



Completion Report Establishment of Integrated Water Resource Management, Qila Iskan Khan, Pishin



Preamble and Background

IUCN in line with its vision and mission is also committed, among others, to build partnership with community organizations for sustainable development of their livelihood activities and environments, which encompasses their living atmosphere. In this way a six year long programme namely “Balochistan Partnerships for Sustainable Development (BPSD)” is being executed by IUCN in **Six** districts of Balochistan Province. The programme is focused on conservation and sustainable redevelopment/ management of key natural resources, viz.-aviz. rangeland improvement and rehabilitation, fresh water resource development and management of other natural resources contributing towards maintenance of ecosystem.

Among other developmental initiatives, Integrated Water Resource Management is a Key Component of BPSD. Under this component a systematic approach is followed to establish sustainable water resource management system; by developing high efficiency irrigation systems in an On-Farm irrigation system with the active participation of community; and capacity building of the community organization to ensure sustainability of natural resources with a view to curb any possible chance of environmental degradation and resource depletion in their area. This component of the programme is actively being executed in all six project districts. The implementation strategy of this project involves, but is not limited to, establishment of Community Conservation Organizations that agrees to the mission and objectives of the project, and is willing to help themselves out of their social, economic, and environmental constraints on participatory basis.

The captioned project had been identified by the community organization of Qila Iskan Khan and is directly related with the core objectives of Integrated Water Resource Management and protection of ecosystem being implemented under BPSD Programme. The project area is a village near Pishin, known as Qila Iskan Khan situated at the base of Alluvial fan of Toba Kakari Range. The village where once agriculture soared to the economies of scale and the farmers were enjoying a high standard of living; till the drought and water mining in Pishin Lora Basin lead to the depletion of their only water resource “a Karez” is now sitting baron with very little

agriculture, bare enough to feed the population of the village with very little possibility of income. At present the 1400 acres of fertile land lay as cultivable waste due to water scarcity. Majority of the residents migrated to the nearby town of Pishin in search of livelihood opportunities.

The said Karez did not dry entirely during the drought but the drought did squeeze the saturated zones at the upstream side of Karez; to a level, that yielding capacity of mother well decreased from 4 cusecs to merely 0.5 cusecs that too during winters when water demand is less. In order to save the livelihood of the community of Qila Iskan Khan and to ensure sustainability of karez in the future days; a rehabilitation project was designed to assist the community towards



sustainable development of their agriculture and natural resources. Under this project it was envisaged that in addition to rejuvenation of Karez, the downstream main distribution network will be laid with PVC pipes and additional storage would be developed and lined with geo-membrane for saving every possible volume of water. The project was presented to the management of IUCN for approval and thereafter, it was started on 20th August 2010 and was completed on 31-December 2010. This completion report highlights the achievements made under this project by the BPSD and the community Organization of Qila Iskan Khan.

Identification of interventions and Community Mobilization

The topography and other salient features of the area are given in Fig-1.. However, in simple narrative terms, the village is located 28 Km north east of Pishin City at (30° 43' 54"N; 67 ° 09' 18" E) at an elevation of 5368 feet above sea level. The

village and its associated agriculture land is like a delta between the two major water ways namely Tore Murgha and Barshore Manda. Both these seasonal rivers join at the downstream side, of the western boundary of village and empty their major volume of waters in Bund Khushdil Khan, while the remaining flows downstream of Bund Khushdil Khan. The village comprises of 80 households of which many live below poverty line. The youth who have attended some schooling are jobless and have nothing to do; that is why most of them just spent their days in jaywalking or strolling around the village or nearby villages. Since the village lies at base of an alluvial fan of Toba kakari range, therefore, its soils are shallow and the underlying layers of soil are either very coarse or gravelly. The entire top strata is observed to sit on a thick rocky layer that not only works as hard pan but also restricts deep percolation of water; hence it can be said with maximum probability that ground water recharge at this location of the alluvial fan does not happen. However, the rocky layer is also a blessing in disguise as it prevents any tool penetration in it hence all the efforts made by the villagers to install tube well have failed till date. Hence the only source of drinking water and irrigation is a Karez namely Iskan Khan karez; which draws its water from a mother well dug at the toe hill of Kakari Range situated some 3 km upstream of the village. The water drawn from the mother well then travels almost 3 km in a tunnel, which also acts as infiltration gallery during rains, bring the water to a day light point. Apart from hardness in the installation of tube well; as per an old agreement the villagers of Killi Iskan Khan made with the downstream villagers; which refrains all from installation of tube well in the vicinity of the Karez. Not only this but also mutual agreement restricts any sort of rehabilitation work in the mother well and delivery tunnel. In this way the community is left with only way to keep their only source (Karez Iskan Khan) alive and working failing which they have to find another source which at present seems impossible. The major source of income is Agriculture and Livestock and some of the village members work in different government department at Pishin City because they do not earn enough to win bread and clothing for their families. The children and women are the most affected part of population because of marginalized income of their families.

This ironic situation of water scarcity and increasing poverty level in the village was first noticed by a group of village activists of Killi Iskan Khan who noted with concern

the depletion of the karez and decrease in agriculture production because of water shortage and increase in poverty ridden people in their village. These activists joined hand and organized themselves into a Community Conservation Organization with a view to combat the menace of water scarcity and poverty on their own. The community organization since its establishment have only been able to line only 3000 rft of the main channel which is 8000 rft long; and have carried out cleaning of channels, the infiltration gallery and the mother well of Karez. But now the community and the organization are so deprived that they cannot carry out any further intervention on their own at they cannot afford any investment because of poverty.

Since one year the community Organization had ran from pillar to post, knocked every door and submitted requests for assistance to many NGOs and donors with a view to save the existing degradation of their land and water resource through improvement of their water resource, delivery and storage structures. The community failed to get the attention of any organization until it reached the local office of IUCN in Pishin. The office bearers of the community Organization of the area narrated their problem and shared their ideas with the IUCN staff and concluded that the present scenario of less water availability may be mitigated to a greater extent if the exiting water wastage is reduced through better on farm water management practices and development of infra-structure for conservation and storage of waters.

After detailed thread bearing discussion and series of visits of the area, that was carried out by *IUCN team*; the community and IUCN team reached to the following possible solutions; unanimously. It was further jointly decided that these interventions shall be carried out on participatory basis wherein, the community shall contribute 20% cost either in cash or in kind:

- 1. Rehabilitation of main Channel 628 meters downstream of daylight point using 14" PVC Pressure Pipe.**
- 2. Construction of main Water Storage Tank 34X34X1.23 Meters, lined with Geo-membrane 0.25mm.**

3. Construction/ Rehabilitation of Secondary Water Storage Tank 50X20X1.2 meters lined with 0.25 Geo-Membrane.
4. Cleaning of Channel and mother well of Karez (1000 meters).
5. Construction of eyebrows (micro-catchment areas) for water conservation.
6. Construction of 2 Nos. Washing Pads for women.



After successful identification of interventions the proposal was submitted to the management of IUCN for final approval, which was accordingly approved by IUCN with the following cost:

Total Cost of the Project:	= 2,089,752/-	
IUCN Share	= 1,648,476/-	79%
Community Share	= 441,257/-	21%

Execution of interventions:

a. Rehabilitation of Main Channel.

As identified at the inception of the project, the critical portion of the main channel streaming out the karez was rehabilitated using 14” PVC B-Class pressure pipe. Prior laying of PVC pipe, the watercourse was excavated by the community using labour and machinery. Thereafter, the pipe was laid by the community itself. Not only this, the community also provided 20% funds for procurement of PVC Pipe and accessories. In addition to above mentioned works the community took the liberty of constructing a manhole at the daylight point of karez.



b. Cleaning of main channel upstream of daylight point.

After successful installation of PVC line, the community carried out the cleaning work of main channel at the upstream side of day light point. Though it was not only a hard task but the zeal of the community made it possible in merely 13 days. Resultantly, a total of 1200 meters



of main channel was cleaned by the community. IUCN provided 50% cost of labour whereby, the remaining 50% cost was borne by the community itself.

c. Construction of 34X34X1.2 meters Main Water Storage Tank, lined with Geo-membrane

The water storage tank was constructed in 3 steps. Firstly the selected site was cleaned by the community and after that the earth was completed as per design provided by the BPSD Technical staff. The community deployed labour and tractor for construction of the Water Storage Tank. Once the earth was complete the community under direct supervision of BPSD technical team lined the bed and banks of the water storage tank with Geo-membrane. The lined section was then covered with 1' sieved earth so as to protect the geo-membrane from direct sun.



The job was completed in 14 working days using 12 labour and 32 Tractors working hours.

d. Rehabilitation of 50X20X1 meter existing water storage tank.

This particular water storage tanks was also lined with geo-membrane but prior spreading of geo-membrane on its banks and bed, the water storage tank was cleaned by the community and the side banks were re-constructed using tractor as per design. After



completion of earth work, geo-membrane sheets were spread on the bed and banks of the Water Storage Tank. The entire lining was then covered with 1' thick earth layer to protect the lining from sun and other possible failure threats.

e. Construction of Washing Pads for women

In order to facilitate the women of the village two washing pads (2x1 meters) were constructed on two locations near the main water channel.

f. Construction of Eyebrows for establishment of micro catchment areas

80 eyebrows like check structures were constructed using labour and tractor at the up-stream side of the karez with a view to offset the runoff during rains and ensure ground water recharge in the catchment area along with increase in vegetation.



Immediate Payback of the interventions

Soon after completion of, some very prompt and immediate benefits of these interventions, observed by the community and noted by IUCN field staff are detailed as under:-

1. The discharge of karez after cleaning was almost doubled.
2. The water losses in the conveyance channel have been reduced by 90%, thereby, increasing the supply volume to approximately double.
3. The Water Storage Capacity at the farm level has been increased, from 432 cum to 2000 cum.
4. 30 Acres more area has been brought under wheat cultivation due to increased supplies of water.
5. The community has started land development activities in the project area using their own resources, in order to make use of increased quantities of water, made available after the rehabilitation of Karez.

Future Plans

The community in consultation with OIUCN has prepared plans for extension of agriculture and laying of extended distribution network in addition to the introduction of low delta-high value crops. IUCN has planned to establish a 40,000 container plants nursery with the view to promote rangeland rehabilitation and commercial forestry. These initiatives will play vital role in biodiversity and ecosystem improvement with a healthy impact on the livelihood.



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