Selection of Mirabs

Zone Mirab

Selection Period

Average : once in 1.2 years

Maximum : once in 3 years

Minimum : once in every year

Selection Method

By irrigation Office : 98 cases (84.5%)

by Farmers : 18 cases (15.5%)

Village Mirab

Selection Period

Average : once in 1.4 years

Maximum : once in 3 years

Minimum : once in every year

Selection Method

by Election among farmers: 16 cases (28%)

by Nomination by farmers: 42 cases (72%)

## 5. Number of Responsible Canals and Villages by Mirab

### 1) Responsible Canals

Zone mirab is mostly responsible to one secondary irrigation canal which is diverted directly from the primary irrigation canal (Kari Rud) or the rivers (Haraz and Alesh Rivers). In case the secondary canal has a long length or diverted to the several large secondary canals, two or three zone mirabs are asigned to one secondary canal system. Contrary in case the secondary irrigation canal is small, one zone mirab is asigned to several secondary canals. The details are presented in Table B. 2. 2-1.

Responsible Canals

Responsible Number of Secondary Canals

One (1) canal 113 cases (97%)

More than one canals 3 cases ( 3%)

Averaged responsible canal(s): 1.1 canals

Canal controled by more than one zone mirabs. (6 canals)

1) Lakoni Rud : 2 zone mirabs (Haraz Left)
2) Ahi Rud : 2 zone mirabs ( ditto )
3) Zane Mard : 2 zone mirabs (Haraz Right)
4) Khoshkeh Rud : 2 zone mirabs ( ditto )
5) Katel Kash : 3 zone mirabs (Kari Left)
6) Mariard : 2 zone mirabs ( ditto )

Case one zone mirab controlling more than one canal. (3 cases)

1) 2 canals (Khoshkeh Rud + 1) (Alesh Rud)
2) 5 canals (Maseh Rud + 4) (Kari Left)
3) 2 canals (Matekeh rud + 1) (Kari Left)

2) Responsible Number of Villages and their Water Right

Zone mirab has several responsible villages in his service area. Average responsible villages are 5.4 villages in one zone mirab service area in the project area, but much different by the areas. Larger number of villages are located in one zone mirab service area in the Haraz Left Bank Area, and smaller number in the Alesh and the Garma Rud Areas.

On the other hand, a village mirab serves one or two villages in his responsible area.

Responsible Villages by Zone and Village Mirabs

| River System | Villages Served by Zone Mirab | Zone Mirab | | Village Mirab | |
|---|---|---|---|---|---|
| | | Number | Villages/ Zone Mirab | Number | Villages/ Village Mirab |
| Alesh Rud | 9 | 7 | 1.3 | 6 | 1.5 |
| Haraz Left | 195 | 22 | 8.9 | 135 | 1.4 |
| Haraz Right | 95 | 15 | 6.3 | 61 | 1.6 |
| Kari Left | 245 | 52 | 4.7 | 224 | 1.1 |
| Kari Right | 57 | 14 | 4.1 | 53 | 1.1 |
| Sub-Total | 601 | 110 | 5.5 | 479 | 1.3 |
| Garma Rud | 10 | 5 | 2.0 | 10 | 1.0 |
| Kharan Rud | 19 | 1 | 19.0 | 19 | 1.0 |
| Total | 630 | 116 | 5.4 | 508 | 1.2 |

(Note) Details are in Table B. 2. 1-1

In above table, total irrigated villages are counted at 630 villages. However, some of villages are duplicated in counting the number of villages because of duplication of the irrigation systems. Some of villages are irrigated by two or more secondary canals simultaneously where irrigation networks are complicated. Water right is generally given to the villages that are irrigated by the surface irrigation network. However, some villages have not any water right or have a water right only for particular canals where several secondary canals are irrigating the village. These duplications of irrigation network and water right were analyzed village-wise.

Water Right and Irrigation Networks by Villages

| Commanding Secondary Canals | None Water Right | Partial Water Right | Full Water Right | Total of Villages | Percent % |
|---|---|---|---|---|---|
| None | 100 | 0 | 0 | 100 | 19.5 |
| 1 Canal | 0 | 0 | 258 | 258 | 50.3 |
| 2 Canals | 0 | 9 | 98 | 107 | 20.9 |
| 3 Canals | 0 | 4 | 33 | 37 | 7.2 |
| 4 Canals | 0 | 1 | 9 | 10 | 1.9 |
| 5 Canals | 0 | 0 | 1 | 1 | 0.2 |
| Sub-Total | 0 | 14 | 399 | 413 | 80.5 |
| Total | 100 | 14 | 399 | 513 | 100 |
| Percent (%) | 19.5 | 2.7 | 77.8 | 100 | |

(Note) Details are Table B. 2. 1-6

There are totally 513 villages in the project area, and 100 villages out of total villages have not any water right. Among these 100 villages, newly established resort villages or the urbanized villages beside the cities are contained. Remaining 413 villages have a full or partial water right. Partial water right villages are only 14 villages (3.4% of 413 villages), and most villages (399 villages or 96.6%) have a full water right. (Detailed village-wise data are presented in Table B. 2. 1-6)

## 6. Irrigation Area and Water Right

Irrigation area served by the zone mirabs is summed up at 55,855 ha, that is 67% of the present paddy area (82,834 ha) in the project area. On the other hand, surface irrigation area is estimated at 66,504 ha by the irrigation study. The summed up area of 55,855 ha is only 84% of the surface irrigation

area and it is smaller by 10,649 ha. This difference is caused by the uncertainty of irrigation area of zone mirabs. Out of total 116 zone mirabs, 9 zone mirabs (8%) could not answer their responsible acreage. Therefore, the summed up area is to be further small comparing to the actual acreage.

Irrigation Area of Zone and Village Mirabs

| River System | Irrigation Area under Zone Mirab (ha) | | | Zone Mirab | | Village Mirab | |
|---|---|---|---|---|---|---|---|
| | Water Right | None Right | Total | Number | Service Area (ha/Mirab) | Number | Service Area (ha/Mirab) |
| Alesh Rud | 756 | 100 | 856 | 7 | 122.3 | 6 | 142.7 |
| Haraz Left | 12,652 | 279 | 12,931 | 22 | 587.8 | 135 | 95.8 |
| Haraz Right | 11,562 | 206 | 11,768 | 15 | 784.5 | 61 | 192.9 |
| Kari Left | 24,035 | 0 | 24,035 | 52 | 462.2 | 224 | 107.3 |
| Kari Right | 4,650 | 0 | 4,650 | 14 | 332.1 | 53 | 87.7 |
| Sub-Total | 53,655 | 585 | 54,240 | 110 | 493.1 | 479 | 113.2 |
| Garma Rud | 1,040 | 0 | 1,040 | 5 | 208.0 | 10 | 104.0 |
| Kharan Rud | 485 | 90 | 575 | 1 | 575.0 | 19 | 30.3 |
| Total | 55,180 | 675 | 55,855 | 116 | 481.5 | 508 | 110.0 |

(Note) Above irrigation areas are to be multiplied by 1.19 for actual areas.
see details in Table B. 2. 1-1

From above table, average responsible areas of zone and village mirabs are 482 ha and 110 ha, however these are to be revised to 574 ha and 131 ha respectively.

On the other hand, 4 village mirabs (6%) out of 67 village mirabs could not answer their responsible aceage. The responsible acreages of village mirabs are varied from 15 ha to 770 ha and averaged at 175 ha by the village mirab survey. (see Table B. 2. 1-4 for details)

## 7. Irrigation Schedule & Puddling Water Depth

Irrigation schedule has been surveyed on three factor that are irrigation period, canal repairing period, and puddling period. Following table shows the average period of above;

Standard Irrigation Schedule

| River System District | Canal Repairing | | Puddling Period | | | | Irrigation Period | |
|---|---|---|---|---|---|---|---|---|
| | | | Sufficient | | Insufficient | | | |
| | Start | End | Start | End | Start | End | Start | End |
| Zone Mirab | | | | | | | | |
| Project Area | Feb 24 | Mar 15 | Apr 6 | May 19 | Apr 6 | May 16 | Mar 20 | Sep 6 |
| Alesh Rud | Mar 2 | Mar 14 | Mar 19 | May 7 | Mar 17 | May 7 | Mar 17 | Sep 20 |
| Haraz Left | Mar 2 | Mar 18 | Apr 14 | May 20 | Apr 17 | May 23 | Mar 12 | Sep 3 |
| Haraz Right | Feb 25 | Mar 15 | Mar 28 | May 5 | Mar 28 | May 5 | Mar 15 | Aug 18 |
| Kari Left | Feb 20 | Mar 12 | Apr 3 | May 19 | Apr 2 | May 12 | Mar 24 | Sep 8 |
| Kari Right | Feb 22 | Mar 23 | Apr 12 | May 23 | Apr 10 | May 20 | Mar 31 | Sep 10 |
| Garma Rud | Mar 1 | Mar 23 | May 1 | Jun 26 | May 1 | Jun 26 | Apr 16 | Sep 20 |
| Kharan Rud | Feb 1 | Mar 15 | May 5 | Jun 20 | May 5 | Jun 20 | Apr 15 | Sep 5 |
| Village Mirab | | | | | | | | |
| Average | Feb 7 | Mar 5 | Mar 15 | Apr 29 | Mar 19 | May 7 | Mar 14 | Aug 1 |
| Haraz West | Mar 3 | Apr 1 | Apr 4 | May 6 | Apr 4 | May 8 | Mar 19 | Aug 8 |
| Amol West | Jan 25 | Mar 2 | Mar 15 | May 5 | Mar 10 | Apr 28 | Mar 11 | Jul 23 |
| Haraz East | Feb 2 | Mar 2 | Mar 16 | May 8 | Mar 10 | May 6 | Mar 16 | Aug 8 |
| Amol East | Jan 19 | Feb 11 | Feb 22 | Apr 1 | Mar 20 | May 14 | Mar 10 | Jul 18 |

(Note) Sufficient: when water is sufficient.
Insufficient: when water is insufficient.
see deatils in Table B. 2. 1-2 and Table B. 2. 1-4.

## 2) Canal Repairing

Canal repairing is conducted by farmers generally from Mid-February to Mid-March before starting irrigation . In lower areas such as Amol West and Amol East Districts, canal repairing starts earlier from late January.

## 3) Puddling

Puddling period was surveyed for two cases, that are when water sufficient and insufficient. In the zone mirab survey, difference was not reported between two cases. Puddling is reported to start around 6 April and to end 16-19 May. However, village mirabs reported the puddling to start on Mid-March an to end on late April around 20 days earlier than the period reported by zone mirabs. It is remarkable that the puddling period is very late from May to June in the Garma Rud and the Kharan Rud basins. It is considered that the late puddling of said two basins depends on scarce availability of water. Since the puddling period reported by zone mirabs contains the late puddling in above two basins, the standard puddling period is to be from Mid-March to late April as reported by village mirabs.

4) Irrigation Period

Irrigation starts generally from Mid-March to supply water for puddling and continues to August or early September. It is remarkable that irrigation ends very early in July in the lower areas as Amol West and East Districts because early matured variety is mostly planted in the lower areas.

5) Puddling Water Depth

Reported puddling water depths vary in large range, from 20 mm to 700 mm. It is difficult for mirabs to answer to this question, because the depth is not clear whether including percolated water or not. And it is also difficult to estimated percolated water depth. Therefore, the reported amounts of puddling are to be evaluated carefully.

Average Reported Puddling Water Depth

| | |
|---|---|
| Zone Mirab | 73 mm to 148 mm |
| Village Mirab | 77 mm |

It is considered the above amount not containing the percolated water into soils. Therefore, the actual puddling amount is considered to be around 150 mm including percolation water.

## 8. Transportation and Communication for Mirabs

Transportation and communication system for the works of mirabs have been surveyed. The works are as follows;

- Transportation for canal control
- Transportation or communication system to communicate with chief mirab and village mirab for zone mirab.
- Transportation or communication system to communicate with zone mirab and other village mirabs for village mirab.

The result of survey is as follows;

Communication and Transportation for Mirabs

| Transportation Communication | Zone Mirab | | | Village Mirab | | |
|---|---|---|---|---|---|---|
| | Canal Control | Communication | | Canal Control | Communication | |
| | | Chief Mirab | Village Mirab | | Zone Mirab | Village Mirab |
| 1. Public Car | 7 | 32 | 33 | 0 | 2 | 4 |
| 2. Vehicle | 22 | 31 | 31 | 6 | 35 | 33 |
| 3. Motorcycle | 59 | 54 | 53 | 8 | 8 | 14 |
| 4. Bicycle | 0 | 0 | 0 | 1 | 0 | 0 |
| 5. Walking | 56 | 28 | 28 | 55 | 21 | 17 |
| 6. Telephone | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 144 | 145 | 145 | 70 | 66 | 68 |
| Percent (%) | | | | | | |
| 1. Public Car | 4.9 | 22.1 | 22.8 | 0.0 | 3.0 | 5.9 |
| 2. Vehicle | 15.3 | 21.4 | 21.4 | 8.6 | 53.0 | 48.5 |
| 3. Motorcycle | 41.0 | 37.2 | 36.6 | 11.4 | 12.1 | 20.6 |
| 4. Bicycle | 0.0 | 0.0 | 0.0 | 1.4 | 0.0 | 0.0 |
| 5. Walking | 38.9 | 19.3 | 19.3 | 78.6 | 31.8 | 25.0 |
| 6. Telephone | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(Note) see details in Table B. 2. 1-2 and B. 2. 1-4.

1) Transportation for Canal Control

Canal control is conducted mostly by walking for village mirabs, because no particular access roads to smaller canals as tertiary or forth canals. However, motorcycles and vehicles are used more frequently by zone mirabs. In case of zone mirabs, canal length is long comparing to village mirabs, and they can use village roads to move, but finally must to walk to approach to the controlling sites such as diversions or weirs. It is remarkable that bicycle is very rare for transportation. Bicycle is considered to be so difficult to run because of muddy or irregular surface of farm roads.

2) Communication with Other Mirabs

Motorcycles and vehicles are mainly used to communicate with other mirabs. Telephone is not used for mirabs for communication, because most mirabs have not telephone (14 telephones in 116 zone mirabs).

## 9. Water Sources

Other water sources than canal water were also surveyed for zone mirabs. The total water sources for 413 villages which are irrigated by canal network are as follows;

Water Sources in the Project Area

| Water Sources | Report Available Number | Studied Available Number | Difference |
|---|---|---|---|
| Return-flows | 236 | - | - |
| Abbandans | 297 | 206 | +91 |
| Springs | 891 | - | - |
| Shallow wells | 6,329 | 5,834 | +492 |
| Deep wells | 11 | 98 | -87 |
| Artesian wells | 33 | 48 | -15 |

(Notes) 1. Reported number is for 413 villages by the TIB survey
2. Studied number is by the irrigation and groundwater studies in this Feasibility Study.
3. Details are in Table B. 2. 1-3 and Table B. 2. 1-6.

Reported 297 abbandans might be duplicated in count, because of duplication of canal network as same as villages. Duplication might by 91 abbandans. Shallow wells are also considered as duplicated. However, the studied number of shallow wells are depending on the data in 1982 to 1986, and it is reported that many shallow wells were dug after this period. Therefore, it is difficult to identify the duplication of shallow wells.

On the other hand, deep wells and artesian wells are reported less than the studied numbers. Most of deep wells are utilized for other purposes than agriculture such as for drinking and industry. Regarding the artesian wells, high productive wells are utilized for agriculture, but low productive wells are utilized for domestic use in the village and water is negligible for irrigation purposes.

## 10. Difficulties on Irrigation

### (1) Irrigation Problem

Irrigation problems are reported by 73.3% of zone mirabs and 98.5% of village mirabs. Almost of village mirabs reported irrigation problems in their service area. From this fact, village mirab is more sever in irrigation problems than zone mirab, because village mirab is selected directly by farmers and directly concerned to water use in the field.

**Reported Irrigation Problems**

| | Zone Mirab | Village Mirab |
|---|---|---|
| Surveyed Numbers | 116 | 67 |
| Reported Problems | 85 | 66 |
| Percent (%) | 73.3% | 98.5% |

### (2) Problem Months

Problem months on irrigation area reported as follows;

**Problem Months on Irrigation**

| | Zone Mirab | Village Mirab |
|---|---|---|
| Reported Numbers | 83 ( 71.6%) | 62 ( 92.5%) |
| Feb (Bah) | 0 ( 0%) | 1 ( 0.4%) |
| Mar (Esf) | 0 ( 0) | 4 ( 1.7) |
| Apr (Far) | 15 ( 6.2) | 42 ( 17.7) |
| May (Ord) | 52 ( 21.5) | 55 ( 23.2) |
| Jun (Kho) | 61 ( 25.2) | 56 ( 23.7) |
| Jul (Tir) | 60 ( 24.8) | 41 ( 17.3) |
| Aug (Mor) | 46 ( 19.0) | 32 ( 13.5) |
| Sep (Sha) | 8 ( 3.3) | 6 ( 2.5) |
| Total | 242 (100%) | 237 (100%) |

(Note) Percentage of reported numbers is to total number of surveyed mirabs, that are 116 zone mirabs and 67 village mirabs.
Details are in Table B. 2. 1-3 and Table B. 2. 1-5.

As seeing above table, problem is concentrated in May to July, and slightly in April and August.

(3) Frequency of Water Shortage

Water shortage is reported as shown in the following table.

Reported Water Shortage Frequency

| Frequency | Zone Mirab | Village Mirab |
|---|---|---|
| 1/1 year | 1 ( 0.9%) | 17 ( 25.4%) |
| 1/2 years | 0 ( 0) | 3 ( 4.5) |
| 1/3 years | 9 ( 7.8) | 10 ( 14.9) |
| 1/5 years | 12 ( 10.3) | 17 ( 25.4) |
| 1/10 years | 63 ( 54.3) | 13 ( 19.4) |
| Sub-Total | 85 ( 73.3%) | 60 ( 89.6%) |
| None Shortage | 31 ( 26.7%) | 7 ( 10.4%) |
| Total | 116 (100%) | 67 (100%) |

(Note) Frequency of water shortage is compiled as below;
Shortage year 1360-70 : 1/1 year
1364-70 : 1/1 year
1367-70 : 1/2 years
1368-70 : 1/3 years
1369-70 : 1/5 years
1370 : 1/10 years
Details are in Table B. 2. 1-3 and Table B. 2. 1-5

As seeing above table, village mirabs reported higher frequency of water shortage than zone mirabs. It is considered that village mirab is more sever on water shortage due to above reasons mentioned in Paragraph (1), direct selection from farmers and direct concern to field irrgaiton. Improper water distribution in the canal networks is also considered as a reason of water shortage, because many zone mirabs desire to replace diversion weirs with concrete ones for proper water distribution. (see paragraph 12) From this aspect, frequent water shortages such as 1/1 to 1/3 years will be solved by improvement of diversion weirs.

(4) Reason of Irrigation Problem

The mirabs, who reported the difficulties on irrigation, pointed out the reasons as shown in following table.

Reasons of Difficulties on Irrigation

| Reasons | Mirabs in Problem | |
|---|---|---|
| | Zone Mirab 85 (75.0%) | Village Mirab 66 (98.5%) |
| 1. Improper water management in upstream | 22 ( 25.9%) | 56 (84.8%) |
| 2. Shortage of water in canal | 82 ( 96.5) | 62 ( 93.9) |
| 3. Shortage of water in abbandans | 54 ( 63.5) | 12 ( 18.2) |
| 4. Difficulty of operation of river pumps | 14 ( 16.5) | 9 ( 13.6) |

(Note) Percentage to Mirabs in problem.
Details are in Table B. 2. 1-3 and Table B. 2. 1-5

Both zone mirabs and village mirabs more than 90% pointed out the shortage of water in canal. It is remarkable that 85% of the village mirabs pointed out the improper water management in upstream. However, only 26% of the zone mirabs pointed out that reason.

(5) Counter-measures taken for Irrigation Problem

Against the difficulties on irrigation, the mirabs have taken following counter-measures.

Counter-Measures taken for Irrigation Difficulties

| Counter-Measures | Mirabs in Problem | |
|---|---|---|
| | Zone Mirab 85 (75.0%) | Village Mirab 66 (98.5%) |
| 1. None | 13 ( 15.3%) | 0 ( 0%) |
| 2. Negotiation with the upstream mirabs | 82 ( 96.5) | 65 ( 98.5) |
| 3. Repairing of canal and weir | 81 ( 95.3) | 64 ( 97.0) |
| 4. Intermittent irrigation to save water | 78 ( 91.8) | 61 ( 92.4) |
| 5. Release more water from abbandan | 44 ( 51.8) | 15 ( 22.7) |
| 6. Operation of more number of wells | 73 ( 85.9) | 32 ( 48.5) |
| 7. Water cut to none water right paddy | 55 ( 64.7) | 50 ( 75.8) |

(Note) Percentage to Mirabs in Problems

Among the counter-measure, negotiation with other mirabs, repairing of canal and weir, and intermittent irrigation are more than 90%, and operation of wells and water cut to none water right paddy are following.

## 11. Difficulties on Water mangement

The mirabs pointed out following difficulties on water mangement through their experience.

Difficulties on Water Management

| Difficulties on Water Mangement | Mirabs in Problem | |
|---|---|---|
| | Zone Mirab 85 (75.0%) | Village Mirab 66 (98.5%) |
| 1. Length of canal is too long | 56 ( 64.4%) | 47 ( 71.2%) |
| 2. Gate operation is difficult | 59 ( 67.8) | 60 ( 90.9) |
| 3. Difficult to access to canal | 63 ( 72.4) | 46 ( 69.7) |
| 4. Difficult on transportation | 78 ( 89.7) | 52 ( 78.8) |
| 5. Difficult on communication | 71 ( 81.6) | 48 ( 72.7) |
| 6. Difficult on sediment remove | 45 ( 51.7) | 43 ( 65.2) |
| 7. Difficult on water measurement | 38 ( 43.7) | 52 ( 78.8) |
| 8. Others (night operation) | 0 ( 0) | 1 ( 1.5) |

(Note) Percentage to totaol mirabs or mirabs in difficulty

The most sever difficulty on water management is transportation for zone mirabs and gate operation for village mirabs.

## 12. Proposal by Mirabs

As the last question, mirabs were requested to grasp their proposals on their works. Following table shows the summary of their proposal.

## Proposal by Mirabs

| Proposals from Mirabs | Mirab | | | |
|---|---|---|---|---|
| | Zone (105) 90.5% | | Village (53) 79.1% | |
| | | (%) | | (%) |
| Canal Improvement | | | | |
| 1. Canal improvement including concrete lining | 12 | 11.4 | 31 | 58.5 |
| 2. Provision of permanent diversion weirs | 46 | 43.8 | 17 | 32.1 |
| 3. Provision of proper new irrigation & drainage canals | 8 | 7.6 | 0 | 0.0 |
| 4. Sediment remove | 2 | 1.9 | 0 | 0.0 |
| Water Management | | | | |
| 5. Proper water management including water measurement | 13 | 12.4 | 18 | 34.0 |
| 6. Provision of access road | 13 | 12.4 | 16 | 30.2 |
| 7. Provision of transportation (vehicles or motorcycles) | 76 | 72.4 | 20 | 37.7 |
| 8. Provision of transceiver | 31 | 29.5 | 0 | 0.0 |
| 9. Provision of proper payment | 74 | 70.5 | 0 | 0.0 |
| Improvement of Related Facilities | | | | |
| 10. Improvement of abbandans | 1 | 1.0 | 1 | 1.9 |
| (Sediment Remove) | 0 | 0.0 | 2 | 3.8 |
| 11. Improvement of springs | 1 | 1.0 | 8 | 15.1 |
| 12 Provision of new wells | | | | |
| Water Resources | | | | |
| 13. Improvement of Lar dam or New reservoir dam | 32 | 30.5 | 12 | 22.6 |

From above table, proposals of high priority are summarized as below;

For the Zone Mirabs;

1) Provision of transportation for canal control. (72%)
2) Provision of proper payment. (71%)
3) Provision of permanent diversion weirs. (44%)
4) Improvement of Lar dam or New reservoir dam. (31%)
5) Provision of transceiver. (30%)

For the village Mirabs;

1) Canal improvement including concrete lining. (59%)
2) Provision of transportation for canal control. (38%)
3) Proper water management including measurement. (34%)
4) Provision of permanent diversion weirs. (32%)
5) Provision of access road. (30%)

## TABLE B.2.1-1 AGE, EXPERIENCE, SELECTION OF MIRABS, AND COMMANDING VILLAGES, IRRIGATION AREAS BY ZONE MIRABS (1/2)

| River System | Zone Mirab Code | Responsible Canal Code | Responsible Canal Name | Zone Mirab Age | Zone Mirab Work Year | Zone Mirab Telephone 1:own 0:none | Zone Mirab Canals Responsible | Mirab Selected by 1:MOE 2:Farmer | Mirab Year | Number of Villages comanded | Number of Village Mirabs | Irrigation Area Data | Irrigation Area None Right (ha) | Irrigation Area Water Right (ha) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 1010 | Kasemdeh Rud | 60 | 6 | 0 | 1 | 1 | | 1 | 1 | 1 | 0 | 80 |
| | 2 | 1020 | Khoshkeh Rud | 60 | 6 | 0 | 2 | 1 | | 3 | 0 | 1 | 100 | 201 |
| | 3 | 1030 | Galan Rud | 60 | 6 | 0 | 1 | 1 | | 1 | 1 | 1 | 0 | 140 |
| Alesh | 4 | 1040 | Kukdeh Rud | 37 | 8 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 120 |
| | 5 | 1050 | Vagozari-e-Zamin Rud | 37 | 8 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 25 |
| | 6 | 1060 | Shir Kola Rud | 37 | 8 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 180 |
| | 7 | 1070 | Kalajpareh Rud | 37 | 8 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 10 |
| | 8 | 2010 | Piteh Rud | 52 | 26 | 0 | 1 | 1 | | 1 | 0 | 1 | 0 | 40 |
| | 9 | 3010 | Razekeh Rud (1) | 52 | 26 | 0 | 1 | 1 | | 1 | 0 | 1 | 0 | 13 |
| | 10 | 3020 | Razekeh Rud (2) | 52 | 26 | 0 | 1 | 1 | | 1 | 0 | 1 | 0 | 30 |
| | 11 | 3030 | Mohammadabad | 52 | 26 | 0 | 1 | 1 | | 1 | 0 | 1 | 0 | 70 |
| | 12 | 3040 | Valekan Rud | 35 | 7 | 0 | 1 | 1 | 1 | 6 | 3 | 1 | 0 | 343 |
| | 13 | 3050 | Shaleh Pat | 40 | 12 | 0 | 1 | 2 | 3 | 30 | 19 | 0 | 0 | 0 |
| | 14 | 3060 | Taj Rud | 50 | 1 | 0 | 1 | 2 | | 22 | 17 | 0 | 79 | 2,284 |
| | 15 | 3070 | Darmeh Kola Rud | 52 | 26 | 0 | 1 | 1 | 1 | 2 | 1 | 1 | 0 | 160 |
| | 16 | 3080 | Lakoni Rud | 49 | 1 | 0 | 1 | 1 | 1 | 14 | 5 | 0 | 0 | 354 |
| | 17 | 3081 | Lakoni Rud (Down Stream) | 48 | 3 | 0 | 1 | 2 | 1 | 5 | 6 | 1 | 0 | 891 |
| Haraz | 18 | 3090 | Mastband Kileh | 52 | 26 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 25 |
| Left | 19 | 3100 | Shah Rud | 39 | 8 | 0 | 1 | 2 | 1 | 18 | 19 | 0 | 0 | 0 |
| | 20 | 3110 | Ahi Rud | 41 | 5 | 0 | 1 | 2 | 1 | 13 | 5 | 1 | 0 | 755 |
| | 21 | 3111 | Ahi Rud (Lower) | 50 | 21 | 0 | 1 | 2 | 1 | 18 | 11 | 0 | 0 | 0 |
| | 22 | 3120 | Ahangar Kola Rud | 52 | 26 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 135 |
| | 23 | 3130 | Ali Rud | 31 | 7 | 0 | 1 | 2 | 1 | 13 | 9 | 1 | 0 | 1,020 |
| | 24 | 3131 | Tifangah Drain | 51 | 1 | 0 | 1 | 2 | 1 | 12 | 12 | 1 | 150 | 1,287 |
| | 25 | 3140 | Molla Rud | 55 | 6 | 0 | 1 | 2 | 1 | 11 | 8 | 1 | 0 | 2,470 |
| | 26 | 3141 | Alavi Kola | 56 | 19 | 0 | 1 | 1 | 1 | 2 | 1 | 1 | 0 | 290 |
| | 27 | 3142 | Ahi Rud | 50 | 3 | 0 | 1 | 2 | 1 | 10 | 6 | 1 | 0 | 957 |
| | 28 | 3150 | Zangi Rud | 36 | 4 | 0 | 1 | 2 | 1 | 9 | 8 | 1 | 50 | 618 |
| | 29 | 3160 | Changar Drain | 35 | 7 | 0 | 1 | 1 | 1 | 4 | 4 | 1 | 0 | 910 |
| | 30 | 4010 | Zane Mard | 40 | 1 | 0 | 1 | 2 | 1 | 20 | 13 | 0 | 30 | 2,049 |
| | 31 | 4011 | Sangar Rud | 34 | 3 | 0 | 1 | 1 | 1 | 3 | 1 | 1 | 0 | 250 |
| | 32 | 4020 | Sag Rud | 34 | 3 | 0 | 1 | 2 | 1 | 6 | 2 | 1 | 0 | 636 |
| | 33 | 4030 | Tork Kola Rud | 52 | 26 | 0 | 1 | 1 | 1 | 2 | 1 | 1 | 0 | 320 |
| | 34 | 4040 | Rash Rud | 48 | 9 | 0 | 1 | 2 | 1 | 1 | 0 | 1 | 0 | 600 |
| | 35 | 4050 | Khoshkeh Rud | 57 | 33 | 0 | 1 | 1 | 2 | 11 | 4 | 0 | 0 | 0 |
| Haraz | 36 | 4051 | Khoshkeh Rud (Lower) | 60 | 17 | 1 | 1 | 1 | 1 | 6 | 6 | 1 | 8 | 2,040 |
| Right | 37 | 4060 | Alavi Kola | 47 | 3 | 0 | 1 | 2 | 1 | 8 | 4 | 1 | 30 | 511 |
| | 38 | 4070 | Valik Rud | 56 | 4 | 0 | 1 | 2 | 1 | 7 | 5 | 1 | 0 | 544 |
| | 39 | 4080 | Jamshid Rud | 42 | 6 | 0 | 1 | 2 | 1 | 2 | 0 | 1 | 8 | 110 |
| | 40 | 4090 | Kachab Rud | 58 | 18 | 0 | 1 | 1 | 1 | 8 | 6 | 1 | 130 | 1,959 |
| | 41 | 4100 | Marj Rud | 39 | 11 | 0 | 1 | 2 | 1 | 9 | 9 | 1 | 0 | 1,631 |
| | 42 | 4110 | Mohammadabad Rud (1) | 50 | 10 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 15 |
| | 43 | 4120 | Mohammadabad Rud (2) | 50 | 10 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 15 |
| | 44 | 4130 | Cheshmeh HaftKhal | 50 | 7 | 0 | 1 | 1 | 1 | 10 | 10 | 1 | 0 | 883 |
| | 45 | 5010 | Sang Rud | 50 | 24 | 0 | 1 | 1 | 1 | 2 | 1 | 1 | 0 | 255 |
| | 46 | 5020 | Niaki Rud | 57 | 6 | 0 | 1 | 1 | 1 | 19 | 19 | 1 | 0 | 1,832 |
| | 47 | 5030 | Barik Rud | 57 | 6 | 0 | 1 | 1 | 1 | 4 | 4 | 1 | 0 | 520 |
| | 48 | 5040 | Katel Kash | 57 | 6 | 0 | 1 | 1 | 1 | 39 | 36 | 1 | 0 | 3,495 |
| | 49 | 5050 | Maliard | 57 | 6 | 0 | 1 | 1 | 1 | 43 | 39 | 1 | 0 | 3,930 |
| | 50 | 5051 | Esbukola Rud | 55 | 8 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 |
| | 51 | 5060 | Maseh Rud | 50 | 3 | 0 | 5 | 1 | 1 | 6 | 7 | 1 | 0 | 1,100 |
| | 52 | 5080 | Sheikh Rud | 50 | 5 | 0 | 1 | 1 | 1 | 3 | 3 | 1 | 0 | 98 |
| | 53 | 5090 | Vozara Rud | 40 | 2 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 100 |
| | 54 | 5100 | Vakeh Rud | 55 | 5 | 0 | 1 | 1 | 3 | 1 | 0 | 1 | 0 | 30 |
| | 55 | 5110 | Mozaffar Rud | 35 | 2 | 1 | 1 | 1 | 1 | 8 | 6 | 1 | 0 | 620 |
| | 56 | 5120 | Khatib Rud | 35 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 50 |
| | 57 | 5130 | Traghchi Rud | 35 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 200 |
| Kari | 58 | 5140 | Kazembeigi Rud | 35 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 80 |
| Left | 59 | 5150 | Karo Kola Rud | 35 | 2 | 1 | 1 | 1 | 1 | 10 | 8 | 0 | 0 | 0 |
| | 60 | 5160 | Zahed Kola Rud | 35 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 50 |
| | 61 | 5170 | Mashin Rud | 35 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 100 |
| | 62 | 5180 | Sang Rud | 57 | 15 | 0 | 1 | 1 | 3 | 2 | 2 | 1 | 0 | 70 |
| | 63 | 5190 | Khandagh Kileh | 57 | 15 | 0 | 1 | 1 | 3 | 1 | 1 | 1 | 0 | 8 |
| | 64 | 5200 | Zardab Rud | 57 | 15 | 0 | 1 | 1 | 3 | 1 | 1 | 1 | 0 | 8 |
| | 65 | 5210 | Juleh Rud | 53 | 24 | 1 | 1 | 1 | 1 | 18 | 21 | 1 | 0 | 3,641 |
| | 66 | 5220 | Matekeh Rud | 53 | 24 | 1 | 2 | 1 | 1 | 4 | 1 | 1 | 0 | 239 |
| | 67 | 5240 | Soragh Rud | 61 | 26 | 0 | 1 | 1 | 1 | 4 | 1 | 1 | 0 | 80 |
| | 68 | 5250 | Sotan Beigi Rud | 65 | 27 | 0 | 1 | 1 | 1 | 12 | 12 | 1 | 0 | 740 |
| | 69 | 5260 | Archirud Kuchak | 61 | 27 | 0 | 1 | 1 | 1 | 2 | 2 | 1 | 0 | 200 |
| | 70 | 5270 | Archirud Bozorg | 55 | 15 | 0 | 1 | 1 | 1 | 10 | 8 | 1 | 0 | 640 |
| | 71 | 5280 | Basra Rud | 55 | 15 | 0 | 1 | 1 | 1 | 4 | 4 | 1 | 0 | 305 |
| | 72 | 5290 | Actich Kola Rud | 55 | 8 | 0 | 1 | 1 | 3 | 1 | 1 | 1 | 0 | 12 |

(continued)

## TABLE B.2.1-1 AGE, EXPERIENCE, SELECTION OF MIRABS, AND COMMANDING VILLAGES, IRRIGATION AREAS BY ZONE MIRABS (2/2)

| River System | Zone Mirab Code | Responsible Canal Code | Responsible Canal Name | Zone Mirab Age | Work Year | Teleph 1:own 0:none | Canals Respo-nsible | Mirab Selected by 1:MOE 2:Farmer | Year | Number of Villages comanded | Number of Village Mirabs | Data | Irrigation Area None Right (ha) | Irrigation Area Water Right (ha) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 73 | 5300 | *Garmich Rud* | 55 | 8 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 70 |
| | 74 | 5310 | Chamazin Rud | 55 | 8 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 100 |
| | 75 | 5320 | Kotisar Rud | 50 | 8 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 130 |
| | 76 | 5330 | Vaghfirud Kamangar | 50 | 8 | 0 | 1 | 1 | | 1 | 1 | 1 | 0 | 12 |
| | 77 | 5340 | Kard Rud | 50 | 8 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 100 |
| | 78 | 5350 | Oulia Rud | 55 | 5 | 0 | 1 | 1 | 1 | 2 | 2 | 1 | 0 | 140 |
| | 79 | 5360 | Bala Haghabeh Rahkola | 50 | 8 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 100 |
| | 80 | 5370 | Pain Haghabeh Rahkola | 55 | 8 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 70 |
| | 81 | 5380 | Tajoddoleh Rud | 55 | 6 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 80 |
| | 82 | 5390 | Rakun Rud | 55 | 6 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 80 |
| Kari | 83 | 5400 | Bala Haghabeh Karikola | 55 | 6 | 0 | 1 | 1 | 1 | 3 | 1 | 1 | 0 | 320 |
| Left | *84* | *5410* | *Khandagh Kileh* | 55 | 6 | 0 | 1 | 1 | 1 | 1 | *0* | 1 | *0* | *10* |
| | 85 | 5420 | Raiss Rud | 55 | 6 | 0 | 1 | 1 | 1 | 3 | 1 | 1 | 0 | 160 |
| | 86 | 5430 | Vale Rud | 55 | 6 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 350 |
| | 87 | 5440 | Kard Rud | 55 | 8 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 300 |
| | 88 | 5450 | Kikha Rud | 55 | 6 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 150 |
| | 89 | 5460 | Rudbast Rud | 50 | 8 | 0 | 1 | 1 | 3 | 2 | 2 | 1 | 0 | 50 |
| | 90 | 5470 | Seid Rud | 55 | 6 | 0 | 1 | 1 | 1 | 5 | 5 | 1 | 0 | 470 |
| | 91 | 5480 | Esfandiar Rud | 50 | 8 | 0 | 1 | 1 | 3 | 1 | 1 | 1 | 0 | 100 |
| | 92 | 5490 | Sorayya Drain | 56 | 29 | 0 | 1 | 1 | | 4 | 4 | 1 | 0 | 170 |
| | 93 | 5052 | Hakkeh Dakal | 65 | 20 | 0 | 1 | 1 | 1 | 1 | 2 | 1 | 0 | 750 |
| | 94 | 5042 | Suteh Kileh Drain | 35 | 2 | 0 | 1 | 1 | 2 | 2 | 2 | 1 | 0 | 1,000 |
| | 95 | 5041 | Mahlaban Drain | 35 | 2 | 0 | 1 | 1 | 2 | 2 | 2 | 1 | 0 | 800 |
| | 96 | 5111 | Khoni Cheshmeh | 56 | 29 | 0 | 1 | 1 | | 6 | 6 | 1 | 0 | 120 |
| | 97 | 6010 | Ziya Rud | 50 | 24 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 150 |
| | 98 | 6020 | Moallem Kola Rud | 49 | 7 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 140 |
| | *99* | *6050* | *Mileh Rud* | 50 | 5 | 0 | 1 | 1 | 1 | 6 | 6 | 1 | 0 | 510 |
| | 100 | 6060 | Charsin Rud | 35 | 5 | 1 | 1 | 1 | 1 | 12 | 12 | 1 | 0 | 950 |
| | 101 | 6070 | Siah Vardi Rud | 35 | 5 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 0 | 75 |
| | 102 | 6080 | Tashan Rud | 35 | 5 | 1 | 1 | 1 | 1 | 5 | 5 | 1 | 0 | 250 |
| Kari | 103 | 6090 | Khatib Rud (2) | 35 | 5 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 80 |
| Right | 104 | 6100 | Actich Rud (2) | 55 | 15 | 0 | 1 | 1 | 1 | 2 | 2 | 1 | 0 | 70 |
| | 105 | 6110 | Seid Rud | 50 | 7 | 0 | 1 | 1 | 1 | 11 | 11 | 1 | 0 | 1,035 |
| | 106 | 6120 | Marzun Rud | 55 | 8 | 0 | 1 | 1 | 1 | 9 | 5 | 1 | 0 | 710 |
| | 107 | 6130 | Kamangar Rud | 55 | 8 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 70 |
| | 108 | 6140 | Abdanrud Barsemnan | 55 | 5 | 0 | 1 | 1 | 3 | 1 | 1 | 1 | 0 | 60 |
| | 109 | 6150 | Zagh Kileh | 50 | 8 | 0 | 1 | 1 | 2 | 2 | 2 | 1 | 0 | 90 |
| | *110* | *6160* | *Kallehbast Rud* | 55 | 8 | 0 | 1 | 1 | 1 | 3 | 3 | 1 | 0 | *460* |
| | 111 | 7010 | Komdarreh Rud | 51 | 29 | 0 | 1 | 1 | 1 | 2 | 2 | 1 | 0 | 180 |
| | 112 | 7020 | Zavarak Rud | 51 | 29 | 0 | 1 | 1 | | 1 | 1 | 1 | 0 | 80 |
| Garma | 113 | 8010 | Ahangar Kola Rud | 51 | 29 | 0 | 1 | 1 | 1 | 3 | 3 | 1 | 0 | 310 |
| Rud | 114 | 8020 | Shahneh Kola Rud | 51 | 29 | 0 | 1 | 1 | | 1 | 1 | 1 | 0 | 200 |
| | 115 | 8030 | Vosta Kola Rud | 51 | 29 | 0 | 1 | 1 | 1 | 3 | 3 | 1 | 0 | 270 |
| Kharan | 116 | 9000 | Kharan Rud River | 51 | 29 | 0 | 1 | 1 | 1 | 19 | 19 | 0 | 90 | 485 |
| | Data Number or Total | | | 116 | 116 | | 116 | 116 | 103 | 630 | 508 | 107 | 675 | 55,180 |
| | Max | | | 65 | 33 | 1= 14 | 5 | 1= 98 | 3 | 43 | 39 | | 150 | 3,930 |
| | Min | | | 31 | 1 | 0=102 | 1 | 2= 18 | 1 | 1 | 0 | | 0 | 0 |
| | Average | | | 49.2 | 11 | | 1.1 | | 1.2 | 5.4 | 4.4 | | 5.8 | 475.7 |
| | S.D. | | | 8.4 | 9.1 | | 0.4 | | 0.6 | 7.3 | 6.5 | | 23.6 | 739.1 |
| Alesh | Total | | | | | | 8 | | | 9 | 6 | | 100 | 756 |
| | average | | | 46.9 | 7.1 | | 1.1 | | | 1.3 | 0.9 | | 14.3 | 108.0 |
| HarazL | Total | | | | | | 22 | | | 195 | 135 | | 279 | 12,652 |
| | average | | | 46.8 | 13 | | 1.0 | | | 8.9 | 6.1 | | 12.7 | 575.1 |
| HarazR | Total | | | | | | 15 | | | 95 | 61 | | 206 | 11,562 |
| | average | | | 47.8 | 11 | | 1.0 | | | 6.3 | 4.1 | | 13.7 | 770.8 |
| Kari L | Total | | | | | | 57 | | | 245 | 224 | | 0 | 24,035 |
| | average | | | 51.2 | 9.8 | | 1.1 | | | 4.7 | 4.3 | | 0.0 | 462.2 |
| KariR | Total | | | | | | 14 | | | 57 | 53 | | 0 | 4,650 |
| | average | | | 47.4 | 8.2 | | 1.0 | | | 4.1 | 3.8 | | 0.0 | 332.1 |
| Garma/ | Total | | | | | | 5 | | | 10 | 10 | | 0 | 1,040 |
| | average | | | 51 | 29 | | 1.0 | | | 2.0 | 2.0 | | 0.0 | 208.0 |

(Notes)

1. *Selection year of mirab is shown in 1/N years, and N is shown in Table.*
2. Some villages are duplicated in count of number of commanded villages due to duplication of irrigation network of secondary canal.
3. In the data column of irrigation area,
   in case 1 = Acreage is reported.
   in case 0 = Acreage is not reported or reported partially.
   Therefore, total acreage might be less than the actual acreage.

## TABLE B. 2. 1-2 IRRIGATION SCHEDULE AND TRANSPORTATION BY ZONE MIRABS (1/2)

| River System | Zone Mir-ab | Irrigation Period start dd | mm | end dd | mm | Canal Repairing start dd | mm | end dd | mm | Puddling Period sufficient start dd | mm | end dd | mm | insufficient start dd | mm | end dd | mm | Transportation Canal Control 1 | 2 | Chief Mirab 1 | 2 | Village Mirab 1 | 2 | Puddling Depth(mm) from | to |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 15 | 12 | 31 | 18 | 10 | 12 | 15 | 12 | 10 | 12 | 10 | 14 | 1 | 12 | 10 | 14 | 5 | 0 | 5 | 1 | 1 | 5 | 50 | 100 |
| | 2 | 15 | 12 | 31 | 18 | 10 | 12 | 15 | 12 | 10 | 12 | 10 | 14 | 1 | 12 | 10 | 14 | 5 | 0 | 5 | 1 | 1 | 5 | 50 | 100 |
| Alesh | 3 | 15 | 12 | 31 | 18 | 10 | 12 | 15 | 12 | 10 | 12 | 10 | 14 | 10 | 12 | 10 | 14 | 5 | 0 | 5 | 1 | 1 | 5 | 50 | 100 |
| Rud | 4 | 15 | 12 | 31 | 18 | 10 | 12 | 15 | 12 | 10 | 12 | 10 | 14 | 10 | 12 | 10 | 14 | 5 | 0 | 5 | 1 | 1 | 5 | 50 | 100 |
| | 5 | 15 | 13 | 31 | 18 | 15 | 12 | 5 | 13 | 1 | 14 | 31 | 14 | 1 | 14 | 31 | 14 | 2 | 5 | 2 | 5 | 2 | 5 | 50 | 150 |
| | 6 | 15 | 13 | 31 | 18 | 15 | 12 | 5 | 13 | 1 | 14 | 31 | 14 | 1 | 14 | 31 | 14 | 2 | 5 | 2 | 5 | 2 | 5 | 50 | 150 |
| | 7 | 10 | 13 | 31 | 18 | 15 | 12 | 5 | 13 | 15 | 13 | 20 | 14 | 15 | 13 | 20 | 14 | 2 | 5 | 2 | 5 | 2 | 5 | 50 | 150 |
| | 8 | 20 | 13 | 31 | 18 | 15 | 13 | 1 | 14 | 10 | 14 | 15 | 15 | 10 | 13 | 15 | 15 | 2 | 0 | 2 | 0 | 2 | 0 | 50 | 150 |
| | 9 | 20 | 13 | 31 | 18 | 15 | 13 | 1 | 14 | 10 | 14 | 15 | 15 | 10 | 14 | 15 | 15 | 2 | 0 | 2 | 0 | 2 | 0 | 50 | 150 |
| | 10 | 20 | 13 | 31 | 18 | 15 | 13 | 1 | 14 | 10 | 14 | 15 | 15 | 10 | 14 | 15 | 15 | 2 | 0 | 2 | 0 | 2 | 0 | 50 | 150 |
| | 11 | 20 | 13 | 31 | 18 | 15 | 13 | 1 | 14 | 10 | 14 | 15 | 15 | 10 | 14 | 15 | 15 | 2 | 0 | 2 | 0 | 2 | 0 | 50 | 150 |
| | 12 | 1 | 13 | 25 | 18 | 15 | 12 | 30 | 12 | 1 | 15 | 30 | 15 | 1 | 15 | 30 | 15 | 3 | 0 | 3 | 0 | 3 | 0 | 50 | |
| | 13 | 1 | 13 | 15 | 18 | 1 | 12 | 30 | 12 | 1 | 13 | 15 | 14 | 15 | 13 | 15 | 14 | 5 | 2 | 5 | 2 | 5 | 2 | 200 | 300 |
| | 14 | 1 | 12 | 31 | 18 | 15 | 11 | 15 | 13 | 10 | 12 | 10 | 14 | 20 | 13 | 30 | 14 | 5 | 2 | 5 | 2 | 5 | 2 | 50 | 200 |
| | 15 | 1 | 13 | 25 | 18 | 15 | 12 | 25 | 12 | 1 | 15 | 30 | 15 | 1 | 15 | 30 | 15 | 3 | 0 | 3 | 0 | 3 | 0 | 50 | |
| | 16 | 10 | 12 | 30 | 18 | 1 | 12 | 6 | 12 | 15 | 13 | 30 | 14 | 20 | 12 | 30 | 13 | 5 | 2 | 5 | 2 | 5 | 2 | 100 | 200 |
| | 17 | 1 | 12 | 31 | 17 | 2 | 13 | 5 | 13 | 15 | 13 | 30 | 13 | 15 | 13 | 30 | 13 | 1 | 0 | 1 | 0 | 1 | 0 | 40 | 100 |
| Haraz | 18 | 1 | 13 | 25 | 18 | 15 | 12 | 18 | 14 | 1 | 15 | 30 | 15 | 1 | 15 | 30 | 15 | 3 | 0 | 3 | 0 | 3 | 0 | 50 | |
| Left | 19 | 15 | 12 | 30 | 17 | 1 | 12 | 15 | 12 | 15 | 12 | 15 | 13 | 15 | 12 | 15 | 13 | 3 | 5 | 3 | 5 | 3 | 5 | 50 | 100 |
| | 20 | 15 | 12 | 30 | 17 | 1 | 12 | 10 | 12 | 20 | 13 | 30 | 14 | 20 | 14 | 10 | 15 | 5 | 2 | 5 | 2 | 5 | 2 | 30 | 100 |
| | 21 | 1 | 12 | 25 | 17 | 15 | 12 | 20 | 12 | 15 | 13 | 15 | 14 | 15 | 13 | 15 | 14 | 5 | 0 | 2 | 0 | 2 | 0 | 50 | 100 |
| | 22 | 1 | 13 | 25 | 18 | 15 | 12 | 20 | 12 | 15 | 14 | 30 | 15 | 15 | 14 | 30 | 15 | 3 | 0 | 3 | 0 | 3 | 0 | 55 | |
| | 23 | 15 | 12 | 31 | 17 | 1 | 12 | 10 | 12 | 10 | 13 | 20 | 14 | 10 | 13 | 20 | 14 | 3 | 0 | 3 | 0 | 3 | 0 | 100 | 150 |
| | 24 | 1 | 12 | 10 | 18 | 1 | 11 | 10 | 11 | 15 | 12 | 30 | 13 | 15 | 13 | 15 | 14 | 3 | 0 | 3 | 0 | 3 | 0 | 100 | 200 |
| | 25 | 1 | 12 | 1 | 18 | 15 | 11 | 20 | 11 | 10 | 13 | 30 | 13 | 1 | 13 | 15 | 14 | 5 | 3 | 5 | 3 | 5 | 3 | 30 | 100 |
| | 26 | 1 | 13 | 20 | 17 | 10 | 12 | 25 | 12 | 15 | 14 | 30 | 15 | 15 | 14 | 30 | 15 | 5 | 0 | 3 | 0 | 3 | 0 | 50 | |
| | 27 | 1 | 12 | 31 | 17 | 10 | 12 | 20 | 12 | 1 | 14 | 15 | 14 | 1 | 14 | 30 | 14 | 5 | 3 | 5 | 3 | 5 | 3 | 50 | |
| | 28 | 15 | 12 | 31 | 17 | 1 | 12 | 15 | 12 | 20 | 12 | 20 | 14 | 20 | 12 | 20 | 14 | 3 | 0 | 3 | 0 | 3 | 0 | 50 | 300 |
| | 29 | 1 | 13 | 20 | 17 | 11 | 12 | 25 | 12 | 15 | 14 | 30 | 15 | 15 | 14 | 30 | 15 | 3 | 0 | 3 | 0 | 3 | 0 | 50 | |
| | 30 | 15 | 12 | 15 | 17 | 10 | 12 | 15 | 12 | 10 | 13 | 30 | 13 | 10 | 13 | 30 | 13 | 2 | 5 | 2 | 5 | 2 | 5 | 50 | 100 |
| | 31 | 1 | 13 | 15 | 17 | 1 | 12 | 15 | 12 | 1 | 13 | 30 | 13 | 1 | 13 | 30 | 13 | 5 | 0 | 5 | 1 | 5 | 1 | 50 | 100 |
| | 32 | 15 | 12 | 20 | 18 | 5 | 12 | 20 | 12 | 15 | 12 | 15 | 15 | 15 | 12 | 15 | 15 | 1 | 5 | 1 | 5 | 1 | 5 | 150 | |
| | 33 | 1 | 13 | 25 | 18 | 15 | 12 | 25 | 12 | 15 | 14 | 30 | 15 | 15 | 14 | 30 | 15 | 3 | 0 | 3 | 0 | 3 | 0 | 50 | |
| | 34 | 10 | 12 | 15 | 18 | 5 | 12 | 6 | 12 | 1 | 14 | 20 | 14 | 1 | 14 | 20 | 14 | 5 | 0 | 1 | 0 | 1 | 0 | 50 | 100 |
| | 35 | 15 | 12 | 15 | 18 | 15 | 12 | 17 | 12 | 1 | 13 | 15 | 14 | 15 | 13 | 15 | 14 | 1 | 5 | 1 | 5 | 1 | 5 | 150 | 200 |
| Haraz | 36 | 1 | 12 | 20 | 17 | 1 | 11 | 15 | 11 | 1 | 13 | 30 | 13 | 1 | 13 | 30 | 13 | 1 | 0 | 1 | 0 | 1 | 0 | 100 | 200 |
| Right | 37 | 1 | 12 | 20 | 17 | 10 | 12 | 13 | 12 | 10 | 12 | 30 | 13 | 10 | 12 | 30 | 13 | 1 | 0 | 1 | 0 | 1 | 0 | 50 | |
| | 38 | 1 | 12 | 15 | 17 | 15 | 12 | 20 | 12 | 20 | 12 | 30 | 13 | 20 | 13 | 30 | 14 | 5 | 0 | 1 | 5 | 1 | 5 | 50 | 150 |
| | 39 | 1 | 12 | 15 | 18 | 1 | 12 | 5 | 12 | 15 | 13 | 30 | 13 | 1 | 12 | 30 | 12 | 3 | 5 | 3 | 5 | 3 | 5 | 50 | 200 |
| | 40 | 15 | 11 | 1 | 17 | 1 | 11 | 3 | 17 | 1 | 13 | 30 | 13 | 1 | 13 | 30 | 13 | 3 | 0 | 3 | 0 | 3 | 0 | 50 | 100 |
| | 41 | 10 | 12 | 10 | 17 | 1 | 12 | 6 | 12 | 10 | 13 | 10 | 14 | 10 | 13 | 10 | 14 | 3 | 0 | 3 | 0 | 3 | 0 | 50 | 70 |
| | 42 | 10 | 13 | 15 | 17 | 20 | 12 | 5 | 13 | 10 | 13 | 10 | 14 | 10 | 13 | 10 | 14 | 3 | 0 | 3 | 0 | 3 | 0 | 50 | 150 |
| | 43 | 10 | 13 | 15 | 17 | 20 | 12 | 5 | 13 | 10 | 13 | 10 | 14 | 10 | 13 | 10 | 14 | 3 | 0 | 3 | 0 | 3 | 0 | 50 | 150 |
| | 44 | 1 | 13 | 25 | 18 | 15 | 12 | 25 | 12 | 1 | 14 | 20 | 15 | 1 | 14 | 20 | 15 | 5 | 0 | 3 | 0 | 3 | 0 | 60 | |
| | 45 | 20 | 14 | 31 | 18 | 25 | 12 | 10 | 13 | 10 | 14 | 30 | 14 | 10 | 14 | 30 | 14 | 5 | 0 | 1 | 0 | 1 | 0 | 100 | 150 |
| | 46 | 1 | 13 | 31 | 18 | 15 | 11 | 20 | 12 | 10 | 13 | 15 | 14 | 1 | 13 | 10 | 14 | 5 | 3 | 3 | 0 | 3 | 0 | 50 | 100 |
| | 47 | 20 | 13 | 31 | 18 | 15 | 12 | 10 | 13 | 1 | 14 | 30 | 14 | 20 | 13 | 20 | 14 | 5 | 3 | 3 | 0 | 3 | 0 | 50 | 100 |
| | 48 | 10 | 13 | 31 | 18 | 20 | 12 | 20 | 13 | 1 | 2 | 30 | 13 | 20 | 13 | 20 | 14 | 5 | 1 | 1 | 0 | 1 | 0 | 50 | 100 |
| | 49 | 10 | 13 | 31 | 18 | 15 | 11 | 25 | 12 | 1 | 14 | 30 | 14 | 20 | 13 | 20 | 14 | 5 | 1 | 1 | 0 | 1 | 0 | 50 | 100 |
| | 50 | 20 | 13 | 31 | 18 | 20 | 12 | 20 | 13 | 1 | 14 | 30 | 14 | 20 | 13 | 20 | 14 | 5 | 0 | 1 | 0 | 1 | 0 | 50 | 100 |
| | 51 | 1 | 13 | 3 | 18 | 1 | 12 | 30 | 12 | 15 | 13 | 30 | 14 | 1 | 11 | 15 | 12 | 3 | 5 | 3 | 5 | 3 | 5 | 400 | 700 |
| | 52 | 15 | 13 | 30 | 18 | 10 | 12 | 15 | 13 | 15 | 14 | 30 | 15 | 15 | 14 | 30 | 15 | 5 | 0 | 1 | 0 | 1 | 0 | 100 | 150 |
| | 53 | 15 | 12 | 30 | 18 | 10 | 12 | 14 | 12 | 1 | 13 | 20 | 14 | 1 | 13 | 20 | 14 | 2 | 0 | 2 | 0 | 2 | 0 | 50 | 150 |
| | 54 | 15 | 13 | 15 | 18 | 1 | 12 | 5 | 12 | 15 | 13 | 31 | 14 | 15 | 13 | 31 | 14 | 3 | 0 | 1 | 0 | 1 | 0 | 100 | 150 |
| | 55 | 20 | 12 | 10 | 18 | 1 | 12 | 10 | 14 | 15 | 12 | 20 | 14 | 15 | 13 | 20 | 14 | 3 | 5 | 1 | 0 | 1 | 0 | 50 | 150 |
| | 56 | 15 | 12 | 30 | 18 | 10 | 12 | 12 | 12 | 10 | 13 | 20 | 14 | 1 | 13 | 20 | 14 | 5 | 0 | 5 | 2 | 5 | 2 | 50 | 150 |
| | 57 | 15 | 12 | 30 | 18 | 10 | 12 | 13 | 12 | 10 | 13 | 20 | 14 | 1 | 13 | 20 | 14 | 5 | 0 | 5 | 2 | 5 | 2 | 50 | 150 |
| Kari | 58 | 15 | 12 | 30 | 18 | 10 | 12 | 12 | 12 | 15 | 13 | 20 | 14 | 1 | 13 | 20 | 14 | 5 | 0 | 5 | 2 | 5 | 2 | 50 | 150 |
| Left | 59 | 20 | 12 | 10 | 18 | 1 | 12 | 10 | 12 | 15 | 12 | 20 | 14 | 15 | 13 | 20 | 14 | 3 | 5 | 2 | 0 | 2 | 0 | 50 | 150 |
| | 60 | 15 | 12 | 30 | 18 | 10 | 12 | 13 | 12 | 10 | 13 | 20 | 14 | 1 | 13 | 20 | 14 | 5 | 0 | 5 | 2 | 5 | 2 | 50 | 150 |
| | 61 | 15 | 12 | 30 | 18 | 10 | 12 | 20 | 12 | 10 | 13 | 20 | 14 | 1 | 13 | 20 | 14 | 5 | 2 | 2 | 0 | 2 | 0 | 50 | 150 |
| | 62 | 15 | 13 | 15 | 18 | 1 | 12 | 5 | 12 | 15 | 13 | 31 | 15 | 15 | 13 | 15 | 15 | 3 | 0 | 1 | 0 | 1 | 0 | 100 | 150 |
| | 63 | 15 | 13 | 15 | 18 | 1 | 12 | 5 | 12 | 15 | 13 | 31 | 15 | 15 | 13 | 31 | 15 | 3 | 0 | 1 | 0 | 1 | 0 | 100 | 150 |
| | 64 | 15 | 13 | 15 | 18 | 1 | 12 | 5 | 12 | 15 | 13 | 31 | 15 | 15 | 13 | 31 | 15 | 3 | 0 | 1 | 0 | 1 | 0 | 100 | 150 |
| | 65 | 1 | 13 | 1 | 18 | 1 | 12 | 30 | 12 | 15 | 13 | 30 | 14 | 1 | 11 | 15 | 12 | 3 | 5 | 3 | 5 | 3 | 5 | 200 | 700 |
| | 66 | 20 | 14 | 30 | 18 | 15 | 13 | 20 | 13 | 20 | 14 | 10 | 15 | 20 | 14 | 10 | 15 | 5 | 0 | 1 | 0 | 1 | 0 | 100 | 150 |
| | 67 | 15 | 11 | 15 | 18 | 20 | 11 | 24 | 11 | 15 | 13 | 20 | 14 | 15 | 12 | 20 | 13 | 3 | 5 | 3 | 5 | 3 | 5 | 150 | 250 |
| | 68 | 15 | 11 | 15 | 18 | 1 | 11 | 1 | 12 | 15 | 13 | 30 | 14 | 15 | 12 | 30 | 13 | 3 | 5 | 3 | 5 | 3 | 5 | 150 | 300 |
| | 69 | 1 | 12 | 15 | 18 | 5 | 12 | 10 | 12 | 15 | 13 | 30 | 13 | 15 | 13 | 30 | 13 | 3 | 0 | 3 | 0 | 3 | 0 | 100 | 200 |
| | 70 | 10 | 11 | 30 | 17 | 15 | 11 | 15 | 12 | 15 | 13 | 30 | 14 | 15 | 12 | 30 | 13 | 3 | 0 | 2 | 3 | 2 | 3 | 100 | 200 |
| | 71 | 15 | 11 | 15 | 18 | 1 | 11 | 15 | 11 | 10 | 13 | 20 | 14 | 1 | 13 | 15 | 14 | 3 | 0 | 3 | 0 | 3 | 0 | 50 | 150 |
| | 72 | 15 | 13 | 15 | 18 | 1 | 12 | 5 | 12 | 15 | 13 | 15 | 15 | 15 | 13 | 15 | 15 | 3 | 0 | 1 | 0 | 1 | 0 | 100 | 150 |

(continued)

## TABLE B. 2. 1-2 IRRIGATION SCHEDULE AND TRANSPORTATION BY ZONE MIRABS (2/2)

| River System | Zone Mirab | Irrigation Period start dd | mm | end dd | mm | Canal Repairing start dd | mm | end dd | mm | Puddling Period sufficient start dd | mm | end dd | mm | insufficient start dd | mm | end dd | mm | Transportation Canal Control 1 | 2 | Chief Mirab 1 | 2 | Village Mirab 1 | 2 | Puddling Depth(mm) from | to |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 73 | 20 | 13 | 31 | 18 | 20 | 11 | 20 | 13 | 1 | 14 | 30 | 14 | 20 | 13 | 20 | 14 | 5 | 0 | 1 | 0 | 1 | 0 | 50 | 100 |
| | 74 | 20 | 13 | 31 | 18 | 20 | 12 | 20 | 13 | 1 | 14 | 30 | 14 | 10 | 13 | 20 | 14 | 5 | 0 | 1 | 0 | 1 | 0 | 50 | 100 |
| | 75 | 20 | 13 | 31 | 18 | 20 | 12 | 20 | 13 | 1 | 14 | 30 | 14 | 10 | 13 | 20 | 14 | 3 | 0 | 3 | 0 | 3 | 0 | 50 | 100 |
| | 76 | 20 | 13 | 31 | 18 | 20 | 12 | 20 | 13 | 1 | 14 | 31 | 14 | 20 | 13 | 20 | 14 | 3 | 0 | 3 | 0 | 1 | 0 | 50 | 100 |
| | 77 | 20 | 13 | 31 | 18 | 20 | 12 | 20 | 13 | 1 | 14 | 30 | 14 | 10 | 13 | 20 | 14 | 3 | 0 | 3 | 0 | 3 | 0 | 50 | 100 |
| | 78 | 25 | 13 | 30 | 18 | 15 | 12 | 10 | 13 | 1 | 14 | 30 | 14 | 20 | 13 | 20 | 14 | 3 | 0 | 3 | 0 | 3 | 0 | 50 | 90 |
| | 79 | 15 | 13 | 25 | 18 | 12 | 12 | 10 | 13 | 1 | 14 | 30 | 14 | 20 | 13 | 20 | 14 | 3 | 0 | 3 | 0 | 3 | 0 | 50 | 100 |
| | 80 | 20 | 13 | 31 | 18 | 20 | 12 | 20 | 13 | 1 | 14 | 30 | 14 | 20 | 13 | 20 | 14 | 3 | 0 | 3 | 0 | 3 | 0 | 50 | 100 |
| | 81 | 15 | 13 | 25 | 18 | 20 | 12 | 10 | 13 | 20 | 13 | 20 | 14 | 20 | 13 | 20 | 14 | 5 | 3 | 3 | 0 | 3 | 0 | 50 | 100 |
| | 82 | 25 | 13 | 31 | 18 | 15 | 12 | 10 | 13 | 1 | 14 | 30 | 14 | 10 | 13 | 20 | 14 | 3 | 0 | 3 | 0 | 3 | 0 | 50 | 100 |
| Kari | 83 | 15 | 13 | 25 | 18 | 20 | 11 | 15 | 12 | 1 | 14 | 30 | 14 | 1 | 14 | 30 | 14 | 3 | 5 | 3 | 0 | 3 | 0 | 50 | 100 |
| Left | 84 | 20 | 13 | 30 | 18 | 15 | 11 | 10 | 12 | 1 | 14 | 30 | 14 | 1 | 14 | 30 | 14 | 3 | 0 | 3 | 0 | 3 | 0 | 50 | 100 |
| | 85 | 15 | 13 | 30 | 18 | 20 | 11 | 10 | 12 | 1 | 14 | 30 | 14 | 1 | 14 | 30 | 14 | 3 | 0 | 3 | 0 | 3 | 0 | 50 | 100 |
| | 86 | 10 | 13 | 25 | 18 | 15 | 11 | 25 | 12 | 1 | 14 | 30 | 14 | 1 | 14 | 30 | 14 | 3 | 0 | 3 | 0 | 3 | 0 | 50 | 100 |
| | 87 | 15 | 13 | 25 | 18 | 15 | 11 | 5 | 12 | 1 | 14 | 30 | 14 | 1 | 14 | 30 | 14 | 3 | 0 | 3 | 0 | 3 | 0 | 50 | 100 |
| | 88 | 10 | 13 | 15 | 18 | 20 | 11 | 10 | 12 | 1 | 14 | 30 | 14 | 1 | 14 | 30 | 14 | 3 | 0 | 3 | 0 | 3 | 0 | 50 | 90 |
| | 89 | 20 | 12 | 15 | 17 | 25 | 10 | 25 | 11 | 1 | 13 | 10 | 14 | 1 | 13 | 10 | 14 | 3 | 0 | 3 | 0 | 3 | 0 | 100 | 150 |
| | 90 | 15 | 13 | 25 | 18 | 20 | 11 | 5 | 12 | 1 | 14 | 30 | 14 | 1 | 14 | 30 | 14 | 3 | 0 | 3 | 0 | 3 | 0 | 50 | 80 |
| | 91 | 20 | 12 | 15 | 17 | 25 | 10 | 25 | 11 | 1 | 13 | 10 | 14 | 1 | 13 | 10 | 14 | 3 | 0 | 3 | 0 | 3 | 0 | 100 | 150 |
| | 92 | 20 | 12 | 15 | 17 | 20 | 10 | 20 | 11 | 1 | 13 | 10 | 14 | 1 | 13 | 10 | 14 | 2 | 0 | 2 | 0 | 2 | 0 | 100 | 150 |
| | 93 | 15 | 13 | 12 | 17 | 15 | 11 | 20 | 12 | 15 | 13 | 30 | 14 | 15 | 13 | 30 | 14 | 3 | 0 | 3 | 0 | 3 | 0 | 100 | 150 |
| | 94 | 20 | 12 | 1 | 17 | 15 | 10 | 15 | 11 | 1 | 13 | 31 | 14 | 1 | 13 | 31 | 14 | 3 | 0 | 3 | 0 | 3 | 0 | 100 | 150 |
| | 95 | 20 | 12 | 1 | 17 | 15 | 10 | 15 | 11 | 1 | 13 | 31 | 14 | 1 | 13 | 31 | 14 | 3 | 5 | 3 | 0 | 3 | 0 | 100 | 150 |
| | 96 | 1 | 14 | 31 | 18 | 1 | 13 | 15 | 13 | 1 | 14 | 31 | 15 | 1 | 14 | 31 | 15 | 2 | 0 | 2 | 0 | 2 | 0 | 100 | 150 |
| | 97 | 20 | 14 | 30 | 18 | 15 | 13 | 20 | 13 | 20 | 14 | 10 | 15 | 20 | 14 | 10 | 15 | 5 | 0 | 1 | 0 | 1 | 0 | 100 | 150 |
| | 98 | 15 | 13 | 30 | 18 | 15 | 12 | 15 | 13 | 15 | 13 | 10 | 16 | 15 | 14 | 10 | 16 | 5 | 0 | 2 | 0 | 2 | 0 | 100 | 150 |
| | 99 | 15 | 13 | 30 | 18 | 10 | 12 | 10 | 13 | 15 | 13 | 15 | 15 | 15 | 13 | 15 | 15 | 5 | 0 | 2 | 0 | 2 | 0 | 100 | 150 |
| | 100 | 1 | 13 | 31 | 18 | 20 | 11 | 20 | 13 | 1 | 13 | 30 | 14 | 20 | 13 | 20 | 14 | 5 | 0 | 1 | 0 | 1 | 0 | 50 | 100 |
| | 101 | 1 | 13 | 31 | 18 | 20 | 11 | 20 | 13 | 1 | 14 | 30 | 14 | 20 | 13 | 20 | 14 | 5 | 0 | 1 | 0 | 1 | 0 | 50 | 100 |
| | 102 | 1 | 13 | 31 | 18 | 20 | 11 | 20 | 13 | 1 | 14 | 30 | 14 | 20 | 13 | 20 | 14 | 5 | 0 | 1 | 0 | 1 | 0 | 50 | 100 |
| Kari | 103 | 15 | 13 | 15 | 18 | 10 | 12 | 20 | 12 | 15 | 13 | 30 | 14 | 15 | 13 | 30 | 14 | 3 | 0 | 3 | 0 | 3 | 0 | 50 | 100 |
| Right | 104 | 15 | 11 | 15 | 18 | 15 | 11 | 22 | 11 | 10 | 13 | 20 | 14 | 1 | 13 | 20 | 14 | 3 | 0 | 3 | 0 | 3 | 0 | 50 | 150 |
| | 105 | 15 | 13 | 15 | 18 | 15 | 11 | 25 | 12 | 15 | 13 | 20 | 15 | 15 | 13 | 20 | 15 | 3 | 0 | 3 | 0 | 3 | 0 | 100 | 150 |
| | 106 | 20 | 13 | 31 | 18 | 20 | 12 | 20 | 13 | 1 | 14 | 30 | 14 | 10 | 13 | 20 | 14 | 5 | 0 | 1 | 0 | 1 | 0 | 50 | 100 |
| | 107 | 20 | 13 | 31 | 18 | 20 | 12 | 15 | 13 | 1 | 14 | 30 | 14 | 20 | 13 | 20 | 14 | 5 | 0 | 1 | 0 | 1 | 0 | 50 | 100 |
| | 108 | 20 | 13 | 31 | 18 | 20 | 12 | 20 | 13 | 1 | 14 | 31 | 14 | 20 | 13 | 31 | 14 | 3 | 0 | 3 | 0 | 3 | 0 | 50 | 100 |
| | 109 | 20 | 12 | 15 | 17 | 20 | 10 | 20 | 11 | 1 | 13 | 31 | 13 | 1 | 13 | 31 | 13 | 3 | 0 | 3 | 0 | 3 | 0 | 100 | |
| | 110 | 15 | 13 | 15 | 17 | 20 | 11 | 5 | 12 | 1 | 14 | 30 | 14 | 1 | 14 | 30 | 14 | 3 | 0 | 3 | 0 | 3 | 0 | 50 | 100 |
| | 111 | 20 | 13 | 30 | 18 | 10 | 12 | 25 | 12 | 25 | 14 | 10 | 16 | 25 | 14 | 10 | 16 | 2 | 0 | 2 | 0 | 2 | 0 | 100 | |
| | 112 | 1 | 14 | 31 | 18 | 1 | 13 | 15 | 13 | 1 | 14 | 31 | 15 | 1 | 14 | 31 | 15 | 2 | 0 | 2 | 0 | 2 | 0 | 100 | 150 |
| Garma | 113 | 25 | 13 | 30 | 18 | 20 | 11 | 30 | 12 | 15 | 14 | 10 | 16 | 15 | 14 | 10 | 16 | 2 | 0 | 2 | 0 | 2 | 0 | 100 | |
| Rud | 114 | 1 | 14 | 31 | 18 | 1 | 13 | 15 | 13 | 1 | 14 | 31 | 15 | 1 | 14 | 31 | 15 | 2 | 0 | 2 | 0 | 2 | 0 | 100 | 150 |
| | 115 | 25 | 13 | 30 | 18 | 25 | 11 | 20 | 12 | 15 | 14 | 10 | 16 | 15 | 14 | 10 | 16 | 2 | 0 | 2 | 0 | 2 | 0 | 100 | |
| Kharan | 116 | 15 | 14 | 15 | 18 | 10 | 11 | 25 | 12 | 15 | 14 | 30 | 15 | 15 | 14 | 30 | 15 | 2 | 0 | 2 | 0 | 2 | 0 | 100 | 150 |
| | Data | | | | | | | | | | | | | | | | | | | | | | | 116 | 101 |
| | Aver | 1 | 13 | 16 | 18 | 4 | 12 | 25 | 12 | 16 | 13 | 29 | 14 | 16 | 13 | 26 | 14 | 1= | 7 | | 32 | | 33 | 73 | 148 |
| | S.D. | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | 2= | 22 | | 31 | | 31 | 45 | 91 |
| | Min. | 10 | 11 | 1 | 17 | 15 | 10 | 10 | 11 | 1 | 2 | 15 | 13 | 1 | 11 | 15 | 12 | 3= | 59 | | 54 | | 53 | 30 | 70 |
| | Max. | 20 | 14 | 0 | 19 | 15 | 13 | 3 | 17 | 1 | 15 | 10 | 16 | 1 | 15 | 10 | 16 | 4= | 0 | | 0 | | 0 | 400 | 700 |
| | | | | | | | | | | | | | | | | | | 5= | 56 | | 28 | | 28 | *Overall* | |
| | | | | | | | | | | | | | | | | | | 6= | 0 | | 0 | | 0 | Av= | 108 |
| Alesh Rud | | 27 | 12 | 1 | 7 | 12 | 12 | 24 | 12 | 30 | 12 | 17 | 2 | 27 | 12 | 17 | 2 | | | | | | | | |
| Haraz Left | | 22 | 12 | 13 | 6 | 12 | 12 | 28 | 12 | 24 | 1 | 1 | 3 | 27 | 1 | 3 | 3 | | | | | | | | |
| Haraz Right | | 15 | 12 | 28 | 5 | 5 | 12 | 25 | 12 | 8 | 1 | 15 | 2 | 8 | 1 | 15 | 2 | | | | | | | | |
| Kari Left | | 4 | 1 | 18 | 6 | 30 | 11 | 22 | 12 | 13 | 1 | 29 | 2 | 12 | 1 | 22 | 2 | | | | | | | | |
| Kari Right | | 9 | 1 | 20 | 6 | 2 | 12 | 3 | 1 | 22 | 1 | 3 | 3 | 20 | 1 | 30 | 2 | | | | | | | | |
| Garma Rud | | 26 | 1 | 1 | 7 | 11 | 12 | 3 | 1 | 11 | 2 | 6 | 4 | 11 | 2 | 6 | 4 | | | | | | | | |
| Kharan Rud | | 15 | 2 | 15 | 6 | 10 | 11 | 25 | 12 | 15 | 2 | 30 | 3 | 15 | 2 | 30 | 3 | | | | | | | | |

| Transportation Communication |
|---|
| 1 Public Car |
| 2 Vehcle |
| 3 Motocycle |
| 4 Bicycle |
| 5 Walking |
| 6 Telephone |

(Notes)

1. Period is shown in Iranian Calendar. When month is more than 12, substruct 12.
   dd= day, mm= month
2. In the column of Puddling Period,
   sufficient= in case water sufficient.
   insufficient= in case water insufficient.

## TABLE B. 2. 1-3 WATER SOURCES, IRRIGATION PROBLEMS, AND WATER MANAGEMENT DIFFICULTIES BY ZONE MIRABS (1/2)

| River System | Zone | Water Sourses other than Canal Water: Return Flow | Abband-ands | Spring | Shallow Wells | Deep Wells | Artesian Wells | Irr Pro | Months in irrigation Problem: N | Apr 1 | May 2 | Jun 3 | Jul 4 | Aug 5 | Sep 6 | Oct 7 | Nov 8 | Dec 9 | Jan 10 | Feb 11 | Mar 12 | Villages in Problem: N | Water Shortage Fregent: 1/N | Year1 | Year2 | Reason of Irrigation Problem: N | 1 | 2 | 3 | 4 | Counter-measures taken for Irrigation Problems: N | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Difficulties on Water Management: N | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alesh Rud | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 |
| | 2 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 |
| | 3 | 0 | 0 | 0 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 |
| | 4 | 1 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 5 | 1 | 0 | 1 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 |
| | 6 | 1 | 3 | 0 | 20 | 0 | 0 | 1 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1369 | 1370 | 2 | 0 | 1 | 1 | 0 | 6 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 |
| | 7 | 1 | 4 | 0 | 40 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 |
| Haraz Left | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 |
| | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 |
| | 10 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 |
| | 11 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 |
| | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 |
| | 13 | 17 | 17 | 0 | 652 | 3 | 0 | 1 | 3 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 1370 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 14 | 0 | 10 | 1 | 15 | 0 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1370 | 0 | 2 | 0 | 1 | 1 | 0 | 6 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 6 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 |
| | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 16 | 0 | 0 | 0 | 25 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 6 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 6 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 |
| | 17 | 0 | 2 | 3 | 204 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1370 | 0 | 3 | 1 | 1 | 1 | 0 | 6 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 7 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 19 | 8 | 0 | 855 | 0 | 0 | 0 | 1 | 6 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1370 | 0 | 2 | 0 | 1 | 1 | 0 | 5 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 4 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 |
| | 20 | 1 | 0 | 0 | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 |
| | 21 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 23 | 0 | 11 | 0 | 300 | 0 | 0 | 1 | 3 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 1370 | 0 | 3 | 1 | 1 | 1 | 0 | 5 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 4 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 |
| | 24 | 0 | 10 | 0 | 198 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 1370 | 0 | 4 | 1 | 1 | 1 | 1 | 6 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 7 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| | 25 | 0 | 14 | 0 | 290 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 1369 | 1370 | 3 | 1 | 1 | 1 | 0 | 6 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 7 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| | 26 | 0 | 2 | 0 | 65 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1370 | 0 | 2 | 0 | 1 | 1 | 0 | 5 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 5 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 |
| | 27 | 0 | 9 | 0 | 34 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1370 | 0 | 3 | 1 | 1 | 1 | 0 | 5 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 28 | 0 | 3 | 0 | 254 | 0 | 0 | 1 | 3 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 1369 | 1370 | 4 | 1 | 1 | 1 | 1 | 5 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 7 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| | 29 | 0 | 10 | 0 | 130 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 1370 | 0 | 2 | 0 | 1 | 1 | 0 | 5 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 4 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 |
| Haraz Right | 30 | 0 | 8 | 0 | 0 | 0 | 6 | 1 | 6 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 1370 | 0 | 3 | 1 | 1 | 1 | 0 | 6 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 7 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| | 31 | 3 | 3 | 0 | 27 | 0 | 3 | 1 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 1370 | 0 | 2 | 0 | 1 | 1 | 0 | 6 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 6 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 |
| | 32 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 1370 | 0 | 1 | 0 | 1 | 0 | 0 | 3 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1370 | 0 | 1 | 0 | 1 | 0 | 0 | 3 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 5 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 |
| | 35 | 0 | 0 | 2 | 73 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 |
| | 36 | 0 | 10 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1370 | 0 | 3 | 1 | 1 | 1 | 0 | 5 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 5 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 |
| | 37 | 0 | 1 | 5 | 19 | 0 | 0 | 1 | 6 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1370 | 0 | 2 | 1 | 1 | 0 | 0 | 4 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 38 | 0 | 0 | 0 | 125 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 1370 | 0 | 2 | 1 | 1 | 0 | 0 | 4 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 7 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| | 39 | 0 | 0 | 2 | 1 | 0 | 0 | 1 | 6 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1370 | 0 | 2 | 1 | 1 | 0 | 0 | 5 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 5 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 |
| | 40 | 0 | 8 | 1 | 120 | 0 | 4 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1370 | 0 | 2 | 0 | 1 | 1 | 0 | 4 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 6 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 |
| | 41 | 0 | 6 | 2 | 177 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 1370 | 0 | 4 | 1 | 1 | 1 | 1 | 6 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 4 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 |
| | 42 | 0 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 43 | 0 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 44 | 0 | 1 | 0 | 191 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 1369 | 1370 | 1 | 0 | 1 | 0 | 0 | 4 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 3 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 |
| Kari Left | 45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| | 46 | 1 | 3 | 0 | 20 | 0 | 0 | 1 | 4 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 1370 | 0 | 1 | 0 | 1 | 0 | 0 | 5 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 7 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| | 47 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| | 48 | 43 | 24 | 2 | 145 | 0 | 0 | 1 | 4 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 1369 | 1370 | 2 | 0 | 1 | 1 | 0 | 6 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 6 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 |
| | 49 | 49 | 21 | 0 | 315 | 0 | 1 | 1 | 4 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 | 0 | 0 | 1369 | 1370 | 2 | 0 | 1 | 1 | 0 | 6 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 5 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 |
| | 50 | 0 | 0 | 0 | 20 | 0 | 0 | 1 | 3 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1370 | 0 | 1 | 0 | 1 | 0 | 0 | 5 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 3 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 |
| | 51 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 1368 | 1370 | 4 | 1 | 1 | 1 | 1 | 6 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 7 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| | 52 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 |
| | 53 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1370 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 54 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1370 | 0 | 1 | 0 | 1 | 0 | 0 | 4 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 55 | 6 | 2 | 8 | 58 | 0 | 4 | 1 | 3 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 1370 | 0 | 2 | 1 | 1 | 0 | 0 | 4 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 6 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 |
| | 56 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1370 | 0 | 3 | 1 | 1 | 1 | 0 | 4 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 4 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 |
| | 57 | 0 | 0 | 0 | 5 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1370 | 0 | 3 | 1 | 1 | 1 | 0 | 4 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 6 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| | 58 | 0 | 0 | 0 | 5 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1370 | 0 | 2 | 1 | 1 | 0 | 0 | 4 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 6 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| | 59 | 2 | 0 | 5 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 60 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1370 | 0 | 2 | 1 | 1 | 0 | 0 | 4 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 61 | 0 | 0 | 0 | 5 | 0 | 0 | 1 | 4 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1370 | 0 | 2 | 1 | 1 | 0 | 0 | 5 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 62 | 0 | 0 | 0 | 20 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1370 | 0 | 1 | 0 | 1 | 0 | 0 | 5 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 5 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 |
| | 63 | 0 | 0 | 0 | 3 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1370 | 0 | 1 | 0 | 1 | 0 | 0 | 5 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 64 | 1 | 0 | 0 | 3 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1370 | 0 | 1 | 0 | 1 | 0 | 0 | 5 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 65 | 0 | 18 | 0 | 54 | 0 | 0 | 1 | 3 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 1368 | 1370 | 4 | 1 | 1 | 1 | 1 | 6 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 7 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| | 66 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 1368 | 1370 | 4 | 1 | 1 | 1 | 1 | 7 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 7 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| | 67 | 0 | 0 | 0 | 7 | 0 | 0 | 1 | 4 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 1370 | 0 | 1 | 0 | 1 | 0 | 0 | 4 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 6 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 |
| | 68 | 0 | 6 | 0 | 259 | 0 | 1 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 1370 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 69 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1370 | 0 | 2 | 0 | 1 | 1 | 0 | 5 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 |
| | 70 | 0 | 11 | 0 | 82 | 1 | 0 | 1 | 2 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 1370 | 0 | 2 | 0 | 1 | 1 | 0 | 5 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 5 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 |
| | 71 | 0 | 3 | 0 | 7 | 0 | 0 | 1 | 4 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 1370 | 0 | 2 | 0 | 1 | 1 | 0 | 5 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 7 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| | 72 | 0 | 0 | 0 | 8 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1370 | 0 | 1 | 0 | 1 | 0 | 0 | 5 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |



(continued)

## TABLE B. 2. 1-3 WATER SOURCES, IRRIGATION PROBLEMS, AND WATER MANAGEMENT DIFFICULTIES BY ZONE MIRABS (2/2)

| River System | Zone | Water Sourses other than Canal Water: Return Flow | Abbandans | Spring | Shallow Wells | Deep Wells | Artesian Wells | Irr Pro | Months in Irrigation Problem: N | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Villages in Problem: N | Water Shortage Frequent: 1/R | Year1 | Year2 | Reason of Irrigation Problem: N | 1 | 2 | 3 | 4 | Counter-measures taken for Irrigation Problems: N | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Difficulties on Water Management: N | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 73 | 0 | 0 | 0 | 10 | 0 | 0 | 1 | 4 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1370 | 0 | 1 | 0 | 1 | 0 | 0 | 6 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 74 | 1 | 1 | 0 | 20 | 0 | 0 | 1 | 3 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1370 | 0 | 2 | 0 | 1 | 1 | 0 | 4 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 4 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 |
| | 75 | 1 | 3 | 0 | 15 | 0 | 0 | 1 | 4 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1370 | 0 | 2 | 0 | 1 | 1 | 0 | 6 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 5 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 |
| | 76 | 1 | 0 | 0 | 2 | 0 | 0 | 1 | 4 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1370 | 0 | 2 | 0 | 1 | 1 | 0 | 5 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 5 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0 |
| | 77 | 1 | 2 | 0 | 1 | 0 | 0 | 1 | 4 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1370 | 0 | 2 | 0 | 1 | 1 | 0 | 7 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 5 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 |
| | 78 | 2 | 3 | 0 | 50 | 0 | 1 | 1 | 4 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1370 | 0 | 2 | 0 | 1 | 1 | 0 | 6 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 5 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 |
| | 79 | 1 | 2 | 0 | 20 | 0 | 3 | 1 | 4 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1370 | 0 | 2 | 0 | 1 | 1 | 0 | 6 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 6 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 |
| | 80 | 0 | 0 | 0 | 10 | 0 | 0 | 1 | 4 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1370 | 0 | 1 | 0 | 1 | 0 | 0 | 5 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 |
| | 81 | 1 | 2 | 0 | 12 | 0 | 0 | 1 | 4 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1369 | 1370 | 2 | 0 | 1 | 1 | 0 | 6 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| | 82 | 1 | 2 | 0 | 20 | 0 | 0 | 1 | 4 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1369 | 1370 | 2 | 0 | 1 | 1 | 0 | 6 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 |
| Kari Left | 83 | 3 | 4 | 0 | 80 | 0 | 0 | 1 | 4 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 1370 | 0 | 2 | 0 | 1 | 1 | 0 | 5 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 4 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 |
| | 84 | 1 | 0 | 0 | 20 | 0 | 0 | 1 | 4 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1370 | 0 | 2 | 0 | 1 | 1 | 0 | 6 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 4 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 |
| | 85 | 3 | 4 | 0 | 80 | 0 | 0 | 1 | 4 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 1370 | 0 | 2 | 0 | 1 | 1 | 0 | 6 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 4 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 |
| | 86 | 1 | 2 | 0 | 60 | 0 | 0 | 1 | 4 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1369 | 1370 | 2 | 0 | 1 | 1 | 0 | 6 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 3 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 |
| | 87 | 1 | 2 | 0 | 50 | 0 | 0 | 1 | 4 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1370 | 0 | 3 | 0 | 1 | 1 | 1 | 6 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 88 | 0 | 1 | 0 | 30 | 0 | 0 | 1 | 4 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1369 | 1370 | 3 | 0 | 1 | 1 | 1 | 7 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 6 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 |
| | 89 | 2 | 1 | 0 | 40 | 0 | 0 | 1 | 3 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1370 | 0 | 2 | 0 | 1 | 1 | 0 | 5 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 |
| | 90 | 4 | 6 | 0 | 160 | 0 | 0 | 1 | 4 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 1369 | 1370 | 3 | 0 | 1 | 1 | 1 | 6 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 7 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| | 91 | 1 | 3 | 0 | 30 | 0 | 0 | 1 | 3 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1368 | 1370 | 2 | 0 | 1 | 1 | 0 | 5 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 |
| | 92 | 4 | 3 | 0 | 130 | 0 | 0 | 1 | 3 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 1368 | 1370 | 3 | 0 | 1 | 1 | 1 | 5 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 93 | 1 | 1 | 0 | 40 | 0 | 0 | 1 | 3 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1368 | 1370 | 2 | 0 | 1 | 1 | 0 | 5 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 4 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 |
| | 94 | 0 | 4 | 0 | 30 | 0 | 0 | 1 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1370 | 0 | 2 | 0 | 1 | 1 | 0 | 6 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 95 | 2 | 1 | 0 | 20 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1370 | 0 | 2 | 0 | 1 | 1 | 0 | 6 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 96 | 6 | 0 | 1 | 10 | 0 | 1 | 1 | 3 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 1368 | 1370 | 1 | 0 | 1 | 0 | 0 | 5 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 97 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| | 98 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 |
| | 99 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 1370 | 0 | 1 | 0 | 1 | 0 | 0 | 3 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 |
| | 100 | 0 | 0 | 0 | 154 | 0 | 0 | 1 | 3 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 1370 | 0 | 1 | 0 | 1 | 0 | 0 | 5 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 7 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| | 101 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1370 | 0 | 2 | 1 | 1 | 0 | 0 | 5 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 7 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| | 102 | 0 | 0 | 0 | 38 | 0 | 0 | 1 | 4 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1370 | 0 | 1 | 0 | 1 | 0 | 0 | 5 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 7 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| Kari Right | 103 | 1 | 0 | 0 | 5 | 0 | 0 | 1 | 2 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1370 | 0 | 1 | 0 | 1 | 0 | 0 | 4 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 5 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 |
| | 104 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1370 | 0 | 2 | 0 | 1 | 1 | 0 | 4 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 105 | 10 | 11 | 0 | 175 | 0 | 0 | 1 | 4 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 1370 | 0 | 2 | 0 | 1 | 1 | 0 | 5 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 106 | 9 | 3 | 0 | 220 | 0 | 0 | 1 | 4 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 1370 | 0 | 3 | 0 | 1 | 1 | 1 | 6 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 7 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| | 107 | 1 | 2 | 0 | 30 | 0 | 0 | 1 | 4 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1370 | 0 | 2 | 0 | 1 | 1 | 0 | 6 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| | 108 | 1 | 2 | 0 | 15 | 0 | 0 | 1 | 4 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1370 | 0 | 3 | 0 | 1 | 1 | 1 | 6 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 4 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 |
| | 109 | 2 | 4 | 0 | 80 | 0 | 0 | 1 | 3 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1368 | 1370 | 3 | 0 | 1 | 1 | 1 | 6 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 110 | 1 | 2 | 0 | 150 | 0 | 0 | 1 | 4 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 1369 | 1370 | 3 | 0 | 1 | 1 | 1 | 6 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 6 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 |
| | 111 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 112 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Garma Rud | 113 | 2 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 |
| | 114 | 1 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| | 115 | 2 | 0 | 0 | 70 | 0 | 0 | 1 | 3 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1368 | 1370 | 1 | 0 | 1 | 0 | 0 | 5 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 4 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 |
| Kharan Rud | 116 | 19 | 5 | 0 | 269 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 |
| Total | 116 | 236 | 297 | 891 | 6,329 | 11 | 33 | 85 | 242 | 15 | 52 | 61 | 60 | 46 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 323 | 1 | 1 | | | 172 | 22 | 82 | 54 | 14 | 427 | 13 | 82 | 81 | 78 | 44 | 73 | 55 | 1 | 410 | 56 | 59 | 63 | 78 | 71 | 45 | 38 | 0 |
| Average | | 2.0 | 2.6 | 7.7 | 54.6 | 0.1 | 0.3 | | 2.8 | | | | | | | | | | | | | 3.8 | | | | 2 | | | | | 5 | | | | | | | | 3.5 | | | | | | | | |
| Percent(%) | | | | | | | | | | 6 | 21 | 25 | 25 | 19 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | 13 | 48 | 31 | 8.1 | | 3 | 19 | 19 | 18 | 10 | 17 | 13 | 0.2 | | 14 | 14 | 15 | 19 | 17 | 11 | 9.3 | 0 |

(Note)

0: No problem on Irrigation
1: Problem on Irrigation

from Year1 to Year2
1: Improper management in Upstream.
2: Water shortage in Canal.
3: Water shortage in Abbandan.
4: Operation of River Pump.

1: None counter-measures taken.
2: Negotiation with Upstream Mirab.
3: Repairing of Canal and Weir.
4: Intermittent irrigation.
5: More release from Abbandan.
6: Operation of More Wells.
7: Water cut to None Water Right Paddy.
8: Other counter-measures.

1: Canal length is too long.
2: Gate operation is difficult.
3: Difficult to access to canal.
4: Difficult on transportation.
5: Difficult on communication.
6: Difficult on sediment remove.
7: Difficult on water management.
8: Other difficulties.

## TABLE B. 2. 1-4 AGE, EXPERIENCE, IRRIGATION SCHEDULE, TRANSPORTATION AND WATER RIGHT BY VILLAGE MIRABS

| Dist-rict | Survey Code | Village where Village Mirab lives | | | Experience / Service Villages / Mean Elevation of Service Villages/ Sellection Methods of Mirab | | | | | | | | Irrigation Activity | | | | Transportation | | | Puddling | | | | | Irrigated Area with Water Right | | | | | | | | | | Non Water Right | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | | When Water Surficient | | When Water Shortage | | | Canals Irrigating Area | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | Secondary Canals | | | | | | | | | | |
| | | Code | Name | Number Mirabs | Age | Work Yrs | Responsible Villages No | Village Code | | | | Mean El. (m) | Selctn Mid | Selctn N | Irrigation Start | Irrigation End | Repair Start | Repair End | Canal Contl | Zone Mirab | Villag Mirab | Start | End | Start | End | Depth (mm) | No | Canal Name | 3rd No | 4th No | Irri Area (ha) | Return flow Dirctions | | | Water Sourc | Irri Area (ha) |
| HW | 1 | 18 | No Gardan | 1 | 55 | | 1 | 18 | | | | 180 | | | 1.75 | 6.99 | 1.00 | 1.45 | 5 | 2 | 5 | 1.50 | 2.50 | 2.16 | 2.75 | 100 | 1 Valkan | 3 | | 67 | 1 | | | | |
| | 2 | 15 | Marzon Kola | 1 * | 50 | 7 | 1 | 15 | | | | 160 | 2 | | 1.50 | 6.99 | 1.00 | 1.50 | 4 | 2 | 2 | 2.33 | 3.99 | 2.00 | 2.99 | 100 | 1 Shelehpat | 1 | | | 2 | | | | |
| | 3 | 13 | Khas Kola | 1 | 60 | 7 | 1 | 13 | | | | 140 | 1 | 1 | 1.00 | 6.00 | 12.00 | 12.99 | 5 | 2 | 2 | 1.16 | 1.83 | 1.16 | 2.50 | 150 | 1 Taj rud | 2 | | 71 | 2 | | | | |
| | 4 | 7 | Derazan | 1 | 48 | 10 | 1 | 7 | | | | 140 | 2 | | 12.50 | 6.99 | 12.00 | 1.50 | 5 | 5 | 5 | 12.50 | 2.33 | 11.50 | 1.66 | 50 | 1 Taj rud | 2 | | 120 | 2 | | | | |
| | 5 | 6 | Chandar Mahalleh | 1 * | 62 | | 2 | 6 | 12 | | | 120 | 2 | | 1.00 | 6.00 | 12.00 | 12.99 | 5 | 2 | 2 | 1.33 | 2.33 | | | 100 | 2 Valkan/Shelehpat | 3 | 4 | 104 | 1 | 2 | | | |
| | 6 | 23 | Varam Deh | 1 | 70 | | 3 | 23 | 5 | 4 | | 100 | 2 | 1 | 1.33 | 5.33 | 12.33 | 1.00 | 5 | 5 | 1 | 1.66 | 2.99 | 1.66 | 2.99 | 100 | 1 Shelehpat | 1 | | 300 | 2 | | | 1 | 210 |
| | 7 | 8 | Div Raz | 1 | 45 | 2 | 2 | 58 | 8 | | | 80 | 2 | 1 | 12.50 | 5.50 | | | 2 | 5 | 2 | 5 | 2 | 5 | 1.66 | 2.50 | 2.16 | 2.75 | 70 | 100 | 1 Shelehpat | 1 | | 36 | 1 | | | |
| | 8 | 60 | Zaron Deh | 2 | 50 | 11 | 4 | 54 | 60 | 49 | 11 | 75 | 2 | 1 | 1.16 | 5.99 | 1.33 | 1.50 | 5 | 1 | 1 | 1.66 | 2.66 | 1.66 | 3.16 | 100 | 150 | 1 Taj rud | 3 | | 162 | 2 | | | | |
| | 9 | 39 | Kord Koti | 1 | 63 | | 1 | 39 | | | | 60 | 2 | | 1.50 | 2.50 | 12.33 | 12.43 | 2 | 5 | 5 | 5 | 1.66 | 2.66 | 1.66 | 3.33 | 200 | 400 | 1 Lakoni rud | 1 | | 83 | | | | | |
| | 10 | 39 | Kord Koti | 1 | 50 | 1 | 1 | 27 | | | | 50 | 1 | 1 | 12.00 | 6.33 | 11.50 | 12.00 | 5 | 5 | 3 | 2 | 1.33 | 1.99 | 1.33 | 2.50 | 100 | | 1 Lakoni rud | 2 | | 28 | 1 | | | | |
| | 11 | 35 | Hali Koti | 2 | 48 | 15 | 1 | 35 | | | | 45 | 2 | | 1.33 | 6.33 | 12.66 | 12.70 | 3 | 3 | 3 | 1.50 | 1.75 | 1.33 | 1.75 | 50 | 60 | 1 Lakoni rud | 1 | | 45 | 2 | | | | |
| | 12 | 208 | Kalikan Olia | 1 | 41 | 6 | 4 | 208 | 511 | 220 | 206 | 45 | 2 | | 1.33 | 6.00 | 12.33 | 4.50 | 5 | 2 | 5 | 1.33 | 2.33 | 1.75 | 2.99 | 100 | 150 | 1 Ahi rud | 1 | 5 | 395 | 1 | | | | |
| | 13 | 37 | Kaseb Mahalleh | 1 * | 40 | 10 | 1 | 37 | | | | 35 | 2 | | 1.00 | 5.66 | 1.00 | 1.10 | 5 | 5 | 5 | 1.00 | 2.50 | 1.33 | 2.50 | 100 | | 1 Taj rud | 5 | | 80 | 1 | | | 2 | 20 |
| | 14 | 206 | Jafar Abad | 1 | 35 | | 1 | 206 | | | | 35 | 2 | | 1.00 | 5.99 | 12.00 | 2.99 | 5 | 2 | 2 | 2.33 | 2.99 | 1.33 | 1.99 | 50 | 150 | 1 Ahi rud | 1 | 3 | 45 | 1 | 2 | 3 | | |
| | 15 | 197 | Aski Mahalleh | 1 | 45 | 1 | 1 | 197 | | | | 25 | 2 | 1 | 12.33 | 6.00 | 1.16 | 1.50 | 5 | 2 | 3 | 12.66 | 2.66 | 2.00 | 2.99 | 50 | 150 | 1 Ahi rud | 1 | 6 | 215 | 1 | 2 | | | |
| | 16 | 254 | Mir Alamdeh | 1 | 55 | 30 | 4 | 254 | 245 | 240 | 246 | 10 | 2 | | 12.00 | 6.99 | 12.00 | 12.99 | 5 | 5 | 2 | 1.75 | 2.75 | | | 50 | | 1 Lakoni rud | 1 | | 50 | 1 | | | | |
| | 17 | 245 | Ghassab Koti | 1 * | 65 | | 1 | 245 | | | | 6 | 1 | | 1.00 | 4.99 | 12.00 | 12.75 | 5 | 5 | 5 | 1.33 | 2.33 | 1.00 | 1.99 | 100 | | 1 Shah rud | 2 | | 45 | 2 | | | | |
| AW | 18 | 225 | Rafi Abad | 1 | 50 | 9 | 1 | 225 | | | | 10 | 2 | | 2.50 | 5.99 | 11.66 | 12.50 | 5 | 2 | 2 | 1.50 | 2.99 | | | 50 | | 1 Molla rud | 1 | | 40 | 2 | | | | |
| | 19 | 231 | Sheikh Abad | 1 | 60 | | 1 | 231 | | | | 6 | 2 | | 2.50 | 5.99 | 11.66 | 12.50 | 5 | 2 | 2 | 1.50 | 2.99 | | | 50 | | 1 Molla rud | 1 | 1 | 40 | 1 | | | | |
| | 20 | 233 | Zagh Deh | 1 * | 49 | 7 | 1 | 233 | | | | 6 | 2 | | 12.00 | 6.00 | 1.00 | 1.99 | 5 | 5 | 2 | 1.66 | 3.99 | 2.00 | 3.99 | 20 | | 1 Sang rud | 4 | | 145 | 1 | 2 | | | |
| | 21 | 310 | Kalosa | 1 * | 42 | 5 | 1 | 310 | | | | 4 | | | 1.00 | 5.99 | 12.00 | 12.99 | 5 | | | 1.33 | 2.99 | | | 50 | | 1 Ali rud | 3 | | 32 | 2 | | | | |
| | 22 | 265 | Zangi Kola | 1 | 60 | 15 | 1 | 265 | | | | 0 | 1 | | 1.00 | 5.00 | 12.50 | 1.00 | 3 | 3 | 3 | 12.66 | 1.66 | 2.00 | 2.99 | 100 | | 1 Ahi rud | 1 | 4 | 146 | 1 | 3 | | | |
| | 23 | 277 | Kenes Marz | 1 | 22 | | 1 | 277 | | | | 0 | 2 | | 12.00 | 5.75 | 9.00 | 9.66 | 5 | 5 | 5 | 11.33 | 12.99 | 11.00 | 12.66 | 80 | | 1 Molla-Ahi rud | 1 | 1 | 140 | 1 | | | | |
| | 24 | 303 | Eskan Deh | 1 * | 35 | 4 | 1 | 303 | | | | -4 | 1 | | 12.50 | 5.50 | 11.50 | 12.50 | 2 | 2 | 3 | 1.50 | 2.50 | 1.00 | 2.50 | 100 | | 1 Ali rud | 4 | | 295 | 3 | | | | |
| | 25 | 307 | Jura Kola | 1 | 35 | 3 | 1 | 307 | | | | -10 | 2 | | 12.50 | 5.50 | 11.00 | 12.50 | 5 | 2 | 2 | 1.00 | 4.50 | 2.00 | 4.50 | 30 | | 1 Ahi rud | 1 | | | 3 | | | | |
| | 26 | 291 | Abolhassan Abad | 1 * | 31 | | 1 | 291 | | | | -14 | 2 | | 12.50 | 4.83 | 11.50 | 12.50 | 5 | 2 | 2 | 12.50 | 1.50 | 12.00 | 12.99 | 100 | | 1 Molla rud | 2 | 1 | 190 | 1 | | | | |
| | 27 | 308 | Kale Marz Olia | 2 | 42 | 4 | 1 | 308 | | | | -16 | 2 | | 1.00 | 4.99 | 11.00 | 12.99 | 5 | 3 | 3 | 1.50 | 3.99 | 1.50 | 3.99 | 70 | | 1 Ali rud | 1 | 1 | 80 | 1 | | | 1 | 10 |
| | 28 | 313 | Moallem Kola | 1 | 50 | 1 | 1 | 313 | | | | -16 | 1 | | 12.50 | 4.75 | 11.50 | 12.50 | 5 | 2 | 2 | 12.50 | 1.50 | 12.00 | 12.99 | 100 | | 1 Molla-Ahi rud | 9 | | 570 | 1 | 2 | 3 | | |
| | 29 | 306 | Harab Deh | 1 | 58 | 3 | 1 | 306 | | | | -20 | 2 | | 1.00 | 5.99 | 12.00 | 12.99 | 5 | 2 | 2 | 3 | 1.20 | 2.75 | | | 50 | | 1 Shah rud | 1 | | 200 | 1 | | | | |
| | 30 | 300 | Bisheh Kola | 1 * | 43 | | 1 | 300 | | | | -20 | 1 | | 11.00 | 5.66 | 10.00 | 10.99 | 3 | 3 | 3 | 11.00 | 12.99 | 11.00 | 12.99 | 100 | | 2 Ali rud/Ahi rud | 11 | | 425 | 1 | | | | |
| | 31 | 252 | Khesht Sar | 1 | 36 | 1 | 1 | 252 | | | | -22 | 2 | | 12.00 | 3.99 | 8.00 | 12.00 | 3 | 2 | 3 | 12.50 | 1.50 | 12.00 | 12.99 | 50 | | 1 Shelehpat | 1 | 2 | | 3 | | | | |
| | 32 | 184 | Rudbar Dasht | 1 | 50 | 20 | 1 | 184 | | | | 160 | 2 | | 1.00 | 6.99 | 11.50 | 12.50 | 5 | 5 | 5 | 1.00 | 2.99 | 1.00 | 2.99 | 80 | | 1 Sag rud | 3 | | 215 | 2 | | | | |
| | 33 | 190 | Tork Kola | 1 | 52 | 8 | 1 | 190 | | | | 140 | 1 | | 12.33 | 6.99 | 11.50 | 11.99 | 5 | 5 | 5 | 12.33 | 2.33 | 12.00 | 2.33 | 80 | | 1 Tork Kola rud | 1 | | 180 | | | | | |
| | 34 | 153 | Buran | 1 | 58 | 4 | 3 | 166 | 184 | 513 | | 120 | 1 | | 1.00 | 4.00 | 11.66 | 1.00 | 5 | 2 | 2 | 10.33 | 1.66 | 11.33 | 1.66 | 150 | | 2 Zane mard/Sag rud | 11 | | 770 | 1 | | 2 | | |
| | 35 | 159 | Firuz Kola Vosta | 1 | 57 | 14 | 1 | 159 | | | | 100 | 1 | 1 | 1.50 | 6.99 | 12.66 | 12.99 | 5 | | 5 | 1.00 | 2.33 | 1.66 | 2.66 | 100 | | 1 Barik rud | 7 | | 240 | 2 | | | | |
| | 36 | 157 | Firuz Kola Olia | 1 | 57 | 10 | 1 | 157 | | | | 100 | | | 12.66 | 6.83 | 12.00 | 1.00 | 5 | 2 | 2 | 12.66 | 2.83 | 1.66 | 2.83 | 50 | | 1 Katelkash | 2 | | 90 | 2 | | | | |
| | 37 | 158 | Firuz Kola Sofla | 1 | 55 | 13 | 1 | 158 | | | | 100 | 2 | | 1.50 | 6.50 | 12.00 | 12.99 | 5 | 5 | 5 | 1.50 | 2.50 | 1.00 | 1.99 | 60 | | 1 Barik rud | 6 | | 205 | 1 | | 2 | | |
| | 38 | 173 | Mahdi Kheil | 1 | | | 1 | 173 | | | | 90 | 2 | 1 | 1.33 | 6.00 | 12.00 | 1.00 | 5 | 5 | 2 | 1.00 | 2.99 | 1.00 | 2.66 | 80 | | 3 Meliard/Pasharud/Katelkash | 3 | 4 | 180 | 2 | 1 | | | |
| | 39 | 210 | Kamangar Kola | 1 | 35 | 2 | 2 | 210 | 230 | | | 65 | 2 | | 1.33 | 6.50 | 12.50 | 1.00 | 2 | 5 | 2 | 2 | 1.33 | 2.66 | 1.33 | 2.99 | 100 | 150 | 1 Khoshkeh rud | 1 | 2 | 520 | 1 | | | | |
| | 40 | 88 | Galesh Kola | 1 | 52 | 10 | 1 | 88 | | | | 65 | 1 | | 12.00 | 5.00 | 11.50 | 12.00 | 3 | 3 | 3 | 12.33 | 2.99 | 11.66 | 2.50 | 50 | | 1 Khoshkeh rud | 1 | 2 | 138 | 2 | | | | |
| | 41 | 122 | Rash Kola | 2 | 47 | 9 | 1 | 122 | | | | 65 | 2 | | 1.00 | 5.99 | 12.50 | 1.00 | 5 | 2 | 2 | 1.75 | 2.75 | | | 50 | | 1 Rash rud | 1 | | 380 | 2 | | | | |
| ME | 42 | 165 | Hendu Kola | 1 | 39 | 1 | 4 | 165 | 77 | 133 | 185 | 65 | 2 | | 1.00 | 6.83 | 12.00 | 12.99 | 2 | 2 | 2 | 2.00 | 2.99 | 1.00 | 2.99 | 100 | | 1 Niaki rud | 6 | 1 | 350 | 1 | | | | |
| | 43 | 164 | Harun Kola | 1 | 59 | 12 | 1 | 164 | | | | 55 | 2 | 1 | 1.00 | 5.66 | 12.00 | 12.99 | 5 | 2 | 2 | 2.00 | 3.33 | 1.33 | 2.99 | 50 | | 1 Meliard | 4 | | 290 | 2 | | | | |
| | 44 | 156 | Ejbar Kola | 1 | 59 | 12 | 3 | 156 | 179 | 164 | | 55 | 2 | 1 | 1.00 | 5.66 | 12.00 | 12.99 | 5 | 2 | 2 | 2.00 | 3.13 | 1.13 | 2.66 | 50 | | 2 Katel kash/Meliard | 5 | 8 | 330 | 2 | | | | |
| | 45 | 179 | Nezam Abad | 1 | 59 | 12 | 1 | 179 | | | | 55 | 2 | 1 | 1.00 | 5.66 | 12.00 | 12.99 | 5 | 2 | 2 | 2.00 | 3.33 | 1.33 | 2.66 | 50 | | 1 Meliard | 1 | 2 | 100 | 2 | | | | |
| | 46 | 76 | Bur Mahalleh | 1 | 43 | | 1 | 76 | | | | 45 | | | 1.00 | 4.99 | 12.00 | 12.33 | 5 | 5 | 5 | 1.33 | 2.66 | 1.00 | 2.66 | 100 | | 1 Khoshkeh rud | 1 | 1 | 25 | 1 | | | | |
| | 47 | 65 | Aloo | 1 | 55 | 5 | 1 | 65 | | | | 45 | 2 | 3 | 12.00 | 4.99 | 9.33 | 9.66 | 2 | 2 | 2 | 11.00 | 12.99 | 1.00 | 3.99 | 100 | | 2 Alavi Kola rud | 2 | | 50 | 1 | | | | |
| | 48 | 95 | Heshtel Pain | 1 | 30 | 3 | 1 | 95 | | | | 45 | | 3 | 1.50 | 5.50 | 12.50 | 1.00 | 5 | 2 | 2 | 12.66 | 2.99 | 1.66 | 2.99 | 100 | | 1 Khoshkeh rud | 1 | 5 | 190 | 1 | 2 | | | |
| | 49 | 160 | Ghaleh Kash | 1 * | 52 | 7 | 1 | 160 | | | | 35 | | | 1.33 | 5.33 | 12.00 | 12.99 | 5 | | | 2.33 | 3.33 | | | 50 | | 1 Katelkash | 2 | 5 | 200 | 1 | | | | |
| | 50 | 150 | Bagheban Kola | 1 * | 56 | | 1 | 150 | | | | 35 | 1 | | 11.50 | 5.99 | 11.00 | 11.50 | 5 | | | 11.33 | 1.66 | 11.33 | 1.66 | 100 | 150 | 1 Katelkash | 3 | | 60 | 1 | | 2 | | |
| | 51 | 91 | Haji Abad | 1 * | 29 | 11 | 1 | 91 | | | | 20 | 2 | | 12.00 | 5.00 | 11.00 | 12.00 | 5 | 5 | 1 | 12.00 | 1.99 | 11.00 | 1.99 | 50 | | 1 Niaki rud | 3 | | 125 | 1 | | | | |
| | 52 | 136 | Tanha Kola | 1 * | 45 | | 1 | 136 | | | | 4 | 2 | | 12.00 | 6.99 | 8.00 | 9.50 | 5 | 2 | 5 | 3 | 12.00 | 1.99 | 11.33 | 12.99 | 100 | | 1 Cheshmeh Kileh | 2 | | 130 | 1 | | | | |
| AE | 53 | 200 | Farah Abad | 1 * | 35 | | 1 | 200 | | | | 20 | | | 1.00 | 6.50 | 12.00 | 12.66 | 5 | 2 | 2 | 1.66 | 2.99 | 2.66 | 3.75 | 50 | | 1 Jamshid rud | 1 | | 15 | 1 | | | | |
| | 54 | 211 | Karati | 1 | 61 | | 1 | 211 | | | | 20 | 2 | | 12.00 | 5.00 | 11.66 | 12.33 | 5 | 2 | 2 | 12.00 | 1.33 | | | 100 | | 2 Valik rud/Zangi rud | 2 | | 48 | 1 | | | | |
| | 55 | 219 | Mohammad Abad | 1 | 37 | | 1 | 219 | | | | 10 | 2 | | 12.00 | 5.00 | 11.66 | 12.33 | 5 | 2 | 2 | 12.00 | 1.33 | 1.33 | 2.99 | 70 | | 2 Valik rud/Zangi rud | 2 | | 75 | 1 | | | | |
| | 56 | 141 | Valik Sofla | 2 | 33 | 2 | 3 | 141 | 219 | 211 | | 10 | 2 | | 1.00 | 4.99 | 1.10 | 1.13 | 5 | 5 | 3 | 3 | 2 | 1.16 | 2.50 | | | 50 | | 1 Valik rud | 4 | | 400 | 1 | | | | |
| | 57 | 86 | Espahi Kola Olia | 1 | 35 | | 1 | 86 | | | | 4 | | | 1.00 | 5.00 | | | 5 | 2 | 5 | 11.00 | 12.99 | 1.00 | 5.00 | 40 | | 1 Zane mard | 2 | | 100 | 1 | 2 | | 1 | |
| | 58 | 72 | Bamer Kola | 1 | 39 | | 1 | 72 | | | | 4 | 1 | | 12.50 | 5.00 | 10.00 | 10.99 | 5 | 1 | 1 | 11.66 | 1.33 | 11.00 | 12.66 | 40 | 50 | 1 Niaki rud | 1 | | | | | | | |
| | 59 | 116 | Narges Marz | 1 * | 46 | | 1 | 116 | | | | 2 | 2 | | 12.00 | 4.99 | 11.00 | 11.33 | 5 | 2 | 2 | 12.00 | 12.99 | 1.00 | 4.99 | 100 | | 1 Katelkash | 1 | | 60 | | | | | |
| | 60 | 73 | Banser Kola | 1 * | 48 | | 1 | 73 | | | | -2 | | | 1.00 | 4.99 | 10.00 | 11.99 | 5 | 5 | 2 | 1.00 | 1.99 | 2.00 | 2.99 | 70 | | 1 Meliard | 2 | | 220 | | | | | |
| | 61 | 74 | Barik Mahalleh | 1 | 50 | 7 | 2 | 74 | 75 | | | -4 | 1 | 1 | 12.00 | 4.99 | 12.50 | 12.99 | 5 | 5 | 5 | 11.50 | 1.83 | 1.16 | 2.99 | 40 | | 1 Niavi Kola rud | 1 | | 250 | 1 | | | | |
| | 62 | 89 | Ghias Kola | 1 * | 43 | 13 | 2 | 89 | 145 | | | -10 | 2 | 1 | 2.00 | 4.66 | 9.00 | 9.99 | 5 | 2 | 2 | | | 2.33 | 4.50 | 40 | | 2 Katelkash/Meliard | 2 | 3 | 220 | 1 | | | | |
| | 63 | 62 | Abo Mahalleh | 1 | 28 | 1 | 1 | 62 | | | | -11 | 2 | | 12.50 | 5.50 | 11.00 | 11.66 | 5 | 5 | 2 | 12.83 | 1.83 | | | 50 | | 1 Zane mard | 1 | | 80 | 3 | | | | |
| | 64 | 275 | Kachab Olia | 1 | 55 | 25 | 1 | 275 | | | | -13 | 1 | 1 | 1.00 | 5.50 | 10.00 | 10.99 | 3 | 3 | 3 | 11.00 | 11.99 | 11.00 | 11.99 | 50 | | 1 Kachab rud | 3 | | 200 | 1 | | | | |
| | 65 | 276 | Kachab Sofla | 1 | 43 | 1 | 1 | 276 | | | | -14 | 2 | | 1.00 | 5.50 | 12.50 | 12.99 | 3 | 2 | 3 | 11.00 | 11.99 | 1.00 | 1.99 | 100 | | 2 Kachab rud/Marij rud | 5 | 2 | 199 | 1 | | 2 | | |
| | 66 | 278 | Merij Mahalleh | 1 | 40 | | 1 | 278 | | | | -16 | 2 | | 12.00 | 5.66 | 8.00 | 8.33 | 5 | 5 | 5 | 1.00 | 1.99 | 12.66 | 1.66 | 80 | | 1 Marij rud | 2 | 2 | 110 | 1 | | | | |
| | 67 | 287 | Vozara Mahalleh | 1 | 46 | 3 | 1 | 287 | | | | -23 | 1 | | 1.00 | 5.50 | 11.50 | 11.99 | 3 | 2 | 3 | 11.00 | 11.99 | 1.00 | 1.99 | 80 | | 1 Marij rud | 2 | | 110 | 1 | | | | |
| Answer | | * : Shora Member | | 67 | 66 | 45 | 67 | | | | | | 58 | 16 | 67 | 67 | 65 | 65 | 67 | 3 | 63 | 3 | 64 | 4 | 66 | 66 | 56 | 56 | 67 | 10 | 67 | 67 | 22 | 63 | 62 | 9 | 6 | 4 | 3 |
| Total | | 17 villages | | 72 | | | 92 | | | | | | 16 | | | | | | 1 | 0 | 1 | 2 | 1 | 4 | | | | | | | | | | | | |
| Average | | | | 1.1 | 47 | 7.9 | 1.4 | | | | | 39.57 | 42 | 1.3 | 12.79 | 5.67 | 11.58 | 12.49 | 2 | 6 | 2 | 35 | 2 | 33 | 12.83 | 2.29 | 12.95 | 2.56 | 76.6 | | 1 | 3 | 3 | 175 | 1=41 | | | 80 | |
| Standard Deviation | | | | 0.3 | 10 | 6.4 | 0.8 | | | | | 52.14 | | 0.7 | 0.66 | 0.84 | 1.23 | 1.23 | 3 | 8 | 3 | 8 | 3 | 14 | 0.98 | 0.93 | 0.99 | 1.07 | 31.7 | | 0 | 2 | 2 | 147 | 2=29 | | | 113 | |
| Min. | | | | 1 | 22 | 1 | 1 | | | | | -23 | | 1 | 11.00 | 2.50 | 8.00 | 8.33 | 4 | 1 | 4 | 0 | 4 | 0 | 10.33 | 11.99 | 11.00 | 11.99 | 20 | | 1 | 1 | 1 | 15 | 3= 7 | | | 10 | |
| Max. | | | | 2 | 70 | 30 | 4 | | | | | 180 | | 3 | 2.50 | 6.99 | 1.33 | 4.50 | 5 | 55 | 5 | 21 | 5 | 17 | 2.33 | 4.50 | 2.66 | 5.00 | 200 | | 3 | 11 | 8 | 770 | | | | 210 | |

## TABLE B.2.1-5 WATER SOURCES, DIFFICULTIES ON IRRIGATION AND WATER MANAGEMENT BY VILLAGE MIRABS

| Dist-rict | Survey Code | Village where Village Mirab lives | | | Other Water Sources than Canal Water & their Irrigating Areas | | | | | | | | | | Difficulties in Irrigation | | | | | | | | | | | | | | | | | | Difficulties in Water Management | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Code | Name | Number Mirabs | Abbandan | | Springs | | Art.Well | | Shallow | | Deep W. | | Y | Month | | How Often | | Reasons | | | | | Counter-measures taken | | | | | | | | | 1:Yes | Difficulties | | | | | | | | | |
| | | | | | Nmbr | (ha | Nmbr | (ha | Nmbr | (ha | Nmbr | (ha | Nmbr | (ha | N | From | to | 1/N | Year | Year | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 0:No | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| HW | 1 | 18 | No Gardan | 1 | | | | | | | | | | | Y | 2 | 4 | | 1370 | | | 1 | | 1 | | 1 | | | | | | 1 | 1 | | | | | | | | | | |
| | 2 | 15 | Marzon Kola | 1 * | | | | | | | | | | | Y | 2 | 3 | 3 | | | 1 | 1 | | | | 1 | 1 | 1 | | | | 1 | | | | | | | | | 1 | | |
| | 3 | 13 | Khas Kola | 1 | | | | | | | | | | | Y | | | | 1370 | | | 1 | | 1 | | 1 | 1 | 1 | | | | 1 | 1 | | | | | | | | | | |
| | 4 | 7 | Derazan | 1 | | | | | | | | | | | Y | 3 | 4 | 2 | | | 1 | 1 | | | | 1 | 1 | 1 | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | |
| | 5 | 6 | Chandar Mahalleh | 1 * | | | | | | | | | | | Y | 1 | 2 | | 1370 | | | | | | | 1 | | | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | |
| | 6 | 23 | Varam Deh | 1 | | | | | | | | | | | Y | 12 | 5 | 3 | | | | | | | | 1 | 1 | 1 | | | | 1 | 1 | 1 | | 1 | 1 | | 1 | | | | |
| | 7 | 8 | Div Raz | 1 | | | 4 | 60 | | | 55 | 17 | | | Y | 1 | 3 | | 1369 | 1370 | 1 | 1 | | | | 1 | 1 | 1 | | 1 | 1 | | 1 | 1 | | 1 | 1 | | 1 | | | | |
| | 8 | 60 | Zaron Deh | 2 | | | | | | | | | | | Y | | | 3 | | | 1 | 1 | | | | 1 | 1 | | | | | | 1 | | | | 1 | 1 | 1 | | | | |
| | 9 | 39 | Kord Koti | 1 | | | | | | | | | | | Y | 1 | 2 | | 1368 | 1370 | 1 | 1 | | | | 1 | 1 | 1 | | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | |
| | 10 | 39 | Kord Koti | 1 | | | | | | | 8 | 35 | | | Y | 1 | 1 | | 1370 | | 1 | | | | | 1 | 1 | 1 | | 1 | | | 1 | | | | | | | | | | |
| | 11 | 35 | Hali Koti | 2 | | | 3 | 55 | | | 15 | 2.5 | | | Y | 2 | 3 | | | | 1 | 1 | | | | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | | 1 | | | | |
| | 12 | 208 | Kalikan Olia | 1 | | | | | | | 2 | 4 | | | Y | 1 | 6 | | 1370 | | | 1 | | | | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | |
| | 13 | 37 | Kaseb Mahalleh | 1 * | | | 2 | 30 | | | 30 | 20 | | | Y | 3 | 4 | 1 | | | 1 | 1 | | 1 | | | 1 | 1 | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | 1 |
| | 14 | 206 | Jafar Abad | 1 | | | 1 | 48 | | | | | | | Y | 2 | 5 | 1 | | | 1 | 1 | | 1 | | | 1 | 1 | 1 | | | 1 | 1 | 1 | | 1 | | | | | | |
| | 15 | 197 | Aski Mahalleh | 1 | | | 1 | 8.5 | | | 8 | | | | Y | 1 | 6 | | 1368 | 1370 | 1 | 1 | | | | 1 | 1 | 1 | | | | | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | | | |
| | 16 | 254 | Mir Alamdeh | 1 | | | 8 | 610 | | | | | | | Y | 1 | 5 | | 1360 | 1370 | 1 | 1 | | | | 1 | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | 1 |
| | 17 | 245 | Ghassab Koti | 1 * | | | 2 | 80 | | | | | | | Y | 1 | 2 | | 1370 | | 1 | 1 | | | | 1 | 1 | 1 | | | 1 | 1 | 1 | 1 | | | | 1 | | | | |
| AW | 18 | 225 | Rafi Abad | 1 | | | | | | | | | | | Y | 1 | 5 | | 1370 | | 1 | 1 | | | | 1 | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | | | | |
| | 19 | 231 | Sheikh Abad | 1 | | | | | | | | | | | Y | 2 | 3 | | 1370 | | 1 | | | | | 1 | 1 | 1 | | | 1 | 1 | | | 1 | 1 | | | | | | |
| | 20 | 233 | Zagh Deh | 1 * | | | 8 | 150 | | | 24 | 548 | | | Y | 2 | 5 | 1 | | | 1 | 1 | | 1 | | 1 | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | | | | |
| | 21 | 310 | Kalosa | 1 * | | | | | | | | | | | Y | 1 | 5 | | 1369 | 1370 | 1 | 1 | | | | 1 | 1 | 1 | | | 1 | 0 | | | | | | | | | | |
| | 22 | 265 | Zangi Kola | 1 | 2 | 70 | | | | | | | | | Y | 1 | 6 | 1 | | | 1 | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | |
| | 23 | 277 | Kenes Marz | 1 | 1 | 45 | | | | | 30 | | | | Y | 12 | 5 | | 1370 | | 1 | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | |
| | 24 | 303 | Eskan Deh | 1 * | 3 | 125 | | | | | | | | | Y | 12 | 5 | 1 | | | 1 | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | |
| | 25 | 307 | Jura Kola | 1 | 2 | 200 | | | | | 100 | 200 | | | Y | 1 | 5 | | 1367 | 1370 | 1 | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | | | | | | 1 | | | | |
| | 26 | 291 | Abolhassan Abad | 1 * | 1 | 10 | | | | | 150 | | | | Y | 2 | 3 | 1 | | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | |
| | 27 | 308 | Kale Marz Olia | 2 | | | | | | | 15 | 15 | | | Y | 2 | 3 | | 1367 | 1370 | 1 | 1 | | 1 | | 1 | 1 | 1 | | 1 | 1 | | 1 | | 1 | | 1 | 1 | | | | |
| | 28 | 313 | Moallem Kola | 1 | 2 | | | | | | 350 | | | | Y | 1 | 3 | 1 | | | 1 | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | |
| | 29 | 306 | Harab Deh | 1 | 4 | 70 | | | | | | | | | Y | 1 | 5 | | 1369 | 1370 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | |
| | 30 | 300 | Bisheh Kola | 1 * | 4 | 137 | | | | | 400 | | | | Y | 2 | 5 | 1 | | | 1 | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | |
| | 31 | 252 | Khesht Sar | 1 | 2 | 120 | | | | | 20 | | | | Y | 2 | 5 | 1 | | | 1 | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | | | 1 | 1 | | | | | 1 | | | | |
| HE | 32 | 184 | Rudbar Dasht | 1 | | | | | | | | | | | Y | 1 | 6 | | 1364 | 1370 | 1 | 1 | | | | 1 | 1 | 1 | | | 1 | | 1 | 1 | 1 | 1 | 1 | | 1 | | | | |
| | 33 | 190 | Tork Kola | 1 | | | | | | | | | | | Y | 1 | 6 | | 1369 | 1370 | 1 | 1 | | | | 1 | 1 | 1 | | | 1 | | 1 | 1 | 1 | 1 | 1 | | 1 | | | | |
| | 34 | 153 | Buran | 1 | | | | | | | | | | | Y | 3 | 5 | | 1369 | 1370 | | 1 | | | | 1 | 1 | 1 | | | 1 | | 1 | | 1 | 1 | 1 | 1 | 1 | | | | |
| | 35 | 159 | Firuz Kola Vosta | 1 | | | | | | | | | | | Y | 2 | 5 | | 1369 | 1370 | 1 | 1 | | | | 1 | 1 | 1 | | | 1 | | 1 | | 1 | 1 | | 1 | 1 | | | | |
| | 36 | 157 | Firuz Kola Olia | 1 | | | | | | | | | | | Y | 3 | 5 | 1 | | | 1 | 1 | | | | 1 | 1 | 1 | | | | | 1 | 1 | 1 | 1 | 1 | 1 | | | | | |
| | 37 | 158 | Firuz Kola Sofla | 1 | | | | | | | | | | | Y | 1 | 3 | | 1369 | 1370 | 1 | 1 | | | | 1 | 1 | 1 | | | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | |
| | 38 | 173 | Mahdi Kheil | 1 | | | | | | | | | | | Y | 1 | 5 | 1 | | | 1 | 1 | | | | 1 | 1 | 1 | | | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | |
| | 39 | 210 | Kamangar Kola | 1 | | | | | | | 10 | 10 | | | Y | 1 | 3 | | 1368 | 1370 | 1 | 1 | | | | 1 | 1 | 1 | | | 1 | | 1 | 1 | 1 | 1 | 1 | | 1 | | | | |
| | 40 | 88 | Galesh Kola | 1 | | | | | | | | | | | Y | 1 | 2 | | 1370 | | 1 | 1 | | | | 1 | 1 | 1 | | | 1 | | 1 | 1 | 1 | 1 | 1 | | 1 | | | | |
| | 41 | 122 | Rash Kola | 2 | | | | | | | | | | | Y | 1 | 5 | | 1370 | | | 1 | | | | 1 | 1 | 1 | | | | | 1 | | | 1 | | 1 | | | | | |
| | 42 | 165 | Hendu Kola | 1 | | | | | | | | | | | Y | 2 | 3 | 1 | | | 1 | 1 | | | | 1 | 1 | 1 | | | 1 | | 1 | 1 | | | 1 | 1 | | | | | |
| | 43 | 164 | Harun Kola | 1 | | | | | | | | | | | Y | 1 | 5 | | 1369 | 1370 | 1 | 1 | | | | 1 | 1 | 1 | | | 1 | | 1 | | 1 | 1 | 1 | | | | | | |
| | 44 | 156 | Ejbar Kola | 1 | | | 4 | 49 | | | 3 | 10 | | | Y | 1 | 5 | | 1368 | 1370 | 1 | 1 | | | | 1 | 1 | 1 | | | 1 | | 1 | | 1 | 1 | 1 | | | | | | |
| | 45 | 179 | Nezam Abad | 1 | | | | | | | | | | | Y | 1 | 5 | | 1369 | 1370 | 1 | 1 | | | | 1 | 1 | 1 | | | 1 | | 1 | | 1 | 1 | 1 | | | | | | |
| | 46 | 76 | Bur Mahalleh | 1 | | | | | | | | | | | Y | 1 | 5 | | 1368 | 1370 | | 1 | | | | 1 | 1 | 1 | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | |
| | 47 | 65 | Aloo | 1 | | | 3 | 35 | | | | | | | Y | 1 | 4 | | | | | 1 | | | | 1 | 1 | 1 | | | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | |
| | 48 | 95 | Heshtel Pain | 1 | | | 5 | 40 | | | 30 | 60 | | | Y | 1 | 5 | | | | | 1 | | | | 1 | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | |
| | 49 | 160 | Ghaleh Kash | 1 * | | | 1 | 50 | | | | | | | Y | 1 | 5 | | 1370 | | 1 | 1 | | | | 1 | 1 | 1 | | | 1 | | 1 | | 1 | | 1 | | | | | |
| | 50 | 150 | Bagheban Kola | 1 * | | | 2 | 38 | | | | | | | N | | | | | | | | | | | | | | | | | | 1 | | 1 | | | | | | | |
| | 51 | 91 | Haji Abad | 1 * | | | 1 | 125 | | | | | | | Y | 1 | 3 | | | | 1 | 1 | | | | 1 | 1 | 1 | | | | | 1 | 1 | 1 | 1 | | | 1 | | | | |
| | 52 | 136 | Tanha Kola | 1 * | | | | | | | 50 | | | | Y | 12 | 5 | | 1368 | 1370 | 1 | 1 | | | | 1 | 1 | 1 | | 1 | | | 1 | 1 | 1 | | 1 | 1 | 1 | | | | |
| AE | 53 | 200 | Farah Abad | 1 * | | | 1 | 60 | | | 3 | 5 | | | Y | 2 | 3 | | 1369 | 1370 | 1 | 1 | | | | 1 | 1 | 1 | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | |
| | 54 | 211 | Karati | 1 | | | | | | | 1 | 0.5 | | | Y | 3 | 4 | | 1369 | 1370 | 1 | 1 | | | | 1 | 1 | 1 | | | | 1 | | 1 | 1 | 1 | | | 1 | | | |
| | 55 | 219 | Mohammad Abad | 1 | | | | | | | | | | | Y | 1 | 3 | | 1369 | 1370 | 1 | 1 | | | | 1 | 1 | 1 | | | | 1 | 1 | 1 | 1 | 1 | 1 | | | | | |
| | 56 | 141 | Valik Sofla | 2 | | | | | | | | | | | Y | 1 | 4 | | 1369 | 1370 | 1 | 1 | | | | 1 | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | | |
| | 57 | 86 | Espahi Kola Olia | 1 | | | | | 1 | 20 | 25 | 70 | | | Y | 1 | 5 | | 1369 | 1370 | 1 | 1 | | | | 1 | 1 | 1 | | | 1 | 1 | 1 | | | 1 | | | | | | | |
| | 58 | 72 | Bamer Kola | 1 | | | 1 | 60 | | | 20 | | | | Y | | | | 1369 | 1370 | 1 | 1 | | | | 1 | 1 | 1 | | | 1 | 1 | | 1 | 1 | 1 | 1 | | | | | |
| | 59 | 116 | Narges Marz | 1 * | | | | | | | 40 | 50 | | | Y | 1 | 4 | | | | 1 | 1 | | 1 | | 1 | 1 | 1 | | | 1 | | 1 | 1 | 1 | | | | | | | |
| | 60 | 73 | Banser Kola | 1 * | | | 1 | 70 | | | 150 | | | | Y | 2 | 4 | | 1369 | 1370 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | |
| | 61 | 74 | Barik Mahalleh | 1 | | | 3 | | | | 5 | | | | Y | 1 | 4 | 1 | | | 1 | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | |
| | 62 | 89 | Ghias Kola | 1 * | 3 | 180 | | | | | | | | | Y | | | 1 | | | 1 | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | |
| | 63 | 62 | Abo Mahalleh | 1 | 3 | 32 | | | 2 | 5 | | | | | Y | 1 | 3 | | 1368 | 1370 | 1 | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | | 1 | | | | |
| | 64 | 275 | Kachab Olia | 1 | | | | | 3 | 30 | 20 | | | | Y | 11 | 11 | | 1369 | 1370 | 1 | 1 | | | | 1 | 1 | 1 | | | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | |
| | 65 | 276 | Kachab Sofla | 1 | | | | | | | 10 | 50 | | | Y | 1 | 5 | | | | 1 | 1 | | | | 1 | 1 | 1 | | | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | |
| | 66 | 278 | Merij Mahalleh | 1 | | | | | | | | | | | Y | 1 | 3 | | 1370 | | 1 | 1 | | | | 1 | 1 | 1 | | | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | |
| | 67 | 287 | Vozara Mahalleh | 1 | 1 | 80 | | | | | | | | | Y | 1 | 6 | 1 | | | 1 | 1 | | | | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | |
| Answer | | | | | 12 | 11 | 18 | 17 | 3 | 3 | 27 | 16 | 0 | 0 | | 62 | 62 | 19 | 41 | 28 | 56 | 62 | 12 | 9 | 0 | 0 | 65 | 64 | 61 | 15 | 32 | 50 | 0 | 66 | 47 | 60 | 46 | 52 | 48 | 43 | 52 | 1 | 1 | 2 |
| Total | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Average | | | | | 2.3 | 97 | 2.8 | 92 | 2 | 18 | 58 | 69 | | | | 1.3 | 4.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Standard Deviation | | | | | 1.1 | 61 | 2.3 | 138 | 1 | 13 | 100 | 137 | | | | 0.8 | 1.4 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Min. | | | | | 1 | 10 | 1 | 8.5 | 1 | 5 | 1 | 0.5 | | | | 11 | 11 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Max. | | | | | 4 | 200 | 8 | 610 | 3 | 30 | 400 | 548 | | | | 3 | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | |

## TABLE B. 2. 1-6 WATER RIGHT AND WATER SOURCES BY VILLAGE-WISE (1/3)

| No. | Village Code | Village Name | Commanded 1:Y 0:N | Commanded Zone Mirab | Commanded Vilge Mirab | Water Right None | Water Right Yes | Number of Water Sources Retn Flow | Abba ndan | Spri ng | Shlv Well | Deep Well | Artn Well |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | Mehdi Abad | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 19 | Osku Mahalleh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 37 | Kaseb Mahalleh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 38 | Kelak Sar | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 50 | Sarhang Koti | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 52 | Shir Kaj | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 56 | Tajenak | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 57 | Tazeh Abad | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 61 | Abdang Sar | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 66 | Amin Abad | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 68 | Ashkar Kola Sofla | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 69 | Ashraf Abad | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 71 | Azim Abad | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 78 | Dang Peya | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 83 | Div Kola Sofla | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16 | 87 | Espahi Kola Sofla | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17 | 93 | Hassan Abad | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 18 | 101 | Kashi Mahalleh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 19 | 104 | Korsi Kola Sofla | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20 | 107 | Mamraz Koti | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 21 | 110 | Mosa Mahalleh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 22 | 117 | Ojak | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 23 | 121 | Rais Abad | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 24 | 128 | Shaneh Band Olia | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 25 | 129 | Shaneh Band Sofla | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 26 | 142 | Vaskal | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 27 | 148 | Angilak | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 28 | 149 | Arab Kheil | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 29 | 151 | Baliran | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 30 | 158 | Firuz Kola Sofla | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 31 | 159 | Firuz Kola Vosta | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 32 | 167 | Kateh Posht Sofla | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 33 | 177 | Mohammad Abad | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 34 | 178 | Najar Mahalleh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 35 | 204 | Nemat Abad | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 36 | 205 | Nossein Abad | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 37 | 209 | Kalikan Sofla | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 38 | 212 | Kharb Mian Rud | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 39 | 213 | Kohneh Dan | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 40 | 223 | Pasha Kola | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 41 | 226 | Rud Bar | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 42 | 227 | Sadin Kola | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 43 | 232 | Tamesk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 44 | 233 | Zagh Deh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 45 | 238 | Baudeh Sofla | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 46 | 240 | Buli Deh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 47 | 254 | Mir Alamdeh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 48 | 261 | Taj Kenar | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 49 | 268 | Chak Sar | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 50 | 269 | Darvish Abad | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 51 | 270 | Gel Mahalleh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 52 | 271 | Haji Kola Bala | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 53 | 272 | Haji Kola Pain | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 54 | 283 | Shah Kola Kalij Pain | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 55 | 309 | Xale Narz Sofla | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 56 | 315 | Siah Kola | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 57 | 337 | Shira | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 58 | 340 | Darya Kenar | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 59 | 341 | Darya Sar | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 60 | 345 | Khazar Shahr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 61 | 352 | Armich Kola | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 62 | 353 | Bala Babol Posht | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 63 | 360 | Khoshkeh Rud | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 64 | 364 | Pain Babol Posht | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 65 | 366 | Rakon Pain | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 66 | 367 | Raz Kenar | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 67 | 369 | Valik Rud Posht | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 68 | 378 | Besra Pain | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 69 | 380 | Bisheh Mahalleh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 70 | 381 | Bolleh Kola | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 71 | 406 | Nei Kola | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 72 | 417 | Shariat Abad | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 73 | 432 | Allah Rudbar | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 74 | 433 | Baba Abad | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 75 | 458 | Nagharehchi Mahalleh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 76 | 459 | Noshiravan Kola | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 77 | 461 | Sadat Mahalleh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 78 | 462 | Shasb Kola | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 79 | 463 | Sheikh Mahalleh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 80 | 469 | Masum Abad (Largeh Sara) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 81 | 472 | Ami Kola | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 82 | 473 | Emadiyeh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 83 | 474 | Haji Abad Valik | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 84 | 475 | Joj Mahalleh Sorak | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 85 | 476 | Mamij Kola | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 86 | 477 | Now Abad | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 87 | 480 | Khaneh Darya | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 88 | 481 | Mian Bal | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 89 | 484 | Koo Sar | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 90 | 485 | Vazi Mal | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 91 | 487 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 92 | 488 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 93 | 490 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 94 | 491 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 95 | 492 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 96 | 495 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 97 | 496 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 98 | 497 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 99 | 498 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100 | 506 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 101 | 2 | Mohammad Abad | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 |
| 102 | 4 | Aali Changel | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 103 | 5 | Chalikia Deh | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 104 | 8 | Div Raz | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 6 | 0 | 0 |
| 105 | 9 | Espened | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 106 | 11 | Karchi Kola | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 107 | 14 | Khoshkeh Rud | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 |
| 108 | 16 | Mian Rud | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 109 | 17 | Mikhran | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 110 | 18 | No Gardan | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 111 | 20 | Suteh Kola | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 112 | 21 | Teliran | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 |
| 113 | 23 | Varam Deh | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 20 | 0 | 0 |
| 114 | 25 | Aghoz Bon | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 115 | 26 | Aghoz Koti | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 7 | 0 | 0 |
| 116 | 27 | Ahan Koti | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 5 | 0 | 0 |
| 117 | 29 | Chan Gaz | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 6 | 0 | 0 |
| 118 | 30 | Cheshme Sar | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| 119 | 31 | Dar Kola | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| 120 | 32 | Darkapey | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 15 | 0 | 0 |
| 121 | 34 | Ghajar Mahalleh | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 |
| 122 | 35 | Hali Koti | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 10 | 0 | 0 |
| 123 | 39 | Kord Koti | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 124 | 41 | Kuseh Raz | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 80 | 1 | 0 |
| 125 | 42 | Mar Koti | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 8 | 0 | 0 |
| 126 | 43 | Maran Deh | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 127 | 44 | Maskun | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 128 | 45 | Noron | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 7 | 0 | 0 |
| 129 | 46 | Now Abad | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 130 | 47 | Pishkon | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 131 | 48 | Rukesh | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 132 | 51 | Shah Mahalleh | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 133 | 53 | Siah Lash | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 134 | 55 | Tajan Jar Sofla | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 135 | 58 | Valis Deh | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 10 | 0 | 0 |
| 136 | 59 | Varka Deh | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 137 | 60 | Zaron Deh | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 138 | 62 | Abo Mahalleh | 1 | 1 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 |
| 139 | 63 | Ahangar Kola Olia | 1 | 1 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 2 |
| 140 | 64 | Ahangar Kola Sofla | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 141 | 67 | Ashkar Kola Olia | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 25 | 0 | 0 |
| 142 | 76 | Bur Mahalleh | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 7 | 0 | 0 |
| 143 | 77 | Chareh | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 144 | 79 | Darvish Kheil | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 145 | 80 | Darzi Kola | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 20 | 0 | 0 |
| 146 | 84 | Diyeh | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 147 | 85 | Dotireh | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 30 | 0 | 0 |
| 148 | 86 | Espahi Kola Olia | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 149 | 88 | Galesh Kola | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 150 | 89 | Ghias Kola | 1 | 1 | 1 | 0 | 1 | 1 | 3 | 0 | 20 | 0 | 0 |
| 151 | 90 | Ghora Kola | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 152 | 92 | Halalkhar Mahalleh | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 153 | 94 | Heshtel Bala | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 154 | 96 | Hossein Abad | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 155 | 97 | Jali Kola | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 15 | 0 | 0 |
| 156 | 98 | Kabod Kola | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 157 | 99 | Kalik Sar | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 158 | 100 | Kamangar Kola | 1 | 1 | 2 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 2 |
| 159 | 102 | Kord Kheil | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 10 | 0 | 0 |
| 160 | 103 | Korsi Kola Olia | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 161 | 105 | Mahot Kola | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 15 | 0 | 0 |
| 162 | 106 | Majid Abad | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 163 | 108 | Narzangu | 1 | 1 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 1 |
| 164 | 109 | Mian Rud | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 165 | 113 | Nozi Koti Bala | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 5 | 0 | 0 |
| 166 | 114 | Nozi Koti Pain | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 5 | 0 | 0 |
| 167 | 115 | Naiij Abad | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 18 | 0 | 0 |
| 168 | 116 | Narges Narz | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 169 | 118 | Pahlem Koti | 1 | 1 | 1 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 |
| 170 | 120 | Pasha Kola | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 171 | 124 | Saraj Mahalleh | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 172 | 125 | Shah Kola | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 20 | 0 | 0 |
| 173 | 126 | Shah Koti | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 37 | 0 | 0 |
| 174 | 127 | Shahr Koti | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 175 | 130 | Shariat Abad | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 176 | 131 | Soltan Abad | 1 | 1 | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 |
| 177 | 132 | Sorak | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 18 | 0 | 0 |
| 178 | 135 | Taher Abad | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 179 | 137 | Tazeh Abad | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 180 | 138 | Tirbejan | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 181 | 139 | Toleh Kola | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 182 | 141 | Valik Sofla | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 25 | 0 | 0 |
| 183 | 143 | Vaskas | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 20 | 0 | 1 |
| 184 | 144 | Yusef Abad | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 12 | 0 | 0 |
| 185 | 145 | Ziar Kola | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 10 | 0 | 0 |
| 186 | 147 | Allah Kaj | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 187 | 150 | Bagheban Kola | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 188 | 153 | Buran | 1 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 189 | 161 | Ghalyan Kola Olia | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 190 | 162 | Ghalyan Kola Sofla | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 191 | 166 | Kateh Posht Olia | 1 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 192 | 168 | Kenesi | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 193 | 169 | Kharman Kola | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 194 | 170 | Khoni Sar | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 195 | 174 | Mazras | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 30 | 0 | 0 |
| 196 | 176 | Moallem Kola | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 197 | 182 | Pelak Sofla | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 198 | 183 | Rostamdar Mahalleh | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 199 | 185 | Salar Mahalleh | 1 | 1 | 1 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 |
| 200 | 188 | Tamesk | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 201 | 189 | Tir Kola | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 202 | 190 | Tork Kola | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 203 | 193 | Ziya Rud | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 204 | 194 | Abseruft | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 3 | 1 | 0 | 0 |
| 205 | 195 | Ahangar Kola | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 206 | 196 | Ali Kola Ahi | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 11 | 0 | 0 |
| 207 | 197 | Aski Mahalleh | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 208 | 199 | Bisheh Mahalleh | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 209 | 201 | Ghadi Mahalleh | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 |
| 210 | 202 | Ghorogh | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 211 | 203 | Hareh Pak | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 |
| 212 | 206 | Jafar Abad | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 12 | 0 | 0 |
| 213 | 208 | Kalikan Olia | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 |
| 214 | 210 | Kamangar Kola | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 10 | 0 | 0 |
| 215 | 211 | Karati | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 216 | 214 | Kola Mahalleh | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 217 | 215 | Kola Safa | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 218 | 217 | Masum Abad | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 219 | 218 | Mian Rud | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 220 | 220 | Now Deh | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 6 | 0 | 0 |
| 221 | 221 | Now Kola | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 4 | 0 | 0 |
| 222 | 222 | Oji Abad | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 5 | 0 | 0 |
| 223 | 224 | Polikiadeh | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 224 | 228 | Sang Bast | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 225 | 229 | Sang Koti | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 226 | 230 | Sharme Kola | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 227 | 234 | Abad Mahalleh | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 228 | 236 | Azad Mun | 1 | 1 | 1 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 |

(continued)

## TABLE B. 2. 1-6 WATER RIGHT AND WATER SOURCES BY VILLAGE-WISE (2/3)

| No. | Village | | Commanded | | | Water Right | | Number of Water Sources | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Code | Name | 1:Y 0:N | Zone Mirab | Vilge Mirab | None | Yes | Retn Flow | Abba ndan | Spri ng | Shlw Well | Deep Well | Artn Well |
| 229 | 237 | Baudeh Olia | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 230 | 241 | Bundeh | 1 | 1 | 1 | 0 | 1 | 1 | 3 | 0 | 50 | 1 | 0 |
| 231 | 242 | Eshgh Abad | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 232 | 243 | Galesh Pol | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 200 | 0 | 0 | 0 |
| 233 | 244 | Gelyard | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 0 |
| 234 | 245 | Ghassab Koti | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 3 | 0 | 0 | 0 |
| 235 | 246 | Gilapey | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 236 | 247 | Hassan Abad | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 237 | 248 | Jovni Kola | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 60 | 0 | 0 | 0 |
| 238 | 249 | Karchak Larijani | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 |
| 239 | 251 | Kelu Deh | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 40 | 0 | 0 | 0 |
| 240 | 253 | Khordon Kola | 1 | 1 | 2 | 0 | 1 | 0 | 1 | 0 | 110 | 0 | 0 |
| 241 | 255 | Namus Deh (Islam Abad) | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 5 | 0 | 0 | 0 |
| 242 | 256 | Naser Abad | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 243 | 262 | Talarom | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 0 |
| 244 | 263 | Tarsiab | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 100 | 0 | 0 | 0 |
| 245 | 264 | Yusef Abad | 1 | 1 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 |
| 246 | 265 | Zangi Kola | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 247 | 266 | Afrasara | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 30 | 0 | 0 |
| 248 | 273 | Islam Mahalleh | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 30 | 0 | 0 |
| 249 | 274 | Kachab Kolva | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 7 | 0 | 1 |
| 250 | 277 | Kenes Marz | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 5 | 0 | 0 |
| 251 | 278 | Merij Mahalleh | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 19 | 0 | 0 |
| 252 | 279 | Mirdeh Olia | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 14 | 0 | 0 |
| 253 | 280 | Mirdeh Sofla | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 254 | 281 | Molla Kola | 1 | 1 | 1 | 0 | 1 | 0 | 7 | 0 | 100 | 0 | 0 |
| 255 | 282 | Shah Kola Kalij Bala | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 40 | 0 | 0 |
| 256 | 284 | Sir Jaran | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 90 | 0 | 0 |
| 257 | 285 | Sorkh Rud Gharbi | 1 | 1 | 1 | 0 | 1 | 0 | 2 | 0 | 15 | 0 | 0 |
| 258 | 286 | Sorkh Rud Sharghi | 1 | 1 | 1 | 0 | 1 | 0 | 2 | 0 | 25 | 0 | 0 |
| 259 | 287 | Vozara Mahalleh | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 20 | 0 | 0 |
| 260 | 288 | Zangi Kola Bala | 1 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 50 | 0 | 0 |
| 261 | 289 | Zangi Kola Pain | 1 | 1 | 2 | 0 | 1 | 0 | 1 | 0 | 100 | 0 | 0 |
| 262 | 290 | Abdolah Abad | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 30 | 0 | 0 |
| 263 | 292 | Afra Takht | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 264 | 295 | Alam Deh Sharghi | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 265 | 296 | Ali Abad | 1 | 1 | 2 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 |
| 266 | 297 | Aram | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 267 | 298 | Armak Kola | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 268 | 299 | Asdollah Abad | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 269 | 302 | Daria Sar | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 10 | 0 | 0 |
| 270 | 303 | Eskan Deh | 1 | 1 | 2 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 |
| 271 | 304 | Ezzat Abad | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 272 | 306 | Harab Deh | 1 | 1 | 1 | 0 | 1 | 3 | 0 | 195 | 0 | 0 | 0 |
| 273 | 308 | Kale Marz Olia | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 274 | 312 | Mian Kalamarz | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 10 | 0 | 0 |
| 275 | 313 | Moallem Kola | 1 | 1 | 2 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 |
| 276 | 314 | Rud Posht | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 20 | 0 | 0 |
| 277 | 316 | Siahrud Sar | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 30 | 0 | 0 |
| 278 | 317 | Tazeh Abad | 1 | 1 | 1 | 0 | 1 | 0 | 2 | 0 | 15 | 0 | 0 |
| 279 | 320 | Vazyak | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 150 | 0 | 0 |
| 280 | 322 | Zard Ab | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 40 | 0 | 0 |
| 281 | 324 | Bisheh Mahalleh Bozorg | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 10 | 0 | 0 |
| 282 | 326 | Boneh Kenar | 1 | 1 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 |
| 283 | 327 | Esbo Kola | 1 | 1 | 1 | 0 | 1 | 2 | 2 | 0 | 10 | 0 | 0 |
| 284 | 328 | Ezbaran | 1 | 1 | 1 | 0 | 1 | 0 | 7 | 0 | 3 | 0 | 0 |
| 285 | 329 | Farzad Shahr | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 20 | 0 | 0 |
| 286 | 332 | Kolagar Sara | 1 | 1 | 1 | 0 | 1 | 1 | 2 | 0 | 20 | 0 | 0 |
| 287 | 334 | Mengarpey | 1 | 1 | 1 | 0 | 1 | 1 | 2 | 0 | 10 | 0 | 0 |
| 288 | 335 | Navai Mahalleh | 1 | 1 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 |
| 289 | 338 | Toleh Sara | 1 | 1 | 1 | 0 | 1 | 1 | 3 | 0 | 5 | 0 | 0 |
| 290 | 339 | Zahed Kola | 1 | 1 | 1 | 0 | 1 | 2 | 1 | 0 | 20 | 0 | 0 |
| 291 | 342 | Ferem | 1 | 1 | 1 | 0 | 1 | 1 | 2 | 0 | 20 | 0 | 0 |
| 292 | 344 | Heidar Kola | 1 | 1 | 1 | 0 | 1 | 1 | 2 | 0 | 20 | 0 | 0 |
| 293 | 346 | Molla Kola | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 10 | 0 | 0 |
| 294 | 350 | Sharmeh Kola | 1 | 1 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 |
| 295 | 354 | Doghi Kola | 1 | 1 | 4 | 0 | 1 | 0 | 4 | 0 | 0 | 0 | 0 |
| 296 | 357 | Kalleh Bast | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 60 | 0 | 0 |
| 297 | 359 | Keikhah Mahalleh | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 30 | 0 | 0 |
| 298 | 361 | Lari Mahalleh | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 30 | 0 | 0 |
| 299 | 365 | Rakon Bala | 1 | 1 | 1 | 0 | 1 | 1 | 2 | 0 | 20 | 0 | 0 |
| 300 | 370 | Ali Abad | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 301 | 373 | Archi | 1 | 1 | 1 | 0 | 1 | 0 | 3 | 0 | 30 | 0 | 0 |
| 302 | 375 | Asbe Shore Pey | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 |
| 303 | 377 | Besra Bala | 1 | 1 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 |
| 304 | 382 | Chamazin | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 20 | 0 | 0 |
| 305 | 383 | Darvish Kheil | 1 | 1 | 1 | 0 | 1 | 1 | 3 | 0 | 20 | 0 | 0 |
| 306 | 385 | Darzi Kola Bozorg | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 10 | 0 | 0 |
| 307 | 386 | Darzi Kola Kuchak | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 5 | 0 | 0 |
| 308 | 387 | Dehak | 1 | 1 | 1 | 0 | 1 | 1 | 2 | 0 | 10 | 0 | 0 |
| 309 | 388 | Gardan Bori Bala | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 310 | 389 | Gardan Bori Pain | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 311 | 390 | Ghadi Kola | 1 | 1 | 1 | 0 | 1 | 0 | 3 | 0 | 20 | 0 | 0 |
| 312 | 391 | Haji Kola | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 10 | 0 | 0 |
| 313 | 392 | Hetal Kola | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 5 | 0 | 0 |
| 314 | 394 | Karfo Kola | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 20 | 0 | 0 |
| 315 | 396 | Khordon Kola | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 20 | 0 | 0 |
| 316 | 397 | Kolangah | 1 | 1 | 1 | 0 | 1 | 0 | 2 | 0 | 20 | 0 | 0 |
| 317 | 399 | Kotisar | 1 | 1 | 1 | 0 | 1 | 1 | 3 | 0 | 15 | 0 | 0 |
| 318 | 405 | Mian Rud | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 15 | 0 | 0 |
| 319 | 406 | Moziraj Astaneh Sar | 1 | 1 | 1 | 0 | 1 | 1 | 4 | 0 | 40 | 0 | 0 |
| 320 | 409 | Now Dehak | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 20 | 0 | 0 |
| 321 | 410 | Pahne Var | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 322 | 413 | Sangchi | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 10 | 0 | 0 |
| 323 | 415 | Shahid Abdollah | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 15 | 0 | 0 |
| 324 | 418 | Shariat Kola | 1 | 1 | 1 | 0 | 1 | 2 | 1 | 0 | 15 | 0 | 0 |
| 325 | 419 | Tajadolleh | 1 | 1 | 1 | 0 | 1 | 1 | 2 | 0 | 12 | 0 | 0 |
| 326 | 422 | Tari Mahalleh | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 327 | 423 | Tavakkol | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 |
| 328 | 430 | Ali Zamin | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 30 | 0 | 0 |
| 329 | 431 | Allah Chal | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 25 | 0 | 0 |
| 330 | 435 | Babolkan Sofla | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 |
| 331 | 436 | Baziar Bala | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 15 | 0 | 0 |
| 332 | 439 | Chenarbon | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| 333 | 442 | Darzikola Agha Shafii | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 30 | 0 | 0 |
| 334 | 444 | Delavar Kola | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 8 | 0 | 0 |
| 335 | 451 | Kazem Beigi | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 5 | 0 | 0 |
| 336 | 454 | Khorasani Mahalleh | 1 | 1 | 1 | 0 | 1 | 1 | 2 | 0 | 20 | 0 | 0 |
| 337 | 460 | Rakaj | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 338 | 464 | Terakhchi Kola | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 5 | 0 | 0 |
| 339 | 470 | Shir Kola | 1 | 1 | 1 | 0 | 1 | 1 | 3 | 0 | 20 | 0 | 0 |
| 340 | 478 | Koti | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 341 | 482 | Darzi Mahalleh | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 20 | 0 | 0 |
| 342 | 483 | Foo Kola | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 40 | 0 | 0 |
| 343 | 486 | Barik Rud | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 20 | 0 | 0 |
| 344 | 489 | | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 20 | 0 | 0 |
| 345 | 493 | | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 |
| 346 | 494 | | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 15 | 0 | 0 |
| 347 | 499 | | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 15 | 0 | 0 |
| 348 | 500 | | 1 | 1 | 2 | 0 | 1 | 2 | 0 | 60 | 0 | 0 | 0 |
| 349 | 501 | | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 90 | 0 | 0 | 0 |
| 350 | 502 | | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 351 | 505 | | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 40 | 0 | 0 |
| 352 | 507 | | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 353 | 508 | | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 354 | 509 | | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 355 | 510 | | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 356 | 511 | | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 357 | 512 | | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 358 | 513 | | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 359 | 6 | Chandar Mahalleh | 1 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 360 | 12 | Kasem Deh | 1 | 2 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 361 | 13 | Khas Kola | 1 | 2 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 362 | 15 | Marzon Kola | 1 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 363 | 22 | Toska Bon | 1 | 2 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 364 | 24 | Abiyak Mahalleh | 1 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 365 | 28 | Angeh Pol | 1 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 20 | 0 | 0 |
| 366 | 33 | Galan | 1 | 2 | 2 | 0 | 1 | 1 | 0 | 0 | 4 | 2 | 0 |
| 367 | 36 | Hossein Abad | 1 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 368 | 40 | Kuk Deh | 1 | 2 | 2 | 0 | 1 | 1 | 0 | 0 | 10 | 0 | 0 |
| 369 | 49 | Saiij Mahalleh | 1 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 370 | 54 | Tajan Jar Olia | 1 | 2 | 2 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 371 | 65 | Aloo | 1 | 2 | 0 | 0 | 1 | 0 | 0 | 3 | 1 | 1 | 0 |
| 372 | 70 | Aski Mahalleh | 1 | 2 | 2 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 |
| 373 | 72 | Bamer Kola | 1 | 2 | 2 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 374 | 74 | Barik Mahalleh | 1 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 18 | 0 | 0 |
| 375 | 81 | Dau Kola | 1 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 376 | 95 | Heshtel Pain | 1 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 26 | 0 | 0 |
| 377 | 122 | Rash Kola | 1 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 378 | 123 | Sangar | 1 | 2 | 1 | 0 | 1 | 1 | 3 | 0 | 16 | 0 | 1 |
| 379 | 133 | Spiarbon | 1 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 380 | 134 | Surat Kola | 1 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 6 | 0 | 4 |
| 381 | 140 | Valik Olia | 1 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 75 | 0 | 0 |
| 382 | 155 | Davood Kola | 1 | 2 | 2 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 |
| 383 | 156 | Ejbar Kola | 1 | 2 | 2 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 |
| 384 | 157 | Firuz Kola Olia | 1 | 2 | 2 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 |
| 385 | 160 | Ghaleh Kash | 1 | 2 | 1 | 0 | 1 | 2 | 0 | 2 | 0 | 0 | 0 |
| 386 | 163 | Gol Mazar | 1 | 2 | 2 | 0 | 1 | 1 | 0 | 0 | 16 | 0 | 0 |
| 387 | 164 | Harun Kola | 1 | 2 | 2 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 |
| 388 | 165 | Hendu Kola | 1 | 2 | 2 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 389 | 171 | Kom Darreh | 1 | 2 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 390 | 187 | Sorkh Kola | 1 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 391 | 191 | Vosta Kola | 1 | 2 | 2 | 0 | 1 | 2 | 0 | 0 | 100 | 0 | 0 |
| 392 | 198 | Bameti | 1 | 2 | 1 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 |
| 393 | 200 | Farah Abad | 1 | 2 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 |
| 394 | 216 | Lati Kola | 1 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 6 | 0 | 0 |
| 395 | 231 | Sheikh Abad | 1 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 15 | 0 | 0 |
| 396 | 235 | Ahlaa | 1 | 2 | 2 | 0 | 1 | 1 | 3 | 0 | 60 | 0 | 0 |
| 397 | 250 | Karchak Navaii | 1 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 |
| 398 | 252 | Khesht Sar | 1 | 2 | 2 | 0 | 1 | 1 | 4 | 0 | 100 | 0 | 0 |
| 399 | 257 | Seyar Kola | 1 | 2 | 2 | 0 | 1 | 0 | 2 | 0 | 90 | 0 | 0 |
| 400 | 258 | Sherefti | 1 | 2 | 2 | 0 | 1 | 1 | 4 | 0 | 80 | 0 | 0 |
| 401 | 259 | Shomia | 1 | 2 | 2 | 0 | 1 | 1 | 4 | 0 | 50 | 0 | 0 |
| 402 | 260 | Shurestagh | 1 | 2 | 2 | 0 | 1 | 1 | 4 | 0 | 90 | 0 | 0 |
| 403 | 267 | Ali Kola Mir | 1 | 2 | 1 | 0 | 1 | 0 | 3 | 0 | 80 | 0 | 0 |
| 404 | 275 | Kachab Olia | 1 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 15 | 0 | 3 |
| 405 | 276 | Kachab Sofla | 1 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 20 | 0 | 0 |
| 406 | 291 | Abolhassan Abad | 1 | 2 | 1 | 0 | 1 | 0 | 1 | 0 | 40 | 0 | 0 |
| 407 | 293 | Ahi Mahalleh | 1 | 2 | 2 | 0 | 1 | 0 | 1 | 0 | 28 | 0 | 0 |
| 408 | 294 | Alam Deh Gharbi | 1 | 2 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 |
| 409 | 300 | Bisheh Kola | 1 | 2 | 2 | 0 | 1 | 0 | 9 | 0 | 170 | 0 | 0 |
| 410 | 301 | Chahar Afra | 1 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 20 | 0 | 0 |
| 411 | 305 | Faram Deh | 1 | 2 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 412 | 307 | Jura Kola | 1 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 25 | 0 | 0 |
| 413 | 311 | Mattehvarij | 1 | 2 | 2 | 0 | 1 | 0 | 3 | 0 | 20 | 0 | 0 |
| 414 | 316 | Urtasht | 1 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 415 | 319 | Valem | 1 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 4 | 0 | 0 |
| 416 | 321 | Vamchi | 1 | 2 | 2 | 0 | 1 | 0 | 1 | 0 | 15 | 0 | 1 |
| 417 | 323 | Binamad | 1 | 2 | 2 | 0 | 1 | 1 | 4 | 0 | 10 | 0 | 0 |
| 418 | 325 | Bisheh Mahalleh Kuchak | 1 | 2 | 2 | 0 | 1 | 1 | 0 | 0 | 10 | 0 | 0 |
| 419 | 330 | Jazin | 1 | 2 | 2 | 0 | 1 | 2 | 6 | 0 | 40 | 0 | 0 |
| 420 | 331 | Kardgar Mahalleh | 1 | 2 | 2 | 0 | 1 | 1 | 4 | 0 | 5 | 0 | 0 |
| 421 | 333 | Mahlaban | 1 | 2 | 3 | 0 | 1 | 2 | 2 | 0 | 30 | 0 | 0 |
| 422 | 336 | Shir Mahalleh | 1 | 2 | 2 | 0 | 1 | 1 | 3 | 0 | 5 | 0 | 0 |
| 423 | 343 | Gavzan Mahalleh | 1 | 2 | 2 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 |
| 424 | 347 | Ojak sar | 1 | 2 | 2 | 0 | 1 | 2 | 2 | 0 | 100 | 0 | 0 |
| 425 | 349 | Sadat Mahalleh | 1 | 2 | 2 | 0 | 1 | 2 | 2 | 0 | 80 | 0 | 0 |
| 426 | 355 | Esfandiar Mahalleh | 1 | 2 | 2 | 0 | 1 | 1 | 5 | 0 | 60 | 0 | 0 |
| 427 | 356 | Ghadi Mahalleh | 1 | 2 | 2 | 0 | 1 | 2 | 4 | 0 | 110 | 0 | 0 |
| 428 | 358 | Kari Kola | 1 | 2 | 2 | 0 | 1 | 2 | 8 | 0 | 80 | 0 | 0 |
| 429 | 362 | Mashhadi Kola | 1 | 2 | 2 | 0 | 1 | 2 | 4 | 0 | 70 | 0 | 0 |
| 430 | 363 | Nosrat Kola | 1 | 2 | 0 | 0 | 1 | 2 | 0 | 0 | 40 | 0 | 0 |
| 431 | 395 | Khalil Kola | 1 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 10 | 0 | 0 |
| 432 | 401 | Marzbal | 1 | 2 | 2 | 0 | 1 | 0 | 2 | 0 | 23 | 1 | 1 |
| 433 | 402 | Nasir Mahalleh | 1 | 2 | 2 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 |
| 434 | 403 | Natekeh | 1 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 5 | 0 | 0 |
| 435 | 411 | Picha Kola | 1 | 2 | 2 | 0 | 1 | 0 | 2 | 0 | 20 | 0 | 0 |
| 436 | 416 | Shareh | 1 | 2 | 2 | 0 | 1 | 0 | 5 | 0 | 60 | 0 | 0 |
| 437 | 420 | Tajenak | 1 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 12 | 0 | 0 |
| 438 | 421 | Talikran | 1 | 2 | 2 | 0 | 1 | 0 | 4 | 0 | 70 | 0 | 0 |
| 439 | 424 | Togan | 1 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 10 | 0 | 0 |
| 440 | 425 | Zargar Mahalleh | 1 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 8 | 0 | 0 |
| 441 | 438 | Buleh Kola | 1 | 2 | 1 | 0 | 1 | 2 | 0 | 0 | 40 | 0 | 0 |
| 442 | 440 | Darvish Khak Bala | 1 | 2 | 2 | 0 | 1 | 2 | 2 | 0 | 20 | 0 | 0 |
| 443 | 441 | Darvish Khak Pain | 1 | 2 | 2 | 0 | 1 | 2 | 2 | 0 | 20 | 0 | 0 |
| 444 | 445 | Esbo Kola | 1 | 2 | 2 | 0 | 1 | 2 | 0 | 0 | 70 | 0 | 0 |
| 445 | 447 | Ghassab Kola | 1 | 2 | 1 | 0 | 1 | 1 | 0 | 0 | 20 | 0 | 0 |
| 446 | 449 | Hamzeh Kola Sheshpol | 1 | 2 | 2 | 0 | 1 | 1 | 0 | 0 | 14 | 0 | 0 |
| 447 | 450 | Hamzeh Reza(Astaneh Sar) | 1 | 2 | 2 | 0 | 1 | 1 | 0 | 0 | 20 | 0 | 0 |
| 448 | 455 | Lalok | 1 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 449 | 456 | Mati Kola | 1 | 2 | 2 | 0 | 1 | 2 | 0 | 0 | 40 | 0 | 0 |
| 450 | 457 | Mozaffar Kola | 1 | 2 | 2 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 |
| 451 | 465 | Tork Mahalleh | 1 | 2 | 2 | 0 | 1 | 2 | 2 | 0 | 30 | 0 | 0 |
| 452 | 466 | Varmatan | 1 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 |
| 453 | 468 | Zahed Kola | 1 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 454 | 471 | Darmeh Kola (Amol) | 1 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 455 | 479 | Taliksar (Mahmud Abad) | 1 | 2 | 1 | 0 | 1 | 1 | 0 | 100 | 0 | 0 | 0 |
| 456 | 503 | | 1 | 2 | 2 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 |
| 457 | 73 | Banser Kola | 1 | 2 | 1 | 1 | 1 | 3 | 0 | 0 | 20 | 0 | 0 |
| 458 | 111 | Motahhar Olia | 1 | 2 | 1 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 |
| 459 | 112 | Motahhar Sofla | 1 | 2 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 460 | 136 | Tanha Kola | 1 | 2 | 1 | 1 | 1 | 3 | 0 | 0 | 10 | 0 | 0 |
| 461 | 154 | Changeh Mian | 1 | 2 | 2 | 1 | 1 | 2 | 0 | 0 | 5 | 0 | 0 |
| 462 | 225 | Rafi Abad | 1 | 2 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 |

(continued)

## TABLE B.2.1-6 WATER RIGHT AND WATER SOURCES BY VILLAGE-WISE (3/3)

| No. | Village | | Commanded | | | Water Right | | Number of Water Sources | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Code | Name | 1:Y 0:N | Zone Mirab | Vilge Mirab | None | Yes | Retn flow | Abba ndan | Spri ng | Shlw Well | Deep Well | Artn Well |
| 463 | 384 | Darzi Kola | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 0 | 10 | 0 | 0 |
| 464 | 437 | Baziar Pain | 1 | 2 | 2 | 1 | 1 | 1 | 0 | 0 | 20 | 0 | 0 |
| 465 | 467 | Yaghi Kola | 1 | 2 | 2 | 1 | 1 | 1 | 0 | 0 | 18 | 0 | 0 |
| 466 | 3 | Razekeh | 1 | 3 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 |
| 467 | 10 | Halom Sar | 1 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 468 | 75 | Bisheh Mahalleh | 1 | 3 | 2 | 0 | 1 | 1 | 0 | 0 | 15 | 0 | 0 |
| 469 | 82 | Div Kola Olia | 1 | 3 | 2 | 0 | 1 | 1 | 0 | 0 | 20 | 0 | 0 |
| 470 | 91 | Haji Abad | 1 | 3 | 2 | 0 | 1 | 0 | 2 | 0 | 110 | 0 | 0 |
| 471 | 119 | Pagin | 1 | 3 | 0 | 0 | 1 | 1 | 0 | 0 | 5 | 0 | 0 |
| 472 | 146 | Ahangar Kola | 1 | 3 | 3 | 0 | 1 | 3 | 0 | 0 | 70 | 0 | 0 |
| 473 | 172 | Kome Kola | 1 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 474 | 175 | Mileh | 1 | 3 | 2 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 |
| 475 | 184 | Rudbar Dasht | 1 | 3 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 476 | 186 | Shahneh Kola | 1 | 3 | 3 | 0 | 1 | 1 | 0 | 0 | 50 | 0 | 0 |
| 477 | 192 | Zavarak | 1 | 3 | 2 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 478 | 219 | Mohammad Abad | 1 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 30 | 0 | 0 |
| 479 | 239 | Birjan Deh | 1 | 3 | 3 | 0 | 1 | 2 | 11 | 0 | 250 | 1 | 0 |
| 480 | 310 | Kalosa | 1 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 481 | 348 | Rud Bast | 1 | 3 | 3 | 0 | 1 | 3 | 3 | 0 | 120 | 0 | 0 |
| 482 | 351 | Suteh | 1 | 3 | 4 | 0 | 1 | 1 | 12 | 0 | 60 | 0 | 0 |
| 483 | 368 | Seyyed Mahalleh | 1 | 3 | 0 | 0 | 1 | 3 | 0 | 0 | 60 | 0 | 0 |
| 484 | 374 | Ard Kola | 1 | 3 | 3 | 0 | 1 | 0 | 2 | 0 | 50 | 0 | 0 |
| 485 | 376 | Barsemnan | 1 | 3 | 3 | 0 | 1 | 3 | 5 | 0 | 46 | 0 | 0 |
| 486 | 393 | Kamangar Kola | 1 | 3 | 3 | 0 | 1 | 3 | 2 | 0 | 52 | 0 | 0 |
| 487 | 398 | Koro Kola | 1 | 3 | 3 | 0 | 1 | 0 | 0 | 2 | 5 | 0 | 4 |
| 488 | 407 | Navai Kola | 1 | 3 | 2 | 0 | 1 | 2 | 0 | 1 | 0 | 0 | 0 |
| 489 | 412 | Rah Kola | 1 | 3 | 3 | 0 | 1 | 2 | 4 | 0 | 50 | 0 | 4 |
| 490 | 414 | Sarun Mahalleh | 1 | 3 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 491 | 426 | Agha Malek | 1 | 3 | 3 | 0 | 1 | 1 | 0 | 0 | 50 | 0 | 0 |
| 492 | 428 | Ahmad Chaleh Pey Pain | 1 | 3 | 3 | 0 | 1 | 2 | 0 | 0 | 16 | 0 | 0 |
| 493 | 429 | Akterich Kola | 1 | 3 | 3 | 0 | 1 | 1 | 0 | 0 | 18 | 0 | 0 |
| 494 | 434 | Babolkan Olia | 1 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 18 | 0 | 0 |
| 495 | 443 | Davod Kola Astaneh Sar | 1 | 3 | 2 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 496 | 446 | Garmich | 1 | 3 | 3 | 0 | 1 | 0 | 0 | 0 | 16 | 0 | 0 |
| 497 | 453 | Khatib | 1 | 3 | 3 | 0 | 1 | 1 | 0 | 0 | 5 | 0 | 0 |
| 498 | 504 | | 1 | 3 | 5 | 0 | 1 | 2 | 1 | 0 | 50 | 0 | 0 |
| 499 | 180 | Now Deh | 1 | 3 | 4 | 1 | 1 | 2 | 0 | 0 | 10 | 0 | 0 |
| 500 | 371 | Amin Abad | 1 | 3 | 3 | 1 | 1 | 0 | 0 | 2 | 4 | 0 | 0 |
| 501 | 379 | Biji Kola | 1 | 3 | 3 | 1 | 1 | 1 | 2 | 2 | 54 | 0 | 0 |
| 502 | 448 | Gol Mahalleh | 1 | 3 | 2 | 1 | 1 | 1 | 0 | 0 | 20 | 0 | 0 |
| 503 | 7 | Derazan | 1 | 4 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 504 | 152 | Boz Hinan | 1 | 4 | 4 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 |
| 505 | 173 | Mahdi Kheil | 1 | 4 | 4 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 |
| 506 | 179 | Nezam Abad | 1 | 4 | 3 | 0 | 1 | 2 | 0 | 2 | 1 | 0 | 0 |
| 507 | 181 | Pasha Kola | 1 | 4 | 5 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 |
| 508 | 372 | Andi Kola | 1 | 4 | 3 | 0 | 1 | 2 | 0 | 2 | 25 | 0 | 6 |
| 509 | 400 | Manaseh Kola | 1 | 4 | 4 | 0 | 1 | 0 | 4 | 0 | 23 | 0 | 0 |
| 510 | 427 | Ahmad Chaleh Pey Bala | 1 | 4 | 4 | 0 | 1 | 1 | 0 | 0 | 15 | 0 | 0 |
| 511 | 452 | Khaji Kola | 1 | 4 | 3 | 0 | 1 | 0 | 0 | 0 | 5 | 0 | 0 |
| 512 | 404 | Mian Dasteh | 1 | 4 | 4 | 1 | 1 | 1 | 2 | 2 | 15 | 0 | 0 |
| 513 | 207 | Jamshid Abad | 1 | 5 | 3 | 0 | 1 | 0 | 3 | 3 | 12 | 0 | 0 |
| Total | | | 413 | 628 | 506 | 14 | 413 | 236 | 297 | 891 | 6329 | 11 | 33 |

FIGURE B. 2. 1-1 LOCATION MAP OF ZONE MIRAB ALLOCATION

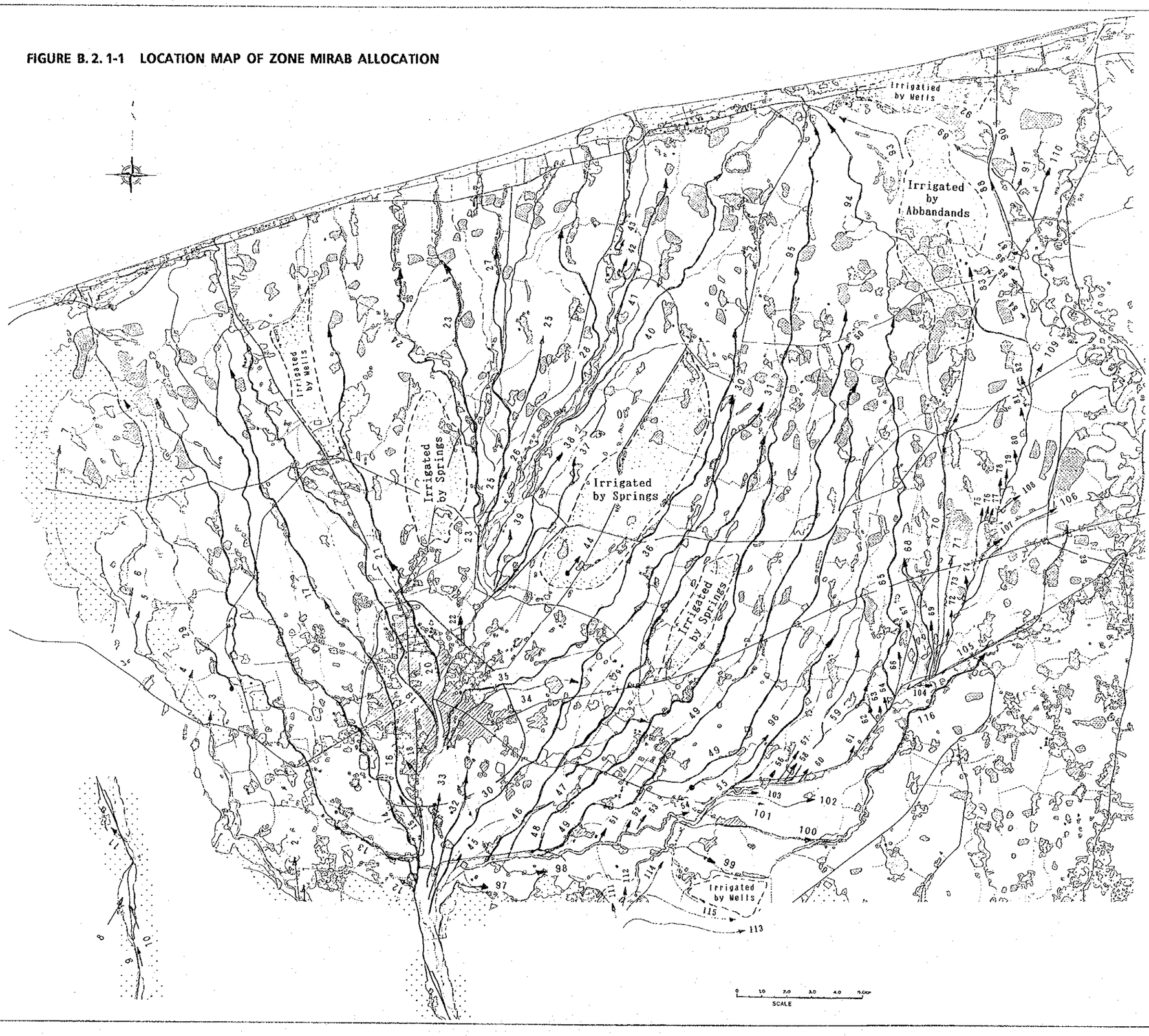
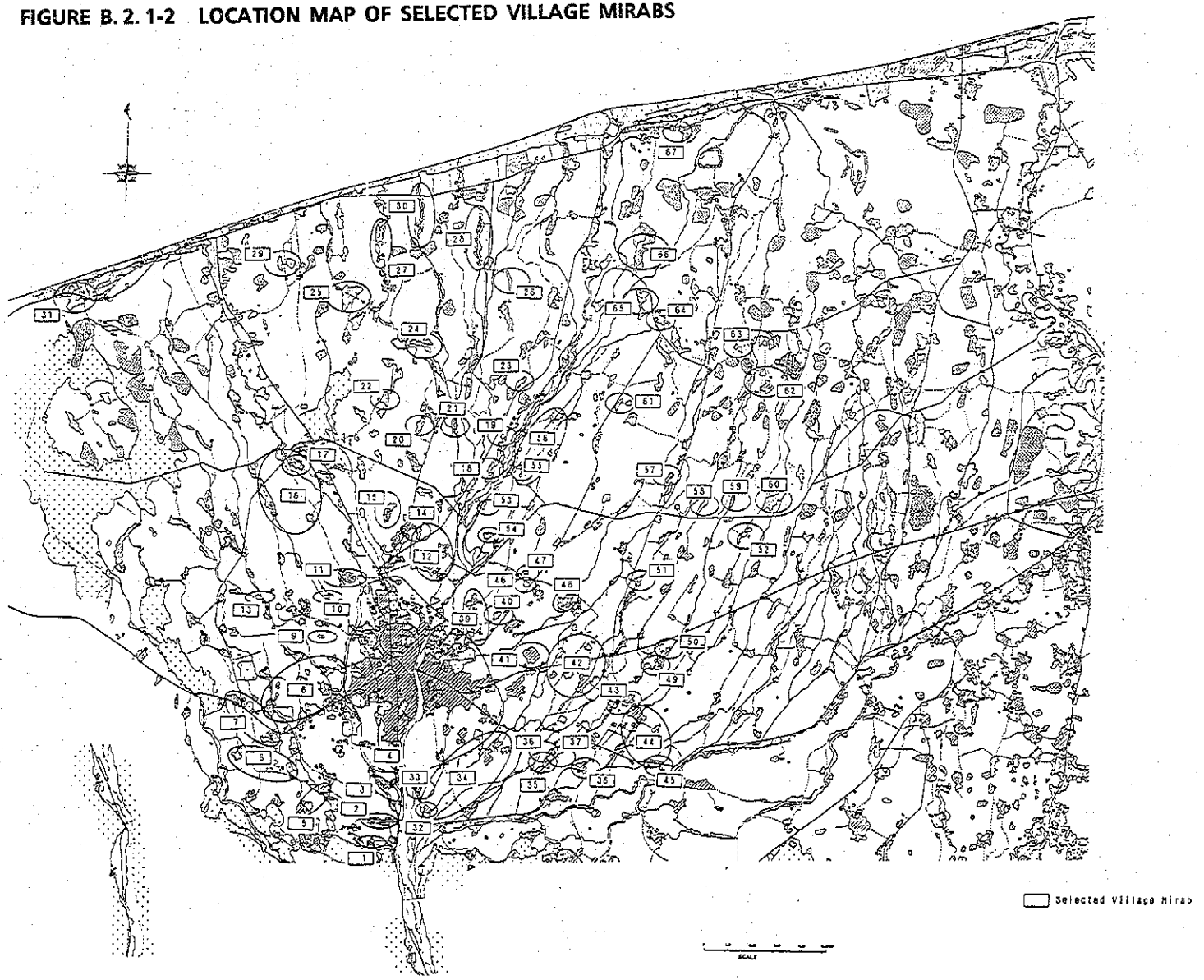


FIGURE B. 2. 1-2 LOCATION MAP OF SELECTED VILLAGE MIRABS



### B. 2. 2 Water Right

The prevailing water right in the Project Area is rather complicated due to existence of two kinds of water right as below:

1) Registered water right at the Registration Offices of Amol, Babol and Babolsar.
2) Permitted water right by the Irrigation Offices of Amol and Babol Shahrestans.

The former water right were mainly registered in 1930-40s as a part of village registration which was, at the same time, land ownership registration in the time.

At the time of above registration, most of villages in the Project Area were owned by one or few land owners and each village was registered with a sketch-like map showing the boundary of land ownership. A complete village was called as SHISHIDONG or 6 parts, and registered as how many parts were owned by a land lord. Then the right of water intake from certain irrigation canals or springs were described as well as right of use of return flow from the upperstream village/s.

In the time of registration, most of villages were surrounded by forestry or pasture, and the cultivated area was not clarified in figure. This means that the quantity of water right is not registered at all. Table B. 2. 2-1 shows some samples of water right registration in the Project Area.

In the mid of 1960s, the water was nationalized and the government took the responsibility of water management. Since that time, the governmental authority, Irrigation Office, got the right to permit water intake from the rivers or irrigation canals or springs or wells, however the registered water right was also observed in case of the Project Area.

In 1960s, the agrarian land reform, nationalization of forest land and pasture were also executed, but the cadastral registration was not taken place in most of villages at the Project Area. Moreover, the boundary of nationalized forestry/pasture land were not protected steadily.

Under the above mentioned circumstance, the water right in the Project Area followed the traditional system without any quantitative clarification, therefore newly reclaimed land have also got water right by means of permission from the Irrigation Offices. Tables B. 2. 2-2 and B. 2. 2-3 are considered as permitted water right of villages from each tertiary canal which was quoted from recent survey of tertiary canals by the Mazandaran Regional Water Board.

Presently, the registered water right is mainly observed in case of dispute at the court, especially in the drought year.

## TABLE B.2.2-1 REGISTERED WATER RIGHT AT REGISTRATION OFFICES

| Code No. | Name of village | Water Right | Return Flow Right |
|---|---|---|---|
| 1 | Esbo kola | Baziar Rod & Rich Rod Sid | Hamzeh kola |
| 2 | Chemazin | Sid Hassan Rod | Garmig Rod |
| 3 | Garmij | Sid Hassan Rod & Shah Rod & Erchi Rod | Garmihkol & Babakan |
| 4 | Imenabad | Bisheh Rod & Abbaz Rod | Kerokola |
| 5 | Kolagar Mahaleh | Babd Rod | Serest & Chareh |
| 6 | Kero Kola | Vazi Rod & Kah Rod & Taj Rod | Davod Kola & Chenarbon |
| 7 | Sorkh Kola | Kari Rod | Changmian & Tamesk |
| 8 | Hafr Mahaleh Sacikolam | Abdang Rod | Kela Rod |
| 9 | Misi Kola | Verchi Rod-Besra Rod | Babolkan-Garmij |
| 10 | Chenarbon | Azim Rod | Terghechi Kola |
| 11 | Kavan Kola | Kela Rod & Metalon River | |
| 12 | Davad Kola | Abchali & Spiar Rod & Matekeh Rod | Bala Ahmed Chalpi |
| 13 | Darzikola Bozorg | Kah Rod & Khoni | Tari Mahaleh |
| 14 | Darzikola Kochak | Karim Rod | Abshore & Alesha & Darzikola Bozorg |
| 15 | Sankchi | Abshorpie & Karim Rod | Ekjor Pain Talaro Dasht |
| 16 | Babolkan | Soliman Rod & Besra Rod | Ahmad Chalpi |
| 17 | Hajikola | Derka | Kolagar Mahaleh |
| 18 | Darzikola Akhondg | | |
| 19 | Darzikol Nasiraie | | |
| 20 | Mirkola | Kela Rod | Kavankolagertij |
| 21 | Zahed Kola | Kolab Rod | Bala Ahmadchalpi |
| 22 | Ghomi Kola | Kolab Rod | Kavan Kola |
| 23 | Darvishkhak | Kela Rod & Darvish Rod | Esbokola |
| 24 | Baghikola | Kari Rod & Kah Rod | Baziar |
| 25 | Bala Ahmadchalpi | Shamshirzam & Pain Rod | Zahed Kola |
| 26 | Lalok | Neshan Rod & Rekaj Rod | Baziarben |
| 27 | Baziarbon | Zard Rod & Bariar Rod | Vestikola-Ahangarkel |
| 28 | Tari Mahaleh | Set Rod & Taj Rod & Karim Rod | Naser KOla-Ghassabkola |
| 29 | Maziraj | Khordon Rod | Tork Mahaleh & Khrdonkola |
| 30 | Khardon Kola | Khordon Rod | Abdang Rod & Kelamarz |
| 31 | Kamangar Kola | Marzon Rod | Esbokol & Hajikola |
| 32 | Khatib Kola | Kharib Rod & Valeh Rod | Siah Verdy |
| 33 | Ketisar | Sid Hassen Rod | Besra& Barsenan |
| 34 | Jalalazrak | Besra Rod | Garmih & Chemadan |
| 35 | Matikola | Mehammad Khan Rod | Darvish Khak |
| 36 | Hajikola | Dehek Rod & Maziar | Jeh Kashan Darvishkhak |
| 37 | Darvishkhak | Molla Rod & Azadban & Darvish Rod | Esbokola |
| 38 | Tork Mahaleh | Sied Rod & Mohammad Rod | - |
| 39 | Archi Kola | Kari Rod | Ghadikola & Rokn |
| 40 | Hamzeh Kola | Sied Rod | Melardasht |
| 41 | Bijikd &Gardanborg & Miandasteh | Taj Rod & Karim Rod<br>Azarbon & Bisheh Rud | Tajenek & Emanabad |
| 42 | Rekaj | Cahharlin | Sorkh kola & Atayan |
| 43 | Dokaj | Cahharlin | Sorkh kola & Atayan |
| 44 | Feriden Kenar | | |
| 45 | Suteh | | |
| 46 | Gavzan Mahaleh | | |
| 47 | Kalehbast | | |
| 48 | Esfandiar Mahaleh | | |
| 49 | Chahar Mahal (Suteh-Mahleban-Menghrpei Kelagarsara) | | |
| 50 | Haft Mahal Rodbast | | |
| 51 | Ezbaran | | |
| 52 | Navi Mahaleh | Cheshmeh Khoni(spring) | Baserkola & Shamshirzan Mahaleh |
| 53 | Aleshah | Karim Rud | Lotfali Sbad & Bala Davodkola |
| 54 | Terghegikola | Terghegikola Rud | Mozaffarkola & Katib(spring) |
| 55 | Andykola | Kah Rud | Chenarben & Cheshmeh Kheny |
| 56 | Masir Mahaleh (Shamshirzan Mahaleh) | Cheshemh Kheny | Terghegikola & Marafferkola |
| 57 | Ghassab | Cheshemh Kheny | Davod Kola & Ghalehkash |
| 58 | Gilkola | Azarbon & Bisheh Rud | Nevai Kola |
| 59 | Baserkola | Gheshmeh Khony & Gate Rud | Mozaffarkola & Davodkola |
| 60 | Kamangar | Kamangar Rud(Marzon Rud) | Esbokola & Hajikola |
| 61 | Barsenan | Kard Rud | Chemazdon & Hamzehkola & Kamangar |
| 62 | Tari Mahaleh | Gate Rud & Taj Rud & Karim Rud | Baserkola & Ghassabkola |
| 63 | Lotfali Abad | Cheshmehkony & Said Rud & Abdang Rud | Tari Mahaleh |
| 64 | Kamangar Dasht Farm | Kazem Rud & Marzon Rud | Kamangar |
| 65 | Rangriz Kola | Cheshmeh Kheny(spring) | Mozaffarkola |
| 66 | Siah Verdy | Khordon Rud & docheshmeh Sorkhkola | Baladasht Farms |
| 67 | Kaparchal Farm | Kari Rud | Andykola |

| Code No. | Name of village | Water Right | Return Flow Right |
|---|---|---|---|
| 68 | Helal Kola | Cheshmeh Rud & Kah Rud | Kahrukola & Darzikola Bozorg |
| 69 | Gard Rudbar | Sajjad Rud | Liarden |
| 70 | Soret-zarivaran | Sajjad Rud | Zevardeh & Narivaran |
| 71 | Allah Rudbar | Kela Rud River | Diva |
| 72 | diva | Kela Rud River & Diva Rud | |
| 73 | Lamokola | - | |
| 74 | Kashi Kola | Sajjad Rud & Metalon Rud | Narivaran |
| 75 | Ledar | Bulek Rud & Sajjad Rud | Charshamin & Ezarsi |
| 76 | Amirdeh | Sajjad Rud | |
| 77 | Sang Rud Pei | Shob Rud | Sefid Tur |
| 78 | Fekechal | Cheshmeh Kharab | Khoshkrud Pie |
| 79 | Shaneh Tarash & Pinehrud Pie | Pisheh Rud | Moghrikola |
| 80 | Bura | Bai Rud & Pisheh Rud & Khar Rud | - |
| 81 | Afrasiab kolaBura | Kela Rud | Bura |
| 82 | Kermi kola | Kela Rud River | |
| 83 | Baikola | Khoshk Rud | Khoshkrud Pie |
| 84 | Gareh Kenar | - | - |
| 85 | Moghrikola | Kela Rud River & Piteh Rud & Kharat Rud | Lamsokola & Afrasiabkola |
| 86 | Khoshkrud Pie | Kela Rud River & Bai Rud | Bura |
| 87 | Bozrud Pie | Kela Rud River & Boz Rud | Afrasiabkola |
| 88 | Tork Kola | | |
| 89 | Mahmadabad | | |
| 90 | Kaleh | | |
| 91 | Mileh | | |
| 92 | Bozninan | | |
| 93 | Konsi | | |
| 94 | Kete Posht | | |
| 95 | Firue Kola | | |
| 96 | Palak | | |
| 97 | Komdarreh | | |
| 98 | Komkola | | |
| 99 | Mianrud sofla | Divrud-Springs | Hajiabad, Mianrud Olia |
| 100 | Mianrud Olia | Springs | |
| 101 | Haji Abad | Springs | Keliksar, Ashrafabad |
| 102 | Shariatabad | Springs | Darvich Kleil |
| 103 | Mamruz Keti | Springs | Darvish Kheil/Vaskol |
| 104 | Aspi Kolai Olia | Haraz-Marun Spring | Ashrafabad, Keliksar, Heshlat |
| 105 | Tazahabad | springs | Hosseinabad, Ghaleh Kati |
| 106 | Abulhassan | Diver rud,Valehrud | |
| 107 | Mahaleh | Ketel kosh spring | |
| 108 | Ashratabad | Bayurud-kari | |
| 109 | Mamruz Keti Olia | spring | |
| 110 | Reisabad | Haraz Spring | Ashrafabad Keliksar |
| 111 | Chaksar | Nil | Nil |
| 112 | Kamangar Kola | Zane-mard,darzirud, spring | Hosseinabad,Kaliksar Ashrafabad |
| 113 | Bala Div Kola | | |
| 114 | Div Kola | Ketel Koshi spring | |
| 115 | Kolmarz | | |
| 116 | Siah rudsar | | |
| 117 | Bazminan | | |
| 118 | Dariasar | | |
| 119 | Tooleh Kola Olia | | |
| 120 | Resh Kola | | |
| 121 | Kaman Kola Chamar kola | Khoshkeh Haras, Pit rud | Pasha Kola |
| 122 | Kaleh Bast | | |
| 123 | Ashkar Kolai, Sofla | Ashkarrud Springs | Ashkarkola Olia Yusefabad soorak |
| 124 | Askbar kolar Olia | Ashkarrud Springs | Yusefabad, Kohnehdan |
| 125 | Vaskus | Khoshleh Hemz Spring | Barik Mahaleh Tirkejain |
| 126 | Barik Mahaleh | | Ashkarkolai Sofla, Oujak, Kohnedan |
| 127 | Pahneh | Ketel Kosh | Kamangarkola, Pirkola |
| 128 | Onadieh | spring | Sialkola soorak, Mahutkola |
| 129 | Aminabad Olia | spring Khoshkeh Haraz | |
| 130 | Heshtal | Zan-Mard | Rashkola, sofiddabon |
| 131 | Shahkola Maleki | Keikavisrud spring | darsikola Heshtal |
| 132 | Zardab | | |
| 133 | Abbasabad | | |
| 134 | Lati Kola | Valikrud | |
| 135 | Jamshidabad | Jamshidrud, Kechap, Valikrud | |
| 136 | Abudal Hassanabad | | |
| 137 | Kerati | Tarud, Valikrud, Spring | Janshidabad |

| Code No. | Name of village | Water Right | Return Flow Right |
|---|---|---|---|
| 138 | Sangbast | Harazriver spring | |
| 139 | Valik | | dlavikola Ahi |
| 140 | Valik Hosseinabad | | Jamshidabad Keroti Barmahcheh |
| 141 | Alu | | Kanankola Chamazkola |
| 142 | Soorak Juj Uahaleh | Sorkhrud Spring | |
| 143 | Absaraft | Aali Kola rud | Kaman kola Chamac kola |
| 144 | Vazra Mahaleh | | sorkhmd, Marij Mchaleh |
| 145 | Kechap Navai | Kechap rud,Marij rud via Heli Keti rud from Pitrud | Kechap Nabaki |
| 146 | Marij Mahaleh | Marij rud | Kechap Navai Kilak Mahleh |
| 147 | Sirjarun | Marij rud | Shah Keti |
| 148 | Kohnehdan | Spring | |
| 149 | Shah Keti | Kechab | |
| 150 | Sharmeh Kola qalesh Kola | Khoshkeh Haraz | Bazyar Kola |
| 151 | Dangpia sofla | spring | Mamrez Keti |
| 152 | Dangpia Olia | spring | Mamrez Shariatabad |
| 153 | Magidabad | Keti Kosh, Spring | Bamer Kola, Nargia Marz |
| 154 | Eski Mahaleh | Ketel Kosh | Shahr Keti, Notaher Sofla |
| 155 | Soltanabad | Ketel Kosh | Eski Mahaleh, Molahir sofla |
| 156 | Motaher Olia | Ketel Kosh, Spring | |
| 157 | Shah Kolai Eski | Ketel Kosh, Spring | Nohaher sofla |
| 158 | Bansar Kola | Ketel Kosh | shah Kola, Shahkolai |
| 159 | Shahkdai Amiri | Naser rud, spring | Notaher Olia, sofla |
| 160 | Palham Keti | Ketel kosh, spring | Motaher Olia |
| 161 | Mataher sofla | Ketel kosh, spring | Motaher Olia |
| 162 | Muzi Keti Olia | Ketel Kosh | Bansarkola, Narges Marz |
| 163 | Ghara Kola | Ketel Kosh spring | |
| 164 | Poin Muziketi | Ketel Kosh | Ghara Kola Mozi Keti Olia |
| 165 | Chias Kola | Ketel Kosh | Gharh Kola, Muzi Keti Olia |
| 166 | Mehdi Kheil | Ketel Kosh | |
| 167 | Buran | Rasheh rud, Tooleh rud | Palak, Kons,Rudbar dasht |
| 168 | Rash Kola | Rasheh rud, Tooleh rud | Rudbar dasht, torkkola Burana |
| 169 | Mahmndabad | Varzarud | Upper Village |
| 170 | Tenleh Kola | Khashleh Haraz-sorkh rud | |
| 171 | Chareh | Pitrud, Tooleh rud | hendon kola |
| 172 | Darvishkheil | spring | Hendon Kola, Chareh |
| 173 | Laber Farm | Kanankola, Chamaz Kola | |
| 174 | Sharmeh Keti | Khashek Haraz-Pitrud | sharneh Keti, Harun kola |
| 175 | Kons Marz | Mallarud Kons Marz rud | Keshan Gharbi Mirdeh Olia |
| 176 | Haji Kola | Molla rud | sardab, Zangi kola Kons Marz |
| 177 | Chaksar | | Haji kola Zanhi Kola |
| 178 | Shah Mahaleh | Sangi rud | Alavi Kola |
| 179 | Tamasak | | |
| 180 | Mirdeh Sofla | Zangirud Alavikola rud | |
| 181 | Mirdeh Olia | Zangirud Kons Marz rud | |
| 182 | Yusefabad | Ashkarkola | Amihabad, Kohnehdon |
| 183 | Rafeabad | Ahirud Molla rud | Sheikhabad, Hosseinabad |

## TABLE B.2.2-2 PERMITTED WATER RIGHT FROM HARAZ RIVER

| Name of Main/ Secondary canals | Name of Tertiary/ Quaternary Canel | Length of T.C. Q.C. (km) | Beneficiary Villages | Discharge* Fluctuation (liter/sec.) | Irrigation Period (day) | Width of Canal (cm) | Depth of Canal (cm) | Area under Irrigation (ha) |
|---|---|---|---|---|---|---|---|---|
| HARAZ-Marichi | Khakpur | 0.5 | Jamshidabad | 0-20 | 195 | 40 | 20 | 15.0 |
| 〃 | Hasan mobaraki | 0.4 | 〃 | 0-20 | 〃 | 40 | 15 | 3.5 |
| 〃 | Sirjaroun | 0.7 | Sirjaroun | 0-192 | 〃 | 80 | 80 | 50.0 |
| 〃 | Laper kileh 1 | 1.0 | 〃 | 0-128 | 〃 | 80 | 40 | 80.0 |
| 〃 | Talaraseh | 1.0 | 〃 | 0-72 | 〃 | 80 | 30 | 20.0 |
| 〃 | Gol mahaleh | 1.2 | Golmahaleh | 0-128 | 〃 | 80 | 40 | 70.0 |
| 〃 | Haraz pei kileh | 2.5 | 〃 | 0-160 | 〃 | 80 | 40 | 70.0 |
| 〃 | Chahr firi kileh | 1.0 | 〃 | 0-48 | 〃 | 40 | 20 | 20.0 |
| 〃 | Dasht kileh 1 | 0.03 | 〃 | 0-3 | 〃 | 6 | 6 | 0.7 |
| 〃 | Laper kiles 2 | 1.0 | 〃 | 0-64 | 〃 | 40 | 20 | 20.0 |
| 〃 | Dasht kileh 2 | | Marigemohamed | 0-3 | 〃 | 6 | 6 | 0.7 |
| 〃 | Sorkhrud Gharbi | 4.0 | Sorkhrud Gharbi | 0-600 | 〃 | 150 | 80 | 479.0 |
| 〃 | Sorkhrud Shargi | 3.0 | 〃 | 0-600 | 〃 | 150 | 80 | 200.0 |
| 〃 | Degli kileh | 0.1 | Kachab olia | 0-3 | 〃 | 10 | 10 | |
| 〃 | Posht Kiles 1 | 0.3 | Kachab Sofla | 0-3 | 〃 | 10 | 10 | |
| 〃 | Lilam Ayesh kileh | 2.0 | Marige Mahaleh | 0-64 | 〃 | 40 | 40 | 40.0 |
| 〃 | Posht Kileh 2 | 1.5 | 〃 | 0-144 | 〃 | 60 | 60 | 70.0 |
| 〃 | Dasht Kileh 1 | 0.2 | 〃 | 0-3 | 〃 | 6 | 6 | 1.0 |
| 〃 | Dasht Kileh 2 | 1.1 | 〃 | 0-24 | 〃 | 40 | 20 | 5.0 |
| 〃 | Dasht Kileh 3 | 0.2 | 〃 | 0-3 | 〃 | 10 | 10 | 1.5 |
| 〃 | Mahdi Abrahimi | | 〃 | 0-3 | 〃 | 6 | 6 | 3.0 |
| 〃 | Faramarz Jahani | 0.2 | 〃 | 0-12 | 〃 | 20 | 20 | 14.0 |
| 〃 | Sadegh Abrahimi | 0.2 | 〃 | 0-20 | 〃 | 20 | 20 | 10.0 |
| 〃 | Rammazani Kileh | 0.7 | 〃 | 0-48 | 〃 | 40 | 40 | 25.0 |
| 〃 | Lilam Ayesh Kileh 2 | 1.6 | 〃 | 0-120 | 〃 | 100 | 70 | 85.0 |
| 〃 | Farji Kileh | 0.3 | 〃 | 0-12 | 〃 | 10 | 10 | 5.0 |
| 〃 | Kalakpei | 1.5 | 3. Marige Mahalehs | 0-216 | 〃 | 90 | 60 | 150.0 |
| 〃 | Esmail-zadeh | 0.1 | Marige Mahaleh | 0-12 | 〃 | 10 | 10 | 4.0 |
| 〃 | Hamam Kilehsar | 0.6 | 〃 | 0-12 | 〃 | 10 | 10 | 10.0 |
| 〃 | Lilam Kileh | 3.0 | 3. Marige Mahalehs | 0-216 | 〃 | 80 | 45 | 150.0 |
| 〃 | Varak Chal | 0.4 | Marige Mahaleh | 0-45 | 〃 | 50 | 30 | 30.0 |
| 〃 | Vazrz Mahaleh | 5.0 | Vazrz Mahaleh | 0-288 | 〃 | 120 | 80 | 113.0 |
| 〃 | Mohamed Ali Kileh | | Marige Mahaleh | 0-6 | 〃 | 10 | 10 | 2.0 |
| 〃 | Tekiyeh Bish Kileh | 0.5 | 〃 | 0-32 | 〃 | 20 | 20 | 20.0 |
| 〃 | Kaleh Kileh | 0.6 | 〃 | 0-6 | 〃 | 10 | 10 | 24.0 |
| 〃 | Jbbandan Kileh | 0.4 | 〃 | 0-20 | 〃 | 20 | 20 | 15.0 |
| 〃 | Espiar Kileh | 1.0 | 〃 | 0-160 | 〃 | 80 | 50 | 75.0 |
| 〃 | Posht Kileh | 1.1 | 〃 | 0-64 | 〃 | 20 | 20 | 40.0 |
| 〃 | Haji Ranjbar | 0.2 | 〃 | 0-6 | 〃 | 6 | 6 | 3.5 |
| 〃 | Haji Reza Monferd | 0.1 | 〃 | 0-6 | 〃 | 6 | 6 | 3.5 |
| 〃 | Norabad Poshet Kileh | 1.2 | 〃 | 0-108 | 〃 | 60 | 60 | 45.0 |
| 〃 | Marige Rud | 3.5 | 〃 | 0-588 | 〃 | 280 | 70 | 40.0 |

| Name of Main/ Secondary canals | Name of Tertiary/ Quaternary Canel | Length of T.C. Q.C. (km) | Beneficiary Villages | Discharge* Fluctuation (liter/sec.) | Irrigation Period (day) | Width of Canal (cm) | Depth of Canal (cm) | Area under Irrigation (ha) |
|---|---|---|---|---|---|---|---|---|
| 〃 | Asghari Kileh 1 | 0.2 | Valik olia | 0-40 | 〃 | 50 | 40 | 10.0 |
| 〃 | Asghari Kileh 2 | 0.4 | 〃 | 0-30 | 〃 | 50 | 20 | 4.0 |
| HARAZ-Kachaprud | Aziz Nikzad | | Valik olia | 0-10 | 195 | 50 | 10 | 1.5 |
| 〃 | Asad Khan | 0.1 | 〃 | 0-8 | 〃 | 60 | 7 | 1.2 |
| 〃 | Saleh Band | 0.1 | Shahketi-Noabad | 0-8 | 〃 | 60 | 7 | 60.0 |
| 〃 | Zabialah Barzegar | 0.2 | 〃 | 0-8 | 〃 | 20 | 20 | 4.0 |
| 〃 | Haji Mostafa Kileh | 0.3 | 〃 | 0-10 | 〃 | 50 | 10 | 4.0 |
| 〃 | Sefallah Hadadi | 0.1 | 〃 | 0-10 | 〃 | 50 | 10 | |
| 〃 | Ali Barzegar | 0.2 | 〃 | 0-10 | 〃 | 50 | 10 | |
| 〃 | Abbas Kileh | 0.9 | 〃 | 0-16 | 〃 | 80 | 10 | |
| 〃 | Mostafa Kileh 2 | | 〃 | 0-12 | 〃 | 60 | 10 | |
| 〃 | Hossin Moradi | 0.2 | 〃 | 0-10 | 〃 | 50 | 10 | |
| 〃 | Haj Shir Ali | 0.1 | 〃 | 0-10 | 〃 | 50 | 10 | |
| 〃 | Sagwash Kileh | 0.3 | 〃 | 0-70 | 〃 | 70 | 50 | |
| 〃 | Abas Metuo | | 〃 | 0-8 | 〃 | 20 | 20 | |
| 〃 | Haj Ali | 0.2 | 〃 | 0-6 | 〃 | 30 | 10 | |
| 〃 | Sagha Jafari | 0.1 | 〃 | 0-8 | 〃 | 20 | 20 | |
| 〃 | Haj Hossin Gholami | | 〃 | 0-8 | 〃 | 20 | 20 | |
| 〃 | Abbas Mehdizadeh | | 〃 | 0-10 | 〃 | 50 | 10 | |
| 〃 | Sagha Jafari | 0.1 | 〃 | 0-12 | 〃 | 40 | 15 | |
| 〃 | Musa Fazeli | 0.2 | 〃 | 0-8 | 〃 | 40 | 10 | |
| 〃 | Abrahim Hadad | 0.1 | 〃 | 0-8 | 〃 | 40 | 10 | |
| 〃 | Reza Mohamadi | | 〃 | 0-8 | 〃 | 40 | 10 | |
| 〃 | Jafar Mohamadi | | 〃 | 0-12 | 〃 | 60 | 10 | |
| 〃 | Shabon Mehdavi | | 〃 | 0-16 | 〃 | 40 | 20 | |
| 〃 | Shabon Shariati | | 〃 | 0-8 | 〃 | 40 | 10 | |
| 〃 | Gholambosin Jalali | | 〃 | 0-8 | 〃 | 40 | 10 | |
| 〃 | Gatkareh Hosseini | | 〃 | 0-8 | 〃 | 40 | 10 | |
| 〃 | Ahmad Hashemi | | 〃 | 0-8 | 〃 | 40 | 10 | |
| 〃 | Haj Abdoellah Hashemi | | 〃 | 0-8 | 〃 | 40 | 10 | |
| 〃 | Mirza Agha Bezai | 0.2 | 〃 | 0-8 | 〃 | 40 | 10 | |
| 〃 | Haj Abdoellah Hashemi | 1.0 | 〃 | 0-8 | 〃 | 40 | 10 | |
| 〃 | Norud | 2.6 | 5,Kachap olia/Sofla,Kalva, Ezbaran,Feriden kenar | 0-180 | 〃 | 100 | 60 | 1385.0 |
| 〃 | Valeh Kileh | 1.1 | 2,Kachap olia and kalv | 1-144 | 〃 | 80 | 60 | |
| 〃 | Bighrud | 2.2 | 5,Chapalia/Sofla,Kalva, Azbaran,Feridon kenar | 0-180 | 〃 | 100 | 60 | |
| 〃 | Haj Abdoellah Hashemi | | Kachap olia | 0-12 | 〃 | 30 | 20 | |
| 〃 | Khaneh Poshcband | 0.5 | Kachap sofla | 0-240 | 〃 | 80 | 100 | |
| Haraz-Jamshidrud | Jamshidrud | 4.0 | 2,Farahabad/Jamshidabad | 0-840 | 〃 | 300 | 70 | 140.0 |
| Haraz-Valikrud | Lati Koiah Band | 0.3 | Lati kolah | 0-30 | 〃 | 50 | 10 | 3.0 |
| 〃 | Jamshidabad Kileh | 2.0 | Jamshidabad | 0-63 | 〃 | 70 | 30 | 30.0 |

| Name of Main/ Secondary canals | Name of Tertiary/ Quaternary Canel | Length of T.C. Q.C. (km) | Beneficiary Villages | Discharge* Fluctuation (liter/sec.) | Irrigation Period (day) | Width of Canal (cm) | Depth of Canal (cm) | Area under Irrigation (ha) |
|---|---|---|---|---|---|---|---|---|
| 〃 | Lati Kolah Band | 1.1 | Lati kolah | 0-54 | 〃 | 90 | 20 | 10.0 |
| 〃 | Karari Band | 0.3 | Karati | 0-80 | 〃 | 90 | 30 | 40.0 |
| 〃 | Mohamadabad Kileh 1 | 1.5 | Mohamadabad | 0-160 | 〃 | 100 | 40 | 60.0 |
| 〃 | Mohamadabad Kileh 2 | 0.6 | Mohamadabad | 0-35 | 〃 | 60 | 20 | 5.0 |
| 〃 | Mohamadabad Kileh 3 | 0.5 | Mohamadabad | 0-16 | 〃 | 40 | 20 | 5.0 |
| 〃 | Mohamadabad Kileh 4 | 0.5 | Mohamadabad | 0-12 | 〃 | 30 | 15 | 6.0 |
| 〃 | Valikrud Sofla | 3.2 | Shahketi | 0-324 | 〃 | 180 | 60 | 150.0 |
| 〃 | Valikrud Olia | 4.0 | Valik olia | 0-360 | 〃 | 200 | 60 | 160.0 |
| Haraz-Aalikolahrud | Lati Kolah | 2.1 | 3,Absaa roft,Late kolah Alavi kolsh | 0-275 | 〃 | 130 | 70 | 50.0 |
| 〃 | Mohamadi Kileh | 0.5 | Lati kolah | 0-24 | 〃 | 60 | 20 | 3.0 |
| 〃 | Mian Kileh | 0.6 | Lati kolah | 0-64 | 〃 | 80 | 40 | 20.0 |
| 〃 | Ramazanali Rezai | 0.6 | 〃 | 0-64 | 〃 | 80 | 40 | 10.0 |
| 〃 | Jafarabad | 1.1 | 〃 | 0-64 | 〃 | 80 | 40 | 20.0 |
| 〃 | Karatiband | 0.7 | Pul kiadeh | 0-64 | 〃 | 80 | 40 | 10.0 |
| 〃 | Ashchal | 0.5 | 〃 | | 〃 | 80 | 30 | 10.5 |
| 〃 | Digrud | 7.6 | 7,Bish mahaleh/Barik-mahaleh,Tirorjan olia/Sofla, Azimabad,Eslamabad/Ali kolah | 0-900 | 〃 | 300 | 60 | 360.0 |
| 〃 | Ali Kolabrud | 4.7 | Ali kolah | 0-1875 | 〃 | 250 | 150 | 250.0 |
| Haraz-Khoshkeh-Har | Kamongir Kalarud | 3.9 | Sharn kolah,Kamaongar | 0-1260 | 〃 | 300 | 60 | 400.0 |
| 〃 | Sorkhrud | 7.3 | 5,Sharm/qalesh kolahs, Burmahaleh,Alu, Tooleh Kolah olia | 0-220 | 〃 | 450 | 70 | 500.0 |
| Haraz-Kilehrud | Rashru | 1.0 | Rash Kolah | 0-460 | 〃 | 170 | 45 | 100.0 |
| 〃 | Tarikafra | 0.6 | Tooleh Kolah sofla | 0-600 | 〃 | 170 | 60 | 150.0 |
| 〃 | Valeh Var | 2.5 | 2,Poin Heshtal Varzi kolah | 0-420 | 〃 | 120 | 70 | 160.0 |
| 〃 | Orangband | 1.0 | 2,Pien Hashtel Kordi Kheil | 0-360 | 〃 | 180 | 40 | 80.0 |
| 〃 | Aghuoz band | 2.0 | Poin Heshta | 0-250 | 〃 | 100 | 50 | 70.0 |
| 〃 | Fakband | 1.1 | 〃 | 0-100 | 〃 | 80 | 30 | 25.0 |
| 〃 | Ghaleh Band | 1.1 | 〃 | 0-90 | 〃 | 80 | 25 | 20.0 |
| 〃 | Marzangu | 4.7 | Marzangu | 0-2500 | 〃 | 280 | 180 | 800.0 |
| 〃 | Navai Mahaleh | 4.7 | 2,Navai Mahaleh Kochek Bisheh Mahaleh | 0-1000 | 〃 | 130 | 200 | 322.0 |
| 〃 | Birudkhaneh | 4.2 | 4,Kuchek Mahaleh hir mahaleh,Bonehkehar Kardgar Mahaleh | 0-1000 | 〃 | 130 | 200 | 520.0 |
| 〃 | Kuchak Bisheh Mahaleh | 3.0 | Kuchak bisheh mahaleh | 0-800 | 〃 | 100 | 200 | 120.0 |
| 〃 | Kardgar Mahaleh | 1.8 | 3,Kuchak bisheh mahaleh Shir/Kardgar Mahalehs | 0-1500 | 〃 | 280 | 150 | 340.0 |

| Name of Main/ Secondary canals | Name of Tertiary/ Quaternary Canel | Length of T.C. Q.C. (km) | Beneficiary Villages | Discharge* Fluctuation (liter/sec.) | Irrigation Period (day) | Width of Canal (cm) | Depth of Canal (cm) | Area under Irrigation (ha) |
|---|---|---|---|---|---|---|---|---|
| 〃 | kire rud | 4.1 | 2,Bisheh/Shir Mahalehs | 0-1500 | 〃 | 220 | 150 | 370.0 |
| HARAZ-Rashrud | Rashrud | 4.2 | Basht kolsh | 0-1260 | 〃 | 300 | 60 | 500.0 |
| HARAZ-Torkkolahrud | Chak Kileh | 0.2 | Rudbar Dasht | 0-20 | 〃 | 40 | 20 | 4.0 |
| 〃 | Sehsar | 1.1 | Tork kolah | 0-380 | 〃 | 160 | 60 | 120.0 |
| 〃 | Chahargiri Band | 2.0 | Tark kolah | 0-1000 | 〃 | 200 | 200 | 220.0 |
| 〃 | Tork Kolahrud | 1.7 | 〃 | 0-1500 | 〃 | 300 | 100 | 10.0 |
| HARAZ | Sarkaleh Band | 1.3 | Konsi | 0-180 | 〃 | 150 | 30 | 15.0 |
| 〃 | Chak Kileh | 1.5 | Rudbar dashet | 0-90 | 〃 | 50 | 30 | 25.0 |
| 〃 | Abolhasan Kileh | 1.0 | 〃 | 0-50 | 〃 | 40 | 30 | 15.0 |
| 〃 | Nomalek Chak Kileh | 1.0 | Tarkala | 0-280 | 〃 | 100 | 40 | 50.0 |
| Haraz-Sagrud | Chak Kileh Kuchak | 0.2 | Kamakaleh | 0-20 | 〃 | 50 | 15 | 1.5 |
| 〃 | Mohamad Tai Band | 0.4 | 〃 | 0-42 | 〃 | 70 | 30 | 8.0 |
| 〃 | Aliasband | 0.4 | 〃 | 0-48 | 〃 | 80 | 30 | 10.0 |
| 〃 | Komkolehband | 0.6 | 〃 | 0-72 | 〃 | 90 | 40 | 15.0 |
| 〃 | Balaharz Posht Kileh | 0.2 | Rudbar dashet | 0-6 | 〃 | 30 | 10 | 1.0 |
| 〃 | Poin Haraz Posht Kileh | 1.2 | 〃 | 0-64 | 〃 | 80 | 40 | 15.0 |
| Haraz-Sagrud-Karatband | Mahaleh Poshetband | 0.6 | 〃 | 0-64 | 〃 | 80 | 40 | 15.0 |
| Haraz-Sagrud | Karatband | 2.5 | 2,Rudbar dashet Vakni | 0-640 | 〃 | 200 | 80 | 170.0 |
| 〃 | Norud | 2.0 | 2,Rudbar dashet Konsi | 0-300 | 〃 | 150 | 50 | 110.0 |
| 〃 | Harehband | 0.1 | Rudbar dashet | 0-12 | 〃 | 40 | 15 | 2.5 |
| 〃 | Shuresh | 1.0 | 2, Konsi,Palakpaoin | 0-312 | 〃 | 130 | 40 | 80.0 |
| 〃 | Orangband | 0.8 | Konsi | 0-108 | 〃 | 90 | 40 | 30.0 |
| 〃 | Naherbil | 1.7 | 2,Konsi,Baziar kolah | 0-312 | 〃 | 130 | 40 | 80.0 |
| 〃 | Chahargiri | 0.5 | 3,Konsi,Palak bala Baziar kolah | 0-72 | 〃 | 80 | 30 | 40.0 |
| 〃 | Palakrud | 2.0 | 2,Palak Bala/poin | 0-245 | 〃 | 140 | 50 | 120.0 |
| 〃 | Sehposht | 1.5 | 2,Palakbala,Baziar kolah | 0-73 | 〃 | 70 | 35 | 30.0 |
| Haraz-Zan o mard | Salehiband | 1.0 | 2,Komkolah,Marzankolah | 0-250 | 〃 | 80 | 35 | 20.0 |
| 〃 | Moslemband | 1.8 | Komkolah | 0-750 | 〃 | 160 | 60 | 50.0 |
| 〃 | Pitru | 3.5 | 2,Komkolah,Bazmian | 0-675 | 〃 | 120 | 80 | 100.0 |
| 〃 | Amir Kileh | 2.5 | Komkolah | 0-500 | 〃 | 120 | 70 | 50.0 |
| 〃 | Karatband | 2.2 | 〃 | 0-750 | 〃 | 200 | 85 | 100.0 |
| 〃 | Direj Kileh | 2.0 | 〃 | 0-350 | 〃 | 100 | 40 | 60.0 |
| 〃 | Chelcheleh Band | 2.5 | Ketieh posht | 0-500 | 〃 | 100 | 70 | 150.0 |
| Haraz-Zan o mard-Pelakrud | Paskiband | 1.3 | Ketieh posht | 0-175 | 〃 | 90 | 60 | 15.0 |
| 〃 | Orangband | 1.6 | 2,Palak bala,Buran | 0-175 | 〃 | 100 | 50 | 50.0 |
| 〃 | Palakrud | 5.3 | Buran | 0-3000 | 〃 | 300 | 150 | 40.0 |
| 〃 | valehvar | 3.5 | 2,Palak poin,buran | 0-350 | 〃 | 150 | 70 | 20.0 |

| Name of Main/ Secondary canals | Name of Tertiary/ Quaternary Canel | Length of T.C. Q.C. (km) | Beneficiary Villages | Discharge* Fluctuation (liter/sec.) | Irrigation Period (day) | Width of Canal (cm) | Depth of Canal (cm) | Area under Irrigation (ha) |
|---|---|---|---|---|---|---|---|---|
| Haraz-Zan o mard | Nobichar | 1.4 | 2,Paski/maian Mahaleh | 0-250 | 〃 | 50 | 30 | 25.0 |
| 〃 | Shahrband | 2.8 | 2,Ketie posht,buran | 0-450 | 〃 | 90 | 100 | 70.0 |
| 〃 | Parkileh | 2.7 | 2, 〃 〃 | 0-175 | 〃 | 100 | 35 | 40.0 |
| 〃 | Gholamband | 0.3 | Ketie posht | 0-55 | 〃 | 50 | 10 | 2.5 |
| 〃 | Toskaband | 1.5 | 〃 | 0-250 | 〃 | 120 | 40 | 33.0 |
| 〃 | Orangband | 0.4 | Ab bakhshiyan | 0-55 | 〃 | 70 | 12 | 10.0 |
| 〃 | Azarband | 1.1 | Buran | 0-250 | 〃 | 120 | 60 | 50.0 |
| 〃 | Retaj Kileh | 1.1 | 〃 | 0-85 | 〃 | 40 | 50 | 20.0 |
| 〃 | Velehvar | 3.2 | 2,Buran,Salar mahaleh | 0-500 | 〃 | 180 | 80 | 180.0 |
| 〃 | Aspiarbon | 4.3 | Aspiarbon | 0-350 | 〃 | 150 | 60 | 50.0 |
| 〃 | Emamzadeh Mahamad | 2.4 | Bala heshtal | 0-200 | 〃 | 80 | 40 | 50.0 |
| 〃 | Poin Heshtal | 2.4 | Poin heshtal | 0-75 | 〃 | 40 | 30 | 30.0 |
| 〃 | Bandrud Posher | 1.3 | 2,Pien/Bala hoshtel | 0-250 | 〃 | 80 | 85 | 35.0 |
| 〃 | shidh Kolaband | 1.0 | Poin heshtal | 0-250 | 〃 | 100 | 80 | 60.0 |
| 〃 | Davod Kalaband | 2.3 | 2,Davod kolah,poin-heshtal | 0-125 | 〃 | 70 | 35 | 35.0 |
| 〃 | Haj Hosein Band | 0.9 | 3,Pien/Bala hoshtel Kord kheil | 0-250 | 〃 | 80 | 80 | 50.0 |
| 〃 | Haj Ramazan Band | 2.8 | 2,Pasha/Davod kolah | 0-375 | 〃 | 90 | 80 | 150.0 |
| 〃 | Haj Gorbon Band | 0.8 | Davod kolah | 0-450 | 〃 | 100 | 80 | 100.0 |
| 〃 | Ordang Band | 1.0 | Pasha kolah | 0-75 | 〃 | 70 | 30 | 10.0 |
| 〃 | Agharu | 2.7 | Aspahi kolah | 0-350 | 〃 | 100 | 50 | 60.0 |
| 〃 | Kabud Kalarud | 9.2 | 3,Aspahi,Korsi, Kabud kolah | 0-1500 | 〃 | 300 | 110 | 300.0 |
| 〃 | Diz Rud | 1.2 | Div kolah | 0-250 | 〃 | 100 | 40 | 50.0 |
| 〃 | Sambih Dasht Kileh | 6.0 | 5,Korsi kolah bala, sampagh kolah,papin sangar, Abu mahaleh | 0-1200 | 〃 | 200 | 130 | 300.0 |
| 〃 | Hajiru | 7.2 | 8,Bala/poin Korsi kolah Sampagh/Kabud/Surat kolah, Ahi mahaleh,Binamad, Ahangar kolah | 0-2400 | 〃 | 300 | 150 | 555.0 |
| 〃 | Zan o mard | 7.7 | 4,Korsi/Sampagh/ Kamaongar/Ahangar kolah | 0-750 | 〃 | 200 | 60 | 220.0 |
| 〃 | Rala dirj kileh | 0.7 | Ketih posht | 0-55 | 〃 | 80 | 40 | 10.0 |
| 〃 | Poin dirj kileh | 1.0 | Katih posht olia | 0-125 | 〃 | 80 | 50 | 40.0 |
| 〃 | Hafr band | 2.2 | Ketih posht olia | 0-250 | 〃 | 100 | 70 | 50.0 |
| 〃 | Odang band | 2.1 | 〃 | 0-250 | 〃 | 100 | 70 | 50.0 |
| 〃 | Hammom band | 0.9 | Ketih posht sofla | 0-30 | 〃 | 40 | 20 | 6.0 |
| 〃 | Mahamad kileh | 1.4 | Tir kan | 0-250 | 〃 | 100 | 70 | 50.0 |
| Alashrud | Naher Sahari | 7.0 | 3,Eskuhi,Aliabad | | | | | |

| Name of Main/ Secondary canals | Name of Tertiary/ Quaternary Canel | Length of T.C. Q.C. (km) | Beneficiary Villages | Discharge* Fluctuation (liter/sec.) | Irrigation Period (day) | Width of Canal (cm) | Depth of Canal (cm) | Area under Irrigation (ha) |
|---|---|---|---|---|---|---|---|---|
| | | | Sahari | 0-350 | 195 | 120 | 182 | 70.0 |
| 〃 | Kasem rah | 5.0 | Kasen rah | 0-300 | 〃 | 130 | 9 | 100.0 |
| 〃 | Khoshek rud | 4.5 | 3,Spand,Kasem rah Khoshek rud | 0-360 | 〃 | 140 | 9 | 100.0 |
| 〃 | Tiran | 5.0 | 2,Rasineh,Tiran | 0-360 | 〃 | 140 | 18 | 110.0 |
| 〃 | Naher kolon | 2.0 | Naher kolom | 0-550 | 〃 | 140 | 23 | 300.0 |
| 〃 | Naher kukadeh | 1.5 | Kukadeh | 0-540 | 〃 | 140 | 22 | 300.0 |
| Haraz-Velkan | Lagher zamin | 0.5 | Lagher zamin | 0-40 | 〃 | 70 | 15 | 105.0 |
| 〃 | Holusar | 0.2 | Holusar | 0-435 | 〃 | 180 | 30 | 50.0 |
| 〃 | Nowgaron zamin | 0.4 | Holusar | 0-100 | 〃 | 100 | 25 | 12.0 |
| 〃 | Marzon kola | 0.2 | Marzon kola | 0-150 | 〃 | 110 | 14 | 20.0 |
| 〃 | Abdang | 0.5 | Nowgaron | 0-90 | 〃 | 90 | 25 | 30.0 |
| 〃 | Pit benil | 2.0 | 2,Nowgaron,Takaban | 0-1000 | 〃 | 200 | 30 | 90.0 |
| 〃 | Mori chal | 0.2 | Nowgaron | 0-70 | 〃 | 60 | 15 | 15.0 |
| 〃 | Esper Khak | 0.6 | 2,Nowgaron,Takaban | 0-90 | 〃 | 100 | 10 | 30.0 |
| 〃 | Kalu dashet | 3.0 | 4,Takaban, Chander-Mahaleh,Kasem rah Esku mahaleh | 0-880 | 〃 | 150 | 25 | 120.0 |
| Haraz-Shaleh pet | Lueh band | 0.5 | Holusar | 0-140 | 〃 | 60 | 20 | 50.0 |
| 〃 | Sad band | 2.0 | Marzon kola | 0-840 | 〃 | 60 | 27 | 60.0 |
| 〃 | Karam poly | 2.0 | 3,Darazon,Zaskpla, Takaban | 0-1500 | 〃 | 170 | 21 | 130.0 |
| 〃 | Khodru | 0.3 | Marzon kola | 0-130 | 〃 | 100 | 10 | 10.0 |
| 〃 | Takaban | 0.7 | Takaban | 0-300 | 〃 | 70 | 20 | 65.0 |
| 〃 | Kamon rud | 6.0 | 3,Alichangal,Chali-Kiyadeh,Chander-mahaleh | 0-250 | 〃 | 80 | 7 | 200.0 |
| 〃 | Kashti kola | 6.0 | 3,Aghozbon, Valideh, Dirrez | 0-450 | 〃 | 150 | 30 | 150.0 |
| 〃 | Suich maahaleh | 0.7 | Shich mahaleh | 0-150 | 〃 | 50 | 15 | 40.0 |
| 〃 | Encheh pol | 2.0 | Encheh pol | 0-250 | 〃 | 110 | 25 | 90.0 |
| 〃 | Changas | 3.0 | Changas | 0-200 | 〃 | 120 | 30 | 60.0 |
| 〃 | Rukash | 0.8 | 2,Rukash,Kukadeh | 0-150 | 〃 | 80 | 12 | 60.0 |
| 〃 | Ferondeh | 1.0 | Ferondeh | 0-400 | 〃 | 120 | 30 | 50.0 |
| 〃 | Shaleh pet | 15.0 | 3,Kusarrez,Shumeya, Barandeh | 0-510 | 〃 | 220 | 13 | 550.0 |
| 〃 | Verdehband | 20.0 | 8,Saedabad,Norabad, Verdeh,Barjandeh,Sur-sehtagh, Sharfi, Alamkhokeh | | | | | |
| Haraz-Tajrud | Darozun alia | 0.8 | Darozun | 0-895 | 195 | 120 | 19 | 35.0 |
| | Darozun safla | 1.5 | Darozun | 0-325 | 〃 | 100 | 28 | 48.0 |
| 〃 | Char zud | 3.0 | 2,Saghkola,Nigizan, | | | | | |

| Name of Main/ Secondary canals | Name of Tertiary/ Quaternary Canel | Length of T.C. Q.C. (km) | Beneficiary Villages | Discharge* Fluctuation (liter/sec.) | Irrigation Period (day) | Width of Canal (cm) | Depth of Canal (cm) | Area under Irrigation (ha) |
|---|---|---|---|---|---|---|---|---|
| | | | Khaskola | 0-1750 | 〃 | 130 | 30 | 600.0 |
| 〃 | Khaskolaband alia | 1.0 | Khaskola | 0-300 | 〃 | 80 | 12 | 40.0 |
| 〃 | Khaskola Safla | 0.8 | 2,Khaskola,Mayanrud | 0-750 | 〃 | 18 | 100 | 70.0 |
| 〃 | Palamband | 3.0 | 3,Mayanrud,Sucehkola, Karchehkola | 0-300 | 〃 | 110 | 25 | 80.0 |
| 〃 | Ghafursheh | 1.0 | Karmehkola Pein | 0-300 | 〃 | 80 | 14 | 20.0 |
| 〃 | Sadband | 3.0 | 3,Tajanjar alia, Zarardeh,Kanas kati | 0-600 | 〃 | 100 | 30 | 200.0 |
| 〃 | Azdarband | 0.8 | 2,Tajanjar alia, Zarandeh | 0-600 | 〃 | 110 | 28 | 100.0 |
| 〃 | Gholi mahre | 0.8 | Zarandeh | 0-80 | 〃 | 70 | 20 | 10.0 |
| 〃 | Kanas kati | 1.0 | 2,Kanas kati,Marketi | 0-450 | 〃 | 70 | 30 | 200.0 |
| 〃 | Baghar abad | 0.5 | Tajanjar alia | 0-150 | 〃 | 50 | 10 | 6.0 |
| 〃 | Bala nahrem | 1.5 | Suich mahaleh | 0-1350 | 〃 | 100 | 34 | 100.0 |
| 〃 | Chaoseh band alia | 0.5 | Chao sarmahaleh | 0-165 | 〃 | 60 | 12 | 25.0 |
| 〃 | Pein nahrem | 0.5 | Suich mahaleh | 0-200 | 〃 | 70 | 20 | 80.0 |
| 〃 | Pein chaoseh bandsafla | 0.3 | 2,Kaseb mahaleh, Chaoseh mahaleh | 0-240 | 〃 | 90 | 14 | 20.0 |
| 〃 | Kaseb nahre bala | 0.7 | Kaseh mahaleh | 0-360 | 〃 | 70 | 14 | 40.0 |
| 〃 | Kaseb mahaleh safla | 0.3 | Kaseh mahaleh | 0-1050 | 〃 | 130 | 33 | 70.0 |
| 〃 | Pishgon | 0.3 | Pishgon | 0-385 | 〃 | 90 | 16 | 60.0 |
| 〃 | Hossinabad | 0.5 | Hossin abad | 0-800 | 〃 | 100 | 18 | 150.0 |
| 〃 | Shumiya | 6.0 | Shumiya | 0-1000 | 〃 | 100 | 50 | 300.0 |
| 〃 | Yusefabda | 5.0 | 2,Yusefabad,Kharab-mahaleh | 0-1850 | 〃 | 130 | 28 | 350.0 |
| 〃 | Azadmon | 0.1 | Azadmon | 0-280 | 〃 | 80 | 15 | 30.0 |
| 〃 | Tajkenar | 4.0 | 2,Tajkenar,Ahiem | 0-1500 | 〃 | 170 | 32 | 400.0 |
| 〃 | Azadmon | 5.0 | Azadmon | 0-3500 | 〃 | 280 | 40 | 800.0 |
| 〃 | Espar kola | 0.1 | Darazon | 0-30 | 〃 | 40 | 25 | 6.0 |
| 〃 | Darmeh kola | 2.0 | Pein darmeh kola | 0-510 | 〃 | 120 | 30 | 50.0 |
| Haraz-Lakuni | Sayeij | 2.0 | 2,Sayeij mahaleh, Abiyat mahaleh | 0-600 | 〃 | 110 | 25 | 100.0 |
| 〃 | Kart kuti | 4.0 | 2,Kart kuti Abiyat mahaleh | 0-650 | 〃 | 110 | 25 | 140.0 |
| 〃 | Ansari | 2.0 | 2,Ansari,Abiyat-mahaleh | 0-4000 | 〃 | 130 | 30 | 120.0 |
| 〃 | Takband | 0.8 | Abiyat mahaleh | 0-150 | 〃 | 80 | 10 | 10.0 |
| 〃 | Aghoz kani | 3.0 | 3,Aghoz kami,Kureh-sar,Darazon | 0-750 | 〃 | 140 | 14 | 200.0 |
| 〃 | Kureh sar | 0.8 | Kureh sar | 0-100 | 〃 | 60 | 20 | 20.0 |
| 〃 | Gholam band | | Tachar mahaleh | 0-75 | 〃 | 50 | 7 | 25.0 |
| 〃 | Tachar mahaleh | 3.0 | Tachar mahaleh | 0-200 | 〃 | 110 | 15 | 45.0 |

| Name of Main/ Secondary canals | Name of Tertiary/ Quaternary Canel | Length of T.C. Q.C. (km) | Beneficiary Villages | Discharge* Fluctuation (liter/sec.) | Irrigation Period (day) | Width of Canal (cm) | Depth of Canal (cm) | Area under Irrigation (ha) |
|---|---|---|---|---|---|---|---|---|
| 〃 | Hali kati | 2.5 | 2,Hali kati Bam kati | 0-500 | 〃 | 100 | 25 | 75.0 |
| Haraz-Shahrud | Nahre shah mahaleh | | Shah mahaleh | 0-550 | 〃 | 150 | 35 | 200.0 |
| Haraz-lakuni | Ciyar kola | 3.0 | Khuzan kola | 0-5000 | 〃 | 250 | 40 | 160.0 |
| 〃 | Khuzan kola | 1.5 | 2,Kuzan kola safla Khuzan kola alia | 0-750 | 〃 | 135 | 35 | 170.0 |
| 〃 | Talarm | 2.0 | Talarm | 0-550 | 〃 | 110 | | 130.0 |
| 〃 | Galizak | 1.3 | Galizad | 0-600 | 〃 | 180 | 20 | 150.0 |
| 〃 | Darab kola | 2.0 | Darab kola | 0-500 | 〃 | 100 | 5 | 150.0 |
| 〃 | Enkati | 1.0 | Enkati | 0-200 | 〃 | 90 | 20 | 35.0 |
| Haraz-Shahrud | Nahre kalaksar | 2.5 | Kalaksar | 0-520 | 〃 | 130 | 12 | 150.0 |
| 〃 | Bamtiband 1 | 0.4 | Bamti | 0-45 | 〃 | 40 | 15 | 10.0 |
| 〃 | Bamtiband 2 | 0.5 | Bamti | 0-350 | 〃 | 170 | 45 | 95.0 |
| 〃 | Band arabkher | 1.2 | Koneh sepa | 0-175 | 〃 | 90 | 11 | 60.0 |
| 〃 | Nahre koneh sepa | 0.8 | 〃 | 0-175 | 〃 | 90 | 20 | 40.0 |
| 〃 | Koneh sepa 2 | 0.6 | 〃 | 0-45 | 〃 | 40 | 4 | 10.0 |
| 〃 | Koneh sepa 3 | 1.5 | 〃 | 0-350 | 〃 | 120 | 20 | 120.0 |
| 〃 | Hossin abad | 1.0 | Hossin abad | 0-250 | 〃 | 120 | 22 | 60.0 |
| 〃 | Nahre koludeh | 2.5 | 2,Koludeh, Kuchak navei | 0-750 | 〃 | 120 | 30 | 350.0 |
| 〃 | Galesh pol kila | 0.3 | 3,Namusdeh,Koludeh, Galesh pol | 0-750 | 〃 | 120 | 20 | 350.0 |
| Haraz-Shahrud | Nowband | 0.3 | Namusband | 0-150 | 〃 | 60 | 20 | 50.0 |
| 〃 | Asiyab band | 1.0 | 〃 | 0-220 | 〃 | 80 | 27 | 70.0 |
| 〃 | Orang band | 0.5 | 2,Namusdeh, Kasab kati | 0-375 | 〃 | 120 | 22 | 150.0 |
| 〃 | Kasab kati | 1.5 | Kasab kati | 0-275 | 〃 | 200 | 25 | 70.0 |
| 〃 | Tarsab band | 1.0 | Tarsiyab | 0-875 | 〃 | 220 | 85 | 350.0 |
| 〃 | Rostanband | 0.6 | Khoni kola | 0-225 | 〃 | 140 | 25 | 60.0 |
| 〃 | Chao sarband | 1.5 | Khoni kola | 0-150 | 〃 | 100 | 22 | 60.0 |
| 〃 | Javadi band | 1.0 | 〃 | 0-150 | 〃 | 100 | 20 | 50.0 |
| 〃 | Nahre khoni kola | 0.8 | 〃 | 0-150 | 〃 | 100 | | 40.0 |
| 〃 | Salehi band | 0.8 | 〃 | 0-150 | 〃 | 1,200 | 20 | 30.0 |
| 〃 | Largah bahreh | 0.7 | 2,Taliksar, arbdeh | 0-1000 | 〃 | 2,800 | 22 | 370.0 |
| 〃 | Orang band | 1.6 | Taiksar | 0-150 | 〃 | 1200 | 8 | 40.0 |
| 〃 | Kspar kileh | 1.5 | Taiksar | 0-150 | 〃 | 1,000 | 13 | 40.0 |
| 〃 | Lalim kileh | 1.3 | Sorakh maralia | 0-1000 | 〃 | 2,000 | 35 | 200.0 |
| 〃 | Sorakhmaru | 1.0 | Sorakhmaru | 0-650 | 〃 | 1,800 | | 150.0 |
| 〃 | Pitrud | 1.0 | Mahmud abad | 0-1100 | 〃 | 1,600 | 33 | 180.0 |
| Haraz-Ahirud | Mahmudrud | 6.3 | 7,Masitaban,Bakhtikati, Kalikan, Harehpak,Nordeh | | | | | |

| Name of Main/ Secondary canals | Name of Tertiary/ Quaternary Canel | Length of T.C. Q.C. (km) | Beneficiary Villages | Discharge* Fluctuation (liter/sec.) | Irrigation Period (day) | Width of Canal (cm) | Depth of Canal (cm) | Area under Irrigation (ha) |
|---|---|---|---|---|---|---|---|---|
| | | | Hifarabad,Norkola | 0-4000 | 〃 | 400 | 80 | 350.0 |
| Haraz-Ahirud | Gharagh rud | 3.3 | 3,gharagh KOla mahaleh, Kalikan | 0-1500 | 〃 | 170 | 60 | 200.0 |
| 〃 | Asiyab band | 1.0 | gharagh | 0-165 | 〃 | 80 | 16 | 30.0 |
| 〃 | Chupan band | 0.1 | Arudkaj | 0-50 | 〃 | 60 | 10 | 15.0 |
| 〃 | Kaniband | 1.5 | 2,Arjiband,Azabimahaleh | 0-450 | 〃 | 1,300 | 38 | 60.0 |
| 〃 | Manucher Goderzi | 0.4 | Ghadi mahaleh | 0-250 | 〃 | 35 | 10 | 5.0 |
| 〃 | Jamshid Goderzi | 0.3 | 〃 | 0-45 | 〃 | 50 | 5 | 5.0 |
| 〃 | Pahlavani | 0.4 | 〃 | 0-36 | 〃 | 70 | 6 | 5.0 |
| 〃 | Sang Kileh | 1.0 | 〃 | 0-60 | 〃 | 80 | | 30.0 |
| 〃 | Chamanha | 1.0 | 〃 | 0-350 | 〃 | 100 | 30 | 5.0 |
| 〃 | Sahar khiz | 0.5 | 〃 | 0-60 | 〃 | 80 | 8 | 10.0 |
| 〃 | Ameralafeh band | 0.8 | Masum abad | 0-45 | 〃 | 60 | 10 | 7.0 |
| 〃 | Sang kati | 2.2 | 3,Sang kati, Kerchek, Ashgh abad | 0-550 | 〃 | 100 | 60 | 150.0 |
| 〃 | Tajai band | 0.6 | Kerchek ful | 0-45 | 〃 | 60 | 7 | 5.0 |
| 〃 | Hasan abad, Ashghabad | 2.5 | 2,Ashghabad,Hasan abad | 0-560 | 〃 | 130 | 35 | 100.0 |
| 〃 | Vazn deh | 0.8 | Hasan abad | 0-55 | 〃 | 50 | 8 | 20.0 |
| 〃 | Jura kola | 3.5 | 4,Jura kola,Mutorich Yamigi safla, Alia | 0-750 | 〃 | 150 | 40 | 200.0 |
| 〃 | Aran, Aram kola | 3.5 | 5,Aram kola,Jura kola, Ahi mahaleh,Miyan kola, Siyarud | 0-1000 | 〃 | 1,000 | 20 | 15.0 |
| Haraz-Ahirud-Skirud | Yahudi band | 1.8 | Ski mahaleh | 0-185 | 〃 | 60 | 12 | 60.0 |
| 〃 | Takaband | 1.5 | 〃 | 0-185 | 〃 | 60 | 10 | 60.0 |
| 〃 | Hamum band | 0.5 | 〃 | 0-45 | 〃 | 40 | 8 | 7.0 |
| 〃 | Band gaza | 0.5 | 〃 | 0-45 | 〃 | 40 | 8 | 6.0 |
| 〃 | Sangar rud | 0.5 | 〃 | 0-45 | 〃 | 70 | 7 | 7.0 |
| 〃 | Muzi band | 0.5 | 〃 | 0-55 | 〃 | 70 | 5 | 10.0 |
| 〃 | Naser rud | 2.5 | 3,Naser abad, Kerchek, Miyan rud | 0-250 | 〃 | 120 | 30 | 100.0 |
| 〃 | Nirchar girl | 0.5 | Miyan rud | 0-45 | 〃 | 60 | 8 | 10.0 |
| 〃 | Skirud | 0.4 | Ski mahaleh | 0-40 | 〃 | 50 | 7 | 5.0 |
| 〃 | Posht kileh | 0.5 | Miyan rud | 0-45 | 〃 | 40 | 8 | 10.0 |
| 〃 | M,Ali kileh | 0.4 | 〃 | 0-20 | 〃 | 40 | 6 | 4.0 |
| 〃 | Ab bandan kileh | 0.8 | Zangi kola | 0-145 | 〃 | 70 | 12 | 30.0 |
| 〃 | Daleh kileh | 0.5 | 〃 | 0-145 | 〃 | 70 | 10 | 30.0 |
| 〃 | Pitband,Zarin kola, Zangi kola | 3.5 | Bao deh | 0-520 | 〃 | 2,000 | 25 | 90.0 |
| 〃 | Afraband | 3.0 | 2,Zangi kola, bao deh | 0-165 | 〃 | 1,000 | 8 | 15.0 |
| 〃 | Bao deh | 4.2 | Bao deh | 0-1200 | 〃 | 300 | 80 | 400.0 |

| Name of Main/ Secondary canals | Name of Tertiary/ Quaternary Canel | Length of T.C. Q.C. (km) | Beneficiary Villages | Discharge* Fluctuation (liter/sec.) | Irrigation Period (day) | Width of Canal (cm) | Depth of Canal (cm) | Area under Irrigation (ha) |
|---|---|---|---|---|---|---|---|---|
| Haraz-Alirud- | | | | | | | | |
| Shar shari | Darwish band | 0.2 | Kalon | 0-150 | 〃 | 50 | 11 | 40.0 |
| 〃 | Ghani band | 0.2 | 〃 | 0-20 | 〃 | 50 | 10 | 4.0 |
| 〃 | Bandpaser kilehrudbar | 0.3 | Rudbar | 0-60 | 〃 | 100 | 4 | 8.0 |
| 〃 | Band kamai | 5.0 | 4, Sheshrud, Charafra, bisheh kileh,rud posht | 0-1400 | 〃 | 150 | 80 | 550.0 |
| 〃 | Ahirud | 3.0 | 2,Ahi mahaleh, Jur kola | 0-1800 | 〃 | 180 | 100 | 400.0 |
| 〃 | Siyah rud | 2.5 | Siyah rudsar | 0-1200 | 〃 | 250 | 30 | 190.0 |
| 〃 | Lilam band | 1.5 | ahi kola | 0-160 | 〃 | 195 | 80 | 13.0 |
| 〃 | Bahaman rud | 0.6 | Miyan kamarz alia | 0-750 | 〃 | 100 | 14 | 50.0 |
| 〃 | Motorich kileh | 2.5 | 2, Motorich,Yamachi | 0-1600 | 〃 | 200 | | 300.0 |
| 〃 | miyan kamraz safla | 1.0 | 2,Kamraz,Miyan kamraz | 0-450 | 〃 | 60 | 40 | 70.0 |
| 〃 | Kamraz | 0.5 | kamraz | 0-360 | 〃 | 120 | 30 | 160.0 |
| 〃 | Daryasar | 3.0 | Daryasar | 0-600 | 〃 | 100 | 40 | 70.0 |
| haraz-Alirud | Sangbast | 1.5 | Sangbast | 0-200 | 〃 | 120 | 18 | 30.0 |
| 〃 | anar kileh shur 2 | 2.0 | Sangbast | 0-145 | 〃 | 90 | 10 | 20.0 |
| 〃 | Haftgiri | 0.6 | Kalusaw | 0-55 | 〃 | 60 | 6 | 7.0 |
| 〃 | Shukri kileh | 0.4 | | 0-35 | 〃 | 50 | 4 | 3.0 |
| 〃 | Sehband | 1.7 | 2,Urdesht, Afratakht | 0-165 | 〃 | 80 | 12 | 50.0 |
| 〃 | Hedayate kileh | 1.0 | Urdesht | 0-155 | 〃 | 80 | 8 | 25.0 |
| 〃 | Khehfir boneh | 1.0 | 2,Urdesht,Vazrik | 0-155 | 〃 | 80 | 9 | 25.0 |
| 〃 | Skabdeh rud | 0.3 | 5,Vazrik, Skandeh, Aram, Charbisheh, Bishehafra | 0-950 | 〃 | 200 | 16 | 310.0 |
| 〃 | Morteza kileh | 0.3 | Vazrik | 0-155 | 〃 | 60 | 10 | 40.0 |
| 〃 | Lilam kileh 1 | 0.4 | Vazrik | 0-155 | 〃 | 60 | 8 | 35.0 |
| 〃 | Lilam kileh 2 | 0.6 | Vazrik | 0-145 | 〃 | 60 | 7 | 30.0 |
| 〃 | Asad abad 1 | 0.2 | Asad alah abad | 0-45 | 〃 | 40 | 6 | 15.0 |
| 〃 | Asad abad 2 | 0.2 | 〃 | 0-45 | 〃 | 40 | 6 | 15.0 |
| 〃 | Parvaneh kileh | 0.3 | 〃 | 0-35 | 〃 | 30 | 5 | 10.0 |
| 〃 | Seyed kileh 1 | 0.3 | 〃 | 0-55 | 〃 | 50 | | 20.0 |
| 〃 | Seyed vali kileh 1 | 2.2 | Ali abad | 0-225 | 〃 | 80 | 16 | 100.0 |
| 〃 | Dehgiri kileh | 0.2 | 〃 | 0-45 | 〃 | 50 | 5 | 8.0 |
| 〃 | Seyed kileh 2 | 0.1 | 〃 | 0-35 | 〃 | 30 | 6 | 8.0 |
| 〃 | Shah nahre | 0.8 | 〃 | 0-145 | 〃 | 60 | 10 | 30.0 |
| 〃 | Ami kileh | 0.2 | 〃 | 0-35 | 〃 | 40 | 5 | 5.0 |
| 〃 | Jabari kileh | 0.3 | 〃 | 0-35 | 〃 | 40 | 5 | 6.0 |
| 〃 | Miyon nahre | 2.0 | 〃 | 0-350 | 〃 | 22 | | 150.0 |
| 〃 | Sharshari kileh | 0.4 | 〃 | 0-55 | 〃 | 50 | 8 | 15.0 |
| 〃 | Abas kileh | 0.4 | 〃 | 0-45 | 〃 | 40 | 6 | 10.0 |
| 〃 | Posht kileh | 0.3 | 〃 | 0-45 | 〃 | 40 | | 12.0 |
| 〃 | Ramazan ahlami kileh | 0.2 | 〃 | 0-35 | 〃 | 40 | 5 | 6.0 |

| Name of Main/ Secondary canals | Name of Tertiary/ Quaternary Canel | Length of T.C. Q.C. (km) | Beneficiary Villages | Discharge* Fluctuation (liter/sec.) | Irrigation Period (day) | Width of Canal (cm) | Depth of Canal (cm) | Area under Irrigation (ha) |
|---|---|---|---|---|---|---|---|---|
| 〃 | Sharifi kileh | 0.3 | 〃 | 0-45 | 〃 | 40 | 14 | 10.0 |
| 〃 | Sarhang kileh | 0.9 | 2,Ali abad,Bisheh kola | 0-225 | 〃 | 70 | 12 | 50.0 |
| 〃 | Dashti kileh | 0.2 | Ali abad | 0-25 | 〃 | 40 | 40 | 6.0 |
| 〃 | Panbehzari band | 0.2 | Bisheh kola | 0-75 | 〃 | 50 | 7 | 20.0 |
| 〃 | Abdon kileh | 0.8 | 〃 | 0-135 | 〃 | 50 | 9 | 30.0 |
| 〃 | Mashagha kileh | 0.6 | 〃 | 0-150 | 〃 | 60 | 10 | 35.0 |
| 〃 | Lorhari haraz | 0.9 | 〃 | 0-165 | 〃 | 70 | 12 | 35.0 |
| 〃 | Posht kileh 1 | 0.8 | 〃 | 0-155 | 〃 | 70 | 12 | 40.0 |
| 〃 | Posht kileh 2 | 1.0 | 〃 | 0-225 | 〃 | 75 | 14 | 50.0 |
| 〃 | Posht kileh 3 | 1.0 | 〃 | 0-135 | 〃 | 60 | 11 | 30.0 |
| 〃 | Posht kileh 4 | 1.6 | 〃 | 0-245 | 〃 | 80 | 13 | 60.0 |
| Haraz-Molarud-Ahirud | Velanrud | 2.5 | Velam alia | 0-450 | 〃 | 25 | | 100.0 |
| 〃 | Baba Jani | 0.5 | Kalusaw | 0-125 | 〃 | 70 | 6 | 20.0 |
| 〃 | Shekari | 0.8 | Kulab | 0-150 | 〃 | 70 | 30 | 40.0 |
| 〃 | Seyed ghanei | 1.0 | Kalusaw | 0-150 | 〃 | 70 | 30 | 25.0 |
| 〃 | Our dasht | 1.4 | Our dasht | 0-150 | 〃 | 70 | 10 | 30.0 |
| 〃 | Alireza rezai | 0.5 | Faradeh | 0-75 | 〃 | 35 | 6 | 6.0 |
| 〃 | Gholamali zareh | 0.8 | Faradeh | 0-150 | 〃 | 80 | 20 | 30.0 |
| 〃 | Sar kileh 1 | 60.0 | 〃 | 0-150 | 〃 | 80 | 18 | 40.0 |
| 〃 | Sar kileh 2 | 0.7 | 〃 | 0-135 | 〃 | 100 | 9 | 20.0 |
| 〃 | Skabdari | 0.7 | 〃 | 0-35 | 〃 | 50 | 8 | 8.0 |
| 〃 | Kilab kileh | 1.2 | 〃 | 0-150 | 〃 | 80 | | 40.0 |
| 〃 | Sarhang band | 0.5 | 〃 | 0-135 | 〃 | 70 | 12 | 20.0 |
| 〃 | Abdolah abad | 2.0 | Abdolah abad | 0-750 | 〃 | 150 | 30 | 180.0 |
| 〃 | Kenefchal kileh | 1.0 | 〃 | 0-350 | 〃 | 70 | 22 | 120.0 |
| 〃 | Taghi abad | 2.0 | Maalem kola | 0-65 | 〃 | 50 | 7 | 13.0 |
| 〃 | Jur dasht | 2.4 | 〃 | 0-35 | 〃 | 120 | 30 | 120.0 |
| 〃 | Alamdeh rud | 0.5 | 〃 | 0-750 | 〃 | 100 | 38 | 246.0 |
| 〃 | Savdeghi | 0.2 | 〃 | 0-18 | 〃 | 60 | 9 | 27.0 |
| 〃 | Falah | 0.2 | 〃 | 0-25 | 〃 | 60 | 8 | 25.0 |
| 〃 | Pein Jurdash kileh | | 〃 | 0-35 | 〃 | 60 | 5 | 24.0 |
| 〃 | Rangi rud | 3.0 | 〃 | 0-350 | 〃 | 10 | 26 | 200.0 |
| 〃 | Band sawdeghi kalayesh | | 〃 | 0-55 | 〃 | 60 | 6 | 25.0 |
| 〃 | Musavi band | 1.0 | 〃 | 0-75 | 〃 | 60 | 6 | 13.0 |
| 〃 | Sulemani | 0.2 | 〃 | 0-30 | 〃 | 60 | 5 | 22.0 |
| 〃 | Seyed hossin musavi | 0.2 | 〃 | 0-20 | 〃 | 50 | 4 | 12.0 |
| 〃 | Bisheh kola kileh | 1.0 | 〃 | 0-155 | 〃 | 80 | 9 | 40.0 |
| 〃 | Siyah kola | 1.5 | Siyah kola | 0-400 | 〃 | 80 | 12 | 6.0 |
| Haraz-Molahrud | Azatabad, Maalem kola | 1.3 | 2,Azetabad, Maalem kola | 0-420 | 〃 | 100 | 12 | 90.0 |
| 〃 | Kanruz, rud band | 1.8 | 2, Kanruz, Mirdeh | 0-80 | 〃 | 150 | 28 | 25.0 |
| 〃 | Shahi kileh | 0.5 | Kanruz | 0-15 | 〃 | 40 | 4 | 8.0 |

| Name of Main/ Secondary canals | Name of Tertiary/ Quaternary Canel | Length of T.C. Q.C. (km) | Beneficiary Villages | Discharge* Fluctuation (liter/sec.) | Irrigation Period (day) | Width of Canal (cm) | Depth of Canal (cm) | Area under Irrigation (ha) |
|---|---|---|---|---|---|---|---|---|
| 〃 | Shahkola band | 7.5 | 2, Alavi kola, Zudab | 0-120 | 〃 | 150 | 30 | 300.0 |
| 〃 | Zudband | 5.5 | Zudab | 0-120 | 〃 | 160 | 10 | 250.0 |
| 〃 | Velam band | 1.5 | Velam | 0-60 | 〃 | 110 | | 60.0 |
| 〃 | abbdang rudband | 1.5 | Tazeh abad | 0-650 | 〃 | 120 | 115 | 60.0 |
| 〃 | Malek kileh | 2.0 | Tazeh abad | 0-800 | 〃 | 90 | | 100.0 |
| 〃 | Nowabad kileh | 2.0 | 〃 | 0-750 | 〃 | 80 | 12 | 70.0 |
| 〃 | Band sar kileh | 0.5 | Faradeh | 0-35 | 〃 | 70 | 10 | 40.0 |
| 〃 | Abdolhasan rud | 5.0 | Abolhasan abad | 0-150 | 〃 | 180 | 38 | 280.0 |
| 〃 | bisheh kileh | 1.0 | Zudab | 0-500 | 〃 | 90 | 18 | 60.0 |
| 〃 | Yahghub kileh | 0.7 | Abolhasan abad | 0-35 | 〃 | 60 | 12 | 40.0 |
| 〃 | Haji kola kileh | 2.8 | 2,Haji kola, Darwish abad | 0-140 | 〃 | 150 | 25 | 13.0 |
| 〃 | Molah kola kileh | 5.0 | Molah kola | 0-150 | 〃 | 200 | 30 | 500.0 |
| Haraz-Molahrud-alavi kilehrud | Rafiabad | 2.0 | Rafiabad | 0-600 | 〃 | 200 | 90 | 88.0 |
| 〃 | Alahjari band | 1.0 | 〃 | 0-30 | 〃 | 100 | 9 | 40.0 |
| Haraz-Molahrud-Alikola rud | Shekhabad kileh | 2.0 | Shekhabad | 0-80 | 〃 | 120 | 6 | 70.0 |
| Haraz-Molahrud-alavi kilehrud | Band mirdeh kileh | 3.0 | 2,Alikola, Mirdeh | 0-450 | 〃 | 300 | 80 | 200.0 |
| Haraz-Molahrud-Ali kileh rud | Band ahamdabad jadid | | 2,Shahkola, Alavikola | 0-1300 | 〃 | 130 | 18 | 128.0 |
| Haraz-Molahrud-Alavikolarud | Lor kileh | 3.0 | 2,Alavi, Mirmohamed | 0-70 | 〃 | 170 | 40 | 150.0 |
| Haraz-Molahrud-Rangi rud | Tamask band | 0.2 | Tamask | 0-30 | 〃 | 30 | 3 | 5.0 |
| 〃 | Aghond kola kileh | 0.8 | 2,Jamshid abad, Mohamad abad | 0-60 | 〃 | 60 | 30 | 20.0 |
| Haraz-Zangi rud | Hamum kileh, Rafiabad | 0.7 | Rafiabad | 0-70 | 〃 | 40 | 4 | 5.0 |
| 〃 | Band bala mirdeh | 3.0 | Bala mirdeh | 0-300 | 〃 | 150 | 50 | 100.0 |
| 〃 | band pein mirdeh | 1.5 | Pein mirdeh | 0-200 | 〃 | 80 | 140 | 60.0 |
| 〃 | Safar band kileh | 0.7 | Alavi kola | 0-20 | 〃 | 80 | 60 | 5.0 |
| 〃 | Shah mahaleh rud | 2.0 | Shah mahaleh | 0-40 | 〃 | 100 | 50 | 150.0 |
| 〃 | Afra sara kileh | 1.5 | Afra sara | 0-700 | 〃 | 100 | 22 | 100.0 |
| 〃 | Abas rud | 3.5 | Zarinkola alia | 0-800 | 〃 | 100 | 12 | 100.0 |
| 〃 | Zangi rud | 3.0 | Zarinkola safla | 0-60 | 〃 | 140 | 20 | 300.0 |

## TABLE B.2.2-3 PERMITTED WATER RIGHT FROM KARI RUD CANAL

| Name of Main/ Secondary Canals | Name of Tertiary(T.)/ Quaternary(Q.) Canal(C.) | Length of T.C./Q.C. (km) | Beneficiary Villages | Discharge Fluctuation (liter/sec.) | Irrigation Period (day) | Canal Width (cm) | Canal Depth (cm) | Area under Irrigation (ha) |
|---|---|---|---|---|---|---|---|---|
| KARI | ASADOLA BAND | 0.5 | BAZMINAN | 0-20 | 195 | 40 | 20 | 3.0 |
| 〃 | ZIYARU | 5.0 | ZIYARU | 0-60 | 〃 | 200 | 60 | 200.0 |
| KARI-BAOURUD | SHAKALEH KILEH | 2.3 | KAMKALEH | 0-120 | 〃 | 120 | 50 | 13.0 |
| 〃 | AGHAKILEH | 2.6 | BAZMINAN | 0-360 | 〃 | 130 | 100 | 80.0 |
| 〃 | MASHKILEH | 2.0 | BAZMINAN | 0-300 | 〃 | 150 | 80 | 50.0 |
| 〃 | TANEH KILEH | 1.5 | 〃 | 0-160 | 〃 | 100 | 80 | 25.0 |
| 〃 | MAHALEH KILEH | 1.7 | 〃 | 0-240 | 〃 | 150 | 70 | 38.0 |
| 〃 | SALAR KILEH | 1.5 | 〃 | 0-240 | 〃 | 150 | 70 | 43.0 |
| KARI | BONEH KILEH | 1.5 | 〃 | 0-160 | 〃 | 100 | 80 | 60.0 |
| KARI-BAOURUD | TOOL RUD | 4.0 | 〃 | 0-250 | 〃 | 150 | 80 | 163.0 |
| 〃 | VALEH KILEH | 2.0 | HENDO KOLA | 0-100 | 〃 | 100 | 50 | 45.0 |
| 〃 | BONEH BAND | 4.0 | 〃 | 0-400 | 〃 | 200 | 80 | 77.0 |
| 〃 | CHAHAR KILEH | 3.4 | 〃 | 0-156 | 〃 | 130 | 60 | 38.0 |
| 〃 | MAHALEH | 0.8 | 〃 | 0-48 | 〃 | 80 | 40 | 17.0 |
| 〃 | BONEH BAND KILEH (1) | 1.4 | HENDO KOLA, CHAREH | 0-154 | 〃 | 100 | 70 | 90.0 |
| 〃 | BONEH BAND KILEH | 0.7 | CHAREH, NASER ABAD | 0-140 | 〃 | 90 | 70 | 70.0 |
| 〃 | DARVISH KHEL | 2.3 | DARVISH KHEV, JALAL KHAR MAHALEH | 0-150 | 〃 | 100 | 50 | 70.0 |
| 〃 | JALAL KHAR MAHALEH | 1.5 | DARVISH KHEL, JALAL KHAR MAHALEH, KALIKSAR | 0-95 | 〃 | 30 | 30 | 80.0 |
| 〃 | NASER ABAD | 2.0 | NASER ABAD | 0-60 | 〃 | 60 | 40 | 60.0 |
| 〃 | HAJ RAMAZAN BAND | 2.0 | KALIKSAR, CHAREH | 0-90 | 〃 | 60 | 50 | 50.0 |
| 〃 | BALA BAND | 2.3 | DARVISH KHEL, KALIKSAR | 0-360 | 〃 | 150 | 60 | 120.0 |
| 〃 | PAIEN BAND | 1.0 | KALIKSAR | 0-160 | 〃 | 70 | 70 | 100.0 |
| 〃 | DASHET KILEH GHARBI | 2.4 | HAJIABAD | 0-175 | 〃 | 100 | 50 | 130.0 |
| 〃 | MAHALEH KILEH | 2.0 | 〃 | 0-150 | 〃 | 90 | 60 | - |
| 〃 | HAMAM KILEH | 1.8 | 〃 | 0-150 | 〃 | 90 | 60 | - |
| 〃 | MIYANRUD BAND | 0.6 | MIYANRUD | 0-160 | 〃 | 80 | 80 | 60.0 |
| 〃 | HAJIABAD | 0.7 | HAJIABAD, RAISABAD | 0-196 | 〃 | 100 | 70 | 50.0 |
| 〃 | HIDRUD | 6.3 | HOSSINABAD, TAZEHABAD, SARAJ-MAHALEH, DIVEKALEH | 0-520 | 〃 | 130 | 100 | 300.0 |
| 〃 | ABOLHASSENABAD-RUD | 3.5 | ABOLHASSENABAD, BAMERKALEH | 0-420 | 〃 | 150 | 80 | 100.0 |
| 〃 | MOLAKATIBAND | 0.6 | MOLAKATI | 0-50 | 〃 | 70 | 35 | 20.0 |
| 〃 | AKBAR POUR | 0.005 | TAZEHABAD | 0-17 | 〃 | 15 | 15 | 4.0 |
| 〃 | CHAMANARA | 0.2 | HOSSINABAD, TAZEHABAD | 0-25 | 〃 | 20 | 20 | 11.0 |
| 〃 | HAJFARAJ | 0.5 | TAZEHABAD, TAHERABAD | 0-87 | 〃 | 70 | 50 | 30.0 |
| 〃 | HAJKHURBAN GILANI | 0.005 | DIVEKILA | 0-25 | 〃 | 20 | 20 | 60.0 |
| 〃 | TAHERABAD KILEH | 2.8 | TAHERABAD, SARAJMAHALEH, DIVE KOLA | 0-75 | 〃 | 40 | 40 | 60.0 |
| 〃 | HAJ ABDIN MAJIDI | 0.005 | DIVE KOLA | 0-25 | 〃 | 20 | 20 | 2.0 |
| 〃 | HAJ IZAD GILAM | 〃 | 〃 | 0-25 | 〃 | 20 | 20 | 3.5 |
| 〃 | HAJ RAMAZAN GOLAM | 〃 | 〃 | - | 〃 | 20 | 20 | 15.0 |
| 〃 | HAJ ABOLKHASEM GILAM | 〃 | DIVE KHADER | 0-25 | 〃 | 20 | 20 | 5.0 |
| 〃 | HAJ EZATOLAH GILAM | 〃 | DIVE KHADER | 0-25 | 〃 | 20 | 20 | 4.0 |

| Name of Main/ Secondary Canals | Name of Tertiary(T.)/ Quaternary(Q.) Canal(C.) | Length of T.C./Q.C. (km) | Beneficiary Villages | Discharge Fluctuation (liter/sec.) | Irrigation Period (day) | Canal Width (cm) | Canal Depth (cm) | Area under Irrigation (ha) |
|---|---|---|---|---|---|---|---|---|
| 〃 | ABDOLNABI MAJIDI | 〃 | 〃 | 0-25 | 〃 | 20 | 20 | 5.0 |
| 〃 | HAJ RAMAZAN GILAM | 〃 | DIVE KOLA | 0-25 | 〃 | 20 | 20 | 11.0 |
| 〃 | KAMAL MAJIDI | 〃 | 〃 | 0-25 | 〃 | 20 | 20 | 12.0 |
| 〃 | HAJ RAMAZAN MUEMEN | 〃 | 〃 | 0-25 | 〃 | 20 | 20 | 3.5 |
| 〃 | HAJ HOJATEH REZAI | 〃 | 〃 | 0-25 | 〃 | 20 | 20 | 7.5 |
| 〃 | HAJ EZATEH GILAM | 〃 | 〃 | 0-25 | 〃 | 20 | 20 | 5.0 |
| 〃 | NASRULAH GILAM | 〃 | 〃 | 0-65 | 〃 | 50 | 50 | 20.0 |
| 〃 | HAJ KANBAR REZAI | 0.05 | 〃 | 0-25 | 〃 | 20 | 20 | 5.0 |
| 〃 | NAMAT GHASEMI | 0.2 | 〃 | 0-25 | 〃 | 20 | 20 | 20.0 |
| 〃 | HOSSEM MOMEN | 0.05 | 〃 | 0-25 | 〃 | 20 | 20 | 5.0 |
| 〃 | PIKILEH | 1.0 | 〃 | 0-312 | 〃 | 130 | 80 | 50.0 |
| 〃 | KAMAL MAJIDI | 0.005 | 〃 | 0-6 | 〃 | 10 | 10 | 1.0 |
| 〃 | HAJ SIYED BAGHER HOSSENI | 0.005 | 〃 | 0-25 | 〃 | 20 | 20 | 10.0 |
| 〃 | HAJ KHEROLAH KHERI | 0.005 | 〃 | 0-25 | 〃 | 20 | 20 | 10.0 |
| 〃 | SIYED ABUZAR HOSSENI | 0.5 | 〃 | 0-25 | 〃 | 20 | 20 | 15.0 |
| 〃 | MAALEM KOLA RUD | 3.3 | MAALEM KOLA | 0-630 | 〃 | 230 | 60 | 200.0 |
| KARI-BARIK RUD | VAKILAK BAND | 3.0 | BAZMINAN | 0-240 | 〃 | 130 | 80 | 90.0 |
| 〃 | AFRABAN | 1.0 | 〃 | 0-264 | 〃 | 150 | 80 | 110.0 |
| 〃 | SEHBAND | 2.4 | FIRUZ KOLA | 0-320 | 〃 | 160 | 80 | 70.0 |
| 〃 | DORANG BAND | 2.0 | FIRUZ KOLA | 0-200 | 〃 | 130 | 70 | 25.0 |
| 〃 | KHARAB KILEH | 2.0 | 〃 | 0-200 | 〃 | 100 | 90 | 65.0 |
| 〃 | KHADIF KILEH | 2.0 | 〃 | 0-160 | 〃 | 100 | 80 | 60.0 |
| 〃 | RLAHKAJ KILEH | 0.5 | 〃 | 0-90 | 〃 | 100 | 60 | 16.0 |
| 〃 | SHARIF KILEH | 0.7 | 〃 | 0-90 | 〃 | 100 | 60 | 60.0 |
| 〃 | SABZLEM KILEH | 1.4 | FIRUZ KOLA, HANDU KOLA | 0-65 | 〃 | 50 | 50 | 30.0 |
| 〃 | KAHLUBON BAND | 2.0 | HAROUN KOLA | 0-80 | 〃 | 80 | 50 | 27.0 |
| 〃 | DOUAWAJ BAND | 0.8 | 〃 | 0-150 | 〃 | 150 | 50 | 20.0 |
| 〃 | BAL KILEH | 1.0 | HAROUN KOLA, ALAHKAJ | 0-126 | 〃 | 90 | 70 | 60.0 |
| FAK CHESHMEH | FAK CHESHMEH | 2.8 | VASHEL, HAROUN-KOLA, KHARMAHALEH, DARVISH KHEL | 8-337 | 〃 | 130 | 35 | 225.0 |
| CHESHMEH KAHUKHUNI | CHESHMEH KAHUKHUNI | 8.0 | MUSAMAHILEH, KASHIMAHLEH, MARZKATI, DAPKIYA, DIYEH | 150-620 | 〃 | 220 | 45 | 440.0 |
| KARI-KATEKOSH | BALIK BAND | 1.8 | KALIS, PASHA KOLA | 0-390 | 〃 | 140 | 50 | 65.0 |
| 〃 | CHALEH BAND | 1.5 | BAZMINAN, FIRUZ KOLA | 0-168 | 〃 | 70 | 60 | 20.0 |
| 〃 | KADU BAND | 1.0 | KALIS, PASHAKOLA | 0-200 | 〃 | 100 | 50 | 75.0 |
| 〃 | HAMAMBAND | 1.5 | FIRUZKOLA MEHDI KHEL | 0-225 | 〃 | 150 | 40 | 70.0 |
| 〃 | BAGHBAND | 2.0 | 〃 | 0-250 | 〃 | 160 | 60 | 80.0 |
| 〃 | KHADIFBAND | 2.5 | FIRUZKOLA, HAROUNKOLA, HANDUKOLA | 0-300 | 〃 | 170 | 70 | 100.0 |
| 〃 | NAJAR RUD | 2.5 | FIRUZ KOLA, MEHDIKHEL, AJBAR KOLA, HAROUN KOLA | 0-300 | 〃 | 170 | 70 | 95.0 |
| 〃 | MAHALEH KILEH | 1.5 | HAROUN KOLAS | 0-156 | 〃 | 130 | 50 | 45.0 |
| 〃 | MAHALEHBAND | 1.8 | HAROUN KOLA | 0-156 | 〃 | 130 | 50 | 45.0 |
| 〃 | GHALEH BAND KILEH | 1.3 | ALAJLAK | 0-90 | 〃 | 100 | 50 | 25.0 |

| Name of Main/ Secondary Canals | Name of Tertiary(T.)/ Quaternary(Q.) Canal(C.) | Length of T.C./Q.C. (km) | Beneficiary Villages | Discharge Fluctuation (liter/sec.) | Irrigation Period (day) | Canal Width (cm) | Canal Depth (cm) | Area under Irrigation (ha) |
|---|---|---|---|---|---|---|---|---|
| 〃 | TASKALASH | 1.0 | 〃 | 0-90 | 〃 | 100 | 50 | 35.0 |
| 〃 | BAGHABON KOLA DASHET | 2.3 | GHALEHKOSH BAGHABON | 0-120 | 〃 | 100 | 60 | 60.0 |
| 〃 | SHIRZA KOLA DASHET | 1.0 | GHALEHKOSH | 0-100 | 〃 | 110 | 50 | 40.0 |
| 〃 | VAGHIZAT KILEH | 2.0 | 〃 | 0-100 | 〃 | 50 | 50 | 25.0 |
| 〃 | KASH KILEH | 2.0 | PALAMKATI, MUTAHAR | 0-150 | 〃 | 120 | 50 | 35.0 |
| 〃 | LILAM DASHET | 1.0 | PALAMKATI | 0-90 | 〃 | 100 | 60 | 30.0 |
| 〃 | SHIRUD | 2.6 | PALHAMKATI, SHARKATI, SKIMAHALEH, SUITANABAD | 0-150 | 〃 | 100 | 60 | 110.0 |
| 〃 | SPIYAR KILEH | 1.8 | SHARKATI | 0-35 | 〃 | 50 | 30 | 15.0 |
| 〃 | ABRANGRUD | 1.4 | 〃 | 0-75 | 〃 | 70 | 50 | 20.0 |
| 〃 | NARGES MARZ | 1.5 | NARGEES MARZ | 0-260 | 〃 | 130 | 80 | 170.0 |
| 〃 | PITRUDKILEH | 2.5 | BAMER KOLA, MAJIDABADE | 0-180 | 〃 | 150 | 60 | 130.0 |
| 〃 | GHARAKOLABAND | 4.5 | NARGESMARZ, GHARA KOLA | 0-352 | 〃 | 200 | 80 | 180.0 |
| 〃 | ZABIZLAH SEADATI | 0.2 | BAMER KOLA NARGES MARZ | 0-25 | 〃 | 60 | 30 | 4.0 |
| 〃 | 〃 | 0.2 | 〃 | 0-28 | 〃 | 60 | 35 | 5.0 |
| 〃 | HOSSEN BARZEGAR | 0.05 | NARGES MARZ BAMER KOLA | 0-16 | 〃 | 40 | 20 | 3.0 |
| 〃 | 〃 | 0.05 | 〃 | 0-25 | 〃 | 20 | 20 | 2.0 |
| 〃 | HOSSEN FARAJZADEH | 0.01 | 〃 | 0-25 | 〃 | 20 | 20 | 2.0 |
| 〃 | 〃 | 0.01 | 〃 | 0-25 | 〃 | 20 | 20 | 1.0 |
| 〃 | HAJ GHORBAN GILANI | 0.07 | 〃 | 0-30 | 〃 | 50 | 20 | 5.0 |
| 〃 | HAJ HOSSEN HOSSENI | 0.1 | NARGES MARZ | 0-30 | 〃 | 50 | 20 | 5.0 |
| 〃 | NORUZ ALIPOUR | 0.01 | MAJIDABAD | 0-25 | 〃 | 20 | 20 | 4.0 |
| 〃 | MOHAMADREZA MAJIDI | 0.03 | DEVI KOLA | 0-48 | 〃 | 60 | 40 | 10.0 |
| 〃 | KAZEMI-HOSSENI | 0.3 | 〃 | 0-55 | 〃 | 40 | 40 | 10.0 |
| 〃 | JAFAR KAZEMI | 0.01 | 〃 | 0-45 | 〃 | 30 | 30 | 10.0 |
| 〃 | ABOLHASSAN HOSSENI | 1.0 | DIVE KOLA, GHIYASHA-KOLA | 0-113 | 〃 | 60 | 60 | 30.0 |
| 〃 | PITRUD | 9.0 | BINAMAD, PISHEH MAHALEH | 0-3 | 〃 | 300 | 200 | 230.0 |
| 〃 | MENGHAR RUD HUCHEK | 4.0 | MENGHAR-PIE | 0-315 | 〃 | 150 | 70 | 150.0 |
| 〃 | SHIR MAHALEHRUD | 2.5 | BUZORG PISHEH MAHALEH, SHIRMAHALEH, KARGAR MAHALEH | 0-364 | 〃 | 130 | 70 | 70.0 |
| 〃 | SUTEHRUD | 4.5 | MENGHAR-PIE, MEHLABOUN, SUTEH | 0-3 | 〃 | 400 | 150 | 350.0 |
| 〃 | MAHAMAD KILEH | 2.0 | MEHLABOUN, SHIR MAHALEH, KARGAR MAHALEH | 0-1 | 〃 | 250 | 100 | 60.0 |
| 〃 | MENGHAR-PIE BOZORG | 5.5 | MEHLABOUN, FIREIDOUNKENAR | 0-5.4 | 〃 | 500 | 180 | 200.0 |
| 〃 | MAHALEH KILEH | 0.6 | PLAM KATI | 0-35 | 〃 | 70 | 30 | 15.0 |
| 〃 | POSH KILEH | 1.0 | SKI MAHALEH | 0-88 | 〃 | 50 | 50 | 20.0 |
| 〃 | ABRANG RUD | 1.2 | SKI MAHALEH | 0-80 | 〃 | 80 | 50 | 30.0 |
| 〃 | KHEL BAND | 0.05 | SUITANABAD | 0-25 | 〃 | 20 | 20 | 5.0 |
| 〃 | AZGHARPOUR | 0.2 | 〃 | 0-25 | 〃 | 20 | 20 | 3.0 |
| 〃 | MUSH AGHARPOUR | 0.02 | 〃 | 0-25 | 〃 | 20 | 20 | 2.0 |
| 〃 | AZIZ HOSSENI | 0.01 | BAMFAR KOLA | 0-57 | 〃 | 40 | 40 | 5.0 |
| 〃 | MIRABU | 0.02 | 〃 | 0-25 | 〃 | 20 | 20 | 5.0 |
| 〃 | ABRAHIM | 0.005 | 〃 | 0-17 | 〃 | 15 | 15 | 1.0 |

| Name of Main/ Secondary Canals | Name of Tertiary(T.)/ Quaternary(Q.) Canal(C.) | Length of T.C./Q.C. (km) | Beneficiary Villages | Discharge Fluctuation (liter/sec.) | Irrigation Period (day) | Canal Width (cm) | Canal Depth (cm) | Area under Irrigation (ha) |
|---|---|---|---|---|---|---|---|---|
| 〃 | YAWAR RUD | 3.4 | MUZIKATI SOFLA, MUZIKAT ALIA | 0-240 | 〃 | 150 | 70 | 130.0 |
| 〃 | KHANRUD | 4.4 | GHIYAS KOLA, ZIYAD KOLA | 0-288 | 〃 | 120 | 80 | 180.0 |
| 〃 | TOLEH SARMA RUD | 3.0 | TOLEH SARA | 0-560 | 〃 | 250 | 120 | 90.0 |
| 〃 | JAZIN RUD | 6.3 | JAZIN | 0-560 | 〃 | 250 | 120 | 150.0 |
| KARI | ROSTAMRUD | 5.0 | KAMAD RAH, MILEH, ZAWARK | 0-1.0 | 195 | 250 | 60 | 200.0 |
| KARI-MELIRD | MEHDI KHEL | 1.8 | MEHDI KHEL | 0-300 | 〃 | 250 | 50 | 100.0 |
| 〃 | ASBER KOLA RUD | 3.1 | MEZAMABAD, AJBARKOLA, HAROUN KOLA | 0-378 | 〃 | 180 | 70 | 200.0 |
| 〃 | MAHMUD RUD | 2.0 | DOCTORABAD | 0-90 | 〃 | 90 | 40 | 40.0 |
| 〃 | AJBARKOLA | 2.6 | AJBAR KOLA | 0-238 | 〃 | 170 | 50 | 120.0 |
| 〃 | MAHALEH KILEH | 1.5 | 〃 | 0-194 | 〃 | 120 | 60 | 70.0 |
| 〃 | ABASALI KILEH | 1.2 | 〃 | 0-108 | 〃 | 90 | 50 | 40.0 |
| 〃 | ORANG RUD | 1.2 | 〃 | 0-210 | 〃 | 120 | 70 | 70.0 |
| 〃 | CHESHMEH KILEH | 1.2 | 〃 | 0-150 | 〃 | 100 | 60 | 40.0 |
| 〃 | GHALAHKASH KILEH | 2.5 | GHALAH KASH, AJBAR KOLA | 0-150 | 〃 | 100 | 60 | 40.0 |
| 〃 | RUJAK DASHET | 2.5 | GHALAHKASH ROSTAMDAR MAHALEH | 0-225 | 〃 | 150 | 60 | 50.0 |
| 〃 | VAKIL KILEH | 2.2 | ARABKHEL, GHALAHKASH | 0-175 | 〃 | 100 | 70 | 40.0 |
| 〃 | GHAZIDASHET | 2.3 | ARABKHEL, GHALIAN KOLA | 0-180 | 〃 | 120 | 60 | 30.0 |
| 〃 | GHALYAN KOLA | 2.5 | 〃 | 0-150 | 〃 | 120 | 50 | 40.0 |
| 〃 | DIYAZBAND | 1.0 | GHALYAN KOLA, LOTFALI ABAD, ALISHAH | 0-180 | 〃 | 120 | 60 | 60.0 |
| 〃 | HAJI RUD | 0.005 | GHALYAN KOLA | 0-25 | 〃 | 40 | 35 | 10.0 |
| 〃 | GHALYAN KOLA | 0.005 | GHALYAN KOLA | 0-17 | 〃 | 15 | 15 | 4.0 |
| 〃 | ALISHAH-1 | 1.0 | ALISHAH | 0-64 | 〃 | 80 | 40 | 10.0 |
| 〃 | ALISHAH-2 | 0.6 | 〃 | 0-78 | 〃 | 50 | 50 | 12.0 |
| 〃 | REZA GHOLIPOUR | 0.02 | 〃 | 0-25 | 〃 | 20 | 20 | 3.0 |
| 〃 | ALI NOUR MOHAMMADI | 0.3 | SHAH KOLA | 0-123 | 〃 | 80 | 60 | 60.0 |
| 〃 | FARZALI MOHAMMADI | 0.1 | 〃 | 0-17 | 〃 | 15 | 15 | 12.0 |
| 〃 | SHAHKOLA KILEH | 2.6 | 〃 | 0-210 | 〃 | 130 | 60 | 100.0 |
| 〃 | SMAIL DOUZI | 0.1 | 〃 | 0-65 | 〃 | 40 | 40 | 20.0 |
| KARI-MELIRD | NORMAHAMADI | 0.1 | SHAKOLA | 0-25 | 〃 | 20 | 20 | 5.0 |
| 〃 | ABASI | 6 | 〃 | 0-98 | 〃 | 60 | 60 | 5.0 |
| 〃 | AGHAMIRY AND CO. | 0.01 | MAMFERKOLA | 0-78 | 〃 | 50 | 50 | 10.0 |
| 〃 | AKBAR HOSSENI AND CO. | 0.006 | 〃 | 0-42 | 〃 | 30 | 30 | 7.0 |
| 〃 | NADALIZADEH | 0.03 | BAMFERKOLA | 0-25 | 〃 | 20 | 20 | 3.0 |
| 〃 | RAMAZAN MIRI AND CO. | 0.006 | 〃 | 0-65 | 〃 | 40 | 40 | 30.0 |
| 〃 | RAMAZAN REZVAM | 0.006 | 〃 | 0-25 | 〃 | 20 | 20 | 2.0 |
| 〃 | GHOLAMI AND YAZDANI | 0.05 | 〃 | 0-25 | 〃 | 20 | 20 | 3.5 |
| 〃 | SULEIMON | 0.01 | 〃 | 0-25 | 〃 | 20 | 20 | 5.0 |
| 〃 | GHORBANPOUR AND CO. | 0.6 | 〃 | 0-65 | 〃 | 40 | 40 | 5.0 |
| 〃 | 〃 | 0.1 | 〃 | 0-65 | 〃 | 40 | 40 | 20.0 |
| 〃 | KARIM ASMAILI | 0.006 | 〃 | 0-25 | 〃 | 20 | 20 | 4.0 |

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|---|---|---|---|---|---|---|---|---|
| 〃 | ZABIH MORADI | 0.7 | 〃 | 0-25 | 〃 | 20 | 20 | 3.5 |
| 〃 | 〃 | 0.02 | 〃 | 0-25 | 〃 | 20 | 20 | 2.5 |
| 〃 | RAHAMAT MADAVI | 0.01 | 〃 | 0-25 | 〃 | 20 | 20 | 5.0 |
| 〃 | ABRANGRUD | 3.7 | BISH MAHALEH | 0-400 | 〃 | 200 | 100 | 100.0 |
| 〃 | JALIKOLA | 3.0 | HALIKOLA | 0-21 | 〃 | 150 | 70 | 130.0 |
| KARI-MIRD | LASHRUD JAZIN | 2.0 | JAZIN | 0-280 | 〃 | 200 | 70 | 60.0 |
| 〃 | KOLAGARSAR | 2.7 | KARIM KOLA, JAZIN,KOLAGARSAR | 0-750 | 〃 | 250 | 100 | 250.0 |
| 〃 | BALA ASBUKOLA | 1.0 | ASBBUKOLAS | 0-287 | 〃 | 170 | 70 | 70.0 |
| 〃 | FORMRUD | 3.5 | KARIM KOLA FORM | 0-600 | 〃 | 250 | 80 | 300.0 |
| 〃 | VALEH LASH | 1.0 | ASBUKOLA, MOLAHKOLA | 0-108 | 〃 | 100 | 60 | 30.0 |
| 〃 | ABARRUD | 1.8 | MOLAHKOLA, HIEYDAR KOLA | 0-400 | 〃 | 250 | 80 | 200.0 |
| 〃 | NORUD | 1.5 | HEIYDARKOLA | 0-250 | 〃 | 80 | 80 | 80.0 |
| 〃 | MEZARBAND | 3.0 | AJBARKOLA | 0-392 | 〃 | 160 | 70 | 70.0 |
| 〃 | KARIMABADBAND | 2.5 | GANKARAJ KOLA | 0-270 | 〃 | 130 | 60 | 70.0 |
| 〃 | KHUNI MARBAND | 2.0 | KHUNNISAR, BEKHAR MOHALEH | 0-210 | 〃 | 120 | 50 | 50.0 |
| 〃 | DAVOOD KOLABAND | 3.8 | KHUNIFAR DAVOOD KOLAS | 0-280 | 〃 | 100 | 70 | 170.0 |
| 〃 | VALEH KILEH | 2.3 | TAHERI MOHALEH NAVAI MOHALEH | 0-240 | 〃 | 100 | 60 | 140.0 |
| 〃 | ABRAND RUD | 1.0 | TAHERI MOHALEH | 0-64 | 〃 | 70 | 40 | 40.0 |
| 〃 | KHARABEH DASHET KILEH | 1.0 | TAHERI MOHALEH | 0-60 | 〃 | 100 | 30 | 15.0 |
| 〃 | LOTEALIABAD KILEH | 0.6 | LOTEALIABAD | 0-42 | 〃 | 30 | 30 | 7.0 |
| 〃 | ALISHA | 0.3 | ALISHA | 0-12 | 〃 | 50 | 15 | 3.0 |
| 〃 | ALINIYA AND CO. | 0.05 | DOZIKOLA BOZORG | 0-65 | 〃 | 40 | 40 | 20.0 |
| 〃 | ALI ASFAHANI AND CO. | 0.1 | 〃 | 0-65 | 〃 | 40 | 40 | 17.0 |
| 〃 | MASUMI AND CO. | 0.006 | 〃 | 0-25 | 〃 | 20 | 20 | 17.0 |
| 〃 | KAZEM AND CO. | 0.3 | 〃 | 0-42 | 〃 | 30 | 30 | 15.0 |
| 〃 | MASUMI AND CO. | 0.05 | 〃 | 0-42 | 〃 | 60 | 35 | 15.0 |
| 〃 | AMINZADEH AND CO. | 0.5 | 〃 | 0-150 | 〃 | 70 | 60 | 40.0 |
| 〃 | FILANI AND CO. | 0.3 | DUZIKOLA | 0-65 | 〃 | 40 | 40 | 10.0 |
| 〃 | AGHA HOSSENI | 0.4 | 〃 | 0-30 | 〃 | 70 | 25 | 15.0 |
| 〃 | SADAGHPOUR AND CO. | 0.006 | 〃 | 0-25 | 〃 | 20 | 20 | 25.0 |
| 〃 | GILANI AND CO. | 0.4 | 〃 | 0-44 | 〃 | 70 | 35 | 10.0 |
| 〃 | RAMAZAN HOSSENI AND CO. | 0.5 | 〃 | 0-25 | 〃 | 20 | 20 | 8.0 |
| 〃 | MADI HOSSENI AND CO. | 0.08 | BALA SANGCHI | 0-65 | 〃 | 40 | 40 | 20.0 |
| 〃 | SANGCHI PILADAHANE | 3.0 | SANGCHI-NODAH | 0-226 | 〃 | 60 | 60 | 200.0 |
| 〃 | SHUTOR GARDAN | 1.5 | BIJIKOLA | 0-180 | 〃 | 100 | 60 | 100.0 |
| 〃 | PAHNOR RUD | 1.2 | PAHNOR | 0-180 | 〃 | 100 | 60 | 100.0 |
| 〃 | ASBSHURPEI | 0.7 | ASBSHURPEI BISH MAHALEH | 0-400 | 〃 | 250 | 60 | 200.0 |
| 〃 | HAJIRUD | 2.0 | PAHNOR, NEMUR KOLA | 0-150 | 〃 | 120 | 50 | 100.0 |
| 〃 | TAGHIPOUR AND CO. | 0.3 | ASBSHURPEI | 0-36 | 〃 | 60 | 30 | 8.0 |
| 〃 | ZAHAD KOLARUD | 6.5 | ASBSHURPEI, BISH MAHALEH, ZAHAD KOLA, ABARKOLA | 0-625 | 〃 | 250 | 100 | 300.0 |

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|---|---|---|---|---|---|---|---|---|
| 〃 | KARIMRUD | 6.8 | ASBSHURPEI, NEMURKOLA KARFAKOLA, TAVAKOL | 0-500 | 〃 | 200 | 100 | 320.0 |
| 〃 | HOSSEN TAHARI AND CO. | 0.08 | TAHARI MAHALEH | 0-6 | 〃 | 10 | 10 | 3.0 |
| 〃 | ABRAHIM TAHARI | 0.1 | 〃 | 0-23 | 〃 | 60 | 20 | 5.2 |
| 〃 | KAZEMI AND CO. | 0.03 | 〃 | 0-6 | 〃 | 10 | 10 | 1.8 |
| 〃 | TAHARI AND CO. | 0.001 | 〃 | 0-6 | 〃 | 10 | 10 | 1.5 |
| 〃 | MAHADIPOUR AND CO. | 0.1 | 〃 | 0-25 | 〃 | 20 | 20 | 3.0 |
| 〃 | ABUTALAB BARARI AND CO. | 0.1 | 〃 | 0-25 | 〃 | 20 | 20 | 2.6 |
| 〃 | ABRANG RUD | 4.5 | DUZIKOLA | 0-375 | 〃 | 150 | 50 | 70.0 |
| 〃 | BABALA MAGHASOMI AND CO. | 0.04 | 〃 | 0-25 | 〃 | 70 | 20 | 8.0 |
| 〃 | HASHEM TAHARI | 0.09 | TAHARI MAHALEH | 0-6 | 〃 | 10 | 10 | 1.2 |
| 〃 | AGHA HOSSENI AND CO. | 0.02 | 〃 | 0-25 | 〃 | 20 | 20 | 4.2 |
| 〃 | KARIM ANDI | 0.006 | NAVAIKOLA | 0-25 | 〃 | - | - | 1.5 |
| 〃 | MUHASENI AND CO. | 0.05 | 〃 | 0-25 | 〃 | 20 | 20 | 4.6 |
| 〃 | HAJ DELAVAR | 0.1 | 〃 | 0-6 | 〃 | 40 | 10 | 0.5 |
| 〃 | KHALEGH HOSSENI | 0.1 | 〃 | 0-25 | 〃 | 20 | 20 | 1.0 |
| 〃 | MUHASENI AND CO. | 0.07 | 〃 | 0-25 | 〃 | 20 | 20 | 3.6 |
| 〃 | 〃 | 0.006 | 〃 | 0-25 | 〃 | 20 | 20 | 5.0 |
| 〃 | AGHA HOSSENI AND CO. | 0.05 | 〃 | 0-25 | 〃 | 20 | 20 | 3.0 |
| 〃 | AMINIZADEH | 0.02 | SUZIKOLA BOZURG | 0-25 | 〃 | 20 | 20 | 3.6 |
| 〃 | NORUZI AND CO. | 0.02 | ANDIKOLA | 0-25 | 〃 | 20 | 20 | 1.8 |
| 〃 | GHOLAM AMIRI | 0.01 | 〃 | 0-25 | 〃 | 20 | 20 | 5.0 |
| 〃 | KARIM HASANI AND CO. | 0.01 | SUZIKOLA BOZURG | 0-25 | 〃 | 20 | 20 | 3.8 |
| 〃 | REZAZADEH | 0.01 | ANDIKOLA | 0-25 | 〃 | 20 | 20 | 1.5 |
| 〃 | BABAZADEH | 0.02 | DUZIKOLA BOZURG | 0-25 | 〃 | 20 | 20 | 3.5 |
| 〃 | ABRAHIM SHUKRI | 0.02 | ANDIKOLA | 0-25 | 〃 | 20 | 20 | 4.5 |
| 〃 | ABADAT HOSSENI | 0.006 | DOZIKOLA BOZURG | 0-25 | 〃 | 20 | 20 | 3.1 |
| 〃 | KASAMZADEH | 0.006 | 〃 | 0-25 | 〃 | 20 | 20 | 2.7 |
| 〃 | ABAS KOHASTANI | 0.006 | ANDI KOLA | 0-25 | 〃 | 20 | 20 | 3.0 |
| 〃 | KASAMZADEH | 0.006 | DUZIKOLA BOZURG | 0-25 | 〃 | 20 | 20 | 2.0 |
| 〃 | AGHAMUSA | 0.006 | ANDIKOLA | 0-25 | 〃 | 20 | 20 | 4.5 |
| 〃 | GHOLIZADEH | 0.006 | SUZIKOLA BOZURG | 0-17 | 〃 | 15 | 15 | 1.2 |
| 〃 | 〃 | 0.04 | 〃 | 0-25 | 〃 | 20 | 20 | 3.3 |
| 〃 | AGHAMUSA | 0.006 | ANDIKOLA | 0-17 | 〃 | 20 | 20 | 1.0 |
| 〃 | AMIRI AND CO. | 0.05 | 〃 | 0-25 | 〃 | 20 | 20 | 9.5 |
| 〃 | HASAN KUROKOLAI | 0.5 | KUROKOLA | 0-25 | 〃 | - | - | 1.2 |
| 〃 | RAJAB KUROKOLAI | 0.006 | 〃 | 0-25 | 〃 | 20 | 20 | 1.2 |
| 〃 | GHOLIZADEH | 0.006 | DUZIKOLA BOZURG | 0-6 | 〃 | 10 | 10 | 2.5 |
| 〃 | HASHEMI | 0.01 | KUROKOLA | 0-25 | 〃 | 20 | 20 | 1.2 |
| 〃 | KAZEMI | 0.006 | DUZIKOLA BOZURG | 0-25 | 〃 | 20 | 20 | 5.5 |
| 〃 | HASHEMI | 0.01 | KUROKOLA | 0-17 | 〃 | 15 | 15 | 2.0 |

| Name of Main/ Secondary Canals | Name of Tertiary(T.)/ Quaternary(Q.) Canal(C.) | Length of T.C./Q.C. (km) | Beneficiary Villages | Discharge Fluctuation (liter/sec.) | Irrigation Period (day) | Canal Width (cm) | Canal Depth (cm) | Area under Irrigation (ha) |
|---|---|---|---|---|---|---|---|---|
| 〃 | 〃 | 0.01 | 〃 | 0-17 | 〃 | 15 | 15 | 6.8 |
| 〃 | 〃 | 0.01 | 〃 | 0-17 | 〃 | 15 | 15 | 1.2 |
| 〃 | 〃 | 0.01 | 〃 | 0-6 | 〃 | 10 | 10 | 6.4 |
| 〃 | HOSSEN HASHEMI | 0.003 | 〃 | 0-6 | 〃 | 10 | 10 | 2.7 |
| 〃 | NAJMI HOSSENI | 0.007 | HELALKOLA | 0-6 | 〃 | 10 | 10 | 0.3 |
| 〃 | KASH KILEH | 3.0 | 〃 | 0-300 | 〃 | 100 | 100 | 60.0 |
| 〃 | HASHEMI AND CO. | 0.006 | 〃 | 0-25 | 〃 | 20 | 20 | 6.0 |
| 〃 | HOSSENI AND CO. | 0.04 | 〃 | 0-25 | 〃 | 20 | 20 | 1.5 |
| 〃 | KORBANI AND CO. | 0.003 | 〃 | 0-6 | 〃 | 10 | 10 | 0.2 |
| 〃 | HOSSENI AND CO. | 0.01 | 〃 | 0-6 | 〃 | 10 | 10 | 2.4 |
| 〃 | 〃 | 0.003 | 〃 | 0-25 | 〃 | 20 | 20 | 0.5 |
| 〃 | 〃 | 0.1 | 〃 | 0-25 | 〃 | 20 | 20 | 2.1 |
| 〃 | MUAMENI AND CO. | 0.08 | 〃 | 0-25 | 〃 | 20 | 20 | 5.0 |
| 〃 | ABRAHIMI | 0.003 | 〃 | 0-25 | 〃 | 20 | 20 | 3.6 |
| 〃 | HOSSENI AND CO. | 0.02 | 〃 | 0-25 | 〃 | 20 | 20 | 0.6 |
| 〃 | HOSSENIPOUR | 0.01 | 〃 | 0-6 | 〃 | 10 | 10 | 3.3 |
| 〃 | 〃 | 0.3 | 〃 | 0-25 | 〃 | 20 | 20 | 10.0 |

Translated from Persian(Farsi) to English By
Sanyu Consultant Inc. April 1991 (G. Shokohifard)

| Name of Main/ Secondary Canals | Name of Tertiary(T.)/ Quaternary(Q.) Canal(C.) | Length of T.C./Q.C. (km) | Beneficiary Villages | Discharge Fluctuation (liter/sec.) | Irrigation Period (day) | Canal Width (cm) | Canal Depth (cm) | Area under Irrigation (ha) |
|---|---|---|---|---|---|---|---|---|
| KARI | PASHARUD | 2.8 | PASHA KOLA, MAHDIKHEL, MILEH | 0-720 | 195 | 200 | 60 | 350.0 |
| 〃 | 〃 | 5.3 | MILEH, KHARMAN KOLA, TIRKOLA, TEMASK, CHANG MIYAN, NODEH | 0-810 | 〃 | 150 | 90 | 820.0 |
| 〃 | SHIKHRUD | 1.8 | MILEH | 0-960 | 〃 | 200 | 80 | 120.0 |
| 〃 | WARZARUD | 4.0 | NEZAMABAD | 0-540 | 〃 | 180 | 50 | 200.0 |
| GARMRUD | KAMADRAH SARBAND | 3.8 | KAMADRAHS, ZEWARAK | 0-300 | 〃 | 180 | 35 | 140.0 |
| 〃 | AHANGAR-KOLARUD | 6.8 | SHAHNEH KOLA, MERZAS, AHANGAR KOLA | 0-400 | 〃 | 200 | 40 | 300.0 |
| 〃 | ZEWARAK RUD | 2.3 | ZEWARAK | 0-160 | 〃 | 150 | 30 | 60.0 |
| 〃 | SHAHNEH KOLARUD | 2.8 | SHAHNEH KOLA | 0-320 | 〃 | 200 | 40 | 200.0 |
| 〃 | VESTA KOLARUD | 6.5 | VESTA KOLA, SHAHNEH KOLA | 0-360 | 〃 | 150 | 50 | 250.0 |
| KARI-CHARSIN | SORKHKOLARUD | 2.0 | SORKHKOLA | 0-315 | 〃 | 150 | 60 | 100.0 |
| 〃 | AHMED HAYDARI | 0.8 | SORKH KOLA | 0-45 | 〃 | 70 | 25 | 15.0 |
| 〃 | ZARDRUD | 1.3 | BALA BAZYAR | 0-300 | 〃 | 150 | 50 | 130.0 |
| 〃 | MAHALEH KILEH | 2.1 | SURKH KOLA | 0-140 | 〃 | 100 | 40 | 60.0 |
| 〃 | REKAJBAND (1) | 2.3 | RAKAJ | 0-210 | 〃 | 100 | 60 | 70.0 |
| 〃 | CHESHMEHBAND | 0.5 | PAIEN BAZYAR, MULKEH HAFTKHUNI | 0-210 | 〃 | 100 | 60 | 40.0 |
| 〃 | REKAJBAND(2) | 1.3 | REKAG, MOLUK | 0-210 | 〃 | 100 | 60 | 80.0 |
| 〃 | PAIEN BAZYAR | 1.6 | PAIEN BAZYAR | 0-420 | 〃 | 150 | 70 | 150.0 |
| 〃 | ANARBAND | 4.0 | PAIEN BAZYAR, PAIEN KOLA, HAMZEH-REZA | 0-378 | 〃 | 180 | 50 | 180.0 |
| 〃 | MARON | 1.6 | ALAH CHAL | 0-250 | 〃 | 150 | 50 | 65.0 |
| 〃 | BALA-ASPEHRUD | 2.2 | ALAH CHAL, DELAVAR KOLA | 0-250 | 〃 | 150 | 50 | 65.0 |
| 〃 | GALEHRUD | 3.3 | ALAH CHAL, DOZI KOLA | 0-360 | 〃 | 200 | 60 | 70.0 |
| 〃 | PAIEN-ASPEHRUD | 2.5 | ALAH CHAL, DEHLAVAR KOLA | 0-100 | 〃 | 90 | 40 | 30.0 |
| 〃 | NADER | 1.2 | DOZI KOLA, DELAVAR KOLA | 0-120 | 〃 | 100 | 40 | 40.0 |
| 〃 | ZAREHIEYAN AND CO. | 0.8 | DOZI KOLA | 0-33 | 〃 | 60 | 30 | 3.0 |
| 〃 | BALA-ALAK | 1.0 | 〃 | 0-100 | 〃 | 90 | 40 | 30.0 |
| 〃 | PAIEN-ALAK | 1.3 | 〃 | 0-120 | 〃 | 100 | 40 | 30.0 |
| 〃 | TAGHIBAND | 0.3 | 〃 | 0-12 | 〃 | 40 | 15 | 1.0 |
| 〃 | OHARGIR | 0.3 | DOZI KOLA, AALI-ZAMIN | 0-40 | 〃 | 80 | 40 | 13.0 |
| 〃 | DOZI-DASHET | 0.3 | 〃 | 0-40 | 〃 | 80 | 40 | 10.0 |
| 〃 | GHASABIAN | 0.6 | GHASAB KOLA | 0-90 | 〃 | 10 | 50 | 20.0 |
| 〃 | AALI-ZAMIN | 0.4 | AALI-ZAMIN | 0-72 | 〃 | 100 | 40 | 14.0 |
| 〃 | PAHLAAN AND CO. | 0.2 | GHASAB KOLA MIYAN MAHALEH | 0-48 | 〃 | 80 | 40 | 5.0 |
| 〃 | PHASAB ZALEHKAN | 0.2 | GHAZAB ZALEHKAN | 0-440 | 〃 | 200 | 60 | 50.0 |
| KHUNI | HAJ HASAN AND CO. | 0.4 | DAVOUD KOLA BALA | 0-25 | 〃 | 50 | 20 | 86.0 |
| 〃 | YUSEFALI AND CO. | 0.04 | MOZAFAR KOLA | 0-33 | 〃 | 70 | 30 | 13.0 |
| 〃 | MAHAMADPOUR AND CO. | 0.05 | 〃 | 0-33 | 〃 | 70 | 30 | 12.0 |
| 〃 | DAVOUDI | 0.5 | DAVOUD KOLABALA | 0-33 | 〃 | 70 | 30 | 6.0 |
| 〃 | MURAD AND CO. | 0.1 | MUZAFAR KOLA | 0-33 | 〃 | 70 | 30 | 14.0 |
| 〃 | BASAR RUD | 3.0 | DAVOUD, MUZAFAR, NAVAI KOLAS | 0-120 | 〃 | 100 | 40 | 77.0 |
| 〃 | TIZKILEH BASAR | 2.0 | MUZAFAR, NAVAI KOLAS | 0-120 | 〃 | 80 | 50 | 50.0 |

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|---|---|---|---|---|---|---|---|---|
| 〃 | HAJKHAN AGHAKILEH | 0.2 | MUZAFAR | 0-25 | 〃 | 50 | 20 | 3.0 |
| 〃 | MAHIBAND(1) | 0.2 | MUZAFAR KOLA | 0-25 | 〃 | 50 | 20 | 5.0 |
| 〃 | MAHIBAND(2) | 0.05 | 〃 | 0-25 | 〃 | 50 | 20 | 3.0 |
| 〃 | ABRANGRUD | 0.8 | MASIR MAHALEH BALA, PEIN | 0-80 | 〃 | 80 | 40 | 50.0 |
| 〃 | BIKASHAN BAND | 0.8 | MASIR MAHALEH PAIEN AND BALA | 0-150 | 〃 | 100 | 50 | 45.0 |
| 〃 | NAVAIRUD | 1.0 | ANDI KOLA | 0-60 | 〃 | 80 | 30 | 60.0 |
| 〃 | MULA GHASAM | 0.4 | 〃 | 0-85 | 〃 | 90 | 30 | 10.0 |
| 〃 | MASSAK, ABRANGRUD | 0.6 | PAIEN KROKOLA | 0-120 | 〃 | 100 | 40 | 50.0 |
| 〃 | ALIKENAR ABRANGRUD | 0.5 | PAIEN KERUDKOLA | 0-120 | 〃 | 100 | 40 | 40.0 |
| KHUNI | NARANJRUD | 2.7 | AMINABAD | 0-480 | 〃 | 200 | 60 | 140.0 |
| 〃 | HIZOMPOSHETBAND(1) | 1.4 | AMINABAD | 0-140 | 〃 | 80 | 50 | 25.0 |
| 〃 | HIZOMPOSHETBAND(2) | 0.3 | AMINABAD | 0-25 | 〃 | 50 | 20 | 10.0 |
| 〃 | HELIBAND(1) | 0.7 | AMINABAD | 0-150 | 〃 | 100 | 50 | 25.0 |
| 〃 | HELIBAND(2) | 0.5 | 〃 | 0-40 | 〃 | 50 | 40 | 10.0 |
| 〃 | BISHRUD | 4.5 | MIYANDASTEH,BALA PEIN GARDAN BARI, KALANGA | 0-1260 | 〃 | 300 | 120 | 100.0 |
| 〃 | BIJIKOLA | 1.5 | BIJIKOLA | 0-277 | 〃 | 120 | 70 | 30.0 |
| 〃 | MIYANDASTEH | 0.6 | MIYANDASTEH | 0-150 | 〃 | 100 | 50 | 80.0 |
| 〃 | BISHRUD(2) | 5.9 | BIJIKOLA, PAHNUD, ASBSHUR, TABAKOL, NUMUR KOLAS | 0-1 | 〃 | 250 | 100 | 500.0 |
| KARI | SIYABARDI | 3.0 | SURKHKOLA | 0-160 | 〃 | 100 | 40 | 50.0 |
| 〃 | MUZAFAR KOLARUD | 3.7 | MUZAFARKOLA, KAZEM BAKI | 0-800 | 〃 | 200 | 80 | 250.0 |
| 〃 | KHATIBRUD | 2.6 | KHATIB | 0-240 | 〃 | 120 | 50 | 50.0 |
| 〃 | TESHANRUD | 6.0 | MULUK, ZAHED KOLA,DELAVAR KOLA, AGHAMULK | 0-1 | 〃 | 250 | 80 | 350.0 |
| 〃 | KHARIBRUD(2) | 3.2 | KHATIB | 0-120 | 〃 | 100 | 40 | 20.0 |
| 〃 | TUCHIKHIRUD | 7.0 | KAZEM BAKI, TUCHIKHIRUD, CHENARBAN | 0-1 | 〃 | 250 | 80 | 340.0 |
| 〃 | KAZEM BEIGIRUD | 2.0 | KAZEMBEIGI | 0-200 | 〃 | 120 | 40 | 40.0 |
| 〃 | KEROKOLARUD | 18.0 | AHMAD CHALEHPIE, ZAHED KOLA CHENAR BON, GHAZI MAHALEH | 0-1150 | 〃 | 160 | 100 | 760.0 |
| 〃 | ZAHEDKOLARUD | 3.2 | ZAHEDKOLA | 0-300 | 〃 | 100 | 60 | 60.0 |
| 〃 | MACHINEURUD | 3.8 | AHAMAD CHALEPEI, ZAHEDKOLA | 0-600 | 〃 | 150 | 80 | 206.0 |
| 〃 | SANGRUD | 4.6 | AHAMAD CHALEHPEI, GOAL MAHALEH, DAVOODKOLA | 0-675 | 〃 | 150 | 90 | 256.0 |
| 〃 | KHANDAGH KILEH | 0.6 | AHAMAD CHALEHPEI | 0-160 | 〃 | 100 | 40 | 20.0 |
| 〃 | ZARDRUD | 1.2 | AHAMAD CHALEHPEI, DAVOOD KOLA | 0-300 | 〃 | 120 | 40 | 40.0 |
| KARI-JEDELEHRUD | HOMAYOUNZADEH AND CO. | 0.8 | DAVOOD KOLA | 0-25 | 〃 | 50 | 20 | 8.0 |
| 〃 | HASANZADEH AND CO. | 0.9 | DAVOOD KOLA | 0-48 | 〃 | 60 | 40 | 20.0 |
| 〃 | GHALAGHEH MUSAVI | 0.1 | 〃 | 0-25 | 〃 | 50 | 20 | 4.0 |
| 〃 | HASANZADEH AND CO. | 0.2 | 〃 | 0-70 | 〃 | 80 | 30 | 20.0 |
| 〃 | HOSSEIN KHAKI | 0.2 | 〃 | 0-42 | 〃 | 70 | 30 | 7.0 |
| 〃 | HAFAR DADASHI | 0.2 | DAVOOD | 0-25 | 〃 | 50 | 20 | 20.0 |
| 〃 | HAJ GILANI | 0.2 | DAVOOD KOLA | 0-25 | 〃 | 50 | 20 | 3.0 |
| 〃 | NEZEM KAVOOSI | 0.08 | 〃 | 0-42 | 〃 | 70 | 30 | 10.0 |
| 〃 | ALI GHOLINIYA | 0.02 | 〃 | 0-23 | 〃 | 40 | 20 | 4.0 |

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|---|---|---|---|---|---|---|---|---|
| 〃 | ALINIYA AND CO. | 0.1 | 〃 | 0-42 | 〃 | 70 | 30 | 6.5 |
| 〃 | ABRAHIM KAVOOSI | 0.1 | 〃 | 0-27 | 〃 | 60 | 20 | 4.0 |
| 〃 | ALINIYA AND CO. | 0.1 | 〃 | 0-25 | 〃 | 50 | 20 | 3.0 |
| 〃 | ALIAKBAR KAVOOSI | 0.02 | 〃 | 0-25 | 〃 | 50 | 20 | 2.0 |
| 〃 | MUSAVIYAN AND CO. | 1.2 | 〃 | 0-180 | 〃 | 120 | 60 | 70.0 |
| 〃 | ALIAKBAR KAVOOSI AND CO. | 0.02 | 〃 | 0-32 | 〃 | 30 | 30 | 10.0 |
| 〃 | ZABIHEBAND | 0.9 | BALAKERU KOLA | 0-96 | 〃 | 80 | 40 | 40.0 |
| 〃 | NORUD METEKALEH | 2.6 | METEKALEH KHELIL KOLA | 0-120 | 〃 | 50 | 50 | 50.0 |
| 〃 | KARIMPOUR AND CO. | 0.9 | METEKALEH | 0-75 | 〃 | 40 | 40 | 35.0 |
| 〃 | KESHAVARZAN METKEH | 0.7 | METKEH | 0-25 | 〃 | 20 | 20 | 15.0 |
| 〃 | KARIMPOUR AND CO. | 0.2 | 〃 | 0-24 | 〃 | 40 | 20 | 3.0 |
| 〃 | METKEI AND CO. | 0.008 | 〃 | 0-22 | 〃 | 20 | 20 | 6.0 |
| 〃 | ZAHEDIAN AND CO. | 0.01 | TIJENIK | 0-22 | 〃 | 20 | 20 | 3.0 |
| 〃 | KAFSHGAR AND CO. | 0.01 | KHALIL KOLA | 0-22 | 〃 | 20 | 20 | 6.0 |
| 〃 | ZAHEDIAN AND CO. | 0.006 | TIJENIK, KHALIL KOLA | 0-22 | 〃 | 20 | 20 | 4.0 |
| 〃 | 〃 | 0.01 | TIJENIK | 0-22 | 〃 | 20 | 20 | 4.0 |
| 〃 | 〃 | 0.01 | 〃 | 0-22 | 〃 | 20 | 20 | 6.0 |
| 〃 | ARD KOLARUD | 3.6 | TIJENIK, ARD KOLA | 0-690 | 〃 | 230 | 100 | 300.0 |
| 〃 | KAJBAND | 0.2 | TIJENIK MIYAN DASTEH | 0-36 | 〃 | 60 | 30 | 10.0 |
| 〃 | ASKARI KIYANECHAD | 0.008 | TIJENIK | 0-22 | 〃 | 20 | 20 | 1.5 |
| 〃 | HOSSENI AND CO. | 0.008 | MIYAN DASTEH | 0-22 | 〃 | 20 | 20 | 6.0 |
| 〃 | ZAHEDIAN AND CO. | 0.1 | TIJENIK | 0-32 | 〃 | 30 | 30 | 8.0 |
| 〃 | KIYANECHAD | 0.1 | 〃 | 0-22 | 〃 | 20 | 20 | 4.0 |
| 〃 | MIYADASTEH AND CO. | 0.2 | MIYADASTEH | 0-22 | 〃 | 20 | 20 | 6.0 |
| 〃 | KIYANECHAD | 0.08 | TIJENIK | 0-22 | 〃 | 20 | 20 | 3.0 |
| 〃 | KIYANECHAD AND CO. | 0.006 | 〃 | 0-22 | 〃 | 20 | 20 | 4.0 |
| 〃 | VAGHFIBAND | 0.01 | MIYAN DASTEH, BALAGARDAN BARI | 0-150 | 〃 | 100 | 50 | 60.0 |
| 〃 | KIYANECHAD | 0.008 | TIJENIK | 0-22 | 〃 | 20 | 20 | 2.0 |
| 〃 | HOSSENIPOUR AND CO. | 0.4 | MIYAN DASTEH | 0-32 | 〃 | 30 | 30 | 8.0 |
| 〃 | ZUMARUD | 7.7 | GARDAN BARI, KALANGA, TILIGARDAN | 0-600 | 〃 | 150 | 100 | 400.0 |
| 〃 | HOSSENIPOUR | 0.2 | MIYAN DASTEH | 0-32 | 〃 | 30 | 30 | 8.0 |
| 〃 | ALIZADEH AND CO. | 0.2 | 〃 | 0-22 | 〃 | 40 | 15 | 4.0 |
| 〃 | KAJBAND | 1.7 | GARDAN BARI | 0-360 | 〃 | 150 | 80 | 100.0 |
| 〃 | SHA ABDOLAH | 3.3 | SHA-ABDOLAH | 0-450 | 〃 | 150 | 90 | 150.0 |
| 〃 | KARIM KOLABAND | 4.0 | DORZIKOLA, TAVAKOL, KARFAKOLA | 0-300 | 〃 | 150 | 60 | 70.0 |
| 〃 | RUGHIKOLA | 5.0 | RUGHIKOLA, MIYABALA, KUFER, VALIKRUPOSHET | 0-1500 | 〃 | 300 | 100 | 600.0 |
| 〃 | VALIK(1) | 7.5 | SUTEH, FEREIDAIN-KENAR | 0-3400 | 〃 | 500 | 170 | 1500.0 |
| 〃 | VALIK(2) | 6.5 | 〃 | 0-3000 | 〃 | 500 | 150 | 350.0 |
| KARI | METKEHRUD | 2.5 | VARMETAN | 0-416 | 〃 | 130 | 80 | 150.0 |
| 〃 | ABRANGRUD | 2.7 | BABAKAN, VARMETAN | 0-416 | 〃 | 130 | 80 | 140.0 |

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|---|---|---|---|---|---|---|---|---|
| 〃 | SARAGHRUD | 3.8 | BABAKAN, VARMETAN,SAROUN MAHALEH | 0-320 | 〃 | 100 | 80 | 150.0 |
| KARI-SADRUD | ARTICH KOLA | 0.5 | ARTICHKOLA | 0-98 | 〃 | 70 | 40 | 30.0 |
| 〃 | GHOLITABAR | 0.04 | 〃 | 0-17 | 〃 | 40 | 15 | 42.0 |
| 〃 | HASAN KHANI AND CO. | 0.2 | 〃 | 0-30 | 〃 | 50 | 25 | 10.0 |
| 〃 | GARDAN BARI | 1.0 | HAMZEH KOLA | 0-96 | 〃 | 80 | 40 | 30.0 |
| 〃 | CHALEH KASHRUD | 1.0 | 〃 | 0-96 | 〃 | 80 | 40 | 20.0 |
| 〃 | ATELARUD | 2.8 | HAMZEH KOLA, ABAR KOLA | 0-96 | 〃 | 80 | 40 | 30.0 |
| 〃 | GHASEM SADEGHI AND CO. | 0.5 | 〃 | 0-33 | 〃 | 50 | 30 | 8.0 |
| 〃 | ABRANGRUD | 2.7 | ABAR KOLA | 0-210 | 〃 | 100 | 60 | 100.0 |
| 〃 | HAJIRUD | 3.6 | ABAR KOLA, HAJI KOLA | 0-245 | 〃 | 100 | 70 | 170.0 |
| 〃 | DEHAKRUD | 4.2 | DARVISH KHAK, ABAR KOLA, DEHAK | 0-210 | 〃 | 100 | 60 | 120.0 |
| 〃 | HAFTFIRIRUD | 0.8 | ASBUKOLA | 0-35 | 〃 | 70 | 25 | 10.0 |
| 〃 | BESHRUD | 2.3 | DARVISH KHAK | 0-252 | 〃 | 120 | 70 | 100.0 |
| 〃 | RUSTAM RUD | 1.5 | 〃 | 0-35 | 〃 | 70 | 25 | 7.0 |
| 〃 | MOLAHRUD | 1.1 | BALA, PEIN DARVISH KOLA | 0-180 | 〃 | 100 | 60 | 50.0 |
| 〃 | METEH KOLARUD | 3.5 | BULEAKOLA, METEHKOLA, TURK MAHALEH | 0-336 | 〃 | 140 | 80 | 150.0 |
| 〃 | VALEH KILEH | 1.2 | METEH KOLA | 0-56 | 〃 | 70 | 35 | 20.0 |
| 〃 | ASPYARI KILEH | 0.5 | DEHAK | 0-90 | 〃 | 90 | 40 | 40.0 |
| 〃 | SARBAZ | 0.5 | FERIEDON KOLA | 0-240 | 〃 | 100 | 80 | 150.0 |
| 〃 | KASHRUD | 0.5 | FERIEDON KOLAS | 0-45 | 〃 | 70 | 30 | 20.0 |
| 〃 | KHER BESHUR | 1.5 | 〃 | 0-60 | 〃 | 70 | 40 | 40.0 |
| 〃 | LAKABADAN KILEH | 0.9 | FEREIDO KOLA, DOZIRJ | 0-150 | 〃 | 100 | 50 | 130.0 |
| 〃 | RUJAKRUD | 1.2 | 〃 | 0-240 | 〃 | 100 | 80 | 120.0 |
| KARI | SUIRAN BIEK | 9.7 | BABAKAN, KHASI KOLA, METEH, KARUN, MOUZBAL, SHAREH | 0-800 | 〃 | 250 | 80 | 400.0 |
| 〃 | ARCHIRUD KUCHEK | 4.0 | KHAJI-KOLA, MANAS KOLA | 0-280 | 〃 | 100 | 70 | 100.0 |
| 〃 | ARCHIRUD BOZURG | 14.5 | KHAJIKOLA, MANASKOLA,ZARGAR MAHALEH, ARCHI,KHADIKOLA | 0-480 | 〃 | 150 | 80 | 450.0 |
| 〃 | BASRARUD | 8.0 | KHAJIKOLA, GERICH, MANASKOLA, KARUN | 0-320 | 〃 | 100 | 80 | 300.0 |
| 〃 | AKRICHKOLARUD | 0.8 | AKRICHKOLA, GARMICH | 0-96 | 〃 | 80 | 40 | 20.0 |
| 〃 | GARMICH | 2.3 | GARMICH | 0-224 | 〃 | 80 | 80 | 80.0 |
| 〃 | SHABONPOUR AND CO. | 0.02 | HAMZEH KOLA | 0-36 | 〃 | 30 | 30 | 8.0 |
| 〃 | HADIPOUR AND CO. | 0.02 | 〃 | 0-22 | 〃 | 20 | 20 | 6.0 |
| 〃 | KHANRU POSHET | 0.7 | KHANRU POSHET, ALBUKOLA | 0-45 | 〃 | 60 | 30 | 10.0 |
| 〃 | CHAMAZINRUD | 3.3 | CHAMAZIN | 0-416 | 〃 | 130 | 80 | 100.0 |
| 〃 | VALEH KILEH | 1.0 | ALBU KOLA | 0-168 | 〃 | 80 | 60 | 40.0 |
| 〃 | MARZONRUD | 12.8 | ALBUKOLA, KAMONGAR, HAFTMAHAL, MARZUN ABAD | 0-1000 | 〃 | 250 | 100 | 960.0 |
| 〃 | KAMONGAR RUD | 1.8 | KAMONGAR | 0-224 | 〃 | 80 | 180 | 80.0 |
| 〃 | KATISAR | 4.4 | KATISAR | 0-280 | 〃 | 100 | 80 | 100.0 |
| 〃 | SHAKHZADEH AND CO. | 0.7 | KAMONGAR | 0-80 | 〃 | 80 | 40 | 22.0 |
| 〃 | KARDRUD | 1.5 | BAR SHAMNAN | 0-210 | 〃 | 120 | 60 | 80.0 |
| 〃 | BAR SHAMNAN | 1.0 | BAR SHAMNAN | 0-240 | 〃 | 100 | 80 | 120.0 |

| Name of Main/ Secondary Canals | Name of Tertiary(T.)/ Quaternary(Q.) Canal(C.) | Length of T.C./Q.C. (km) | Beneficiary Villages | Discharge Fluctuation (liter/sec.) | Irrigation Period (day) | Canal Width (cm) | Canal Depth (cm) | Area under Irrigation (ha) |
|---|---|---|---|---|---|---|---|---|
| 〃 | OILIARUD | 2.8 | BAR SHAMNAN BAHKOLA | 0-210 | 〃 | 100 | 70 | 150.0 |
| 〃 | ABRAHIM JABARAR | 0.8 | BAR SAMNAN | 0-70 | 〃 | 70 | 40 | 20.0 |
| 〃 | HAGHABEHRUD | 1.0 | BAR SAMNAN | 0-75 | 〃 | 40 | 40 | 30.0 |
| 〃 | HAGHABEH KOLA | 3.2 | BALA RAHKOLA | 0-288 | 〃 | 120 | 80 | 150.0 |
| 〃 | PEIN RAHKOLA | 3.2 | BALA, PEIN RAHKOLAS, TAJDOLEH, KHADIKOLA | 0-234 | 〃 | 130 | 60 | 125.0 |
| 〃 | TAJDOLEH | 5.9 | TAJDOLEH, PEIN RAHKOLA, GHADIKOLA, ARCHI | 0-216 | 〃 | 90 | 80 | 300.0 |
| 〃 | REKON | 2.2 | REKON | 0-210 | 〃 | 120 | 70 | 150.0 |
| 〃 | ZAGH KILEH | 0.5 | MARZON ABAD, FUKOLA | 0-160 | 〃 | 80 | 80 | 100.0 |
| 〃 | KARIKOLA | 10.0 | SIYED MAHALEH, KARIKOLA, NOSRAT KOLA, SUBHAN KOLA, KHUKRUD | 0-400 | 〃 | 100 | 100 | 650.0 |
| 〃 | HANDAGH KILEH | 0.5 | KARI KOLA | 0-36 | 〃 | 70 | 40 | 15.0 |
| 〃 | RAISRUD | 2.0 | KARI KOLA NOSRATKOLA | 0-210 | 〃 | 70 | 100 | 200.0 |
| 〃 | VALEHRUD | 0.7 | GHADI MAHALEH, KALEHBAST, KIKHAMAHALEH | 0-500 | 〃 | 200 | 90 | 350.0 |
| 〃 | KARDRUD | 1.0 | GHADI MAHALEH, KALEH BAST, KIKHAKOLA | 0-128 | 〃 | 80 | 80 | 350.0 |
| KARI-KALEH BAST | KALEH BAST RUD | 3.0 | KALEH BAST | 0-168 | 〃 | 120 | 70 | 75.0 |
| KARI-RUHAKSAR | ALAH KAJ | 0.3 | DUZI MAHALEH, LARI MAHALEH, VAZIMAL | 0-96 | 〃 | 80 | 60 | 70.0 |
| 〃 | LILAM DASHET | 0.3 | 〃 | 0-52 | 〃 | 70 | 50 | 30.0 |
| 〃 | FAK AB-BANDAN | 0.5 | 〃 | 0-52 | 〃 | 70 | 50 | 35.0 |
| KARI | RUJAKSAR | 0.006 | RUJAKSAR | 0-144 | 〃 | 120 | 60 | 130.0 |
| 〃 | KEVARZAN BABOLSAR | 0.003 | BABOLSAR, RUJAKSAR | 0-144 | 〃 | 120 | 60 | 70.0 |
| KARI-KHANRUD | KEYKHA MAHALEHRUD | 2.3 | KEYKHA MAHALEH | 0-200 | 〃 | 100 | 100 | 100.0 |
| KARI-SADRUD | GAVZAN MAHALEHRUD | 4.5 | GAVZAN MAHALEH | 0-208 | 〃 | 130 | 80 | 200.0 |
| 〃 | ASFANDIYAR MAHALEHRUD | 2.5 | ASFANDIYAR MAHALEH | 0-192 | 〃 | 120 | 80 | 100.0 |
| 〃 | SADRUD | 8.0 | SADAT MAHALEH, LARIRUD | 0-256 | 〃 | 160 | 80 | 240.0 |

## B. 2. 3 Irrigable Area by Zone-Wise

## TABLE B.2.3-1 PRESENT LAND USE BY DISTRICT LEVEL

(Unit : ha)

| District | Zone | No. of S. B | Farm land | | | | | Non - Farm land | | | | | | | | Grand Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Paddy (S. W) | Paddy (G. W) | Upland | Orchard | Total | Wasted | Forest | Pond | Villa. | River | Road | S. Dune | Total | |
| Haraz | HW 1-6 | | 10,000 | 925 | 121 | 375 | 11,421 | 103 | 1,708 | 28 | 653 | 475 | 239 | 0 | 3,206 | 14,627 |
| West | HWU 1-3 | | 314 | 0 | 2 | 38 | 354 | 2 | 0 | 0 | 30 | 9 | 4 | 0 | 45 | 399 |
| S. Total | | | 10,314 | 925 | 123 | 413 | 11,775 | 105 | 1,708 | 28 | 683 | 484 | 243 | 0 | 3,251 | 15,026 |
| Haraz | HE 1-5 | | 11,022 | 572 | 0 | 89 | 11,683 | 36 | 0 | 6 | 1,192 | 369 | 199 | 0 | 1,802 | 13,485 |
| East | KL 1-6 | | 7,897 | 1,090 | 16 | 98 | 9,101 | 7 | 0 | 416 | 974 | 557 | 232 | 0 | 2,186 | 11,287 |
| | KR 1-5 | | 3,747 | 934 | 8 | 32 | 4,721 | 19 | 41 | 27 | 332 | 282 | 58 | 0 | 759 | 5,480 |
| S. Total | | | 22,666 | 2,596 | 24 | 219 | 25,505 | 62 | 41 | 449 | 2,498 | 1,208 | 489 | 0 | 4,747 | 30,252 |
| Amol | | | 14,925 | 3,453 | 67 | 373 | 18,818 | 99 | 1,530 | 1,106 | 1,529 | 699 | 372 | 677 | 6,012 | 24,830 |
| West | AW 1-9 | | 14,925 | 3,453 | 67 | 373 | 18,818 | 99 | 1,530 | 1,106 | 1,529 | 699 | 372 | 677 | 6,012 | 24,830 |
| S. Total | | | | | | | | | | | | | | | | |
| Amol | | | 20,304 | 4,786 | 24 | 259 | 25,373 | 19 | 266 | 1,703 | 2,581 | 1,258 | 465 | 872 | 7,164 | 32,537 |
| East | AE1-11 | | 20,304 | 4,786 | 24 | 259 | 25,373 | 19 | 266 | 1,703 | 2,581 | 1,258 | 465 | 872 | 7,164 | 32,537 |
| S. Total | | | | | | | | | | | | | | | | |
| Total | | | 68,209 | 11,760 | 238 | 1,264 | 81,471 | 285 | 3,545 | 3,286 | 7,291 | 3,649 | 1,569 | 1,549 | 21,174 | 102,645 |
| Amol U. | AU | | 1,813 | 0 | 26 | 115 | 1,954 | 40 | 2 | 5 | 1,461 | 297 | 90 | 0 | 1,895 | 3,849 |
| Babol U. | BU | | 466 | 586 | 1 | 20 | 1,073 | 0 | 0 | 211 | 179 | 45 | 7 | 0 | 442 | 1,515 |
| Total | | | 2,279 | 586 | 27 | 135 | 3,027 | 40 | 2 | 216 | 1,640 | 342 | 97 | 0 | 2,337 | 5,364 |
| G. Total | | | 70,488 | 12,346 | 265 | 1,399 | 84,498 | 325 | 3,547 | 3,502 | 8,931 | 3,991 | 1,666 | 1,549 | 23,511 | 108,009 |

## TABLE B.2.3-2 PROPOSED LAND USE BY DISTRICT LEVEL

(Unit : ha)

| District | Zone | No. of S. B | Farm land | | | | | Non - Farm land | | | | | | | | Grand Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Paddy (S. W) | Paddy (G. W) | Upland | Orchard | Total | Wasted | Forest | Pond | Villa. | River | Road | S. Dune | Total | |
| Haraz | HW 1-6 | | 9,457 | 925 | 121 | 375 | 10,878 | 103 | 1,708 | 28 | 653 | 690 | 567 | 0 | 3,749 | 14,627 |
| West | HWU 1-3 | | 298 | 0 | 2 | 38 | 338 | 2 | 0 | 0 | 30 | 15 | 14 | 0 | 61 | 399 |
| S. Total | | | 9,755 | 925 | 123 | 413 | 11,216 | 105 | 1,708 | 28 | 683 | 705 | 581 | 0 | 3,816 | 15,026 |
| Haraz | HE 1-5 | | 10,447 | 572 | 0 | 89 | 11,108 | 36 | 0 | 6 | 1,192 | 602 | 541 | 0 | 2,377 | 13,485 |
| East | KL 1-6 | | 7,449 | 1,090 | 16 | 98 | 8,653 | 7 | 0 | 416 | 974 | 738 | 499 | 0 | 2,634 | 11,287 |
| | KR 1-5 | | 3,513 | 934 | 8 | 32 | 4,487 | 19 | 41 | 27 | 332 | 373 | 201 | 0 | 993 | 5,480 |
| S. Total | | | 21,409 | 2,596 | 24 | 219 | 24,248 | 62 | 41 | 449 | 2,498 | 1,713 | 1,241 | 0 | 6,004 | 30,252 |
| Amol | | | 14,010 | 3,453 | 67 | 373 | 17,903 | 99 | 1,530 | 1,106 | 1,529 | 1,067 | 919 | 677 | 6,927 | 24,830 |
| West | AW 1-9 | | 14,010 | 3,453 | 67 | 373 | 17,903 | 99 | 1,530 | 1,106 | 1,529 | 1,067 | 919 | 677 | 6,927 | 24,830 |
| S. Total | | | | | | | | | | | | | | | | |
| Amol | | | 19,051 | 4,786 | 24 | 259 | 24,12024 | 19 | 266 | 1,703 | 2,581 | 1,762 | 1,214 | 872 | 8,417 | 32,537 |
| East | AE1-11 | | 19,051 | 4,786 | 24 | 259 | ,120 | 19 | 266 | 1,703 | 2,581 | 1,762 | 1,214 | 872 | 8,417 | 32,537 |
| S. Total | | | | | | | | | | | | | | | | |
| Total | | | 64,225 | 11,760 | 238 | 1,264 | 77,487 | 285 | 3,545 | 3,286 | 7,291 | 5,247 | 3,955 | 1,549 | 25,158 | 102,645 |
| Amol U. | AU | | 1,813 | 0 | 26 | 115 | 1,954 | 40 | 2 | 5 | 1,461 | 297 | 90 | 0 | 1,895 | 3,849 |
| Babol U. | BU | | 466 | 586 | 1 | 20 | 1,073 | 0 | 0 | 211 | 179 | 45 | 7 | 0 | 442 | 1,515 |
| Total | | | 2,279 | 586 | 27 | 135 | 3,027 | 40 | 2 | 216 | 1,640 | 342 | 97 | 0 | 2,337 | 5,364 |
| G. Total | | | 66,504 | 12,346 | 265 | 1,399 | 80,514 | 325 | 3,547 | 3,502 | 8,929 | 5,593 | 4,052 | 1,549 | 27,495 | 108,009 |

TABLE B.2.3-3 PROPOSED LAND USE BY SUB-DISTRICT AND ZONE LEVEL

(1/2)

(Unit:ha)

| District | Sub-District and Zone | Gross Area | Paddy | | | Farm Land |
|---|---|---|---|---|---|---|
| | | | Surface W. | Ground W. | Total | Total |
| HARAZ WEST | HW(I)/HW1 | 954 | 623 | 0 | 623 | 685 |
| | /HW2A | 3,751 | 1,424 | 467 | 1,891 | 1,922 |
| | /HW2B | 2,362 | 1,755 | 106 | 1,861 | 1,883 |
| | /HW3 | 3,678 | 2,662 | 222 | 2,884 | 3,125 |
| | /HW4 | 1,905 | 1,531 | 26 | 1,557 | 1,612 |
| | /HW5 | 1,049 | 769 | 42 | 811 | 860 |
| | /HW6 | 928 | 693 | 62 | 755 | 791 |
| | /HWU | 399 | 298 | 0 | 298 | 338 |
| TOTAL | | 15,026 | 9,755 | 925 | 10,680 | 11,216 |
| HARAZ EAST | HE(I)/HE1 | 3,495 | 2,461 | 360 | 2,821 | 2,855 |
| | /HE2 | 1,813 | 1,431 | 94 | 1,525 | 1,528 |
| | /HE3 | 2,707 | 2,106 | 86 | 2,192 | 2,199 |
| | /HE4 | 2,209 | 1,792 | 0 | 1,792 | 1,816 |
| | /HE5 | 445 | 360 | 0 | 360 | 372 |
| | /HE5A | 815 | 657 | 28 | 685 | 686 |
| | /HE5B | 2,001 | 1,640 | 4 | 1,644 | 1,652 |
| Sub-Total | | 13,485 | 10,447 | 572 | 11,019 | 11,108 |
| HARAZ EAST | HE(II)/KL1 | 394 | 155 | 0 | 155 | 157 |
| | /KL2 | 490 | 412 | 0 | 412 | 416 |
| | /KL3 | 3,017 | 2,371 | 42 | 2,413 | 2,415 |
| | /KL4 | 2,686 | 1,919 | 38 | 1,957 | 1,973 |
| | /KL5 | 2,664 | 1,384 | 724 | 2,108 | 2,134 |
| | /KL6 | 348 | 280 | 6 | 286 | 291 |
| | /KL6A | 623 | 399 | 60 | 459 | 466 |
| | /KL6B | 1,065 | 529 | 220 | 749 | 801 |
| Sub-Total | | 11,287 | 7,449 | 1,090 | 8,539 | 8,653 |
| HARAZ EAST | HE(III)/KR1 | 392 | 298 | 0 | 298 | 300 |
| | /KR2 | 426 | 365 | 0 | 365 | 365 |
| | /KR3 | 1,060 | 861 | 20 | 881 | 886 |
| | /KR4 | 2,910 | 1,551 | 860 | 2,411 | 2,429 |
| | /KR5 | 692 | 438 | 54 | 492 | 507 |
| Sub-Total | | 5,480 | 3,513 | 934 | 4,447 | 4,487 |
| TOTAL | | 30,252 | 21,409 | 2,596 | 24,005 | 24,248 |
| AMOL WEST | AW(I)/AW1 | 2,284 | 810 | 114 | 924 | 924 |
| | /AW2 | 1,266 | 321 | 372 | 693 | 693 |
| | /AW3A | 2,448 | 1,366 | 308 | 1,674 | 1,674 |
| | /AW3B | 721 | 373 | 196 | 569 | 592 |
| | /AW4 | 2,327 | 1,400 | 226 | 1,626 | 1,689 |
| Sub-Total | | 9,046 | 4,270 | 1,216 | 5,486 | 5,572 |
| AMOL WEST | AW(II)/AW5 | 2,698 | 1,377 | 604 | 1,981 | 1,996 |
| | /AW6 | 1,374 | 1,038 | 102 | 1,140 | 1,162 |
| | /AW7 | 4,138 | 2,579 | 562 | 3,141 | 3,236 |
| | /AW8 | 647 | 405 | 73 | 478 | 542 |
| | /AW9 | 925 | 760 | 2 | 762 | 791 |
| | /AW9A | 3,067 | 1,552 | 636 | 2,188 | 2,234 |
| | /AW9B | 2,935 | 2,029 | 258 | 2,287 | 2,370 |
| Sub-Total | | 15,784 | 9,740 | 2,237 | 11,977 | 12,331 |
| TOTAL | | 24,830 | 14,010 | 3,453 | 17,463 | 17,903 |

TABLE B. 2. 3-3 PROPOSED LAND USE BY SUB-DISTRICT AND ZONE LEVEL



(Unit:ha)

| District | Sub-District and Zone | Gross Area | Paddy | | | Farm Land |
|---|---|---|---|---|---|---|
| | | | Surface W. | Ground W. | Total | Total |
| AMOL EAST | AE(I)/AE1 | 746 | 642 | 2 | 644 | 654 |
| | /AE2 | 915 | 738 | 30 | 768 | 771 |
| | /AE3A | 994 | 719 | 12 | 731 | 733 |
| | /AE3Aa | 2,683 | 1,557 | 168 | 1,725 | 1,769 |
| | /AE3Ab | 1,232 | 557 | 0 | 557 | 569 |
| | /AE3B | 1,093 | 888 | 16 | 904 | 906 |
| | /AE3C | 673 | 439 | 156 | 595 | 601 |
| Sub-Total | | 8,336 | 5,540 | 384 | 5,924 | 6,003 |
| AMOL EAST | AE(II)/AE4 | 65 | 43 | 6 | 49 | 49 |
| | /AE4A | 604 | 223 | 302 | 525 | 525 |
| | /AE4B | 3,329 | 2,303 | 330 | 2,633 | 2,667 |
| | /AE5 | 2,020 | 1,620 | 20 | 1,640 | 1,644 |
| | /AE6A | 1,866 | 1,381 | 138 | 1,519 | 1,526 |
| | /AE6B | 1,301 | 921 | 92 | 1,013 | 1,013 |
| Sub-Total | | 9,185 | 6,491 | 888 | 7,379 | 7,424 |
| AMOL EAST | AE(III)/AE7 | 2,473 | 1,569 | 286 | 1,855 | 1,855 |
| | /AE8 | 1,289 | 634 | 372 | 1,006 | 1,010 |
| | /AE9 | 1,637 | 439 | 774 | 1,213 | 1,214 |
| | /AE10 | 1,569 | 44 | 1,068 | 1,112 | 1,119 |
| | /AE11 | 547 | 359 | 84 | 443 | 461 |
| | /AE11A | 1,363 | 730 | 284 | 1,014 | 1,021 |
| | /AE11B | 6,138 | 3,245 | 646 | 3,891 | 4,013 |
| Sub-Total | | 15,016 | 7,020 | 3,514 | 10,534 | 10,693 |
| TOTAL | | 32,537 | 19,051 | 4,786 | 23,837 | 24,120 |
| GRAND TOTAL | | 102,645 | 64,257 | 11,760 | 75,985 | 77,487 |

(Except Urban Area)

## B. 2. 4 Plan of Irrigation Canal System

### 1. Classification of Existing Irrigation Canal

Existing irrigation canal systems were investigated on the function, and structure through TIB and field survey in the Project Area.

According to above mentioned investigation, the existing canal have been classified as follows.

(1) Primary Canal

Haraz River
Babol River
Alesh River
Kari Rud

(2) Secondary Canal

Diverted from a primary canal, and having a particular name in the MRWB canal survey or the TIB survey, neither larger nor smaller in its command area.

(3) Tertiary Canal

Diverted from a secondary canal or a canal fed by return-flow, or abbandan, and having a particular name neither larger nor smaller in its command area.

(4) Fourth Canal

Diverted from a tertiary canal, not named.

## 2. Canal Classification after the Project

The proposed canals shall be classified depend on commandable area as follows.

(1) Main Irrigation Canal

Kari Rud
Haraz East Main Canal (HEMC)
Haraz West Main Canal (HWMC)
Amol East Main Canal (AEMC)
Amol West Main Canal (AWMC)

(2) Secondary Irrigation Canal

Canals commanding an area of more than 500 ha.

(3) Tertiary Irrigation Canal

Canal commanding an area of less than 500 ha, and conveying water to the units/unit. This canal has a command area more than 100 ha.

(4) Fourth Irrigation Canal (or Lateral Irrigation Ditch)

Canal diverted from a tertiary canal or directly from a secondary canal, and conveying water in the land consolidated area. This canal corresponds to the lateral irrigation ditch in the land consolidated area.

(5) Fifth Irrigation Canal (or Irrigation Ditch)

Canal principally diverted from a fourth canal (or lateral irrigation ditch) and commanding a field-block in the land consolidated area. This canal corresponds to the irrigation ditch in the land consolidated area.

(6) Haraz river is the most important natural flow in the Project Area.

After the project, all of the surface water should be supplied from the Haraz river.

The Babol river and Alesh river will have the function of drainage channels for the Project Area.

## 3. Design Canal Capacity

(1) Occurrence of the Peak Demands

According to the proposed cropping pattern, these occurs the peak demands at the last day of the puddling period of M.M.V (Medium Matured Variety) on the end of May as shown in attached Figure B.2.4-1.

(2) Design Capacity of the Irrigation Canal

From attached Figure B.2.4-1, the peak demand of whole Project Area should be examined to find reasonable value.

Concerning above trials, numerical value of necessary items was applied from the para. B.2.5 water requirement.

1) Design Capacity of Secondary Canal

$$Q1\text{-}T = \frac{155 + 39\,(5.5 \times 1.1 + 3.0)}{40} \times 0.1653 = 2.10\ \ell/s/ha$$

$$Q1\text{-}A = (4.4 \times 1.1 + 3.0) \times 0.1653 = 1.30\ \ell/s/ha$$

$$Q1\text{-}K = \frac{155 + 29\,(4.4 \times 1.1 + 3.0)}{40} \times 0.1653 = 1.58\ \ell/s/ha$$

$$Q\text{-}Av = 2.10 \times 0.375 + 1.30 \times 0.25 + 1.58 \times 0.375 = 1.71\ \ell/s/ha$$

The peak demand of ordinary period

$$Q1\text{-}Or = (5.5 \times 1.2 + 3.0) \times 0.1653 = 1.58\ \ell/s/ha$$

The secondary canal capacity, therefore, decided with 1.7 ℓ/s/ha in the project area.

2) Design Capacity of Tertiary Canal

As for estimation of the peak demand at tertiary canals same procedure of secondary canal can be applied. In this case, the puddling period is fixed with half of period in each variety.

(a) The Peak Demand of Tarom (E.M.V.) and Other Varieties

$$Q1\text{-}T = \frac{155 + 19\,(4.4 \times 1.1 + 3.0)}{20} \times 0.1465 = 2.23\ \ell/s/ha$$

$$Q1\text{-}K = \frac{155 + 15\,(4.4 \times 1.1 + 3.0)}{20} \times 0.1465 = 2.00\ \ell/s/ha$$

$$Q1\text{-}A = (4.4 \times 1.1 + 3.0) \times 0.1465 = 1.15\ \ell/s/ha$$

$$QAv = 2.23 \times 0.375 + 2.00 \times 0.375 + 1.15 \times 0.25 = 1.88\ \ell/s/ha$$

(b) The Peak Demand of Khazar (M.M.V.) and Other Varieties

$$Q\text{-}1K = \frac{155 + 19\,(5.5 \times 1.1 + 3.0)}{20} \times 0.1465 = 2.39\ \ell/s/ha$$

$$Q1\text{-}T = (5.5 \times 1.1 + 3.0) \times 0.1465 = 1.33\ \ell/s/ha$$

$$Q1\text{-}A = (5.5 \times 1.1 + 3.0) \times 0.1465 = 1.33\ \ell/s/ha$$

$$QAv = 2.39 \times 0.375 + 1.33 \times 0.375 + 1.33 \times 0.25 = 1.73\ \ell/s/ha$$

(c) The Peak Demand of Amol-3 (L.M.V.) and Other Varieties

$$Q1\text{-}A = \frac{155 + 9\,(4.4 \times 1.1 + 3.0)}{10} \times 0.1465 = 3.30\ \ell/s/ha$$

$$Q1\text{-}K = \frac{155 + 5\,(4.4 \times 1.1 + 3.0)}{20} \times 0.1465 = 1.42\ \ell/s/ha$$

$$Q1\text{-}T = \frac{155 + 9\,(4.4 \times 1.1 + 3.0)}{20} \times 0.1465 = 1.65\ \ell/s/ha$$

$$QAv = 3.30 \times 0.25 + 1.42 \times 0.375 + 1.65 \times 0.375 = 1.98\ \ell/s/ha$$

As results of above trials, case (c) shows the highest demands, therefore, design capacity is fixed with 2.0 ℓ/s/ha.

(d) Design Capacity of Fourth and Fifth Canal

As for design capacity of both canals, the numerical values of necessary items are referred to same as para. B.2.5.

$$Q1-4 = \frac{155 + 14\,(4.4 \times 1.1 + 3.0)}{15} \times 0.1465 = 2.59\ \ell/s/ha$$

$Q1-4 = 2.6\ \ell/s/ha$ for fourth canal

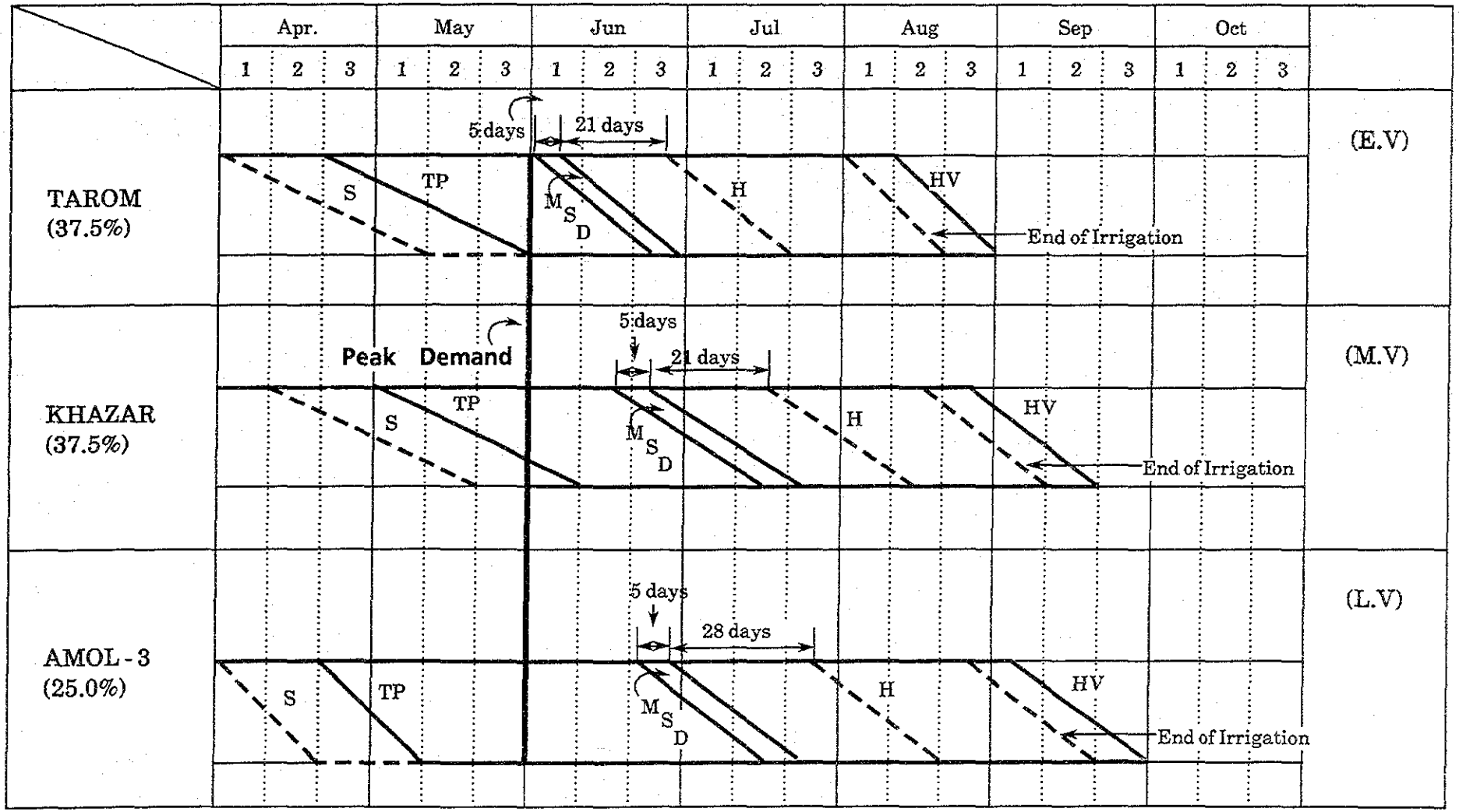
$$Q1-5 = \frac{155 + 3\,(4.4 \times 1.1 + 3.0)}{20} \times 0.1330 = 5.94\ \ell/s/ha$$

$Q1-5 = 5.9\ \ell/s/ha$ for fifth canal

## 4. Proposed Irrigation Schematic Diagram

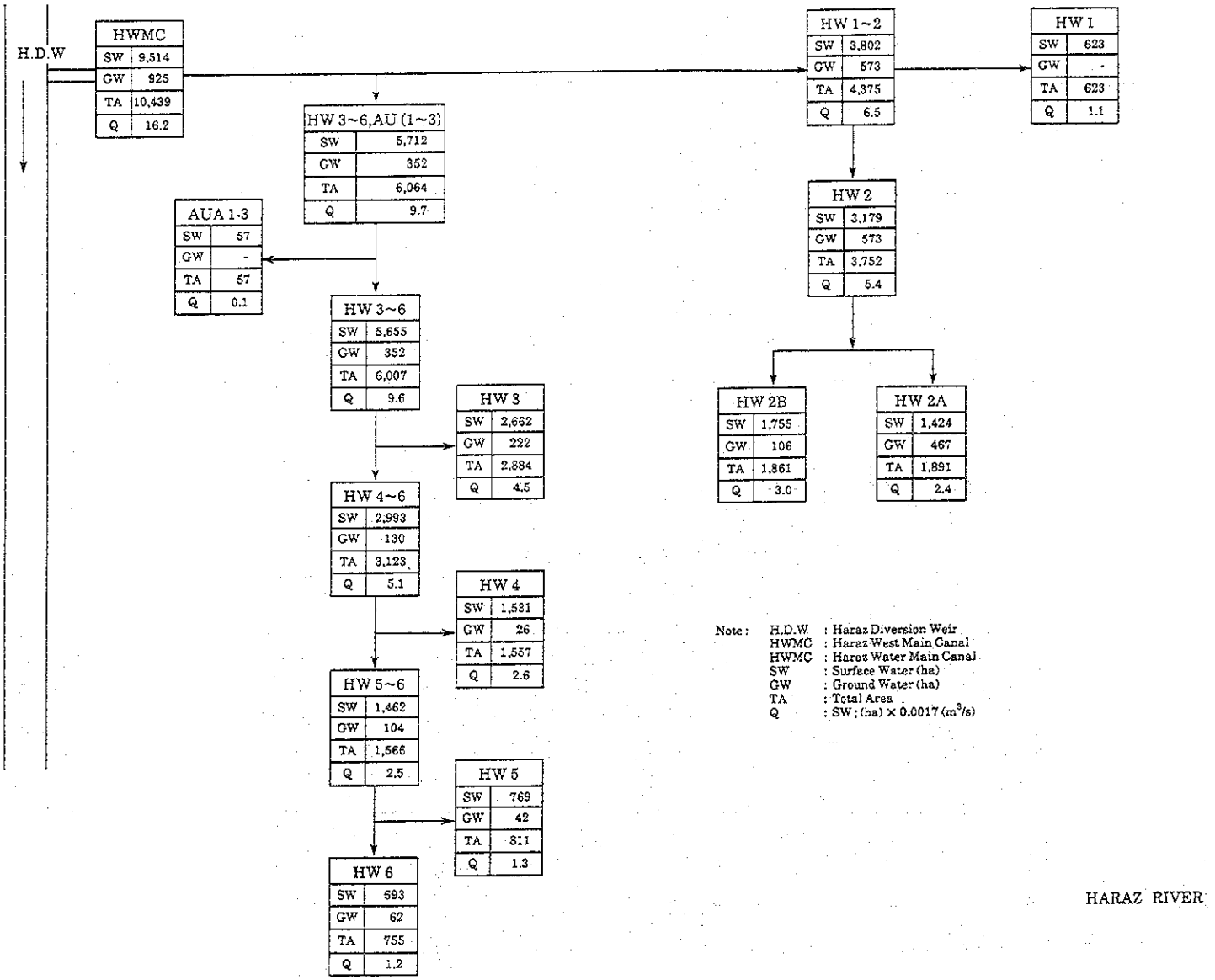
Irrigation canal alignment including the drainage canal was made based on topo-map with scale 1 : 20,000 and TIB survey under the consideration of existing canal system and functions. Accordingly, schematic diagram of Irrigation Network was prepared on zone level, which are shown in attached Figure B.2.4-2 ~ 5.

## FIGURE B. 2. 4 - 1 OCCURRENCE OF PEAK DEMAND




H : Heading MSD : *Midsummer Drainage*

FIGURE B. 2. 4 - 2 HW. DISTRICT PROPOSED IRRIGATION SCHEMATIC DIAGRAM
(Zone Level)




Note: H.D.W : Haraz Diversion Weir
HWMC : Haraz West Main Canal
HWMC : Haraz Water Main Canal
SW : Surface Water (ha)
GW : Ground Water (ha)
TA : Total Area
Q : SW ; (ha) × 0.0017 ($m^3/s$)

FIGURE B. 2. 4 - 3 HE. DISTRICT PROPOSED IRRIGATION SCHEMATIC DIAGRAM
(Zone Level)

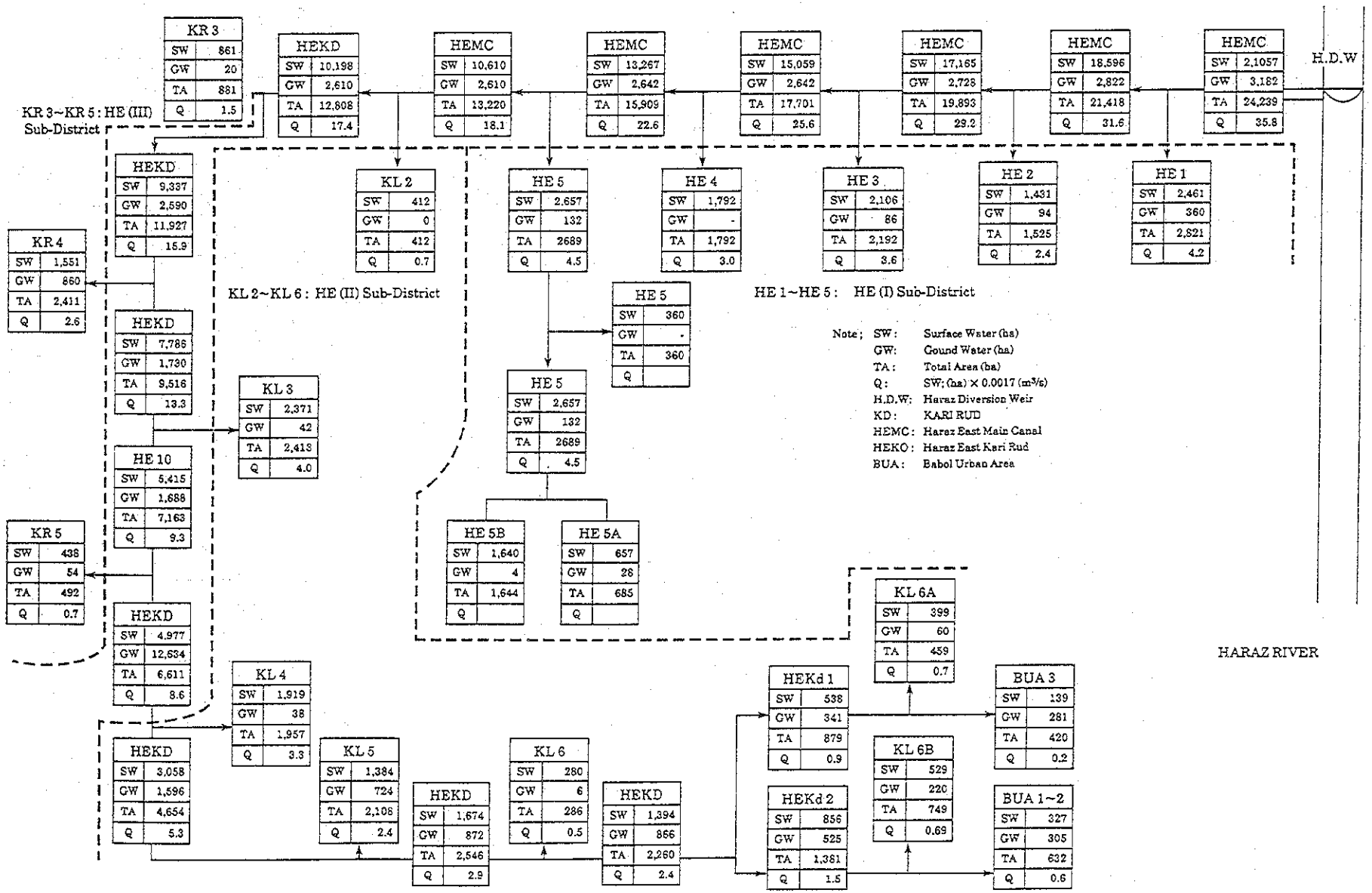


FIGURE B. 2. 4 - 4 AW. DISTRICT PROPOSED IRRIGATION SCHEMATIC DIAGRAM
(Zone Level)

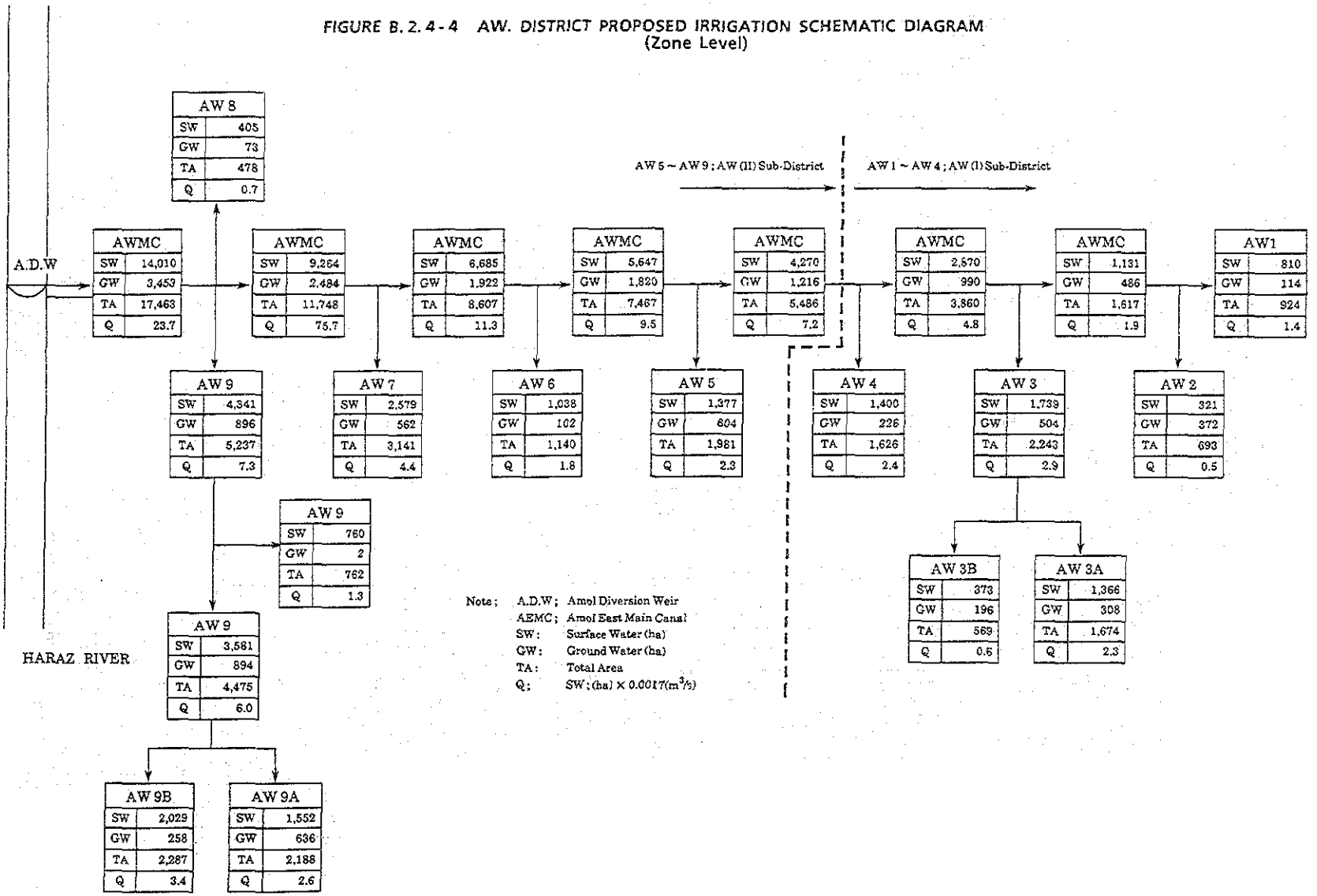
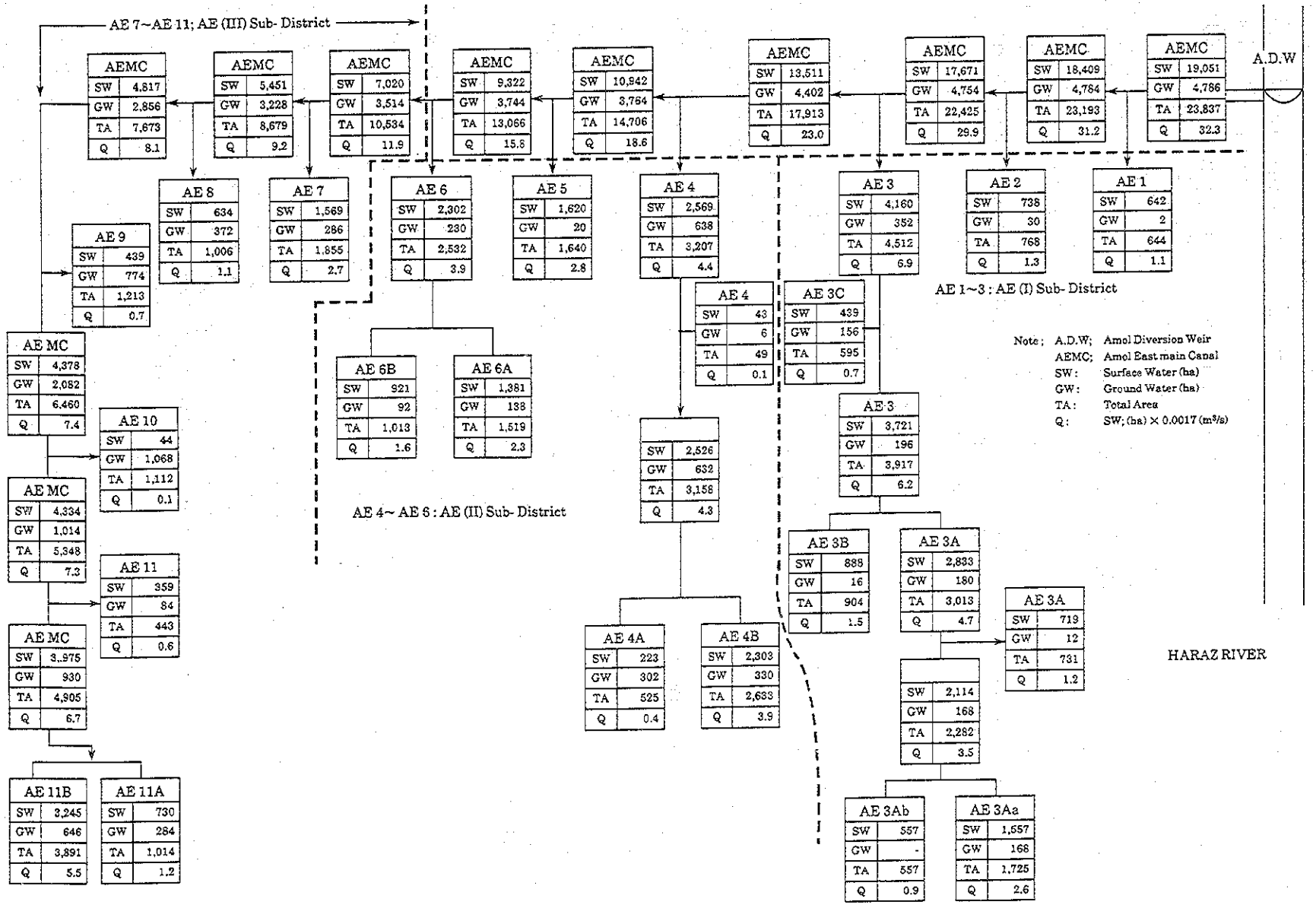


FIGURE B. 2. 4 - 5 AE. DISTRICT PROPOSED IRRIGATION SCHEMATIC DIAGRAM
(Zone Level)



## B. 2. 5 Irrigation Water Requirement

Irrigation demand has been estimated both for present and future in accordance with the following procedure based on "Irrigation and Drainage Paper, No. 24, FAO (Ref. IRR-1) taking present and future conditions into consideration.

### 1. Reference Crop Evapotranspiration (ETo)

Reference crop evapotranspiration has been estimated by the Modified Penman Method with the climatological data at Babolsar and Amol. Reference crop evapotranspiration which is used in this report is as follows;

Reference Crop Evapotranspiration

(Unit : mm)

| Jan | Feb | Mar | Apr | May | June | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Monthly | | | | | | | | | | | |
| 31 | 40 | 62 | 93 | 136 | 165 | 164 | 146 | 105 | 74 | 42 | 28 |
| Daily | | | | | | | | | | Total | 1,086 |
| 1.0 | 1.4 | 2.0 | 3.1 | 4.4 | 5.5 | 5.3 | 4.7 | 3.5 | 2.4 | 1.4 | 0.9 |

### 2. Irrigation Factors from aspect of Cropping Calendar

From the aspect of cropping calendar, following irrigation factors have been applied.

Irrigation Factors From Aspect of Cropping Calendar

| Crops | Growing Period (From Transplanting to Harvesting) |
|---|---|
| Amol 3 | 140 days |
| Khazar | 105 days |
| Tarom | 100 days |

| | | |
|---|---|---|
| · Puddling Period | : | 30 days at present |
| | : | 15 days at Irrigation Ditch in future |
| | : | 20 days at Tertiary Level in future |
| | : | 40 days at Secondary Level in future |
| · Nursery Bed | : | 5% of Planting field at present |
| | : | 1% of planting field in future |
| · Nursery Period | : | 30 days at present |
| | : | 20 days in future |
| · Secondary Crops | : | Non-irrigation |