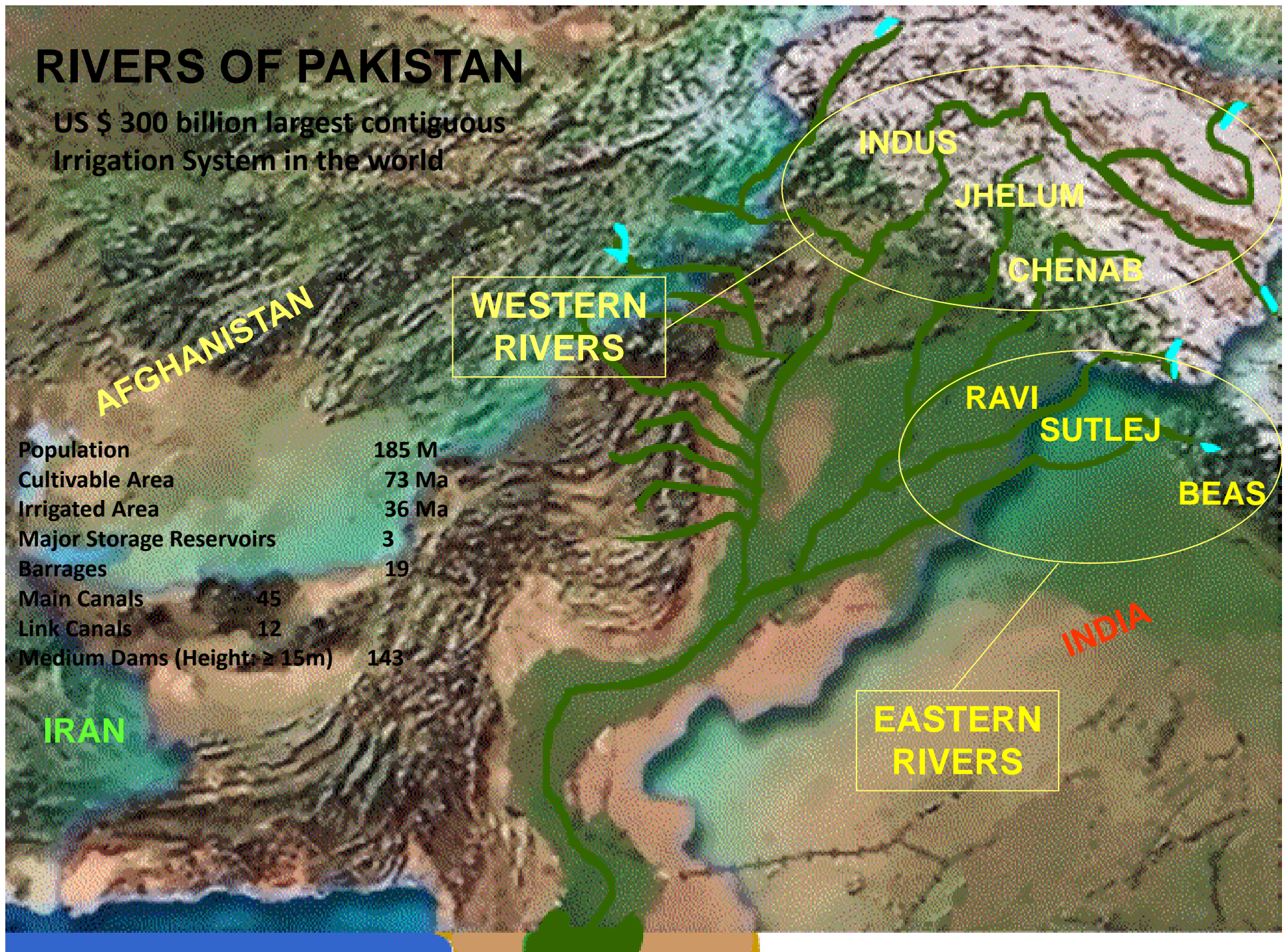




RIVERS OF PAKISTAN

US \$ 300 billion largest contiguous
Irrigation System in the world





BASIC AGRICULTURE STATISTICS (AJ&K)

- Area under cultivation 0.166 million ha (0.410 million acres)
(13% of total area)
- Annual cropped area 0.242 million ha (0.598 million acres)
- Cropping intensity 150%
- Irrigated area 10790 ha. (6.5% of area under cultivation in 1947)
15,500 ha (38750 acres Pre-EQ)
(9% of area under cultivation)
- Irrigated area affected by EQ: 5580 ha (13783 acres)
- Irrigated Area June, 2012 15825 ha (39563 acres)
(9.5% of area under cultivation)
- Average Farm Size 0.84 ha (2.07 acres)
- Average Family size 7.2 members

Potential of Small Dams in GilGit - Baltistan

Total Water Basins = 280 No
Potential Dam Sites = 250 No.

Pre-Feasibility Study Completed

Phase – I = 3 No.

Proposed Dams in GB

- Diemer Basha Dam
- Bunji Dam
- Satpara dam

Potential of Small Dams in Azad Kashmir

Total Water Basins in AJ&K	=	301 No.
Potential Dam Sites	=	600 No.

Reference: Assessment of water Resources potential and Development of Irrigation System in AJ&K, Study conducted by ACE

Feasibility Study, Detail Design and Estimates
Completed

Package I	=	11 No.
Package II	=	15 No.
Package III	=	8 No.
Total	=	34 No.

SUMMARY OF THE PROJECT (Package I & II)

Total Dams	26
Gravity Dams	23
Earth Core Rockfill Dams	02
Zoned Earthen Dams	01
Catchment Area (Sq miles)	320
Annual Inflow (Acre-ft)	85545
Average Life of Dam (Years)	60
Water Demand (Acre-ft)	64752
Reservoir Yield (Acre-ft)	72597
Cultivable Area (Acres)	19224
Range management Area (Acre)	10241
Power Generation (kW)	140
Direct Beneficiaries	57015
Fish Production (Tons)	1539
Water Available for Drinking (MGD)	0.57015
Total Cost in Million Rupees	7119.860

List of Dams (Package-I)

S.#	Name of District/Dam	Type of Dam	Command Area (acres)	Hight of Dams (ft)	Type of Spillway	Width of Spillway (ft)	Storage Capacity (acre-ft)	Power Genr. (KW)	Estimated Cost (in million)
1	2	3	4	5	6	7	8	9	10
1	Sona Sabzpir, Bhimber	Concrete Gravity	872	46	Free over flow Ogee Type	160	138.72	10.8	180.307
2	Nihala, Bhimber	Earth Core rockfill Dam	314	49	Sloping Baffled Apron	50	100.5	3.4	134.844
3	Barali, Kotli	Earth Core rockfill Dam	164	49	Sloping Baffled Apron	75	85.35	1.9	160.869
4	Bal-Brahmana, Kotli	Concrete Gravity	620	49	Free over flow Ogee Type	50	75.56	12	177.096
5	Naval, Bagh	Concrete Gravity	880	47	Free over flow Ogee Type	150	40.8	3.7	320.444
6	Earn, Bagh	Concrete Gravity	380	43	Free over flow Ogee Type	125	12.51	3.7	124.354
7	Baroora, Muzaffarabad	Concrete Gravity	225	47	Free over flow Ogee Type	75	12.74	2.75	149.238
8	Kardala, Muzaffarabad	Concrete Gravity	550	46	Free over flow Ogee Type	150	60.79	9	158.666
9	Tahi, Poonch	Concrete Gravity	225	46	Free over flow Ogee Type	100	38.96	1.8	132.744
10	Numb, Sudhnoti	Concrete Gravity	570	47	Free over flow Ogee Type	75	63.8	2.8	157.435
11	Nakkar, Sudhnoti	Concrete Gravity	222	45	Free over flow Ogee Type	58	109.44	2.7	128.899
Total			5022	514		1068	739.17	54.55	1824.896

List of Dams (Package-II)

S.#	Name of District/Dam	Type of Dam	Command Area (acres)	Hight of Dams (ft)	Type of Spillway	Width of Spillway (ft)	Storage Capacity (acre-ft)	Power Genr. (KW)	Estimated Cost (in million)
1	2	3	4	5	6	7	8	9	10
1	Dudnaya, Neelum	Concrete Gravity	3020	52.23	Free over flow Ogee Type	203.12	210	25	352.47
2	Palri, Neelum	Concrete Gravity	3761	53	Free over flow Ogee Type	78	21.76	6	154.996
3	Nowshera, Muzaffarabad	Concrete Gravity	5477	53	Free over flow Ogee Type	153	152	10	248.276
4	Pursacha, Muzaffarabad	Concrete Gravity	1711	54	Free over flow Ogee Type	10	12.54	2	326.063
5	Nawan Pur, Bagh	Concrete Gravity	3237	50.54	Free over flow Ogee Type	103	57.64	5	187.997
6	Madar Pur, Poonch	Concrete Gravity	2361	49.75	Free over flow Ogee Type	128	54.6	5	184.351
7	Bal Mandhole, Poonch	Concrete Gravity	819	47	Ogee Type	83	47	1	92.196
8	Saher, Sudhnoti	Concrete Gravity	4790	54	Ogee Type	103	106	6	285.489
9	Bhimber, Bhimber	Zoned Earthfill Dam	18000	36.64	Sloping Baffled Apron	602	4930	10	914.91
10	Bindi Nakka, Bhimber	Concrete Gravity	384	45.2	Free over flow Ogee Type	23	11.22	—	68.101
11	Abshar, Bhimber	Concrete Gravity	1917	48	Ogee Type	53	222	5	110.004
12	Andral Tarala, Kotli	Concrete Gravity	1016	53	Free over flow Ogee Type	38	43	2	98.485
13	Banala Nakayyal, Kotli	Concrete Gravity	3397	47.28	Ogee Type	93	72.58	6	221.776
14	Bilal Kund, Kotli	Concrete Gravity	696	47	Ogee Type	78	82.82	1	150.741
15	Chilayar, Mirpur	Concrete Gravity	819	47	Ogee Type	83	40.58	1	124.947
Total			51405	737.64		1831.12	6063.74	85	3520.802

PROJECT BENEFITS

S. No	Benefit	Existing Status	After Project	Unit	Per Annum Benefit in Million Rupees
1	Agriculture	2680	19224	Acres	100
2	Fisheries	0	1539	Tons	160
3	Water supply	0	6206	HH	30
4	Tourism	0	50	Million Rupees	50
5	Power Generation	0	140 / 938	KW / HH	-
6	Health	0	20	Million Rupees	20
	TOTAL				360

COST OF THE PROJECT (Phase-I)

Phase – I			(Million)
S.No	Dam	District	Cost (Pak. Rs.)
1	Sona Sabz Pir	Bhimber	180.307
2	Nihala	Bhimber	134.844
3	Barali	Kotli	160.869
4	Bal Barhamana	Kotli	177.096
5	Naval	Bagh	320.444
6	Earn	Bagh	124.354
7	Baroora	Muzaffarabad	149.238
8	Kardala	Muzaffarabad	158.666
9	Numb	Sudhnoti	157.435
10	Nakkar	Sudhnoti	128.899
11	Tahi	Poonch	132.744
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COST OF THE PROJECT (Phase - I)

Phase – I		(Million)
S.No	Description	Cost (Pak. Rs.)
12	General requirements	152.306
13	Construction of Infrastructure Facilities	26.201
14	Establishment of Project Implementation Unit(PMU)	49.350
15	Watershed and Range Management(3% of Base Cost)	61.583
16	Physical and financial Contingencies(4% of Case Cost)	82.110
17	Construction Supervision and Administration Cost(4% Base Cost)	82.110
18.	IDC Charges @ 13.65%	252.181
	Sub Total “ A “ for Phase – I Rs.	2530.736

COST OF THE PROJECT (Phase - II)

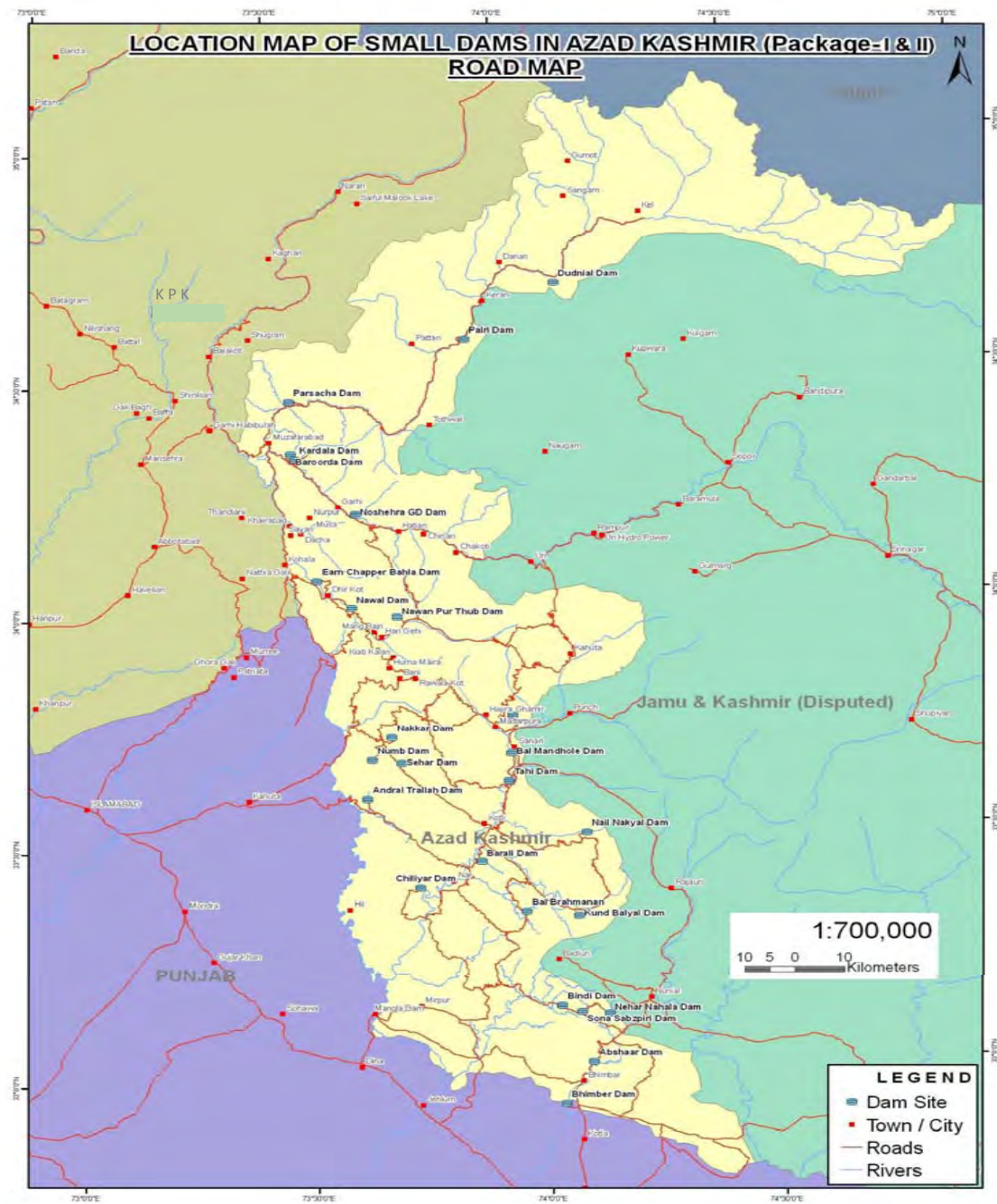
Phase – II			(Million)
S.No	Dam	District	Cost (Pak. Rs.)
1	Andral Tarala	Kotli	98.485
2	Bilal Kund	Kotli	150.741
3	Banala Nail Nukial	Kotli	221.776
4	Abshar	Bhimber	110.004
5	Bindi Nakka	Bhimber	68.101
6	Bhimber main Nullah	Bhimber	914.910
7	Madar Pur	Poonch	184.351
8	Bal Mandhole	Poonch	92.196
9	Nawan pur	Bagh	187.997
10	Nowshera	Muzafarabad	248.276
11	Phagla Pursacha	Muzafarabad	326.063
12	Chilayar	MirPur	124.947
13	Sehar Chonthra	Sudhnoti	285.489
14	DudnayaI	Neelum	352.470
15	Palri	Neelum	154.996
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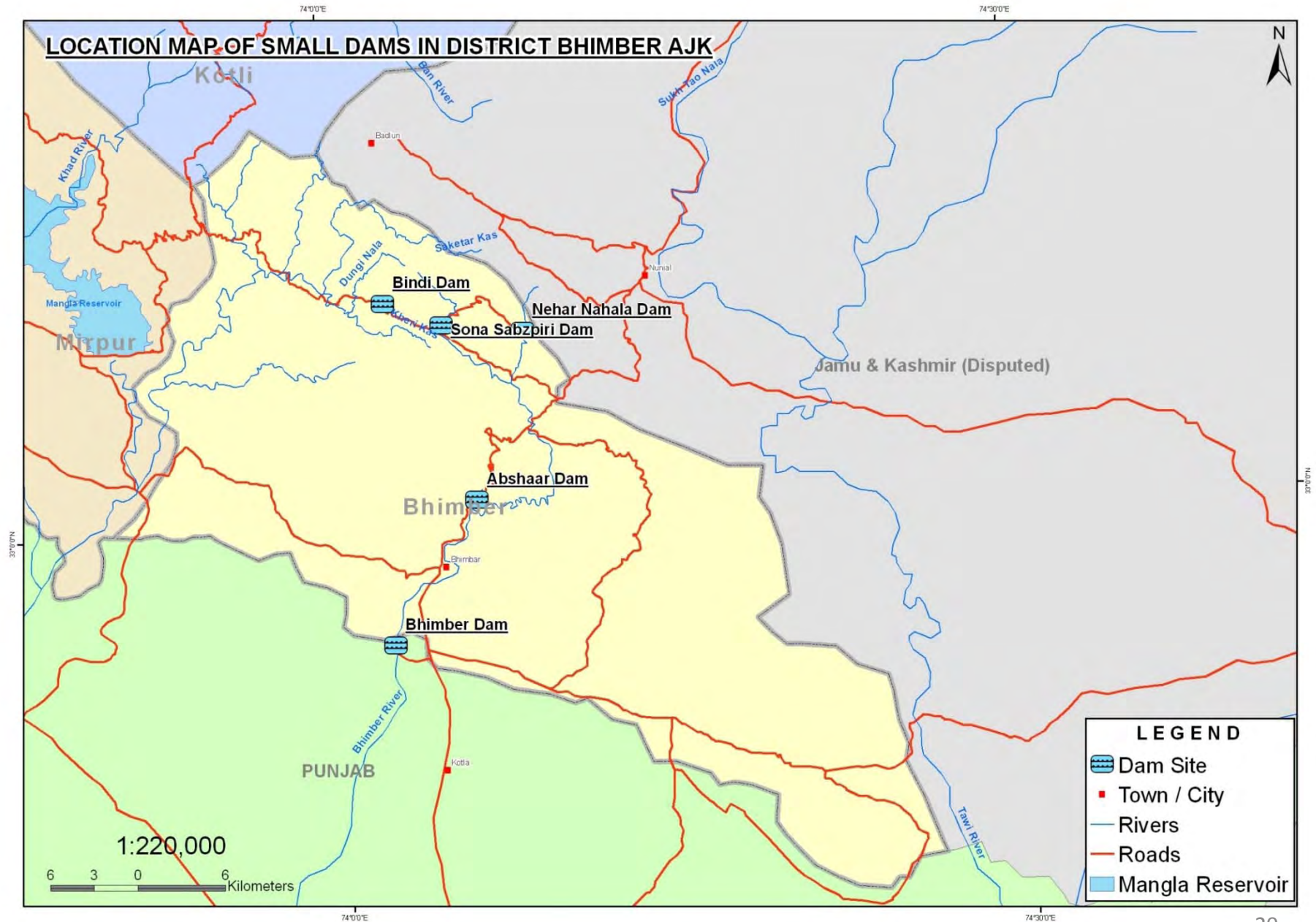
COST OF THE PROJECT (Phase - II)

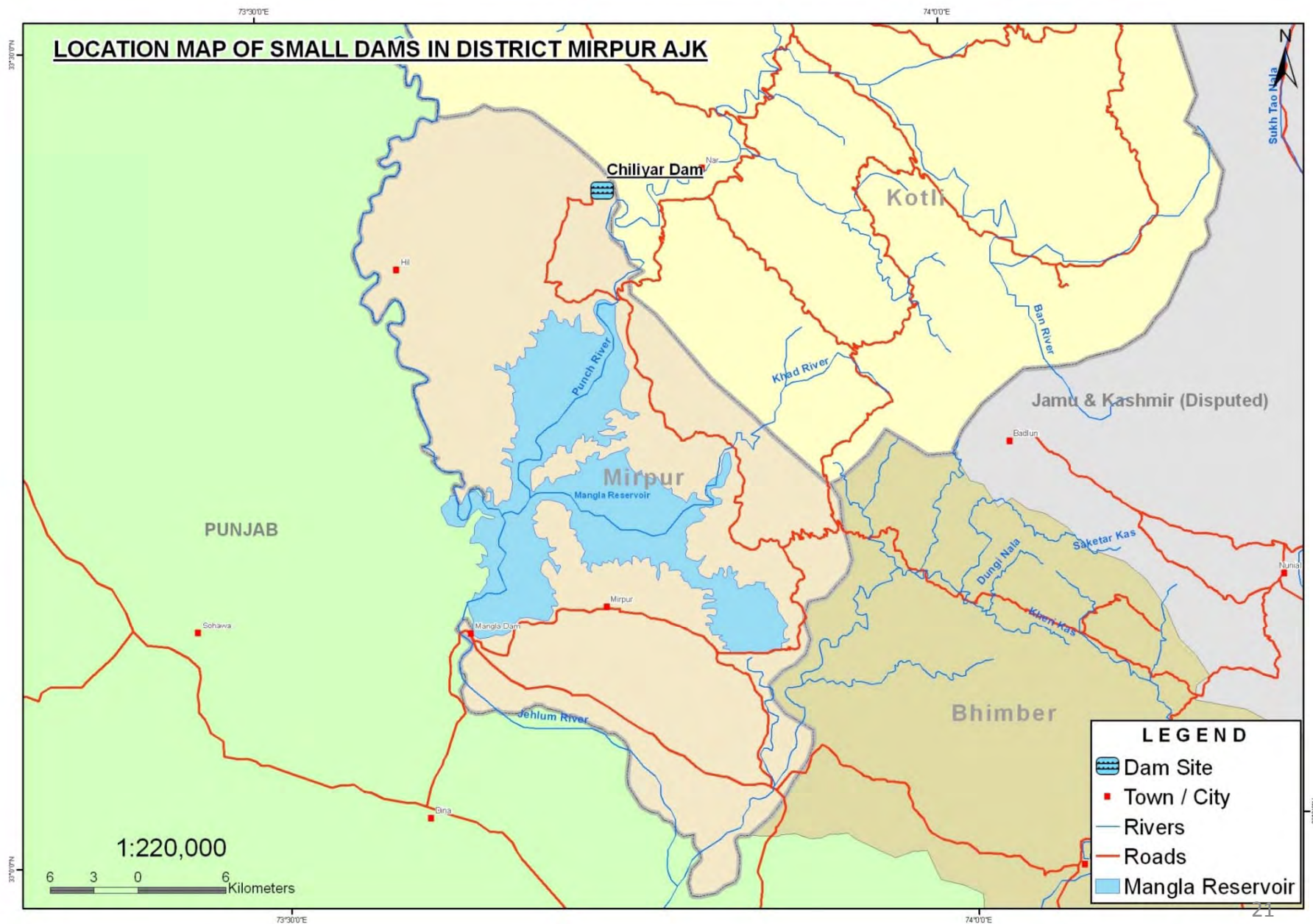
Phase – II		(Million)
S.No	Description	Cost (Pak. Rs.)
16	General Requirements	151.530
17	Construction of Infrastructure Facilities	35.729
18	Establishment of Project Implementation Unit (PMU)	14.309
19	Watershed and Range Management (3% of Base Cost)	111.671
20	Physical and Financial Contingencies (4% of Base Cost)	148.895
21	Construction Supervision and Administration Cost (4% Base Cost)	148.895
22	Escalation / Interest during Construction	457.293
	Sub Total “ B “ for Phase – II	4589.123
	Grand Total “ A + B “	7119.860

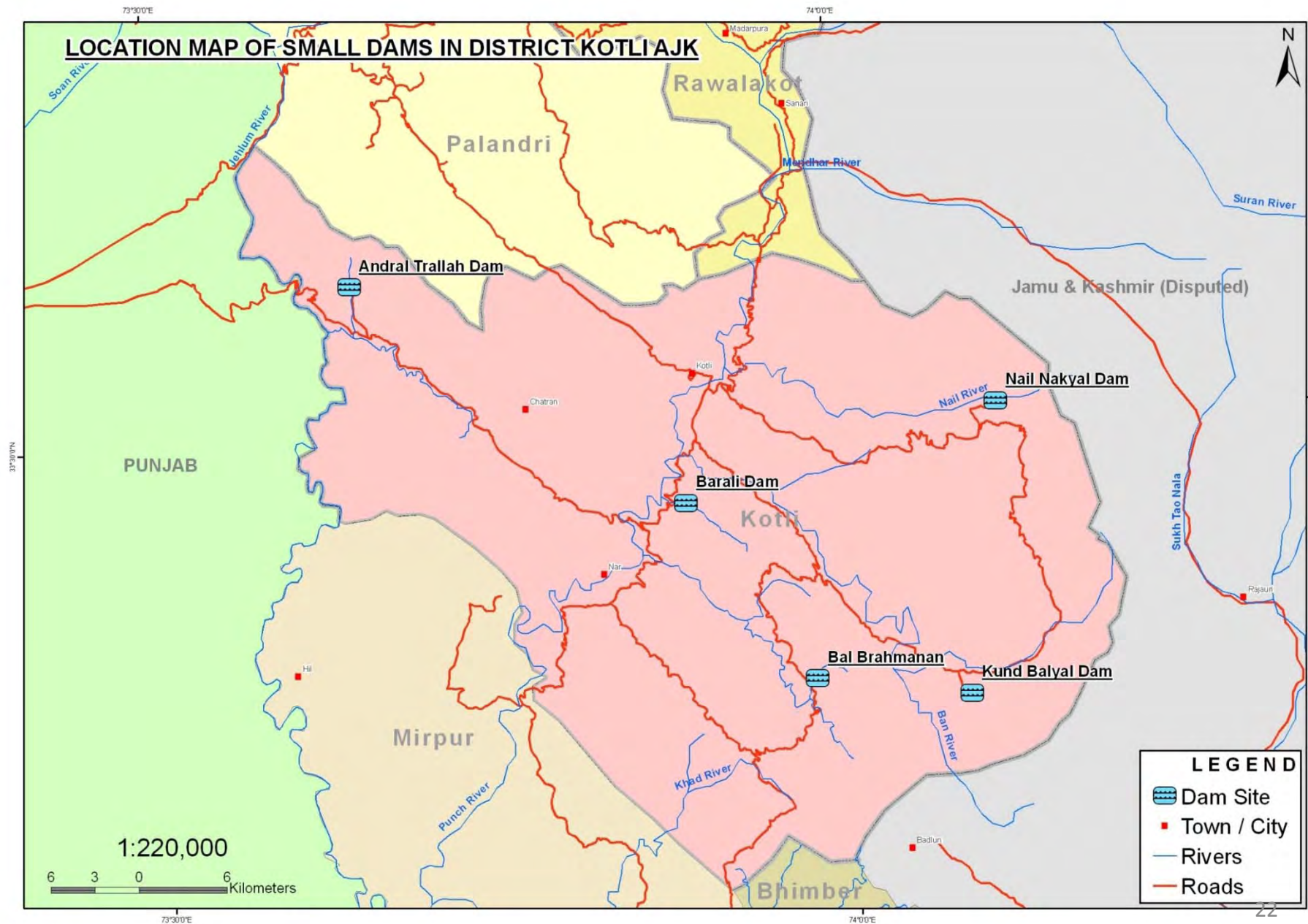
ECONOMIC & FINANCIAL ANALYSIS

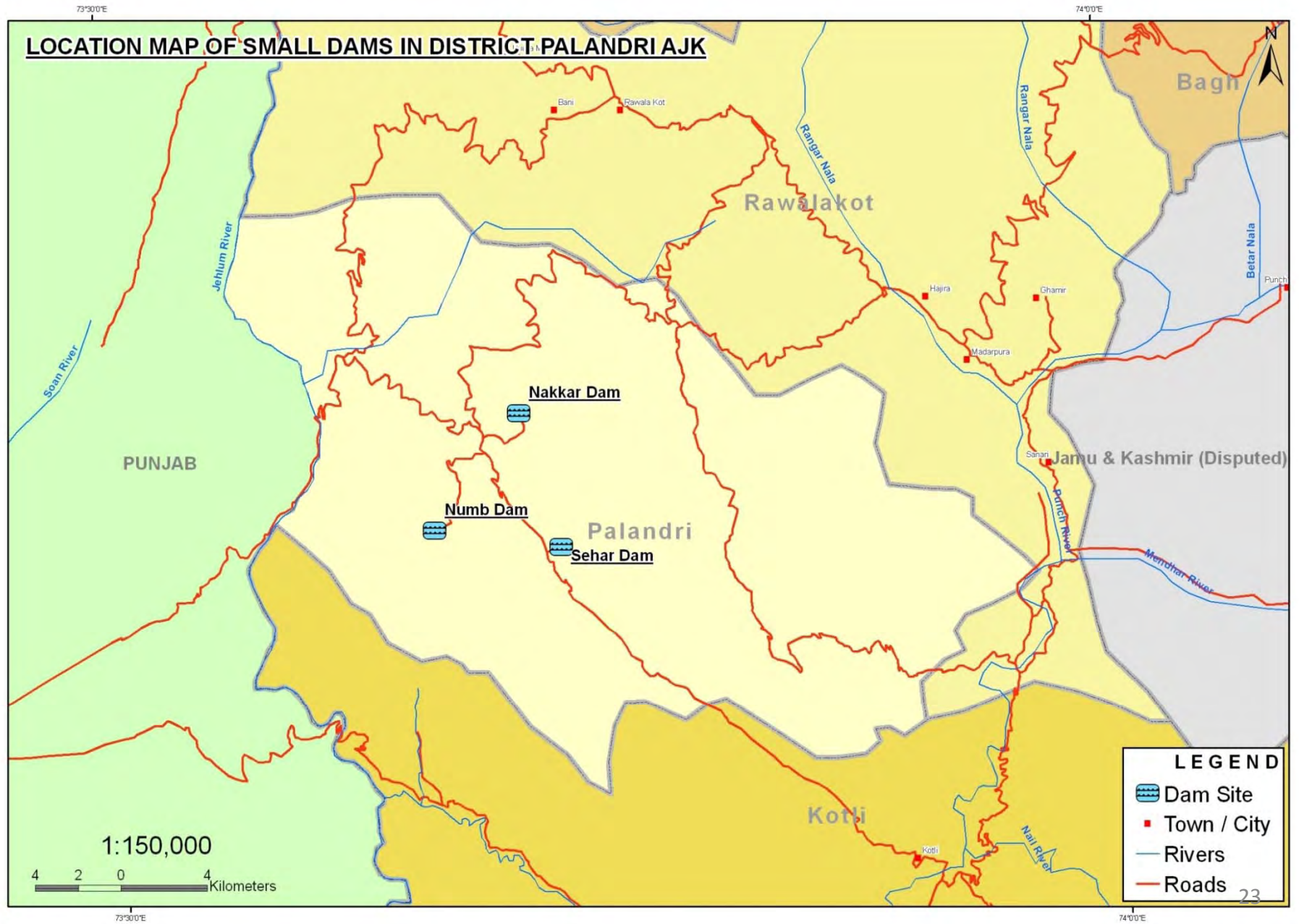
	Package I	Package II
EIRR	17.03	19.96
FIRR	15.88	17.35

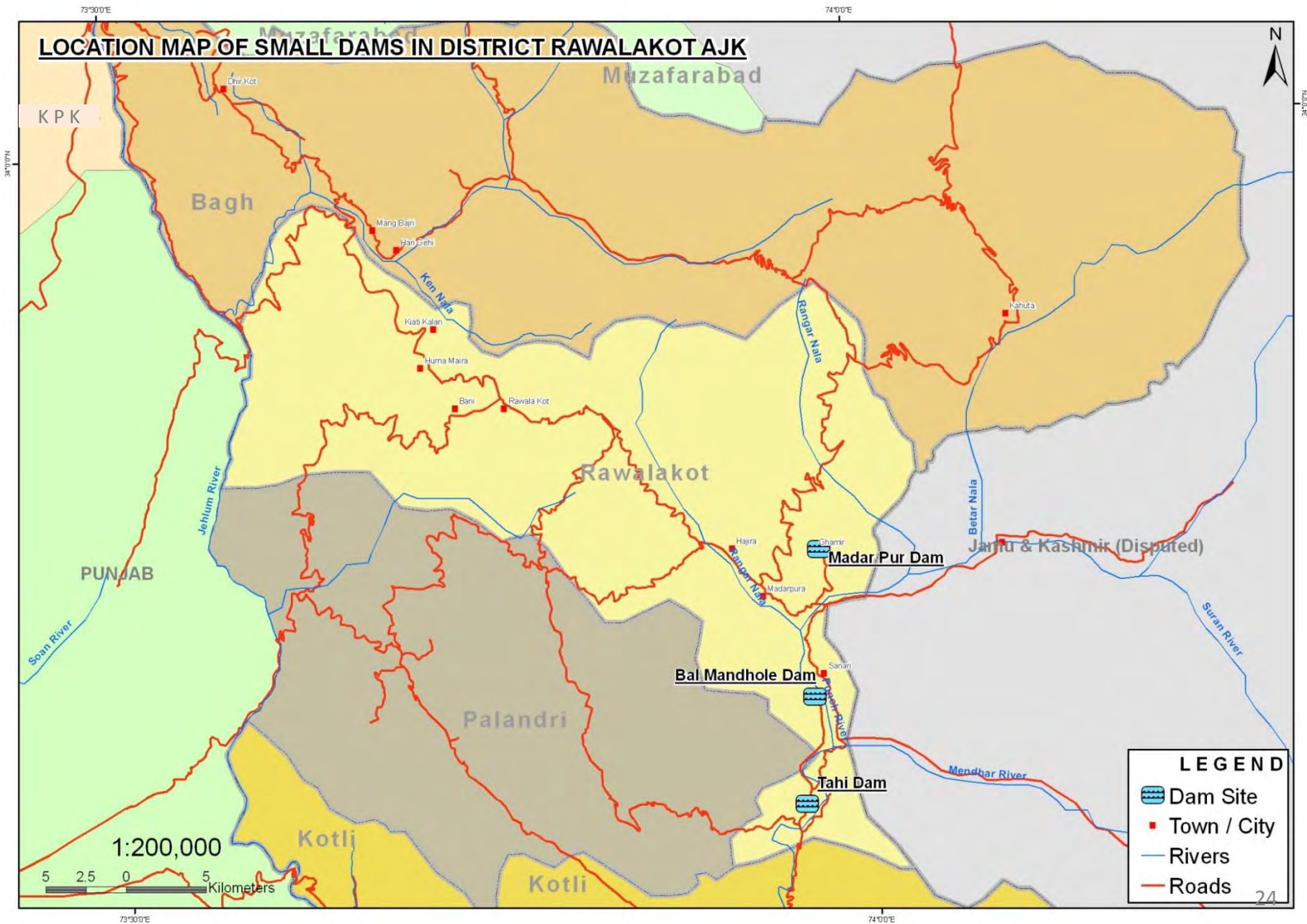


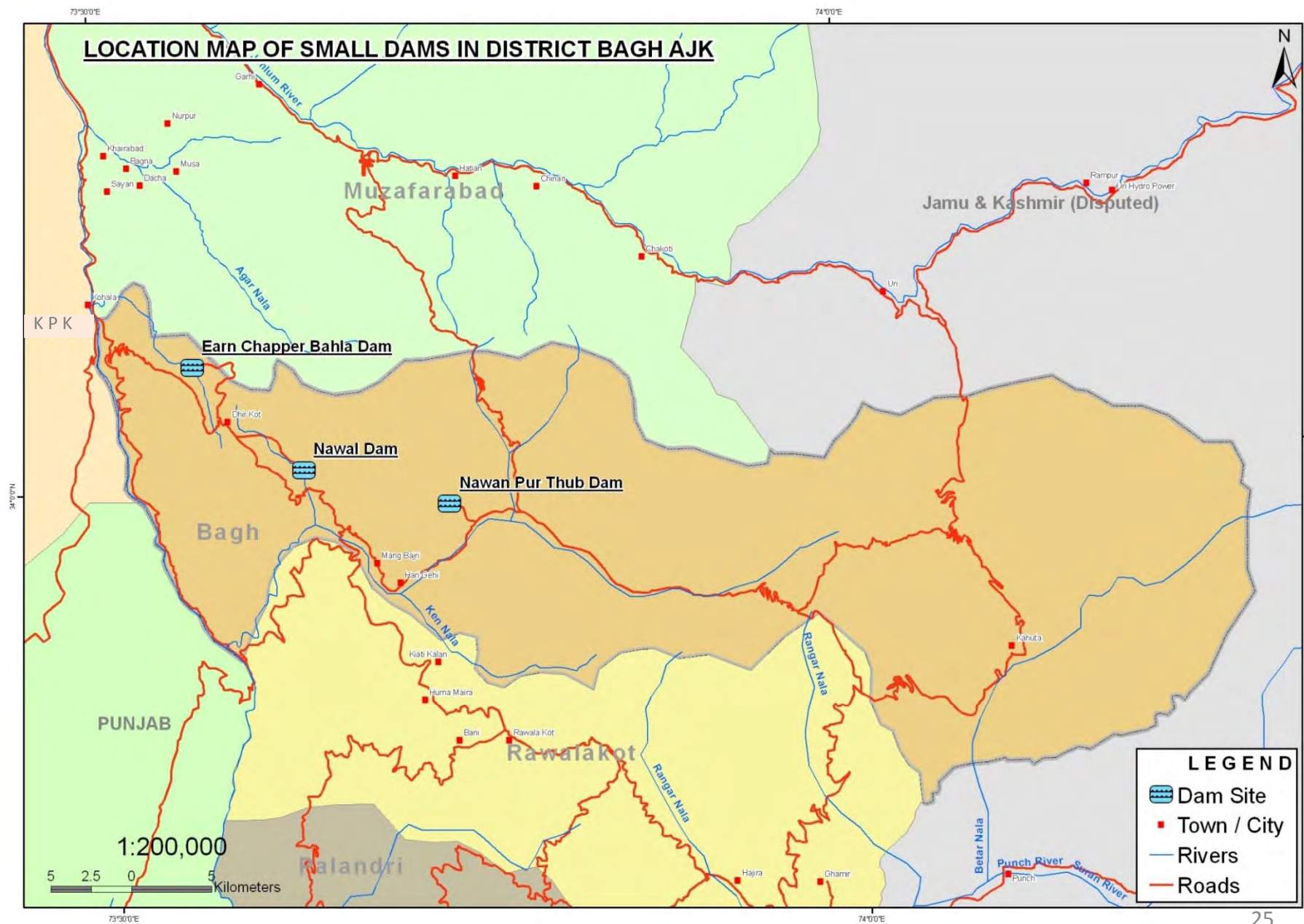


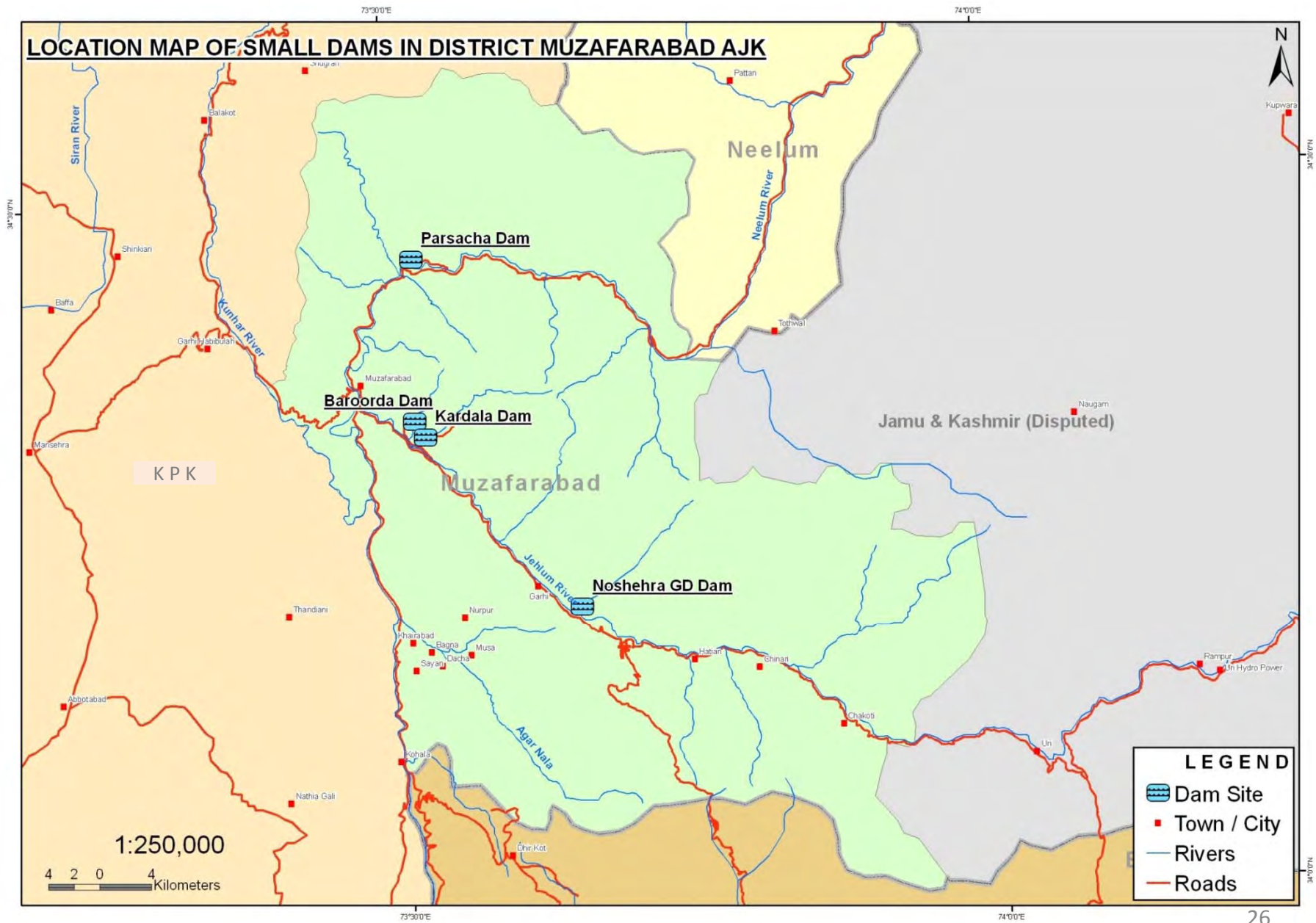


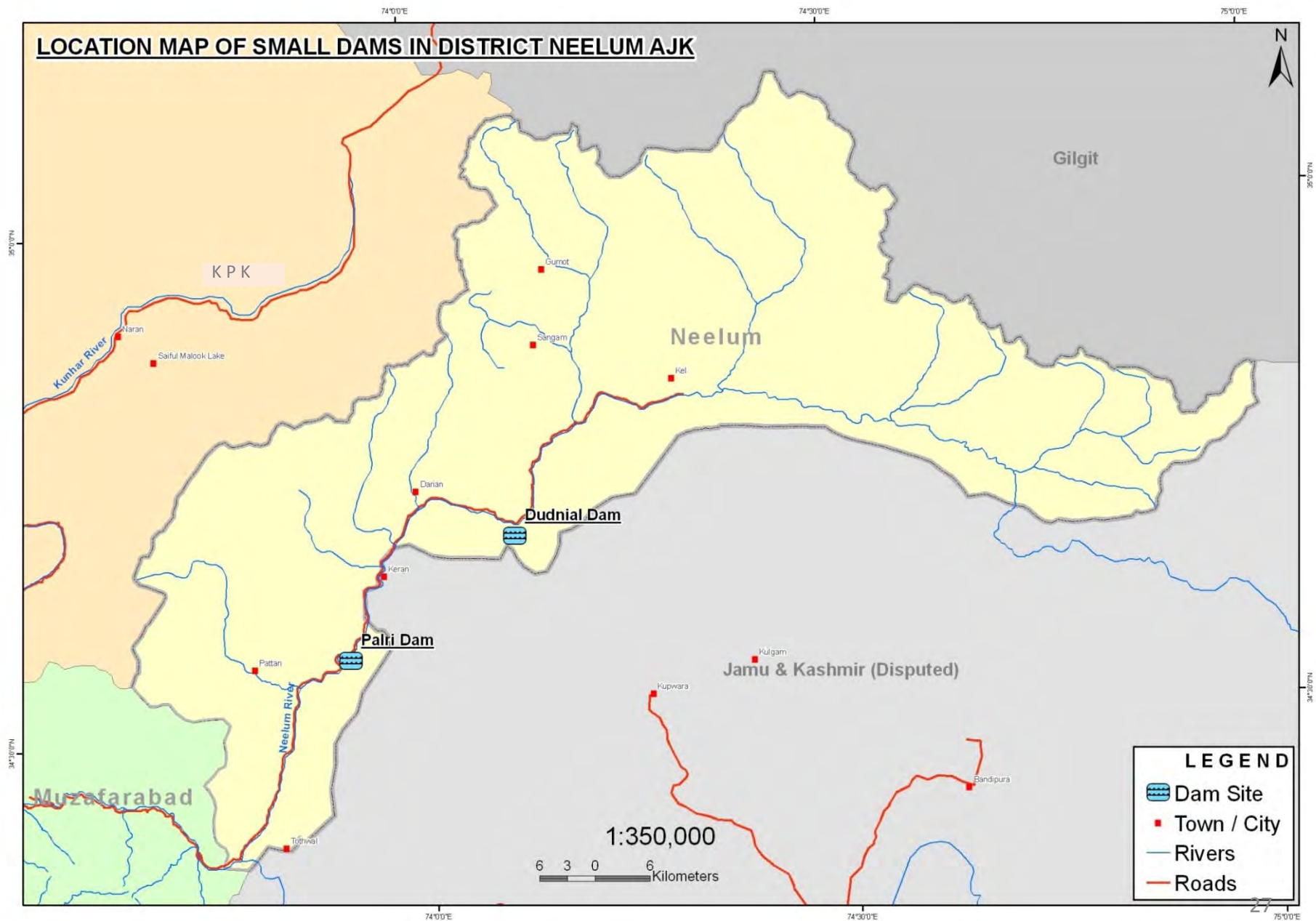














Dam Site of Sona Sabzpir, Bhimber



Dam Site of Bhimber Main Nullah



Dam Site of Kardala, Muzaffarabad



Dam Site of Banala Nail Nukial, kotli



Dam Site of Balmandhole, Poonch



Dam Site of Madarpur, Poonch



Check Dam Site



Uplifting Water at Barali Dam



Community Mobilization



Women Fetching Water for Drinking

Strengths - GB

1. The area is full of natural endowment and is featured with a spectacular panorama with vast barren cultivable lands, fast flowing rivers, twisting turbulent streams, waste cultivable lands, eye catching meadows and high pastures, lush green forest pockets, Crystal blue lakes, lofty barren mountains with snow covered peaks, Glaciers (1014 Nos), lakes (119 Nos) and Rivers (6Nos) which are the main sources of fresh water.
2. Availability of abundant water resource in the State.
3. Conducive environment in the development of water resources.
4. Responsive Communities
5. Importance of Water Resources Sector at National Level.

Strengths – AJ&K

1. Availability of abundant water resource in the State.
(8670 M.cu.m runoff is available in the State, whereas anticipated requirement for irrigation purposes is about 311 M.cu.m)
2. Conducive environment in the development of water resources.
3. Organized Communities (Water User Associations)
4. Importance of Water Resources Sector at National Level.

Issues

1. Flash Floods due to climate change causing sever damages to downstream
2. Lack of Financial Resources
3. Lack of Capacity Building of Technical Staff
4. Non-Development of Water Sector Policy
5. Institutional development
6. Legislation enactment