were appeared with minor seepage.



Storage Tank Walls started seepage