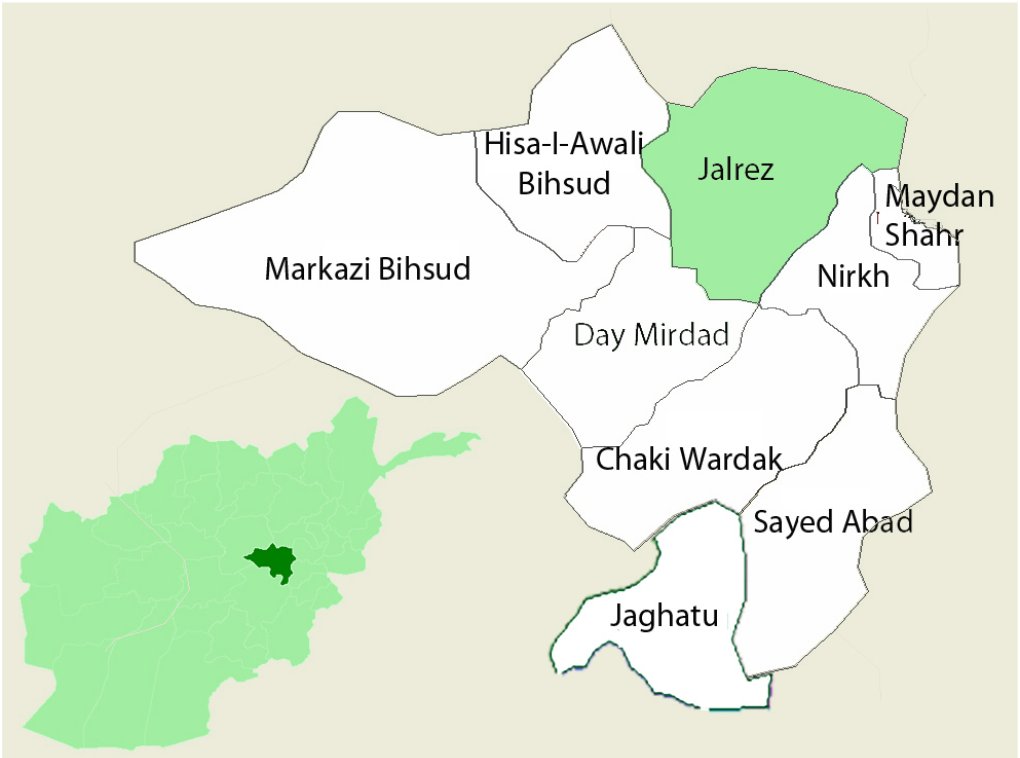
Global PARTNERSHIP for Afghanistan

Wardak Watershed and Irrigation Survey Project



Jalrez District Report

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Jalriz District Water Report

1. Introduction

This report is one of a series of reports on a survey of watersheds and irrigation in the 9 districts of Wardak Province, Afghanistan. The purpose of the survey was to provide data on watersheds (drainage basins) and irrigation in Wardak so that allocation of donor money for improvements to the water supply can be prioritized for maximum impact on livelihoods.

Although the survey was conducted by watershed, the data has beans extracted for each district.

2. Methodology

The survey was carried out by a team of three local surveyors, interviewed and selected by GPFA staff in June 2010. The team members had no previous experience of this type of work, but were trained by GPFA staff in July and the survey started on August 3rd and ended on November 23th. The survey took 12 days in August, 19 days in September, 11days in October and 8 days in November, a total of 50 days or 177 man-days. 53 villages were surveyed, approximately one per day, but some time has been two villages per day. The reason for lower productivity of the survey team in Jalriz is not clear, but it may be due to security concerns or to the difficult terrain or to shorter days in the autumn. Transport was by local taxi and on foot. Interviews were held with leaders and with 5 elders from each village. All significant water structures (karez, wells, canals etc.) were visited in each village. The teams recorded information manually in Dari/Pashto and it was later translated into English and entered into a database using MS Excel. As well as a notebook, the teams carried digital cameras with GPS facility to record location and altitude and to take representative photographs. Copies of the survey forms used are attached to this report.

There are 181 villages or settlements in Jalriz with government id codes. 53 villages were surveyed, but several of the villages surveyed do not have government id codes and do not appear on official maps. So the real percentage of villages surveyed is uncertain. In addition, the survey was based on watersheds (catchments) or micro-watersheds which meant that certain settlements were grouped together.

Surveyors were required to survey a percentage of villages in each sub-watershed. Large parts of the Maidan River itself and its main tributaries to the west have not been surveyed. It is not clear why these areas were omitted and a meeting has been scheduled in Kabul with the survey team and monitoring staff to ascertain the reasons. It may have been due to security issues; but equally it could be due to lack of geographical knowledge. Whichever, this will be rectified in the coming months, security permitting. GPFA will also analyse carefully the approach to village selection in the light of experience and in respect to the terms of reference of the overall assignment: if necessary, GPFA will change its approach in the remaining districts.

Because the survey teams are relatively inexperienced in watershed and catchment interventions, the photographs are extremely useful to experts analysing each sub-watershed. For the future, surveyors will be given better training on what to photograph. For example, a photo of the terrain above each karez mother-well would be very useful; also the off-take of each canal might be helpful. It may be possible to automatically record on each photo the GPS position of the photographer; if not, it will be done manually in future. This would give a better idea of where surveyors were

photographing and a crosscheck on information recorded in the database. Nevertheless, the photographs from Jalriz are a valuable extra resource to aid project selection.

3. Watersheds & sub-Watersheds in Jalriz District

Jalriz District is entirely dependent on the main Maidan River and its tributaries for water. The Maidan River is the source of the Kabul River after flowing Northeast through Char Asia District into Kabul Province. The Maidan River itself rises in Markazi Bihsud District and passes through Day Mirdad before entering Chak District at Kala in the northwest of the district. At Monkay, the Chak River is joined by a major tributary, the xxxxx, from the southwest. Upstream from Monkay, another tributary, the xxx, joins at Mirahmadkhel; downstream at Iwar, the Baksmand River joins the Chak River. All three tributaries have their catchment areas inside Chak District, but the major catchment for the Chak River itself is in Markazi Bihsud district with smaller catchments in Day Mirdad District and in Ghazni Province. There is no figure for the catchment area in Chak District itself, but the total watershed upstream of the Chak Dam[1] has an area of 4,054 km^2.

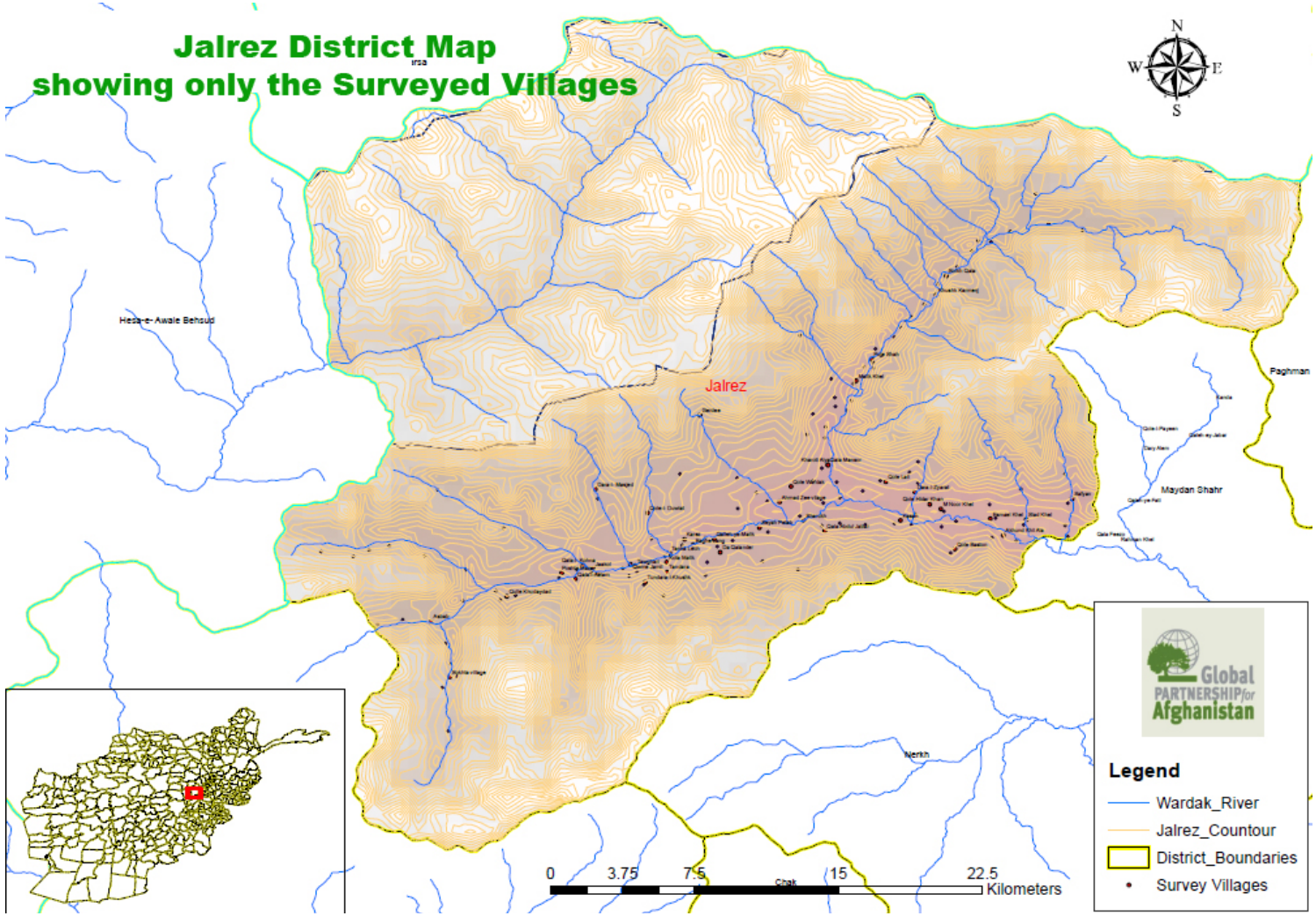
Peak flow in the Jalriz River is from snowmelt and spring rains in April. However there are significant unpredictable flash floods in late summer too. Demand varies according to elevation and crops grown. For example, the wheat grown at high elevations will be harvested later than that at low elevation: thus its peak demand for water will also be later. Peak demand for wheat is about one month prior to harvest and falls off rapidly after grain milk stage (Zadoks 7-8). If soil conditions are good, wheat roots extend to 1m and if winter snow has fully replenished soil moisture, the plants can take about 150mm from a silt soil early in the growing season. But wheat may be using more than 7mm per day in the period Zadoks 3 to 7 and annual water demand by wheat may exceed 1,000mm: in the absence of summer rain, irrigation is essential. The peak water demand for maize will come later in the season when the water supply in some springs and streams will be dwindling. This will limit the growing of maize in certain areas. Maize roots are much shallower than wheat which means that irrigation must be much more frequent, but in Wardak, as water from snow-melt diminishes, irrigation water supply to each farmer is often less frequent in late summer. For fruit crops, apples need water most from mid-July onwards whereas stone fruit may need irrigation earlier.

Altitudes of the villages surveyed vary from Zarif at 2,114m to Karez-e-Surkh at 2,941m. There is no obvious correlation between altitude and the percentage of wheat or fruit grown. Rice, which has a very high demand for water, is not grown above 2,378m (Ahmad Khel[2]).

[1] There have been many reports on the Maidan River, so it is not included in this survey.

[2] This may not be the correct name – there are conflicts in the data for this village.

4. Map of District



5. Village Profile examples

a. Kanda Village

Kanda village was selected for its remote location and high altitude (2,751 m). It is on the kohna khomar sub-watershed off the Maidan River. The population is small (750) and there are 200 families. The total land area is 1300 jeribs of which about more than half is agricultural land and irrigated (1000 jeribs of). Thus each family has on average 5 jeribs of irrigated land. Water seems to be plentiful as distribution is hourly and each family gets water for some part of the day. There are 300 jeribs of cereal crops, but the major crop is fruit with 50 jeribs of. The 2,750 m elevation is at the extreme for successful fruit growing. The number of cows in the village is 100 and 210 sheep and goats and 100 donkeys, but there are an average 1 sheep or goats per families which is typical for an upland village with access to rangeland.

According to the five elders interviewed, the population has tripled in the last 30 years. Thirty years ago, there was more agricultural land and more trees in the village and there were no signs of deforestation or soil erosion. Opinions were divided on the amount of rain and snow in the past, but they were unanimous that there was more water flow from the village spring. There was no mention of conflict within or between villages.

Surveyors found moderate vegetation on surrounding hillsides and some signs of tree planting. Kuchis are not allowed access and grazing is controlled by villagers.

There is one village spring one karez and one canal. The water is drinkable and the flow is moderate serving 100 jeribs of, there is one karez it has been damaged by floods and it is full of mud and stones. It was last cleaned 10 years ago. Nevertheless, at the time of the survey on October 08, there was a reasonable flow. The water from the karez is flowing in a channel. The distribution channels from the karez and the karez don't have reservoir. If the width of the channels were restricted and the channels lined with trees of economic use, then evaporation would be reduced and any water seeping from the channels would be put to good use by the trees.

The water of canal is drinkable and the water flow is moderate serving 400 jeribs of, this canal has leaks and damaged places,

This canal also needs cleaning and concreting of the damaged places and leak places.

Various interventions were requested by the village elders. For water, repair to the karez and its channels damaged by flooding are a priority. Also the village spring needs attention. Surprisingly water storage in reservoirs was emphasised. The need for work on the karez and the spring was confirmed by the survey team. The potential for improving ground-water replenishment was not noted by the survey, but looking at the photographs there is obviously potential for better rangeland and catchment management and some reforestation.

Non-water farming interventions requested were

- orchard replanting
- improved seed
- small chicken form
- market for products
- need to have electricity

Villagers also described one primary school and the need for electricity.

b. Dara-I- Ziarat

At an altitude of 2,417m, Dara-i- Ziarat is located near to Dara-i-Ziarat sub watershed which is a tributary of the Maidan River. The soil is predominately sandy. There are 214 households and irrigates a population of 2000 supported on 2000 jeribs of land, 1000 jeribs of is agricultural land irrigated land. There is a further 1000 jeribs of un-cropped land within the village envelope. Families have on average more land than neighbouring villages. There are 60 jeribs of cereals, but also many orchards (132 jeribs of). 50 jeribs of is given over to fodder to support some 70 cows and 450 sheep and goats and 100 donkeys.

The water comes from a karez and a spring. The karez was cleaned in 2004, but it seems that it was recently flooded the shafts are damaged. No work has been undertaken above the mother well to mitigate flooding and improve infiltration into groundwater. Although the flow is said to have decreased, when the photographs were taken in October there was a good stream in the karez channel. The distribution channels are haphazard and could be improved by directing them out of the potential flood zone and stabilising with willows, Russian olives or other native species. Some 1000 jeribs of are irrigated from the Karez. The spring also needs some attention.

Water is distributed to each village every 6 days which is not frequent enough if the soil is all sandy. The Malik is chairman of the water shura.

All the village elders interviewed said that the cleaning of karez and spring and also cleaning of water canal and concreting of the damaged places and leak places and also concreting of the Reservoir well have positive effect on water.

There are no trees on the mountains and there has been no planting of poplar woodlots to supply villagers' timber needs, but from the photographs there are some grasses in the damp areas near springs and the karez channels. There may be potential for planting woodlots on land liable to flooding.

The village elders mentioned several other needs, including clinic for livestock , improve certified seed and chemical fertilizer , chickens, Reservoir for karez and agricultural land training and also pipe for spring canal for drip irrigation . However, restoring the water supply is a priority combined with cleaning of spring and karez and also building of Reservoir for karez.

c. Khushk Karmenj

Khushk karmenj has been chosen as typical of the larger villages near to the sanglokh River. The altitude is 2,584m.
The population has increased from about 350 thirty years ago to 2100 with 300 households of which 350 list agricultural land as their primary occupation. 200 have irrigation and all agricultural land is irrigated. This totals some 2000 jeribs of. Average household landholding is some 6.66 jeribs of, but average irrigated landholding by professional farmers is only 1.16 jeribs of. The water distribution system in this time is by hours between farmers but in the past they have distributed water between farmers by day and night.

Wheat and other cereals take up some 30 jeribs of and. there are 50 jeribs of onion, Fruit (150jeribs of) and other horticultural crops are important, potatoes (10 jeribs of) and animal feed 10 jeribs of and other vegetable 50 jeribs of. This village has 150 cows, 220 sheep and goats and 100 donkeys.

According to the villagers, the irrigation system is in relatively not good in spite of the recent floods and the past drought, but our survey team thought that work was needed. Water is mainly by canal off the Sanglokh River, but a properly constructed off-take would allow better water regulation. The canal is long and serves some 2 villages, comprising 304 households and irrigates 2000 jeribs of land irrigated by this canal. General improvements to the canal system are requested to clear blockages and prevent leaks. There are several inconsistencies in the data collected for the canal and it is suggested that the team return to check their readings. , the altitude of the discharge end is lower than the off-take from the main river and the GPS reading at exit point of the canal is (x 34.56964, y 68.6886, Alt 2000).

The elder mention the need for cleaning of karez and canal and canal has leak places and damaged every year by flood it has need for concrete. Also elders mentioned building of check dam in the village,

Apart from water, the villagers mentioned the need for, Market for products, better seed and inputs. The villagers don’t have any plan for their grazing lands from incursion by Kuchis.

d. Esmailkhil

Esmailkhil village which flows from Maidan River to zewalat canal and this village near to the Zewalat, Akhundkhil and Zmni villages. The altitude is about 2,288m. The soil is clay and there is insufficient water to meet all irrigation needs.

The village is medium size 250 household respectively and populations of 1500. As in other villages surveyed, numbers have approximately five times in the last 30 years. The survey reveals that this village have 2750 jeribs of land in total, of which 2700 is agricultural land, but only 2000 jeribs of is cultivated and 2700 is irrigated. Esmailkhil not listed the rain fed land which is used.

Water is available on a different basis for this village. Esmailkhil village divided water by hours per Farmers and 6 villages are shared in this canal.

Cropping places and horticulture crops greater emphasis. There are 150 jeribs of wheat, 1550 jeribs of fruits, 50 jeribs of, 100 jeribs of potatoes, 150 jeribs of other vegetables and 100 jeribs of. This village has 250 cows, 600 sheep and gouts and 200 donkeys.

Water is sourced from Canal which are said to be in poor condition and has leak and blockage and also some damaged places, it has need for cleaning and concreting of the leak places and Repairing of the damaged places.

The village elders from Esmailkhil say that the village would like a tube well and a larger Reservoir.

The elders also listed the following village improvements: distribution of improved seeds and, agricultural land machinery and technology and high way for this village.

6. Village Irrigation in Chaki Wardak District

a. Villages south east of Jalrez District Centre on both sides of the Maydan River.

Name: Village	Population Jeribs	GPS N E Altitude (M)	Village Description	Water Supply	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs of Irrigated USD
Qala-i- Kohna قلعه کحنه WD-Jal-026	Pop. 700 Total. 1000 j Irrig.800 j	N 34.44138 E 68.52306 Alt. 2515 m	70 out of 100 households are dependent on agricultural land. 100 families benefit from irrigation The soil type is sandy. 800 out of 1000 jeribs are irrigated agricultural land and 800 jeribs are cultivated in the area. The income of 70 families is from growing cash crops. There are 200 jeribs of wheat, 400 jeribs of fruit, 100 jeribs of onion, 20 jeribs of animal feed, and 80 jeribs of potatoes. There are 35 cows, 270 sheep and goats, and 35 donkeys.	This village has one canal and one spring. The canal supplies about 1000 households and irrigates 5000 jeribs of land. 5000 jeribs of land is cultivated in the area. This canal needs concreting because it has a lot of leaks and damage. The source of the canal requires cleaning. The spring supplies about 3,000 households and irrigates 2500 jeribs of land. The soil type is clay and there is no erosion of soil in the area. The reservoir of this spring needs concreting and the spring needs cleaning as it is full of mud and stone. The canal from this spring has leaks needs concreting.	Canal 400,000 Spring 20,000		
Qala-e-Sabz -i- Miyana	Pop. 1120 Total. 150j	N 34.43756 E 68.53015	15 out of 50 households depend on agriculture and 50 families	This village has one canal and one spring.	Canal 25,000		

Name: Village	Population Jeribs	GPS N E Altitude (M)	Village Description	Water Supply	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs of Irrigated USD
قلعه سبز میانه WD-Jal-006	Irrig. 120 j	Alt. 2497 m	benefit from irrigation The soil type is sandy and 120 out of 150 jeribs of land are irrigated for agricultural land. 90 jeribs are cultivated and the income of 50 families is from growing cash crops. There are 10 jeribs of wheat, 50 jeribs of fruit, 10 jeribs of animal feed, 20 jeribs of potatoes There are 30 cows, 180 sheep and goats, and 60 donkeys.	The canal supplies about 350 households and irrigates 1000 jeribs of land. 700 jeribs of land are cultivated. The canal is destroyed by floods every year and it is full of mud and stones – it needs cleaning and restoration. The spring supplies about 30 households and irrigates needs cleaning and its reservoir needs concreting.	Spring 16,000		
Tawghari توغری WD-Jal-037	Pop. 1356 Total.5000 j Irrig.4000 j	N 34.44133 E 68.5475 Alt. 2477 m	200 out of 226 households depend on agriculture and 200 benefit from irrigation. The soil type is sandy and clay. 4,000 out of 5,000 jeribs of are irrigated agricultural land. 3,000 jeribs of are cultivated land. The income of 200 families is from growing cash crops. There are 500 jeribs of wheat, 200 jeribs of onion, 1300 jeribs of fruit, 500 jeribs of animal feed, and 200 jeribs of potatoes. There are180 cows 100 sheep and goats, and 50 donkeys.	This village has one canal, one karez and one spring. The canal supplies about 1,500 households 1,350 jeribs of land is irrigated by this canal and 1,200 jeribs of is cultivated in the area. The canal leaks and needs repairs and cleaning. The karez supplies 16 households. The soil type is sandy and clay. There is no erosion of soil in the area. The wells of the karez are blocked and need	Canal 30,000 Karez 15,000 Spring 10,000		

Name: Village	Population Jeribs	GPS N E Altitude (M)	Village Description	Water Supply	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs of Irrigated USD
				cleaning as does the karez itself. It may also need concreting. The spring supplies about 14 households. 7 jeribs of land is irrigated by the spring. There is no erosion of soil in the area. The spring has leaks and needs cleaning, digging and repairing – perhaps concreting.			
Kota Malik کوته ملک WD-Jal-016	Pop. 300 Total.500 j Irrig. 300 j	N 34.44297 E 68.56234 Alt. 2472 m	40 out of 60 households depend on agriculture. 60 households benefit from irrigation. The soil type is sandy. 300 out of 500 jeribs of land are irrigated agricultural land, 250 jeribs of are cultivated. The income of 40 families derives from growing cash crops. There are 50 jeribs of wheat,100 jeribs of fruits, 50 jeribs of animal feed, and 50 jeribs of potatoes. There are 20 cows, 120 sheep and goats, and 10 donkeys.	This village has one canal. It supplies about 450 households and irrigates 1,500 jeribs of land. 1,300 jeribs of land are cultivated in the area. The canal has been badly damaged by past floods and is full of mud and stones. It needs cleaning and leaks require repairs in some places – concreting.	Canal 30,000		

Name: Village	Population Jeribs	GPS N E Altitude (M)	Village Description	Water Supply	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs of Irrigated USD
Baghe Lang باغ لنگ WD-Jal-017	Pop. 2000 Total.1000 Irrig. 700 j	N 34.45114 E 68.57475 Alt. 2414 m	80 out of 180 households depend on agriculture. 180 benefit from irrigation. The soil type is sandy. 700 out of 1000 jeribs of land are irrigated agricultural land and 700 jeribs of are cultivated. The income of 150 families derives from growing cash crops. There are 150 jeribs of wheat, 400 jeribs of fruit, 50 jeribs of animal feed, and 50 jeribs of potatoes. There are 120 cows, 150 sheep and goats, and 80 donkeys.	This village has canal and one spring. The canal supplies about 31 households and irrigates 100 jeribs of land. 100 jeribs of land is cultivated in the area. The canal was destroyed by past floods, has leaks and needs repairing with concreting. The spring supplies 660 households and irrigates 70 jeribs of Erosion of soil is moderate in the area. The spring needs cleaning and its canal has leaks and needs concreting.	Canal 10,000 Spring 15,000		
Qalleh-ye-Malik قلعه ملک WD-Jal-038	Pop. 1400 Total.6000 j Irrig. 3500 j	N 34.45367 E 68.58455 Alt.2425 m	180 out of 280 households depend on agriculture. 280 benefit from irrigation. The soil type is sandy. 3,500 out of 6,000 jeribs of land are irrigated agricultural land and 3,000 jeribs of are cultivated. The income of 180 households comes from growing cash crops.	This village has one canal and two springs. The canal supplies about 230 households and irrigates 1,280 jeribs of land. 1,000 jeribs of land is cultivated. The canal has many leaks and	Canal 30,000 Spring 10,000		

Name: Village	Population Jeribs	GPS N E Altitude (M)	Village Description	Water Supply	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs of Irrigated USD
			There are 500 jeribs of wheat, 100 jeribs of onion, 1,500 jeribs of fruits, 300 jeribs of animal feed, and 500 jeribs of potatoes. There are 200 cows, 440 sheep and goats, and 4 donkeys.	needs repairing/concreting. The villagers are interested in drip irrigation. The spring of Qalleh-ye-Malik supplies about 180 households and irrigates 20 jeribs of land There is no erosion of soil in the area The spring needs cleaning and digging and its canal has leaks and needs repairs/concreting. The spring of Chall supplies about 230 households and irrigates 100 jeribs of land. There is no erosion of soil in the area. This spring needs cleaning and digging and its canal leaks and requires repair/concreting.			
Seyah Petab سیاه پیتاب WD-Jal-020	Pop. 1825 Total. 1250 j	N 34.45909 E 68.60574 Alt. 2392	203 out of 365 households depend on agriculture. 365 families benefit from irrigation. The soil type is clay and sandy. 940 out of 1,250 jeribs of land are agricultural land. 440 jeribs of is irrigated land and 300 jeribs of are cultivated.	This village has one canal, one spring. The canal supplies about 565 households and irrigates 740 jeribs of land. 400 jeribs of land are cultivated in the area. The	Canal 20,000 Spring 5,000		

Name: Village	Population Jeribs	GPS N E Altitude (M)	Village Description	Water Supply	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs of Irrigated USD
			The income of 100 families comes from growing cash crops. There are 50 jeribs of wheat, 150 jeribs of fruits, 70 jeribs of potatoes, 30 jeribs of animal feeds. There are 100 cows, 200 sheep and goats, and 100 donkeys.	canal leaks and needs cleaning, repair or concreting. The spring supplies about 20 households and irrigates 30 jeribs of land. There is no erosion in the area. The spring needs cleaning.			
Sharukh شاروخ WD-Jal-039	Pop. 1400 Total. 500 j Irrig. 250 j	N 34.46255 E 68.62659 Alt.2366 m	10 out of 80 households 10 depend on agriculture and 80 families benefit from irrigation. The soil type is sandy.\ 250 out of 500 jeribs of land are irrigated for agricultural land and 200 jeribs of are cultivated. The income of 20 families comes from growing cash crops. There are 50 jeribs of wheat, 100 jeribs of fruit, 20 jeribs of animal feed, and 10 jeribs of potatoes. There are 20 cows, 80 sheep and goats, and 20 donkeys.	This village has one canal and one spring. The canal supplies about 250 households and irrigates 1,000 jeribs of land. 800 jeribs of land is cultivated in the area. The canal leaks and needs cleaning and repair or concreting. The spring supplies about 10 households and irrigates 2 jeribs of land. Its canal leaks and both the spring and the canal needs repair or concreting.	Canal 35,000 Spring 10,000		
Poshta Mazar پوشته مزار	Pop. 1050 Total.14000j	N 34.43803 E 68.51318	100 out of 150 households depend on agriculture and 100	This village has one canal, and one karez and one Reservoir.	Canal 10,000		

Name: Village	Population Jeribs	GPS N E Altitude (M)	Village Description	Water Supply	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs of Irrigated USD
WD-Jal-21	Irrig. 3000j	Alt.2554 m	families benefit from irrigation. The soil types are clay and sandy. 4,000 out of 14,000 jeribs of land are agricultural land and 3,000 jeribs of are irrigated. 2000 jeribs are cultivated. The income of 100 families comes from growing cash crops. There are 500 jeribs of wheat, 600 jeribs of fruits, 500 jeribs of animal feed, and 100 jeribs of potatoes. There are 20 cows, 200 sheep and goats, and 50 donkeys.	This canal supplies about 120 households and irrigates 500 jeribs of land irrigated by this canal and 500 jeribs of land is cultivated in the area. This canal has leaks and need for concreting and also need for cleaning. This karez supplies about 90 households and irrigates 100 jeribs of land irrigated by this karez, the soil erosion is moderate in the area and the soil type is gravel. Wells of this karez is full from mud and stone need for cleaning and also karez need for cleaning. This reservoir supplies about 90 people and 100 jeribs of land irrigated by this reservoir. This Reservoir need for cleaning and concreting of this.	Karez 15,000		
Baghe Lang باغ لنگ WD-Jal-017	Pop. 2000 Total.1000 Irrig. 700 j	N 34.45114 E 68.57475 Alt. 2414 m	80 out of 180 households depend on agriculture and 180 benefit from irrigation.	This village has canal and one spring. The canal supplies about 31	Canal 10,000 Spring 15,000		

Name: Village	Population Jeribs	GPS N E Altitude (M)	Village Description	Water Supply	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs of Irrigated USD
			The soil type is sandy. 700 out of 1000 jeribs of land are irrigated agricultural land and 700 jeribs are cultivated. The income of 150 families comes from growing cash crops There are 150 jeribs of wheat, 400 jeribs of fruits, 50 jeribs of animal feed, and 50 jeribs of potatoes. There are 120 cows, 150 sheep and goats, and 80 donkeys.	households and irrigates and irrigates 100 jeribs of land. 100 jeribs of land is cultivated in the area. It has been damaged by past floods and leaks in some places. It needs repairing or concreting. The spring supplies about 660 households and irrigates 70 jeribs of land. Erosion of soil is moderate in the area. The spring leaks and needs cleaning and repair or concreting.			

Google Photo: Villages south east of Jalriz District Centre on both sides of the Maydan River.

b. Villages north west of Jalriz District Centre on both sides of the Maydan River

Name: Village	Population Jeribs	GPS N E Altitude (M)	Village Description	Water Supply	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
Kasan کا سان WD-Jal-048	Pop. 400 Total. 500 j Irrig. 260 j	N 34.46255 E 68.6718 Alt. 2308 m	Out of 40 households 40 depend on agriculture and 40 benefit from irrigation The soil type is sandy 260 jeribs of land out of 500 jeribs are irrigated agricultural land and 220 jeribs are cultivated. The income of 35 families comes from growing cash crops There are 50 jeribs of wheat, 10 jeribs of onion, 100 jeribs of fruit, 40 jeribs of animal feed and 20 jeribs of potatoes. There are 20 cows, 90 sheep and goats, and 8 donkeys.	This village has one canal and one spring. The canal supplies about 1,210 families and irrigates 2,000 jeribs of land. 2,000 jeribs of land is cultivated in the area. The canal needs cleaning and concreting of damaged places. The spring supplies about 15 families and irrigates 5 jeribs of land. Soil erosion is moderate. The spring needs digging and cleaning.	Canal 8,000 Spring 3,000		
M Nur Khel محمد نور خیل WD-Jal-018	Pop. 800 Total.240 j Irrig. 200 j	N 34.46786 E 68.69073 Alt. 2310 m	70 out of 100 households depend on agriculture and 100 families benefit from irrigation. The soil types are clay and sandy. 200 jeribs out of 240 jeribs of land are irrigated agricultural land and 200 jeribs of are cultivated. The income of 100 families comes from growing cash crops.	This village has one canal and one karez. The canal supplies about 1,200 households and irrigates and irrigates 3,600 jeribs of land. 3600 jeribs of land is cultivated in the area. This canal needs cleaning and	Canal 80,000 Karez 4,000		

Name: Village	Population Jeribs	GPS N E Altitude (M)	Village Description	Water Supply	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
			There are 40 jeribs of wheat, 105 jeribs of fruits, 20 jeribs of animal feed, 5 jeribs of potatoes, 15 jeribs of other cereal crops and 3 jeribs of are other vegetables. There are 70 cows, 110 sheep and goats, and 30 donkeys.	repairs or concreting of those places where there are leaks. The Karez supplies about 25 households and irrigates 5 jeribs of land. There is no erosion of soil in the area. The soil type is gravel. The karez, its canal and its reservoir need cleaning and repairs.			
Esmael Khel اسماعیل خیل WD-Jal-002	Pop.1500 Total.3750 j Irrig.2700 j	N 34.46332 E 68.71387 Alt.2288 m	50 out of 250 households depend on agriculture and 250 benefit from irrigation. The soil type is clay. 2,700 out of 3750 jeribs of land of are irrigated agricultural land with 2,000 jeribs cultivated. The income of 150 families comes from growing cash crops. There are 150 jeribs of wheat, 1,550 jeribs of fruits, 50 jeribs of animal feed, 100 jeribs of potatoes, and 150 jeribs of other vegetables. There are 50 cows, 600 sheep and goats, and 100 donkeys.	This village has only one canal. It supplies 550 households and irrigates 3,750 jeribs of land. This canal needs restoration and cleaning	Canal 5,000		
Akhund Khil Ala اخوند خیل WD-Jal- 005	Pop.600 Total.2000j Irrig.1000 j	N 34.45553 E 68.71998 Alt. 2279.5 m	50 out of 70 households depend on agriculture and 70 families benefit from irrigation.	This village has one canal and one Karez.	Canal 22,000 Karez		

Name: Village	Population Jeribs	GPS N E Altitude (M)	Village Description	Water Supply	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
			The soil type is silt and out of 2,000 jeribs of land, 1,500 jeribs are irrigated agricultural land. 1,000 jeribs of land is cultivated. The income of 70 families comes from growing cash crops. There are 100 jeribs of wheat, 700 jeribs of fruits, 40 jeribs of animal feed, and 30 jeribs of potatoes. There are 60 cows and 100 sheep and goats.	The canal supplies about 800 households and irrigates 1,600 jeribs of land. It is full of mud and stones and needs cleaning and repairs or concreting of areas that leak. The karez supplies about 70 households and irrigates and irrigates 1,500 jeribs of land. There is no erosion of soil and the soil type is gravel. The shafts of this karez have been damaged by floods and need cleaning. The canal and reservoir of the karez need cleaning and repair or concreting.	6,000		
Rahman Khel رحمان خیل WD-Jal-045	Pop. 350 Total. 120 j Irrig. 70 j	N 34.45146 E 68.77395 Alt. 2237 m	10 out of 70 households depend on agriculture and 70 benefit from irrigation The soil type is clay. 70 out of 120 jeribs of land are irrigated agricultural land. 50 jeribs of land are cultivated. The income of 20 families comes from growing cash crops. .	This village has one canal. It supplies about 800 families and irrigates 1,200 jeribs of land. 900 jeribs of land is cultivated in the area. The canal leaks and needs cleaning and repairs or concreting.	Canal 20,000		

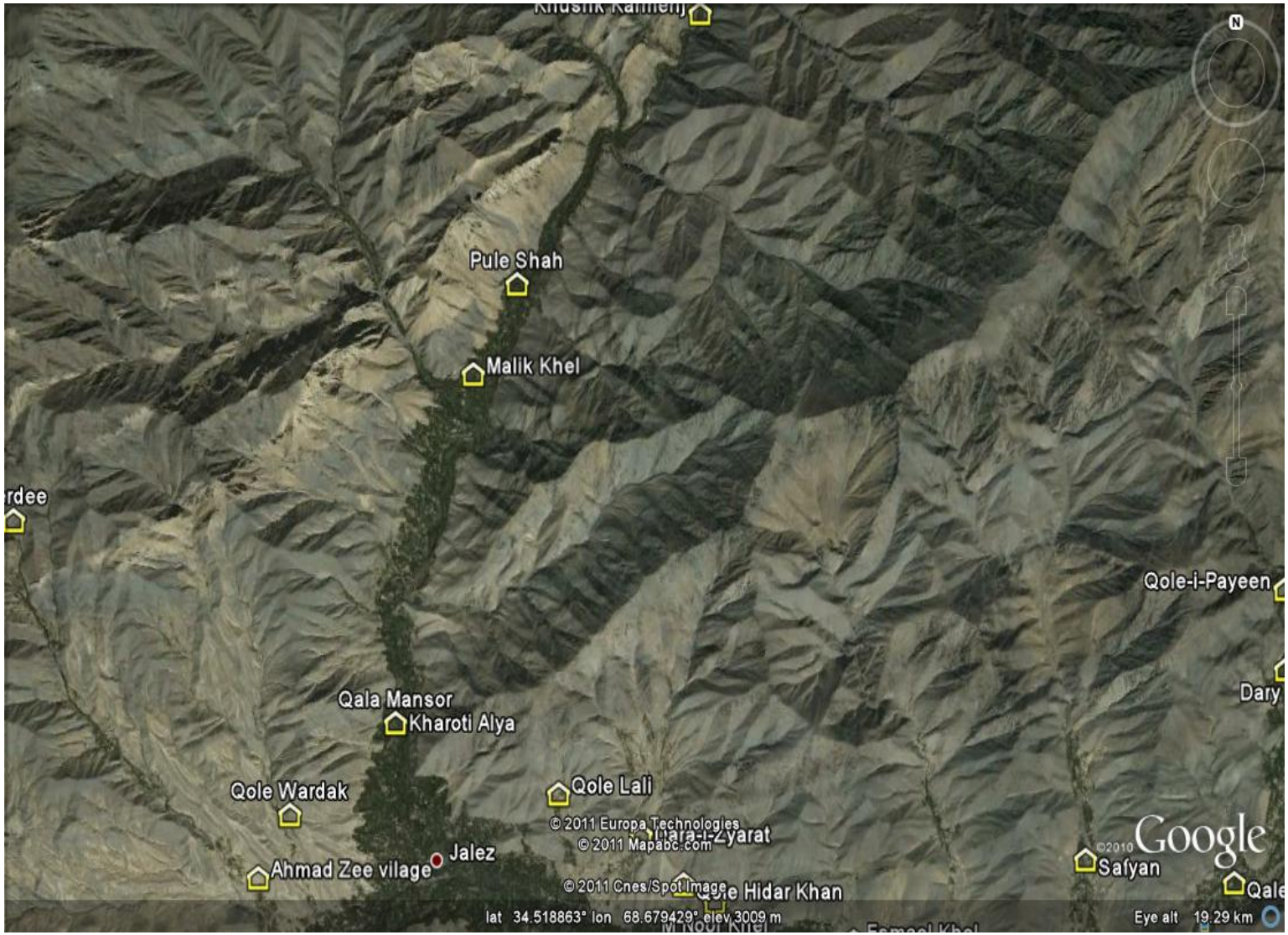
Google Photo:Villages north west of Jalriz District Centre on both sides of the Maydan River

c. Villages principally dependent on Sanglokh River of Jalriz

Name: Village	Population Jeribs	GPS N E Altitude (m)	Village description	Water supply	Cost estimate USD	Cost per beneficiary USD	Cost per jeribs of irrigated USD
Kharoti Alya خروتی علا WD-Jal-041	Pop. 2400 Total.2400 j Irrig.1500 j	N 34.48846 E 68.63786 Alt. 2367 m	30 out of 400 households depend on agriculture and 400 benefit from irrigation The soil types are sandy and clay. 1,500 out of 2,400 jeribs of land are irrigated agricultural land. 1,000 jeribs are cultivated. The income of 50 families comes from growing cash crops. There are 500 jeribs of wheat, 200 jeribs of fruits, 200 jeribs of potatoes, and 50 jeribs of animal feed. There are 60 cows, 500 sheep and goats and 30 donkeys.	This village has one canal and one spring. The canal supplies 110 households and irrigates 200 jeribs of land. 180 jeribs of land is cultivated in the area. The width of this canal is small and should be increased. The canal also needs cleaning. The spring supplies about 60 households and irrigates 60 jeribs of land. The soil erosion is moderate. The spring needs cleaning and its canal needs repairing or concreting.	Canal 42,000 Spring 8,5000		
Qala Mansor قلعه منصور WD-Jal-040	Pop. 450 Total. 500 j Irrig. 400 j	N 34.48853 E 68.63777 Alt. 2365 m	10 out of 50 households depend on agriculture and 50 benefit from irrigation. The soil types are sandy and clay. 400 out of 500 jeribs of land are irrigated agricultural land and 350 jeribs are cultivated. T he income of 25 families comes	This village has one canal. It supplies about 1,500 households and irrigates and irrigates 1,200 jeribs of land. 1,200 jeribs of land is cultivated in the area. This canal needs cleaning and concreting. Some parts require restoration after recent flood	Canal 16,000		

Name: Village	Population Jeribs	GPS N E Altitude (m)	Village description	Water supply	Cost estimate USD	Cost per beneficiary USD	Cost per jeribs of irrigated USD
			from growing cash crops. There are 20 jeribs of wheat, 30 jeribs of onion, 200 jeribs of fruit, 50 jeribs of animal fee and 50 jeribs of potatoes. There are 20 cows, 240 sheep and goat and 20 donkeys.	damage.			
Malik Khel ملک خیل WD-Jal-008	Pop. 10000 Total.2000j Irrig. 500 j	N 34.52788 E 68.65109 Alt. 2503 m	120 out of 200 households depend on agriculture and 120 families benefit from irrigation. The soil type is sandy. 500 out of 2,000 jeribs of land are irrigated agricultural land and 500 jeribs are cultivated. The income of 120 families comes from growing cash crops. There are 10 jeribs of wheat, 470 jeribs of fruits, and 20 jeribs of animal feed. There are 120 cows, 280 sheep and goats, and 120 donkeys.	This village has one spring and one canal. The spring supplies 50 households and irrigates 100 jeribs of land. Soil erosion is heavy here. The spring is will with mud and stones and needs cleaning. The canal supplies 220 households and irrigates 100 jeribs of land. 100 jeribs of land is cultivated in the area. The canal leaks and needs cleaning and concreting.	Spring 5,000 Canal 20,000		
Pule Shah پول شاه WD-Jal-014	Pop. 1400 Total.1500 j Irri.1400 j	N 34.538 E 68.65834 Alt.2498 m	700 out of 1,400 households depend on agriculture and 1,400 families benefit from irrigation. The soil type is sandy. 900 out of 1,500 jeribs of land are	This village has one canal. It supplies about 4,000 households and irrigates 6,000 jeribs of land. 5000 jeribs of land is cultivated in the area. This canal has leaks in	Canal 35,000		

Name: Village	Population Jeribs	GPS N E Altitude (m)	Village description	Water supply	Cost estimate USD	Cost per beneficiary USD	Cost per jeribs of irrigated USD
			agricultural land with 700 jeribs cultivated. 200 jeribs are irrigated. The income of 700 families comes from growing cash crops. There are 300 jeribs of wheat, 50 jeribs of onion, 250 jeribs of fruit, and 50 jeribs of potatoes. There are 100 cows, 200 sheep and goats, and 70 donkeys.	some places and needs cleaning of mud and stones and repairing or concreting.			
Khushk Karmenj خشک کرسنج WD-Jal-009	Pop. 2100 Total.2000j Irrig. 200 j	N 34.56804 E 68.68863 Alt. 2584 m	100 out of 300 households depend on agriculture and 300 families benefit from irrigation. The soil type is sandy. 350 out of 2,000 jeribs of land are irrigated agricultural land and 300 jeribs are cultivated. The income of one family comes from growing cash crops. There are 30 jeribs of wheat, 50 jeribs of onion, 150 jeribs of fruits, 10 jeribs of animal feed, and 10 jeribs of potatoes. There are 150 cows, 220 sheep and goats, and 100 donkeys.	This village has one canal and one karez. The canal supplies 350 households and irrigates 2,000 jeribs of land. 1,500 jeribs of land are cultivated. The canal has a lot of leaks and needs cleaning and restoration. The first dam of the canal needs restoration and concreting. The karez supplies about 100 households and irrigates 200 jeribs of land. The soil type is clay and there is no soil erosion. This karez needs cleaning and concreting of it reservoir.	Canal 15,000 Karez 40,000		



Google Photo: Villages principally dependent on Sanglokh River of Jalriz

d. Villages principally dependent on the Kohona Khomar River.

Name: Village	Population Jeribs	GPS N E Altitude (M)	Village Description	Water Supply	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
Qaleh-ye-Fati قلعه فاتح WD-Jal-031	Pop. 1190 Total. 500 j Irrig. 300 j	N 34.4698 E 68.7772 Alt. 2321 m	100 out of 170 households depend on agriculture and 170 benefit from irrigation. The soil type is sandy and clay. 300 out of 500 jeribs of land are irrigated agricultural land and 200 are cultivated. The income of 100 families comes from growing cash crops. There are 100 jeribs of wheat, 20 jeribs of fruit, 20 jeribs of animal feed, and 40 jeribs of potatoes. There are 50 cows, 150 sheep and goats, and10 donkeys.	This village has one canal and one spring. The canal supplies about 450 households and irrigates 700 jeribs of land. 500 jeribs of land is cultivated in the area. The canal was damaged by floods and is blocked by mud and stones. It has a lot of leaks and needs cleaning and concreting of the damaged places. This spring supplies about 200 jeribs of land. There is no soil erosion in the area. The spring need digging and concreting of its canal's damaged areas.	Canal 45,000 Spring 12,000		
Dary Alem دره علم WD-Jal-029	Pop. 7000 Total.500 j Irrig. 300 j	N 34.4942 E 68.7848 Alt. 2525 m	200 out of 1,000 households depend on agriculture and 1,000 benefit from irrigation.	This village has one canal and one spring.	Canal 20,000 Spring		

Name: Village	Population Jeribs	GPS N E Altitude (M)	Village Description	Water Supply	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
			The soil type is clay. 300 out of 500 jeribs of land are irrigated agricultural land with 300 are cultivated. The income of 100 families comes from growing cash crops. There are 100 jeribs of wheat, 50 jeribs of onion, 40 jeribs of fruit, 50 jeribs of animal feed, and 60 jeribs of potatoes. There are 200 cows, 250 sheep and goats and 30 donkeys.	This canal supplies about 1,500 households and irrigates 500 jeribs of land. 500 jeribs are cultivated in the area. The canal needs cleaning and 50 meters which was badly damaged in recent floods needs repairing. This spring supplies about 400 households and irrigates 200 jeribs of land. The soil type is clay and there is no soil erosion in the area. This spring needs digging and cleaning and its canal requires repairs or concreting because it has leaks.	20,000		
Qole-i-Payeen قلعه پایین WD-Jal-034	Pop. 900 Total. 400 Irrig. 300 j	N 34.5033 E 68.7843 Alt. 2553 m	60 out of 150 households depend on agriculture and 150 benefit from irrigation. The soil types are sandy and clay. 300 out of 400 jeribs of land are irrigated agricultural land with 250 jeribs cultivated. The income of 60 families comes from growing cash crops. There are 100 jeribs of wheat, 50 jeribs of fruit, 30 jeribs of animal feed, and 30 jeribs of potatoes.	This village has one canal, one spring and one karez. The canal supplies about 150 households and irrigates 200 jeribs of land. 150 jeribs of land is cultivated in the area. In recent floods 100 meters of the canal was damaged and needs repair, cleaning, and concreting of the source of the canal and its leaks.	Canal 10,000 Karez 20,000 Spring 5,000		

Name: Village	Population Jeribs	GPS N E Altitude (M)	Village Description	Water Supply	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
			There are 50 cows, 120 sheep and goats, and 30 donkeys.	This karez supplies about 150 households and irrigates 150 jeribs of land. The soil erosion is moderate and the soil type is sandy and clay. The karez needs cleaning and concreting of damaged areas. This spring supplies about 150 households and irrigates 40 jeribs of land. There is no soil erosion in the area. The canal of this spring leaks and requires digging, cleaning and concreting.			
Qaleh-ey-Jabar قلعه جبار WD-Jal-033	Pop. 3500 Total.1500 j Irrig.1200 j	N 34.50022 E 68.80605 Alt. 2515 m	300 out of 500 households depend on agriculture and 500 benefit from irrigation. The soil type is sandy. 1,200 out of 1,500 jeribs of land are irrigated agricultural land and 1,200 jeribs are cultivated. The income of 200 families comes from growing cash crops. There are 500 jeribs of wheat, 500 jeribs of fr6uit, 100 jeribs of animal feed, and 100 jeribs of potatoes. There are 60 cows, 180 sheep and	This village has one canal, one karez, and one spring. The canal supplies 720 households and irrigates 2,800 jeribs of land. 1500 jeribs of land is cultivated in the area. The water source for this canal need concreting because it has leaks and the canal needs cleaning. The spring supplies 600 households and irrigates 200	Canal 18,000 Karez 30,000 Spring 10,000		

Name: Village	Population Jeribs	GPS N E Altitude (M)	Village Description	Water Supply	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
			goats, and 20 donkeys.	jeribs of land. Soil erosion is moderate. The spring needs digging and cleaning, and its canal needs cleaning. The karez supplies about 720 households and irrigates 700 jeribs of land. Soil erosion is heavy and the soil type is clay. This karez needs repair of damaged which almost destroyed it and it needs cleaning.			
Kanda كندا WD-Jal-030	Pop.750 Total.1300 j Irrig.1000 j	N 34.518 E 68.81866 Alt. 2751 m	100 out of 200 households depend on agriculture and 200 benefit from irrigation. The soil type is sandy. 1,000 out of 1,300 jeribs of land are irrigated agricultural land with 500 jeribs cultivated. The income of 150 families comes from growing cash crops. There are 300 jeribs of wheat, 50 jeribs of fruits, 50 jeribs of animal feed, and 100 jeribs of potatoes. There are 100 cows, 210 sheep and goats, and 100 donkeys.	This village has one canal, one karez and one spring. The canal supplies about 60 households and irrigates 400 jeribs of land. 200 jeribs of land is cultivated in the area. This canal needs a stone wall and concreting to collect water in the canal and needs some leaks repaired. The karez supplies about 120 households and irrigates 200 jeribs of land. The soil type is clay. There is no soil erosion in the area. The villagers are interested	Canal 5,000 Karez 15,000 Spring 10,000		

Name: Village	Population Jeribs	GPS N E Altitude (M)	Village Description	Water Supply	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
				in cleaning and concreting both sides of this karez. The spring supplies about 120 households and irrigates 100 jeribs of land. Soil erosion is moderate in the area. The spring needs a broken pipe to be replaced and the canal of the spring needs leaks repairing.			

Google Photo: Kohona Khomar sub watershed value.

e. Miscellaneous Villages

Name: Village	Population Jeribs Of	GPS N E Altitude (M)	Village Description	Water Supply	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
0 jDara-i-Zyarat دره زیارت WD-Jal-001	Pop. 2000 Total. 2000j Irrig. 1000j	N 34.47584 E 68.67849 Alt. 2417 m	100 out of 214 households 100 depend on agriculture and 214 benefit from irrigation. The soil type is sandy. 1,000 out of 2,000 jeribs of land are irrigated agricultural land and 300 jeribs of cultivated. The income of 214 families comes from growing cash crops. There are 50 jeribs of wheat, 132 jeribs of fruits, 50 jeribs of animal feed, 18 jeribs of potatoes, and 40 jeribs of other vegetables. There are 70 cows, 450 sheep and goats and 100 donkeys.	This village has one spring and one karez. The spring supplies 30 households and irrigates 214 jeribs. Soil erosion is moderate. The spring is filled with mud and stones and needs cleaning. A canal for the spring is also needed. The karez supplies 214 households and irrigates 1,000 jeribs of land. The soil type is gravel and there is no soil erosion. The karez is filled with mud and stones and should be cleaned. The reservoir of the karez needs concreting.	Spring 12,000 Karez 2,000		
Dara Masjed دره مسجد WD-Jal-003	Pop. 1050 Total. 1600j Irrig.900 j	N 34.47714 E 68.52894 Alt.2713 m	120 out of 150 households depend on agriculture and 150 benefit from irrigation. The soil type is sandy. 900 out of 1600 jeribs of land are irrigated agricultural land with 900 jeribs cultivated.	The village has one karez and one spring. The karez supplies 150 households and irrigates 900 jeribs of land. Soil erosion is moderate. The karez needs cleaning and the	Karez 50,000 Spring 60,000		

Name: Village	Population Jeribs Of	GPS N E Altitude (M)	Village Description	Water Supply	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
			The income of 150 families comes from growing cash crops. There are 300 jeribs of wheat, 200 jeribs of fruit, 30 jeribs of onion, 150 jeribs of potatoes, 100 jeribs of animal feed, 20 jeribs of other vegetables, and 100 jeribs of other cereal crops. There are 80 cows, 120 sheep and goats, and 60 donkeys.	canal of the karez needs concreting. This spring supplies 180 households and irrigates 500 jeribs of land. It needs cleaning and the water channel from the source to field leaks and needs restoration.			
Tandara تندوره WD-Jal-004	Pop.1050 Total.1000 j Irrig.700 j	N 34.43827 E 68.56246 Alt.2527 m	70 out of 150 households depend on agriculture and 150 families benefit from irrigation. The soil type is sandy. 700 out of 1000 jeribs of land are irrigated agricultural land with 700 jeribs cultivated. The income of 65 families comes from growing cash crops. There are 100 jeribs of wheat, 400 jeribs of fruit, 100 jeribs of animal feed, and 100 jeribs of potatoes. There are 60 cows, 120 sheep's and goats, and 50 donkeys.	This village has one karez and one spring. This karez supplies 150 households and irrigates 700 jeribs of land. Soil erosion is moderate. This karez needs cleaning and its canal needs concreting because it has a lot of leaks and was badly damaged by recent floods. The spring supplies 7 households and irrigates needs cleaning and restoration.	Karez 20,000 Spring 5,000		
Tundara-i-Khushk تندره خوشک WD-Jal-007	Pop. 280 Total. 1600j Irrig.600 j	N 34.4336 E 68.55224 Alt. 2537 m	30 out of 50 households depend on agriculture and 50 families benefit from irrigation. The soil type is sandy 1,000 out of 1,600 jeribs of land	This village has one karez. This karez supplies 50 households and irrigates 600 jeribs of land. The soil type is gravel and soil	Karez 15,000		

Name: Village	Population Jeribs Of	GPS N E Altitude (M)	Village Description	Water Supply	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
			are irrigated agricultural land and 600 jeribs are cultivated. The income of 30 families comes from growing cash crops. There are 300 jeribs of wheat, 200 jeribs of fruit, 20 jeribs of animal feed, 20 jeribs of potatoes, and 10 jeribs of onion. There are 30 cows, 55 sheep and goats, and 10 donkeys.	erosion above the karez is moderate. The reservoir of this karez needs concreting the karez needs cleaning. It was damaged by recent floods.			
Jaghain چای عنی WD-Jal-010	Pop.560 Total. 1700j Irrig.700 j	N 3,443,884 E 6,858,251 Alt. 2502 m	70 out of 180 households depend on agriculture and 80 families benefit from irrigation. The soil type is sandy. 700 out of 1,700 jeribs of land are irrigated agricultural land and 650 jeribs of are cultivated. The income of 60 families comes from growing cash crops; there are 200 jeribs of wheat, 350 jeribs of fruit, 50 jeribs of animal feed, and 50 jeribs of potatoes. There are 70 cows, 350 sheep and goats, and 50 donkeys in the village.	This village has one canal, one spring and one Karez. This canal supplies 400 households and irrigates 800 jeribs of land. 650 jeribs of land are cultivated. It has a lot of leaks and needs concreting and cleaning. This Spring supplies 400 households and irrigates 800 jeribs of land. There is no soil erosion in the area. The spring needs cleaning and concreting as it has flood damage and many leaks. The karez supplies 400 families	Canal 13,000 Spring 8,000		

Name: Village	Population Jeribs Of	GPS N E Altitude (M)	Village Description	Water Supply	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
				and irrigates 800 jeribs of land. The soil type is gravel and there is no erosion in the area. The karez needs cleaning and also concreting.			
Asbab اسباب WD-Jal-011	Pop. 350 Total. 2000j Irrig.20	N 34.41514 E 68.45201 Alt. 2669 m	15 out of 50 households depend on agriculture and 50 families benefit from irrigation. The soil type is sandy. 50 out of 2000 jeribs of land are agricultural land, 20 jeribs are irrigated and 20 jeribs are cultivated. The income of 30 families comes from growing cash crops. There are 10 jeribs of wheat, 7 jeribs of animal feed, and 3 jeribs of fruit. There are 150 cows, 70 sheep and goats, and 20 donkeys.	This village has one spring. It supplies about 50 households and irrigates and irrigates 10 jeribs of land. There is no soil erosion in the area. The spring itself needs cleaning and its canal needs repair as it has a lot of leaks.	Spring 16,000		
Qole Duwlat قولی دولث WD-Jal-012	Pop .500 Total.800 j Irrig.100 j	N 34.46601 E 68.55334 Alt.2623 m	45 out of 80 households depend on agriculture and 165 families benefit from irrigation. The soil type is sandy. 500 out of 800 jeribs of land is agricultural land with 400 jeribs cultivated and 100 jeribs irrigated. The income of 30 families comes from growing cash crops.	This village has one karez and one spring. The Karez supplies 165 households and irrigates 310 jeribs of land. Soil erosion is moderate and the soil type is sandy. The karez needs cleaning as it is	Karez 40,000 Spring 20,000		

Name: Village	Population Jeribs Of	GPS N E Altitude (M)	Village Description	Water Supply	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
			There are 50 jeribs of wheat, 250 jeribs of fruit, 40 jeribs of animal feed, and 40 jeribs of potatoes. There are 120 cows, 190 sheep and goats, and 140 donkeys.	blocked with mud and stone. The spring supplies 165 households and irrigates 150 jeribs of land. Soil erosion is moderate. The spring needs cleaning and it canal needs concreting as it has leaks.			
Qulle Khudaydad قولی خودایداد WD-Jal-013	Pop.1500 Total.400 j Irri.300 j	N 34.42695 E 68.48741 Alt.2665 m	250 out of 300 households depend on agriculture and 300 families benefit from irrigation. The soil type is silt. 200 out of 400 jeribs of land is irrigated agricultural land with 180 jeribs cultivated. The income of 250 families comes from growing cash crops. There are 40 jeribs of wheat, 80 jeribs of fruit, 40 jeribs of animal feed, and 20 jeribs of potatoes. There are 100 cows, 120 sheep and goats, and 120 donkeys.	This village has one spring. This spring supplies 300 households and irrigates 100 jeribs of land. There is no erosion of soil in the area. Some parts of the canal of the spring are damaged by floods and need concreting and the spring itself needs cleaning.	Spring 50,000		
Safyan صافیان WD-Jal-015	Pop.1000 Total.700 j Irrig.450 j	N 34.47273 E 68.75212 Alt.2411 m	70 out of 120 households depend on agriculture and 120 households benefit from irrigation. The soil type is sandy. 500 out of 700 jeribs of land are agricultural land with 450 jeribs irrigated and 300 jeribs cultivated. The income of 80 families comes	This village has one karez and one spring. The karez supplies about 230 households and irrigates 80 jeribs of land. The soil type is sandy and there is no erosion in the area. The karez needs cleaning and the canal of the	Karez 10,000 Spring 12,000		

Name: Village	Population Jeribs Of	GPS N E Altitude (M)	Village Description	Water Supply	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
			from growing cash crops. There are 25 jeribs of wheat, 200 jeribs of fruit, 15 jeribs of onion, 45 jeribs of animal feed, and 15 jeribs of potatoes. There are 60 cows, 500 sheep and goats, and 40 donkeys.	karez leaks and needs repair. The spring supplies about 300 households and irrigates 200 jeribs of land. Erosion is moderate. This spring was flood damaged and needs cleaning and its canal leaks needs repair.			
Ahmad Zee village احمد زی کلی WD-Jal-019	Pop. 350 Total. 700 j Irrig. 500 j	N 34.4712 E 34.4712 Alt. 2433	15 out of 95 households depend on agriculture and 95 families benefit from irrigation. The soil type is sandy. 500 out of 700 jeribs of land are irrigated agricultural land with 200 jeribs cultivated. The income of 80 households comes from growing cash crops. There are 50 jeribs of wheat, 75 jeribs of fruit, 15 jeribs of onions, and 25 jeribs of animal feed. There are 20 cows, 110 sheep and goats, and 50 donkeys.	This village has one karez. It supplies about 95 households and irrigates 25 jeribs of land. The soil type is clay and there is no erosion in the area. The karez wastes a lot of water and the canal has leaks – it needs concreting and cleaning.	Karez 15,000		
Qala-i-Aslam قلعه اسلم WD-Jal-022	Pop. 1000 Total.1800 j Irrig. 300 j	N 34.4351 E 68.51953 Alt.2531 m	80 out of 150 households depend on agriculture and 150 families benefit from irrigation. The soil types are clay and sandy. 500 out of 1,800 jeribs of land are agricultural land with 300 jeribs irrigated and 200 jeribs cultivated. The income of 20 families comes	This village has one spring. It supplies about 150 households and irrigates 200 jeribs of land. Erosion is moderate in the area. The canal of the spring has leaks and needs repairing and the spring needs cleaning.	Spring 70,000		

Name: Village	Population Jeribs Of	GPS N E Altitude (M)	Village Description	Water Supply	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
			from growing cash crops. There are 50 jeribs of wheat, 100 jeribs of fruit, 20 jeribs of animal feed and 30 jeribs of potatoes. There are 15 cows, 170 sheep and goats, and 30 donkeys.				
Dahan Neek دهن نیک WD-Jali-023	Pop. 420 Total. 500 j Irrig. 50 j	N 34.44884 E 64.51445 Alt. 2550 m	100 out of 60 households depend on agriculture and 150 families benefit from irrigation. The soil type is sandy. 50 out of 500 jeribs of land are irrigated agricultural land and 50 jeribs are cultivated. The income of 40 families comes from growing cash crops. There are 10 jeribs of wheat, 30 jeribs of fruit, and 10 jeribs of animal feed. There are 30 cows, 300 sheep and goats, and 10 donkeys.	This village has one karez and one spring. This karez supplies about 800 households. Soil erosion is moderate and the soil type is gravel. The karez needs cleaning and it needs a reservoir and the concreting of that. The spring supplies about 1,000 households and irrigates 1,000 jeribs of land. There is no erosion of soil in the area and the soil type is clay. The spring is blocked with mud and stones and needs cleaning. Its canal leaks and need concreting.	Karez 60,000 Spring 500,000		

Name: Village	Population Jeribs Of	GPS N E Altitude (M)	Village Description	Water Supply	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
Qwme Jamil قوم جميل WD-Jal-024	Pop. 2000 Total. 500 j Irrig. 200 j	N 34.44207 E 68.54533 Alt. 2478 m	70 out of 200 households depend on agriculture and 200 benefit from irrigation. The soil type is sandy. 200 out of 500 jeribs of land are irrigated agricultural land and 180 jeribs are cultivated. The income of 50 families comes from growing cash crops. There are 50 jeribs of wheat, 100 jeribs of fruit, 20 jeribs of animal feed, and 10 jeribs of potatoes. There are 80 cows, 60 sheep and goats, and 30 donkeys.	This village has one spring. It supplies about 80 households and irrigates and irrigates s30 jeribs of land. Erosion is heavy and the soil type is silt. The spring needs cleaning and its canal leaks and needs repair or concreting.	Spring 40,000		
Sokhta village سوخته کلی WD-Jal-025	Pop.1750 Total.120 j Irrig. 30 j	N 34.38932 E 68.46076 Alt.2809	10 out of 40 households depend on agriculture and 40 benefit from irrigation. The soil type is sandy. 50 out of 120 jeribs of land are agricultural land with 30 jeribs irrigated and 30 jeribs cultivated. There are no families whose income comes from growing cash crops. There are 5 jeribs of wheat, 10 jeribs of fruit, and 5 jeribs of potatoes. There are 15 cows, 160 sheep and goats, and 20 donkeys.	This village has one spring. This spring supplies about 150 households and irrigates 100 jeribs of land. Erosion of soil is heavy in the area. The villagers have suggested that a drip irrigation system from the spring to the field should be installed because the land around the canal is sandy and much water is wasted.	Spring 20,000		

Name: Village	Population Jeribs Of	GPS N E Altitude (M)	Village Description	Water Supply	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
Qala Feezo قلعه فیضو WD-Jal-027	Pop.480 Total.700 j Irrig.400 j	N 34.4541 E 68.76277 Alt.2264 m	50 out of 70 households depend on agriculture and 70 families benefit from irrigation. The soil type is sandy. 500 out of 700 jeribs of land are agricultural land with 400 jeribs irrigated and 400 cultivated. The income of 60 families comes from growing cash crops. There are 100 jeribs of wheat, 250 jeribs of fruit, 20 jeribs of animal feed, and 20 jeribs of potatoes. There are 50 cows, 50 sheep and goats, and 40 donkeys.	This village has one karez and one spring. The karez supplies about 70 households and irrigates 170 jeribs of land. The soil type is clay and there is no erosion in the area. The karez needs concreting and cleaning. This spring supplies about 70 households and irrigates 30 jeribs of land. There is no erosion in the area. The spring needs cleaning.	Karez 10,000 Spring 7,000		
Gerdee گیردی WD-Jal-028	Pop.1000 Total. 4000 j Irrig.1000 j	N 34.51181 E 68.57782 Alt. 2886 m	50 out of 100 households depend on agriculture and 100 families benefit from irrigation. The soil type is sandy. 1,000 out of 4,000 jeribs of land are irrigated agricultural land with 700 jeribs cultivated. The income of 30 families comes from growing cash crops. There are 100 jeribs of wheat and 600 jeribs of fruit. There are 10 cows, 500 sheep and goats, and 25 donkeys.	This village has one spring. It supplies about 8,000 households and irrigates 1,000 jeribs of land. There is no erosion in the area and the soil type is clay. The spring needs cleaning and its canal needs repair or concreting because it has a lot of leaks and damaged sections.	Spring 200,000		

Name: Village	Population Jeribs Of	GPS N E Altitude (M)	Village Description	Water Supply	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
Bala Qala بالا قلعه WD-Jal-032	Pop.700 Total.600 j Irrig.400 j	N 34.7608 E 68.5086 Alt. 2616 m	50 out of 100 households depend on agriculture and 100 benefit from irrigation. The soil types are sandy and clay. 400 out of 600 jeribs of land are irrigated agricultural land with 350 jeribs cultivated. The income of 50 families comes from growing cash crops. There are 100 jeribs of wheat, 20 jeribs of onion, 100 jeribs of fruit, 60 jeribs of animal feed, and 40 jeribs of potatoes. There are 20 cows, 120 sheep and goats, and 30 donkeys.	This village has one canal, one karez and one spring. This canal supplies about 100 households and irrigates 100 jeribs of land with 80 jeribs of land are cultivated in the area. The canal leaks and needs repairing or concreting. 100 meter of canal was damaged by floods and needs to be restored. The villagers are in a drip irrigation system from the source of canal to the fields. The karez supplies about 100 households and irrigates 20 jeribs of land. The soil type is sandy and erosion is moderate. The karez needs cleaning and some sections were flood damaged and need concreting and repair. This spring supplies 150 households and irrigates 200 jeribs of land. Erosion is moderate. The spring needs cleaning and some flood	Canal 8,000 Karez 20,000 Spring 30,000		

Name: Village	Population Jeribs Of	GPS N E Altitude (M)	Village Description	Water Supply	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
				damaged sections need repair.			
Da Qalander ده قلندر WD-Jal-035	Pop.420 Total.3000 j Irrig.2000 j	N 34.44768 E 68.58734 Alt. 2471 m	40 out of 60 households depend on agriculture and 60 benefit from irrigation. The soil type is sandy. 2,000 out of 3,000 jeribs of land are irrigated agricultural land with 1,000 jeribs cultivated. The income of 50 families comes from growing cash crops. There are 200 jeribs of wheat, 20 jeribs of onion, 500 jeribs of fruit, 50 jeribs of potatoes, and 100 jeribs of animal feed. There are 30 cows, 92 sheep and goats, and 60 donkeys.	This village has one spring. It supplies about 60 households and irrigates 10 jeribs of land. Erosion is moderate. The spring's canal needs concreting or repair as it is wasting a lot of water. The spring itself needs digging and cleaning.	Spring 20,000		
Tanka Lech تنګلیچ WD-Jal-036	Pop. 750 Total.320 j Irrig.270 j	N 34.44734 E 68.5636 Alt. 2442 M	80 out of 100 households depend on agriculture and 100 benefit from irrigation. The soil type is sandy. 270 out of 320 jeribs of land are irrigated agricultural land with 250 cultivated. The income of 100 families comes from growing cash crops.	This village has one karez and one spring. The karez supplies about 100 households and irrigates 180 jeribs of land. Erosion is moderate the soil type is sandy. Some sections of the karez channel leak and need repair or	Karez 20,000 Spring 10,000		

Name: Village	Population Jeribs Of	GPS N E Altitude (M)	Village Description	Water Supply	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
			There are 100 jeribs of wheat, 80 jeribs of fruit, 10 jeribs of animal feed, and 10 jeribs of potatoes. There are 50 cows, and 50 sheep and goats.	concreting. The wall of the karez reservoir is small and should be enlarged. The karez itself needs cleaning. This spring supplies about 100 households and irrigates 30 jeribs of land. There is no erosion in the area. The spring's canal needs repair or concreting because it has a lot of sand. The spring needs cleaning and digging.			
Scorch Qala سورخ قلعه WD-Jal-042	Pop. 2300 Total.1500 j Irrig.800 j	N 34.577 E 68.6932 Alt. 2616 m	200 out of 400 households depend on agriculture and 400 benefit from irrigation. The soil type is sandy. 80o out of 1,500 jeribs of land are irrigated agricultural land with 300 jeribs cultivated. There are 50 jeribs of wheat, 15 jeribs of onion, 150 jeribs of fruit, 50 jeribs of animal feed and 15 jeribs of are potatoes. There are 200 cows, 800 sheep and goats, and 50 donkeys.	This village has one Karez. It supplies about 800 households and irrigates 300 jeribs of land. The soil type is sandy and there is heavy erosion. The karez was seriously damaged by recent floods and needs for repair and cleaning. The spring's canal needs repair or concreting.	Karez 60,000		

Name: Village	Population Jeribs Of	GPS N E Altitude (M)	Village Description	Water Supply	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
Jaakol جاکول WD-Jal-043	Pop. 1000 Total. 1000 j Irrig. 700 j	N 34.44 E 68.5278 Alt. 2491 m	20 out of 200 households depend on agriculture and 200 families benefit from irrigation. The soil type is sandy. 800 out of 1,000 jeribs of land are agricultural land with 700 jeribs irrigated and 700 jeribs cultivated The income of 80 families comes from growing cash crops. There are 100 jeribs of wheat, 500 jeribs of fruit, 50 jeribs of animal feed, and 50 jeribs of potatoes. There are 40 cows, 60 sheep and goats, and 30 donkeys.	This village has one spring. It supplies 60 households and irrigates 100 jeribs of land. The soil erosion is moderate in the area. The spring needs digging and cleaning.	Spring 20,000		
Qole Wardak قول وردک WD-Jal-044	Pop. 400 Total. 400 j Irrig.300 j	N 34.47838 E 68.62046 Alt. 2432 m	15 out of 60 households depend on agriculture and 60 benefit from irrigation. The soil type is sandy. 300 out of 400 jeribs of land are irrigated agricultural land with 100 jeribs cultivated. The income of 40 families comes from growing cash crops. There are 20 jeribs of wheat, 5 jeribs of onion, 60 jeribs of fruit, 10 jeribs of animal feed, and 5 jeribs of potatoes. There are 10 cows, 31 sheep and goats, and 6 donkeys.	This village has one karez and one spring. The karez supplies about 60 households and irrigates 100 jeribs of land. The soil type is sandy and erosion is moderate. The karez needs cleaning and repairs to damaged sections. The spring supplies about 60 households and irrigates 100 jeribs of land. Erosion is moderate. The spring needs cleaning and digging.	Karez 18,000 Spring 20,000		

Name: Village	Population Jeribs Of	GPS N E Altitude (M)	Village Description	Water Supply	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
Qala Abdul Jabar قلعه عبدلجبار WD-Jal-046	Pop. 300 Total. 200 j Irrig. 100 j	N 34.45774 E 68.63638 Alt.2458 m	30 out of 50 households depend on agriculture and 50 benefit from irrigation. The soil type is sandy. 100 out of 200 jeribs of land are irrigated agricultural land with 50 jeribs cultivated. The income of 10 families comes from growing cash crops. There are 20 jeribs of wheat, 10 jeribs of fruit, 15 jeribs of animal feed and 5 jeribs of potatoes. There are 40 cows, 550 sheep and goats, and 30 donkeys.	This village has one karez and two springs. This karez supplies about 25 families and irrigates 5 jeribs of land. The soil type is sandy and erosion is heavy. The karez needs cleaning as it is blocked with mud and stones. Some sections are flood damaged and need repair. The Qala-e-Aghamohammad spring supplies about 20 families and irrigates 8 jeribs of land. Erosion is moderate in the area. The spring is clogged with mud and stone and needs cleaning. Some sections need repair or concreting. The spring of Abdul Jabar supplies about 50 families and irrigates 5 jeribs of land. Erosion is moderate in the area. This spring is also clogged with mud and stones and needs cleaning and some flood damage repairs.	Karez 7,000 Two Springs 3,000 3,000		

Name: Village	Population Jeribs Of	GPS N E Altitude (M)	Village Description	Water Supply	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
Qole Hidar Khan قولی حیدر خان WD-Jal-047	Pop. 200 Total. 200 j Irrig. 50 j	N 34.47009 E 68.6855 Alt. 2352 m	15 out of 40 households depend on agriculture and 40 benefit from irrigation. The soil type is sandy. 50 out of 200 jeribs of land are irrigated agricultural land with 20 cultivated. The income of 15 families comes from growing cash crops. There are 5 jeribs of wheat, 10 jeribs of fruit, and 5 jeribs of animal feed. There are 5 cows, 60 sheep and goats, and 4 donkeys.	This village has one karez. It supplies about 50 families and irrigates 20 jeribs of land. The soil type is sandy and erosion is heavy. The karez needs for cleaning and its canal needs concreting.	Karez 12,000		
Qole Lali قولی لا لی WD-Jal-049	Pop. 360 Total. 600 j Irrig. 150 j	N 34.48062 E 68.66491 Alt. 2460 m	30 out of 60 households depend on agriculture and 60 benefit from irrigation. The soil type is sandy. 150 out of 600 jeribs of land are irrigated agricultural land with 45 jeribs cultivated. The income of 25 families comes from growing cash crops. There are 10 jeribs of wheat, 20 jeribs of fruit, 5 jeribs of animal feed, and 10 jeribs of potatoes. There are 5 cows, 95 sheep and goats, and 13 donkeys.	This village has two karez and one spring. Barkelay karez is located in Qole lali. It supplies 60 families and irrigates 35 jeribs of land. The soil type is sandy and erosion is moderate in the area. The karez and its canal need cleaning. Qole Lali karez supplies 60 families and irrigates 35 jeribs of land. The canal of this karez has leaks and needs repair or concreting, both canal and karez	Two Karez 8,000 8,000 Spring 7,000		

Name: Village	Population Jeribs Of	GPS N E Altitude (M)	Village Description	Water Supply	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
				need cleaning. The spring supplies about 60 families and irrigates 10 jeribs of land. Erosion is moderate in the area. The spring is clogged with mud and stones and needs cleaning and its canal needs concreting or repair to remove leaks and the waste of much water.			
Qole Baston قولی بستون WD-Jal-050	Pop. 350 Total. 300 j Irrig. 100 j	N 34.44911 E 68.69726 Alt. 2388 m	45 out of 50 households depend on agriculture and 50 households benefit from irrigation. The soil type is sandy. 100 out of 300 jeribs of land are irrigated agricultural land with 50 jeribs cultivated. The income of 30 families comes from growing cash crops. There are 10 jeribs of wheat, 20 jeribs of fruit, 5 jeribs of onion, 10 jeribs of animal feed, and 5 jeribs of potatoes. There are 5 cows, 320 sheep and goats, and 10 donkeys.	This village has one karez and one spring. The karez supplies 50 households and irrigates 20 jeribs of land. The soil type is sandy and erosion is moderate. The wells of this karez need digging and the whole karez needs cleaning. The spring supplies 25 families and irrigates 5 jeribs of land. The soil erosion is moderate. The spring needs cleaning and its canal needs concreting to repair leaks.	Karez 15,000 Spring 10,000		

Name: Village	Population Jeribs Of	GPS N E Altitude (M)	Village Description	Water Supply	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
Karez کاریز WD-Jal-051	Pop. 350 Total.500 j Irrig. 300 j	N 34.45358 E 68.5706 Alt.8458 m	35 out of 90 households depend on agriculture and 90 benefit from irrigation. The soil type is sandy. 300 out of 500 jeribs of land are irrigated agricultural land with 100 jeribs cultivated. The income of 20 families comes from growing cash crops. There are 20 jeribs of wheat, 5 jeribs of onion, 50 jeribs of fruits, 10 jeribs of animal feed, and 10 jeribs of potatoes. There are 10 cows, 30 sheep and goats, and 3 donkeys.	This village has one karez and one spring. This karez supplies 70 families and irrigates 50 jeribs of land. The soil type is gravel and erosion is moderate. The karez needs cleaning and its wells need re-digging. The spring supplies 20 families and irrigates 5 jeribs of land. It needs cleaning and digging.	Karez 10,000 Spring 4,000		
Siad Khel سید خیل WD-Jal-052	Pop. 900 Total.2000 j Irrig.500 j	N 34.46285 E 68.73068 Alt. 2306 m	100 out of 130 households depend on agriculture and 130 benefit from irrigation. The soil type is sandy. 500 out of 2,000 jeribs of land are irrigated agricultural land with 250 jeribs cultivated. The income of 130 families comes from growing cash crops. There are 40 jeribs of wheat, 10 jeribs of onion, 100 jeribs of fruit, 40 jeribs of animal feed, and 30 jeribs of potatoes. There are 30 cows, 60 sheep and	This village has two karez. The New karez supplies 130 families and irrigates 250 jeribs of land. The soil type is gravel and erosion is moderate. This karez is clogged with mud and stones and needs cleaning. The Old karez supplies 150 families and irrigates 30 jeribs of land. The soil type is gravel and erosion is moderate. The canal of this karez needs concreting	Two Karez New karez 40,000 Old karez 32,000		

Name: Village	Population Jeribs Of	GPS N E Altitude (M)	Village Description	Water Supply	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
			goats, and 3 donkeys.	and its wells need re-digging and cleaning.			

7. Physical Description of Canals, Karez and other components

Name: Village Item	Type	GPS (Of Exit) N E Altitude (M)	Description	Condition & Repairs Needed	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
Esmael Khel	Jowe Shuda Bra Gul Canal	N 34.46649 E 68.70178 Alt. 2304 m	5,000m long canal supplies 550 households and irrigates 3,750 jeribs of land. The canal is shared between 6 villages. There are trees around this canal. The irrigation system is flood. The water is potable.	This canal has leaks and blockages. Cleaning and repairing is needed.	50000	91 per families	13.33
Tundara	Tundara village karez	N 34.43626 E 68.5627 Alt. 2531 m	This karez supplies 150 households and irrigates 700. The soil type is silt and erosion is moderate. The water is potable.	The shafts of this karez are full of mud and stones. Cleaning and repairing is recommended.	20000	133	28,57
Dara-i-Masjed	Tala Sheer Beek spring	N 34.47583 E 68.52923 Alt. 2696 m	This spring supplies 180 households and irrigates 500 jeribs of land irrigated by this spring. Erosion is moderate above the spring area. The water is potable.	The channel of this spring is full of mud and stones. Cleaning and repairing is recommended.	60000	333	120
Akhund Khil Ala	Do Asyab Canal	N 34.44799 E 68.72102 Alt. 2330 m	2,000m long canal supplies 800 households and irrigates 1,600 jeribs of land. Some grasses and vegetation are visible on the two sides of the	This canal has leaks and blockages. Cleaning the canal and concreting of the leaky sections is needed.	22000	275	13

Name: Village Item	Type	GPS (Of Exit) N E Altitude (M)	Description	Condition & Repairs Needed	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
			canal. The canal is shared between 7 villages. The irrigation system is flood. The water is not potable.				
Tundara-i-Khushk	Tundara Kushkak Karez	N 34.43242 E 68.55121 Alt. 2552 m	This karez supplies 50 households and irrigates 600 jeribs of land. The soil type is gravel and erosion is moderate. The irrigation system is flood. The water is potable	This karez is full of mud and stones. Cleaning and concreting of reservoir is recommended.	15000	300	25
Malik Khel	Khuja Mubark Spring	N 34.53275 E 68.6408 Alt. 2564 m	This spring supplies 200 households and irrigates 100 jeribs of land. The soil erosion is heavy. The irrigation system is flood. Some grasses are visible on both sides of canal. The water is potable.	This spring is full of mud and stone and the channel has leaks and wastes much water. Cleaning and concreting of the leaks is necessary.	5000	25	50
Pule Shah	Jowe Khak Canal	N 34.5369 E 68.66186 Alt. 2526 m	This canal supplies 4,000 households and irrigates 6,000 jeribs of land. Forestry trees are visible on the two sides of the canal. This canal is shared between 5 villages. The irrigation system is flood. The water is potable.	This canal has leaks and blockages. Cleaning the canal and concreting of leak places is Recommended.	35000	8,75	5.33

Name: Village Item	Type	GPS (Of Exit) N E Altitude (M)	Description	Condition & Repairs Needed	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
Khushk Karmenj	Qole Khushk Karsanj Karez	N 34.5726 E 68.67474 Alt. 2696 m	This karez supplies 100 households and irrigates 200 jeribs of land The soil type is clay and there is no erosion in the area. The water is potable.	The canal of this karez wastes much water. Cleaning and concreting of the canal of this karez is recommended.	40000	400	200
Jaghani	Sarferaz spring	N 34.4382 E 68.5826 Alt. 2506 m	This spring supplies 400 households and irrigates 800 jeribs of land. There are a lot of trees on the two sides of the canal of this spring. The water is potable.	This spring was flood damaged and is clogged with mud and stones. Cleaning and concreting of the canal is recommended.	8000	20	10
Dara Alem	Dara Alam Asya Canal	N 34.495 E 68.785 Alt. 2502 m	This canal supplies 1500 households and irrigates 500 jeribs of land. Forestry trees and grasses grow on the two sides of the canal. This canal is shared between 40 villages. The irrigation system is flood. The water is potable.	50 meter of the canal is completely destroyed by flood and also the rest of the canal is full of mud and stones. Cleaning and concreting of leaking sections and also reconstruction of the damaged sections is recommended.	20000	13.33	40
Qole-i-Duwlat	Tala-i-Gardi karez	N 34.48758 E 68.55514 Alt. 2800 m	This karez supplies 165 households and irrigates 310 jeribs. Te soil type is gravel and erosion is moderate. There are some forestry trees growing on the two sides of the canal of this karez. The irrigation system in the village is flood. The water is potable.	The canal of this karez leaks and wastes much water. Cleaning of karez and concreting of the leak places is recommended.	40000	242	129

Name: Village Item	Type	GPS (Of Exit) N E Altitude (M)	Description	Condition & Repairs Needed	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
Gerdee	Perakha Tala Spring	N 34.52134 E 68.56848 Alt. 3212 m	This spring supplies 8,000 households and irrigates 1,000 jeribs of land. The soil type is sandy and there is no erosion in the area. There are forestry trees and grasses growing on the two sides of the canal of this spring. The water is potable.	This spring is full of mud and stones and the canal of this spring leaks. Cleaning of the spring and concreting of the canal of this spring is recommended.	200000	25	200
Tougher	Jowe Mir Canal	N 34.43538 E 68.51431 Alt. 2510	2,000 meter long canal supplies 1,500 households and irrigates 1,350 jeribs of land. The irrigation system is flood in the village. There are some grasses and forestry trees growing on the two sides of the canal. The water is potable.	This canal is full of mud and stones and leaks. Cleaning and concreting of the leaking sections is needed.	30000	20	22.22
Scorch Qala	Kulangak Karez	N 34.57212 E 68.69762 Alt. 2682 m	This karez supplies 800 households and irrigates 300 jeribs of land There are some grasses and forestry trees growing on the two sides of this karez. The irrigation system is flood in the village. The water is potable.	This karez was badly damaged by floods and its canal leaks. Cleaning and concreting of the leaking places is recommended.	60000	75	200

Name: Village Item	Type	GPS (Of Exit) N E Altitude (M)	Description	Condition & Repairs Needed	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
Qala-i-Kohna	Jafar tayar Spring	N 34.43612 E 68.51378 Alt.2518 m	This spring supplies 3,500 households and irrigates 250 jeribs of land. There is no erosion in the area. There are some grasses and forestry trees on the two sides of canal of this spring. The irrigation system is flood in the village. The water is potable.	The canal of this spring leaks and wastes much water. The spring is full of mud and stones. Cleaning and concreting of the canal and also concreting of the reservoir of this spring are recommended.	20000	5,71	80
Kasan	Jowe Kasan Canal	N 34.46627 E 68.67601 Alt. 2033 m	1,500 meter long canal supplies 1,210 households and irrigates 2,000 jeribs of land. There are some forestry trees on both sides of canal. The irrigation system is flood in the village. The water is potable.	The canal leaks and has damaged sections and blockages. Cleaning and repair of the leaks is recommended.	8000	7	4
Qaleh-ye-Jabar	Jowe Muskan Karez	N 34.51494 E 68.81909 Alt. 2663 m	This Karez supplies 720 households and irrigates 700 jeribs of land. The soil type is clay and erosion is heavy in the area. There are a lot of grasses and forestry trees on both sides of the canal of this karez. The irrigation system is flood.	This karez has blockages and damaged sections Cleaning and repair of these is recommended.	30000	42	43

Name: Village Item	Type	GPS (Of Exit) N E Altitude (M)	Description	Condition & Repairs Needed	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
Dahan Neek	Ban-i-Sang spring	N 34.44934 E 68.50583 Alt. 2568 m	This spring supplies 1,000 households and irrigates 1,000 jeribs of land. There is no erosion of soil in the area. There is Alf Alfa and grasses on both sides of the canal of this spring. Most of the irrigation is drip system The water is potable.	This spring is closed by stones and mud and its canal wastes much water. Cleaning and repair of this canal is recommended.	500000	500	500
Qala Mansor	Asya Canal	N 34.48061 E 68.63L877 Alt. 2328 m	This canal supplies 1,500 households and irrigates 1,200 jeribs of land. The irrigation system is flood in the village. There are a lot of trees and grasses on the two sides of the canal. The water is potable.	Some sections of the canal are damaged and blocked. Cleaning and repair are recommended. The villagers want to develop a drip irrigation system.	16000	11	13.33
Dahan Neek	Neek Karez	N 34.45206 E 68.5158 Alt. 2592 m	This karez supplies 800 households. The soil type is gravel and erosion is moderate. The irrigation system is flood. There are grasses on the two sides of the canal. The water is potable.	The Karez has blockages and is full of mud and stones as well as damaged sections. Cleaning and repair of the damaged places and also the building of a reservoir is r0ecommended.	60000	75	
Qaleh-ye-Jabar	Hanna Spring	N 34.5099 E 68.81688 Alt. 2615 m	This spring supplies 600 households and irrigates 200 jeribs of land. Erosion is moderate in the area. The irrigation system is flood. There are some grasses and **Alf Alfa**	This spring is full of mud and stone and its canal is damaged by recent floods. Cleaning, digging and repairing of the damaged sections are	10000	17	50

Name: Village Item	Type	GPS (Of Exit) N E Altitude (M)	Description	Condition & Repairs Needed	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
			on the two sides of the canal of this spring. The water is potable.	recommended.			
M Nur Khel	Bayee Khan Canal	N 34.64915 E 68.66191 Alt. 2329 m	8000 m long canal supplies 1,200 households and irrigates 3,600 jeribs of land. This canal is shared between 10 villages. The irrigation system is flood in the village. There are some grasses and Alfalfa on the two sides of this canal. The water is potable.	The canal wastes much water and some parts are flood damaged. Cleaning and concreting of the damage is recommended.	80000	67	22.22
Jaghani	Haji Guldali Karez	N 34.43705 E 68.58301 Alt. 2514 m	This karez supplies 400 households and irrigates 800 jeribs of land. The irrigation system is flood in the villages. There are some grasses and forestry trees on the two sides of the canal of this karez. The water is potable.	Some sections of the karez are flood damaged and it has blockages. Cleaning and concreting of the damaged is recommended.	10000	25	12.5
Baghe Lang	hashm Jowee Qabla Spring	N 34.44576 E 68.58464 Alt. 2455 m	This spring supplies 660 households and irrigates 70 jeribs of land. Erosion is moderate. The irrigation system is flood in the village. There are some grasses and Alfalfa	The spring is clogged with mud and stones and its canal leaks and was damaged by past floods. It wastes much water. Cleaning and concreting of the damage and leaks is	15000	23	214.28

Name: Village Item	Type	GPS (Of Exit) N E Altitude (M)	Description	Condition & Repairs Needed	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
			on the two sides of the canal of this spring. The water is potable.	recommended.			
Qala-i-Kohna	jowe Zyarat Canal	N 34.43612 E 68.51378 Alt. 2518 m	This canal supplies 1,000 households and irrigates 5,000 jeribs of land. It is shared between 5 villages. The irrigation system is flood and furrow in the village. There are some grasses and Alfalfa on both sides of canal. The water is potable	Every year this canal is damaged by floods and filled with mud and stones. It also leaks and its source is flood damaged. Cleaning and concreting of the damage is recommended.	400000	400	80
Safyan	Safyan karez	N 34.473 E 34.473 Alt. 2420	This karez supplies 23 0 households and irrigates 80 jeribs of land. The soil type is gravel and there is no erosion. The irrigation system is flood in the village. There are grasses and trees on the two sides of the canal of this karez. The water is potable.	This karez is blocked with stones and mud and also some sections are badly damaged. Cleaning and concreting of the damage is recommended.	10000	44	125
Dary Alem	Haji amir Hasan spring		This spring supplies 400 households and irrigates 200 jeribs of land. Soil erosion is moderate in the area. The irrigation system is furrow.	The canal of this spring has blockages and leaks and the spring itself is full of mud and stones. Cleaning, concreting of the leaks	20000	50	50

Name: Village Item	Type	GPS (Of Exit) N E Altitude (M)	Description	Condition & Repairs Needed	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
			There are some poplar trees on the two sides of the canal of this spring. The water is potable.	and digging of the spring are recommended.			
Rahman Khel	Landi Wyala Canal	N 34.44982 E 68.77607 Alt . 2245 m	3,000 m long canal supplies 800 households and irrigates 1,200 jeribs of land. This canal is shared between 6 villages. The irrigation system is flood. There are some grasses and forestry trees on the two side of the canal. The water is potable.	This canal leaks and has blockages. It is full of mud and stones. Cleaning and concreting is recommended.	20000	25	17
Dara-i-Zyarat	Dara-i-Zyarat Karez	N 34.4798 E 68.67911 Alt. 2414 m	This karez supplies 214 households and irrigates 1,000 jeribs of land. The soil type is gravel and erosion is moderate. There are some trees on the two sides of canal of this karez. The irrigation system is flood. The water is potable.	The reservoir and wells of this karez and the karez itself have been badly damaged by recent floods. Its canal leaks. Cleaning and repair of the karez and its wells and the concreting of the reservoir are recommended.	2000	9	2
Qulle Khudaydad	Sia Khak spring	N 34.42261 E 68.46683 Alt. 2698 m	This spring supplies 300 households and irrigates 100 jeribs of land. The irrigation system is ruler. There are some grasses on the two sides of the canal of this spring. The water is potable.	The canal of this spring has a lot of leaks and blockage and also the spring is damaged by flood and the canal has grasses. Cleaning and concreting of the damaged places and digging of the spring are Recommended.	50000	167	500

Name: Village Item	Type	GPS (Of Exit) N E Altitude (M)	Description	Condition & Repairs Needed	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
Jaghani	Dahan Dorgi Canal	N 34.4271 E 68.8583 Alt.	950 m long canal supplies 400 households and irrigates 800 jeribs of land. 3 villages share this canal. The irrigation system is flood. There are some grasses and forestry trees on the two sides of this canal. The water is potable.	The canal is flood damaged leaks and has blockages. Repair of the damage and cleaning of canal is recommended.	13000	32.5	16.25
Said Khel	Old Karez	N 34.4664 E 68.7966 Alt. 2318 m	This karez supplies 150 households and irrigates 30 jeribs of land. The irrigation system is mainly flood with some furrow. There are some grasses and trees on the two sides of the canal of this karez. The water is potable.	The canal of this karez leaks and has blockages. The karez is also full of stones and mud. Cleaning of the karez and repair of the canal is recommended.	32000	213	1066
Safyan	Tajowe Safyan Spring		This spring supplies 300 households and irrigates 200 jeribs of land. The irrigation system is flood. There are a lot of trees on the two sides of the canal of this spring. The water is potable.	The spring is blocked and damaged by recent floods and the canal of the spring wastes much water. Cleaning and digging of this spring, cleaning of its canal and concreting of that is recommended.	12000	40	60

Name: Village Item	Type	GPS (Of Exit) N E Altitude (M)	Description	Condition & Repairs Needed	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
Qaleh-ye-Jabar	Abdul Jabar Canal	N 34.50528 E 68.81027 Alt. 2553 m	500 m long canal supplies 720 households and irrigates 2,800 jeribs of land. This canal is shared by 5 villages. The irrigation system is ruler. There are poplar trees on the two side of canal. The water is potable.	The canal and its source were damaged by floods and the canal leaks. Cleaning and repair of the canal and concreting of the damaged sections is recommended.	18000	25	6.42
Dara-i-Masjed	Jalrez River Karez		This karez supplies 150 households and irrigates 1,600 jeribs of land. There are a lot of grasses and trees on the two sides of the canal. The soil type is sandy and erosion is moderate. The irrigation system is flood with some furrow. The water is potable.	The canal of this karez leaks and has blockages. The karez is blocked by stones and mud. Cleaning of the karez, concreting of the canal and cleaning of the canal is recommended.	50000	333	31.25
Qalleh-ye-Malik	Chill Spring	N 34.45376 E 68.58459 Alt. 2427 m	This spring supplies 230 households and irrigates 100 jeribs of land. There is no erosion in the area. The irrigation system is flood. There are some grasses on the two sides of the canal. The water is potable.	The spring is clogged with mud and stones. The canals of this spring leak and waste much water. Cleaning and digging of the spring and also concreting of the canals is recommended.	10000	43.47	100
Seyah Petab	Jowe Band Rigi Canal	N 34.4557 E 68.58385 Alt. 2414 m	5,000 m long canal supplies 565 households and irrigates 740 jeribs of land. This canal is shared between 2 villages.	The canal wastes much water and has blockages. Cleaning and repair is recommended.	20000	35.39	27

Name: Village Item	Type	GPS (Of Exit) N E Altitude (M)	Description	Condition & Repairs Needed	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
			The irrigation system is flood. There are some grasses and forestry trees on both sides of canal. The water is potable.				
Said Khel	New Karez	N 34.48519 E 68.7324 Alt. 2331 m	This karez supplies 130 households and irrigates 250 jeribs of land. The soil type is gravel and erosion is moderate in the area. There are some trees on both sides of canal. The irrigation system is flood in the village.	The karez is full of mud and stone. Cleaning and concreting is recommended.	40000	308	160
Qalleh-ye-Malik	Qala Malik Spring	N 34.45376 E 68.58459 Alt. 2427 m	This spring supplies 180 households and irrigates 20 jeribs of land. The irrigation system is flood in the village. There are some grasses and trees on both sides of canal.	The spring is blocked by stone and mud and the canal has leaks and wastes much water. Cleaning and digging of spring as well as cleaning and concreting of the canal are recommended.	10000	55	500
Kota Malik	Jowe Kham Canal.	N 34.4407 E 68.55285 Alt. 4000 m	This canal supplies 450 households and irrigates 1,500 jeribs of land. This canal is shared by 4 villages. The irrigation system is flood. There are some grasses and Alfalfa on both sides of canal. The water is potable.	Some sections of this canal were damaged by flood and have leaks and blockages. Cleaning and repair of the damage and concreting of the leaks is recommended.	30000	66.66	20

Name: Village Item	Type	GPS (Of Exit) N E Altitude (M)	Description	Condition & Repairs Needed	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
Qole-i-Payeen	Sar reege karez	N 34.5052 E 68.7843 Alt. 2588 m	This karez supplies 150 households and irrigates 150 jeribs of land. The soil types are sand and gravel in the area and erosion is moderate. The irrigation system is ruler. There are some grasses on both sides of the canal. The water is potable.	This karez has blockages and damaged sections. Cleaning of the karez and concreting of the damaged sections is recommended.	20000	133	133
Qole-i-Duwlat	Zir kota safid Spring	N 34.4787 E 68.55315 Alt. 2697	This spring supplies 165 households and irrigates 150 jeribs of land. Erosion of soil is moderate in the area. The irrigation system is flood. There are some grasses on the canal. The water is potable.	This spring is full of mud and stones and its canal has leaks and damaged sections. Cleaning and concreting of the canal is recommended.	20000	121	133
Qaleh-ye-Fati	Qala Fatih Canal	N 34.4698 E 68.7772 Alt. 2321 m	5,000 m long canal supplies 450 households and irrigates 700 jeribs of land. This canal is shared by 6 villages. The irrigation system is flood with some furrow. There are some grasses and poplar trees on both sides of canal. The water is potable.	This canal has leaks and damaged sections and has some blockages. Cleaning and concreting of the damage are recommended.	45000	100	64.28

Name: Village Item	Type	GPS (Of Exit) N E Altitude (M)	Description	Condition & Repairs Needed	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
Kanda	Zyarat karez	N 34.52421 E 68.81733 Alt. 2757 m	This karez supplies 120 households and irrigates 200 jeribs of land. The soil type is clay and there is no erosion in the area. The irrigation system is furrow in the village. There are some poplar trees on both sides of canal. The water is potable.	This karez has blocked and damaged sections and its canal has leaks and damage. Cleaning and repair of the leaks and damaged sections is recommended. The villages would like to concrete both sides of this karez.	15000	125	75
Sokhta Village	Sar Pori Spring	N 34.38932 E 68.46076 Alt. 2809 m	This spring supplies 150 households and irrigates 100 jeribs of land. The soil type is sandy and erosion is heavy in the area. The irrigation system is furrow in the village. There are some trees on both sides of canal. The water is potable.	The canal of this spring has leaks and wastes much water. The spring is full of mud and stones. Cleaning and repairing of the damaged sections and leaks is recommended. The villagers have suggested a pipe for drip irrigation from the source to the field.	20000	133	200
Qala-e-Sabz -i-Miyana	Shahed Canal	N 34.43026 E 68.53678 Alt. 2602 m	This canal supplies 350 households and irrigates 1,000 jeribs of land. This canal is shared between 5 villages. There are some grasses on both sides of canal. The irrigation system is flood with some underline irrigation methods. The water is potable.	This canal is damaged by flood every year and is full of mud and stones. It also has leaks and blockages. Cleaning and repair of the damage, concreting of the leaky sections and the damaged places is recommended.	25000	71	25

Name: Village Item	Type	GPS (Of Exit) N E Altitude (M)	Description	Condition & Repairs Needed	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
Bala Qala	Bebe Koshta karez	N 34.5158 E 68.7748 Alt. 2714 m	This karez supplies 100 households and irrigates 20 jeribs of land. The soil type is gravel and erosion is moderate. They use the line irrigation system in the village. There are some grasses and trees on both sides of the canal of this karez. The water is potable.	Some sections of the karez are badly damaged and closed by mud and stone. The karez channel wastes much water and leaks. Cleaning and concreting of the damaged sections and concreting of the leaks are recommended.	20000	200	1000
Qole-i-Payeen	Sar Ghaur Spring	N	This spring supplies 150 households and irrigates 40 jeribs of land. The irrigation system is ruler in the village. There are some grasses and trees on both sides of the canal. The water is potable.	This spring is full of mud and stone and the canal leaks and wastes much water. The spring doesn't have a reservoir. Cleaning and digging of the spring, cleaning and concreting the canal and building a reservoir is recommended.	5000	33	125
Khushk Karmenj	Sar Asyab River Canal	N 34.56964 E 68.6886 Alt. 2000	This canal supplies 304 households and irrigates 2,000 jeribs of land. This canal is shared between 2 villages. The irrigation system is flood. There are some grasses and forestry trees on both sides of this canal. The water is potable.	The dam of this canal is damaged and the canal has leaks and wastes much water. Cleaning and concreting of the dam and concreting of the damaged sections of the canal are recommended.	15000	49	7.5

Name: Village Item	Type	GPS (Of Exit) N E Altitude (M)	Description	Condition & Repairs Needed	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
Tanka Lech	Khaza Karez	N 34.45349 E 68.5581 Alt. 2486 m	This karez supplies 100 households and irrigates 180 jeribs of land. The soil type is gravel and erosion is heavy. There are some grasses and trees on both sides of canal and under the canal. The water is potable.	The karez is blocked by stones and mud and its wells are badly damaged. Cleaning of the karez, re-digging and concreting of the wells is recommended.	20000	200	111
Bala Qala	Amir M Spring	N	This spring supplies 150 households and irrigates 200 jeribs of land. Erosion is moderate in the area. They used the ruler irrigation system. There are some grasses along the canal of this spring. The water is potable.	Some parts of the canal of this spring were damaged by flood and it is full of mud and stone. Cleaning of the canal and concreting of the damage is recommended.	30000	200	150
Sharukh	Jowe Gada Canal	N 34.46255 E 68.62659 Alt. 2366 m	4.000 m long canal supplies 250 households and irrigates 1000 jeribs of land. This canal is shared by 3 villages. The irrigation system is flood. There are some grasses and trees on both sides of canal. The water is potable.	This canal has leaks and wastes much water and some parts are flood damaged. Cleaning and concreting of the damage is recommended.	35000	140	35
Ahmad Zee Village	Ahmad Zee Karez	N 34.34472 E 68.6108 Alt. 2420 m	This karez supplies 95 households and irrigates 25 jeribs of land. The soil types are clay and sand and there is no erosion in the area. There are no trees or grasses near	The canals of this karez waste much water and have leaks and flood damage. The karez has blockages and stones. Cleaning, concreting of the karez	15000	158	600

Name: Village Item	Type	GPS (Of Exit) N E Altitude (M)	Description	Condition & Repairs Needed	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
			the canal of this karez. A furrow irrigation system is used. The water is potable.	and the leaks and damaged places of canal are recommended.			
Qala-i-Aslam	Dara-i-Dastgeen Spring	N 34.40987 E 68.52482 Alt. 2651	This spring supplies 150 households and irrigates 200 jeribs of land. The erosion of soil is moderate. There are some trees on both sides A furrow irrigation system is used. The water is potable.	The canal of this spring has leaks and flood damage. The spring is clogged with mud and stones and some sections are damaged. Cleaning and concreting of the damage and also concreting of the leaking sections are recommended.	70000	467	350
Malik Khel	Khuja Mubarak Canal	N 34.52788 E 68.65109 Alt. 2503	2,000 m long canal supplies 220 households and irrigates 100 jeribs of land. This canal is shared by 3 villages. The irrigation system is flood and sometimes furrow. There are some grasses and Alfalfa on both sides of the canal. The water is potable.	This canal has leaks and damaged sections. Cleaning of the canal and concreting of the damage is recommendation.	20000	91	200
Poshta Mazar	Qole-i-Zarif Karez	N 34.44043 E 68.50274 Alt. 2608 m	This karez supplies 90 households and irrigates 100 jeribs of land. The soil type is gravel and erosion is moderate. The irrigation system is flood. There are some grasses on both sides of the canal.	The wells of this karez are full of mud and stones and the karez has blockages and damaged sections. Cleaning and concreting of the damaged places are recommended.	15000	166	150

Name: Village Item	Type	GPS (Of Exit) N E Altitude (M)	Description	Condition & Repairs Needed	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
			The water is potable.				
Kanda	Alif Spring	N 34.52028 E 68.82032 Alt .2722 m	This spring supplies 120 households and irrigates 100 jeribs of land. Erosion is moderate. The irrigation system is furrow. There are some grasses and poplar trees around the spring. The water is potable.	The spring has collapsed and is full of mud and stones. Cleaning and installing a pipe for the water is recommended.	10000	83	100
Qole-i-Payeen	Sar Reeg Canal	N 34.5033 E 68.7843 Alt. 2549 m	3000 m long canal supplies 150 households and irrigates 200 jeribs of land. This canal is used by one village. The irrigation system is flood. There are some grasses and forestry trees on both sides of canal. The water is potable.	100 m canal is very badly damaged and the rest of the canal has leaks and blockages. Cleaning and concreting of the damage are recommended.	10000	67	50
Akhund Khil Ala	Sheekh Ali Karez	N	This karez supplies 70 households and irrigates 1,500 jeribs of land. The soil type is gravel and there is no erosion of soil. The irrigation system is flood. There are some grasses and alfalfa near the canal. The water is potable.	This karez is full of mud and stone and the shafts of the karez are closed by flood damage. Cleaning of the shafts and karez and also cleaning and concreting of the reservoir are recommended.	6000	86	4

Name: Village Item	Type	GPS (Of Exit) N E Altitude (M)	Description	Condition & Repairs Needed	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
Qwm Jamil	Zer Qala Now Spring	N 34.4569 E 68.5379 Alt. 2542	This spring supplies 80 households and irrigates 30 jeribs of land. The erosion of soil is heavy. The irrigation system is flood. There are some grasses, Alfalfa and trees on both sides of canal. The water is potable.	The spring is full of mud and stones and the canal has leaks and blockages. Cleaning of the spring and concreting of the leaking areas of the canal is recommended.	40000	500	1333
Qalleh-ye-Malik	Canal	N 34.54213 E 68.58208 Alt. 2414 m	1,000 long canal supplies 230 households and irrigates 1,280 jeribs of land. This canal is shared by 3 villages. There are some grasses and trees on both sides of canal. The water is potable.	This canal has leaks and blockages and wastes much water. Cleaning and concreting of the damaged sections is recommended. The villagers would like a drip irrigation pipe from the source to the field.	30000	130	23.43
Karez	Siadano Karez	N 34.45425 E 68.57047 Alt.2469	This karez supplies 70 households and irrigates 50 jeribs of land. The soil type is gravel and erosion is moderate. The irrigation system is flood. There are no trees and grasses here. The water is potable.	The canal of this karez has leaks and blockages and wastes much water. Cleaning of the karez, concreting of the canal and damaged sections of the karez and re-digging of the wells of the karez are recommended.	10000	143	200
Tanka Lech	Tang Leech Spring		This spring supplies 100 households and irrigates 30 jeribs of land. The irrigation system is flood. There are some trees on both sides of canal. The water is potable.	The canal of this spring wastes much water and leaks and it is full of mud and stone. Cleaning and concreting of the canal and also digging of the spring are recommended.	10000	100	333

Name: Village Item	Type	GPS (Of Exit) N E Altitude (M)	Description	Condition & Repairs Needed	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
Poshta Mazar	Canal	N 34.44043 E 68.50274 Alt. 2608 m	2,000 m long canal supplies 120 households and irrigates 500 jeribs of land. This canal shared by 2 villages. The irrigation system is flood. There are some grasses on both sides of canal.	This canal has leaks and wastes much water. Some parts are very badly damaged. Cleaning and concreting of the damaged are is recommended.	10000	83	20
Qala Feezo	Qala Feezo Karez	N 34.45503 E 68.76034 Alt. 2264 m	This karez supplies 70 households and irrigates 170 jeribs of land. The irrigation system is flood. The soil type is clay and there is no erosion in the area. The water is potable.	This karez has blockages and the canal of this karez has leaks. Cleaning of the karez and canal and concreting of the damaged places and leaks is recommended.	10000	143	59
Qala Feezo	Qala Feezo Spring	N 34.45407 E 68.76204 Alt .2252 m	This spring supplies 70 households and irrigates 30 jeribs of land. There is no erosion of soil in the area. The irrigation system is flood. There are a lot of trees around the spring. The water is potable.	The spring is full of mud and stones and its canal has leaks. Cleaning of the spring and canal and also concreting of the damaged sections is recommended.	7000	100	233
Bala Qala	Sar Reeg Canal	N 34.7608 E 68.5086 Alt. 2635 m	500 m long canal supplies 100 households and irrigates 100 jeribs of land. The irrigation system is line. There are some grasses and trees on both sides of canal The water is potable.	100 m canal is very badly damaged and some parts are leaking and blocked. Cleaning and repairing of the canal is recommended.	8000	80	80

Name: Village Item	Type	GPS (Of Exit) N E Altitude (M)	Description	Condition & Repairs Needed	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
Qole Wardak	Qole Wardak karez	N 34.48559 E 68.61774 Alt.2431 m	This karez supplies 60 households and irrigates 100 jeribs of land. The soil type is gravel and erosion is moderate. The irrigation system is flood and some furrow irrigation system also. There are some grasses and trees around the karez and canal. The water is potable.	This karez has blockages and damaged sections. Cleaning the karez and repairing of the damaged sections is recommended.	18000	300	180
Da Qalander	Qaber Nargan Spring	N 34.44718 E 68.5872 Alt. 2475 m	This spring supplies 60 households and irrigates 10 jeribs of land. The irrigation system is flood. There are some trees around the canal. The water is potable.	The spring is full of mud and stones and the canal of this spring has leaks and damaged sections. Cleaning and repairing are recommended.	20000	333	2000
Kanda	Kohna Daa Canal	N 34.51601 E 68.8204 Alt. 2675 m	400 m long canal supplies 60 households and irrigates 400 jeribs of land. This canal is shared by 4 villages. There are some grasses and poplar trees around the canal. The irrigation system is flood. The water is potable.	The water of this canal is not flowing correctly and it has some leaks and blockages. The building of a wall to collect water for the canal, concreting the damaged places and leaking places, and cleaning the canal are recommended.	5000	83	12,5
Qole Lali	Qole Lali Karez	N 34.48075 E 68.66483 Alt. 2452 m	This karez supplies 60 households and irrigates 35 jeribs of land. The soil type is gravel and there is no erosion in the area. The irrigation system is flood. There are some grasses and trees	This karez has blockages and is full of mud and stones. Its canal has leaks. Cleaning and concreting of the damaged places and leaking sections are recommended.	8000	133	288

Name: Village Item	Type	GPS (Of Exit) N E Altitude (M)	Description	Condition & Repairs Needed	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
			around the karez. The water is potable.				
Asbab	Pami Spring	N 34.22395 E 68.44041 Alt. 3028 m	This spring supplies 50 households and irrigates 10 jeribs of land. The irrigation system is flood. There are some grasses and trees around the spring and canal. The water is potable.	The spring and its canal are full of mud and stones and the canal is leaking. Cleaning and concreting of the leaking areas and repair of the damage are recommended.	16000	320	1600
Baghe Lang	Bagh Langar Canal	N 34.44859 E 68.56906 Alt. 4000 m	This canal supplies 31 households and irrigates 100 jeribs of land. This canal is shared by 31 villages. The irrigation system is flood and sometimes furrow is also used. There are some grasses and trees around the canal. The water is potable.	This canal has leaks and wastes much of the water. It also has some damaged sections. Cleaning, concreting and repair of the damage are recommended.	10000	332	100
Qole Baston	Mousqe Karez	N 34.4482 E 68.69699 Alt. 2387 m	This karez supplies 50 households and irrigates 20 jeribs of land. The soil type is gravel and erosion is moderate in the area. The irrigation system is flood. There are some grasses and trees around the karez and canal. The water is potable.	The karez has blockages and damaged sections and the canal has leaks. Cleaning and repair of the damage, concreting of the leaking sections and the re-digging the wells of the karez are recommended.	15000	300	750

Name: Village Item	Type	GPS (Of Exit) N E Altitude (M)	Description	Condition & Repairs Needed	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
Qole Wardak	Qole Wardak Spring	N 34.48315 E 68.61332 Alt. 2552 m	This spring supplies 60 households and irrigates 100 jeribs of land. Erosion is moderate. The irrigation system in the village is flood with some ruler irrigation also. There are some grasses and poplar trees around the spring and canal. The water is potable.	This spring is full of mud and stone and the canal has leaks and damaged sections. Cleaning of the spring and canal, concreting of the leaks and repair of the damaged sections is recommended.	20000	333	200
Qole Lali	Bar Kali Karez	N 34.48238 E 68.66506 Alt. 2508 m	This karez supplies 60 households and irrigates 35 jeribs of land. The soil type is gravel and erosion is moderate. The irrigation system is flood. There are some grasses around the canal. The water is potable.	This karez has blockages and damaged sections and its canal has leaks. Cleaning and concreting of the leaks and repair of the damage is recommended.	8000	133	228
Qole Lali	Lowi Khwar Spring	N 34.48253 E 68.66395 Alt.2498 m	This spring supplies 60 households and irrigates 10 jeribs of land. The erosion is moderate. The irrigation system is flood. There are some trees and grasses around the spring and canal. The water is potable.	The canal of this spring has leaks and blockages and the spring itself is full of mud and stones from flood damage. Cleaning and repair of the damage and concreting of the leaks places are recommended.	7000	117	700
Qole Hidar Khan	Hidar Khan Karez	N 34.47223 E 68.68501 Alt. 2383 m	This karez supplies 50 households and irrigates 20 jeribs of land. The soil type is gravel and erosion is heavy above the karez area. The irrigation system is flood.	This karez is full of mud and stones and its canal has leaks and blockages. Cleaning of the karez and canal and concreting of the leaks are	12000	240	600

Name: Village Item	Type	GPS (Of Exit) N E Altitude (M)	Description	Condition & Repairs Needed	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
			There are some grasses and trees around the canal and karez. The water is potable.	recommended.			
Kharoti Alya	Nazrak Spring	N 34.48815 E 68.63026 Alt. 2448	This spring supplies 60 households and irrigates 6 jeribs of land. Erosion of soil is moderate. The irrigation system is ruler. There are some grasses and trees around the canal and spring. The water is potable.	The canal of this spring has leaks and blockages and the spring is full of mud and stone. Cleaning and concreting of the damage in the canal and cleaning and digging of the spring are recommended.	8500	142	1416
Qala Abdul Jabar	Qala Abdul Jabar Karez	N 34.4572 E 68.639 Alt. 2448 m	This karez supplies 25 households and irrigates 5 jeribs of land. The soil type is gravel and erosion is heavy. The irrigation system is flood. There are some poplar trees around the canal and karez. The water is potable.	This karez is full of mud and stone and the canal has leaks and damaged sections. Cleaning of the karez and repair of the damaged places and concreting of the leaking areas are recommended.	7000	280	1400
Qala Abdul Jabar	Qala Abdul Jabar Spring	N 34.45268 E 68.63742 Alt. 2473 m	This spring supplies 50 households and irrigates 5 jeribs of land. The soil erosion is moderate. The irrigation system is flood. There are some poplar trees around the canal and spring. The water is potable.	The canal of this spring has leaks and blockages and is full of mud and stone. The spring is also full of mud and stone. Cleaning and concreting of the leaks and damaged places and also cleaning of the spring are recommended.	3000	60	600

Name: Village Item	Type	GPS (Of Exit) N E Altitude (M)	Description	Condition & Repairs Needed	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
M Nur Khel	Qole Khujak Karez	N	This karez supplies 25 households and irrigates 5 jeribs of land. The soil type is gravel and there is no erosion. There are some grasses and Alfalfa around the karez and canal. The irrigation system is flood in the village. The water is potable.	The karez is full of mud and stones as is its canal. Cleaning of the karez and canal and also cleaning the wells of the karez and concreting of the reservoir are recommended.	4000	160	800
Qaleh-ye-Fati	Dand Spring	N 34.4798 E 68.7893 Alt. 2384 m	This spring supplies 200 households. The irrigation system is flood. There are some grasses and Alfalfa near the canal of the spring. The water is potable.	Some parts of the canal of this spring are damaged by flood and the canal has leaks and blockages and it wastes much water. Cleaning of the spring and canal and concreting of the damaged places and leaking areas are recommended.	20000	100	
Towghari	Kota Shah Khan Karez	N 34.4347 E 68.54274 Alt. 2527 m	This karez supplies 16 households. The soil types are gravel and sand and there is no erosion. The irrigation system is flood. There are some grasses around the canal and karez. The water is potable.	The canal of this karez has leaks and blockage and its reservoir also leaks. The karez is full of mud and stones. Cleaning of the karez and canal, concreting of damaged places and leaks and also concreting of the reservoir are recommended.	15000	937	

Name: Village Item	Type	GPS (Of Exit) N E Altitude (M)	Description	Condition & Repairs Needed	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
Jaakol	Dahan Cap Qole spring	N 34.4673 E 68.5241 Alt. 2744 m	This spring supplies 30 households and irrigates 15 jeribs of land. The irrigation system is ruler. There are some grasses around the canal and spring. The water is potable.	The canal of this spring has leaks and blockages and wastes much water. The spring itself is also full of mud and stones. Cleaning of spring and canal and concreting of the leaks and repair of the damage are recommended.	20000	667	1333
Dara-i-Zyarat	Shiri Spring	N 34.48091 E 68.67885 Alt.2479.5 m	This spring supplies 30 households and irrigates 214 jeribs of land. The irrigation system is flood. There are some grasses near the spring and canal. The water is potable.	The spring is damaged and the canal has leaks and blockages and is wasting much water. Cleaning and concreting of the damage and installation of a pipe from source to field are recommended.	12000	400	56
Qole Baston	Siya Khak Spring	N 34.44741 E 68.69254 Alt. 2410 m	This spring supplies 25 households and irrigates 5 jeribs of land. The soil erosion is moderate. The irrigation system is flood. There are some grasses and trees around the canal and spring. The water is potable.	The spring is full of mud and stone and the canal has leaks and damaged places. Cleaning and concreting of the damage and repair of the damaged places are recommended.	10000	400	2000
Karez	Aziz Spring	N 34.45344 E 68.57281 Alt. 2450 m	This spring supplies 20 households and irrigates 5 jeribs of land. Erosion is moderate. The irrigation system is flood. There are some trees in some places near the canal and spring. The water is potable.	This spring is full of mud and stone and the canal has leaks and blockages. Cleaning and concreting of the damage and digging of the spring are recommended.	4000	200	800

Name: Village Item	Type	GPS (Of Exit) N E Altitude (M)	Description	Condition & Repairs Needed	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
Seyah Petab	Baqa spring	N 34.46098 E 68.61033 Alt. 2407 m	This spring supplies 20 households and irrigates 30 jeribs of land. The irrigation system is flood. There are some grasses around the canal and spring. The water is potable.	The spring is full of mud and stone and the canal wastes much water because of leaks and blockages. Cleaning of spring and canal and concreting of the canal are recommended.	5000	250	166
Towghari	Qole Bagh Baghl Spring	N 34.43314 E 68.54263 Alt.2562 m	This spring supplies 14 households and irrigates 7 jeribs of land. The irrigation system is flood. There are some grasses and trees near the canal and spring. The water is potable.	The canal of this spring leaks and is damaged in places which makes it waste much water. The spring is full of mud and stone. Cleaning of the spring and canal and also concreting of the damaged areas and leaks are recommended.	10000	714	1428
Qala Abdul Jabar	Qole Agha M Spring	N 34.45815 E 68.6384 Alt. 2435 m	This spring supplies 20 households and irrigates 8 jeribs of land. Erosion is moderate. The irrigation type is flood. There are poplar trees around the spring and canal. The water is potable.	The spring is full of mud and stone and canal has leak and waste much water. Cleaning of canal and spring and concreting of the canal is Recommended.	3000	150	375
Kasan	Kasan Spring	N 34.45478 E 68.67057 Alt.2383 m	This spring supplies 15 households and irrigates 5 jeribs of land. The soil erosion is moderate. The irrigation system is flood. There are some poplar trees around the canal and spring. The water is potable.	The spring is full of mud and stone and the canal leaks and wastes much water. Cleaning and digging of the spring and concreting of the damaged places are recommended.	3000	200	600

Name: Village Item	Type	GPS (Of Exit) N E Altitude (M)	Description	Condition & Repairs Needed	Cost Estimate USD	Cost Per Beneficiary USD	Cost Per Jeribs Of Irrigated USD
Sharukh	Tala Spring	N 34.47164 E 68.63983 Alt. 2342 m	This spring supplies 10 households and irrigates 2 jeribs of land. The irrigation system is flood. There are a lot of trees around the canal and spring. The water is potable.	The spring is full of mud and stone and its canal has leaks and wastes much water. Cleaning of the canal and spring and concreting of the damaged places are recommended.	20000	2000	10000
Qala-e-Sabz-i-Miyana	Qala-e-Mashrib spring	N 34.42845 E 68.5372 Alt. 2621 m	This spring supplies 30 households. The irrigation system is flood. There are some grasses and trees around the canal and spring. The water is potable.	The spring is full of mud and stone and canal has leaks and wastes much water. The spring reservoir has leaks and wastes much water. Cleaning and concreting of the canal, reservoir and leaks are recommended.	16000	533	
Poshta Mazar	Qole-I-Zarif Reservoir	N 34.43873 E 68.50789 Alt. 2588	The reservoir has 450m width and 300m length and 1.5m depth. It supplies 90 people and irrigates 100 jeribs of land. There are some trees around the reservoir. The water is potable.	The reservoir wastes water because of leaks and the canal from source to field has leaks, blockages and therefore also wastes much water. Cleaning of the reservoir canal and concreting of the damaged places and also concreting of the reservoir itself are recommended.	6000	66.66	60

8. Recent Water Interventions[3]

Village	Improvements
Dara-i-Zyarat	
Esmael Khel	
Dara-i- Masjed	
Tandara	
Akhund Khil Ala	
Qala-e-Sabz -i-Miyana	
Tundara-i-Khushk	
Malik Khel	
Khushk Karmenj	
Jaghain	
Asbab	
Qole-i- Duwlat	
Qulle Khudaydad	
Pule Shah	
Safyan	
Kota Malik	
Baghe Lang	
M Noor Khel	
Ahmad Zee village	
Seyah Petab	
Poshta Mazar	
Qala-i-Aslam	
Dahan Neek	
Qwme Jamil	
Sokhta village	
Qala-i- Kohna	
Qala Feezo	
Gerdee	
Dary Alem	
Kanda	

[3] It is not possible to find this data in the Jalriz Survey. The questionnaire is being modified to cover it.

Qaleh-ye-Fati	
Bala Qala	
Qaleh-ey-Jabar	
Qole-i-Payeen	
Da Qalander	
Tanka Lech	
Tawghari	
Qalleh-ye-Malik	
Sharukh	
Qala Mansor	
Kharoti Alya	
Sorkh Qala	
Jaakol	
Qole Wardak	
Rahman Khel	
Qala Abdul Jabar	
Qole Hidar Khan	
Kasan	
Qole Lali	
Qole Baston	
Karez	
Siad Khel	

9. Potential Water Projects

10. Potential Community Projects (non water)

11. Annexes

Annexes should contain detailed tables of data collected on survey. Should be easy to pull these off the database into reports. Use standard format for each district, village or water feature report.

Make tables easy to put into Excel and manipulate – use minimum of merged cells, formatting etc.

Need to discuss what tabulated data would be really useful for decision making. Tables should be referred to in main text. For example, number of farm families and jeribs of land serviced by each canal would help in deciding priorities for repairs.

One table should show progress of survey – who was interviewed by whom, when and where.

One table should give contact details for each village.

12. Photographs

Photographs of key features in above report should be attached. They should be given a reference number so that they can be referred to in text above. ***All photos need checking to ensure the caption is correct. One photo there may be other errors which would make us look very foolish if published.***

Note: One or two photos may be included in text of report for interest. However we need to supply complete photographic record of each village, water feature and watershed. Suggest photos are supplied on separate disk for each district. Selection of photos important to show important points referred to in text.