REPORT ON

CONVERSION OF DUG WELL WITH
SUBMERSIBLE PUMP ALONG WITH SOLAR
ELECTRIFICATION

Introduction of SAFWCO: Sindh Agricultural and Forestry Workers Coordinating Organization—SAFWCO is a non-government, not-for-profit, right-based organization working in Pakistan since 1986. Safwco initiated a process of social mobilization in District Sanghar, registered under Society Act 1860 in 1992 now its journey extended over all Sindh by mainstreaming rural population. SAFWCO has worked under thematic lines of Agriculture, Health and Education, WASH (Water sanitation and hygiene), livelihood, advocacy, governance and gender.

Summary of the Project: The humanitarian crisis in Taluka Umerkot has been deteriorating as a consequence of the recurrent drought which is in continuation since 2014. Umerkot district has two distinct geographical portions: i.e. the irrigated area in the north and west and the desert in the south and east. 25 sub units of union councils (Dehs) are officially declared as Drought affected area in district of Umerkot. Access to portable water remains of high concern and is intensified by the needs of livestock animals. Moreover, recurring dry spells have forced communities to travel long distances to access water for drinking. Continuous lowering of water table, non-functionality of dug wells and hand pumps, people’s limited capacity of repairing them and absence of any water schemes from Government in these remote and desert areas of Umerkot has aggregated humanitarian crisis. According to the National Disaster Consortium (NDC) assessment 2019, around 3 to 4 million people are affected in Sindh which forms almost 40% of the population in the affected districts. The Humanitarian Country Team through allocated Pakistan Humanitarian Pooled Fund (PHPF) has announced to provide urgent humanitarian assistance for drought affected communities in district of Umerkot and Tharparker in sectors of WASH, Nutrition, Health and Food Security. The proposed project aims to contribute and concentrate on increased access to portable drinking water through installation, rehabilitation and restoration of damaged water sources. The project will increase existing water discharge capacity of the communal dug wells through upgrading them with submersible pumps powered by renewable energy. Communal Shallow dysfunctional hand
pumps will be rehabilitated with deep hand pumps to provide three times more water to the affected communities. Most vulnerable families “the ultra poor” will be provided with water storage containers for safer storage of water at household levels. They will also be provided water treatment options so that they every beneficiary of the project access to quality drinking water.

Community local water reservoirs will also be repaired for storage of water aimed at both human and livestock animals. At institution level, primary schools will be provided with drinking water and sanitation facilities to build students resilience to recurrent drought shocks. Access to water component will provide a durable water solution for 45,700 individuals in 288 villages affected by drought to sufficient, safe, fresh, potable water. The surplus water will also be available for livestock animals which is the mainstay of economy in targeted desert area. Widespread safe hygiene practice education will be provided to women through hygiene promotion session along with sessions on significance of hand washing at Household level. The targeted 3,297 vulnerable ultra poor households (having poverty scores from 0 to 19 Poverty Score Card (PSC) scores) will be provided with hygiene kit with demonstration session to use them. The project also addresses the needs of disabled people and other vulnerable individuals including the elderly, unaccompanied women, and pregnant and lactating women.

**Drought and its impact:**

Drought has greater impact, as compared to other major disasters as the later are mostly of short duration and geographically limited, while drought, by contrast, affects large geographical areas for considerable period of time. The frequency and severity of drought have increased in Umerkot, in recent years due to a combination of increasing temperatures, reduction in the number of rainy days, a significant increase in the frequency of heat waves, an indicator of forthcoming drought. During last four years District Umerkot received very nominal and inadequate rains during monsoon season, it churned the lives of human as well as animal too.

**Scenario of Drought affected 03 Union Councils of District Umerkot:**

Due to drought since 2014 the lives of people have greater impact and created humanitarian crisis. Continuous lowering of water table, non-functionality of dug wells and hand pumps, people’s limited capacity of repairing them and absence of any water schemes from Government in this remote and desert area of Umerkot has aggregated humanitarian crisis. The most vulnerable groups of affected
population are ultra poor families who have no ownership/access to portable quality drinking water. Under ultra poor category, minority groups are most affected. Lack of drinking water and NFI kits for water collection and storage, has put the affected community more vulnerable to time, energy and money consumption. Moreover, due to financially weak position in the society, they have to wait for their turn after all women well off families fetch water from dug well, water reservoir and hand pumps. Since the many of the hand pumps and dug wells are dysfunctional due to lowering of water table. As a result women and children have to fetch water from other remote destinations leaving them exposed to lack of privacy. In the deteriorating scenario, elderly, unaccompanied women, and pregnant and lactating women are also the most affected groups who require special arrangements for benefitting the proposed intervention. UC Faqeer Abdullah, UC Kaplore and UC Sekho of district Umerkot-Sindh are the worst drought affected areas with limited access to water. They are situated almost 65 kilometers away from district Head quarter. They are situated in desert region which is part of great Desert of Thar. These UCs are situated adjacent to district Tharparker. Due to acute water shortage, people and livestock are adversely affected by the humanitarian crisis.

**WASH Intervention:** SAFWCO launched its WASH interventions in remote areas of district Umerkot with support of UNOCHA. SAFWCO is implementing the project entitled as “Integrated WASH Response for Building Resilience in Drought-Affected Desert Areas of District Umerkot, Sindh.” In this context SAFWCO contributed and concentrated on increased access to portable drinking water through installation, rehabilitation and restoration of damaged water sources.

The project increased having installed solar powered submersible pump on existing dug wells in the villages where the need was quite dire for poor & ultra-poor community. Community local hand dug well converted into electrifying solar system, aimed at both human and livestock animals. In this pain staking situation (before the installation of solar powered submersible pumps on hand dug well people had been facing so many problems like for fetching water from deep dug well 2 or 3 persons were engaged from each household to bring the water for drinking purpose and for animals as well as the depth of water is too deep to fetch water, the human energy is not sufficient therefore they have healthy animals like camels and donkey for fetching the water. Due to drought they had to buy fodder from urban areas it costs a lot as well as due to high population of the villages these water points are not sufficient to meet their needs therefore they had practice to rent the water tanker from urban area the expenses were high and there income was not enough to meet their daily expenses like food rations, health and education) of drought affected area of district umerkot to heal the people regarding their basic need of portable water for drinking purpose as well as for animal identified 12 villages where the dug well exist, water quality testing officer visited these villages took water samples and send to PCRWR Nawabshah for water quality tests and the technical team of engineers visited these villages for verification and further consideration process that the hand dug wells are on suitable location and have capacity to meet the need of water. As well as in these villages there are numerous catchment areas can cover and benefited direct and indirect
targeted population. The 12 villages where the solar powered pumps are installed are following with covered population:

<table>
<thead>
<tr>
<th>S.NO</th>
<th>Name of Village</th>
<th>Name of UC</th>
<th>Covered Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Umaid Ali Chandio</td>
<td>Faqeer Abdullah</td>
<td>311</td>
</tr>
<tr>
<td>2</td>
<td>Thane Jo Tar</td>
<td>Kaplore</td>
<td>1643</td>
</tr>
<tr>
<td>3</td>
<td>Ramsar Sathi Menghwar</td>
<td>Kaplore</td>
<td>2265</td>
</tr>
<tr>
<td>4</td>
<td>Meghar Arisar</td>
<td>Seekhro</td>
<td>1789</td>
</tr>
<tr>
<td>5</td>
<td>Marohar Menghwar</td>
<td>Seekhro</td>
<td>773</td>
</tr>
<tr>
<td>6</td>
<td>Marhar Halepota</td>
<td>Seekhro</td>
<td>1499</td>
</tr>
<tr>
<td>7</td>
<td>Mandhar Qaim Samejo</td>
<td>Seekhro</td>
<td>1834</td>
</tr>
<tr>
<td>8</td>
<td>Lonbho</td>
<td>Seekhro</td>
<td>527</td>
</tr>
<tr>
<td>9</td>
<td>Jogla Bah</td>
<td>Seekhro</td>
<td>1687</td>
</tr>
<tr>
<td>10</td>
<td>Hakeemani Kerlo</td>
<td>Seekhro</td>
<td>1468</td>
</tr>
<tr>
<td>11</td>
<td>Haji Menhal Jo Tar</td>
<td>Seekhro</td>
<td>1090</td>
</tr>
<tr>
<td>12</td>
<td>Abdul Hakeem Ji Dhani</td>
<td>Seekhro</td>
<td>605</td>
</tr>
<tr>
<td></td>
<td><strong>Total Covered Population</strong></td>
<td></td>
<td><strong>23375</strong></td>
</tr>
</tbody>
</table>

After WASH intervention and installation of solar powered pumps on existing dug well the time, energy and money is saved because before it they had to get water from remote areas (now they are able to save their time to travel the remote areas, the man power is decreased, the practice to rent the tanker of water from urban areas is seized before it there half source of income would have expensed on it therefore they were not able to meet their other needs like food ration, health and education of children, (The main source of income in desert area is seasonal cultivation and livestock) due to scarcity of water death ratio of livestock was increased and it became root cause to migrate to barrage areas with their family and livestock (constructed water tank which has water storage capacity of 6000 liters, to ensure the easiness and access of each household to get water for whole day, the animal trough beside the dug well to meet the need of water of animals and migrated people are returned back). People highly appreciate the intervention and are very happy because their main problem of drinking water is resolved they have been owning dug wells with full of ownership and ensured to maintain and sustain these dug wells in future too.

**Community Quotes:**
“Mr. Bhemon (Social activist) from village Ramsar shared that since 4, 5 years there is drought condition in our area our survival and source of income depends upon seasonal cultivation and livestock so in drought condition our sources of income were totally disturbed in this difficult time SAFWCO healed us, I do not have words to express my sentiments, just want to share that before SAFWCO’s WASH intervention due to scarcity of water we had been facing so many issues because we have Dug well as a water resource, to get water from deep dug well we have camels and donkeys (in drought condition there is shortage of livestock fodder, therefore we expense the money to buy fodder from urban area) as well as 2 persons from each household are reserved to get water from dug well, we are very thankful to SAFWCO that they identified, verified and installed solar power pump on dug well. Now our time, energy and money is saved whole villagers are happy as well as we ensure that having promoted the sense of ownership we will preserve the sustainability of solar power pump and dug well”.

“Mr. Allah Wasayo (Social Activist) from village Abdul Hakeem Ji Dhani shared that after the installation of solar powered pump on existing dug well and construction of water storage tank with the capacity to store water 6000 liters benefited us a lot because in our village there are 65 households and each household has access to get sufficient water according to the need of people and animals. This intervention benefited us in its true essence we ensure to cooperate and participate in each activity of the organization”.
PICTURES OF DUG WELL

(Before & After)

Figure 1 Of 2: Existing Hand Dug Well before Rehabilitation in Village Lonbho Lala Bah.

Figure 2 Of 2: Existing Hand Dug Well after Rehabilitation in and connected submersible pump along with solar electrification in Village Lonbho Lala Bah.
Figure 1 of 2: Existing Hand Dug Well before Rehabilitation in Village Marohar Meghwaar.

Figure 2 of 2: Existing Hand Dug Well after Rehabilitation in and connected submersible pump along with solar electrification in Village Marohar Meghwaar.
Figure 1 Of 2: Existing Hand Dug Well before Rehabilitation in Village Meghar Arisaar.

Figure 2 Of 2: Existing Hand Dug Well after Rehabilitation in and connected submersible pump along with solar electrification in Village Meghar Arisaar.
Figure 1 of 2: Existing Hand Dug Well before Rehabilitation in Village Ramsar Meghwar.

Figure 2 of 2: Existing Hand Dug Well after Rehabilitation in and connected submersible pump along with solar electrification in Village Ramsar Meghwaar.
Figure 1 Of 2: Existing Hand Dug Well before Rehabilitation in Village Thane Jo Tarr.

Figure 2 Of 2: Existing Hand Dug Well after Rehabilitation in and connected submersible pump along with solar electrification in Village Ramsar Meghwaar.
Figure 1: A glimpse while constructing the water tank of Dug Well in village Ramsar Sathi Meghwar.
Figure 2: A glimpse while constructing the water tank of Dug Well in village Kerlo Hakemaani.
Figure 3: A glimpse of water fetching from water tank of dug well in village Lonbho Lala Bah.
Figure 4: A glimpse of water fetching from water tank of dug well in village Marohar Halepota.
Figure 5: A glimpse of livestock drinking water through trough in Village Mandhar Qaim Samejo.