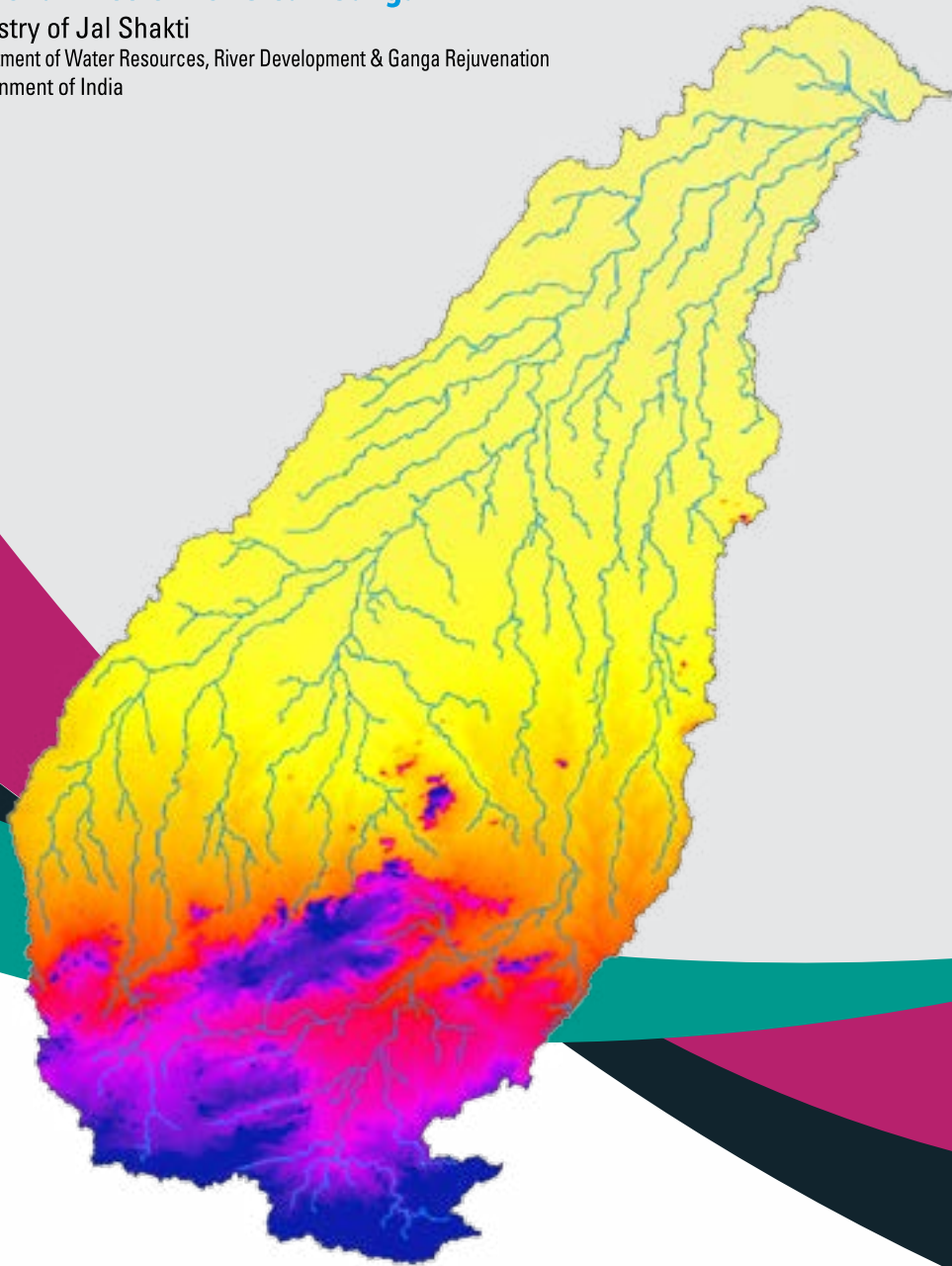




National Mission for Clean Ganga

Ministry of Jal Shakti

Department of Water Resources, River Development & Ganga Rejuvenation
Government of India



PUNPUN RIVER BASIN ATLAS

Version - 1

November 2023



cGanga

Centre for Ganga River Basin Management and Studies
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PUNPUN

RIVER BASIN ATLAS

NOVEMBER 2023

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National Mission for Clean Ganga (NMCG)

NMCG is the implementation wing of National Ganga Council which was setup in October 2016 under the River Ganga Authority order 2016. Initially NMCG was registered as a society on 12th August 2011 under the Societies Registration Act 1860. It acted as implementation arm of National Ganga River Basin Authority (NGRBA) which was constituted under the provisions of the Environment (Protection) Act (EPA) 1986. NGRBA has since been dissolved with effect from the 7th October 2016, consequent to constitution of National Council for Rejuvenation, Protection and Management of River Ganga (referred to as National Ganga Council).

www.nmcg.in

Centre for Ganga River Basin Management and Studies (cGanga)

cGanga is a think tank formed under the aegis of NMCG, and one of its stated objectives is to make India a world leader in river and water science. The Centre is headquartered at IIT Kanpur and has representation from most leading science and technological institutes of the country. cGanga's mandate is to serve as think-tank in implementation and dynamic evolution of Ganga River Basin Management Plan (GRBMP) prepared by the Consortium of 7 IITs. In addition to this, it is also responsible for introducing new technologies, innovations, and solutions into India.

www.cganga.org

Acknowledgment

This river atlas document is a collective effort of a number of experts, institutions and organisations, some who had been associated with preparing the Ganga River Basin Management Plan (GRBMP) submitted to the Government of India in 2015, and others who joined later with their own independent expertise and enthusiasm. Contributions to the photographs and images for this document by individuals are gratefully acknowledged.

Suggested Citation

Punpun River Basin Atlas by cGanga and NMCG.

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PREFACE

The Centre for Ganga River Basin Management and Studies (“cGanga”) was established in the year 2016 as a comprehensive think-tank for river restoration and to assist the National Mission for Clean Ganga (NMCG), Jal Shakti Ministry, GoI, for “continual scientific support in the implementation and dynamic evolution of the Ganga River Basin Management Plan” for conservation of National River Ganga. In keeping with this goal, cGanga has been actively developing detailed knowledge capsules, tools and procedures to enable comprehensive and early rejuvenation of the Ganga River network across the whole basin. While a river basin approach is essential for analyzing and comprehending the Ganga river’s status and needs to regain her wholesomeness, the implementation strategies of the required interventions must keep in mind the role and individuality of each State. Thus, it is necessary to focus on state-level sub-strategies of natural resource management for holistic revival of River Ganga.

The present document attempts to provide a comprehensive picture of the river network in the Punpun basin of State of Bihar. This Atlas was created entirely by cGanga, with original mapping of all identifiable rivers, and with selective additional information culled from different sources for completeness. Many of the rivers and maps given here are not readily available elsewhere, and we expect them to prove useful to the many Central, State, and other organizations engaged in the river, water or natural resource management in the Bihar.

In preparing this document dedicated members of cGanga spent a lot of time in diligently studying, analysing, acquiring and compiling diverse information from diverse sources. Many people and organisations outside cGanga also helped in its preparation, which aided in its comprehensiveness. We are grateful to one and all of them.

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ACRONYMS AND ABBREVIATIONS

cGanga	: Centre for Ganga River Basin Management and Studies
Cumec	: Cubic meter per second
CGWB	: Central Ground Water Board
CWC	: Central Water Commission
DEM	: Digital Elevation Model
ESRI	: Environmental Systems Research Institute
GIS	: Geographic Information System
GRBMP	: Ganga River Basin Management Plan
Km	: Kilometer
LULC	: Land Use/ Land Cover
M	: Meter
mm	: millimeter
NWIC	: National Water Informatics Center
SoI	: Survey of India
Sq. Km	: Square Kilometer
SWAT	: Soil & Water Assessment Tool

INTRODUCTION

Bihar has a total area of 116,469 sq km, which is about 3.54 % of the total area of the country and 13.52% area of the Indian part of the Ganga Basin. Bihar is divided by the river Ganges into two which flows from west to east. During her course in Bihar many tributaries such as Gandak, Budhi Gandak, Kosi, Sone, Punpun, Kiul and Ghaghara, which flow through Bihar, join the river, both from the left as well as from the right.

The Punpun River, a tributary of the Ganges, originates from the hilly area of Palamu district of Jharkhand and traverses through the districts of Chatra, Aurangabad, Gaya, and Patna in the Indian states of Jharkhand and Bihar. This river exhibits significant discharge during monsoons, causing flooding, yet experiences minimal flow during lean periods, leading to challenges in water management within its basin. Many small tributaries flow into the Punpun drainage basin like Morhar, Dardha, Batane, Senane, Panchanva, etc. The boundaries of the Punpun River basin are defined by the North Koel to the south, the Ganga to the north, the Kiul-Harohar-Phalgu to the east, and the Sone to the west.

The present volume is an attempt to map the rich river network of Punpun basin in as fine a detail as possible. Much of the information contained in this River Atlas is created from available earth images with appropriate data and image processing tools and software on the GIS platform. Naturally, there may be shortcomings in some of the maps herein, including missing small streams, which can be expected to be duly refined and included in later versions. In the meanwhile, it is hoped that this Atlas will provide a useful window to the available River resources.

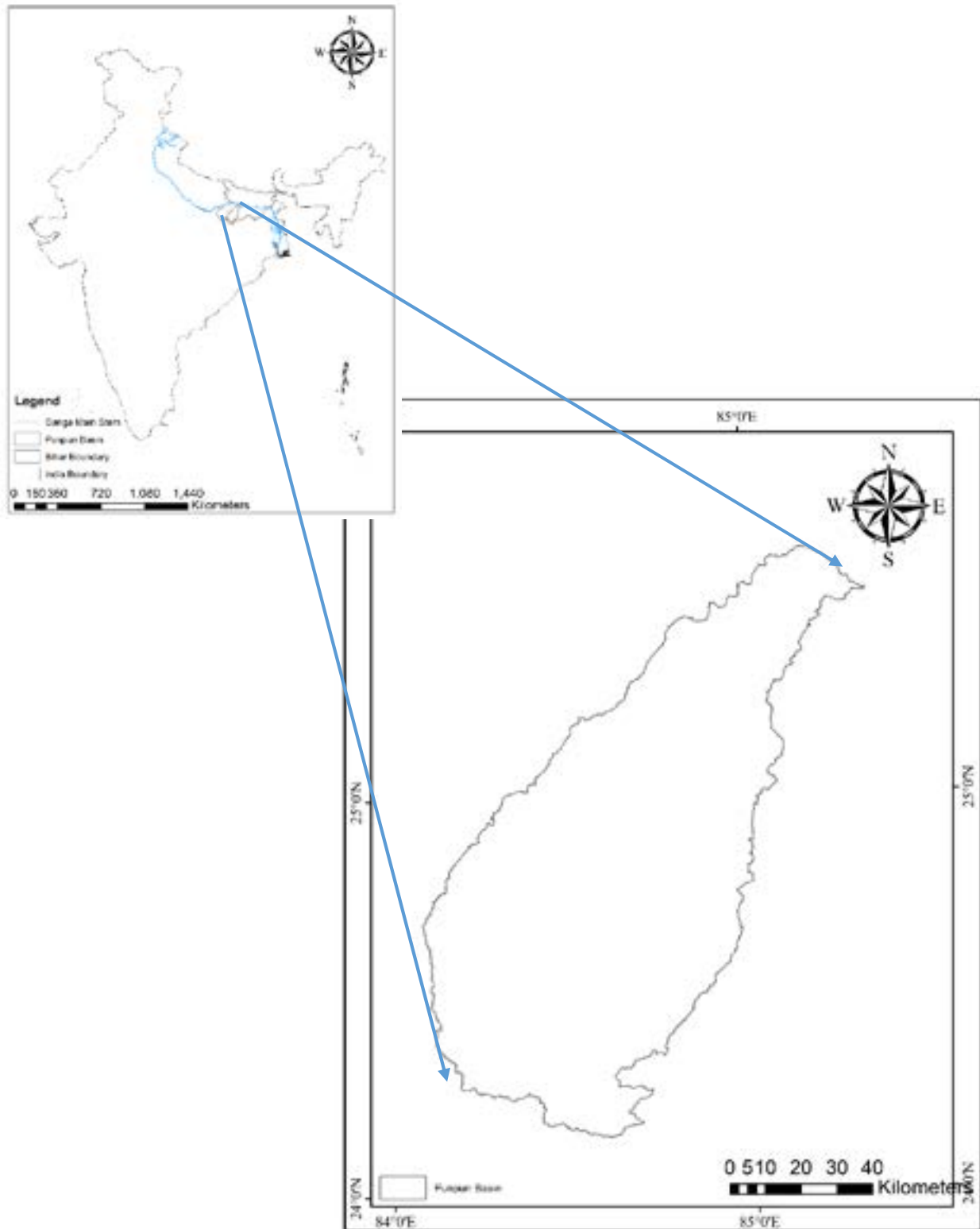


Figure: Location of Punpun Basin

PUNPUN: SALIENT FEATURES

S No	Particulars	Details
1	State Extent	Latitude: 24° 15' & 25° 10' N and Longitude: 84° 03' & 84° 50' E
2	Total Geographical Area (sq. km)	9473
3	Forest Area	--
4	Area contributing to Ganga Basin (sq km)	9473
5	Percentage of the Ganga Basin Area (India)	1.09
6	Districts (Census 2011)	06 (Jharkhand: 02; Bihar: 04)
7	Towns (Census 2011)	(Class I: 05; Class II: 05; Class III: 05; Class IV: ; Class V: ; Class VI:)
8	Total Population (Census 2011)	--
9	% Population in Ganga Basin	--
10	Gram Panchayats	--
11	Census Villages (Census 2011)	4956
12	Average Annual Rainfall (mm)	990 - 1340
13	Average Temperature Range (oC)	5.0 – 44.0
14	Major Rivers	Batane, Dhardha, Adari, Keshar, Surahar, Jamuna
15	Number of Major Basins	04
16	Number of Water Resources Structures	(Dams: 11, Barrages: 04, Weir: 13, Anicuts, Lifts, Power houses)
17	Number of Ground Water Observation wells	Level: 108 Quality: 65

PUNPUN BASIN: RIVERS TRAVERSING THROUGH VARIOUS DISTRICTS

S No	State	District	Area (Sq. Km)	Population (Census 2011)	Growth Rate (%)	Density	Rivers
1	Jhar-khand	Chatra	3,718	10,42,886	28.98	280	Alha, Amiharwa Drain, Belhara Drain, Bhangia, Bhorha Nala, Budar Nala, Chunha Drain, Dardha, Dhardharhi Nadi -Ghari nadi, Dhoi, Doraha, Dulki, Jamua, Kahwaria Amjhar, Kusahi, Labji, Malum Chuwar, Motha Nadi, Padra Nala, Pardoraha-Satwahini Nala, Sukha Drain, Sukhru Drain, Urur.
2		Palamu	5,043	19,39,869	26.17	442	Batane, Batre, Bhurhi Drain, Chhotki, Dardha, Dulki, Harhi, Hulia, Jhonk, Kahwaria Amjhar, Mahulania, Pakwa, Ramrekha, Sukhnadia Drain , Surahar, Tithia, Titra, Urur.
3	Bihar	Arwal	638	7,00,843	19.01	1,098	Ganghar, Mahriya Drain, Nira, Punpun, Sinana, Siroka.
4		Aurangabad	3,305	25,40,073	24.75	769	Adari, Barki Drain, Batane, Batre, Begi, Bhutandah Nala, Bijaru Drain, Burh Drain, Dhunda Drain, Hulia, Jharhi, Jharna Drain, Kanodo, Keshar, Madar, Nira, Punpun, Punpun, Punpun, Ramrekha, Siroka, Tekari.
5		Gaya	4,976	4,391,418	26.43	883	Bindraban Drain, chapardah drain, Chhotki, Chunha Drain, Darauna Drain, Dardha, Dhab, Dhardharhi Nadi -Ghari nadi, Dhoi, Dhunda Drain, Doraha, Dumra Drain , Gobardaha Drain, Harhi,jamuna, Jharna Drain, Jhonk, Keshar, Kusahi, Labji, Madar, Madawar, Morhar, Padra Nala, Pakwa, Rajkel -Barahdahar Drain, Raksi Drain, Ramrekha Drain, Sinana, Sobh Nadi, Sukhru Drain, Surahar, Thari Drain, Tithia, Titra, Urur.
6		Patna	3,202	5,838,465	22.34	1,823	Barmutta Drain, Dardha, Dhobani Drain, Dhoi, Ganghar, Kararwa Drain, Mahriya Drain, Pachanhua Drain, Punpun, Siroka.

PUNPUN BASIN: MAJOR DAMS ON THE RIVER AND HER TRIBUTARIES

S. No	Districts	Name	River	Status	Type	Length (m)	Max ht abv foundation	Year start	Year comp	Total vol (cumec)	Design flood (cumec)	Purpose
1	Chatra	Baksa/ Buksa Dam	Baksa	Completed	Earthen	2667.67	18.78		1982			Irrigation
2	Chatra	Dhulki Dam	Lilajan	Completed	Earthen	1067	16.76		1971			Irrigation
3	Chatra	Garhi Dam	Garhi (Damar)	Under Construction	Earthen	1830	22.33					Irrigation
4	Palamu	Amanat Dam	Amanat	Under Construction	Earthen	869	41					Irrigation
5	Palamu	Batane Dam	Batane	Completed	Earthen	2011.68	24.08		1990			Irrigation
6	Palamu	Batre Dam	Batare	Completed	Earthen	748.48	19.33		1954			Irrigation
7	Palamu	Bhutanduba Dam		Completed	Earthen	365.85	22.56		1985			Irrigation
8	Palamu	Malay Dam	North Koel	Completed	Earthen	1684.15	28.8		1985			Irrigation
9	Palamu	Tahlay Dam	Tahlay	Under Construction	Earthen		15					Irrigation
10	Palamu	Temrain Dam		Completed	Earthen	503.05	12.8		1973			Irrigation

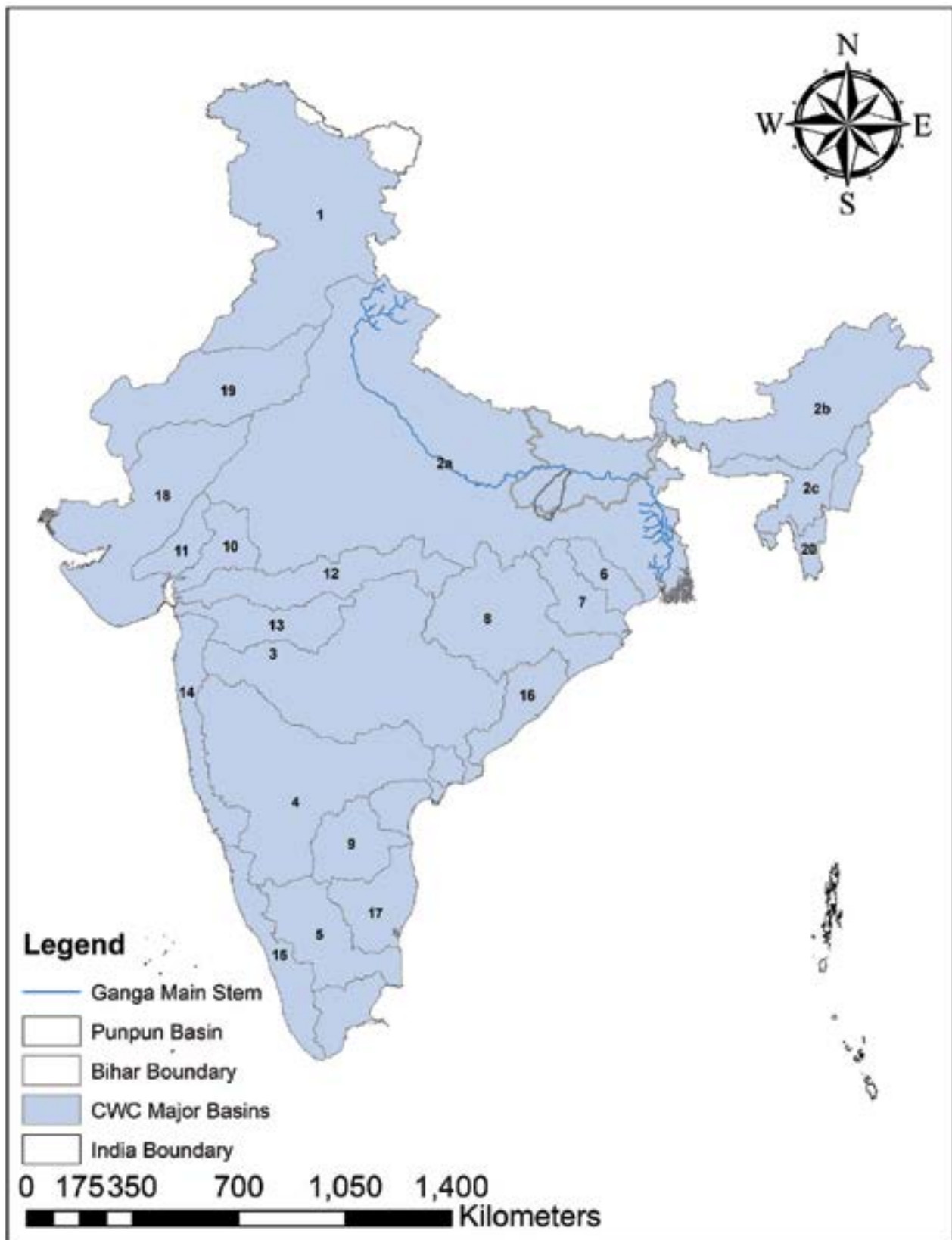
PUNPUN BASIN: MAJOR BARRAGES AND WEIRS ON THE RIVER AND HER TRIBUTARIES

S. No	State	Districts	Name	River	Status	Type	Length (m)	Height upto Crest (m)	Year start	Year comp	Purpose
1	Bihar	Aurangabad	Adri Weir	Adri	Completed	Weir					
2		Aurangabad	Batane Weir	Batane	Completed	Weir					
3		Aurangabad	Dhawa Weir	Dhawa	Completed	Weir					
4		Aurangabad	Punpun Barrage	Punpun	Under construction	Barrage	178			2013	
5		Gaya	Dhadhar Barrage	Dhadhar	Completed	Barrage	138	2.434		2004	
6		Gaya	Gokhula Weir	Gokhula	Completed	Weir				1975	
7		Gaya	Lower Morhar Weir	Morhar	Completed	Weir	289.5609			1962	
8		Gaya	Upper Jamuna / Yamuna Weir	Yamune River	Completed	Weir				1959	
9		Gaya	Upper Morhar Diversion Weir	Morhar	Completed	Weir	195.07			1961	
10	Jharkhand	Palamu	Amanat Barrage		Under construction	Barrage					
11		Palamu	Batane Pick-up Barrage	Batane	Completed	Barrage	95.12				
12		Palamu	Batre Weir	Batre	Completed	Weir	32.004				
13		Palamu	Chordana Weir			Weir					
14		Palamu	Harhi Weir	Harhi	Completed	Weir					
15		Palamu	Jinjoy Weir	Jinjoy	Completed	Weir	60.96				
16		Palamu	Lower Karar-bar Weir	Karar-war	Completed	Weir	25.91				
17		Palamu	Yamuna Weir	Satbahini	Completed	Weir	115.82				
18		Chatra	Chako Weir	Chako	Completed	Weir					
19		Chatra	Lilajan Weir	Lilajan	Completed	Weir				1958	

CWC BASINS

Basin Code	Basin Name
1	Indus (Up to border)
2a	Ganga
2b	Brahmaputra
2c	Barak and others
3	Godavari
4	Krishna
5	Cauvery
6	Subernarekha
7	Brahmani and Baitarni
8	Mahanadi
9	Pennar
10	Mahi
11	Sabarmati
12	Narmada
13	Tapi
14	West flowing s from Tapi to Tadri
15	West flowing s from Tadri to Kanyakumari
16	East flowing s between Mahanadi and Pennar
17	East flowing s between Pennar and Kanyakumari
18	West flowing s of Kutch and Saurashtra including Luni
19	Area of inland drainage in Rajasthan
20	Minors draining into Myanmar (Burma and Bangladesh)

Source: River Basin Atlas of India, Ministry of Water Resources, GoI (October 2012)



PUNPUN BASIN: ADMINISTRATIVE STRUCTURE



District: 07



Tehsil: 23



Block: 60

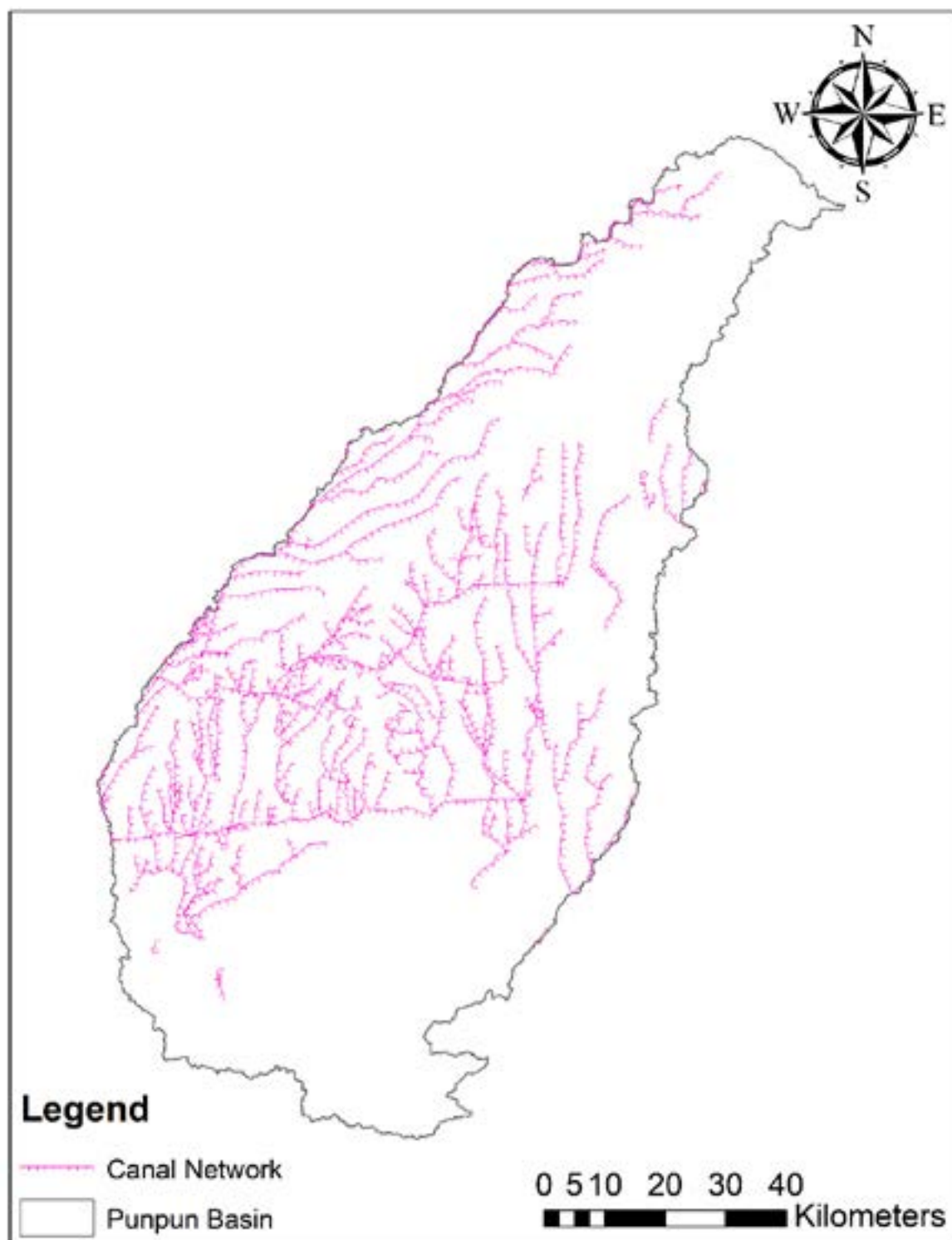


Villages: 4,956

Source: Survey of India

PUNPUN BASIN: CANAL NETWORK

Total Canal Network Length: 2086.93 KM



Source: NWIC

S No	Canal Name	Project Name	Length (km)
1	Batre LBC	Batre Res. Sch.	3.11
2	Chordanda LBC	Chordanda Weir Sch.	2.66
3	Chordanda LBC	Chordanda Weir Sch.	5.23
4	Dulki Left Canal	Dulki Reservoir Scheme	2.00
5	Lilajan Main Canal	Lilajan Major Irrigation Project	19.78
6	Kanak Bigha Main Canal	Kanak Bigha Medium Irrigation Project	8.00
7	Dharawat Main Canel	Uderasthan Major Irrigation Project	16.11
8	Chhariyari Right Bank Canal	Chhariyari Medium Irrigation Project	3.26
9	Chhariyari Left Bank Canal	Chhariyari Medium Irrigation Project	4.79
10	Bagahi Branch Canal	Lilajan Major Irrigation Project	25.41
11	Dariaura Br. Canal	Upper Morhar Major Irrigation Project	9.80
12	Hablbalipur Branch Canal	Uderasthan Major Irrigation Project	2.49
13	Nataul Branch Canal	Uderasthan Major Irrigation Project	10.47
14	Kharanti Distributary	Lilajan Major Irrigation Project	8.30
15	Fatehpur Distributary	Lilajan Major Irrigation Project	14.94
16	Dumra Ismailpur Distributary	Upper Morhar Major Irrigation Project	11.03
17	Sugawan Distributary	Chhariyari Medium Irrigation Project	2.62
18	Chitab Minor	Upper Morhar Major Irrigation Project	3.02
19		Upper Morhar Major Irrigation Project	6.02
20		Upper Morhar Major Irrigation Project	2.50
21		Upper Morhar Major Irrigation Project	2.32
22	Gureri Minor	Upper Morhar Major Irrigation Project	3.82
23	Mai Minor	Upper Morhar Major Irrigation Project	2.17
24	Kastha Minor	Lilajan Major Irrigation Project	7.36
25		Upper Morhar Major Irrigation Project	1.58
26		Upper Morhar Major Irrigation Project	2.46
27		Upper Morhar Major Irrigation Project	2.35
28		Upper Jamuna/Yamuna Medium Irrigation Project	2.94
29	Supai Br. Canal	Upper Morhar Major Irrigation Project	7.22
30	Upper Morhar Main Canal	Upper Morhar Major Irrigation Project	38.04
31	Budhpur Br. Canal	Upper Morhar Major Irrigation Project	24.49
32	Arthua Distributary	Upper Morhar Major Irrigation Project	7.27

S No	Canal Name	Project Name	Length (km)
33	Karmauni Branch Canal	Lilajan Major Irrigation Project	8.95
34	Upper Jamuna Main Canal	Upper Jamuna/Yamuna Medium Irrigation Project	26.65
35	Amra Distributary	Sone Canals Major Irrigation Project	7.99
36	Imamganj Distributary	Sone Canals Major Irrigation Project	22.87
37	Mali Distributary	Sone Canals Major Irrigation Project	37.35
38	Kochahaa Distributary	Sone Canals Major Irrigation Project	43.08
39	Saidapur Distributary	Sone Canals Major Irrigation Project	12.70
40	Nagwan Sub-Distributary	Sone Canals Major Irrigation Project	9.22
41	Murka Distributary	Sone Canals Major Irrigation Project	28.21
42	Aiyara Distributary	Sone Canals Major Irrigation Project	10.63
43	Nira Left Canal	Sone High Level Canal Major Irrigation Project	9.14
44	Bhagwatipur Minor	Sone High Level Canal Major Irrigation Project	20.81
45	Amarpur Minor	Sone High Level Canal Major Irrigation Project	3.65
46	Salempur Minor	Sone High Level Canal Major Irrigation Project	2.56
47	Deohara Distributary	Sone Canals Major Irrigation Project	7.12
48	Rampur Sub-Distributary	Sone Canals Major Irrigation Project	4.21
49	Maner Distributary	Sone Canals Major Irrigation Project	8.65
50	Paliganj Distributary	Sone Canals Major Irrigation Project	26.19
51	Adampur Sub- Distributary	Sone Canals Major Irrigation Project	11.15
52	Jabarpur Minor	Sone Canals Major Irrigation Project	6.57
53	Tegraila Subdistributary	Sone Canals Major Irrigation Project	4.57
54	Khajuri Distributary	Sone Canals Major Irrigation Project	5.76
55	Fatehpur Distributary	Sone Canals Major Irrigation Project	16.07
56	Manjhauri Distributary	Sone Canals Major Irrigation Project	0.07
57	Chandhaus Sub- Distributary	Sone Canals Major Irrigation Project	7.15
58	Bharatpura Sub- Distributary	Sone Canals Major Irrigation Project	5.47
59	Kurkuri Distributary	Sone Canals Major Irrigation Project	13.50
60	NIRA RIGHT CANAL	Sone High Level Canal Major Irrigation Project	16.23
61	Neera Branch Canal	Lower Morhar Major Irrigation Project	24.62
62	SINANE MAIN CANAL	Sone High Level Canal Major Irrigation Project	9.31
63	Nizampur Distributary	Sone High Level Canal Major Irrigation Project	2.19
64		Sone High Level Canal Major Irrigation Project	1.03

S No	Canal Name	Project Name	Length (km)
65	Chrtaukhar Distributary	Sone High Level Canal Major Irrigation Project	5.69
66		Sone High Level Canal Major Irrigation Project	1.07
67	Eastern Sone High Level Canal	Sone High Level Canal Major Irrigation Project	80.17
68	Jagatpur Minor	Sone High Level Canal Major Irrigation Project	5.23
69		Sone High Level Canal Major Irrigation Project	2.51
70	Manora Distributary	Sone Canals Major Irrigation Project	20.30
71	Tilodana Distributary	Sone Canals Major Irrigation Project	4.83
72	Chanda Distributary	Sone Canals Major Irrigation Project	17.09
73	Chapra Sub-Distributary	Sone High Level Canal Major Irrigation Project	10.12
74	Sonbarse Distributary	Sone High Level Canal Major Irrigation Project	14.53
75	BelMinor	Sone High Level Canal Major Irrigation Project	3.08
76	Rampur Sub-Distributary	Sone High Level Canal Major Irrigation Project	7.86
77	Mahthu Sub-Distributary	Sone High Level Canal Major Irrigation Project	6.54
78	Goysiya Minor	Sone High Level Canal Major Irrigation Project	4.54
79		Sone High Level Canal Major Irrigation Project	2.61
80	Gopalpur Minor	Sone High Level Canal Major Irrigation Project	2.63
81		Sone High Level Canal Major Irrigation Project	2.35
82	Abdul Minor	Sone High Level Canal Major Irrigation Project	3.07
83	Rukhua Minor	Sone High Level Canal Major Irrigation Project	5.02
84		Sone High Level Canal Major Irrigation Project	1.56
85	Jamhor	Sone High Level Canal Major Irrigation Project	4.32
86	Pirauta Minor	Sone High Level Canal Major Irrigation Project	3.35
87	Phesar Minor	Sone High Level Canal Major Irrigation Project	4.26
88	Bans Minor	Sone High Level Canal Major Irrigation Project	5.64
89	Jujharpur Distributary	Sone High Level Canal Major Irrigation Project	6.57
90	Dular Chak Distributary	Sone High Level Canal Major Irrigation Project	7.95
91	Lata Minor	Sone High Level Canal Major Irrigation Project	4.08
92		Sone High Level Canal Major Irrigation Project	1.11
93		Sone High Level Canal Major Irrigation Project	1.91
94	Lower Morhar Main Canal	Lower Morhar Major Irrigation Project	37.58
95	Dariyapur Distributary	Sone Canals Major Irrigation Project	10.33
96		Sone High Level Canal Major Irrigation Project	2.22
97		Sone High Level Canal Major Irrigation Project	2.89

S No	Canal Name	Project Name	Length (km)
98	Tuturkhi Distributary	Sone Canals Major Irrigation Project	12.70
99	Eastern Link Canal		12.98
100			0.02
101	Patna Canal	Sone Canals Major Irrigation Project	92.80
102	Dorwan Minor	Sone Canals Major Irrigation Project	7.42
103	Rewa Distributary	Sone Canals Major Irrigation Project	0.08
104	Escape Channel	Sone Canals Major Irrigation Project	4.91
105	Nawner Sub-Distributary	Sone Canals Major Irrigation Project	11.49
106		Sone Canals Major Irrigation Project	0.22
107	Janpur Minor	Sone Canals Major Irrigation Project	3.23
108		Sone Canals Major Irrigation Project	3.01
109		Sone Canals Major Irrigation Project	2.57
110	Chura	Sone Canals Major Irrigation Project	3.39
111	Bhalua	Sone Canals Major Irrigation Project	2.56
112	Dhanauti Minor	Sone Canals Major Irrigation Project	2.34
113	Narayanpur Sub-Distributary	Sone High Level Canal Major Irrigation Project	24.13
114	Semra Sub-Distributary	Sone High Level Canal Major Irrigation Project	16.26
115	Mirjapur Minor	Sone High Level Canal Major Irrigation Project	6.31
116	Dosma Minor	Sone High Level Canal Major Irrigation Project	4.78
117	Biseni Minor	Sone High Level Canal Major Irrigation Project	3.18
118	Kutkuri Minor	Sone High Level Canal Major Irrigation Project	2.69
119	Bihta Minor	Sone High Level Canal Major Irrigation Project	2.43
120	Chapuk Minor	Sone High Level Canal Major Irrigation Project	5.01
121		Sone High Level Canal Major Irrigation Project	1.83
122	Mirpur Minor	Sone High Level Canal Major Irrigation Project	5.91
123		Sone High Level Canal Major Irrigation Project	3.14
124	Lodhipur Minor	Sone High Level Canal Major Irrigation Project	11.46
125	Faridpur Distributary	Sone High Level Canal Major Irrigation Project	23.36
126	Panti Minor	Batane Major Irrigation Project_Bihar	3.43
127		Batane Major Irrigation Project_Bihar	2.09
128	Batane Right Main Canal	Batane Major Irrigation Project_Bihar	16.23
129	Bhulaury Distributary	Batane Major Irrigation Project_Bihar	8.94
130	Dhibra Distributary	Batane Major Irrigation Project_Bihar	6.60

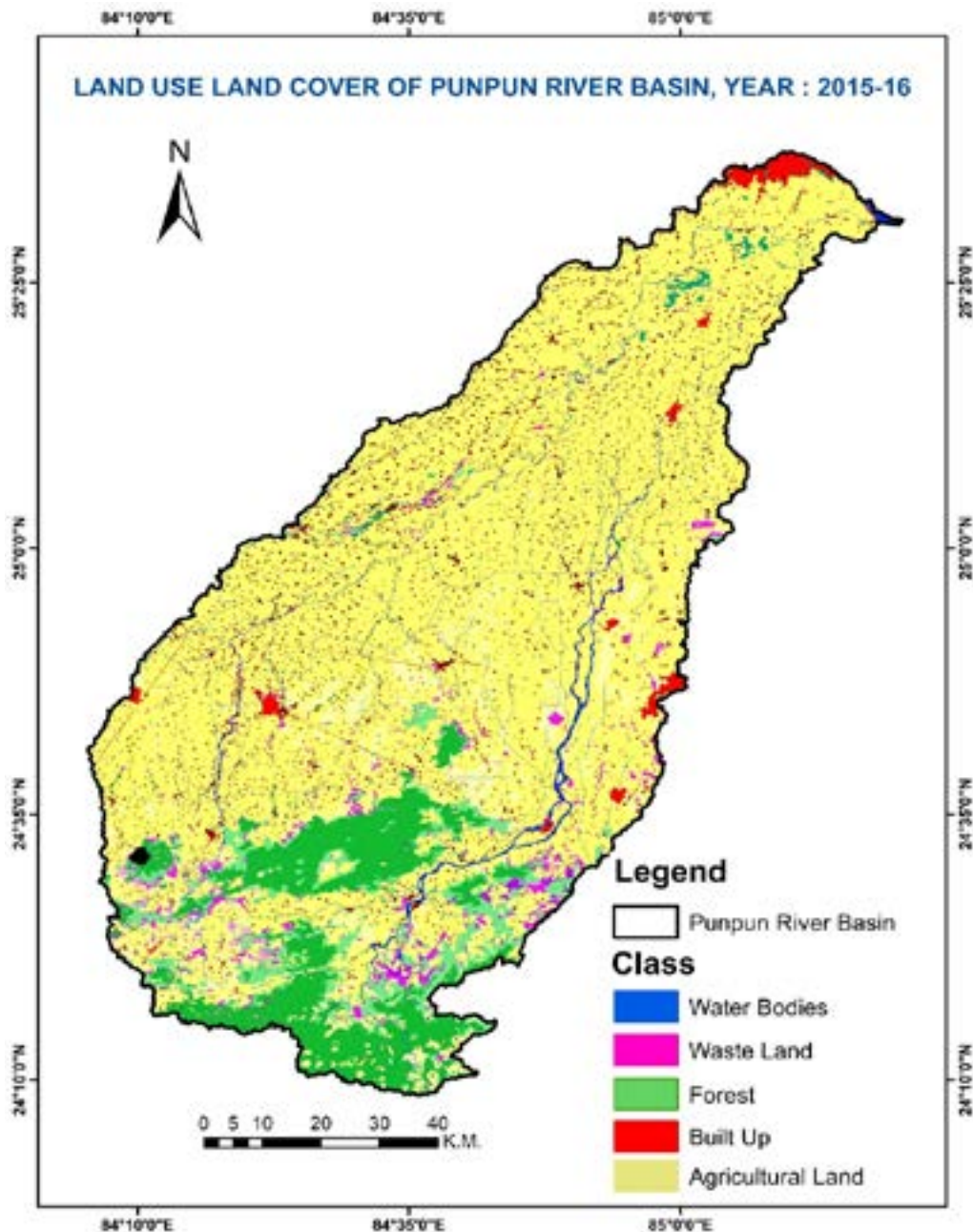
S No	Canal Name	Project Name	Length (km)
131	Hirasarai Distributary	Batane Major Irrigation Project_Bihar	5.36
132	Batane Left Main Canal	Batane Major Irrigation Project_Bihar	18.50
133		Batane Major Irrigation Project_Jharkhand	0.86
134	Dhab Distributary	Batane Major Irrigation Project_Jharkhand	11.78
135	Laubar Minor	Batane Major Irrigation Project_Bihar	5.09
136	Surna Minor	Batane Major Irrigation Project_Bihar	1.92
137	Lavara Minor	Batane Major Irrigation Project_Bihar	3.26
138	Batane main canal	Batane Canal Medium Irrigation Project	19.15
139		Batane Canal Medium Irrigation Project	4.31
140			3.00
141		Batane Canal Medium Irrigation Project	7.45
142		Batane Canal Medium Irrigation Project	4.39
143		Batane Canal Medium Irrigation Project	1.35
144	Batane canal		14.88
145	Shiv Nagar Sub-Distributry	Lower Morhar Major Irrigation Project	6.45
146	Salempur Sub Distributry	Lower Morhar Major Irrigation Project	3.38
147		Lower Morhar Major Irrigation Project	0.68
148		Adri Canal Medium Irrigation Project	1.69
149	Adri Main Canal	Adri Canal Medium Irrigation Project	7.05
150	Dhuwa Right Bank Canal	Dhuwa /Dhawa Medium Project	16.06
151	Anti minor	Dhuwa /Dhawa Medium Project	7.54
152	Dhuwa Left Bank Canal	Dhuwa /Dhawa Medium Project	12.56
153	Batane Right Main Canal	Batane Major Irrigation Project_Jharkhand	14.30
154	Batane Left Main Canal	Batane Major Irrigation Project_Jharkhand	6.56
155	Angara Branch Disty	North Koel Reservoir Scheme	34.64
156	Chain Nawada Disty	North Koel Reservoir Scheme	33.71
157	Pranpur MR	North Koel Reservoir Scheme	3.09
158	Mahuwa Sub Disty	North Koel Reservoir Scheme	7.08
159	Sondih III Sub Disty	North Koel Reservoir Scheme	10.30
160	Bara MR	North Koel Reservoir Scheme	1.27
161	Sondih II Sub Disty	North Koel Reservoir Scheme	5.04
162	Kusha MR	North Koel Reservoir Scheme	5.85
163	Bishunpur Sub Disty	North Koel Reservoir Scheme	11.36

S No	Canal Name	Project Name	Length (km)
164	Kulharia Sub Disty	North Koel Reservoir Scheme	12.39
165	Madhaury Sub Disty	North Koel Reservoir Scheme	19.36
166	Basdiha Disty	North Koel Reservoir Scheme	23.18
167	Mirzapur MR	North Koel Reservoir Scheme	3.84
168	Chapri MR	North Koel Reservoir Scheme	2.39
169	Tetaria MR	North Koel Reservoir Scheme	2.79
170	Mali MR	North Koel Reservoir Scheme	3.92
171	Chatara Sub Disty	North Koel Reservoir Scheme	5.67
172	Hetampur Disty	North Koel Reservoir Scheme	15.73
173	Yari MR	North Koel Reservoir Scheme	4.14
174	Bahuwara MR	North Koel Reservoir Scheme	2.84
175	Narchi MR	North Koel Reservoir Scheme	2.61
176	Deo MR	North Koel Reservoir Scheme	3.08
177	Rasalpur-I MR	North Koel Reservoir Scheme	2.31
178	Kataiya MR	North Koel Reservoir Scheme	3.01
179	Ratanpur MR	North Koel Reservoir Scheme	3.74
180	Karma Basantpur MR	North Koel Reservoir Scheme	6.00
181	Amba MR	North Koel Reservoir Scheme	3.39
182	Pritumpura Sub Disty	North Koel Reservoir Scheme	14.09
183		North Koel Reservoir Scheme	3.14
184	Dabura MR-I	North Koel Reservoir Scheme	5.58
185	Riur Branch Canal	North Koel Reservoir Scheme	23.98
186		North Koel Reservoir Scheme	0.72
187	Rasalpur-II MR	North Koel Reservoir Scheme	6.83
188	Sondih I Sub Disty	North Koel Reservoir Scheme	6.89
189		North Koel Reservoir Scheme	10.93
190		North Koel Reservoir Scheme	12.18
191		North Koel Reservoir Scheme	1.41
192	Akauna MR	North Koel Reservoir Scheme	9.18
193	Kapasias Disty	North Koel Reservoir Scheme	14.94
194		North Koel Reservoir Scheme	1.80
195	Simra MR	North Koel Reservoir Scheme	3.66
196	Gajaroa MR	North Koel Reservoir Scheme	6.03

S No	Canal Name	Project Name	Length (km)
197	Shankarpur MR	North Koel Reservoir Scheme	4.29
198	Khaira MR	North Koel Reservoir Scheme	8.08
199	Bhumbhi MR	North Koel Reservoir Scheme	5.80
200	Itma MR	North Koel Reservoir Scheme	7.03
201	Bariawa MR	North Koel Reservoir Scheme	4.75
202	Sattar MR	North Koel Reservoir Scheme	1.73
203	Barki Parhi MR	North Koel Reservoir Scheme	2.67
204		North Koel Reservoir Scheme	5.12
205	Kotwara Disty	North Koel Reservoir Scheme	29.09
206	Dhamani MR	North Koel Reservoir Scheme	5.24
207	Sahokarma MR	North Koel Reservoir Scheme	4.38
208	Kotwara Disty	North Koel Reservoir Scheme	2.94
209	Dobur MR	North Koel Reservoir Scheme	1.96
210	Dharampur Sub Disty	North Koel Reservoir Scheme	9.44
211	Patoie Sub Disty	North Koel Reservoir Scheme	15.72
212	Rampur MR	North Koel Reservoir Scheme	2.90
213	Marhuka MR	North Koel Reservoir Scheme	3.69
214	Batre Main Canal	Batre Weir Scheme	2.00
215	Batre Main Canal	Batre Weir Scheme	4.25
216	North Koel Main Canal	North Koel Reservoir Scheme	70.88
217		Sone Canals Major Irrigation Project	0.17
218		Sone Canals Major Irrigation Project	1.75
219		Sone Canals Major Irrigation Project	0.68
220		Sone Canals Major Irrigation Project	0.04
221	Dhana Channel	Sone Canals Major Irrigation Project	0.25
222		Sone Canals Major Irrigation Project	1.53
223	Usas M	Sone High Level Canal Major Irrigation Project	3.01
224	Balaura M	Sone High Level Canal Major Irrigation Project	4.74
225		Sone High Level Canal Major Irrigation Project	2.84
226		Sone High Level Canal Major Irrigation Project	0.80

S No	Canal Name	Project Name	Length (km)
227	Mohiuddinpur Minor	Sone High Level Canal Major Irrigation Project	3.64
228		Sone High Level Canal Major Irrigation Project	1.90
229		Sone High Level Canal Major Irrigation Project	1.50
230			4.66
231		Sone High Level Canal Major Irrigation Project	1.00
232	Surkhi SD	Sone High Level Canal Major Irrigation Project	8.83
233		Sone High Level Canal Major Irrigation Project	1.32
234		Sone High Level Canal Major Irrigation Project	1.86
235		Sone High Level Canal Major Irrigation Project	1.47
236		Sone High Level Canal Major Irrigation Project	1.10
237		Sone High Level Canal Major Irrigation Project	1.49
238		Sone High Level Canal Major Irrigation Project	1.06
239	Mankhar Minor	Sone High Level Canal Major Irrigation Project	1.08
240	Kanna M	Sone High Level Canal Major Irrigation Project	2.03
241		Sone High Level Canal Major Irrigation Project	1.37
242	Pauthu M	Sone High Level Canal Major Irrigation Project	4.19
243		Sone High Level Canal Major Irrigation Project	2.18
244		Sone High Level Canal Major Irrigation Project	2.15
245	Escape	Batane Canal Medium Irrigation Project	1.20
246	Choraha M	Batane Canal Medium Irrigation Project	4.43
247		Batane Major Irrigation Project_Jharkhand	12.80
248		Batane Major Irrigation Project_Jharkhand	4.83
249		Batane Major Irrigation Project_Jharkhand	1.69
250		Batane Major Irrigation Project_Jharkhand	2.00

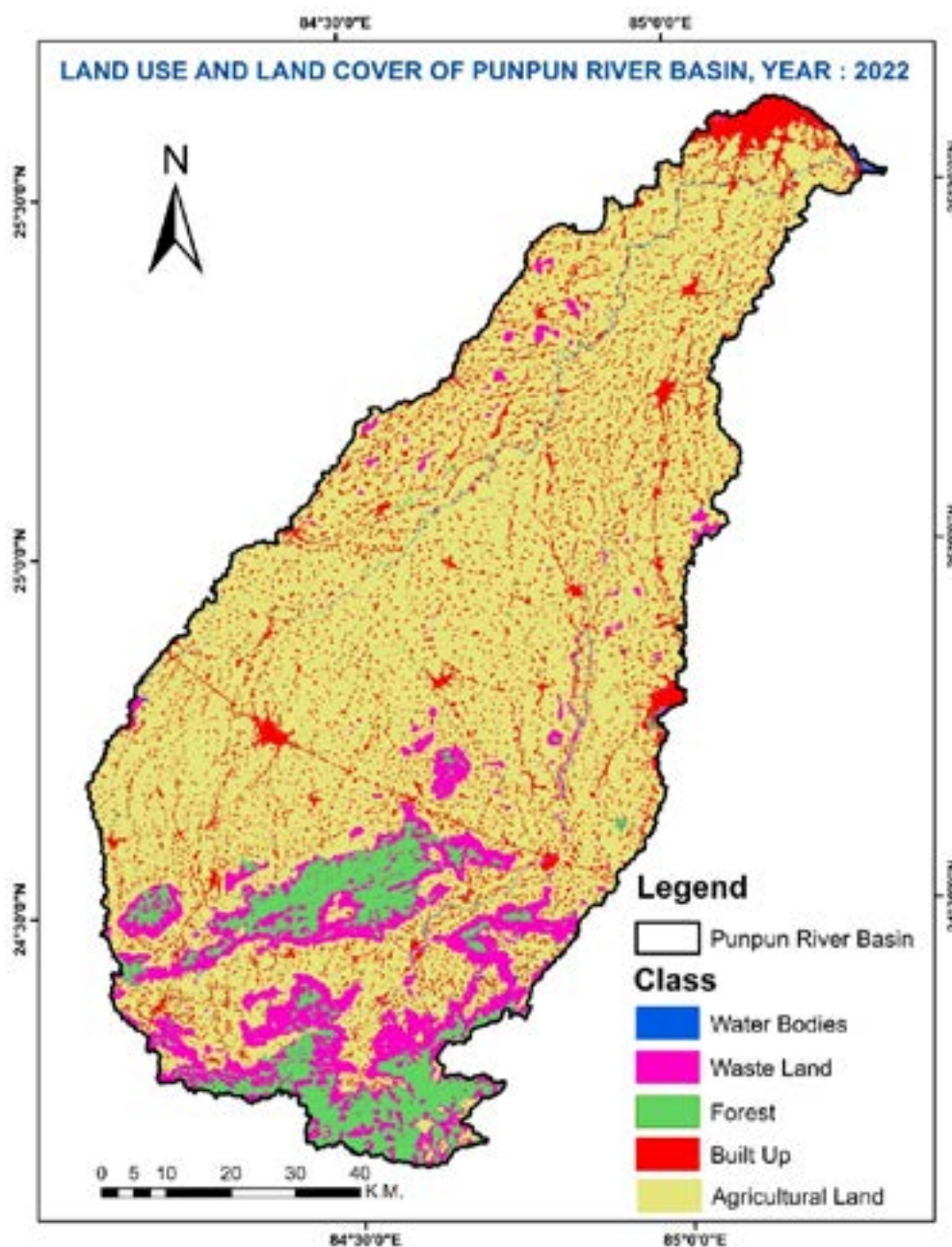
PUNPUN BASIN: LAND USE LAND COVER [1:50K]



Imagery: Multi-temporal satellite data of 2015-16 from Resourcesat-2 LISS III, Year: 2015 -16
 Accuracy: Overall accuracy of different LULC classes vary from 79% (like Agro-horticulture) to 97% (like waterbodies).

Source: NRSC BHUVAN

PUNPUN BASIN: LAND USE LAND COVER [SENTINEL-2]



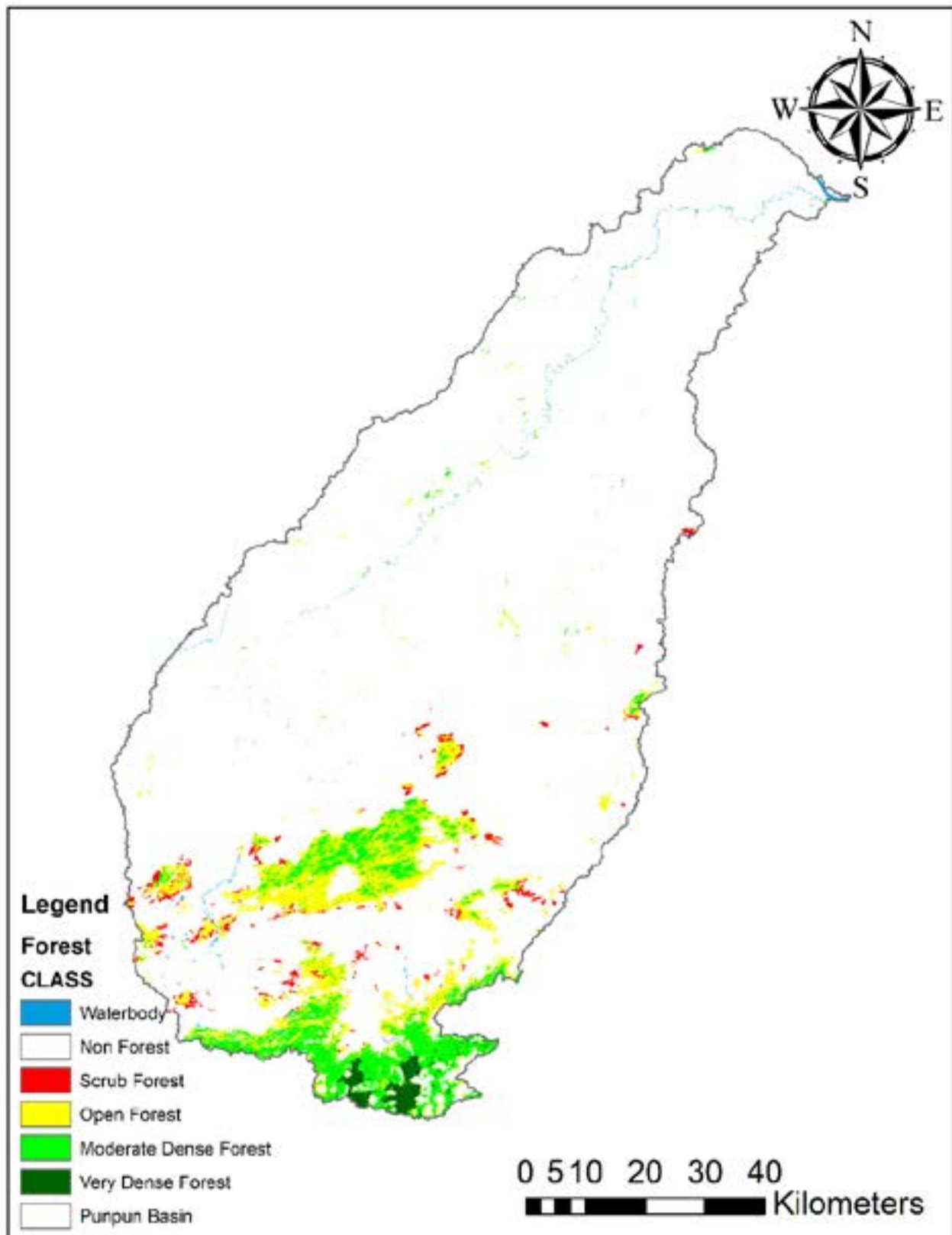
Imagery: Sentinel-2

Year: 2021

Accuracy: 85.96%

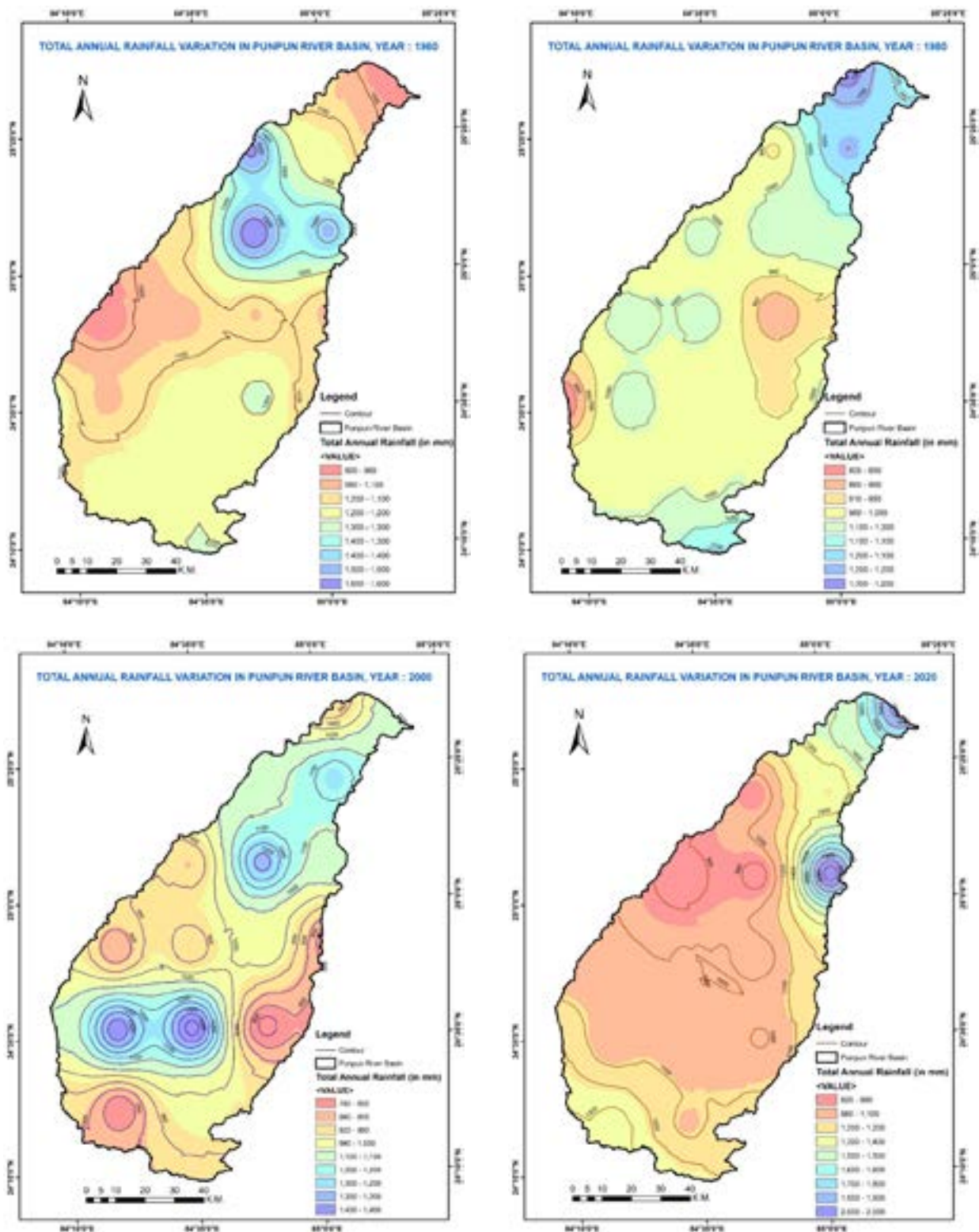
Source: ESRI

PUNPUN BASIN: FOREST COVER



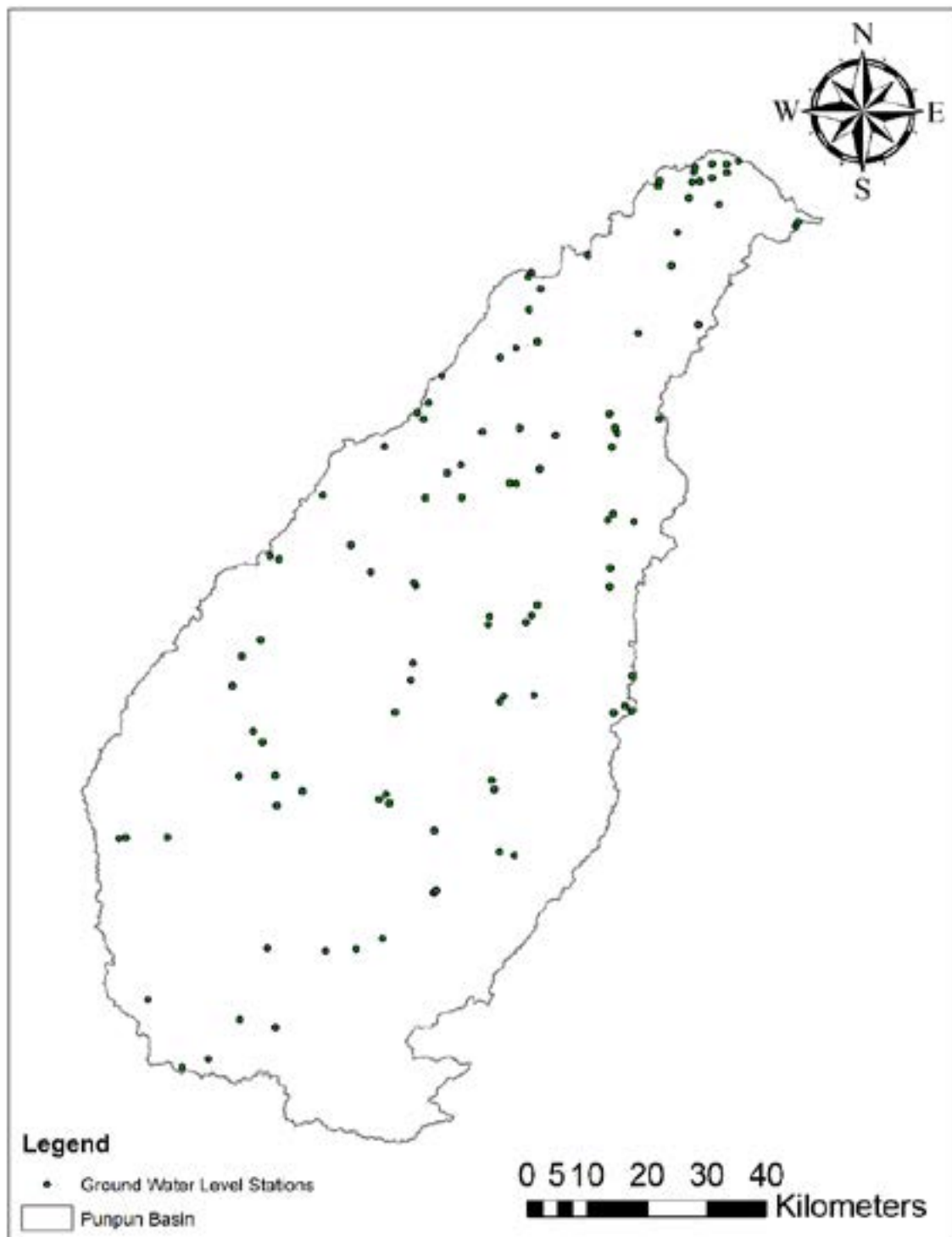
Source: Forest Survey of India, 2019

PUNPUN BASIN: ANNUAL RAINFALL [1960 – 2020]

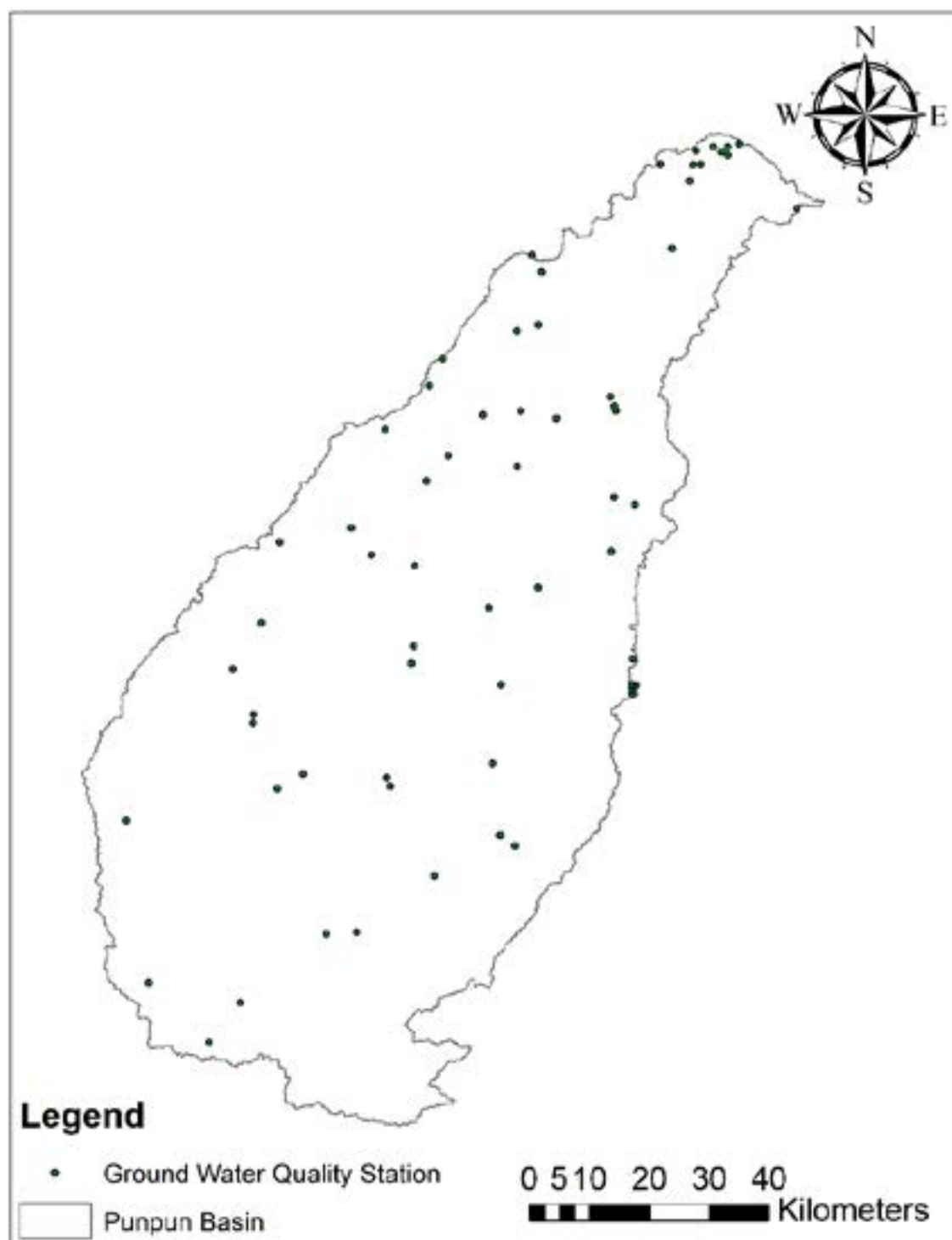


Source: IMD

PUNPUN BASIN: GROUND WATER LEVEL AND QUALITY STATION

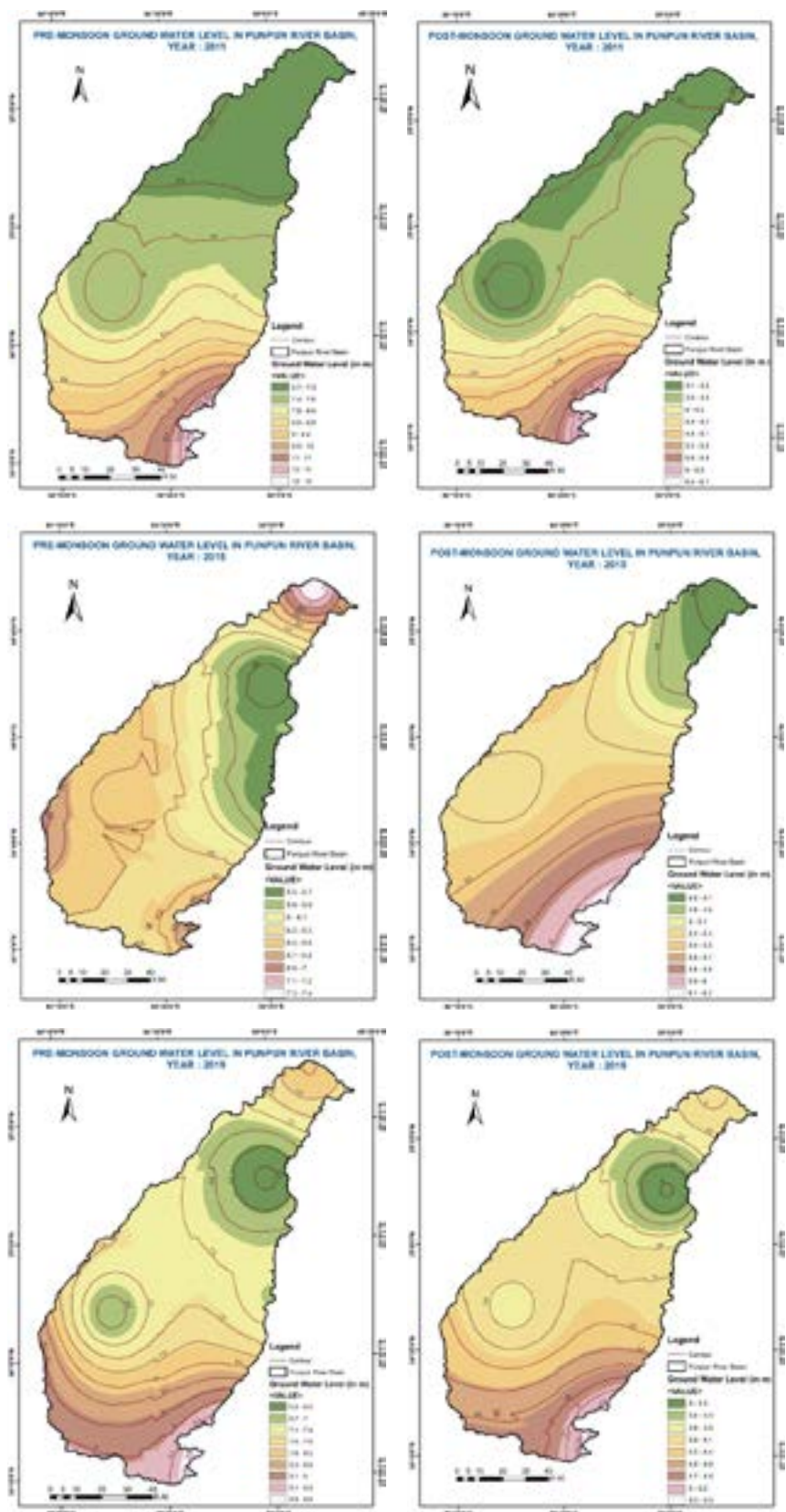


Source: CGWB

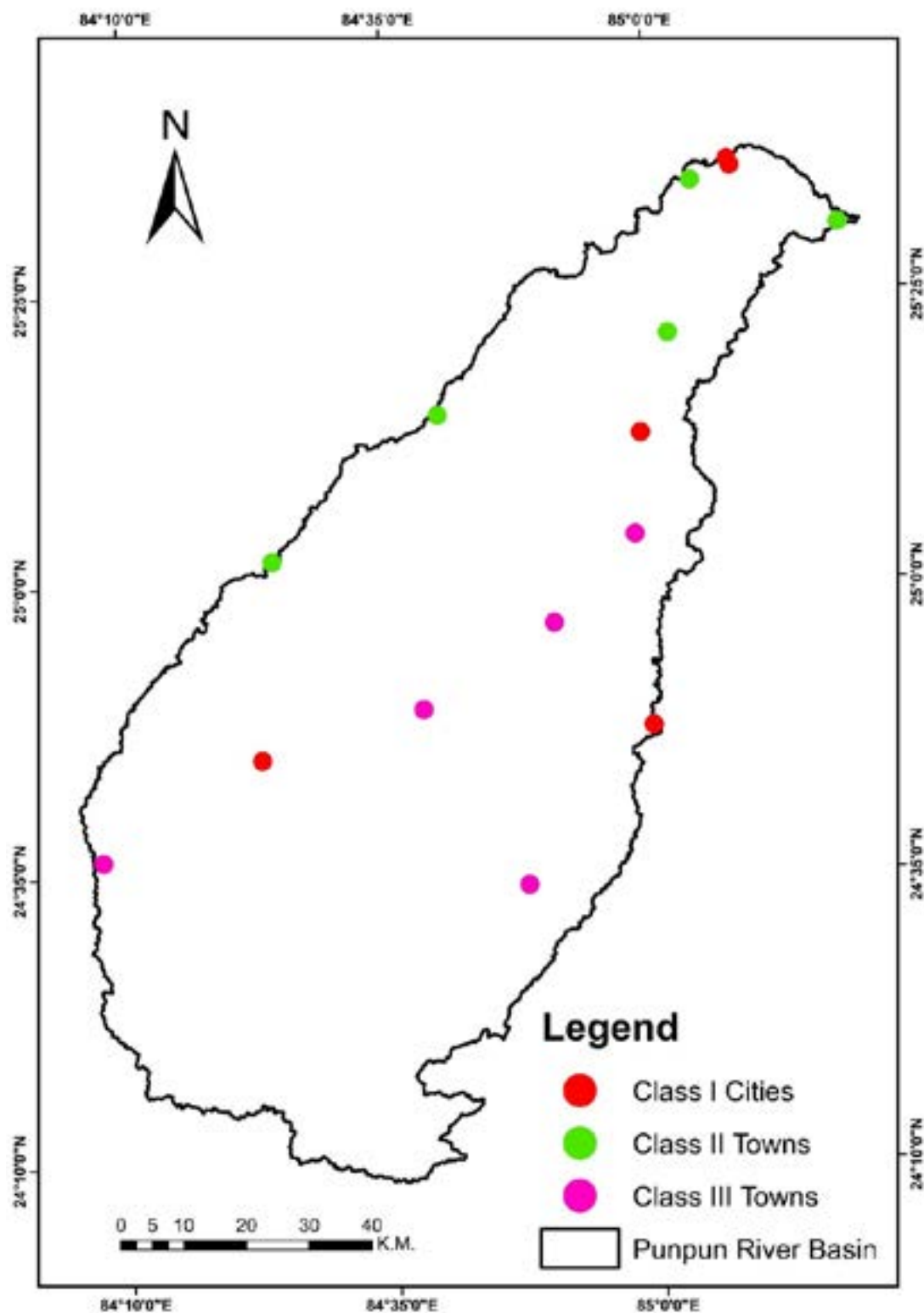


Source: CGWB

PUNPUN BASIN: GROUND WATER LEVELS



PUNPUN BASIN: CLASS I, II AND III CITIES



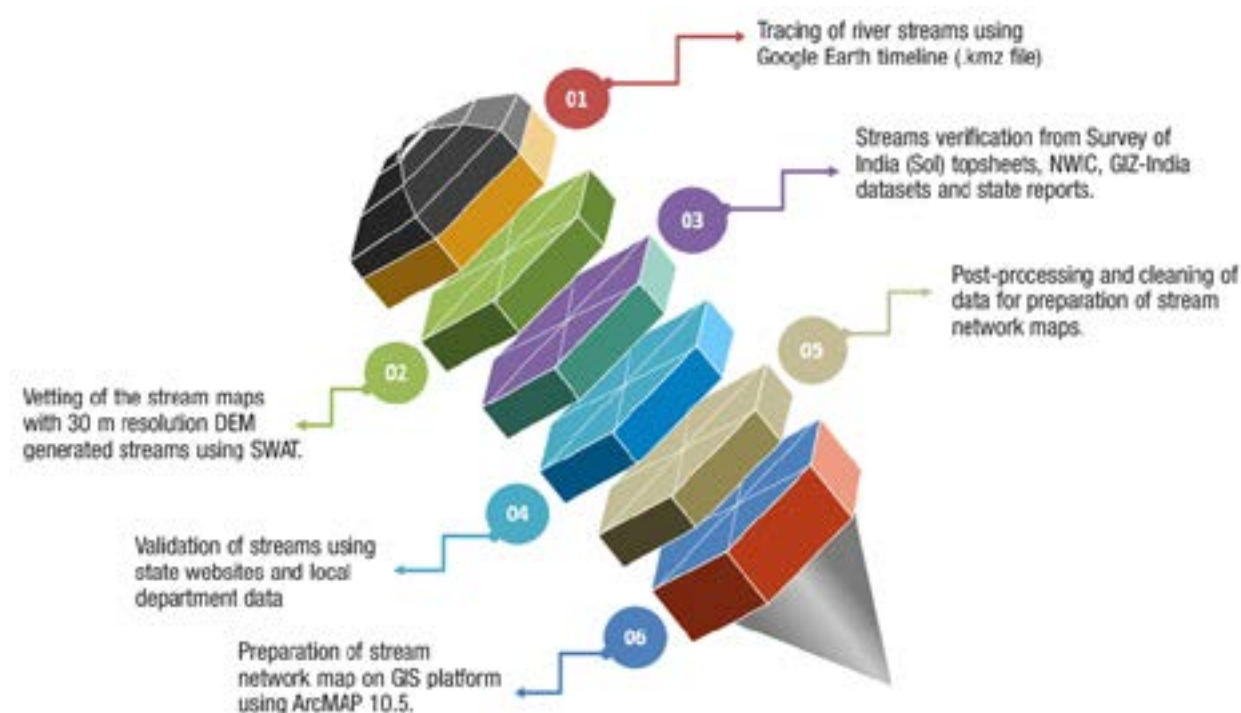
05 Class I cities,
 05 Class II and 05 Class III towns.
 Source: Census 2011





RIVER NETWORK PREPARATION METHODOLOGY

The method adopted, in brief, to obtain the river network are stepwise as follows:

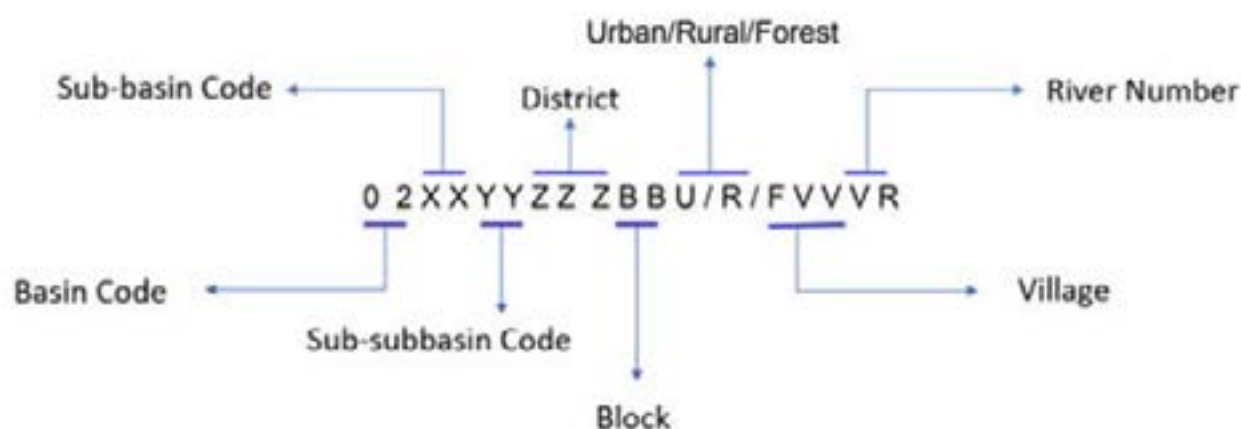


- Streams less than 2.5 km and coming from local agriculture land is not covered.
- All streams covered which are coming from populated area (Urban or Rural) even if they are less than 1 km. (if it is visible).

Disclaimer: The accuracies of the maps generated by the above method are subject to the limitations of the data processing tools and software used for the particular geographical regions as represented in Google Earth images, and are subject to future refinement.

RIVER CODIFICATION SYSTEM

In the present Atlas alphanumeric characters are used for coding the river systems. A combination of natural and administrative boundaries is used to assign a code to each river. Each sub-step in the codification system is assigned a digit that indicates the length of the code up to that point, and the total length of the code is 16 digits.



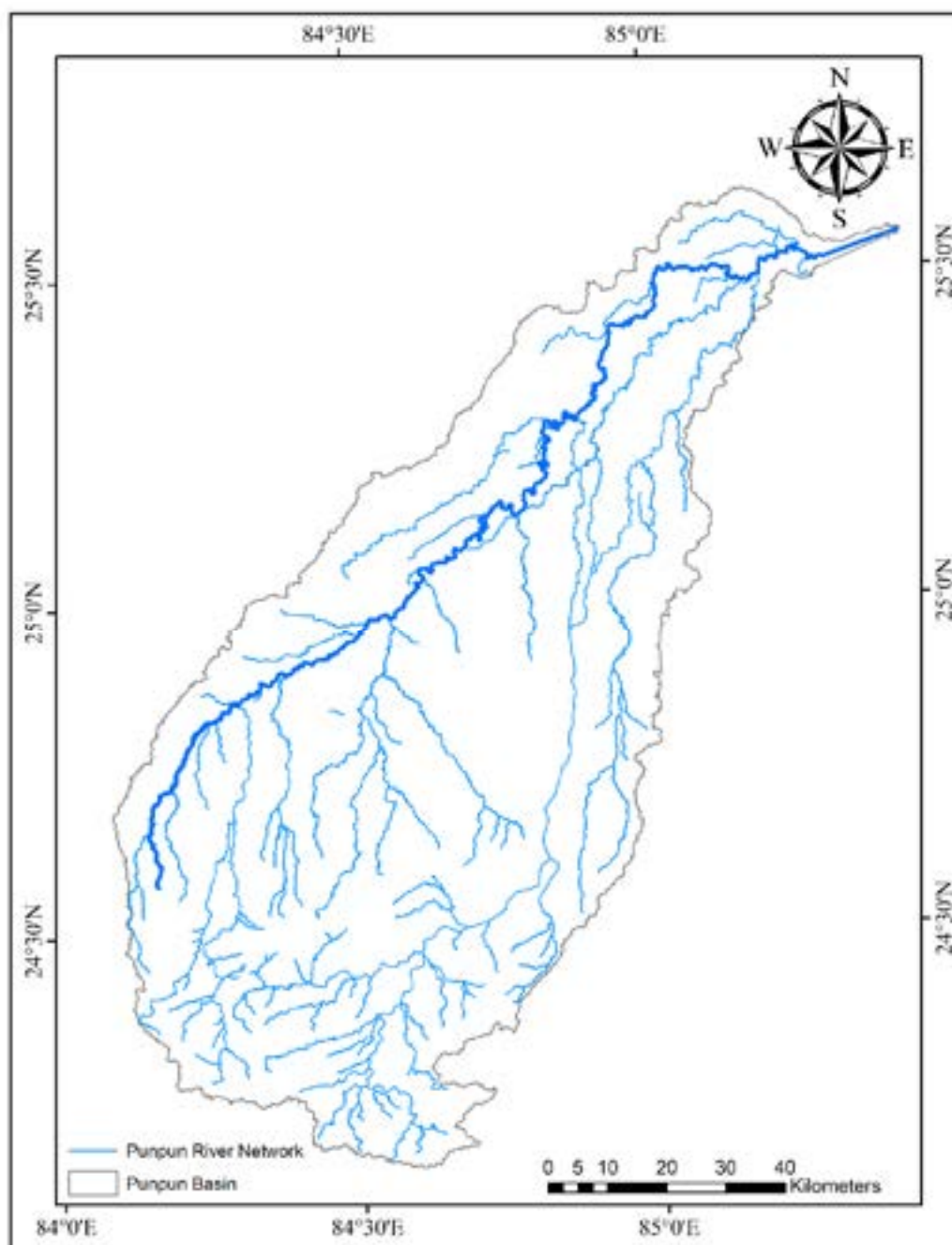
The first two digits represent the code for the major basin, according to the code system proposed by the Central Water Commission (CWC), Government of India. The following four digits indicate the sub-basins and sub-subbasins, in the order of the rivers. The district code is represented by the next three digits and is based on the 2011 census data. The administrative boundaries will be determined based on the source of the river. The next two digits represent the block code, which is taken from the district website and uses the same serial numbering system. The next character, 'U', 'R' or 'F' indicates whether the river is located in an urban, rural or forest area. The next three digits represent the code for the village, based on census data from 2011, and uses the same serial numbering system as provided on the census data but the number will be given based on block. The final digit indicates the number of the river that originates from the specific administrative boundary.

PUNPUN BASIN AND ITS RIVER NETWORK

Area: 9472.66 Sq. Km

Number of Rivers - 114

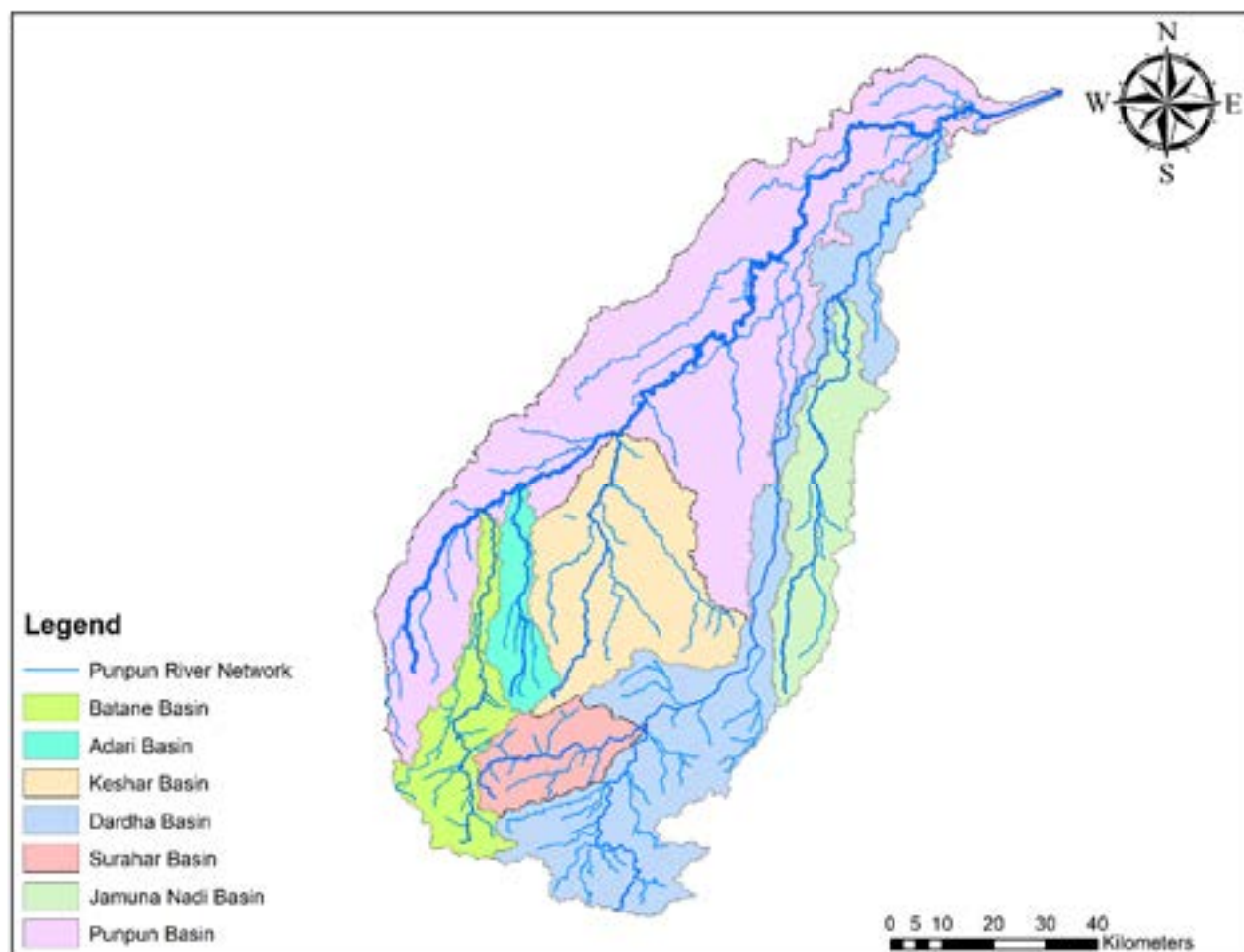
River Network – 2544.34 Km



PUNPUN BASIN: MAJOR SUB-BASINS

Major sub-basins of Punpun River are as follows:

- | | | |
|-----------------|-----------------|----------------|
| ■ Batane Basin | ■ Adari Basin | ■ Keshar Basin |
| ■ Dhardha Basin | ■ Surahar Basin | ■ Jamuna Basin |



PUNPUN BASIN AND ITS RIVER NETWORK

Punpun River UID Code:

Basin Area: 9472.66 Sq. Km

Number of Rivers: 114

River Network: 2544.34 Km

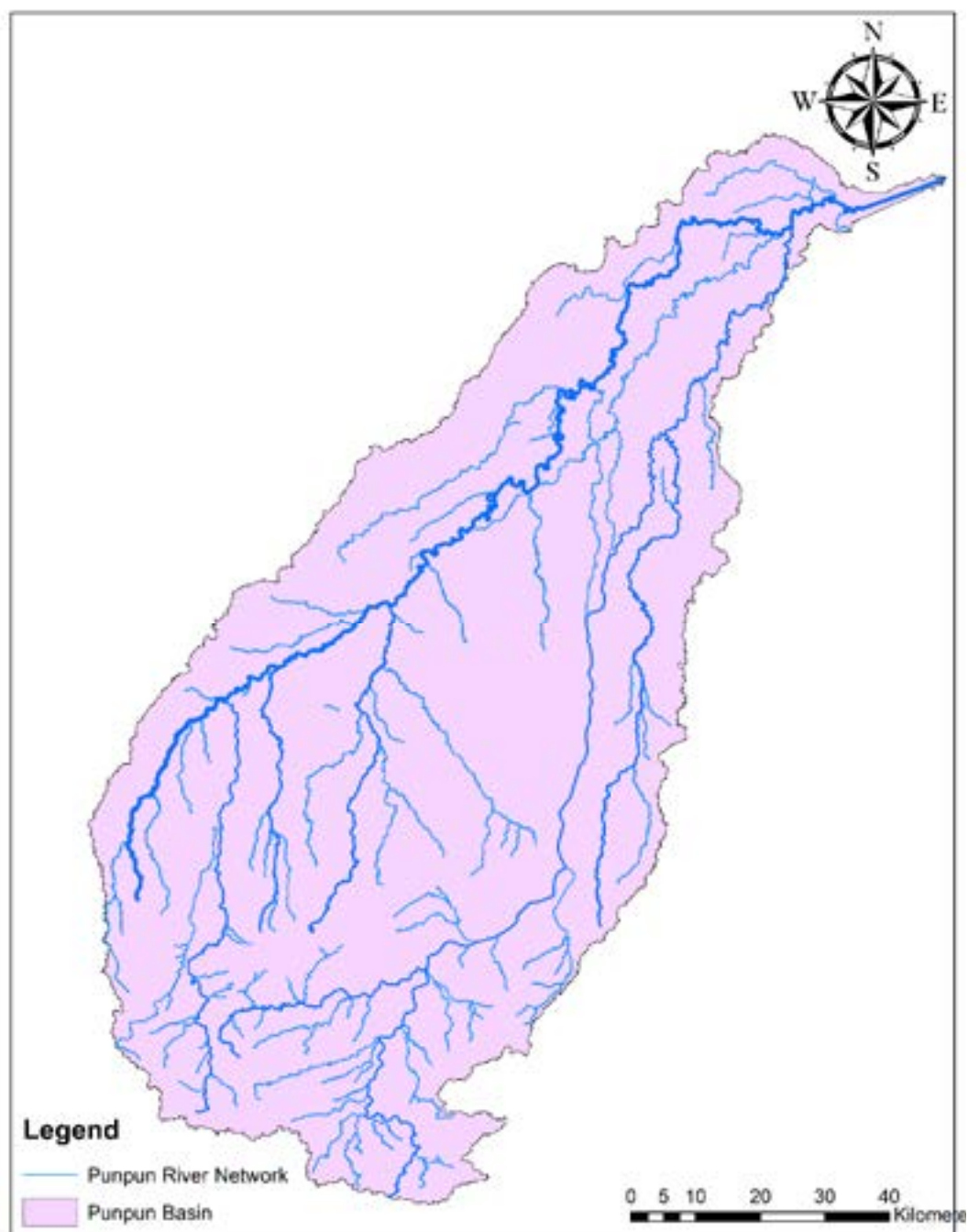


Figure: Punpun River Network

PUNPUN RIVER MAINSTEM FLOW DIAGRAM

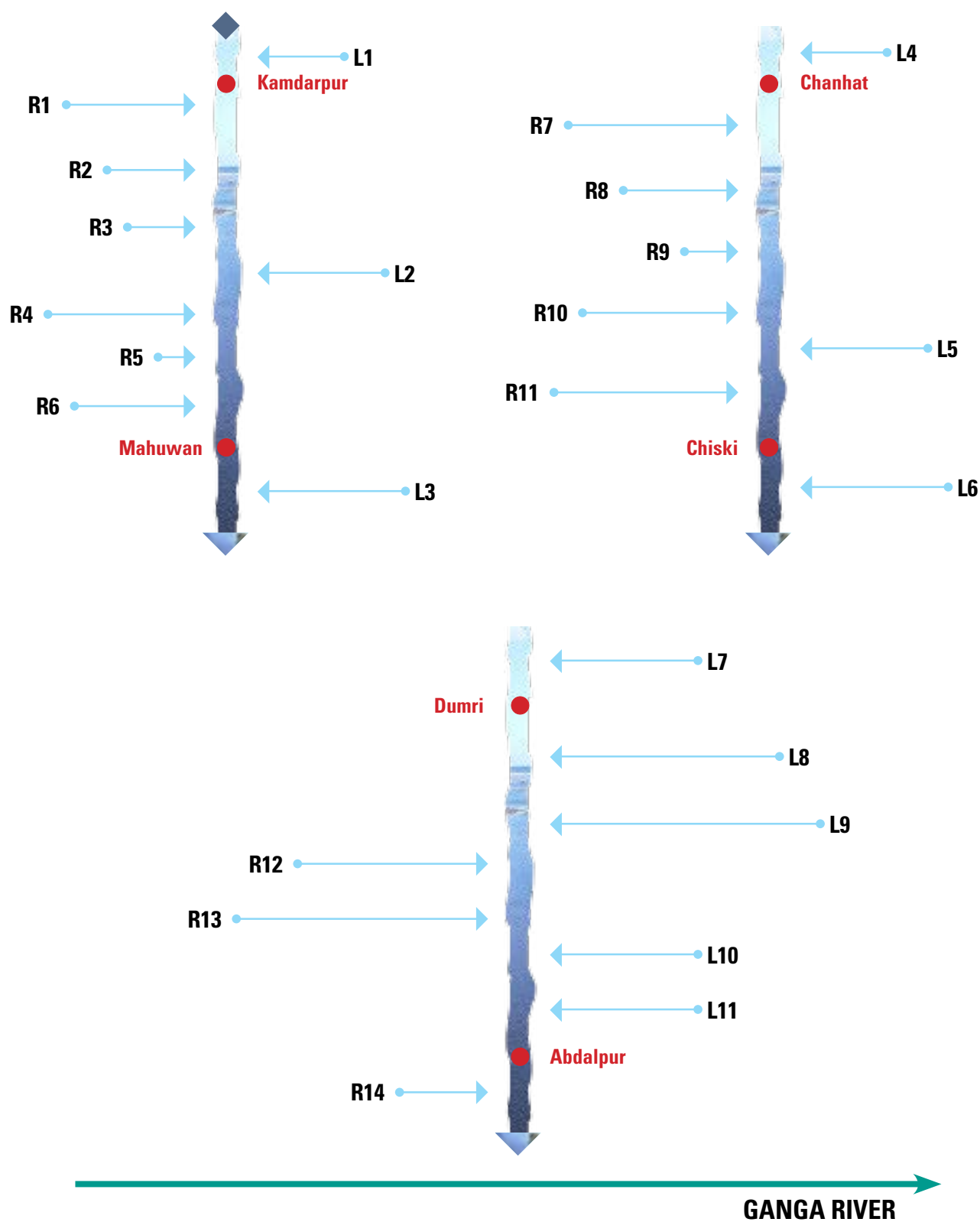


Figure: Flow Diagram of Punpun River

PUNPUN RIVER MAINSTEM NETWORK						
S.No.	River Name	Confluence Bank	River Length (Km)	Confluence Co-ordinate		Distance from origin (km)
				Lat	Long	
1	Hulia River	L 1	35.1	24.66	84.15	13
2	Ramrekha River	R 1	32.8	24.73	84.19	27
3	Barki Drain	R 2	22.1	24.82	84.26	52
4	Stream 8	R 3	11.8	24.83	84.27	54
5	Stream 7	L 2	11	24.85	84.30	63
6	Batane River	R 4	87.6	24.85	84.31	64
7	Stream 6	R 5	2.77	24.87	84.34	69
8	Adari River	R 6	62.3	24.89	84.38	76
9	Burh Drain	L 3	30	24.95	84.51	94
10	Begi River	L 4	20.3	24.97	84.52	98
11	Keshar River	R 7	84	24.98	84.56	103
12	Bijaru Drain	R 8	22.3	25.04	84.62	114
13	Stream 5	R 9	5.54	25.05	84.61	116
14	Stream 4	R 10	19.3	25.13	84.73	144
15	Sinana River	L 5	42.9	25.13	84.78	153
16	Ganghar River	R 11	32.7	25.28	84.88	155
17	Mahriya Drain	L 6	12.4	25.26	84.82	178
18	Siroka River	L 7	64.9	25.27	84.83	180
19	Dhoi River	L 8	24.9	25.41	84.94	214.8
20	Pachanhua Drain	L 9	16.5	25.48	85.02	230.6
21	Stream 3	R 12	11.1	25.49	85.14	252.5
22	Dardha River	R 13	232	25.49	85.19	259.3
23	Barmutta Drain	L 10	30.6	25.52	85.23	267.2
24	Stream 2	L 11	6.49	25.53	85.26	272.4
25	Stream 1	R 14	6.47	25.51	85.28	275.7

BATANE BASIN AND ITS RIVER NETWORK

Batane River UID Code:
 Basin Area: 614.19 Sq. Km
 Number of Rivers: 19
 River Network: 534.85 Km

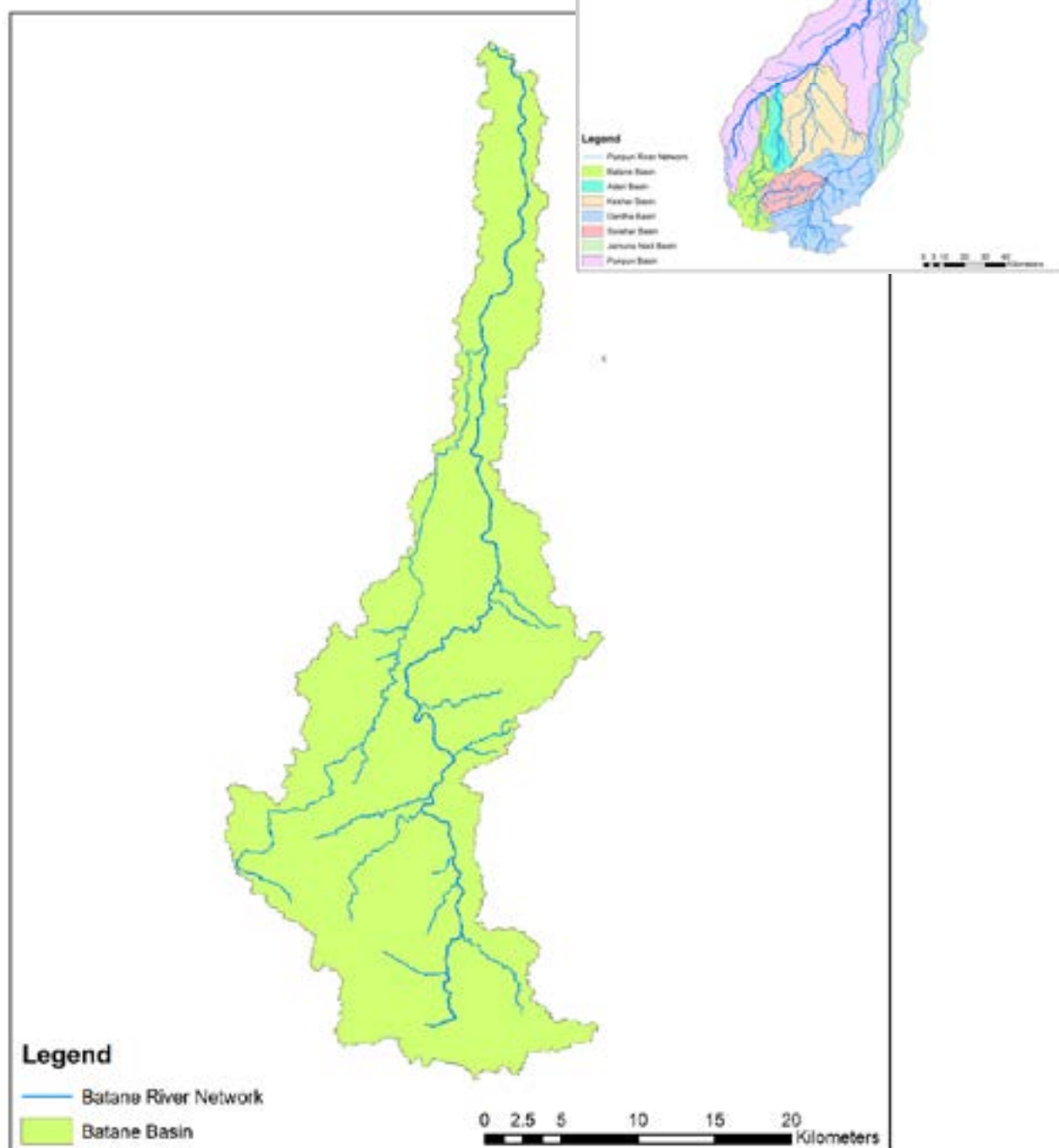


Figure: Batane River Network

BATANE RIVER MAINSTEM FLOW DIAGRAM

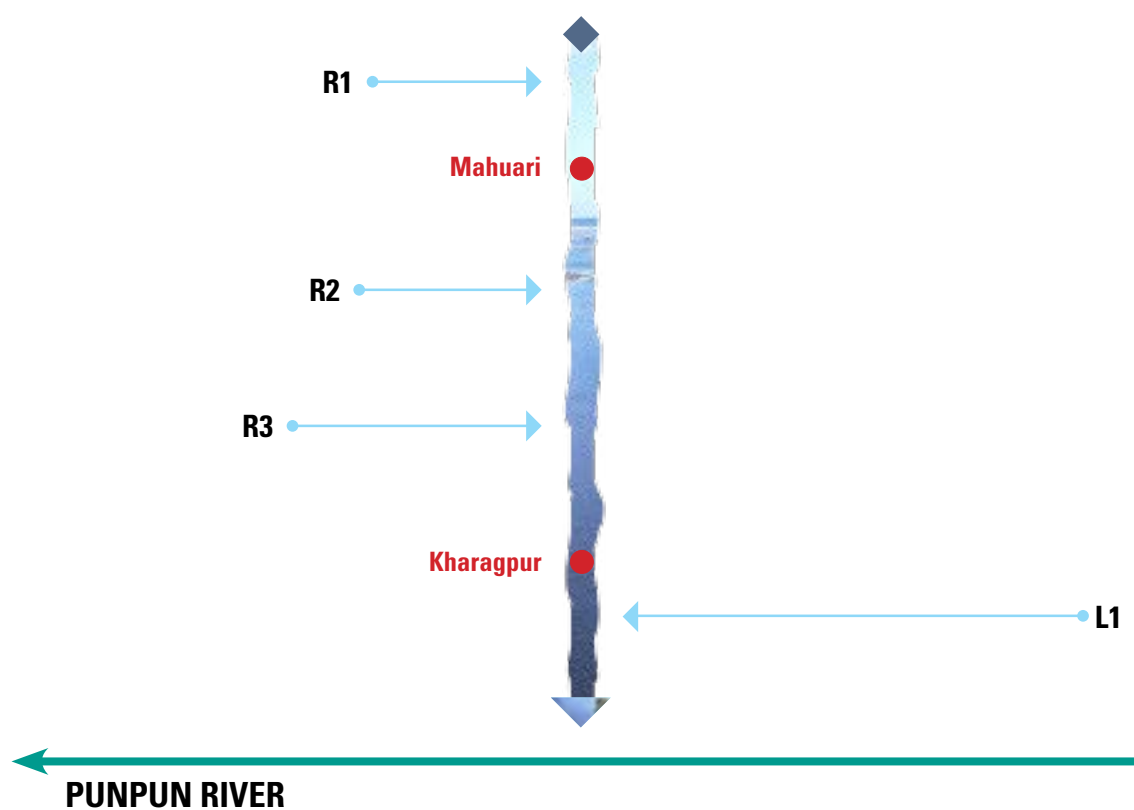


Figure: Flow Diagram of Batane River

BATANE RIVER MAINSTEM NETWORK						
S.No.	River Name	Confluence Bank	River Length (Km)	Confluence Co-ordinate		Distance from origin (km)
				Lat	Long	
1	Titra River	R 1	4.99	24.44	84.27	26.7
2	Stream 1	R 2	1.91	24.45	84.30	
3	Harhi River	R 3	7.3	24.47	84.25	32.2
4	Batra River	L 1	58.5	24.68	84.29	63.9

ADARI BASIN AND ITS RIVER NETWORK

Adari River UID Code:

Basin Area: 114.59 Sq. Km

Number of Rivers: 05

River Network: 326.25 Km

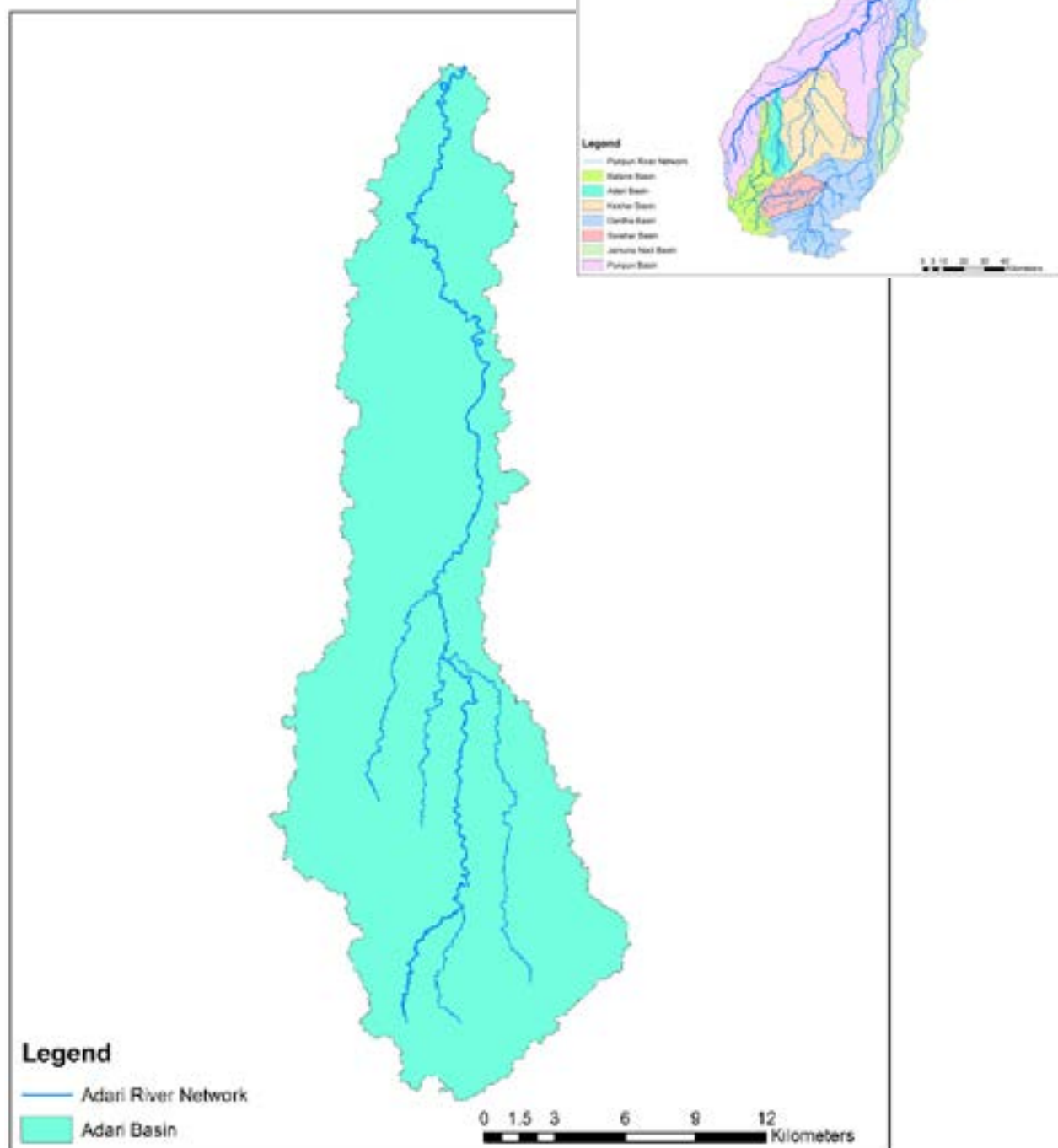


Figure: Adari River Network

ADARI RIVER MAINSTEM FLOW DIAGRAM

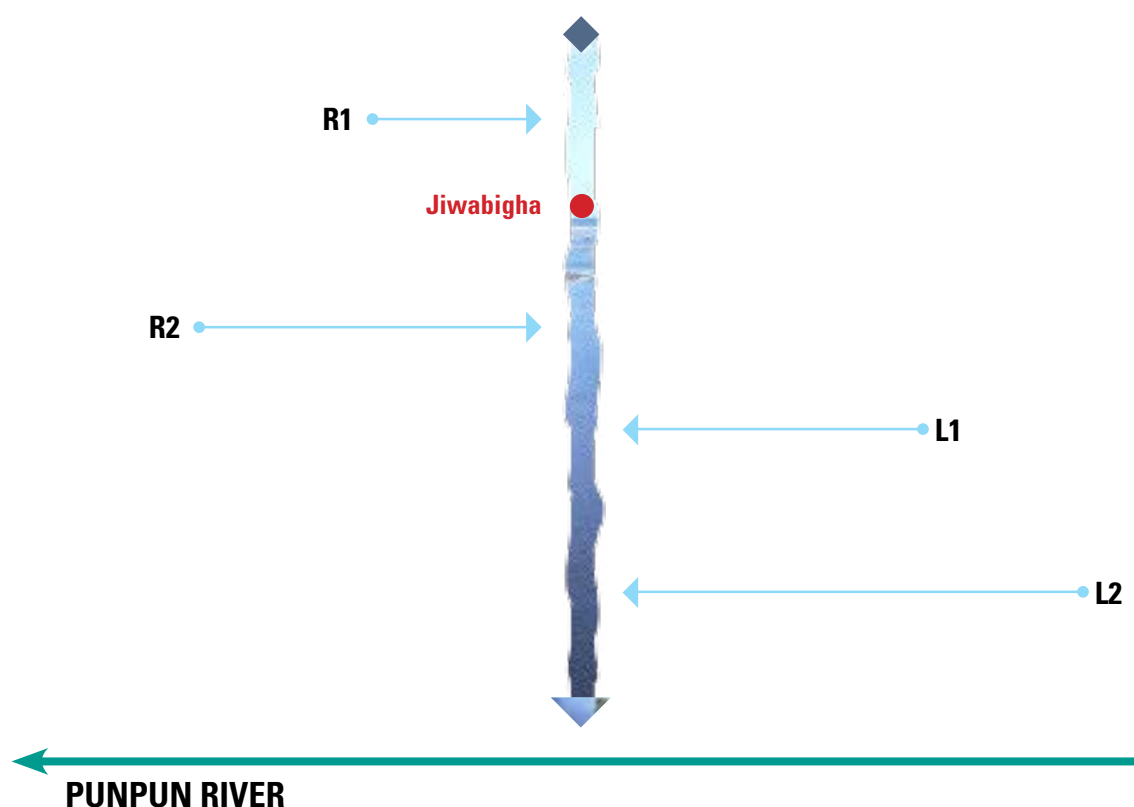


Figure: Flow Diagram of Adari River

ADARI RIVER MAINSTEM NETWORK						
S.No.	River Name	Confluence Bank	River Length (Km)	Confluence Co-ordinate		Distance from origin (km)
				Lat	Long	
1	Jharna Drain	R 1	7.1	24.57	84.37	7.9
2	Ramrekha Drain	R 2	19.5	24.67	84.37	23.3
3	Stream 1	L 1	11.3	24.67	84.37	23.5
4	Kanodo River	L 2	14.2	24.69	84.37	26.9

KESHAR BASIN AND ITS RIVER NETWORK

Keshar River UID Code:
 Basin Area: 1328.38 Sq. Km
 Number of Rivers: 15
 River Network: 663.66 Km

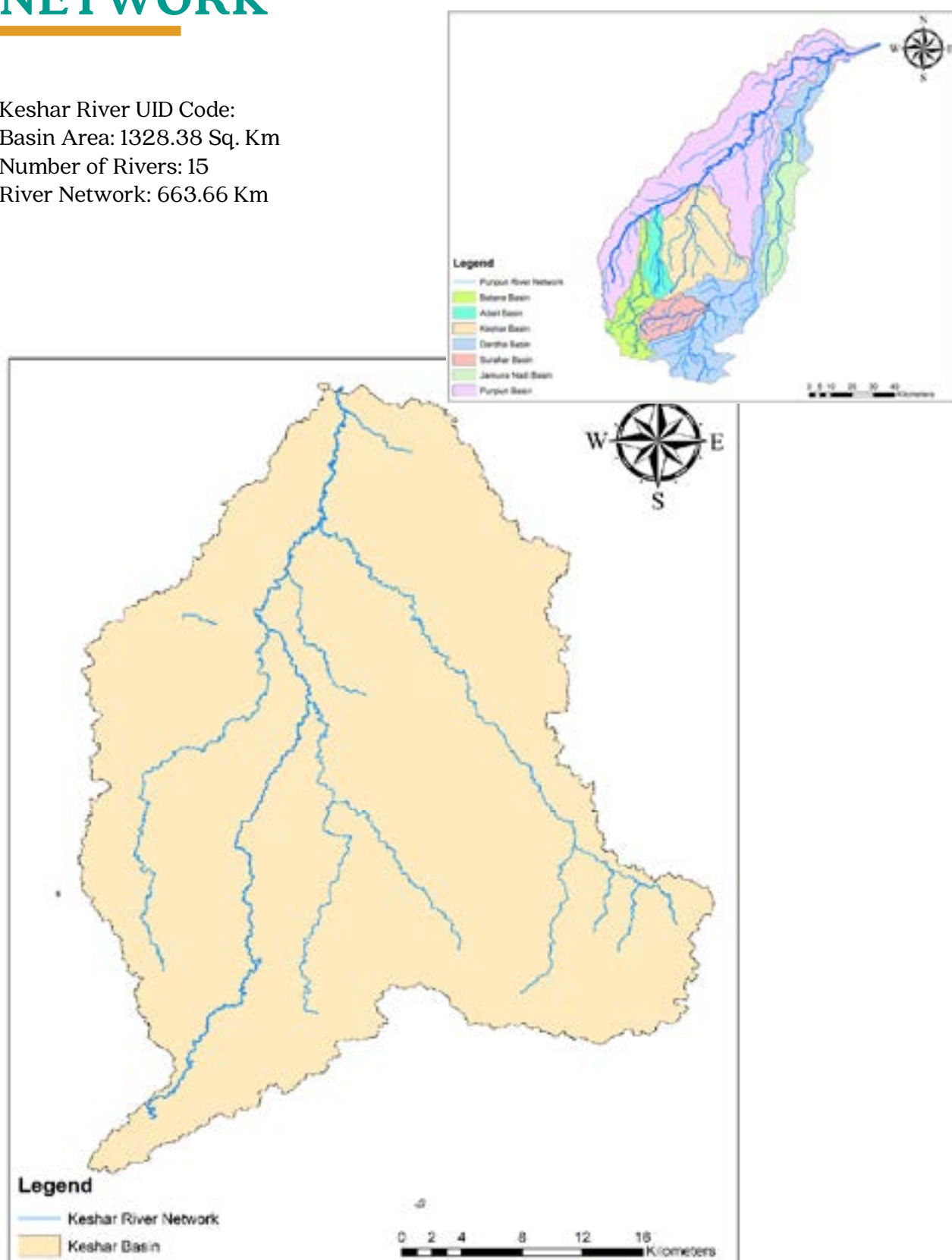


Figure: Keshar River Network

KESHAR RIVER MAINSTEM FLOW DIAGRAM

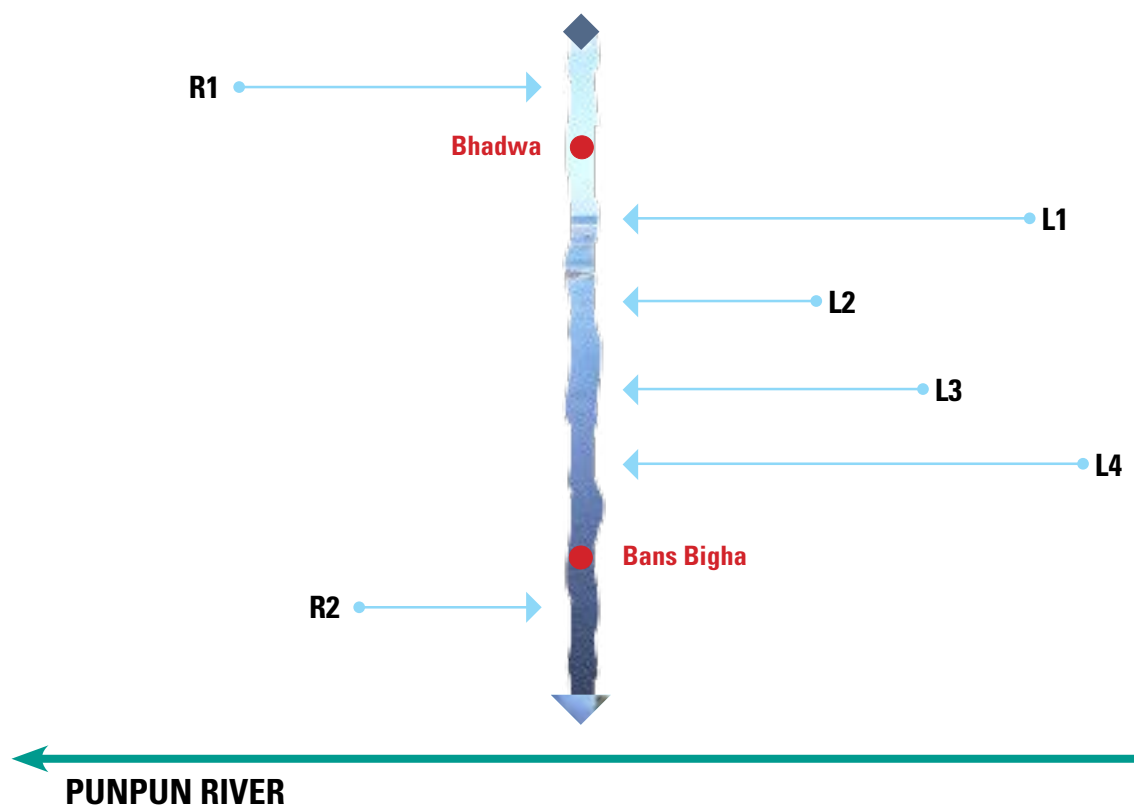


Figure: Flow Diagram of Keshar River

KESHAR RIVER MAINSTEM NETWORK						
S.No.	River Name	Confluence Bank	River Length (Km)	Confluence Co-ordinate		Distance from origin (km)
				Lat	Long	
1	Madar River	R 1	31	24.78	84.54	45.5
2	Tekari River	L 1	47.3	24.83	84.51	52.6
3	Dosma Drain	L 2	15.5	24.84	84.51	53.8
4	Stream 2	L 3	15.6	24.86	84.53	60.2
5	Dhunda Drain	L 4	54.7	24.90	84.55	67.2
6	Stream 1	R 2	7.65	24.96	84.57	81.43

DHARDHA BASIN AND ITS RIVER NETWORK

Dhardha River UID Code:
 Basin Area: 3331.47 Sq. Km
 Number of Rivers: 57
 River Network: 1411.39 Km

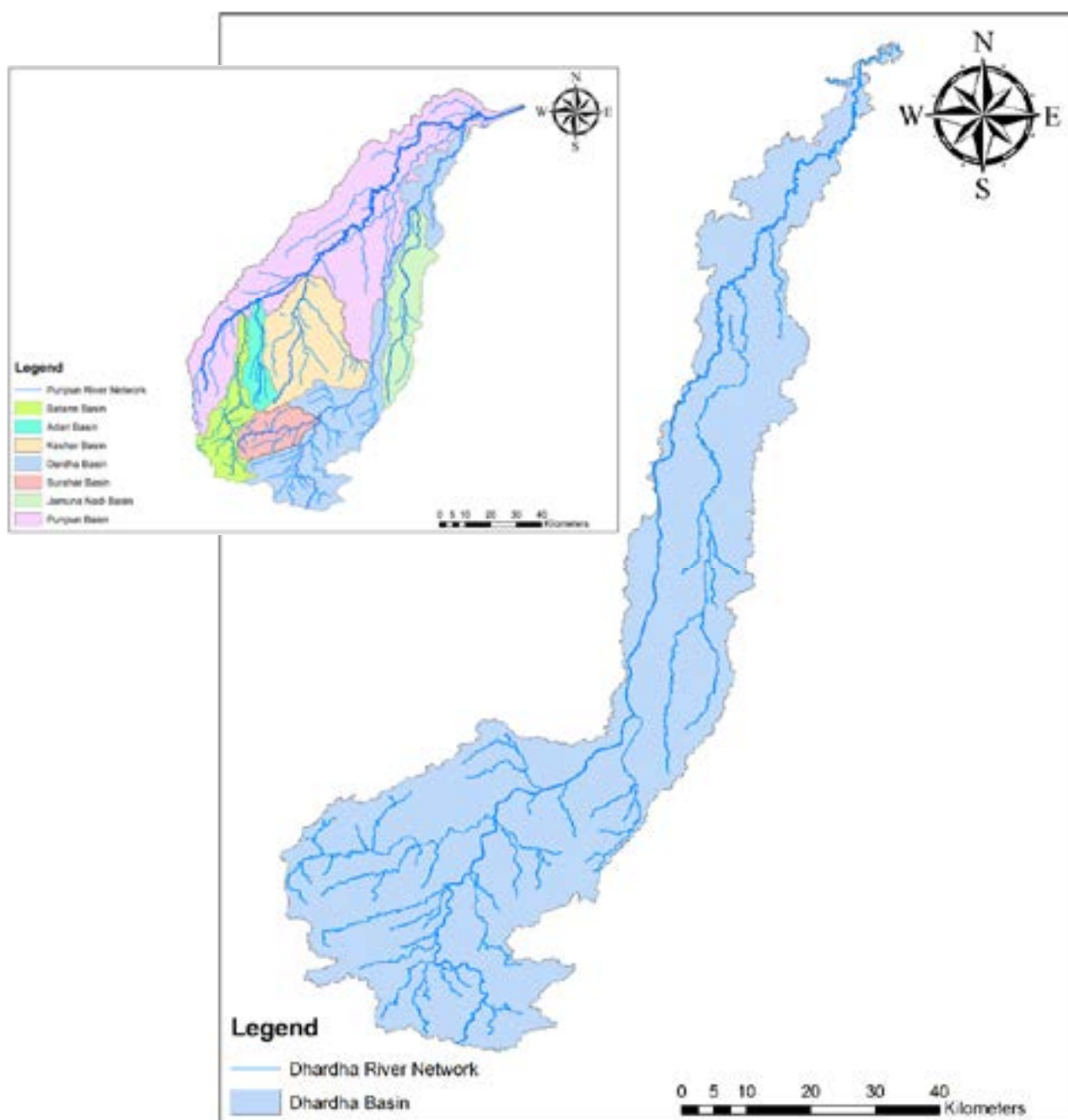


Figure: Dhardha River Network

DARDHA RIVER MAINSTEM FLOW DIAGRAM

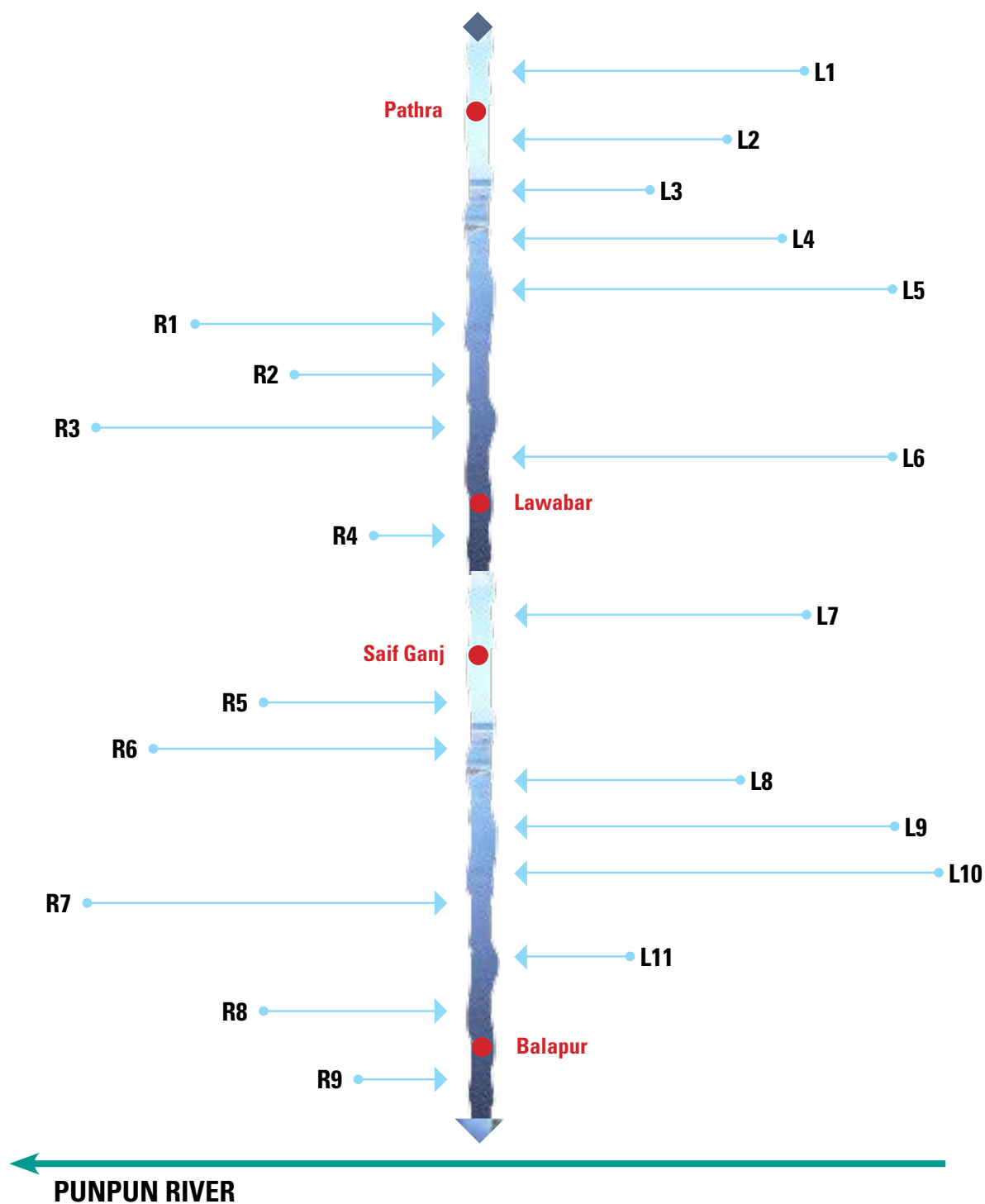


Figure: Flow Diagram of Dhardha River

DHARDHA RIVER MAINSTEM NETWORK						
S.No.	River Name	Confluence Bank	River Length (Km)	Confluence Co-ordinate		Distance from origin (km)
				Lat	Long	
1	Dulki River	L 1	17.8	24.27	84.50	26
2	Urur River	L 2	15.7	24.29	84.51	30
3	Stream 5	L 3	8.22	24.31	84.51	35
4	Bhurhi Drain	L 4	15	24.37	84.53	40
5	Chotki River	L 5	30.7	24.38	84.53	41
6	Dhoi River	R 1	15.3	24.39	84.56	45
7	Belhara Drain	R 2	12.2	24.39	84.57	46
8	Labji River	R 3	22.3	24.46	84.61	56
9	Surahar River	L 6	53.7	24.47	84.59	58
10	Stream 4	R 4	4.93	24.50	84.67	65
11	Madawar River	L 7	17.9	24.51	84.67	66
12	Padra Drain	R 5	11.6	24.51	84.71	72
13	Dhardharhi River -Ghari River	R 6	35.4	24.60	84.82	87
14	Stream 3	L 8	14.7	24.99	84.80	
15	Dhab River	L 9	40.7	25.22	84.91	129
16	Morhar River	L 10	97.5	25.48	85.18	140.2
17	Jamuna River	R 7	130	25.21	84.99	169.5
18	Stream 2	L 11	3.15	25.28	85.04	182.2
19	Kararwa Drain	R 8	26	25.28	85.04	183.3
20	Stream 1	R 9	4.92	25.38	85.14	209.2

SURAHAR BASIN AND ITS RIVER NETWORK

Surahar River UID Code:

Basin Area: 436.18 Sq. Km

Number of Rivers: 18

River Network: 426.85 Km

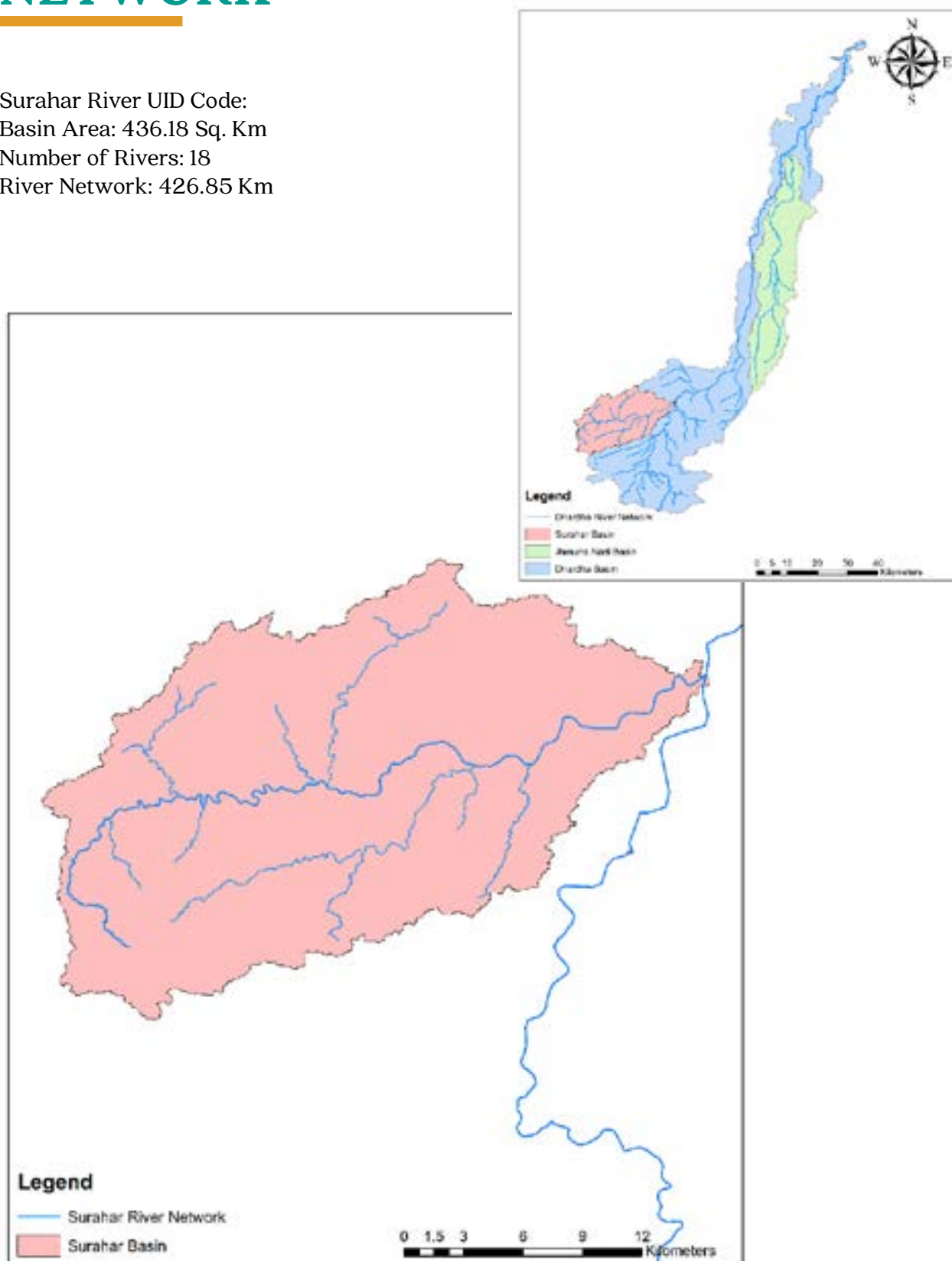


Figure: Surahar River Network

SURAHAR RIVER MAINSTEM FLOW DIAGRAM

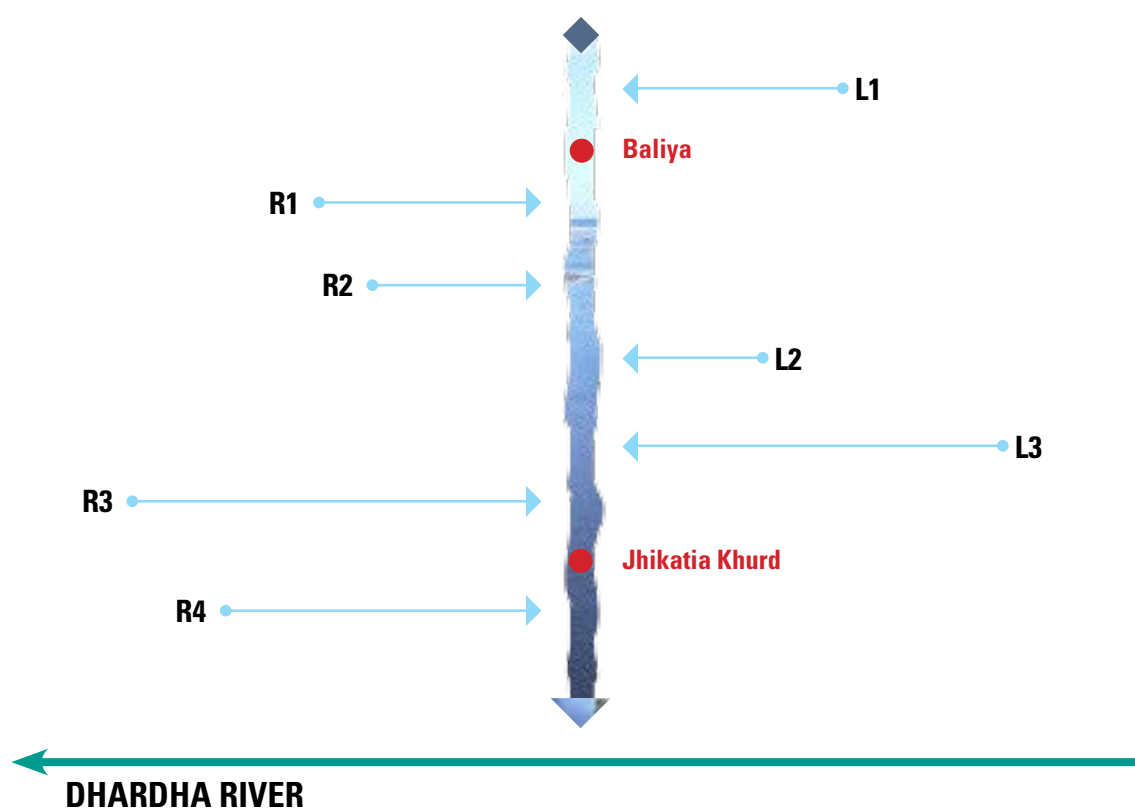


Figure: Flow Diagram of Surahar River

SURAHAR RIVER MAINSTEM NETWORK						
S.No.	River Name	Confluence Bank	River Length (Km)	Confluence Co-ordinate		Distance from origin (km)
				Lat	Long	
1	Jhonk River	L 1	6.33	24.42	84.34	16.1
2	Stream 2	R 1	4.32	24.42	84.35	18
3	Stream 1	R 2	3.48	24.42	84.38	23.5
4	Bhutahi Drain	L 2	6.2	24.43	84.41	27.3
5	Rajkel Nadi- Barahdahar Drain	L 3	15.7	24.43	84.41	28
6	Pakwa River	R 3	17.4	24.43	84.49	38
7	Darauna Drain	R 4	9.97	24.43	84.51	41.1

JAMUNA BASIN AND ITS RIVER NETWORK

Jamuna River UID Code:
 Basin Area: 782.39 Sq. Km
 Number of Rivers: 07
 River Network: 219.35 Km

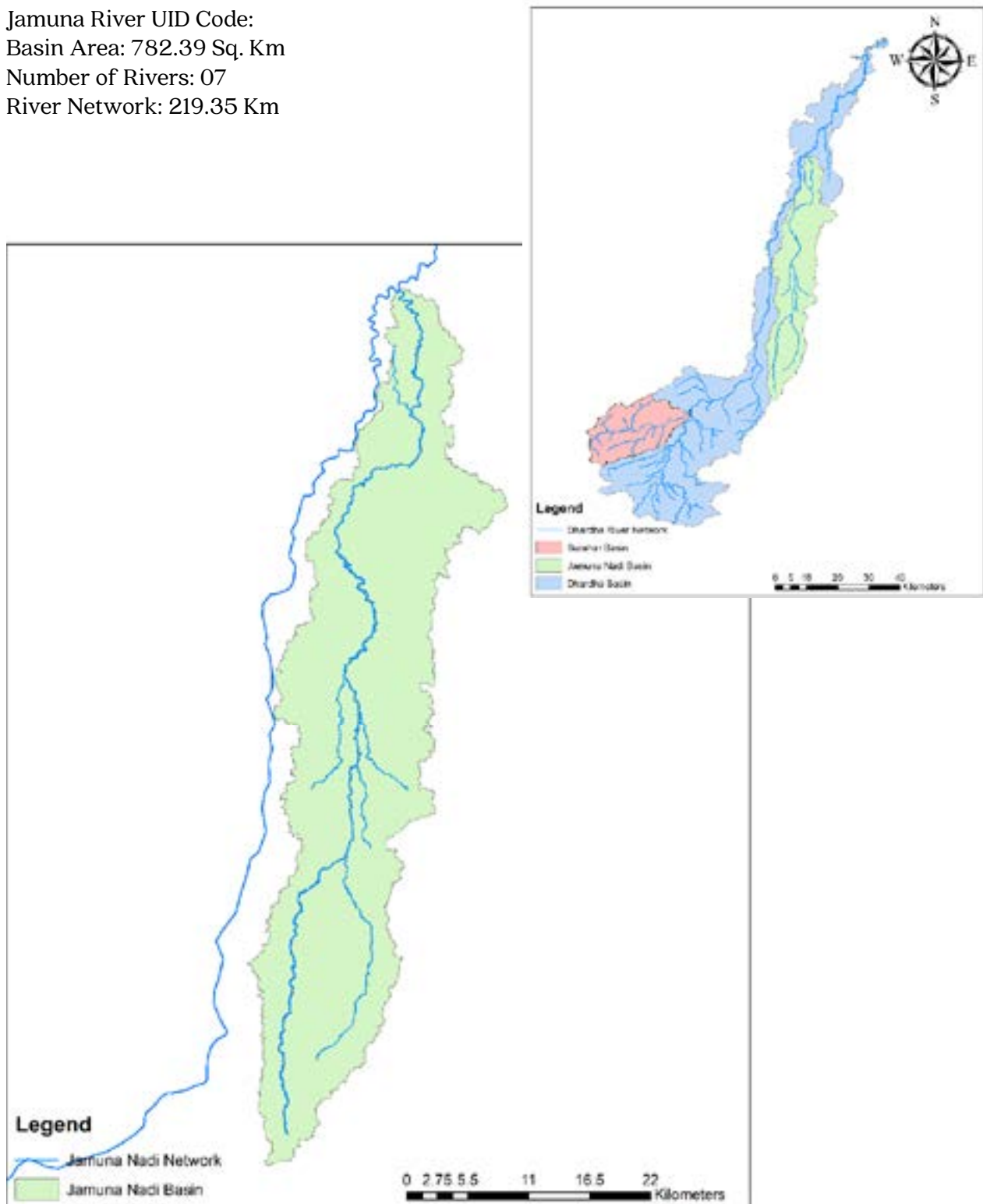


Figure: Jamuna River Network

JAMUNA RIVER MAINSTEM FLOW DIAGRAM

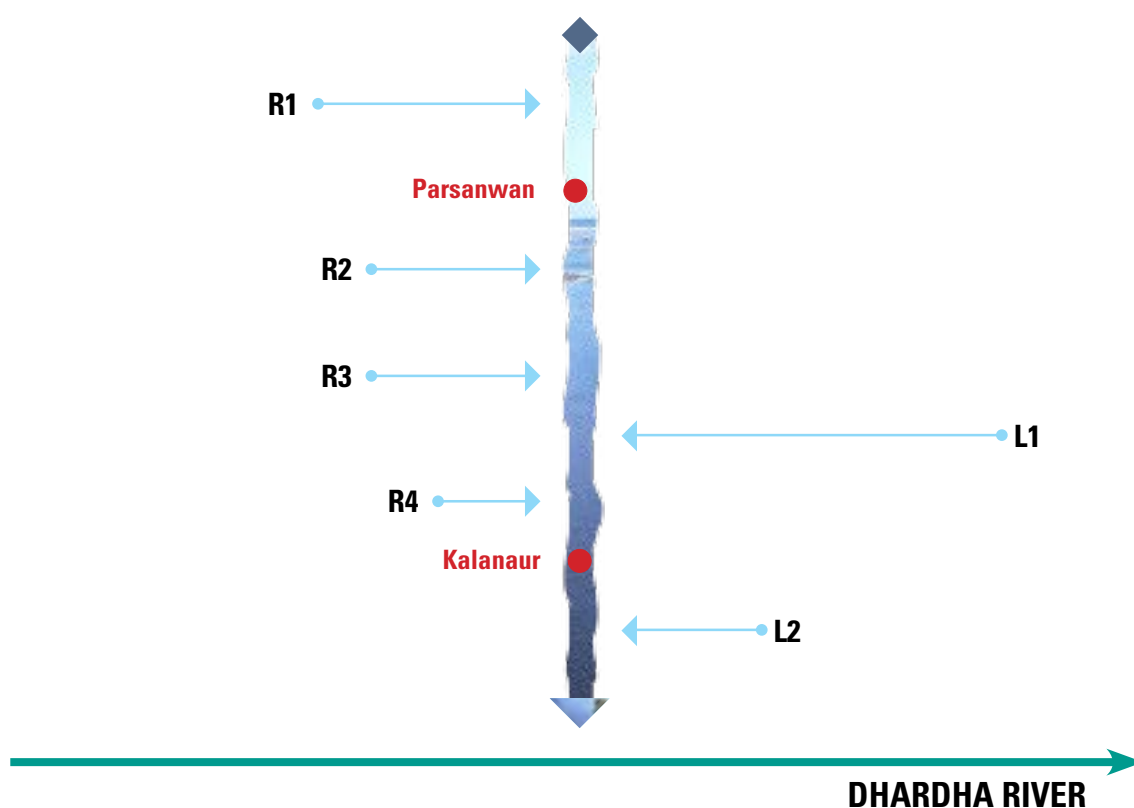
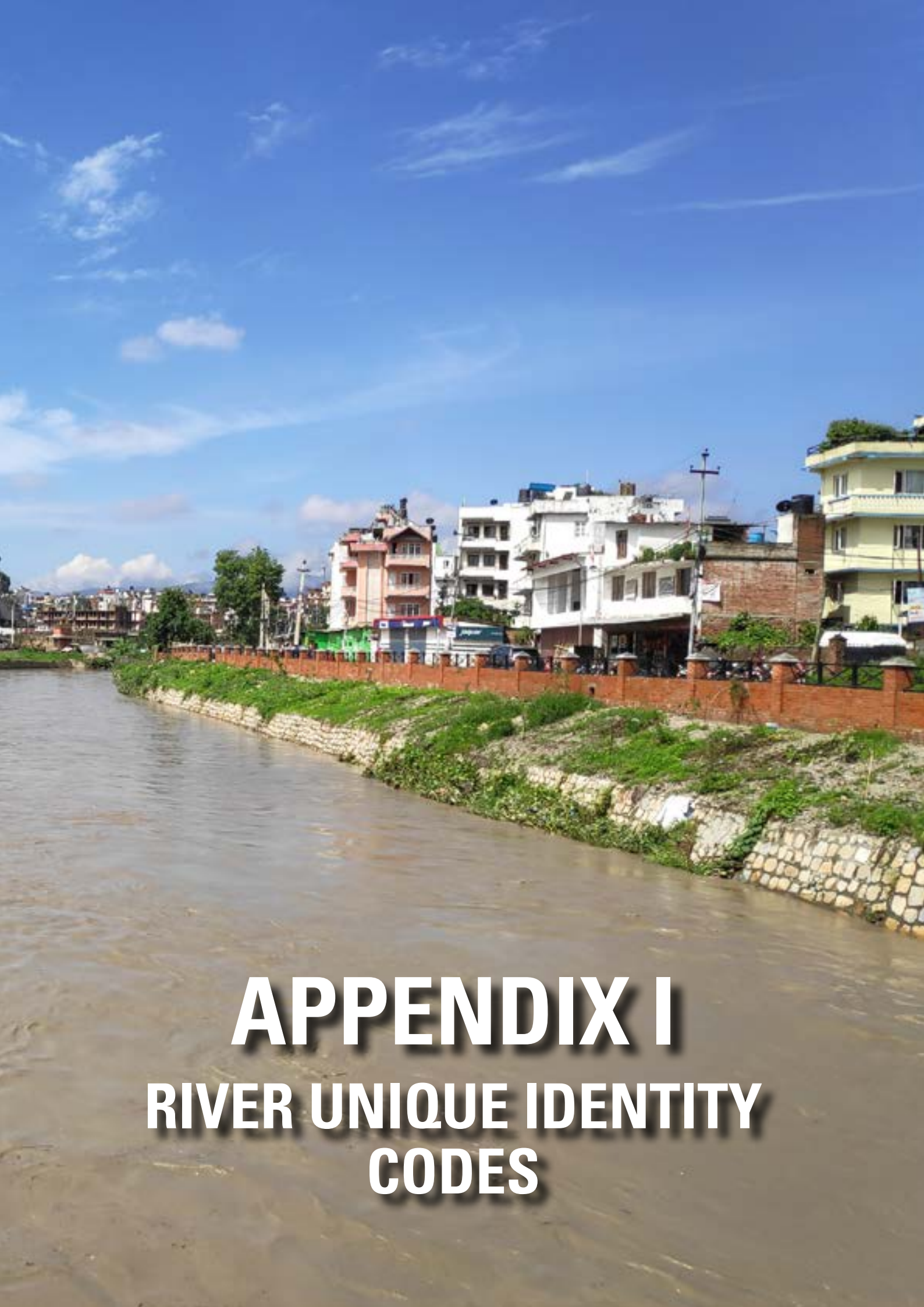


Figure: Flow Diagram of Jamuna River

JAMUNA RIVER MAINSTEM NETWORK						
S.No.	River Name	Confluence Bank	River Length (Km)	Confluence Co-ordinate		Distance from origin (km)
				Lat	Long	
1	Sobh River	R 1	29.7	24.75	84.93	42.1
2	Chapardah Drain	R 2	11	24.82	84.94	52.4
3	Stream 2	R 3	12.4	24.86	84.94	59
4	Dumra Drain	L 1	15.8	24.89	84.93	64.2
5	Stream 1	R 4	7.17	25.07	85.00	105.7
6	Korain Drain	L 2	7.81	25.16	84.99	111.8





APPENDIX I

RIVER UNIQUE IDENTITY CODES

PUNPUN BASIN: DETAILS OF RIVERS

S. No	River	River Code	Origin		Destination		Confluence with	Length of the river (km)	Sub-Sub Basin	Sub-Basin	Basin
			Latitude	Longitude	Latitude	Longitude					
1	Punpun River		24.58	84.16	25.51	85.30	Ganga	293.1		Punpun	Ganga
2	Hulia River		24.45	84.15	24.66	84.15	Punpun River	35.1	Punpun	Punpun	Ganga
3	Stream 1		24.53	84.14	24.58	84.13	Hulia River	8.92		Punpun	Ganga
4	Ramrekha River		24.55	84.20	24.73	84.19	Punpun River	32.8		Punpun	Ganga
5	Barki Drain		24.70	84.25	24.82	84.26	Punpun River	22.1		Punpun	Ganga
6	Stream 8		24.77	84.28	24.83	84.27	Punpun River	11.8		Punpun	Ganga
7	Stream 7		24.87	84.24	24.85	84.30	Punpun River	11		Punpun	Ganga
8	Batane River		24.26	84.27	24.85	84.31	Punpun River	87.6		Punpun	Ganga
9	Titra River		24.45	84.30	24.44	84.27	Batane River	4.99		Punpun	Ganga
10	Stream 1		24.46	84.31	24.45	84.30	Batane River	1.91		Punpun	Ganga
11	Harhi River		24.48	84.30	24.47	84.25	Batane River	7.3		Punpun	Ganga
12	Batra River		24.35	84.16	24.68	84.29	Batane River	58.5		Punpun	Ganga
13	Stream 6		24.86	84.33	24.87	84.34	Punpun River	2.77		Punpun	Ganga
14	Adari River		24.53	84.35	24.89	84.38	Punpun River	62.3		Punpun	Ganga
15	Jharna Drain		24.53	84.37	24.57	84.37	Adari River	7.1		Punpun	Ganga
16	Ramrekha Drain		24.54	84.40	24.67	84.37	Adari River	19.5		Punpun	Ganga
17	Stream 1		24.60	84.36	24.67	84.37	Adari River	11.3		Punpun	Ganga
18	Kanodo River		24.61	84.34	24.69	84.37	Adari River	14.2		Punpun	Ganga
19	Burh Drain		24.93	84.31	24.95	84.51	Punpun River	30		Punpun	Ganga

S. No	River	River Code	Origin		Destination		Confluence with	Length of the river (km)	Sub-Sub Basin	Sub-Basin	Basin
			Latitude	Longitude	Latitude	Longitude					
20	Begi River		25.00	84.38	24.97	84.52	Punpun River	20.3		Punpun	Ganga
21	Keshar River		24.53	84.43	24.98	84.56	Punpun River	84		Punpun	Ganga
22	Madar River		24.63	84.63	24.78	84.54	Keshar River	31		Punpun	Ganga
23	Jharhi River		24.59	84.54	24.72	84.55	Madar River	23		Punpun	Ganga
24	Tekari River		24.62	84.44	24.83	84.51	Keshar River	47.3		Punpun	Ganga
25	Dosma Drain		24.77	84.44	24.84	84.51	Keshar River	15.5		Punpun	Ganga
26	Stream 1		24.84	84.46	24.83	84.48	Dosma Drain	3.29		Punpun	Ganga
27	Stream 2		24.79	84.58	24.86	84.53	Keshar River	15.6		Punpun	Ganga
28	Dhunda Drain		24.64	84.72	24.90	84.55	Keshar River	54.7		Punpun	Ganga
29	Bhura Drain		24.64	84.78	24.67	84.74	Dhunda Drain	9.9		Punpun	Ganga
30	Stream 1		24.62	84.74	24.66	84.75	Bhura Drain	6.47		Punpun	Ganga
31	Bindrabab Drain		24.60	84.67	24.69	84.71	Dhunda Drain	13.9		Punpun	Ganga
32	Stream 1		24.94	84.61	24.96	84.57	Keshar River	7.65		Punpun	Ganga
33	Bijaru Drain		24.92	84.68	25.04	84.62	Punpun River	22.3		Punpun	Ganga
34	Stream 5		25.03	84.59	25.05	84.61	Punpun River	5.54		Punpun	Ganga
35	Stream 4		25.07	84.59	25.13	84.73	Punpun River	19.3		Punpun	Ganga
36	Sinana River		24.91	84.80	25.13	84.78	Punpun River	42.9		Punpun	Ganga
37	Stream 1		25.04	84.77	25.06	84.78	Sinana River	4.12		Punpun	Ganga
38	Nira River		25.13	84.78	25.08	84.70	Sinana River	10.4		Punpun	Ganga

S. No	River	River Code	Origin		Destination		Confluence with	Length of the river (km)	Sub-Sub Basin	Sub-Basin	Basin
			Latitude	Longitude	Latitude	Longitude					
39	Ganghar River		25.14	84.79	25.28	84.88	Punpun River	32.7		Punpun	Ganga
40	Mahriya Drain		25.20	84.78	25.26	84.82	Punpun River	12.4		Punpun	Ganga
41	Siroka River		25.04	84.49	25.27	84.83	Punpun River	64.9		Punpun	Ganga
42	Dhobani Drain		25.23	84.75	25.23	84.77	Siroka River	2.12		Punpun	Ganga
43	Dhoi River		25.38	84.83	25.41	84.94	Punpun River	24.9		Punpun	Ganga
44	Pachanhua Drain		25.41	84.93	25.48	85.02	Punpun River	16.5		Punpun	Ganga
45	Stream 3		25.45	85.09	25.49	85.14	Punpun River	11.1		Punpun	Ganga
46	Dardha River		24.15	84.54	25.49	85.19	Punpun River	232		Punpun	Ganga
47	Dulki River		24.19	84.42	24.27	84.50	Dardha River	17.8		Punpun	Ganga
48	Urur River		24.26	84.39	24.29	84.51	Dardha River	15.7		Punpun	Ganga
49	Stream 5		24.29	84.45	24.31	84.51	Dardha River	8.22		Punpun	Ganga
50	Bhurhi Drain		24.32	84.44	24.37	84.53	Dardha River	15		Punpun	Ganga
51	Sukhru Drain		24.32	84.49	24.34	84.51	Bhurhi Drain	5.49		Punpun	Ganga
52	Chhotki River		24.29	84.34	24.38	84.53	Dardha River	30.7		Punpun	Ganga
53	Dhoi River		24.28	84.57	24.39	84.56	Dardha River	15.3		Punpun	Ganga
54	Belhara Drain		24.34	84.61	24.39	84.57	Dardha River	12.2		Punpun	Ganga
55	Labji River		24.33	84.62	24.46	84.61	Dardha River	22.3		Punpun	Ganga
56	Doraha River		24.42	84.70	24.45	84.61	Labji River	12.4		Punpun	Ganga
57	Kusahi River		24.37	84.66	24.42	84.67	Doraha River	8.31		Punpun	Ganga

S. No	River	River Code	Origin		Destination		Confluence with	Length of the river (km)	Sub-Sub Basin	Sub-Basin	Basin
			Latitude	Longitude	Latitude	Longitude					
58	Chunha Drain		24.40	84.69	24.42	84.67	Kusahi River	3.59		Punpun	Ganga
59	Surahar River		24.35	84.31	24.47	84.59	Punpun River	53.7		Punpun	Ganga
60	Jhonk River		24.44	84.31	24.42	84.34	Surahar River	6.33		Punpun	Ganga
61	Gobardaha Drain		24.47	84.34	24.44	84.32	Jhonk River	5.1		Punpun	Ganga
62	Raksi Drain		24.47	84.36	24.46	84.34	Gobardaha Drain	3.25		Punpun	Ganga
63	Stream 2		24.39	84.34	24.42	84.35	Surahar River	4.32		Punpun	Ganga
64	Stream 1		24.40	84.38	24.42	84.38	Surahar River	3.48		Punpun	Ganga
65	Bhutahi Drain		24.46	84.39	24.43	84.41	Surahar River	6.2		Punpun	Ganga
66	Rajkel Nadi-Barahdaha Drain		24.51	84.48	24.43	84.41	Surahar River	15.7		Punpun	Ganga
67	Bechlisili Drain		24.50	84.44	24.49	84.45	Rajkel Nadi-Barahdaha Drain	2.27		Punpun	Ganga
68	Pakwa River		24.36	84.42	24.43	84.49	Surahar River	17.4		Punpun	Ganga
69	Tithia River		24.36	84.32	24.40	84.43	Pakwa River	14.8		Punpun	Ganga
70	Stream 1		24.40	84.48	24.43	84.49	Pakwa River	3.96		Punpun	Ganga
71	Darauna Drain		24.37	84.49	24.43	84.51	Surahar River	9.97		Punpun	Ganga
72	Stream 4		24.47	84.66	24.50	84.67	Dardha River	4.93		Punpun	Ganga
73	Madawar River		24.52	84.56	24.51	84.67	Dardha River	17.9		Punpun	Ganga
74	Thari Drain		24.58	84.62	24.53	84.65	Madawar River	9.32		Punpun	Ganga
75	Bhutandah Drain		24.55	84.55	24.56	84.64	Thari Drain	12.4		Punpun	Ganga
76	Padra Drain		24.44	84.73	24.51	84.71	Dardha River	11.6		Punpun	Ganga

S. No	River	River Code	Origin		Destination		Confluence with	Length of the river (km)	Sub-Sub Basin	Sub-Basin	Basin
			Latitude	Longitude	Latitude	Longitude					
77	Dhardharhi River -Ghari River		24.40	84.74	24.60	84.82	Dardha River	35.4		Punpun	Ganga
78	Stream 3		24.93	84.86	24.99	84.80	Dardha River	14.7		Punpun	Ganga
79	Dhab River		24.96	84.86	25.22	84.91	Dardha River	40.7		Punpun	Ganga
80	Morhar Rive		25.04	84.90	25.48	85.18	Dardha River	97.5		Punpun	Ganga
81	Jamuna River		24.52	84.87	25.21	84.99	Dardha River	130		Punpun	Ganga
82	Sobh River		24.58	84.90	24.75	84.93	Jamuna River	29.7		Punpun	Ganga
83	Chapardah Drain		24.75	84.95	24.82	84.94	Jamuna River	11		Punpun	Ganga
84	Stream 2		24.80	84.99	24.86	84.94	Jamuna River	12.4		Punpun	Ganga
85	Dumra Drain		24.80	84.90	24.89	84.93	Jamuna River	15.8		Punpun	Ganga
86	Stream 1		25.03	85.00	25.07	85.00	Jamuna River	7.17		Punpun	Ganga
87	Korain Drain		25.11	85.00	25.16	84.99	Jamuna River	7.81		Punpun	Ganga
88	Stream 2		25.28	85.02	25.28	85.04	Dardha River	3.15		Punpun	Ganga
89	Kararwa Drain		25.13	85.06	25.28	85.04	Dardha River	26		Punpun	Ganga
90	Stream 1		25.35	85.13	25.38	85.14	Dardha River	4.92		Punpun	Ganga
91	Barmutta Drain		25.54	85.06	25.52	85.23	Punpun River	30.6		Punpun	Ganga
92	Stream 1		25.52	85.10	25.53	85.22	Barmutta Drain	15.7		Punpun	Ganga
93	Stream 2		25.56	85.23	25.53	85.26	Punpun River	6.49		Punpun	Ganga
94	Stream 1		25.48	85.25	25.51	85.28	Punpun River	6.47		Punpun	Ganga



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