INLAND WATER BODIES *of* BIHAR

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ICAR-Central Inland Fisheries Research Institute

(An ISO 9001:2015 Certified Organization)

Barrackpore, Kolkata-700120, West Bengal India

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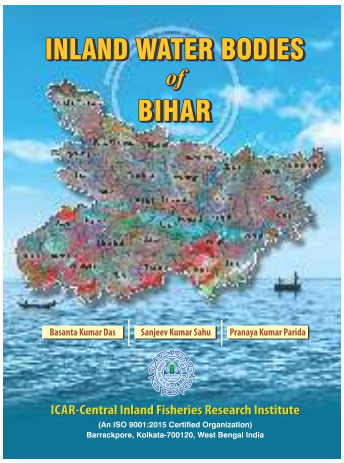

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ISBN: 81-85482-43-8.

Citation:

Das B. K., Sahu S. K. and Parida P. K., (2022). ***Inland water bodies of Bihar***, ICAR-CIFRI, Barrackpore.

ISBN : 81-85482-43-8

Published by

Director
ICAR-Central Inland Fisheries Research Institute,
Barrackpore: Kolkata - 700 120

Printed at:

Sailee Press Pvt. Ltd.
4A, Manicktala Main Road, Kolkata - 700 054
E-mail : saileepress@yahoo.com

सत्यमेव जयते
त्रिलोचन महापात्र, पीएच.डी.
सचिव, एवं महानिदेशक
TRILOCHAN MOHAPATRA, Ph.D.
SECRETARY & DIECTOR GENERAL

भारत सरकार
कृषि अनुसंधान और शिक्षा विभाग एवं
भारतीय कृषि अनुसंधान परिषद
कृषि एवं किसान कल्याण मंत्रालय, कृषि भवन, नई दिल्ली 100 001
GOVERNMENT OF INDIA
DEPARTMENT OF AGRICULTURAL RESEARCH & EDUCATION
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Foreword

Bihar is the twelfth largest state and is blessed with a bountry of seasonal and perennial inland fishery resources. The mapping of inland fishery resources is of paramount importance to exploit the enormous potential and opportunities for generating employment and income. Remote sensing and GIS technologies are successfully used for effective management of the resources by analysing the spatial information/data.

ICAR-Central Inland Fisheries Research Institute (CIFRI), Barrackpore mandated to undertake resource assessment of inland open-water, has taken up a programme to develop GIS maps of inland water bodies of the country using remote sensing imageries. As a part of this effort, the Institute has successfully delineated the inland fishery resources of Bihar by utilizing the Indian Remote Sensing satellite imageries. The institute had also made special efforts to organize and interpret the data and prudently presented them in GIS platform. It gives me immense pleasure to know that ICAR-CIFRI has compiled this information in the form of a book entitled “Inland Water Bodies of Bihar”. I hope this will be of great value for fisheries management and for effective planning for sustainable fish production in the State. I compliment all the team members and the authors for this important contribution.

Date: 7th June 2021
Place: New Delhi 110 001

(T. Mohapatra)

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Foreword

Lack of adequate and reliable data related to aquaculture and fishery resources has been one of the major deficiencies of the fisheries sector since the beginning of the First Five Year Development Plan period. According to a rough estimate, over seventy percent of the total fish production in India comes from the inland fisheries resources available in the form of rivers, canals, floodplain lakes, ponds, reservoirs, and brackish water bodies. Out of these, we have been able to use only a fraction of its fish yield potential so far. The potential of fish yield from these resources has been estimated to be several times more. With the development and application of improved culture technologies and inland fisheries and environmental management practices, there is the possibility of enhancing fish yield several times more. However, to achieve this, it is important that each of these resources is precisely mapped, accounted for, recorded, and made the best use of. With this endeavor, each of the inland water bodies with aquaculture and fishery potential available in the state of Bihar has been inventoried with other associated details including their precise location and surroundings. As a result, an enormous amount of data has been generated in the process.

I am happy that ICAR-Central Inland Fisheries Research Institute, Barrackpore has given this a priority and extensively worked in this area to generate adequate quality data, compiled and analyzed and finally publishing a book entitled **"Inland Water Bodies of Bihar"**. Planners, development personnel, researchers, and those associated with the governance of the sector will be happy to get this much-awaited and useful tool for their development endeavor. The graphical representations with intelligent choice of cartographic techniques allow a high level of clarity of analyzed data. The book is a quick reference and will be able to fulfill the requirements of professional users. I am pleased with the data content and especially the way it has been presented in the book. I sincerely believe that this book would immensely benefit fisheries professionals associated with the fisheries development in Bihar.

I congratulate and compliment the team for their efforts to bring this book to the public domain and showcasing the vast and varied water bodies of Bihar available for the development of fisheries and aquaculture in the state. Would expect similar resource inventories for other remaining states of the country.

Preface

Water has a special place because it is believed to have spiritually cleansing powers. To all water is sacred, especially rivers, and there are several rivers flowing through the state of Bihar, the most important of which is the Ganga. Apart from river Ganga, there are other rivers namely Ghaghra, Gandak, Burhi Gandak, Kosi, and Mahananda that join river Ganga from the North. The Rivers Karmanasa, Sone, Punpun, Phalgu, Sakri and Kiul join the river Ganga from the South. Water is important for cleansing and purifying. Places of worship have a courtyard with a pool of clear water in the centre. Water is a primary building block of life. Without water there is no life.

One of the leading research institutes of India dealing with the earliest evolved living organism from primary life form is The Central Inland Fisheries Research Institute. CIFRI, having a shining history of academic excellence with eminent scientists being a consistent part of this alma mater has long been associated with fish catch data. As a support to the process of fish catch estimation, an account of water body occurrences (henceforth referred to as resources) had become an inevitability. All efforts were summoned up to make an appraisal of these resources which had a presence throughout the length and breadth of this vast and ancient country. Thus the project was taken up so that a list of water bodies could be prepared which would be able to complement the fish catch data. Such elaborate data would assist the preparation of ground for further analysis.

This report intends to study in detail the presence water bodies in the state of Bihar. It has been prepared as an extension of the larger venture. It has been prepared on a two stage platform proceeding from the formal initial stages of introduction, study area and methodology. Initially all water bodies of the state were analyzed with an overview of total, perennial and seasonal water bodies. Further they were also analyzed on a category wise seasonal and perennial basis. The finer details of the same analysis on a district wise platform had been taken up in the next stage. We have decided on a district wise representation instead of a block wise one due to a huge volume of the report it would entail.

As a part of this review, resources of Uttar Pradesh had been assessed using Remote Sensing and G.I.S. It indirectly considers the potential of developing the resources as fishing units, for bringing an improvement in the nutritional condition of the malnourished population.

This report brings into the forefront the number of water bodies and their corresponding area. All the water bodies have been categorized into five categories. Their presence has been

mapped for all the districts of the state in the pre-monsoon as well as the post-monsoon conditions. A few maps have been mounted for a quick representation of the scenario on the ground. Their presence might be valuable as a quick display of a-spatial data for any reader of the report. They will be favourable especially for planners who will benefit from at a glance observation of water body distribution. The tables, associated maps, graphs and other information both literary as well as numeric as presented in the report may be considered for evaluation by scholars, authorities, planners and bureaucrats.

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Bihar

Bihar, a state in the eastern portion of India, bounds by the Himalayas in the north and Chota Nagpur Plateau in the south. Until 2000 Chota Nagpur Plateau was included in the state Bihar but now it becomes a separate state named Jharkhand. The state of Bihar is divided into two unequal parts by the river Ganga which flows through the middle from west to east. The total area covered by the state of Bihar is 91689 sq. km. The state shares a common border with the country Nepal and the states West Bengal, Jharkhand, and Uttar Pradesh. Location map is shown in Figure-3. The state represents mainly flat alluvial plains excepting some hills present in the northern and the southern parts of the state. Hills of the northern portion of the state are considered as the part of Himalayas and hills of the southern portion of the state are considered as the extensions of Vindhya Range. The general slope of the state is from west to east. The entire state is drained mainly by the Ganga, Kosi, Gandak, and Son apart from other seasonal streams. Due to the presence of a lot of large rivers at the time of rainy season most of the area of this state is flooded. As a result of deposition of alluvial soil by the rivers of the state land quality is very fertile. The state enjoys tropical monsoon type of climate due its great distance from the sea. There are mainly four seasons; summer, monsoon, autumn and winter. Bihar is mildly cold in winter and very hot in summer. The temperature ranges between a minimum of 5-10˚C and a maximum of 40-45˚C. October/November to February/March pleasant climate is felt in the state. Rainfall occurs from June to September due to southwest monsoon and from October to November (North easterly). Most of the wetlands in Bihar state show various types of floral and faunal diversity. Few fishes such as rohu, catla, mrigal, tangra, lata, etc. are widely cultured in these wetlands. Satellite data (IRS, LISSIII) has been analysed for delineating wetlands in the state. The state has thirty eight districts.

Physiography

Broadly there are three physiographic divisions in the state a) The Siwalik range, b) The Ganga plains and c) The Southern Plateau Regions.

The Himalayan range has three major divisions firstly, Greater Himalayas or Himadri, secondly, Middle Himalayas or Himachal and thirdly, Lesser Himalayas or Siwaliks. Marginal portions of Siwaliks in North Champaran District, fringes and projections of the Peninsular Block also exist in this region.

The region covered by the state, is a portion of the Indo-Gangetic trough. The Ganges runs from west to east through the plains, which are relatively flat thus dividing Bihar into two unequal halves. The topography of Bihar can be easily described as a fertile alluvial plain occupying the Gangetic Valley.

The plain extends from the foothills of the Himalayas in the north to a few miles south of the river Ganges. They are narrowed eastwards by the prolongations of the Southern plateaus. The differences

in relief and river conditions have further subdivided the Bihar plains into two parts i) North Bihar Plains and ii) South Bihar Plains. The land lying to the North of River Ganga is drained by her tributaries Ghagra, Gandak, Kosi and slopes towards the south-east in the western part and south in the eastern part. Extending parallel to the Ganga are a long line of marshes locally known as "chaurs". Some of them contain water throughout the year because of their depth. South Bihar Plains lies to the west of the Rajmahal hills and eastward side of southern bank of river Ganga. They are a vast depression known as Jala near Patna and Tal near Mokama.

The Southern Plateau region is the northeastern part of the Chota Nagpur Palteau and is mostly made up of Granite and Gneiss.

The Agro-Climatic regions of Bihar have been differentiated on the basis of similarity of rainfall and temperature. There are four zones namely, i) North East Alluvial Zone, ii) North West Alluvial Plain Zone, iii) South Bihar Alluvial Zone (a), and iv) South Bihar Alluvial Zone (b) as showen in figure 1.

Water Bodies Categorization

As the water has multiple uses, there are several nomenclatures of the water bodies depending upon its use. The present report focuses upon the potential water resources for fisheries. Thus classification and nomenclature used in this report was done in terms of fisheries resources. Broadly, inland water resources in India were classified into freshwater and brackish water, as far as fisheries were concerned. Freshwater fisheries resources comprise ponds, tanks, irrigation tanks, lake, reservoirs, beels, river, stream, while the brackish water fisheries resources includes mainly estuaries, lagoons, bheries. Many of the water bodies lose its importance in fisheries, as it contributes marginally to the fisheries production assessment. Keeping this in mind, Central Inland Fisheries Research Institute has classified Indian inland water bodes to eliminate disparity among different states (Tyagi and Mondal, 2008). The idea was to develop national level uniform criteria for inland water bodies grouping that lead to statistically sound fish production assessment framework. This resulted in the following three main classifications of inland water bodies that were useful for designing fish catch assessment survey

According water area all the water bodies are classified into five group

Category 1 below 5 ha

Category 2 5.00 ha to 10.00 ha

Category 3: 10.00 to 50.00 ha

Category 4: 50.00 to 200.00 ha

Category 5: 200.00ha and above

Inland Water bodies of Bihar

The state of Bihar hosts 54689 number of water bodies with a maximum water spread area of 74176.4 hectares, minimum water spread area of 25895.02 hectares and average water spread area of 50035.65 hectares. Madhubani district has the highest number of water bodies and Arwal district has the lowest number of water bodies. With respect to maximum, minimum and average water spread area Purba Champaran district leads all the other districts and Arwal follows the rest. Spread of water bodies is shown in figure 2.

Table 1: Total number of water bodies and their area in the state of Bihar

DISTRICT	Total number of water bodies	Maximum Area(ha)	Minimum Area(ha)	Average Area(ha)
Araria	2824	2108.06	657.65	1382.85
Arwal	57	63.32	18.15	40.74
Aurangabad	484	724.56	309.99	517.27
Banka	1853	4743.04	1992.05	3367.54
Begusarai	658	1860.63	421.43	1141.03
Bhagalpur	1118	1467.89	533.18	1000.53
Bhojpur	453	1109.26	445.40	777.33
Buxar	416	1123.16	342.60	732.88
Drabhanga	4696	4759.63	1960.29	3359.96
Gaya	726	917.58	379.50	648.54
Gopalganj	1764	1500.96	334.84	917.90
Jamui	1413	3085.20	1085.75	2085.47
Jehanabad	239	246.98	97.77	172.38
Kaimur	1040	1745.19	854.39	1299.79
Katihar	2482	3998.41	1678.76	2838.59
Khagaria	367	1716.19	306.57	1011.38
Kishanganj	1069	1161.12	434.56	797.84
Lakhisarai	462	655.58	219.14	437.36
Madhepura	858	437.83	82.52	260.17
Madhubani	8761	4881.62	2071.06	3476.34
Munger	370	472.04	167.26	319.65
Muzaffarpur	2495	4675.56	1883.31	3279.43
Nalanda	955	934.92	319.38	627.15
Nawada	765	1356.83	711.42	1034.12
Pashchim Champaran	1218	3068.49	1318.92	2193.70
Patna	701	879.67	208.18	543.92
Purba Champaran	2343	6165.82	2620.12	4392.97
Purniya	2117	2656.97	1067.47	1862.22
Rohtas	635	633.90	294.14	464.02

Saharsa	1156	1132.72	505.85	819.28
Samastipur	1800	2625.59	660.58	1643.08
Saran	1340	1794.09	340.92	1067.50
Sheikhpura	333	335.88	116.64	226.26
Sheohar	194	145.30	26.35	85.83
Sitamarhi	2240	1893.57	629.56	1261.56
Siwan	1908	2099.87	326.20	1213.03
Supaul	1226	654.63	170.23	412.43
Vaishali	1153	4344.34	302.89	2323.61

Water bodies can be perennial or seasonal where perennial water bodies are those spatial units of water area that have water in them throughout the year. Seasonal water bodies are those spatial water area units which contain water for the post monsoon season only. The highest numbers of perennial as well as seasonal water bodies are present in the district of Madhubani with Arwal again recording the lowest number of perennial as well as seasonal water bodies. The district of Purba Champaran has the highest maximum, minimum and average perennial water spread area with Arwal trailing the list for the same. For seasonal water spread area, with respect to both maximum and minimum values, Vaishali leads all other districts and Arwal follows the rest of them. District wise seasonal and perennial waterbodies in different districts shown in figure 2.

Table 2: Total number of perennial and seasonal water bodies and their area in the state of Bihar

District	Perennial waterbodies				Seasonal Waterbodies		
	No	Maximum Area(ha)	Minimum Area(ha)	Average Area(ha)	No	Maximum Area(ha)	Average Area(ha)
Araria	603	1,084.93	657.65	871.29	2221	1023.13	511.56
Arwal	14	36.17	18.15	27.16	43	27.14	13.57
Aurangabad	324	452.37	309.99	381.18	160	272.18	136.09
Banka	509	4,091.24	1,992.05	3041.64	1344	651.80	325.90
Begusarai	117	835.06	421.43	628.25	541	1025.57	512.78
Bhagalpur	303	823.27	533.18	678.22	815	644.62	322.31
Bhojpur	121	741.37	445.40	593.38	332	367.89	183.95
Buxar	173	924.42	342.60	633.51	243	198.75	99.37
Drabhanga	2098	2,767.35	1,960.29	2363.82	2598	1992.29	996.14
Gaya	347	586.65	379.50	483.08	379	330.93	165.46
Gopalganj	298	517.05	334.84	425.95	1466	983.91	491.95
Jamui	310	2,453.67	1,085.75	1769.71	1103	631.53	315.76

Jehanabad	45	140.64	97.77	119.21	180	106.34	53.17
Kaimur	524	1,242.83	854.39	1048.61	516	502.36	251.18
Katihar	700	2,474.72	1,678.76	2076.74	1782	1523.69	761.84
Khagaria	69	667.01	306.57	486.79	298	1049.18	524.59
Kishanganj	242	683.12	434.56	558.84	827	478.01	239.00
Lakhisarai	155	426.83	219.14	322.99	307	228.75	114.37
Madhepura	149	136.51	82.52	109.52	709	301.32	150.66
Madhubani	3694	2,961.86	2,071.06	2516.46	5067	1919.76	959.88
Munger	57	245.31	167.26	206.29	313	226.73	113.36
Muzaffarpur	686	2,803.74	1,883.31	2343.53	1809	1871.81	935.91
Nalanda	161	449.78	319.38	384.58	794	485.14	242.56
Nawada	183	934.23	711.42	822.83	582	422.60	211.30
Pashchim Champaran	432	2,056.85	1,318.92	1687.88	786	1011.64	505.82
Patna	123	354.18	208.18	281.18	578	525.49	262.74
Purba Champaran	564	4,195.24	2,620.12	3407.68	1779	1970.58	985.28
Purniya	659	1,707.60	1,067.47	1387.53	1458	949.37	474.69
Rohtas	284	418.42	294.14	356.28	351	215.48	107.74
Saharsa	305	682.38	505.85	594.11	851	450.34	225.17
Samastipur	428	1,153.60	660.58	907.09	1372	1471.99	735.99
Saran	368	796.72	340.92	568.82	972	997.37	498.68
Sheikhpura	93	165.97	116.64	141.31	240	169.91	84.95
Sheohar	30	45.65	26.35	36.00	164	99.65	49.82
Sitamarhi	739	1,001.73	629.56	815.64	1501	891.83	445.91
Siwan	472	799.48	326.20	562.84	1436	1300.39	650.19
Supaul	322	266.28	170.23	218.26	904	388.35	194.17
Vaishali	235	847.76	302.89	575.33	918	3496.58	1748.28

In the first category, that includes those fishery resources which are below 0.5 ha, Bihar has 53075 units of them with a maximum water spread area of 36804.01 hectares and minimum water spread area of 11289.69 hectares. In this category, the total numbers of perennial water bodies are 15961 occupying 16920.85 hectares of maximum and 11289.69 hectares of minimum water spread area. Similarly, the total numbers of seasonal water bodies are 37114 with 19883.15 hectares of maximum water spread area. Figure 3 shows spread of surface waterbodies in category 1 and figure 4 shows district wise seasonal and perennial water bodies in category 1.

Table 3: Total number of category 1 water bodies and their area in the state of Bihar

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Araria	2758	1474.91	346.88	552	569.35	346.88	2206	905.57
Arwal	53	36.06	6.08	10	8.92	6.08	43	27.14
Aurangabad	471	455.10	250.27	313	365.15	250.27	158	89.95
Banka	1828	1119.11	318.21	489	512.31	318.21	1339	606.80
Begusarai	581	483.27	72.85	87	111.88	72.85	494	371.39
Bhagalpur	1094	686.57	180.28	289	274.55	180.28	805	412.02
Bhojpur	436	391.42	90.51	112	153.60	90.51	324	237.82
Buxar	406	344.10	119.21	165	201.80	119.21	241	142.30
Drabhanga	4560	3334.34	1399.14	2017	1903.14	1399.14	2543	1431.21
Gaya	710	800.21	326.27	333	486.78	326.27	377	313.43
Gopalganj	1738	1083.98	195.48	290	301.25	195.48	1448	782.73
Jamui	1377	991.21	231.09	277	391.11	231.09	1100	600.10
Jehanabad	179	148.21	49.00	42	69.01	49.00	137	79.19
Kaimur	1015	1051.56	436.93	509	623.80	436.93	506	427.76
Katihar	2327	1948.04	480.87	580	756.86	480.87	1747	1191.18
Khagaria	296	328.71	41.48	45	62.90	41.48	251	265.81
Kishanganj	1030	685.81	146.46	208	247.82	146.46	822	437.98
Lakhisarai	454	342.76	125.10	149	181.75	125.10	305	161.01
Madhepura	852	396.67	74.14	145	108.66	74.14	707	288.01
Madhubani	8718	4390.90	1920.38	3664	2576.42	1920.38	5054	1814.48
Munger	362	229.35	40.13	51	63.99	40.13	311	165.36
Muzaffarpur	2349	1651.04	508.52	598	808.25	508.52	1751	842.79
Nalanda	931	655.78	143.94	141	204.77	143.94	790	451.01
Nawada	741	625.30	177.28	168	271.30	177.28	573	354.00
Pashchim Champaran	1146	1061.79	306.09	389	504.68	306.09	757	557.11
Patna	684	576.36	99.47	114	166.10	99.47	570	410.27
Purba Champaran	2241	2028.34	500.78	503	818.10	500.78	1738	1210.24
Purniya	2027	1680.99	540.74	583	868.11	540.74	1444	812.88

Rohtas	620	520.87	225.00	270	313.81	225.00	350	207.06
Saharsa	1130	604.84	157.01	285	231.96	157.01	845	372.87
Samastipur	1732	1315.13	320.67	390	463.59	320.67	1342	851.54
Saran	1306	908.29	244.23	355	412.54	244.23	951	495.75
Sheikhpura	328	243.45	91.39	90	120.22	91.39	238	123.23
Sheohar	193	139.72	25.19	29	40.07	25.19	164	99.65
Sitamarhi	2208	1536.49	493.92	720	750.92	493.92	1488	785.56
Siwan	1871	1263.54	304.90	463	489.01	304.90	1408	774.53
Supaul	1212	534.48	134.78	317	204.82	134.78	895	329.66
Vaishali	1111	735.31	165.02	219	281.55	165.02	892	453.76

In category 2 of inland fishery resources, having area ranging between 0.5 to 10 hectares, the total number of water bodies reaches 840 with 5732.89 hectares of maximum and 1962.24 hectares of minimum water spread area. In this category, the total number of perennial water bodies stand at 497 and seasonal water bodies at 239 occupying 3370.41 hectares and 1945.79 hectares of water spread area respectively. Figure 5 shows spread of surface waterbodies in category 2 and figure 6 shows district wise seasonal and perennial water bodies in category 2.

Table 4: Total number of category 2 water bodies and their area in the state of Bihar

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Araria	43	283.95	113.26	33	221.38	113.26	10	62.58
Arwal	4	27.25	12.07	4	27.25	12.07		
Aurangabad	10	66.39	38.57	9	57.28	38.57	1	9.12
Banka	10	74.41	22.96	6	41.83	22.96	3	24.16
Begusarai	37	247.54	26.05	8	49.63	26.05	15	96.87
Bhagalpur	10	70.58	25.91	5	33.75	25.91	4	30.14
Bhojpur	11	81.39	18.38	7	53.14	18.38	1	5.40
Buxar	2	14.40	9.03	2	14.40	9.03		
Drabhanga	94	674.81	248.25	55	386.34	248.25	39	288.47
Gaya	15	106.00	46.52	13	88.49	46.52	1	8.08
Gopalganj	13	84.39	2.78	1	7.03	2.78	6	33.42
Jamui	15	108.32	42.58	13	94.59	42.58	1	6.66

Jehanabad	1	6,58	6.27	1	6,58	6.27		
Kaimur	17	110.51	24.80	8	52.20	24.80	3	18.77
Katihar	98	654.89	311.54	72	482.67	311.54	25	166.80
Khagaria	23	165.57	28.72	7	49.87	28.72	15	110.53
Kishanganj	22	153.56	75.99	15	99.93	61.28	1	7.12
Lakhisarai	4	28.66	6.29	3	20.57	6.29	1	8.08
Madhepura	6	41.16	8.37	4	27.85	8.37	1	7.69
Madhubani	32	204.43	89.47	22	141.45	87.73	7	43.52
Munger	4	24.91	17.09	3	19.02	17.09		
Muzaffarpur	63	443.99	139.74	32	226.30	139.74	20	136.47
Nalanda	13	82.24	54.84	11	71.06	54.84	2	11.18
Nawada	16	106.64	36.20	8	50.69	36.20	6	43.05
Pashchim Champaran	44	299.65	78.33	25	177.19	78.33	19	122.47
Patna	9	56.13	21.48	6	40.17	21.48		
Purba Champaran	39	273.36	52.15	16	114.52	52.15	19	133.05
Purniya	60	388.22	198.58	50	321.00	198.58	9	61.51
Rohtas	12	77.17	43.62	11	68.75	43.62		
Saharsa	9	53.52	16.01	5	28.37	16.01	1	7.29
Samastipur	32	229.58	60.92	16	116.10	60.92	14	100.60
Saran	12	81.89	8.44	4	29.91	8.44	2	16.24
Sheikhpura	1	6.80	5.66	1	6.80	5.66		
Sheohar	1	5.58	1.16	1	5.58	1.16		
Sitamarhi	18	132.21	19.88	7	55.44	19.88	6	41.43
Siwan	17	118.23	12.41	4	26.07	12.41	1	5.38
Supaul	10	61.53	7.47	2	13.59	7.47	1	5.21
Vaishali	13	93.03	30.45	7	50.20	30.45	5	36.05

Category 3 water bodies have area ranging from10.00 to 50.00 ha. The state of Bihar have 590 units of category 3 water bodies with a total maximum and minimum water spread area of 11762.55 and 4556.84 hectares respectively. In this category, number of perennial water bodies are 380 having a maximum water spread area of 7635.98 hectares and minimum water spread area of 4526.73 hectares. The number of seasonal water bodies stand at 208 with an area of 4093.48 hectares. Figure 7 shows spread of surface waterbodies and figure 4 shows district wise seasonal and perennial water bodies in category 3.

Table 5: Total number of category 3 water bodies and their area in the state of Bihar

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Araria	20	339.18	194.82	17	284.19	194.82	3	54.99
Aurangabad	2	29.95	21.15	2	29.95	21.15		
Banka	8	163.99	49.87	7	151.57	49.87	1	12.43
Begusarai	35	743.86	203.65	18	370.95	203.65	17	372.91
Bhagalpur	9	288.03	96.89	5	154.69	96.89	4	133.34
Bhojpur	4	101.82	0.00				4	101.82
Buxar	5	109.21	18.15	3	52.77	18.15	2	56.44
Drabhanga	41	680.79	283.17	25	408.18	283.17	16	272.61
Gaya	1	11.38	6.71	1	11.38	6.71		
Gopalganj	12	280.12	90.14	6	156.30	90.14	6	123.81
Jamui	11	177.30	58.57	10	159.60	58.57	1	17.70
Jehanabad	2	28.88	24.35	2	28.88	24.35		
Kaimur	7	146.32	83.18	6	130.02	83.18	1	16.30
Katihar	53	1051.35	585.77	44	891.06	585.77	9	160.29
Khagaria	42	727.75	155.87	14	297.54	155.87	28	430.21
Kishanganj	17	321.76	212.12	16	310.00	212.12	1	11.76
Lakhisarai	2	59.03	24.45	2	59.03	24.45		
Madhubani	10	138.48	59.45	7	96.67	59.45	3	41.81
Munger	2	40.43	3.09	2	40.43	3.09		
Muzaffarpur	70	1415.83	667.62	47	997.39	667.62	23	418.44
Nalanda	11	196.90	120.60	9	173.96	120.60	2	22.95
Nawada	7	138.23	78.96	6	125.57	78.96	1	12.66
Pashchim Champaran	21	455.31	197.77	12	280.96	197.77	9	174.35
Patna	7	146.94	41.59	2	47.68	41.59	5	99.26
Purba Champaran	41	835.67	330.83	24	524.15	300.72	15	278.41
Purniya	28	467.25	239.29	24	397.98	239.29	4	69.27
Rohtas	3	35.85	25.52	3	35.85	25.52		
Saharsa	16	307.35	169.86	14	255.05	169.86	2	52.31

Samastipur	33	778.65	238.04	21	523.57	238.04	12	255.08
Saran	19	472.65	43.66	7	181.78	43.66	12	290.87
Sheikhpura	4	85.64	19.59	2	38.95	19.59	2	46.68
Sitamarhi	14	224.87	115.76	12	195.37	115.76	2	29.50
Siwan	15	361.59	6.09	3	71.88	6.56	13	306.62
Supaul	4	58.62	27.98	2	30.96	27.51	1	10.75
Vaishali	14	341.57	62.28	5	121.67	62.28	9	219.91

There are 102 water bodies in this category 4, where per unit size is between 50 to 200 hectares, having a water spread area of 9458.71 hectares. Out of these 74 water bodies are perennial in nature with a water spread area of 6761.17 hectares and 28 are seasonal in nature with a water spread area of 2697.57 hectares. Figure 9 shows spread of surface waterbodies and figure 10 shows district wise seasonal and perennial water bodies in category 4.

Table 6: Total number of category 4 water bodies and their Area(ha) in the state of Bihar

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Aurangabad	1	173.12	0.00				1	173.12
Banka	2	161.52	37.29	2	161.52	37.29		
Begusarai	5	385.96	118.88	4	302.60	118.88	1	83.36
Bhagalpur	5	422.71	230.10	4	360.27	230.10	1	62.44
Bhojpur	1	127.22	78.68	1	127.22	78.68		
Buxar	1	101.49	8.99	1	101.49	8.99		
Drabhanga	1	69.69	29.73	1	69.69	29.73		
Gopalganj	1	52.47	46.44	1	52.47	46.44		
Jamui	6	442.16	257.04	6	442.16	257.04		
Katihar	4	344.13	300.58	4	344.13	300.58		
Khagaria	6	494.16	80.50	3	256.70	80.50	3	237.46
Lakhisarai	2	225.13	63.30	1	165.48	63.30	1	59.66
Madhubani	1	147.81	1.76	1	147.81	1.76		
Munger	2	177.36	106.95	1	121.88	106.95	1	55.48
Muzaffarpur	13	1164.69	567.43	9	771.81	567.43	4	392.89
Pashchim Champaran	5	504.46	180.40	4	346.74	180.40	1	157.72

Patna	1	100.25	45.63	1	100.25	45.63		
Purba Champaran	20	2077.91	1240.83	17	1754.82	1240.83	3	323.09
Purniya	2	120.52	88.85	2	120.52	88.85		
Saharsa	1	167.00	162.97	1	167.00	162.97		
Samastipur	3	302.22	40.95	1	50.34	40.95	2	251.88
Saran	3	331.26	44.59	2	172.49	44.59	1	158.77
Siwan	5	356.51	2.81	3	229.44	2.81	2	127.08
Vaishali	11	1008.96	45.15	4	394.34	45.15	7	614.62

Category 5 water bodies are of size greater than 500 hectares. For the state of Bihar they are 22 in number having a water spread area of 10338.38 hectares. Among them 18 are perennial and 4 are seasonal. The perennial water bodies have a maximum and minimum water spread areas of 8172.91 hectares and 4285.59 hectares respectively. The seasonal water bodies have an area of 2165.47 hectares. Figure 11 and figure 12 shows surface waterbodies and district wise seasonal and perennial water bodies in this category respectively.

Table 7: Total number of category 5 water bodies and their area in the state of Bihar

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Banka	5	3224.01	1563.72	5	3224.01	1563.72		
Bhojpur	1	407.40	257.84	1	407.40	257.84		
Buxar	2	553.97	187.22	2	553.97	187.22		
Jamui	4	1366.22	496.47	4	1366.22	496.47		
Kaimur	1	436.81	309.48	1	436.81	309.48		
Nawada	1	486.67	418.99	1	486.67	418.99		
Pashchim Champaran	2	747.29	556.33	2	747.29	556.33		
Purba Champaran	2	950.54	495.54	2	950.54	495.54		
Vaishali	4	2165.47		4	2165.47			

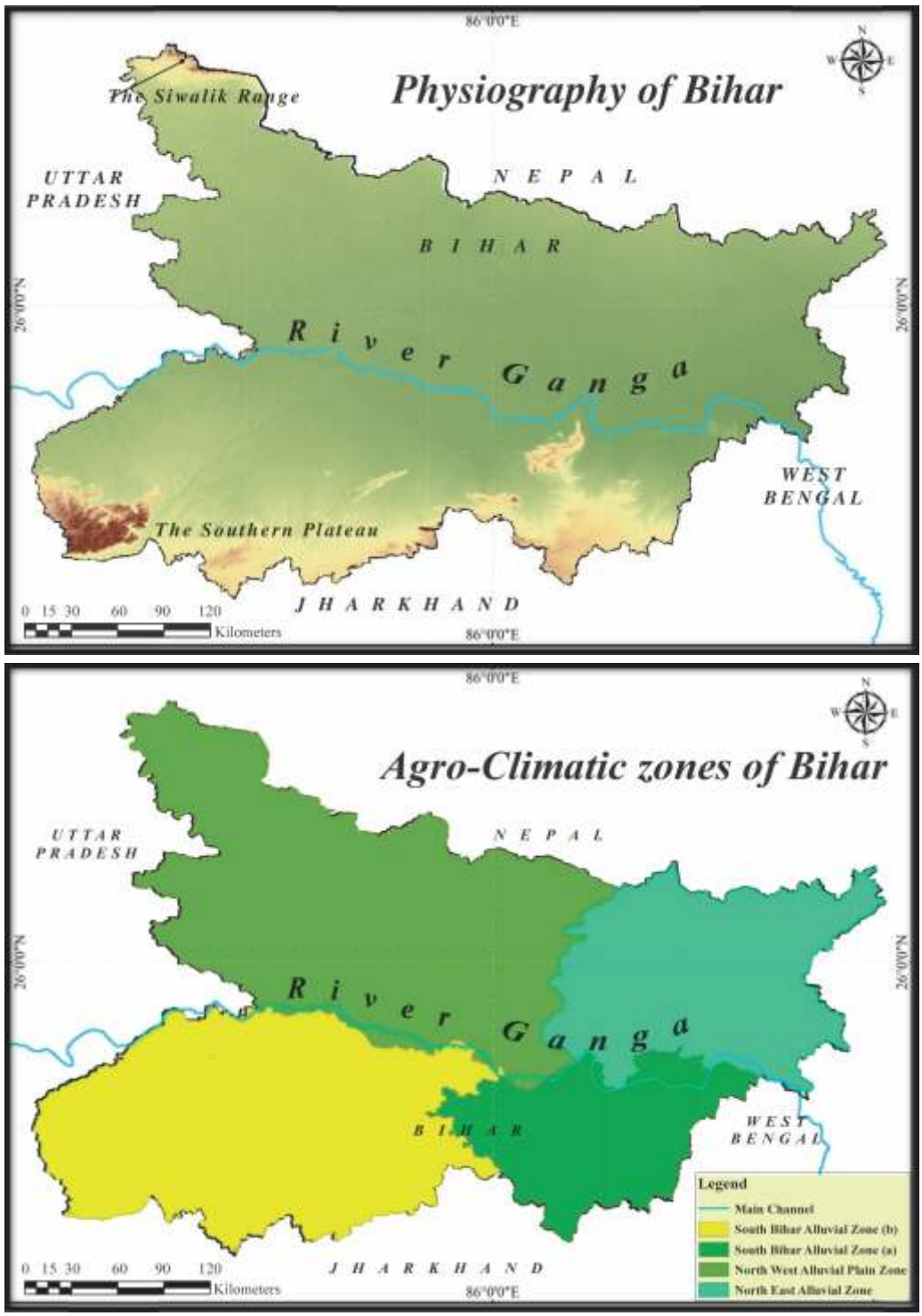


Figure 1: Physiography and Agro-Climatic Zone of Bihar

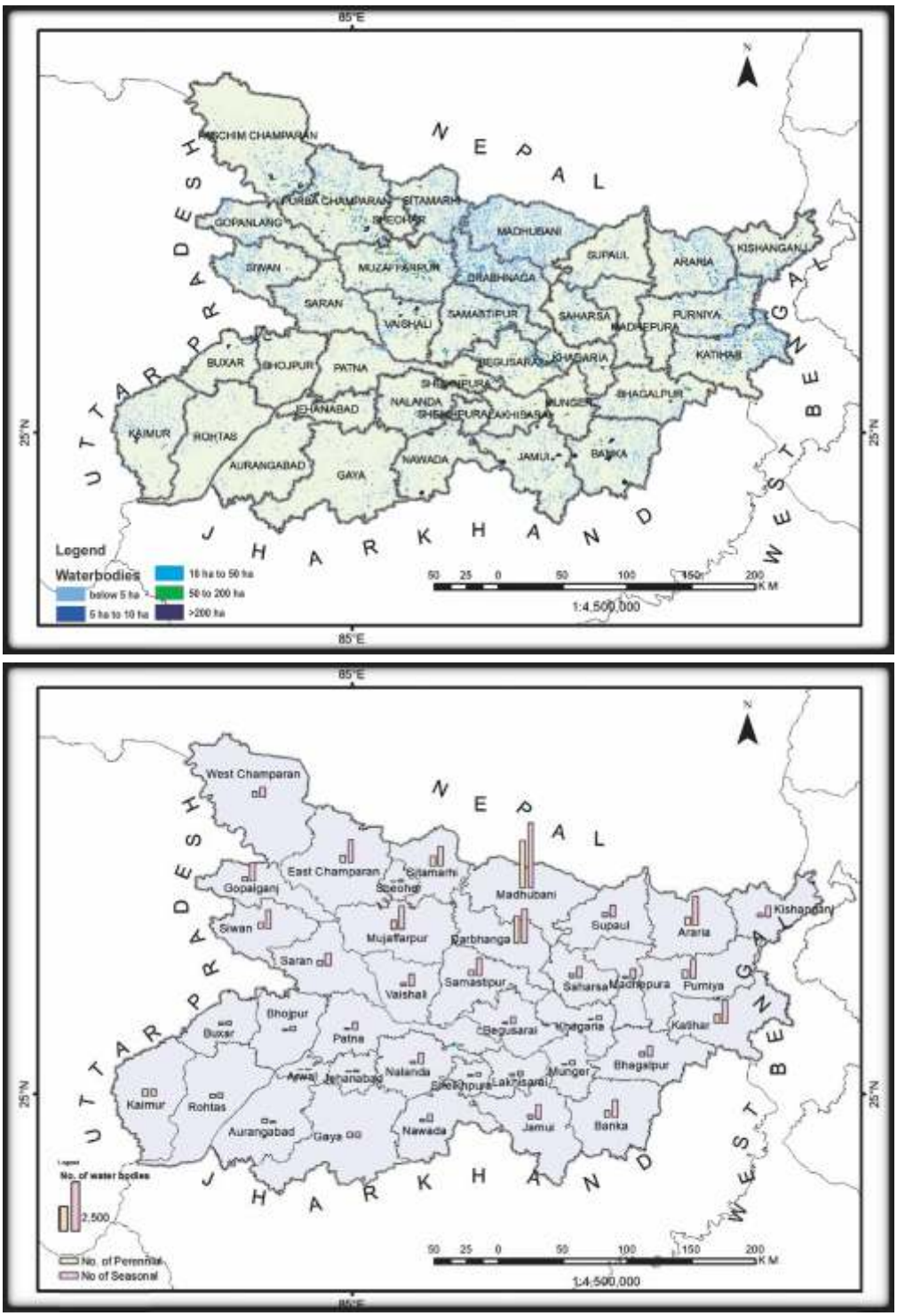


Figure 2: District wise Surface water bodies in different category and perennial and seasonal waterbodies in Bihar

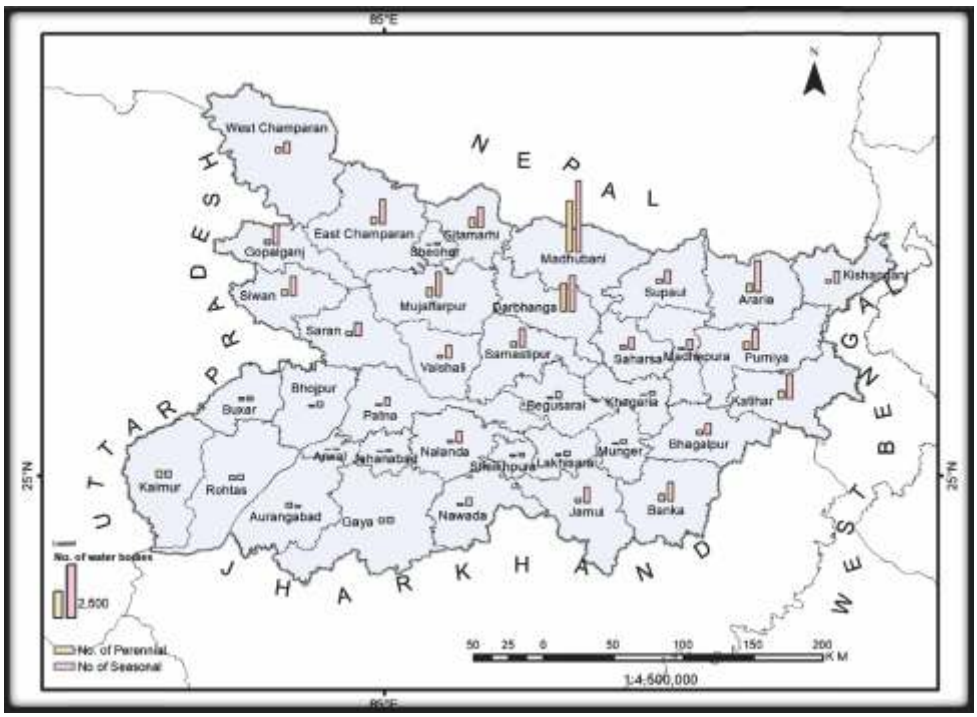


Figure 3: Surface waterbodies of Bihar in category one

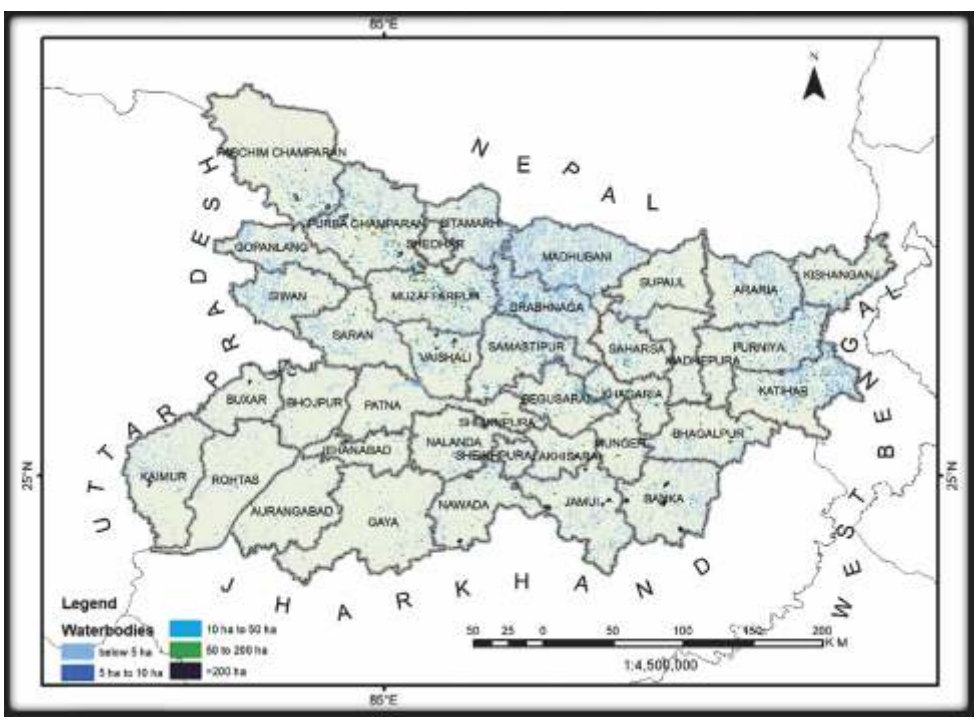


Figure 4: District wise perennial and seasonal waterbodies in category one

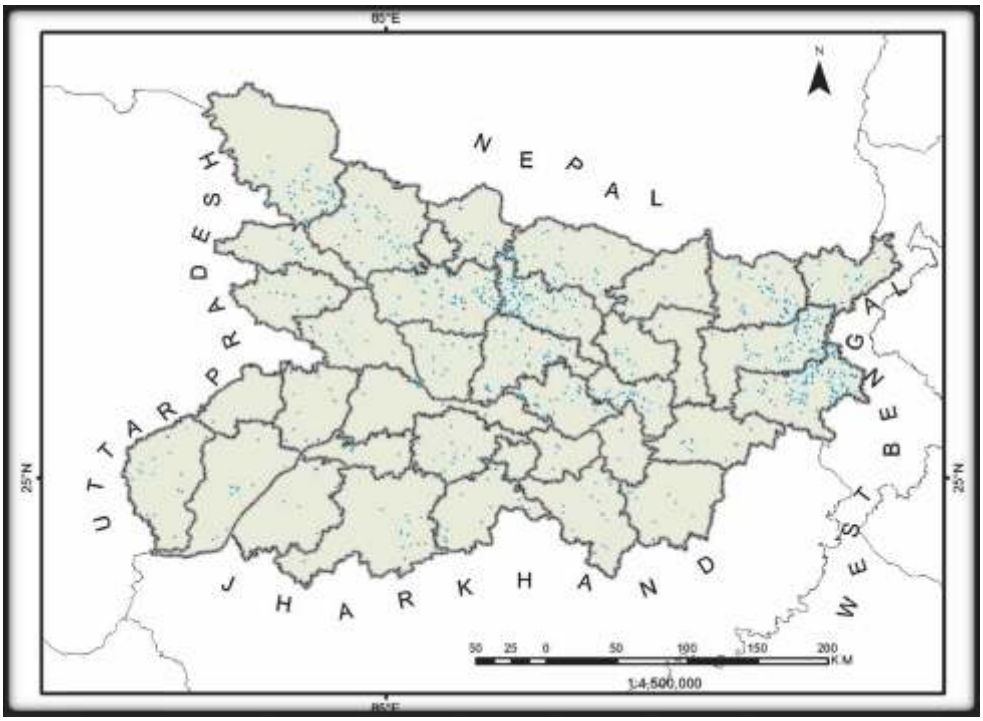


Figure 5: Surface water bodies of Bihar in category two

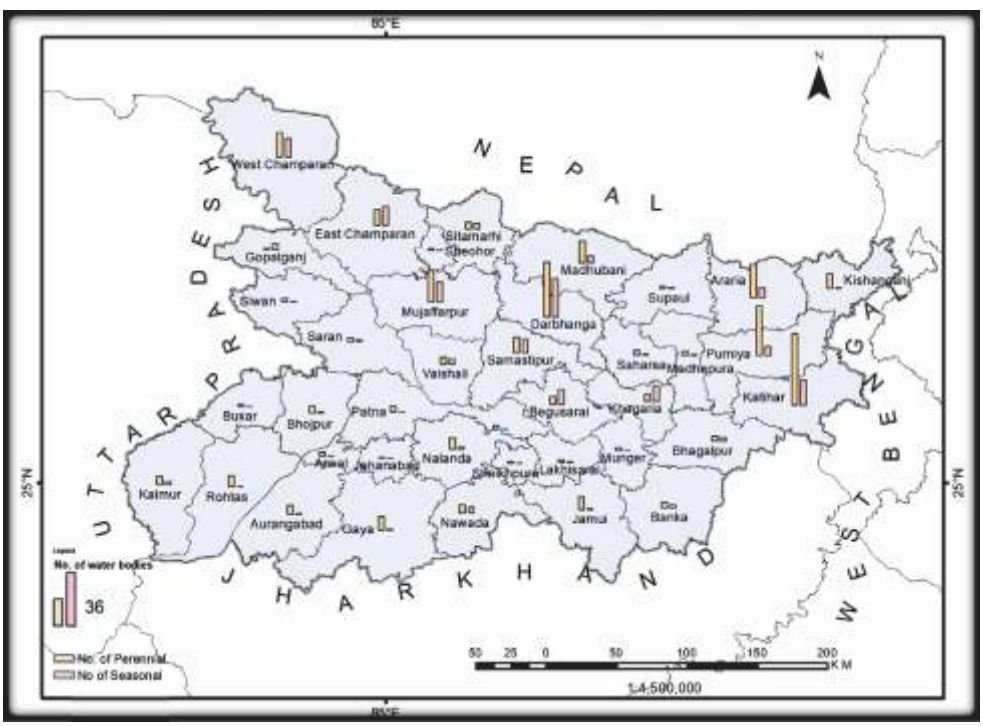


Figure 6: District wise perennial and seasonal waterbodies in category two

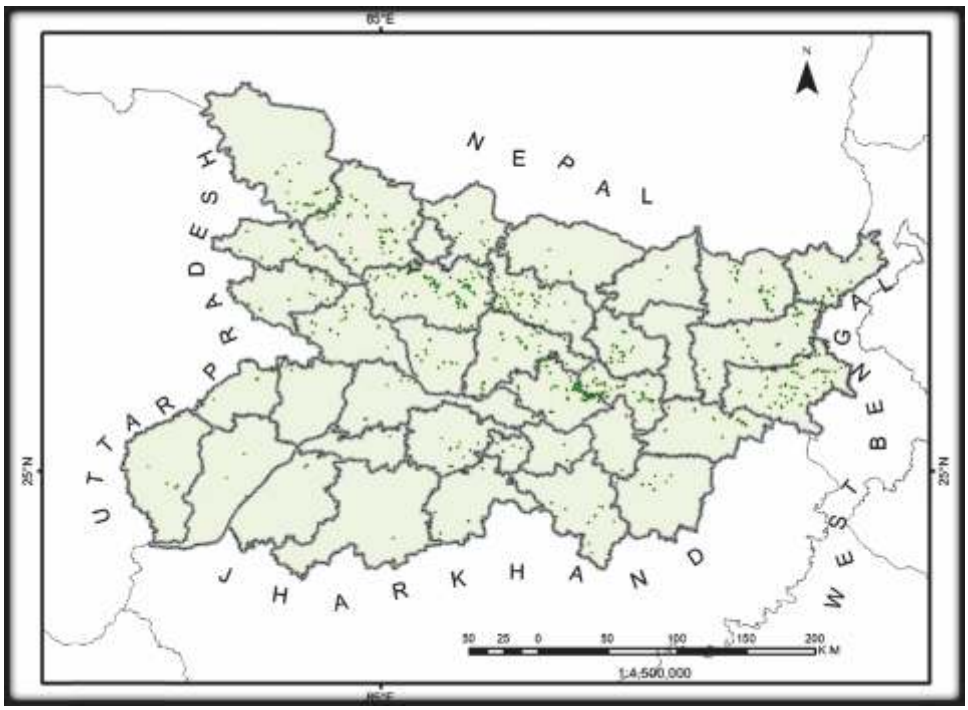


Figure 7: Surface water bodies of Bihar in category three

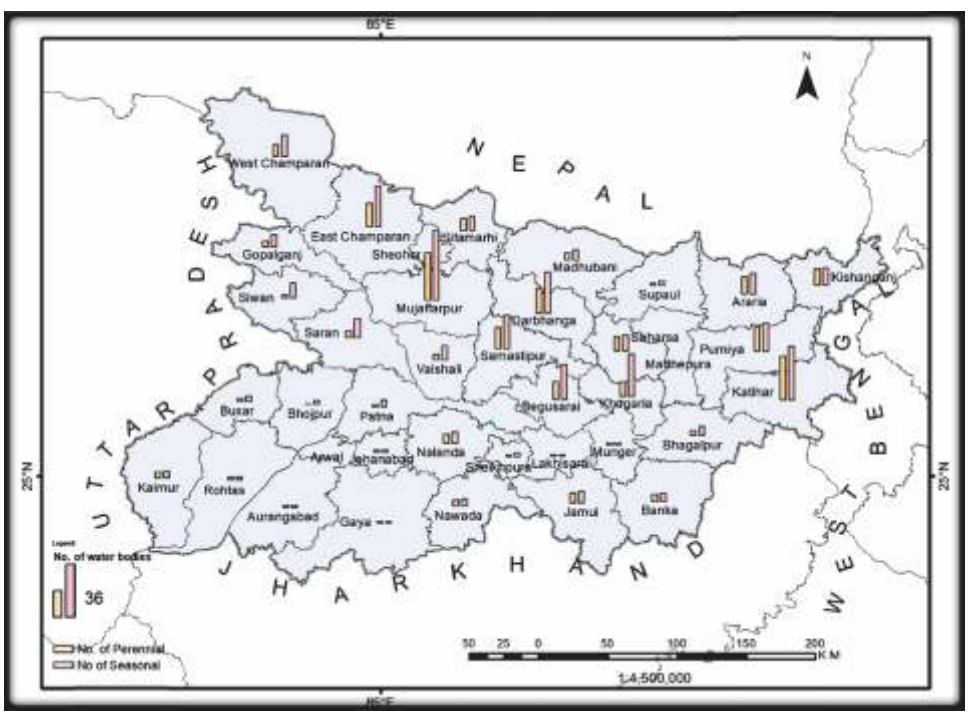


Figure 8: District wise perennial and seasonal waterbodies in category three

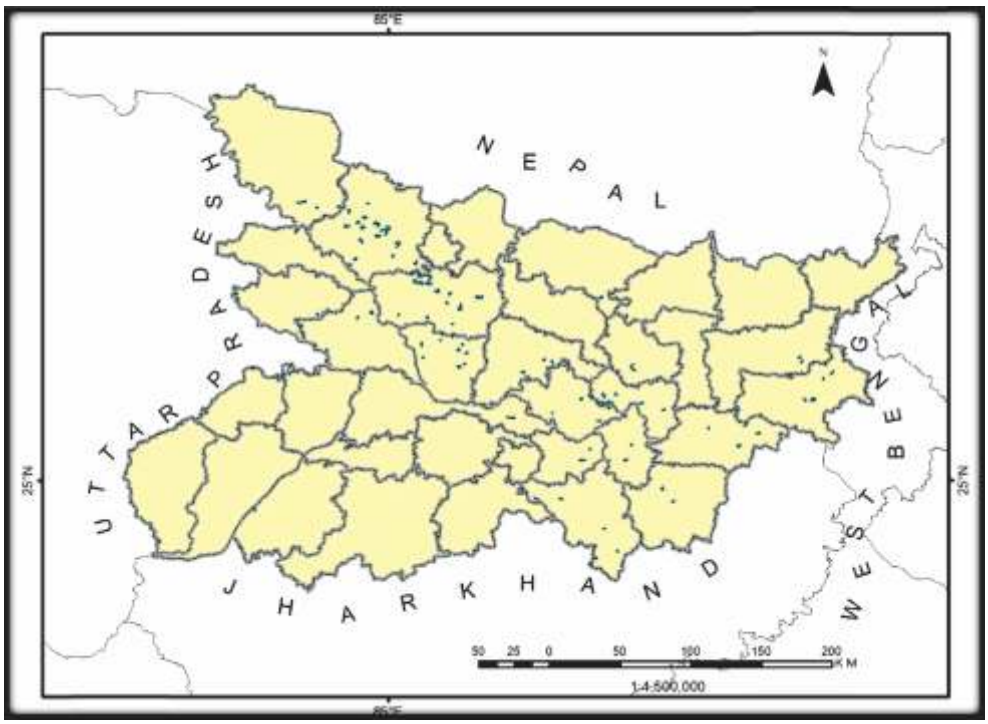


Figure 9: Surface water bodies of Bihar in category four

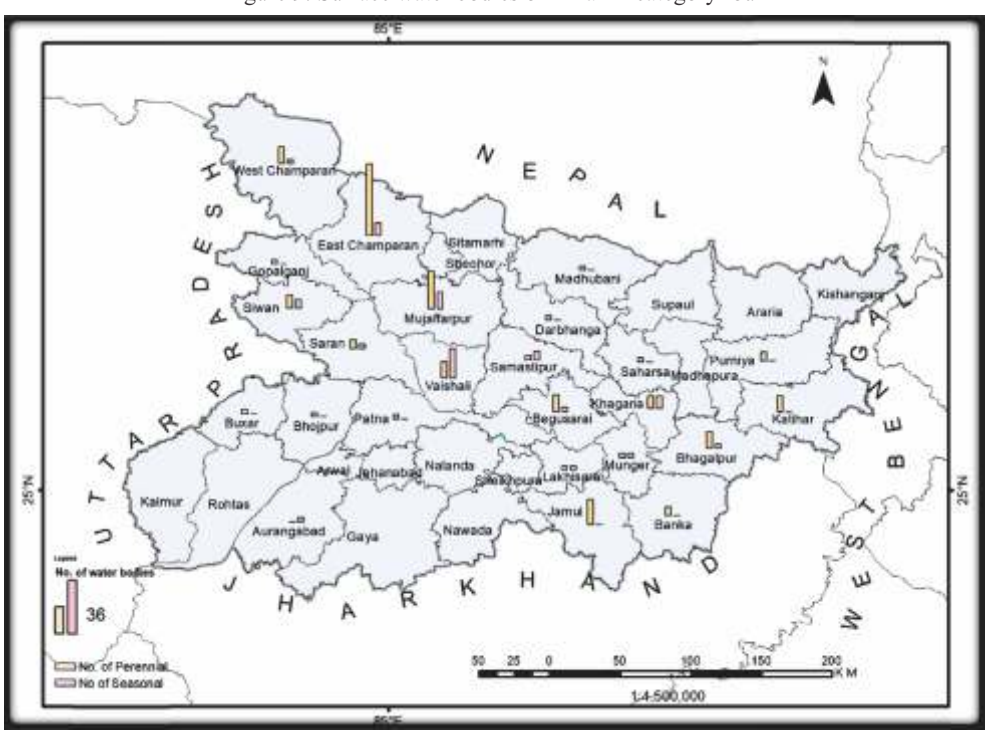


Figure 10: District wise perennial and seasonal waterbodies in category four

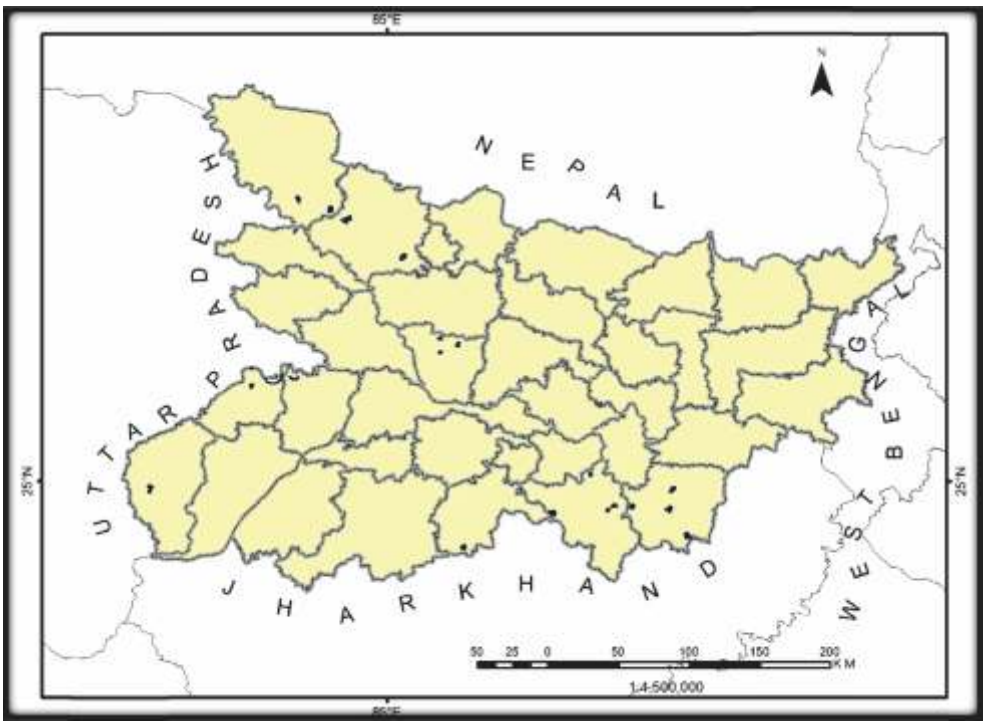


Figure 11: Surface water bodies of Bihar in category five

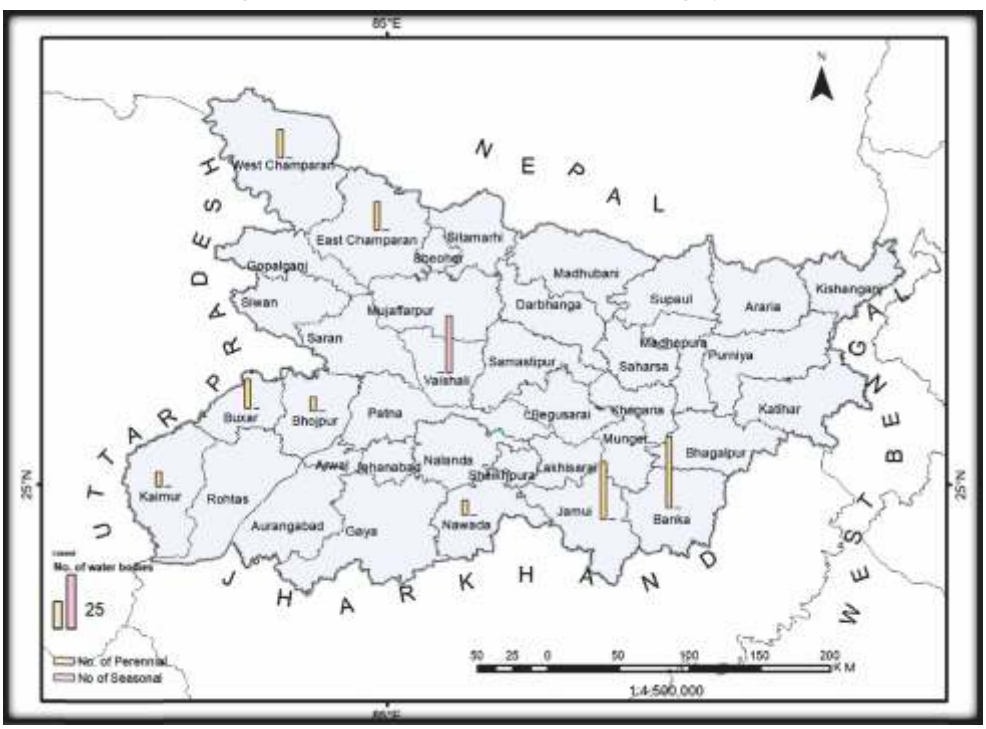


Figure 12: District wise perennial and seasonal waterbodies in category five

Araria

Araria has been carved out of the parent district of Purniya and covers an area of 2784.96 km^2. Araria is bounded by Purniya and Madhepura on the south, Kishanganj in east and Supaul in west. Strategically, Araria is important for security reasons as it shares its border with Nepal in the north. Geo-coordinates are N-E 26° 35'/87° 02' 32".51 and S-W 25° 56' 26".27/87° 42' 09".41.Total population in the district is 2811569 (2011 Census).

The district of Araria has a total of 2824number of water bodies having an area of 2108.06 hectares of maximum water spread area, 657.66 hectares of minimum water area and 1382.85 hectares of average water area. Total water bodies and their area is shown in table 8. In the category 1 water bodies, the district hosts 2758 number of total water bodies, 552 numbers of perennial water bodies and 2206 number of seasonal water bodies. The total maximum and minimum water spreads are 1474.92 hectares, 346.88 hectares respectively. The perennial water bodies have a maximum water spread of 569.35 hectares, minimum water spread of 346.88 hectares. The seasonal water bodies have a water spread area of 905.57 hectares. The number of water bodies and their area is given in table 9.The category 2 numbers of water bodies are 43 in total, with a total maximum water spread of 283.96 hectares and total minimum water spread of 113.26 hectares. The numbers of perennial water bodies stand at 33 units having maximum and minimum areas of 221.38 and 113.26 hectares respectively. The numbers of seasonal water bodies stand at 10 units having maximum area of 62.57hectares. The number of water bodies and their area under category 2 is given in table 10. In category 3 the total number of water bodies including perennial and seasonal stand at 20 units having maximum and minimum total area of 339.18 and 194.82 hectares respectively. In this category, the numbers of perennial water bodies stand at 17 units with maximum and minimum area water spread area of 284.19 and 194.82 hectares respectively. In this category the number of seasonal water bodies are 3 with the maximum water spread area of 54.99 hectares. The number of water bodies and their area under category 3 is given in table 11. There is no waterbodies in category 4 and 5. Waterbodies of block Forbesganj and district Araria is given figure 13 and 14 respectively.

Table 8: Total water bodies and their area in district Araria

Block Name	Total number of water bodies	Maximum Area(ha)	Minimum Area(ha)	Average Area(ha)
Araria	465	529.51	188.50	359.00
Bhargama	88	36.58	5.78	21.18
Forbesganj	406	382.76	149.71	266.24
Jokihat	331	356.56	125.84	241.20
Kursakatta	372	181.22	36.53	108.87
Narpatganj	98	45.95	5.37	25.66
Palasi	380	168.50	35.89	102.19
Raniganj	379	278.37	82.77	180.57
Sikti	305	128.61	27.27	77.94

Table 9: Category 1 water bodies and their area in district Araria

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Araria	443	269.96	64.27	106	108.29	64.27	337	161.67
Bhargama	88	36.58	5.78	12	7.67	5.78	76	28.91
Forbesganj	394	248.74	69.10	98	109.27	69.10	296	139.47
Jokihat	315	238.10	71.38	83	115.87	71.38	232	122.24
Kursakatta	368	161.20	32.77	79	59.15	32.77	289	102.05
Narpatganj	98	45.95	5.37	12	11.17	5.37	86	34.78
Palasi	377	145.18	23.23	30	37.94	23.23	347	107.24
Raniganj	371	208.46	47.93	71	72.86	47.93	300	135.60
Sikti	304	120.75	27.05	61	47.13	27.05	243	73.61

Table 10: Category 2 water bodies and their area in district Araria

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Araria	11	69.46	29.20	10	63.68	29.20	1	5.78
Forbesganj	7	45.78	24.00	6	39.91	24.00	1	5.87
Jokihat	13	80.89	34.02	8	52.90	34.02	5	27.98
Kursakatta	3	20.02	3.76	1	6.68	3.76	2	13.34
Palasi	2	13.08	9.85	2	13.08	9.85		
Raniganj	6	46.86	12.21	5	37.26	12.21	1	9.60
Sikti	1	7.87	0.22	1	7.87	0.22		

Table 11: Category3 water bodies and their area in district Araria

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Araria	11	190.08	95.03	9	153.61	95.03	2	36.47
Forbesganj	5	88.24	56.61	4	69.72	56.61	1	18.52
Jokihat	2	27.57	17.74	2	27.57	17.74		
Palasi	1	10.24	2.80	1	10.24	2.80		
Raniganj	1	23.05	22.64	1	23.05	22.64		

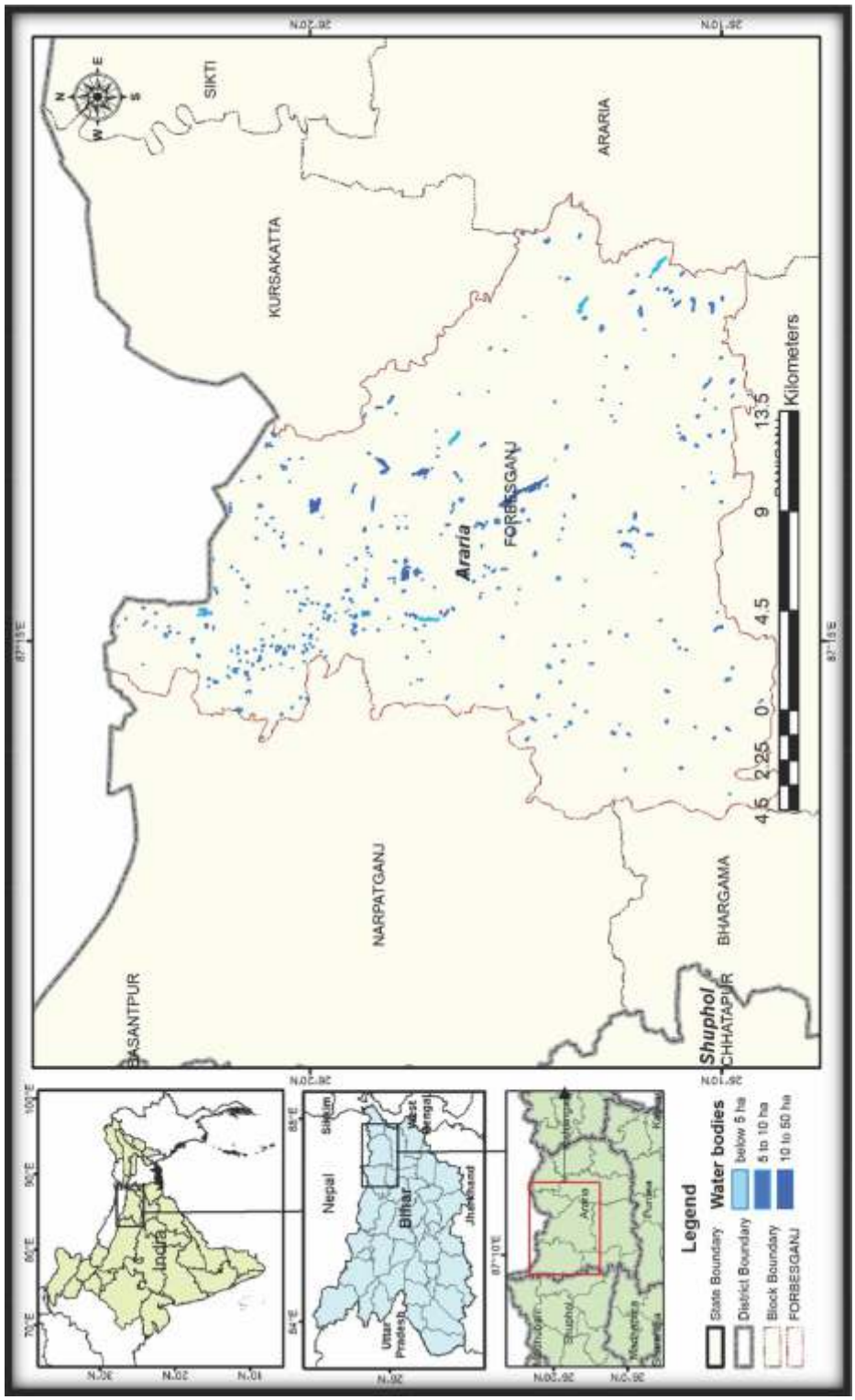


Figure 13: Waterbodies of Block Forbesganj of Araria

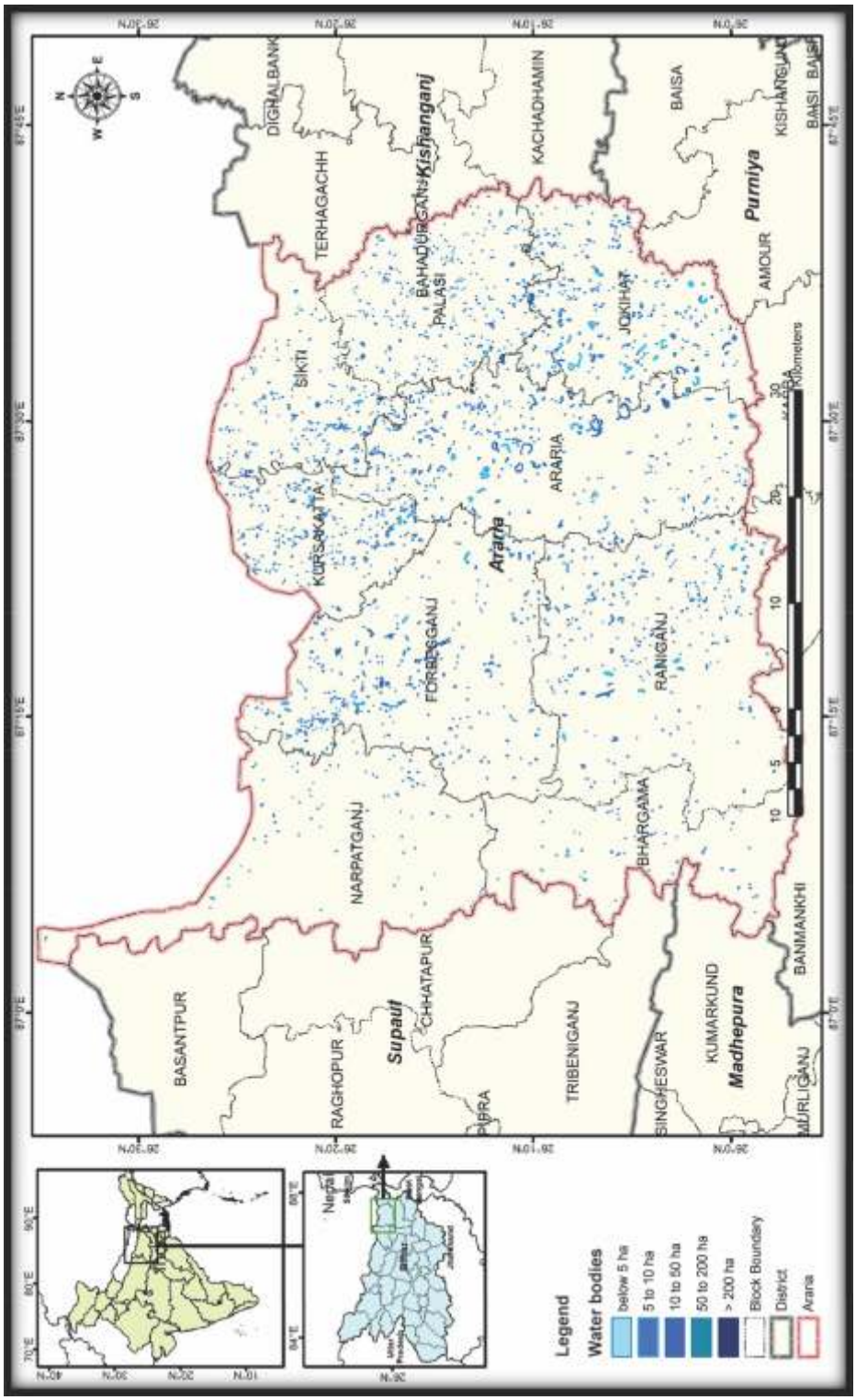
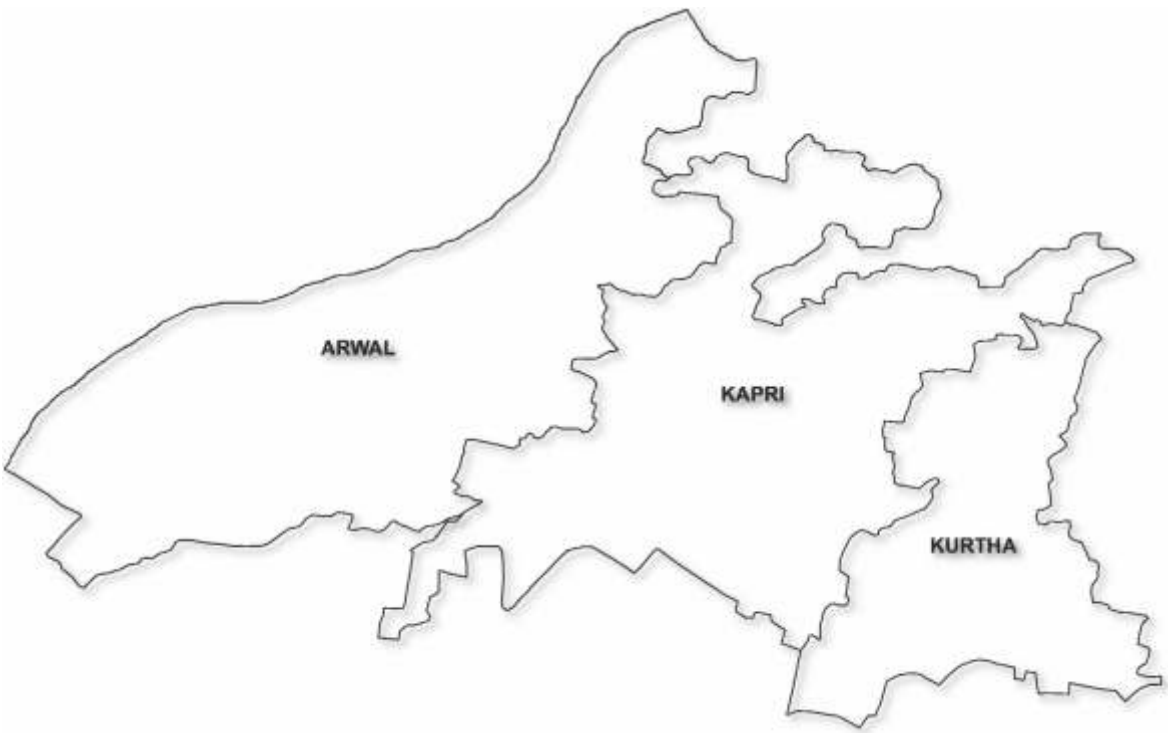


Figure 14: Waterbodies of Araria district

Arwal

Arwal a part of Jehanabad district, came into existence in September 2001, with area of 661.72 km^2. There are five blocks namely Arwal, Kale, Karpi, Kurtha and Suryapur Vanshi. District belongs within Geo-coordinates of N-E 25°19'/ 84°27', S-W 25° 02' 38"/84°52'. Total population in the district is 700843 (2011 Census). Arwal is bounded by Aurangabad and Gaya on the south, Bhojpur in east and Jehanabad in west and north by state capital Patna.



For the district of Arwal, number of water bodies stand at 57. They occupy a total maximum area of 63.32 hectares and a total minimum area of 18.15 hectares and a total average area of 40.73 hectares. The share of perennial water bodies in this district stand at 14 units which have a maximum and minimum area of 36.17 and 18.15 hectares respectively. The seasonal water bodies have a contribution of 43 units having a total maximum area of 27.14 hectares. Total water bodies and their area is shown in table 12. In category 1 the total number of water bodies stand at 53 units having a total maximum and minimum areas of 36.06 and 6.08 hectares respectively. In this category the total units of perennial water bodies are 10 having a total maximum area and minimum area of 8.93 and 6.08

hectares respectively. Seasonal water bodies stand at 43 units having a maximum area of 27.14 hectares. The number of water bodies and their area under category 1 is given in table 13. In category 2 the total number of water body units are 4 their total maximum and minimum areas are 27.25 and 12.07 hectares respectively. The numbers of perennial water bodies stand at 4 units having maximum and minimum areas of 27.25 and 12.07 hectares respectively. The numbers of seasonal water bodies stand at 4 units having maximum area of 27.25 hectares. There is no waterbodies in category 3, 4 and 5.Waterbodies of block Kapri and district Arwal is given figure 15 and 16 respectively.

Table 12: Total water bodies and their area in district Arwal

Block Name	Total number of water bodies	Maximum Area(ha)	Minimum Area(ha)	Average Area(ha)
Arwal	25	19.03	5.33	12.18
Kapri	23	31.45	8.53	19.99
Kurtha	9	12.84	4.29	8.56

Table 13: Category 1 water bodies and their area in district Arwal

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Arwal	25	19.03	5.33	8	7.76	5.33	17	11.28
Kapri	20	9.62	0.75	2	1.17	0.75	18	8.45
Kurtha	8	7.41	0.00				8	7.41

Table 14: Category 2 water bodies and their area in district Araria

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Kapri	3	21.82	7.78	3	21.82	7.78	Kapri	3
Kurtha	1	5.43	4.29	1	5.43	4.29	Kurtha	1

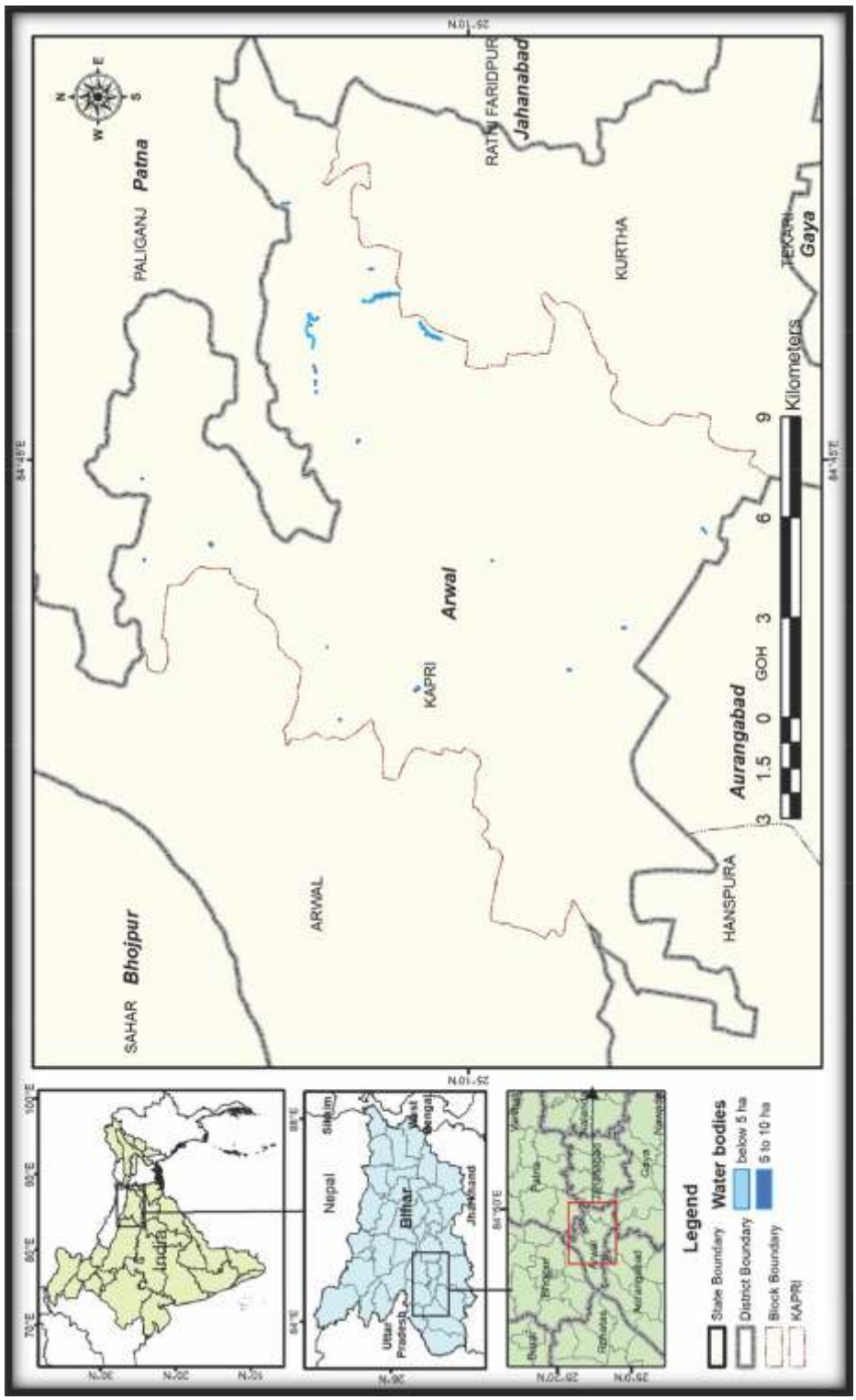


Figure 15: Waterbodies of Block Kapri of district Arwal

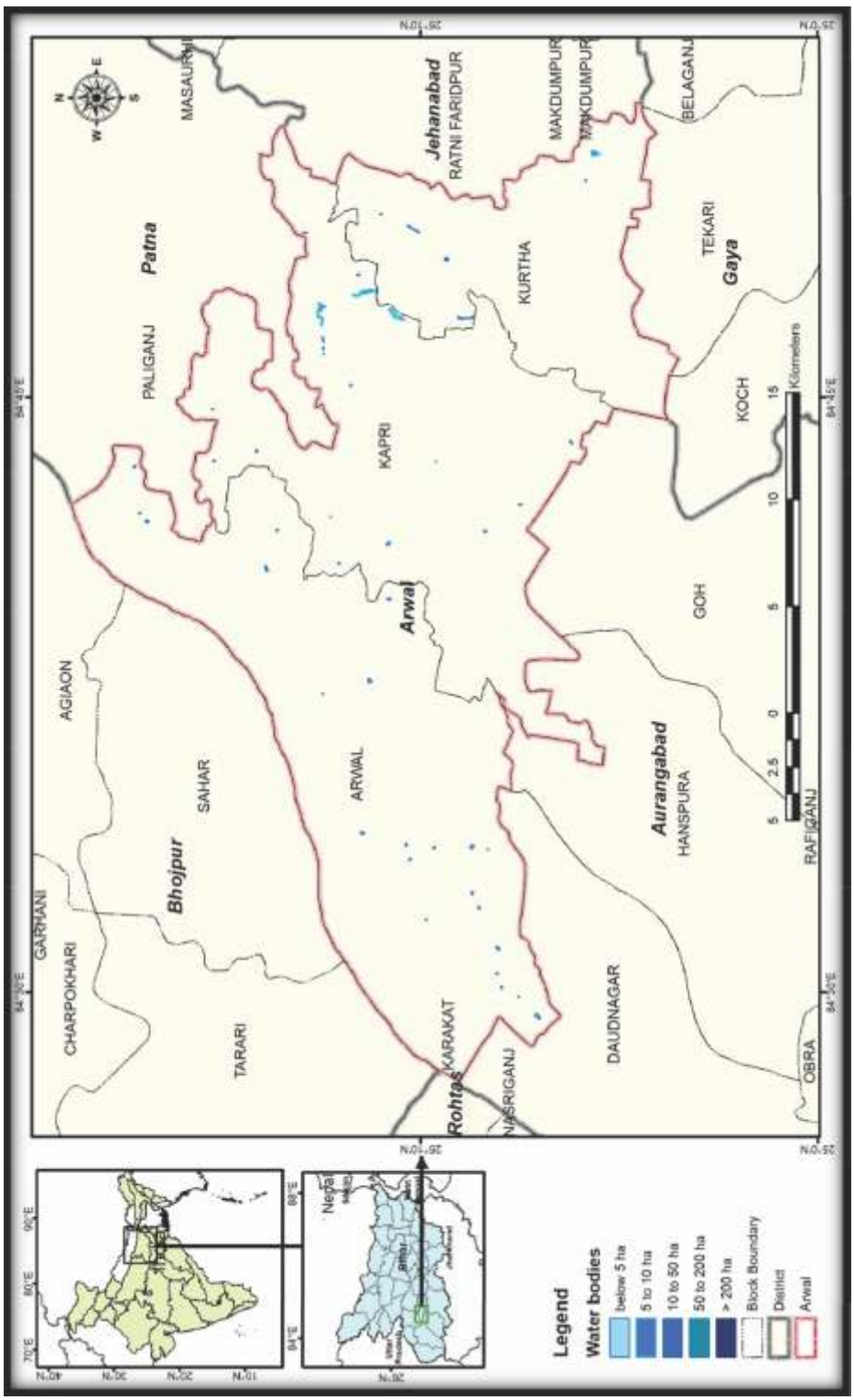


Figure 16: Waterbodies of Arwal

Aurangabad

Aurangabad is one of the 38 districts in Bihar, with a city of the same name of Maharashtra. The beautiful city boasts of a unique culture and identity. The Magadha-speaking people that are settled here have largely taken up agriculture and related activities as their occupation. On 26 January 1973, Aurangabad district, Bihar was created. District Aurangabad is bounded by Jharkhand state on the south, Gaya in east and Rohtas in west and north Jahanabad The district has geo-coordinates N-E 25°07'35"/ 84°43'20" and S-W 24°29'05"/84°44'50". It has total area of 3273.98 km^2.Total population of the district is 2540073 (according to 2011 Census).

For the district of Aurangabad, number of water bodies stand at 484 They occupy a total maximum area of 724.57 hectares and a total minimum area of 309.98 hectares and a total average area of 517.27 hectares. The share of perennial water bodies in this district stand at 324 units which have a maximum and minimum area of 452.37 and 309.99 hectares respectively. The seasonal water bodies have a contribution of 160 units having a total maximum area of 272.18 hectares. Total water bodies and their area is shown in table 15.In category 1 the total number of water bodies stand at 471 units having a total maximum and minimum areas of 455.1 and 250.27 hectares respectively. In this category the total units of perennial water bodies are 313 having a total maximum area and minimum area of 365.17 and 250.27 hectares respectively. Seasonal water bodies stand at 158 units having a maximum area of 89.97 hectares. The number of water bodies and their area under category 1 is given in table 16. In category 2 the total number of water body units are 10 their total maximum and minimum areas are 66.39 and 38.57 hectares respectively. The numbers of perennial water bodies stand at 9 units having maximum and minimum areas of 57.28 and 38.57 hectares respectively. The numbers of seasonal water bodies stand at 1unit having maximum area of 9.12 hectares. The number of water bodies and their area under category 2 is given in table 17. In category 3 the total number of water bodies including perennial and

seasonal stand at 2 units having maximum and minimum total area of 29.95 and 21.15 hectares respectively. In this category, the numbers of perennial water bodies stand at 2 units with maximum and minimum area water spread area of 29.95 and 21.15 hectares respectively. In this category, there are no seasonal water bodies for this district. The number of water bodies and their area under category 3 is given in table 18.There is only one seasonal water body in this category for this district with a maximum water spread area of 173.12 hectares. There is no waterbody in a category five. Waterbodies of block Barun and district Aurangabad is given in figure 17 and 18 respectively.

Table 15: Total water bodies and their area in district Aurangabad

Block Name	Total number of water bodies	Maximum Area(ha)	Minimum Area(ha)	Average Area(ha)
Aurangabad	46	48.70	21.79	35.24
Barun	42	212.94	17.19	115.07
Daudnagar	29	26.99	13.96	20.48
Deo	54	63.23	37.75	50.49
Goh	37	49.95	28.20	39.07
Hanspura	34	85.40	57.34	71.37
Kutamba	26	44.83	31.46	38.14
Madanpur	32	33.97	25.21	29.59
Nabinagar	102	97.32	50.89	74.10
Obra	20	12.50	8.41	10.46
Rafiganj	62	48.74	17.78	33.26

Table 16: Category1 water bodies and their area in district Aurangabad

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Aurangabad	44	33.87	18.91	26	24.34	18.91	18	9.54
Barun	41	39.82	17.19	24	28.78	17.19	17	11.04
Daudnagar	29	26.99	13.96	19	22.53	13.96	10	4.46
Deo	53	56.76	35.02	42	48.20	35.02	11	8.56
Goh	36	42.30	22.02	24	33.75	22.02	12	8.55
Hanspura	28	29.93	17.83	21	24.99	17.83	7	4.94
Kutamba	26	44.83	31.46	23	43.22	31.46	3	1.61
Madanpur	31	28.14	19.75	22	24.58	19.75	9	3.57
Nabinagar	101	91.22	47.94	76	76.80	47.94	25	14.43
Obra	20	12.50	8.41	15	11.56	8.41	5	0.95
Rafiganj	62	48.74	17.78	21	26.42	17.78	41	22.32

Table 17: Category 2 water bodies and their area in district Aurangabad

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Aurangabad	2	14.82	2.88	1	5.71	2.88	1	9.12
Deo	1	6.46	2.74	1	6.46	2.74		
Goh	1	7.66	6.18	1	7.66	6.18		
Hanspura	4	25.53	18.36	4	25.53	18.36		
Madanpur	1	5.83	5.46	1	5.83	5.46		
Nabinagar	1	6.09	2.95	1	6.09	2.95		

Table 18: Category 3 water bodies and their area in district Aurangabad

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Hanspura	2	29.95	21.15	2	29.95	21.15		

Table 19: Category 4 water bodies and their area in district Aurangabad

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Barun	1	173.12	0				1	173.12

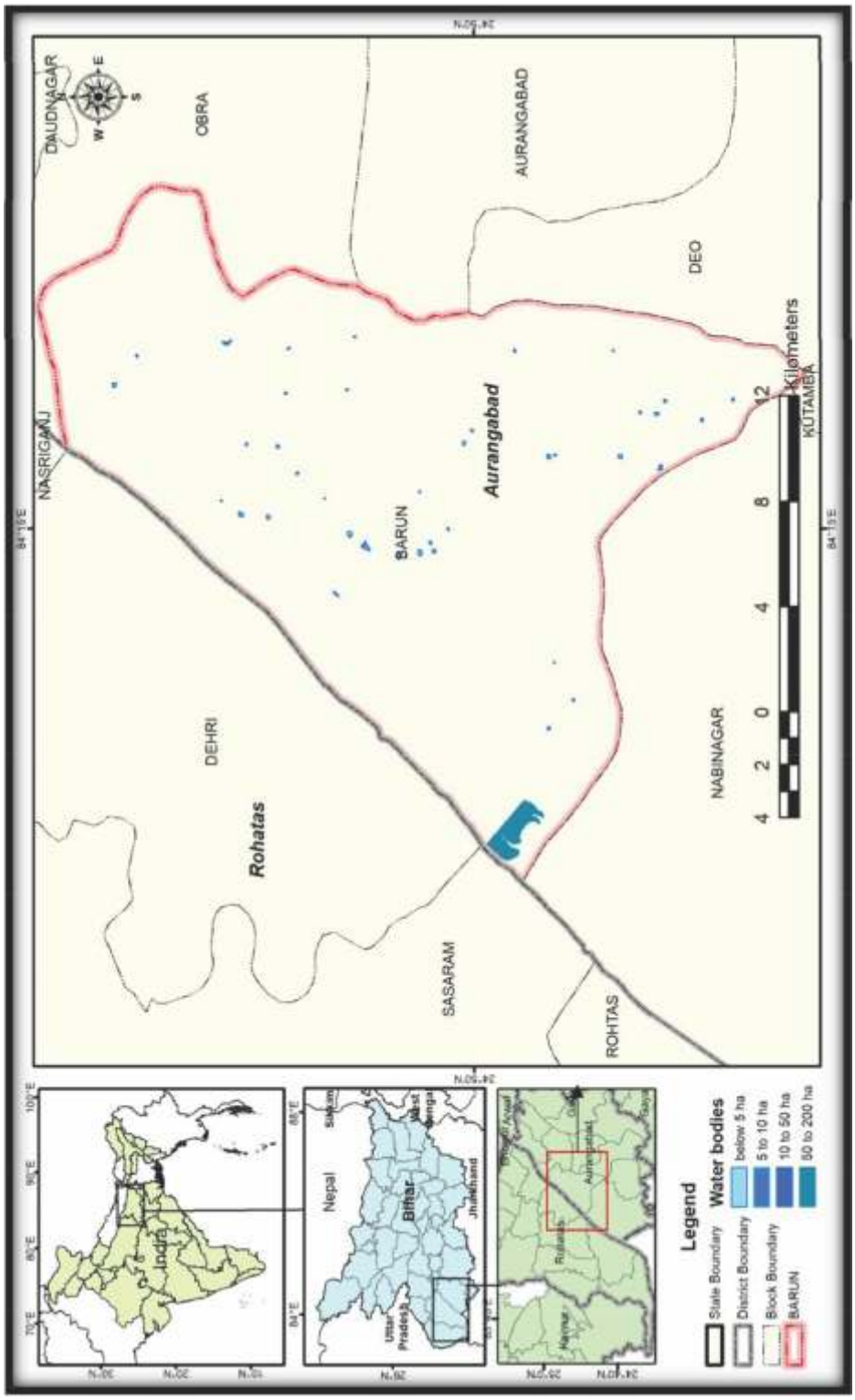


Figure 17: Waterbodies of block Barun of Aurangabad

Figure 18: Waterbodies of district Aurangabad

Banka

The District of Banka is situated at the far south – east of the State of Bihar. The eastern and the southern border of the district coincide with district Godda of the state – Jharkhand. In west and north east it is bounded by Jamui and Munger district respectively. The old district Bhagalpur is situated in the north side of Banka. Geographical coordinates of the district is N-E 25°07'24"/ 86°29'45" and S-W 24°32'30"/87°10'40" and total Geographical area 3056 km^2. Total population of the district is 2034763 (according to 2011 Census).

The district head quarter of Banka is situated in Banka Town. The district has been established on 21st February, 1991. Earlier it was a Sub-Division of district Bhagalpur. The district consists of 11 blocks and two municipalities Banka and Amarpur.

For the district of Banka, number of water bodies stand at 1853 they occupy a total maximum area of 4743.04 hectares and a total minimum area of 1992.05 hectares and a total average area of 3367.54 hectares. The share of perennial water bodies in this district stand at 509 units which have a maximum and minimum area of 4091.24 and 1992.05 hectares respectively. The seasonal water bodies have a contribution of 1344 units having a total maximum area of 651.8 hectares.Total water bodies and their area is shown in table 20. In category 1 the total number of water bodies stand at 1828 units having a total maximum and minimum areas of 1119.12 and 318.2 hectares respectively. In this category the total units of perennial water bodies are 489 having a total maximum area and minimum area of 512.32 and 318.2 hectares respectively. Seasonal water bodies stand at 1339 units having a maximum area of 606.81 hectares. The number of water bodies and their area under category 1 is given in table 21. In category 2 the total number of water body units are 10 their total maximum and minimum areas are 74.41 and 22.95 hectares respectively. The numbers of perennial water bodies stand at 6 units having maximum and minimum areas of 41.84 and 22.95 hectares respectively. The numbers of seasonal water bodies stand at 3 units having maximum area of 24.16 hectares. The number of water bodies and their area under category 2 is given in table 22. In category 3 the total number of water bodies including perennial and seasonal stand at 8 units having maximum

and minimum total area of 163.98 and 49.87 hectares respectively. In this category, the numbers of perennial water bodies stand at 7 units with maximum and minimum area water spread area of 151.56 and 49.87 hectares respectively. In this category the number of seasonal water bodies are 1 with the maximum water spread area of 12.43 hectares. The number of water bodies and their area under category 3 is given in table 23. For this category there are only two units of perennial water bodies 1 each in Banka and Belhar districts with a maximum area of 94.91 hectares and a minimum area of 29.26 hectares. The number of water bodies and their area under category 4 is given in table 24. For category 5 there are 3 perennial water bodies of which there are 2 in Banka block and 1 in Belhar district with a maximum 1553.87 hectares and 608.38 hectares of water spread area as given in table 25. Waterbodies of block Katoriya and district Banka is given figure 19 and 20 respectively.

Table 20: Total water bodies and their area in district Banka

Block Name	Total number of water bodies	Maximum Area(ha)	Minimum Area(ha)	Average Area(ha)
Amaarpur	142	117.97	41.00	79.48
Banka	219	1,414.76	618.13	1,016.45
Barahat	188	123.96	55.50	89.73
Bausi	266	195.11	77.51	136.31
Belhar	103	603.38	91.05	347.21
Bhuvaiya	199	117.40	53.94	85.67
Chanan	240	1,204.05	362.42	783.23
Katoria	261	837.55	650.67	744.11
Rajaun	132	76.94	32.35	54.65
Sambhuganj	103	51.92	9.48	30.70

Table 21: Category 1 water bodies and their area in district Banka

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Amaarpur	141	98.56	38.26	40	54.37	38.26	101	44.19
Banka	213	150.07	28.40	36	46.36	28.40	177	103.71
Barahat	188	123.96	55.50	88	89.54	55.50	100	34.42
Bausi	265	189.47	72.15	126	122.52	72.15	139	66.95
Belhar	96	51.44	8.86	11	14.53	8.86	85	36.92
Bhuvaiya	198	110.84	51.98	94	74.09	51.98	104	36.76
Chanan	237	139.76	19.33	23	40.98	19.33	214	98.77
Katoria	256	140.31	12.06	16	26.39	12.06	240	113.92
Rajaun	131	62.79	22.18	44	31.78	22.18	87	31.01
Sambhuganj	103	51.92	9.48	11	11.76	9.48	92	40.16

Table 22: Category 2 water bodies and their area in district Banka

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Banka	2	18.33	6.18	1	9.24	6.18	1	9.10
Bausi	1	5.64	5.36	1	5.64	5.36		
Belhar	3	19.55	5.55	2	12.07	5.55	1	7.47
Bhuvaiya	1	6.56	1.95	1	6.56	1.95		
Chanan	2	15.92	3.91	1	8.33	3.91	1	7.59
Katoria	1	8.41	0.00					

Table 23: Category 3 water bodies and their area in district Banka

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Amaarpur	1	19.41	2.74	1	19.41	2.74		
Banka	1	11.41	3.74	1	11.41	3.74		
Belhar	2	51.94	10.77	1	39.52	10.77	1	12.43
Katoria	3	67.07	22.45	3	67.07	22.45		
Rajaun	1	14.15	10.17	1	14.15	10.17		

Table 24: Category 4 water bodies and their area in district Banka

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Banka	1	66.60	8.03	1	66.60	8.03		
Belhar	1	94.91	29.26	1	94.91	29.26		

Table 25: Category 5 water bodies and their area in district Banka

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Banka	2	1168.34	571.78	2	1168.34	571.78		
Belhar	1	385.53	36.60	1	385.53	36.60		

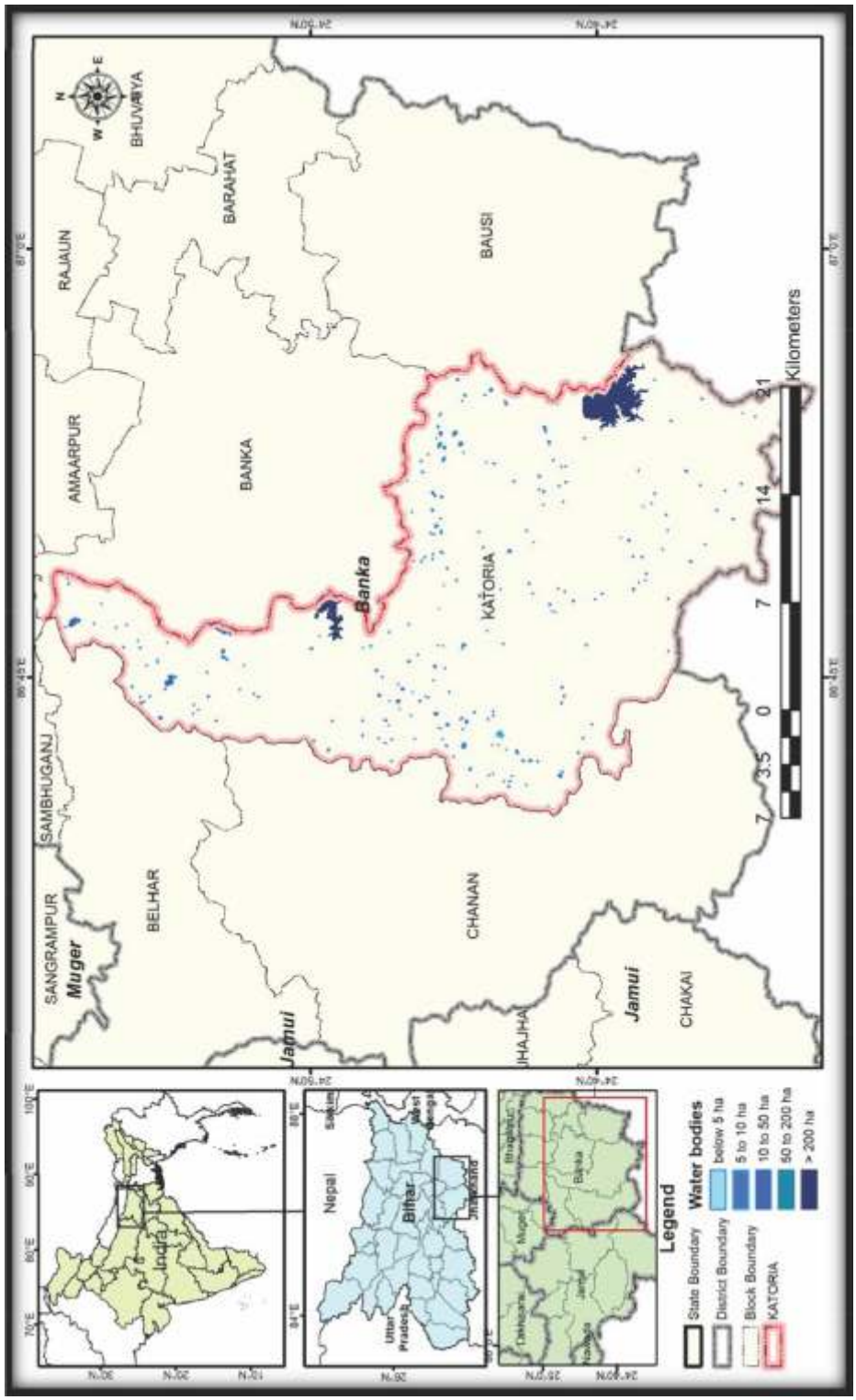


Figure 19: Waterbodies of Block Katoriya of Banka

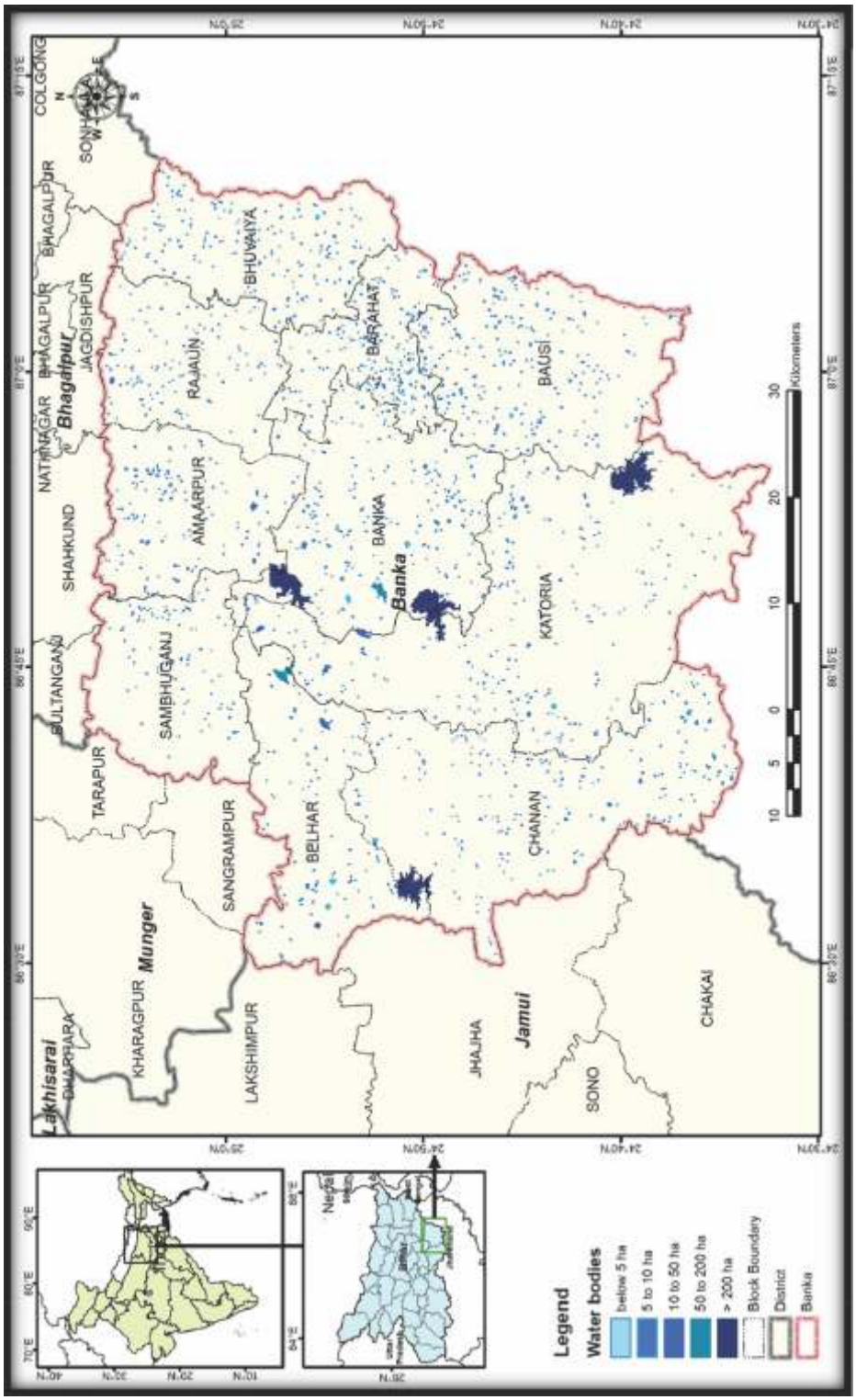


Figure 20: Waterbodies of district Banka

Begusarai

Begusarai formed in the year 1972, is situated in the middle of North Bihar and is surrounded on the north by Samastipur, on the south by Ganga and Lakhisarai district, on the east by Khagaria and Munger, on the west by Samastipur and Patna district. Geo-coordinates of the district are N-E 25°46'29"/ 85°44'30" and S-W 25°15'01"/86°30'45". Total area is 1912.79 km^2. Total population of the district is 2034763 (according to 2011 Census).

For the district of Begusarai, number of water bodies stand at 658. They occupy a total maximum area of 1860.64 hectares and a total minimum area of 421.43 hectares and a total average area of 1141.03 hectares. The share of perennial water bodies in this district stand at 117 units which have a maximum and minimum area of 835.06 and 421.43 hectares respectively. The seasonal water bodies have a contribution of 541 units having a total maximum area of 1025.57 hectares. Total water bodies and their area is shown in table 26.

In category 1 the total number of water bodies stand at 581 units having a total maximum and minimum areas of 483.27 and 72.84 hectares respectively. In this category the total units of perennial water bodies are 87 having a total maximum area and minimum area of 111.89 and 72.84 hectares respectively. Seasonal water bodies stand at 494 units having a maximum area of 371.39 hectares. The number of water bodies and their area under category 1 is given in table 27. In category 2 the total number of water body units are 37, their total maximum and minimum areas are 247.54 and 26.06 hectares respectively. The numbers of perennial water bodies stand at 8 units having maximum and minimum areas of 49.63 and 26.06 hectares respectively. The numbers of seasonal water bodies stand at 15 units having maximum area of 96.87 hectares.

The number of water bodies and their area under category 2 is given in table 28. In category 3 the total number of water bodies including perennial and seasonal stand at 35 units having maximum and minimum total area of 743.87 and 203.65 hectares respectively. In this category, the numbers of perennial water bodies stand at 18 units with maximum and minimum area water spread area of 370.95 and 203.65 hectares respectively. In this category the number of seasonal water bodies are 17 with the

maximum water spread area of 372.92 hectares. The number of water bodies and their area under category 3 is given in table 29. There are 5 number of category 4 water bodies with 4 number of perennial and 1 number of seasonal units of them. The perennial type has a maximum area of 302.59 hectares and a minimum area of 118.88 hectares while the seasonal type has a maximum area of 83.36 hectares bringing the total maximum area to 385.95 hectares of water spread area. The number of water bodies and their area under category 4 is given in table 30. There is no waterbodies in category 5. Waterbodies of block Barauni and district Begusarai given figure 21 and 22 respectively.

Table 26: Total water bodies and their area in district Begusarai

Block Name	Total number of water bodies	Maximum Area(ha)	Minimum Area(ha)	Average Area(ha)
Bachhwara	54	117.35	0	58.67
Bakhri	92	380.96	116.31	248.64
Balia	64	350.95	72.34	211.64
Barauni	100	174.13	81.36	127.74
Begusarai	94	158.62	45.92	102.27
Bhagwanpur	38	33.9	7.18	20.54
Cheria	41	71.27	17.41	44.34
Khudabandpur	67	127.38	17.59	72.48
Matihani	20	18.79	3.23	11.01
Sahebpur	40	351.33	58.46	204.90
Teghra	48	75.96	1.63	38.80

Table 27: Category 1 water bodies and their area in district Begusarai

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Bachhwara	46	34.69	0.00				46	34.69
Bakhri	73	67.95	6.19	7	8.78	6.19	66	59.17
Balia	51	50.60	4.59	5	10.50	4.59	46	40.10
Barauni	92	63.37	16.29	16	29.55	16.29	76	33.83
Begusarai	90	63.38	11.68	14	15.63	11.68	76	47.75
Bhagwanpur	37	28.60	4.38	4	5.02	4.38	33	23.58
Cheria	38	35.17	7.26	13	9.71	7.26	25	25.46
Khudabandpur	63	55.41	17.59	24	25.31	17.59	39	30.10
Matihani	20	18.79	3.23	1	4.79	3.23	19	14.00
Sahebpur	29	33.22	0.00				29	33.22
Teghra	42	32.09	1.63	3	2.60	1.63	39	29.49

Table 28: Category 2 water bodies and their area in district Begusarai

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Bachhwara	6	42.44	0.00					
Bakhri	7	42.55	3.00	1	5.10	3.00	6	37.45
Balia	4	26.48	6.14	1	6.54	6.14	3	19.94
Barauni	6	36.00	5.37	2	12.17	5.37	4	23.83
Begusarai	1	6.25	1.82	1	6.25	1.82		
Bhagwanpur	1	5.30	2.80	1	5.30	2.80		
Cheria	1	5.57	0.00					
Khudabandpur	1	9.16	0.00					
Sahebpur	4	29.92	6.93	2	14.27	6.93	2	15.65
Teghra	6	43.87	0.00					

Table 29: Category 3 water bodies and their area in district Begusarai

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Bachhwara	2	40.22	0.00				2	40.22
Bakhri	11	176.57	62.43	7	114.11	62.43	4	62.46
Balia	8	182.13	57.81	5	90.99	57.81	3	91.14
Barauni	1	12.67	12.07	1	12.67	12.07		
Begusarai	3	89.00	32.42	2	73.69	32.42	1	15.31
Cheria	2	30.53	10.15	1	14.87	10.15	1	15.66
Khudabandpur	3	62.81	0.00				3	62.81
Sahebpur	5	149.94	28.77	2	64.62	28.77	3	85.32

Table 30: Category4 water bodies and their area in district Begusarai

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Bakhri	1	93.89	44.69	1	93.89	44.69		
Balia	1	91.73	3.80	1	91.73	3.80		
Barauni	1	62.08	47.63	1	62.08	47.63		
Sahebpur	2	138.25	22.76	1	54.89	22.76	1	83.36

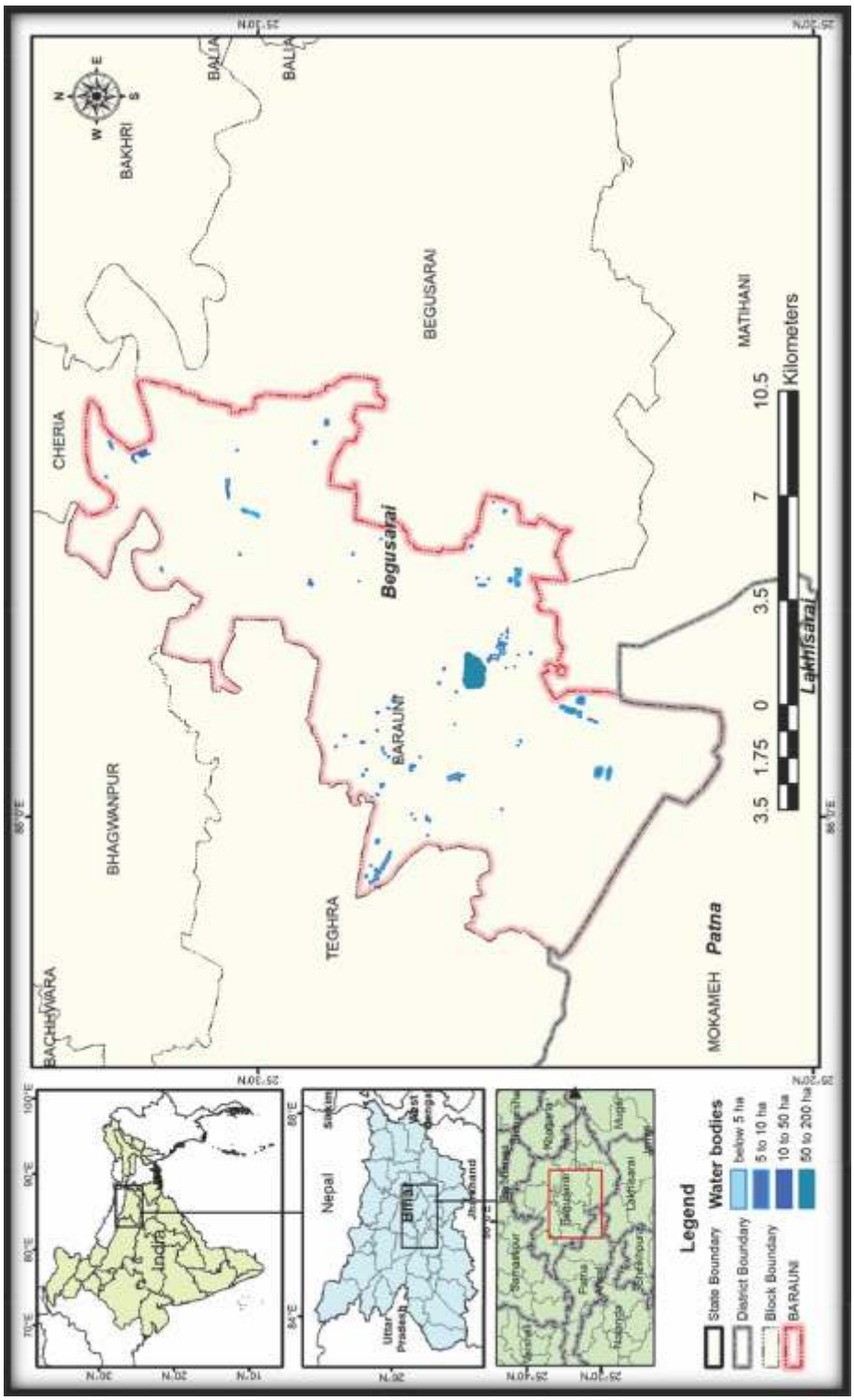


Figure 21: Waterbodies of Block Barauni of Begusarai

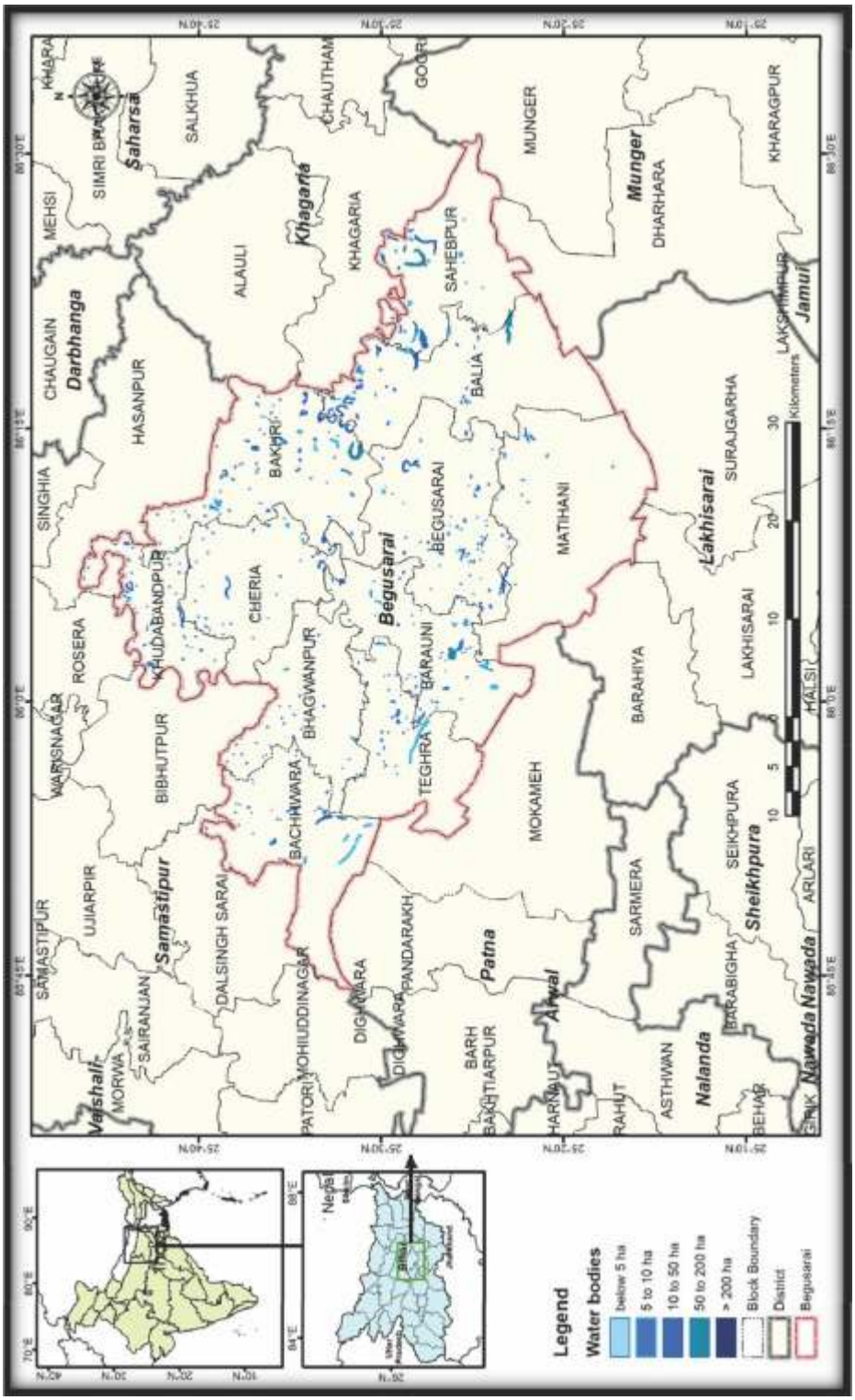


Figure 22: Waterbodies of district Begusarai

Bhagalpur

Bhagalpur is situated on the southern bank of the Ganga River and is famous for silk production. District Bhagalpur is bounded by Katihar, Purniya and Madhepura in North, Khagaria and Munger in West, Banka on the south, Jharkhand in East.Bhagalpur had a population of 3037766 (according to census 2011). The district has total area 2507.58 km^2 with geo-coordinates N-E 25°30'05"/ 86°38'45"and S-W 25°3'34"/87°32'45".

For the district of Bhagalpur, number of water bodies stand at 1118. They occupy a total maximum area of 1467.88 hectares and a total minimum area of 533.16 hectares and a total average area of 1000.52 hectares. The share of perennial water bodies in this district stand at 303 units which have a maximum and minimum area of 823.27 and 533.18 hectares respectively. The seasonal water bodies have a contribution of 815 units having a total maximum area of 644.62 hectares. The number of water bodies and their area is given in table 31.

In category 1 the total number of water bodies stand at 1094 units having a total maximum and minimum areas of 686.57 and 180.26 hectares respectively. In this category the total units of perennial water bodies are 289 having a total maximum area and minimum area of 274.56 and 180.26 hectares respectively. Seasonal water bodies stand at 805 units having a maximum area of 412.02 hectares. The number of water bodies and their area under category 1 is given in table 32. In category 2 the total number of water body units are 10 their total maximum and minimum areas are 70.58 and 25.91 hectares respectively. The numbers of perennial water bodies stand at 5 units having maximum and

minimum areas of 33.75 and 25.91 hectares respectively. The numbers of seasonal water bodies stand at 4 units having maximum area of 30.14 hectares. The number of water bodies and their area under category 2 is given in table 33. In category 3 the total number of water bodies including perennial and seasonal stand at 9 units having maximum and minimum total area of 288.03 and 96.88 hectares respectively. In this category, the numbers of perennial water bodies stand at 5 units with maximum and minimum area water spread area of 154.7 and 96.88 hectares respectively. In this category the number of seasonal water bodies are 4 with the maximum water spread area of 133.33 hectares. The number of water bodies and their area under category 3 is given in table 34. There are 5 number of category 4 water bodies with 4 number of perennial and 1 number of seasonal units of them. The perennial type has a maximum area of 360.27 hectares and a minimum area of 230.11 hectares while the seasonal type has a maximum area of 62.44 hectares bringing the total maximum area to 422.71 hectares of water spread area. The number of water bodies and their area under category 4 is given in table 35 and no waterbodies in category 5.Waterbodies of block colgong and district Bhagalpur is given figure 23 and 24 respectively.

Table 31: Total water bodies and their area in district Bhagalpur

Block Name	Total number of water bodies	Maximum Area(ha)	Minimum Area(ha)	Average Area(ha)
Bhagalpur	91	54.18	19.08	36.63
Bihpur	36	58.22	10.21	34.22
Colgong	186	550.06	337.37	443.71
Gopalpur	21	117.37	1.99	59.68
Jagdishpur	150	127.75	49.42	88.59
Nathnagar	59	54.6	5.52	30.06
Naugachhia	24	126.36	27.55	76.96
Pirpainti	74	81.2	20.03	50.61
Shahkund	139	71.66	21.62	46.64
Sonhaula	219	114.25	36.63	75.44
Sultanganj	119	112.23	3.74	57.98

Table 32: Category 1 water bodies and their area in district Bhagalpur

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Bhagalpur	91	54.18	19.08	32	27.64	19.08	59	26.55
Bihpur	35	39.05	0.00				35	39.05
Colgong	176	105.21	31.35	54	50.02	31.35	122	55.19
Gopalpur	19	15.13	1.99	2	3.73	1.99	17	11.41

Jagdishpur	147	107.33	39.86	51	66.28	39.86	96	41.05
Nathnagar	56	37.28	5.11	7	7.53	5.11	49	29.75
Naugachhia	22	31.26	4.40	3	5.97	4.40	19	25.29
Pirpainti	73	50.45	16.48	28	23.20	16.48	45	27.25
Shahkund	139	71.66	21.62	30	30.63	21.62	109	41.02
Sonhaula	218	107.56	36.63	76	54.58	36.63	142	52.98
Sultanganj	118	67.46	3.74	6	4.98	3.74	112	62.48

Table 33: Category 2 water bodies and their area in district Bhagalpur

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Colgong	**3**	**26.14**	**15.94**	**2**	**16.41**	**15.94**	**1**	**9.73**
Jagdishpur	3	20.43	9.56	2	11.70	9.56	1	8.73
Nathnagar	3	17.32	0.41	1	5.64	0.41	2	11.68
Sonhaula	1	6.69	0.00					

Table 34: Category 3 water bodies and their area in district Bhagalpur

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Bihpur	1	19.17	10.21	1	19.17	10.21		
Colgong	4	122.49	83.12	3	104.78	83.12	1	17.71
Gopalpur	1	39.80	0.00				1	39.80
Naugachhia	1	31.05	0.00				1	31.05
Pirpainti	1	30.75	3.55	1	30.75	3.55		
Sultanganj	1	44.77	0.00				1	44.77

Table 35: Category 4 water bodies and their area in district Bhagalpur

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Colgong	3	296.21	206.96	3	296.21	206.96		
Gopalpur	1	62.44	0.00				1	62.44
Naugachhia	1	64.06	23.15	1	64.06	23.15		

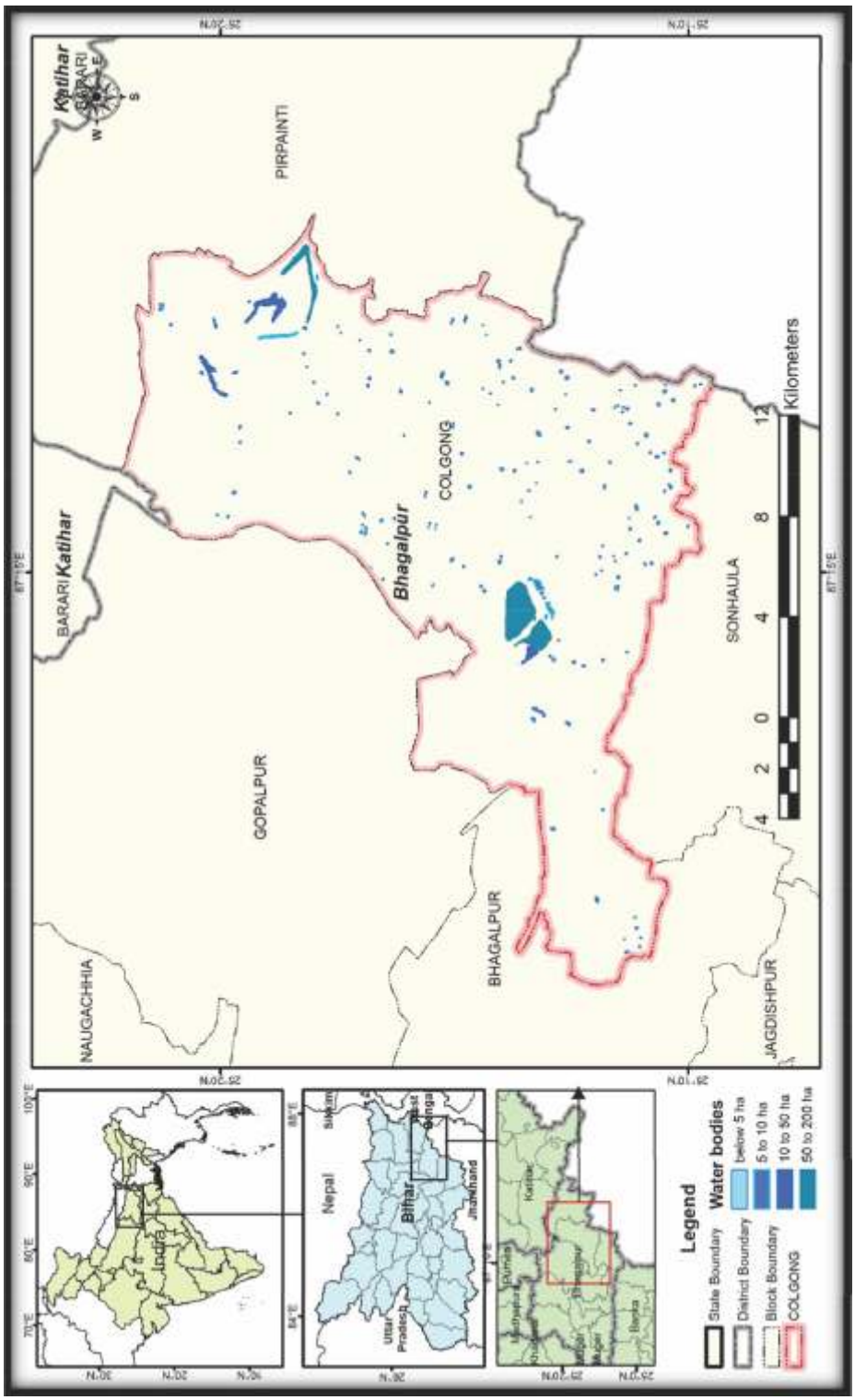


Figure 23: Waterbodies of block Colgong of district Bhagalpur

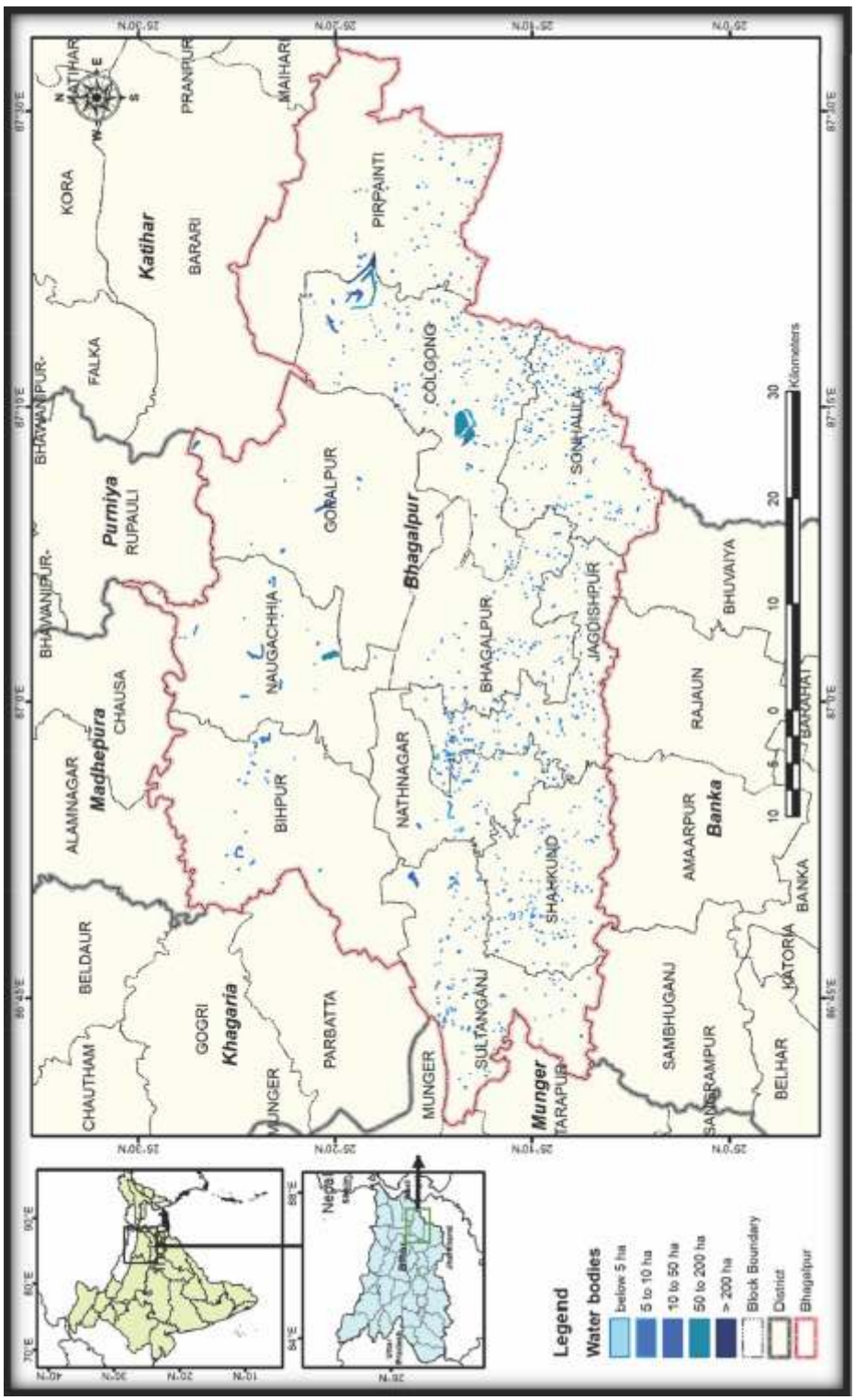


Figure 24: Waterbodies of district Bhagalpur

Bhojpur

The present Bhojpur came into existence in 1972. Earlier this district was part of old Sahabad district. In the year 1972 Sahabad district was bifurcated in two parts namely Bhojpur and Rohtas. Buxar was a subdivision of old Bhojpur district. In 1992, Buxar became a separate district and rest of Bhojpur district has now three sub-divisions.The district headquarters is located at Arrah also known as Ara. The district occupies an area of 2418 km² with geo-coordinate N-E 25°45'20"/ 84°16'45" and S-W 25°09'45"/84°50'30".Total population of the district is 2728407 (according to 2011 census). District Bhojpur shared bounderies with Buxar, Rohtas, Aurangabd, Arwal, Patna, Saran and Uttar Pradesh state.

For the district of Bhojpur, number of water bodies stand at 453 They occupy a total maximum area of 1109.25 hectares and a total minimum area of 445.4 hectares and a total average area of 777.32 hectares. The share of perennial water bodies in this district stand at 121 units which have a maximum and minimum area of 741.37 and 445.4 hectares respectively. The seasonal water bodies have a contribution of 332 units having a total maximum area of 367.89 hectares. The number of water bodies and their area is given in table 36.

In category 1 the total number of water bodies stand at 436 units having a total maximum and minimum areas of 391.41 and 90.53 hectares respectively. In this category the total units of perennial water bodies are 112 having a total maximum area and minimum area of 153.61 and 90.53 hectares

respectively. Seasonal water bodies stand at 324 units having a maximum area of 237.81 hectares. The number of water bodies and their area under category 1 is given in table 37. In category 2 the total number of water body units are 11 their total maximum and minimum areas are 84.19 and 18.38 hectares respectively. The numbers of perennial water bodies stand at 7 units having maximum and minimum areas of 53.15 and 18.38 hectares respectively. The numbers of seasonal water bodies stand at 4 units having maximum area of 31.04 hectares. The number of water bodies and their area under category 2 is given in table 38. In category 3 the total number of water bodies including perennial and seasonal stand at 11 units having maximum total area of 101.83 as given in table 39. There is only one perennial waterbody under category 4 in Shahpur block having maximum water area 127.22 ha. The water area of this waterbody reduces to 78.68 ha in summer season. There is one perennial waterbody in category five in the Shahpur block. It reaches up to maximum area of 407 ha in the monsoon season and reduces to 257.84 ha. Waterbodies of block Pyro and district Bhojpur is given figure 25 and 26 respectively.

Table 36: Total water bodies and their area in district Bhojpur

Block Name	Total number of water bodies	Maximum Area(ha)	Minimum Area(ha)	Average Area(ha)
Agiaon	16	18.94	4.08	11.51
Ara	68	61.09	13.89	37.49
Barahr	29	104.09	2.97	53.53
Bihiya	22	25.62	8.23	16.93
Charpokhari	19	13.37	4	8.68
Garhani	22	15.18	3.82	9.50
Koath	66	59.59	18.5	39.04
Koilwar	24	18.22	0.77	9.50
Piro	66	75.88	21.41	48.65
Sahar	17	25.74	5.27	15.50
Sandes	6	2.93	0	1.46
Shahpur	36	603.83	337.29	470.56
Tarari	31	41.51	14.89	28.20
Udawantnagar	31	43.26	10.28	26.77

Table 37: Category 1 water bodies and their area in district Bhojpur

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Agiaon	16	18.94	4.08	3	6.55	4.08	13	12.39
Ara	67	55.14	10.14	10	16.09	10.14	57	39.04
Barahr	26	21.87	2.66	3	3.49	2.66	23	18.38
Bihiya	21	17.99	3.02	5	5.56	3.02	16	12.43
Charpokhari	19	13.37	4.00	6	5.91	4.00	13	7.47
Garhani	22	15.18	3.82	6	6.51	3.82	16	8.67
Koath	65	53.70	18.50	25	30.97	18.50	40	22.73
Koilwar	24	18.22	0.77	1	1.81	0.77	23	16.41
Piro	64	61.95	18.51	22	38.12	18.51	42	23.83
Sahar	16	17.52	4.52	5	5.63	4.52	11	11.89
Sandes	6	2.93	0.00				6	2.93
Shahpur	31	34.14	0.78	2	1.23	0.78	29	32.91
Tarari	29	24.30	9.45	13	14.76	9.45	16	9.54
Udawantnagar	30	36.16	10.28	11	16.98	10.28	19	19.19

Table 38: Category 2 water bodies and their area in district Bhojpur

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Ara	1	5.95	3.75	1	5.95	3.75		
Barahr	1	5.59	0.31	1	5.59	0.31		
Bihiya	1	7.64	5.23	1	7.64	5.23		
Koath	1	5.89	0				1	5.89
Piro	2	13.93	2.90	1	8.53	2.90	1	5.40
Sahar	1	8.22	0.75	1	8.22	0.75		
Shahpur	1	9.87	0				1	9.87
Tarari	2	17.22	5.44	2	17.22	5.44		
Udawantnagar	1	9.88	0				1	9.88

Table 39: Category 3 water bodies and their area in district Bhojpur

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Barahr	2	76.64	0.00				2	
Shahpur	2	25.19	0.00				2	

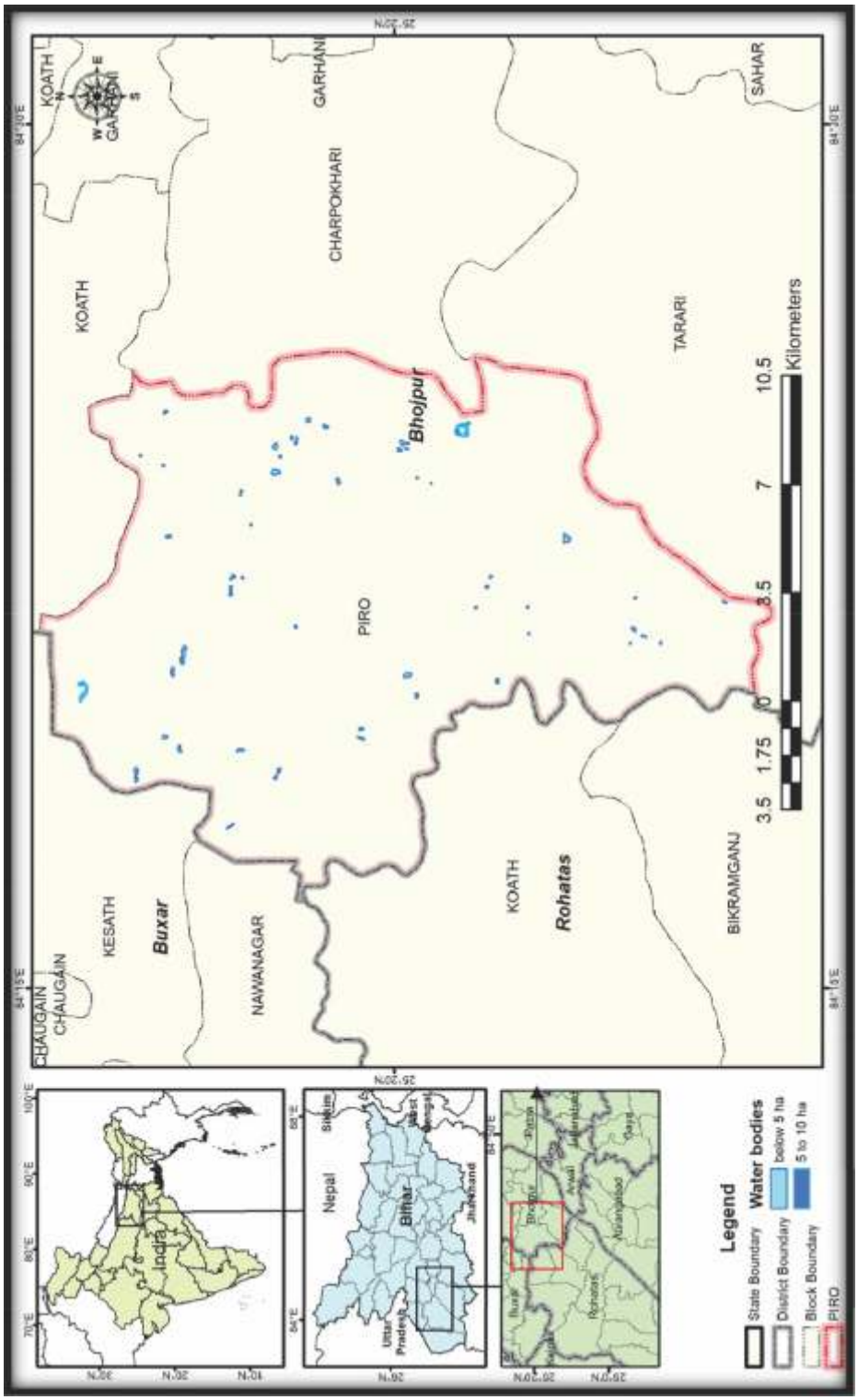


Figure 25: Waterbodies of block Piro of Bhojpur district

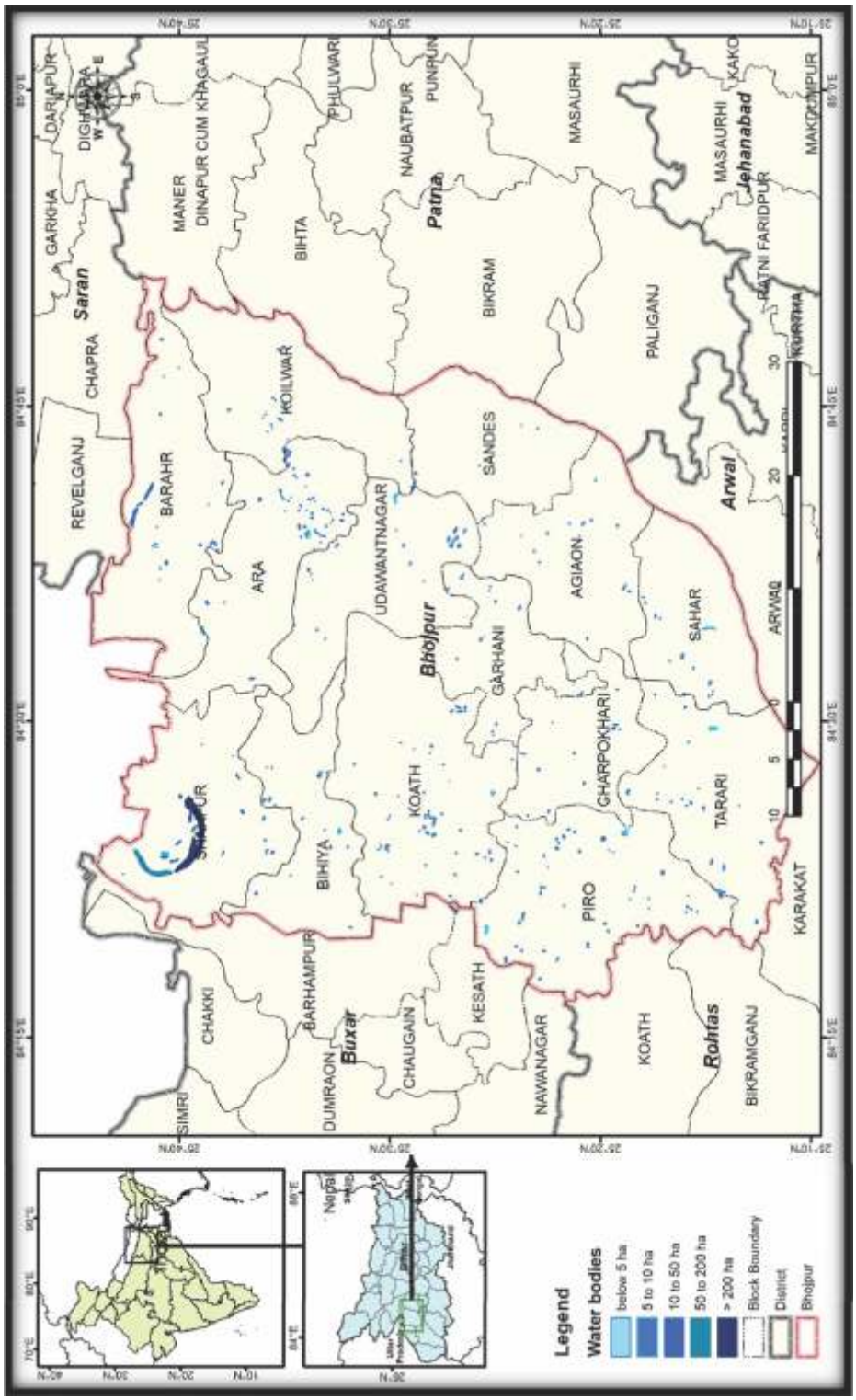


Figure 26: Waterbodies of Bhojpur district

Buxar

The present district of Buxar consists of areas under Buxar Sadar and Dumraon Sub-Division of the old Bhojpur district and came in existence in the year 1991. Buxar town which is located on the bank of river Ganges, is the headquarter of the district and also its principal town. The district is bounded on the north by Ballia district of U.P., on the south by Rohtas district, on the west by Ghazipur and Ballia districts of U.P. and on the east by Bhojpur district. A road bridge over Ganges connects Buxar with Ballia district in the neighbouring state Uttar Pradesh. Buxar has geo-coordinate N-E 25°44'33"/ 83°46'45" and S-W 25°15'47"/84°23'. It has total area of 1695 km^2. Total population of the district is 1706352 (according to 2011 Census). Buxar district consist of 2 Sub-division and 11 Blocks. Out of the 11 Blocks, 7 are in Dumraon Sub-division while 4 in Buxar Sadar Sub-division. A town is located each in Buxar and Dumraon Sub-division.

For the district of Buxar, number of water bodies stand at 416. They occupy a total maximum area of 1123.16 hectares and a total minimum area of 342.6 hectares and a total average area of 732.87 hectares. The share of perennial water bodies in this district stand at 173 units which have a maximum and minimum area of 924.42 and 342.6 hectares respectively. The seasonal water bodies have a contribution of 243 units having a total maximum area of 198.75 hectares. The number of water bodies and their area is given in table 40.

In category 1 the total number of water bodies stand at 406 units having a total maximum and minimum areas of 344.09 and 119.19 hectares respectively. In this category the total units of perennial water

bodies are 165 having a total maximum area and minimum area of 201.82 and 119.19 hectares respectively. Seasonal water bodies stand at 241 units having a maximum area of 142.31 hectares. The number of water bodies and their area under category 1 is given in table 41.

In category 2 the total number of water body units are 2 their total maximum and minimum areas are 14.39 and 9.03 hectares respectively. The numbers of perennial water bodies stand at 2 units having maximum and minimum areas of 14.39 and 9.03 hectares respectively. There are no seasonal water bodies of this category in this district. The number of water bodies and their area is given in table 42.

In category 3 the total number of water bodies including perennial and seasonal stand at 5 units having maximum and minimum total area of 109.22 and 18.14 hectares respectively. In this category, the numbers of perennial water bodies stand at 3 units with maximum and minimum area water spread area of 52.77 and 18.14 hectares respectively. In this category the number of seasonal water bodies are 2 with the maximum water spread area of 56.44 hectares. The number of water bodies and their area under category 3 is given in table 43. There is a single water body in category 4 as given in table 44 which is perennial. It has a maximum area of 101.49 hectares.

There are 2 perennial water bodies in category 5 with a maximum area of 553.97 and a minimum area of 187.22 hectares as mention in table 45. Waterbodies of block Dumron and district Buxar is given figure 27 and 28 respectively.

Table 40: Total water bodies and their area in district Buxar

Block Name	Total number of water bodies	Maximum Area(ha)	Minimum Area(ha)	Average Area(ha)
Barhampur	56	394.92	146.73	270.82
Buxar	38	50.31	24.67	37.49
Chakki	9	164.79	11.36	88.07
Chaugain	15	9.16	4.24	6.70
Chausa	23	27.42	14.45	20.93
Dumraon	88	86.81	27.93	57.37
Itarhi	60	54.23	26.82	40.53
Kesath	18	23.33	4.17	13.75
Nawanagar	15	12.65	1.58	7.12
Rajpur	78	63.35	24.06	43.70
Simri	16	236.19	56.59	146.39

Table 41: Category 1 water bodies and their area in district Buxar

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Barhampur	54	41.95	11.56	15	17.77	11.56	39	24.18
Buxar	38	50.31	24.67	25	43.32	24.67	13	6.98
Chakki	6	5.92	0.97	1	2.94	0.97	5	2.99
Chaugain	15	9.16	4.24	5	5.47	4.24	10	3.70
Chausa	22	19.31	8.13	13	14.61	8.13	9	4.71
Dumraon	87	70.45	22.08	34	40.09	22.08	53	30.36
Itarhi	59	41.82	15.92	25	26.75	15.92	34	15.08
Kesath	18	23.33	4.17	5	6.12	4.17	13	17.22
Nawanagar	15	12.65	1.58	3	2.53	1.58	12	10.12
Rajpur	77	57.06	21.34	34	33.27	21.34	43	23.79
Simri	15	12.13	4.53	5	8.95	4.53	10	3.18

Table 42: Category 2 water bodies and their area in district Buxar

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Chausa	1	8.10	6.32	1	8.10	6.32		
Rajpur	1	6.29	2.71	1	6.29	2.71		

Table 43: Category 3 water bodies and their area in district Buxar

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Barhampur	1	23.06	0.00				1	23.06
Chakki	2	57.38	1.39	1	23.99	1.39	1	33.38
Dumraon	1	16.37	5.85	1	16.37	5.85		
Itarhi	1	12.41	10.90	1	12.41	10.90		

Table 44: Category 4 water bodies and their area in district Buxar

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Chakki	1	101.49	8.99	1	101.49	8.99		

Table 45: Category 5 water bodies and their area in district Buxar

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Barhampur	1	329.91	135.16	1	329.91	135.16		
Simri	1	224.06	52.06	1	224.06	52.06		

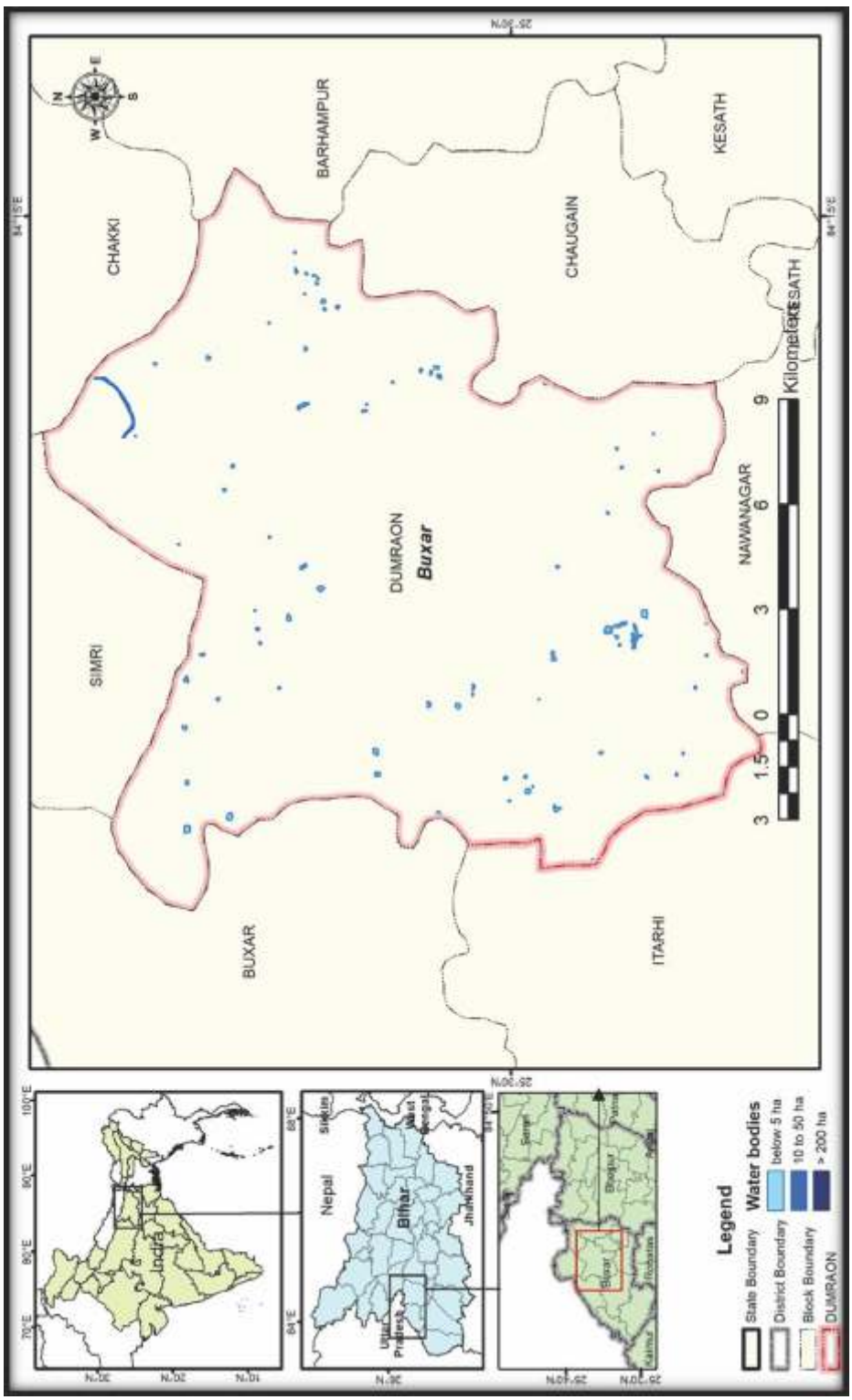


Figure 27: Waterbodies of block Dumron of district Buxor

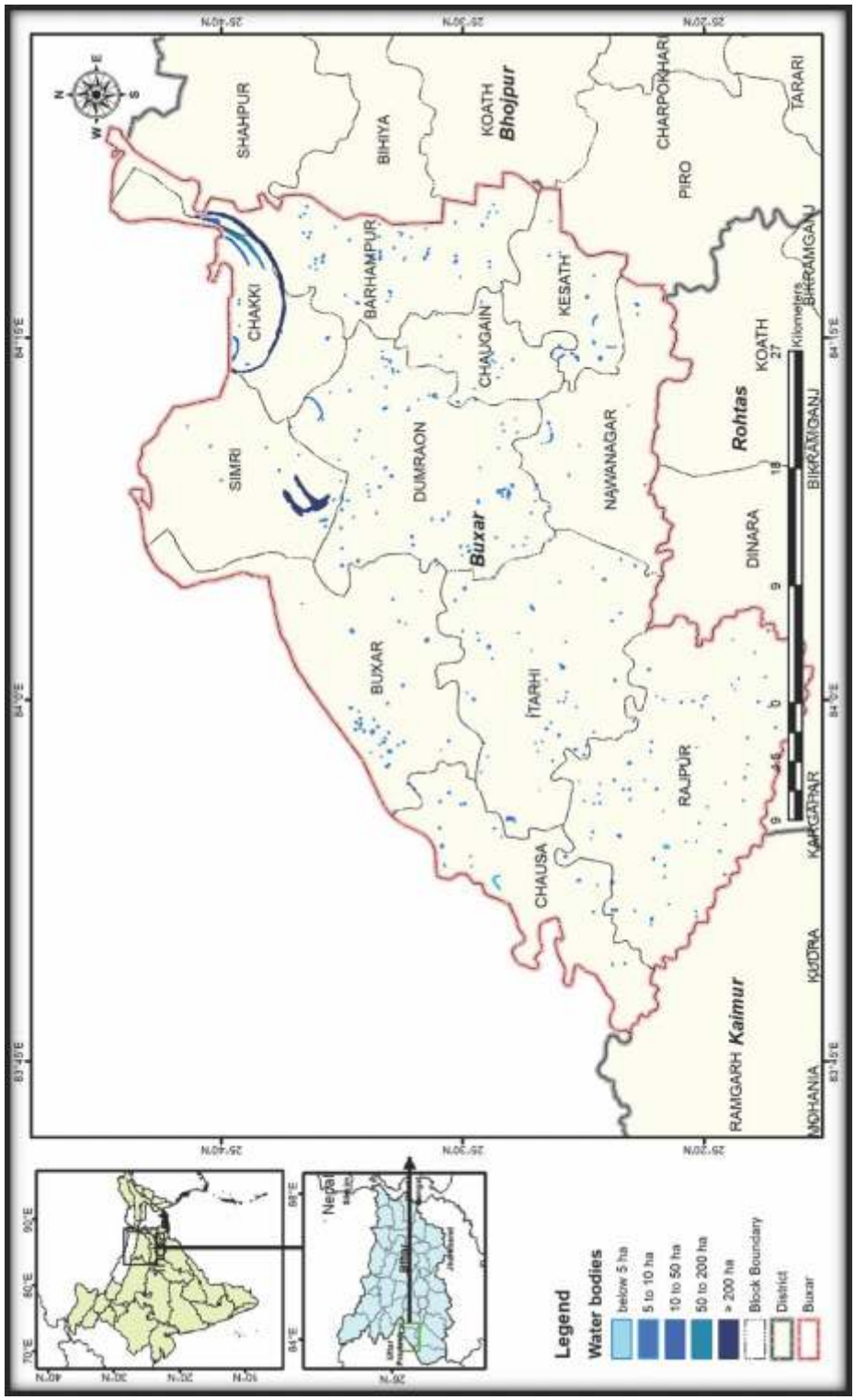


Figure 28: Waterbodies of district Buxor

Darbhanga

Under the British Rule, Darbhanga was a part of Sarkar Tirhut up to 1875, when it was constituted into a separate district. The subdivisions had been created earlier – Darbhanga Sadar in 1845, Madhubani in 1866 and Samastipur (then known as Tajpur) in 1867. It was the part of Patna division till 1908, when the Tirhut division was created with its headquarters at Muzaffarpur. As a result of reorganization of districts in the State which took effect in the year 1972, Madhubani and Samastipur subdivision were upgraded as independent districts and then the trimmed Darbhanga district has two subdivisions, viz, Darbhanga Sadar and Benipur consisting of 12 Development Blocks in all. Biraul Subdivision was created in 1992 and six more Development Blocks were created namely Hanuman Nagar, Tardih, Gaura Bauram, Kiratpur, Kusheshwar Asthan East and Alinagar in later stage. The district is bounded on the north by Madhubani district, on the south by the district of Samastipur, on the east by Saharsa district and on the west by the district of Muzaffarpur and Sitamarhi.

It gets its name from "Dwar Banga" or the Gate to Bengal.It has geo-coordinates N-E 26°26'15"/ 85°41'15" and S-W 25°43'15"/86°25' with total area of 2534.11 km^2. Total population of the district is 3937385 (according to 2011 census).

The district is noted for its trade in Fish, Mango and Makhana. For the district of Darbhanga, number of water bodies stand at 4696. They occupy a total maximum area of 4759.65 hectares and a total

minimum area of 1960.3 hectares and a total average area of 3359.95 hectares. The share of perennial water bodies in this district stand at 2098 units which have a maximum and minimum area of 2767.35 and 1960.29 hectares respectively. The seasonal water bodies have a contribution of 2598 units having a total maximum area of 1992.29 hectares. The number of water bodies and their area is given in table 46.

In category 1 the total number of water bodies stand at 4560 units having a total maximum and minimum areas of 3334.34 and 1399.14 hectares respectively. In this category the total units of perennial water bodies are 2017 having a total maximum area and minimum area of 1903.14 and 1399.14 hectares respectively. Seasonal water bodies stand at 2543 units having a maximum area of 1431.2 hectares. The number of water bodies and their area under category 1 is given in table 47.

In category 2 the total number of water body units are 94 their total maximum and minimum areas are 674.8 and 248.25 hectares respectively. The numbers of perennial water bodies stand at 55 units having maximum and minimum areas of 386.32 and 248.25 hectares respectively. The numbers of seasonal water bodies stand at 39 units having maximum area of 288.47 hectares. The number of water bodies and their area under category 2 is given in table 48.

In category 3 the total number of water bodies including perennial and seasonal stand at 47 units having maximum and minimum total area of 765.02 and 319.96 hectares respectively. In this category, the numbers of perennial water bodies stand at 28 units with maximum and minimum area water spread area of 454.22 and 319.96 hectares respectively. In this category the number of seasonal water bodies are 19 with the maximum water spread area of 310.81 hectares. The number of water bodies and their area under category 3 is given in table 49. There is one perennial waterbody under category 4 in Jale block having maximum water area 69.69 ha. The water area of this waterbody reduces to 29.73 ha in summer season. There is no waterbody in category 5.

Waterbodies of block Darbhanga and district Darbhanga is given figure 29 and 30 respectively.

Table 46: Total water bodies and their area in district Darbhanga

Block Name	Total number of water bodies	Maximum Area(ha)	Minimum Area(ha)	Average Area(ha)
Bahadurpur	383	429.32	163.21	296.26
Beheri	325	304.99	121.03	213.01
Benipur	640	466.76	190.67	328.72
Biraul	259	200.93	76.26	138.60
Chaugain	92	69.31	10.42	39.86
Darbhanga	538	697.66	315.37	506.51
Ghanshyampur	400	273.04	107.23	190.13
Hayaghat	307	606.74	197.87	402.30
Jale	341	446.03	200.73	323.38
Keotiranway	375	305.35	113.84	209.59
Manigachhi	672	512.4	269.38	390.89
Singhwara	364	447.12	194.29	320.70

Table 47: Category 1 water bodies and their area in district Darbhanga

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Bahadurpur	369	291.89	118.64	169	162.44	118.64	200	129.45
Beheri	318	241.69	95.81	139	129.97	95.81	179	111.72
Benipur	633	404.05	176.87	313	240.48	176.87	320	163.56
Biraul	254	158.57	58.77	103	85.74	58.77	151	72.84
Chaugain	92	69.31	10.42	11	13.15	10.42	81	56.16
Darbhanga	512	407.16	171.02	213	220.75	171.02	299	186.41
Ghanshyampur	397	243.41	102.93	168	140.66	102.93	229	102.75
Hayaghat	280	282.80	105.61	106	151.53	105.61	174	131.28
Jale	328	273.31	123.34	170	171.11	123.34	158	102.19
Keotiranway	367	240.99	87.63	124	112.00	87.63	243	128.99
Manigachhi	663	423.95	203.74	346	281.10	203.74	317	142.85
Singhwara	347	297.21	144.36	155	194.21	144.36	192	103.00

Table 48: Category 2 water bodies and their area in district Darbhanga

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Bahadurpur	8	53.19	7.77	4	28.72	7.77	4	24.47
Beheri	4	25.30	11.54	3	19.82	11.54	1	5.48
Benipur	5	28.44	13.80	4	22.62	13.80	1	5.82
Biraul	5	42.36	17.49	3	25.79	17.49	2	16.57
Darbhanga	17	119.31	48.24	9	60.28	48.24	8	59.03
Ghanshyampur	2	15.86	4.29	1	7.85	4.29	1	8.00
Hayaghat	18	143.52	39.97	10	78.87	39.97	8	64.65
Jale	10	75.01	32.14	5	37.05	32.14	5	37.96
Keotiranway	6	37.43	10.97	3	17.39	10.97	3	20.04
Manigachhi	5	33.77	24.93	5	33.77	24.93		
Singhwara	14	100.61	37.11	8	54.16	37.11	6	46.45

Table 49: Category 3 water bodies and their area in district Darbhanga

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Bahadurpur	6	84.23	36.79	3	46.03	36.79	3	38.20
Beheri	3	38.00	13.68	2	25.20	13.68	1	12.80
Benipur	2	34.28	0.00				2	34.28
Darbhanga	9	171.19	96.11	6	131.12	96.11	3	40.07
Ghanshyampur	1	13.77	0.00				1	13.77
Hayaghat	9	180.41	52.30	6	92.94	52.30	3	87.48
Jale	2	28.01	15.52	1	17.38	15.52	1	10.63
Keotiranway	2	26.92	15.24	2	26.92	15.24		
Manigachhi	4	54.68	40.71	4	54.68	40.71		
Singhwara	3	49.30	12.82	1	13.92	12.82	2	35.38
Bahadurpur	6	84.23	36.79	3	46.03	36.79	3	38.20

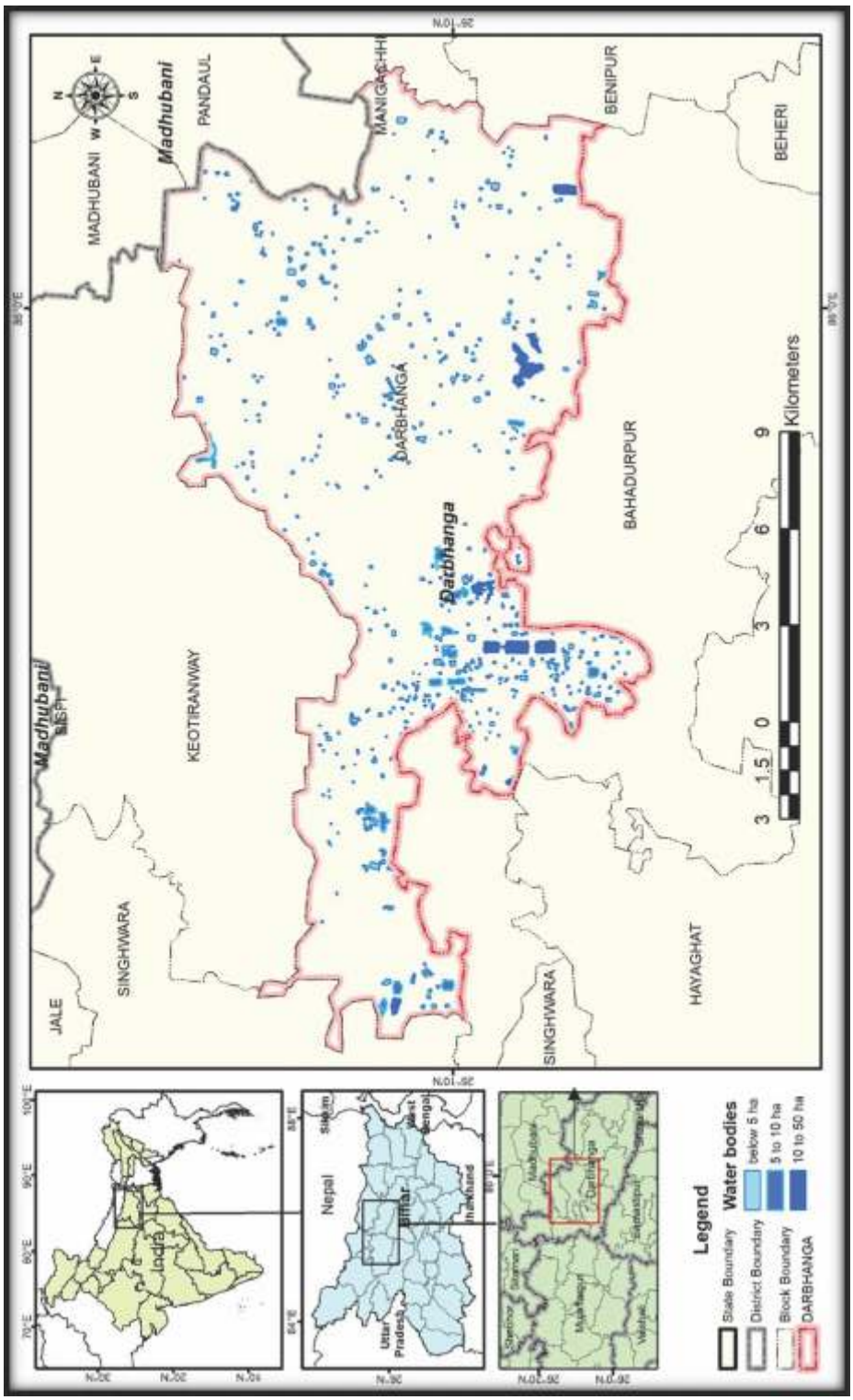


Figure 29: Waterbodies of block Darbhanga of district Darbhanga

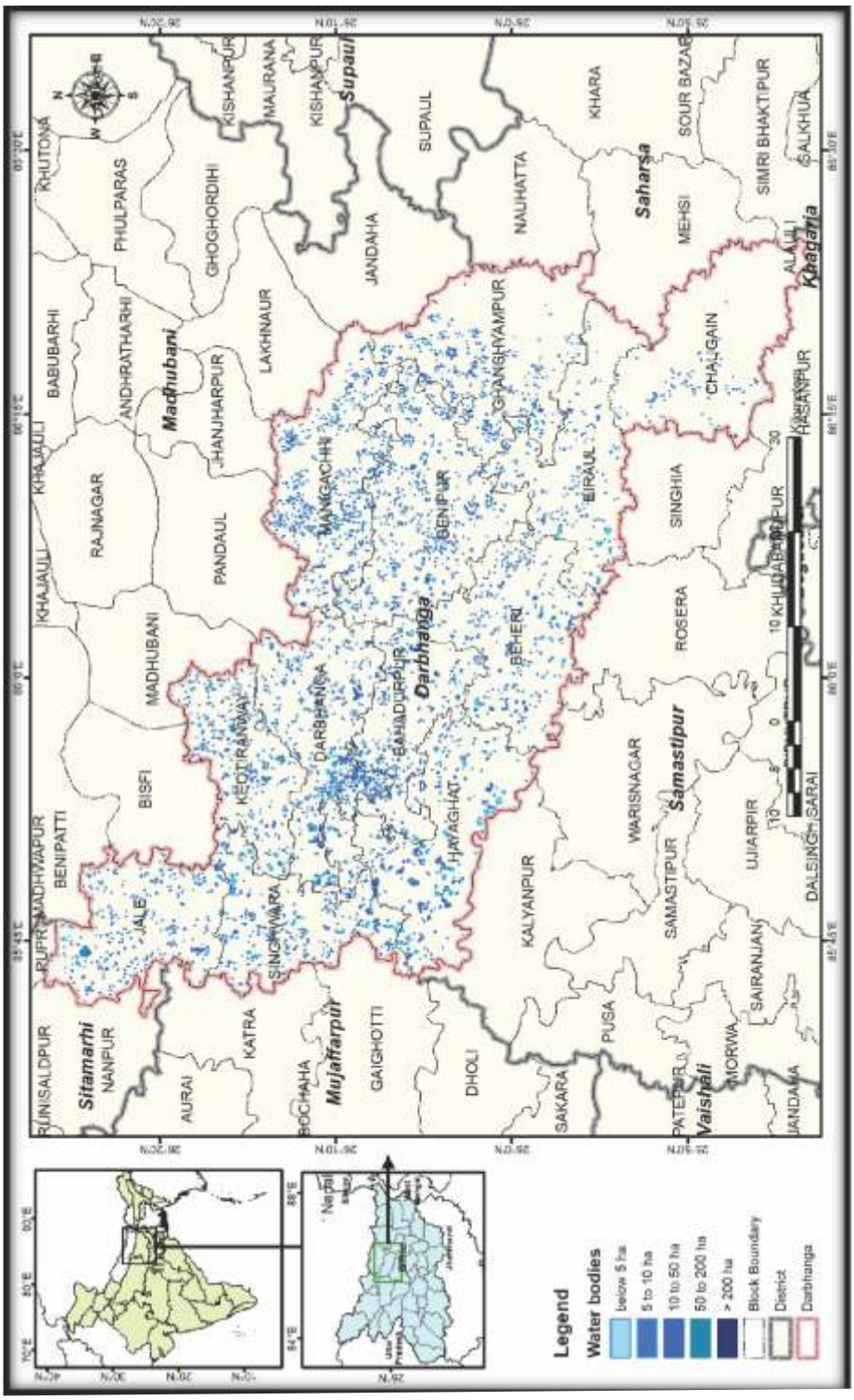


Figure 30: Waterbodies of district Darbhanga

Gaya

Gaya formed a part of the district of Behar and Ramgarh till 1864 and got the status of independent district in 1865. Present Gaya, Aurangabad and Nawada Districts were carved out of original Gaya in the year 1976.

Gaya is 100 kilometers south of Patna, the capital city of Bihar lies on the banks of Falgu River (Niranjana, as mentioned in Ramayana). It is surrounded by small rocky hills (Mangala-Gauri, Shringa-Sthan, Ram-Shila and Brahmayoni) by three sides and the river flowing on the fourth (western) side. District shares boundary with District Jehanabad, Nawada, Nalanda, Aurangabad and Jharkhand state. The geo-coordinates are N-E 25°03'30"/ 84°17'45" and S-W 25°15'30"/85°24'. Total area of the district is 4927 km^2. Total population of the district is 4391418 (according to 2011 census).

For the district of Gaya number of water bodies stand at 726 They occupy a total maximum area of 917.56 hectares and a total minimum area of 379.48 hectares and a total average area of 648.55 hectares. The share of perennial water bodies in this district stand at 347 units which have a maximum and minimum area of 586.65 and 379.5 hectares respectively. The seasonal water bodies have a contribution of 379 units having a total maximum area of 330.93 hectares. The number of water bodies and their area is given in table 50.

In category 1 the total number of water bodies stand at 710 units having a total maximum and minimum areas of 800.19 and 326.27 hectares respectively. In this category the total units of perennial water bodies are 333 having a total maximum area and minimum area of 486.79 and 326.27 hectares respectively. Seasonal water bodies stand at 377 units having a maximum area of 313.41 hectares. The

number of water bodies and their area under category 1 is given in table 51. In category 2 the total number of water body units are 15 their total maximum and minimum areas are 105.99 and 46.53 hectares respectively. The numbers of perennial water bodies stand at 13 units having maximum and minimum areas of 88.48 and 46.53 hectares respectively. The numbers of seasonal water bodies stand at 1 unit having maximum area of 8.08 hectares. The number of water bodies and their area under category 2 is given in table 52. There is one perennial waterbody under category 3 in mohanpur block having maximum water area 11.38 ha. The water area of this waterbody reduces to 6.71 ha in summer season. There is no waterbody in category 4 and 5. Waterbodies of block Fatehpur and district Gaya is given figure 31and 32 respectively.

Table 50: Total water bodies and their area in district Gaya

Block Name	Total number of water bodies	Maximum Area(ha)	Minimum Area(ha)	Average Area(ha)
Amas	20	31.44	15.79	23.62
Barahchatt	47	61.81	17.15	39.48
Belaganj	12	14.59	8.25	11.42
Bodhgaya	46	34.46	13.62	24.04
Dumaria	38	48.49	27.9	38.20
Fatehpur	117	160.22	62.93	111.58
Gaya	37	41.27	26.45	33.86
Gurua	25	22.97	9.75	16.36
Imamganj	11	11.32	3.35	7.34
Khizarsarai	10	12.83	6.76	9.80
Koch	41	47.08	29.81	38.45
Manpur	28	37.95	14.03	25.99
Mohanpur	69	115.6	38.88	77.24
Paraiya	28	28.15	14.98	21.56
Serghati	39	49.13	19.71	34.42
Tekari	37	31.41	14.06	22.74
Tetua	45	54.95	16.02	35.48
Wajirganj	76	113.89	40.04	76.97

Table 51: Category 1 water bodies and their area in district Gaya

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Amas	19	25.21	15.23	15	23.06	15.23	4	2.15
Barahchatt	46	52.39	17.15	17	26.10	17.15	29	26.29
Belaganj	12	14.59	8.25	10	10.87	8.25	2	3.72
Bodhgaya	46	34.46	13.62	14	17.37	13.62	32	17.08
Dumaria	37	40.60	21.42	28	36.70	21.42	9	3.90
Fatehpur	112	123.70	45.65	43	66.92	45.65	69	56.78
Gaya	36	34.79	20.61	25	28.90	20.61	11	5.90
Gurua	25	22.97	9.75	13	15.08	9.75	12	7.89
Imamganj	11	11.32	3.35	5	9.55	3.35	6	1.77
Khizarsarai	10	12.83	6.76	5	9.66	6.76	5	3.17
Koch	40	40.30	24.96	21	31.97	24.96	19	8.34
Manpur	28	37.95	14.03	14	23.22	14.03	14	14.73
Mohanpur	66	87.64	28.44	32	55.32	28.44	34	32.32
Paraiya	28	28.15	14.98	15	20.05	14.98	13	8.10
Serghati	39	49.13	19.71	19	27.40	19.71	20	21.73
Tekari	37	31.41	14.06	15	17.81	14.06	22	13.60
Tetua	45	54.95	16.02	18	25.30	16.02	27	29.65
Wajirganj	73	97.80	32.28	24	41.51	32.28	49	56.29

Table 52: Category 2 water bodies and their area in district Gaya

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Amas	1	6.23	0.57	1	6.23	0.57		
Barahchatt	1	9.42	0.00					
Dumaria	1	7.89	6.49	1	7.89	6.49		
Fatehpur	5	36.53	17.29	4	28.44	17.29	1	8.08
Gaya	1	6.47	5.85	1	6.47	5.85		
Koch	1	6.78	4.85	1	6.78	4.85		
Mohanpur	2	16.57	3.72	2	16.57	3.72		
Wajirganj	3	16.10	7.76	3	16.10	7.76		

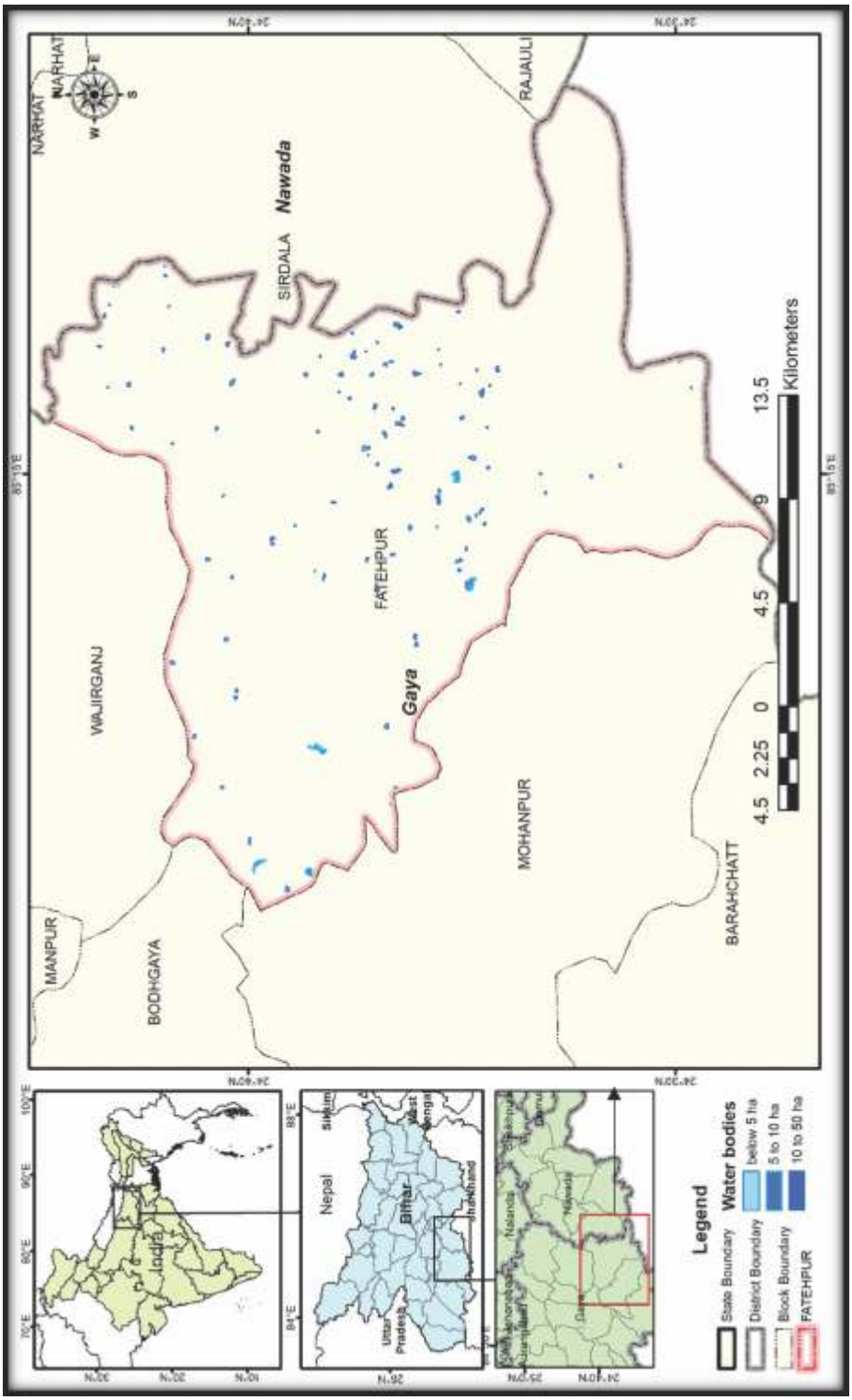


Figure 31: Waterbodies of block Fatehpur of district Gaya

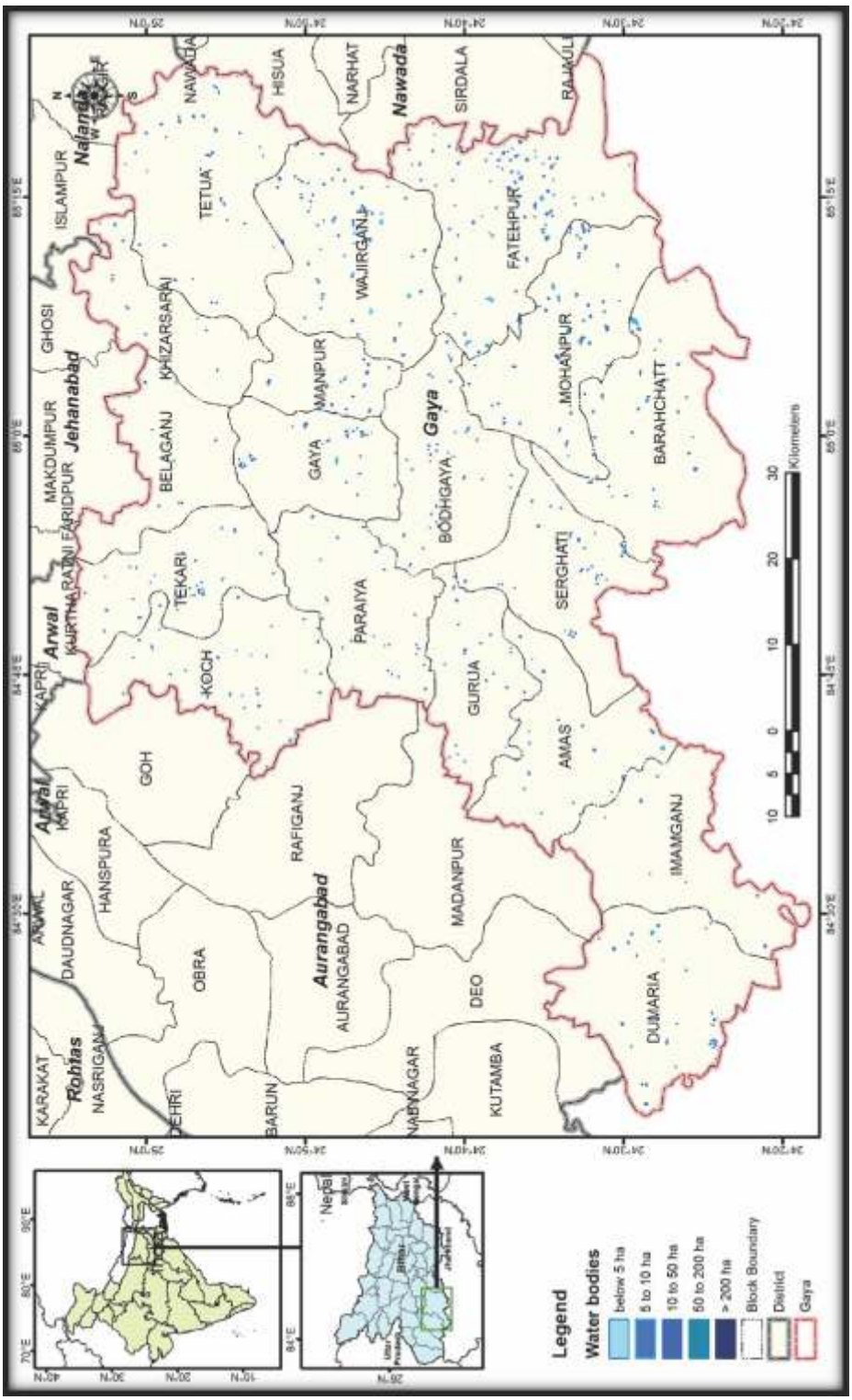


Figure 32: Waterbodies of district Gaya

Gopalganj

Gopalganj was a subdivision of the old Saran district. It became an independent district on October 2, 1973. The district headquarters are located in the town of Gopalganj. The Gopalganj District is located on the West –North corner of the Bihar State. It is bounded on East by Champaran and river Gandak, on the South by Siwan District and on the North West Deoria District of Uttar Pradesh. The district has an area of 2033 km^2 with geo-coordinates N-E 26° 37'30 "/ 83° 54'30" and S-W 26° 12'30 "/ 84° 54'35". According to the 2011 census the total population of the district is 2562012.

For the district of Gopalganj number of Waterbodies stand at 1764 they occupy a total maximum area of 1500.95 hectares and a total minimum area of 334.82 hectares and a total average area of 917.89 hectares. The share of perennial water bodies in this district stand at 17 units which have a maximum and minimum area of 517.05 and 334.84 hectares respectively. The seasonal water bodies have a contribution of 1466 units having a total maximum area of 983.91 hectares. The number of water bodies and their area is given in table 53.

In category 1 the total number of water bodies stand at 1738 units having a total maximum and minimum areas of 1083.98 and 195.47 hectares respectively. In this category the total units of perennial water bodies are 290 having a total maximum area and minimum area of 301.25 and 195.47 hectares respectively. Seasonal water bodies stand at 1448 units having a maximum area of 782.75 hectares. The number of water bodies and their area under category 1 is given in table 54. In category 2 the total number of water body units are 13 their total maximum and minimum areas are 84.39 and 2.78 hectares respectively. The numbers of perennial water bodies stand at 1 unit having maximum and

minimum areas of 7.03 and 2.78 hectares respectively. The numbers of seasonal waterbodies stand at 12 units having maximum area of 77.36 hectares. The number of water bodies and their area under category 2 is given in table 55.

In category 3 the total number of water bodies including perennial and seasonal stand at 12 units having maximum and minimum total area of 280.12 and 90.14 hectares respectively. In this category, the numbers of perennial water bodies stand at 6 units with maximum and minimum area water spread area of 156.3 and 90.14 hectares respectively. In this category the number of seasonal water bodies are 6 with the maximum water spread area of 123.82 hectares. The number of water bodies and their area under category 3 is given in table 56. There is one perennial waterbody under category 4 in Barauli block having maximum water area 52.47 ha. The water area of this waterbody reduces to 46.44 ha in summer season. There is no waterbody in category 5.Waterbodies of block Katia and district Gopalganj is given figure 33 and 34 respectively.

Table 53: Total water bodies and their area in district Gopalganj

Block Name	Total number of water bodies	Maximum Area(ha)	Minimum Area(ha)	Average Area(ha)
Baikunthpur	58	63.95	20.16	42.05
Barauli	70	107.83	51.02	79.42
Bhore	173	112.52	13.05	62.79
Bijoypur	144	83.56	4.73	44.15
Hatua	263	259.5	74.52	167.01
Katia	448	213.29	30.23	121.76
Kuchiakot	261	276.07	30.47	153.27
Manjha	87	210.84	68.82	139.83
Phulwaria	65	38.6	13.63	26.12
Sidhwalla	38	22.88	5.2	14.04
Uchkagaon	157	111.91	22.99	67.45

Table 54: Category 1 water bodies and their area in district Gopalganj

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Baikunthpur	56	42.52	7.01	6	10.92	7.01	50	31.60
Barauli	68	44.99	4.57	6	7.52	4.57	62	37.47
Bhore	171	97.09	13.05	16	16.34	13.05	155	80.75
Bijoypur	142	66.03	4.73	11	10.35	4.73	131	55.68
Hatua	260	192.21	73.90	112	107.60	73.90	148	84.61
Katia	447	191.45	18.80	35	31.03	18.80	412	160.42
Kuchiakot	252	203.16	26.53	39	48.28	26.53	213	154.88
Manjha	82	73.14	5.06	7	6.90	5.06	75	66.24
Phulwaria	65	38.60	13.63	20	19.86	13.63	45	18.75
Sidhwalla	38	22.88	5.20	5	9.01	5.20	33	13.87
Uchkagaon	157	111.91	22.99	33	33.44	22.99	124	78.48

Table 55: Category 2 water bodies and their area in district Gopalganj

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Baikunthpur	1	7.59	0.00				1	7.59
Bhore	2	15.43	0.00				2	15.43
Bijoypur	1	6.40	0.00				1	6.40
Hatua	1	8.61	0.00				1	8.61
Kuchiakot	7	40.45	2.78	1	7.03	2.78	6	33.42
Manjha	1	5.91	0.00				1	5.91

Table 56: Category 3 water bodies and their area in district Gopalganj

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Baikunthpur	1	13.83	13.16	1	13.83	13.16		
Barauli	1	10.37	0.00				1	10.37
Bijoypur	1	11.14	0.00				1	11.14
Hatua	2	58.68	0.62	1	21.09	0.62	1	37.59
Katia	1	21.83	11.44	1	21.83	11.44		
Kuchiakot	2	32.47	1.16	1	17.95	1.16	1	14.52
Manjha	4	131.80	63.76	2	81.60	63.76	2	50.20

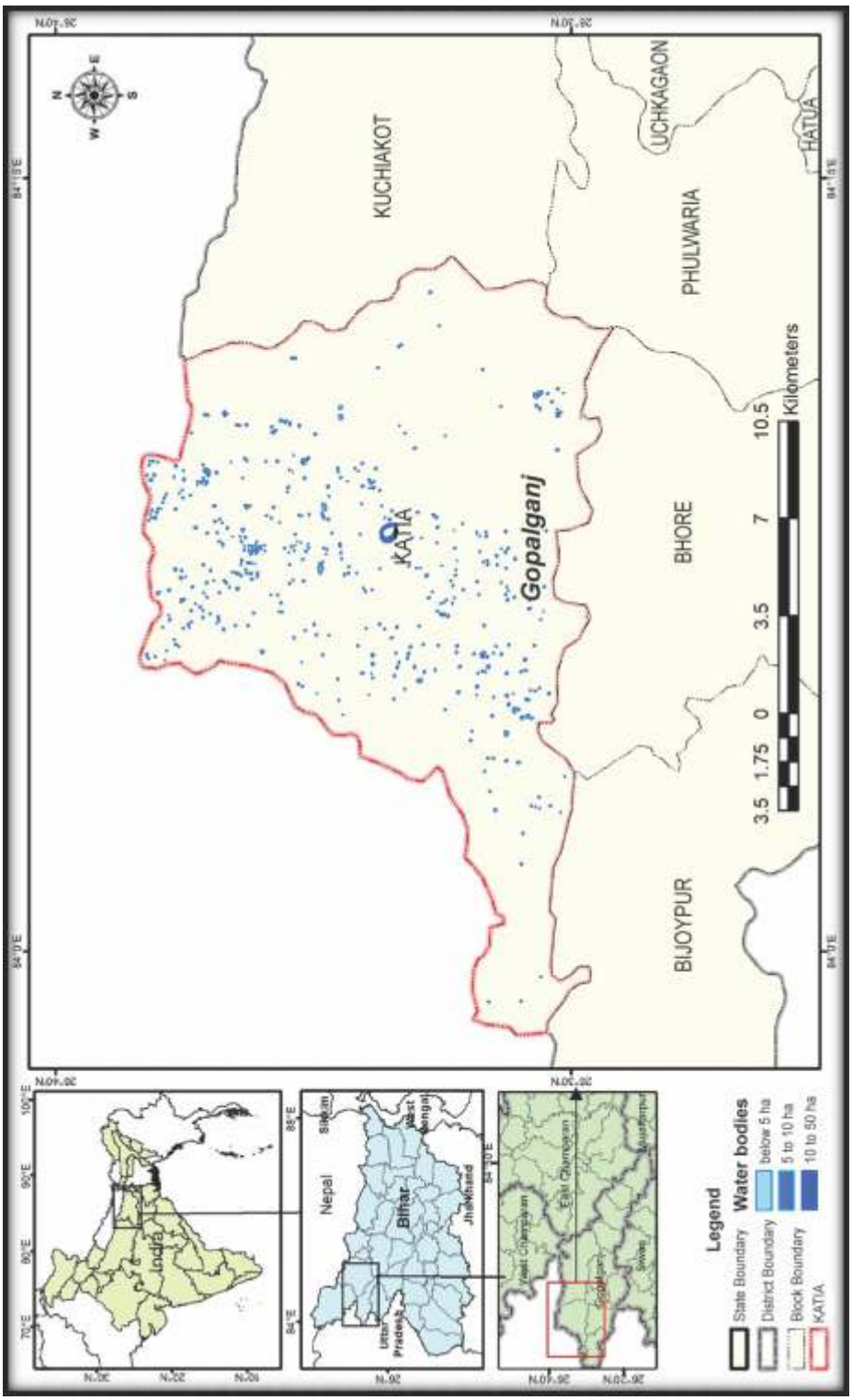


Figure 33: Waterbodies of block Katia of district Gopalganj

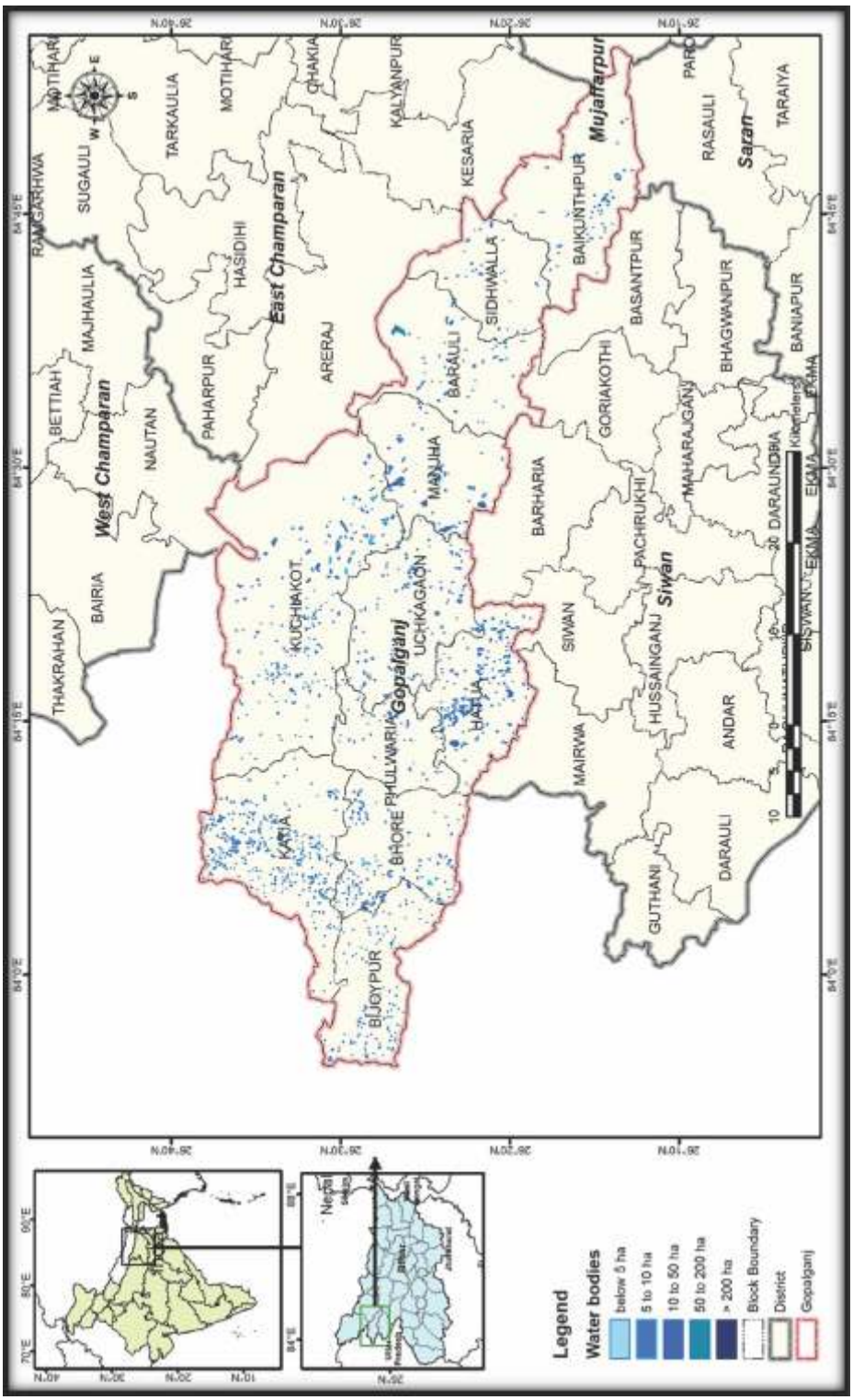


Figure 34: Waterbodies of district Gopalganj

Jamui

Jamui was formed in 1991 as a result of its separation from Munger. The district, located in the centre of Bihar has a total area of 3090 km^2 with Munger and Lakhisarai in the north, Giridih in the south, Deoghar and Banka in the east and Nawada in the west, Jamui has a total population of 17,60,405 (Census 2011). Geo-coordinates are N-E 25°07'45"/ 85°49'30" and S-W 24°22'30"/86°37'10".For the district of Jamui, number of water bodies stand at 1413 they occupy a total maximum area of 3085.2 hectares and a total minimum area of 1085.75 hectares and a total average area of 2085.47 hectares. The share of perennial water bodies in this district stand at 310 units which have a maximum and minimum area of 2453.67and 1085.75 hectares respectively. The seasonal water bodies have a contribution of 1103 units having a total maximum area of 631.53 hectares. The number of water bodies and their area is given in table 57. In category 1 the total number of water bodies stand at 1377 units having a total maximum and minimum areas of 991.21 and 231.09 hectares respectively. In this category the total units of perennial water bodies are 277 having a total maximum area and minimum area of 391.12 and 231.09 hectares respectively. Seasonal water bodies stand at 1100 units having a maximum area of 600.1 hectares. The number of water bodies and their area under category 1 is given in table 58. In category 2 the total number of water body units are 15 their total maximum and minimum areas are 108.32 and 42.58 hectares respectively. The numbers of

perennial water bodies stand at 13 units having maximum and minimum areas of 94.59 and 42.58 hectares respectively. The numbers of seasonal water bodies stand at 2 units having maximum area of 13.73 hectares. The number of water bodies and their area under category 2 is given in table 59. In category 3 the total number of water bodies including perennial and seasonal stand at 11 units having maximum and minimum total area of 177.31 and 58.57 hectares respectively. In this category, the numbers of perennial water bodies stand at 10 units with maximum and minimum area water spread area of 159.6 and 58.57 hectares respectively. In this category the number of seasonal water bodies are 1 with the maximum water spread area of 17.7 hectares. The number of water bodies and their area under category 3 is given in table 60. There are 6 number of category 4 perennial water bodies which has a maximum area of 442.15 hectares and a minimum area of 257.04 hectares as given in table 61. There are 4 number of category 5 perennial water bodies which has a maximum area of 1366.22 hectares and a minimum area of 496.48 hectares as shown in table 62.

Waterbodies of block Sono and district Jamui is given figure 35 and 36 respectively.

Table 57: Total water bodies and their area in district Jamui

Block Name	Total number of water bodies	Maximum Area(ha)	Minimum Area(ha)	Average Area(ha)
Chakai	368	580.85	259.06	419.96
Jamui	101	45.13	11.68	28.40
Jhajha	173	768.15	222.93	495.54
Khaira	110	594.03	274.95	434.49
Lakshimpur	231	431.62	100.74	266.18
Sikandra	193	332.68	134.7	233.69
Sono	237	332.74	81.69	207.21

Table 58: Category 1 water bodies and their area in district Jamui

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Chakai	356	284.99	63.16	85	121.98	63.16	271	163.01
Jamui	101	45.13	11.68	23	18.15	11.68	78	26.99
Jhajha	166	97.80	20.40	21	33.25	20.40	145	64.55
Khaira	106	71.39	19.86	22	28.50	19.86	84	42.89
Lakshimpur	226	153.02	20.13	24	32.89	20.13	202	120.13
Sikandra	191	145.74	53.98	61	81.24	53.98	130	64.50
Sono	231	193.14	41.88	41	75.11	41.88	190	118.03

Table 59: Category 2 water bodies and their area in district Jamui

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Chakai	5	33.49	15.08	5	33.49	15.08		
Jhajha	3	20.71	15.67	3	20.71	15.67		
Khaira	2	12.96	4.12	2	12.96	4.12		
Lakshimpur	4	34.09	7.71	3	27.43	7.71	1	6.66
Sono	1	7.07	0.00				1	7.07

Table 60: Category 3 water bodies and their area in district Jamui

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Chakai	4	58.41	12.85	3	40.70	12.85	1	17.70
Jhajha	2	22.91	11.99	2	22.91	11.99		
Khaira	1	14.70	2.27	1	14.70	2.27		
Sono	4	81.29	31.46	4	81.29	31.46		

Table 61: Category4 water bodies and their area in district Jamui

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Chakai	3	203.96	167.97	3	203.96	167.97		
Sikandra	2	186.94	80.72	2	186.94	80.72		
Sono	1	51.25	8.35	1	51.25	8.35		

Table 62: Category 5 water bodies and their area in district Jamui

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Jhajha	2	626.73	174.88	2	626.73	174.88		
Khaira	1	494.98	248.70	1	494.98	248.70		
Lakshimpur	1	244.51	72.90	1	244.51	72.90		

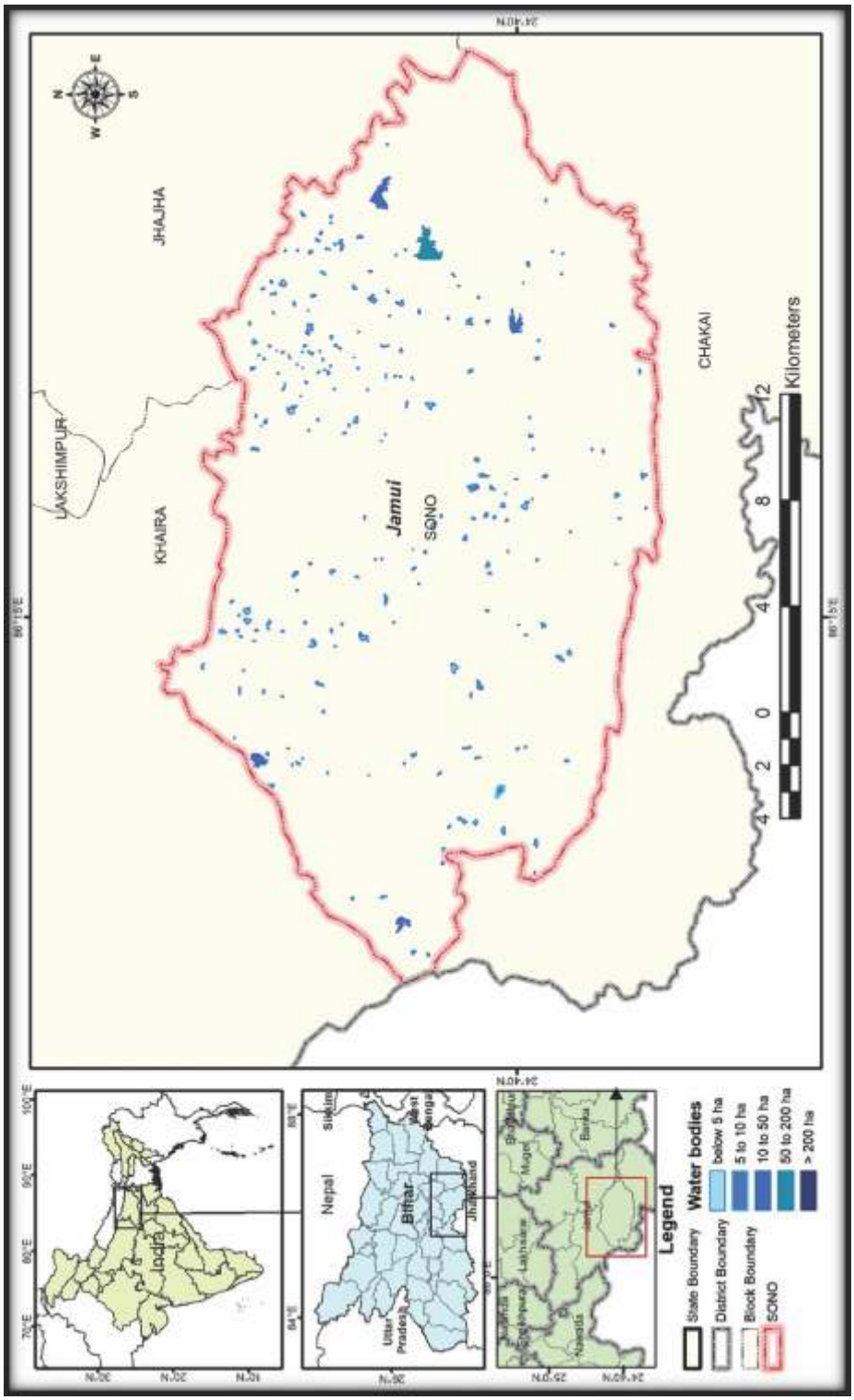


Figure 35: Waterbodies of block Sono of district Jamui

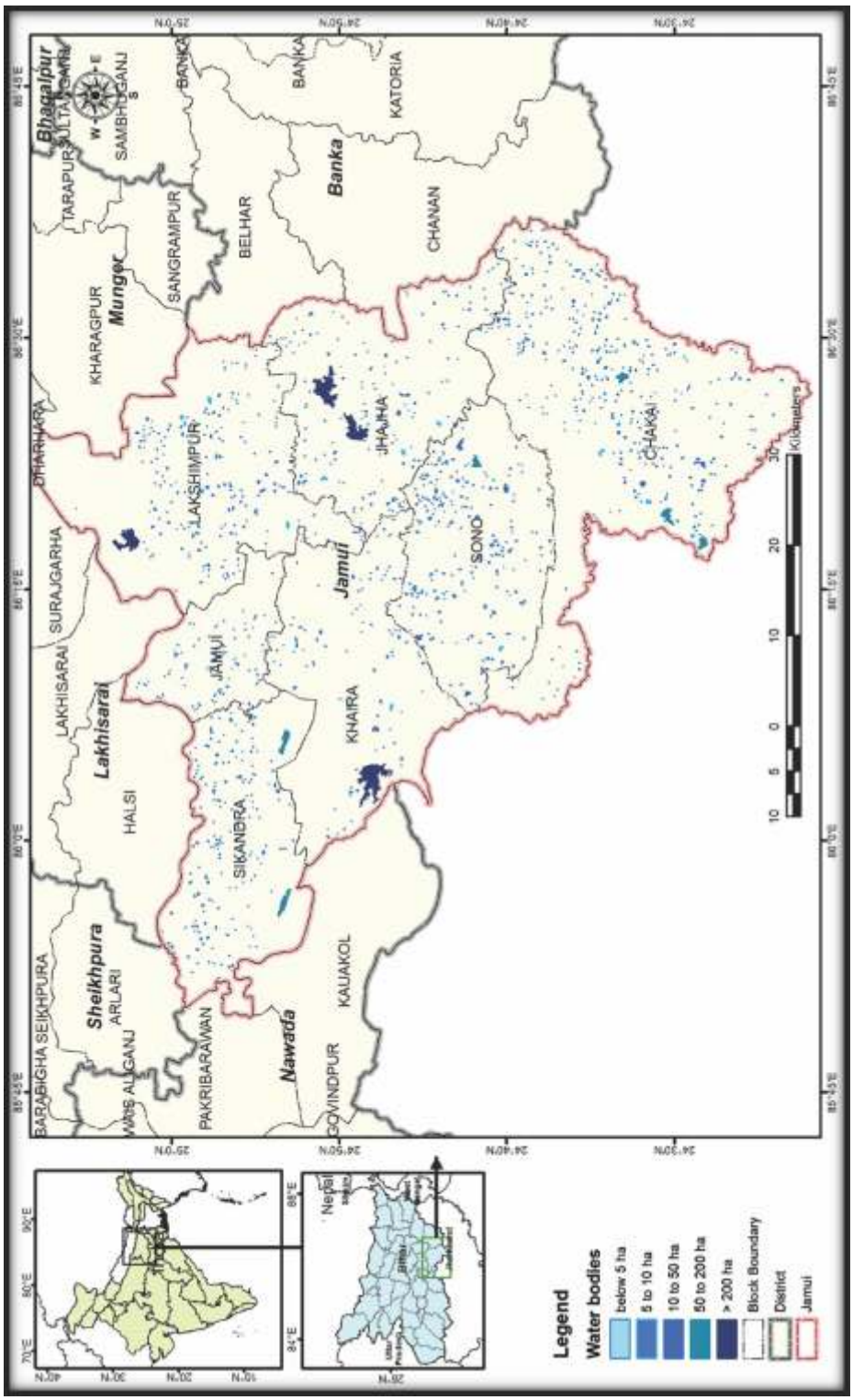


Figure 36: Waterbodies of block Katia of district Gopalganj

Jehanabad

Jehanabad, earlier a sub-division of Gaya since 1872, is surrounded by Patna in north, Gaya in south, Nalanda in east and Arwal in west. It has total area of 956.56 km^2 with geo-coordinate N-E 25°18'45"/ 84°49'45" and S-W 24°58'45"/85°12'45". District has a total population of 11,25,313 (Census 2011). Famous for the River Flag where people offer "Pend Dan" to their forefathers, Jehanabad possesses imprints of the incredible ancient civilization. For the district of Jehanabad, number of water bodies stand at 182. They occupy a total maximum area of 183.67 hectares and a total minimum area of 79.63 hectares and a total average area of 131.63 hectares. The share of perennial water bodies in this district stand at 45 units which have a maximum and minimum area of 140.64 and 97.77 ha respectively. The seasonal water bodies have a contribution of 180 units having a total maximum area of 106.34 hectares. The number of water bodies and their area is given in table 63. In category 1 the total number of water bodies stand at 179 units having a total maximum and minimum areas of 148.21 and 49 hectares respectively. In this category the total units of perennial water bodies are 42 having a total maximum area and minimum area of 69.01 and 49 hectares respectively. Seasonal water bodies stand at 137 units having a maximum area of 79.18 hectares. The number of water bodies and their area under category 1 is given in table 64. There is only 1 perennial water body in category 2 with a maximum and minimum water spread area of 6.58 and 6.27 hectares respectively. The number of water bodies and their area under category 2 is given in table 65. There is only 1 perennial water body in category 4 with a maximum and minimum water spread area of 12.37 and 10.93 hectares respectively as given in table 66. There is no waterbodies in category 4 and 5.Waterbodies of block Kako and district Jehanabad is given figure 37 and 38 respectively.

Table 63: Total water bodies and their area in district Jehanabad

Block Name	Total number of water bodies	Maximum Area(ha)	Minimum Area(ha)	Average Area(ha)
Ghosi	68	54.22	18.21	36.21
Kako	54	69.55	33.9	51.72
Makdumpur	30	40.14	25.67	32.90
Masaurhi	20	12.39	0.96	6.67
Ratni Faridpur	10	7.37	0.89	4.13

Table 64: Category 1 water bodies and their area in district Jehanabad

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Ghosi	68	54.22	18.21	16	24.89	18.21	52	29.32
Kako	52	46.46	14.20	12	20.44	14.20	40	26.01
Makdumpur	29	27.77	14.74	12	20.03	14.74	17	7.74
Masaurhi	20	12.39	0.96	1	2.60	0.96	19	9.79
Ratni Faridpur	10	7.37	0.89	1	1.05	0.89	9	6.32

Table 65: Category 2 water bodies and their area in district Jehanabad

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Kako	1	6.58	6.27	1	6.58	6.27		

Table 66: Category 3 water bodies and their area in district Bhojpur

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Kako	1	16.51	13.42	1	16.51	13.42		
Makdumpur	1	12.37	10.93	1	12.37	10.93		

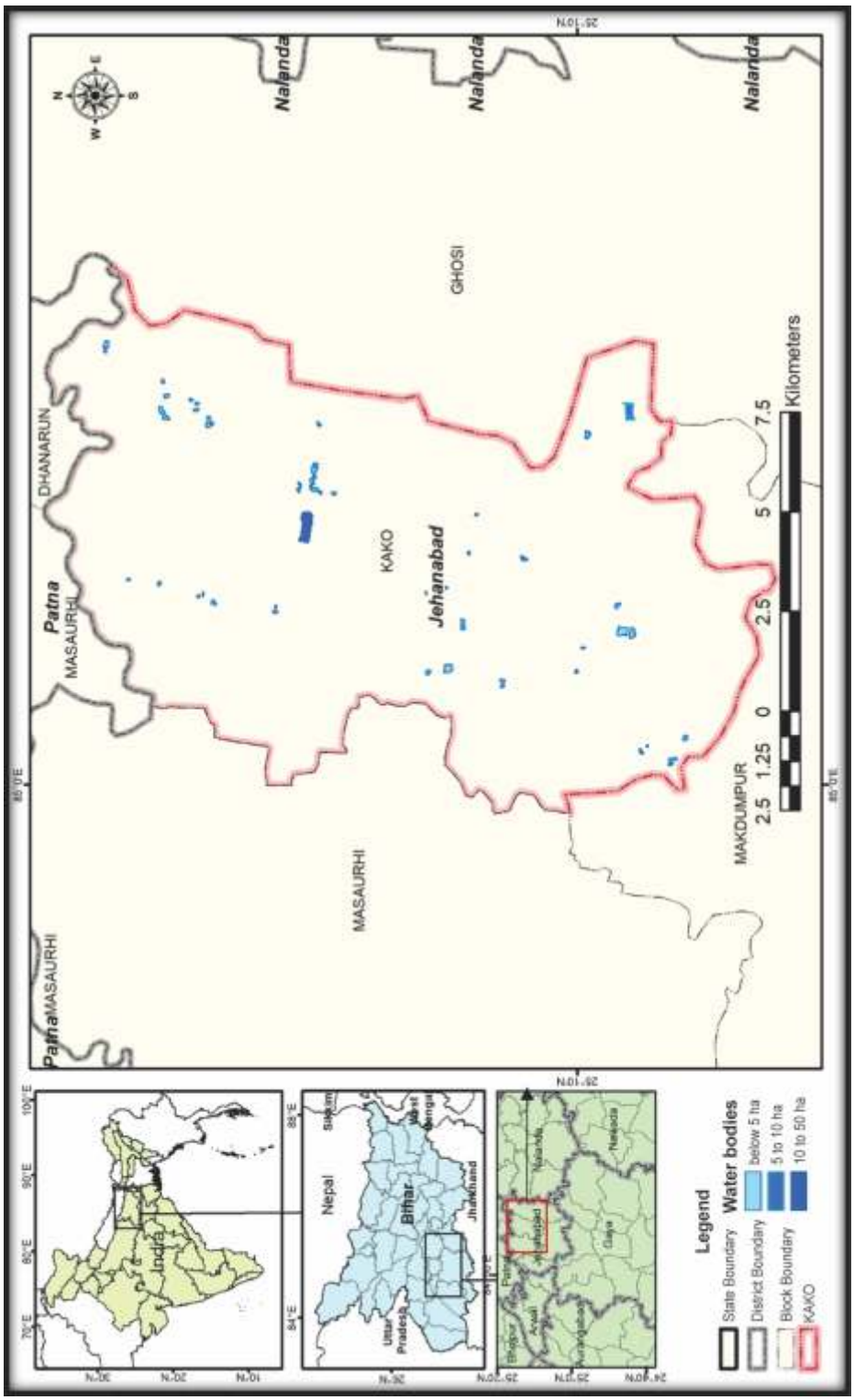


Figure 37: Waterbodies of block Kako of district Jehanabad

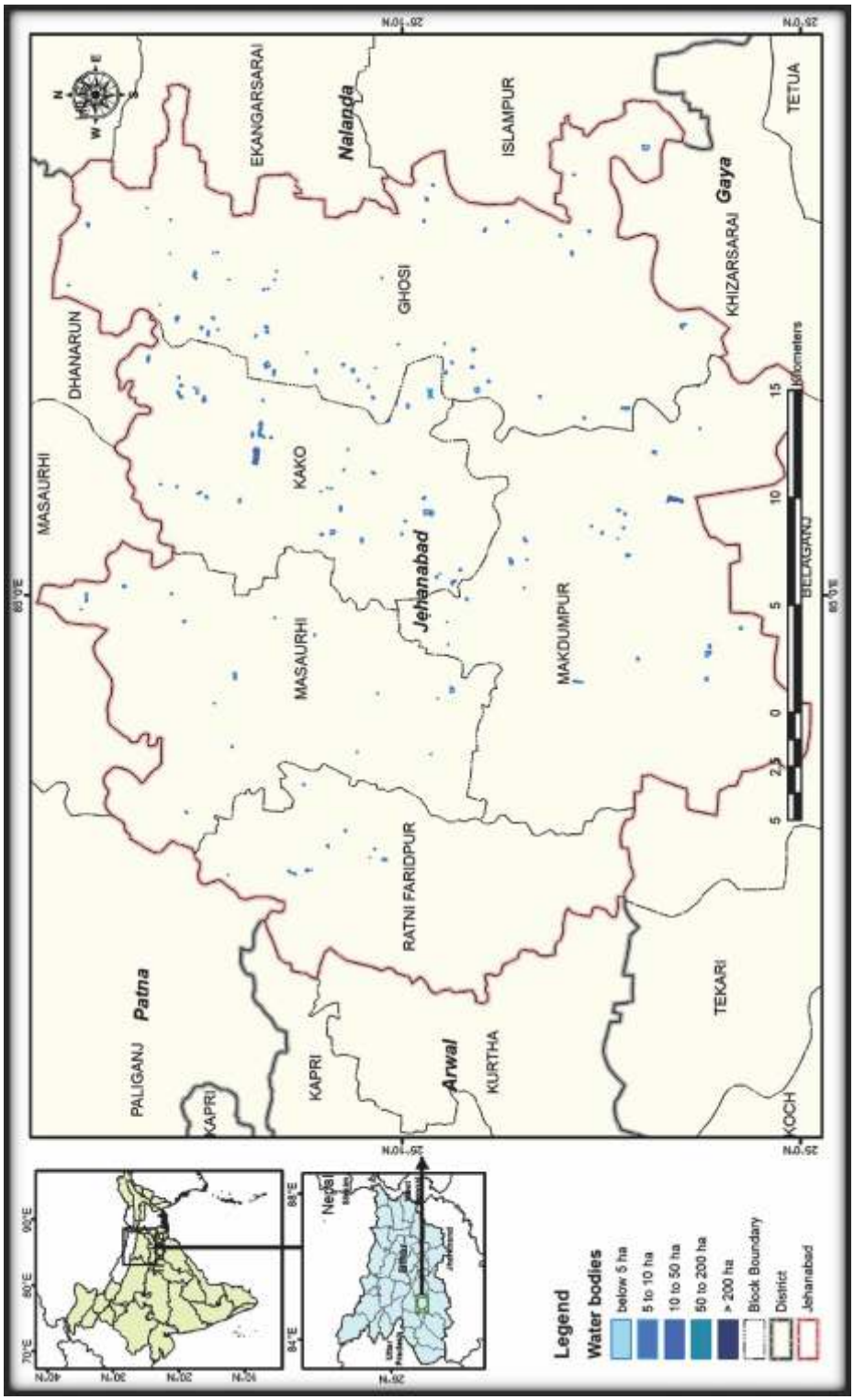


Figure 38: Waterbodies of district Jehanabad

Kaimur

The district Kaimur was established in 1991 and consists mainly of plains and plateau areas. The district Kaimur was established in 1991 and consists mainly of plains and plateau areas. The district shares a border with the states of Uttar Pradesh and Jharkhand with the districts of Buxar and Rohtas. It has a population of 16,26,384 (as of 2011). Geo-coordinates are N-E 25°24'15"/ 83°19'30" and S-W 24°32'15"/83°54'03" with total area of 3388.27 km^2. For the district of Kaimur, number of water bodies stand at 1040 they occupy a total maximum area of 1745.2 hectares and a total minimum area of 854.39 hectares and a total average area of 1299.79 hectares. The share of perennial water bodies in this district stand at 524 units which have a maximum and minimum area of 1242.83 and 854.39 hectares respectively. The seasonal water bodies have a contribution of 516 units having a total maximum area of 502.36 hectares. The number of water bodies and their area is given in table 67. In category 1 the total number of water bodies stand at 1015 units having a total maximum and minimum areas of 1051.55 and 436.94 hectares respectively. In this category the total units of perennial water bodies are 509 having a total maximum area and minimum area of 623.83 and 436.94 hectares respectively. Seasonal water bodies stand at 506 units having a maximum area of 427.75 hectares. The number of water bodies and their area under category 1 is given in table 68. In category 2 the total number of water body units are 17 their total maximum and minimum areas are 110.51 and 24.81 hectares respectively. The numbers of perennial water bodies stand at 8 units having maximum and minimum areas of 52.21 and 24.81 hectares respectively. The numbers of seasonal water bodies stand at 7 units having maximum area of 42.44 hectares. The number of water bodies and their area under category 2 is given in table 69. In category 3

the total number of water bodies including perennial and seasonal stand at 7 units having maximum and minimum total area of 146.32 and 83.18 hectares respectively. In this category, the numbers of perennial water bodies stand at 6 units with maximum and minimum area water spread area of 130.01 and 83.18 hectares respectively. In this category the number of seasonal water bodies are 1 with the maximum water spread area of 16.3 hectares. The number of water bodies and their area under category 3 is given in table 70. There is no waterbodies in category 4 and 5. Waterbodies of block Bhabua and district Kaimur is given figure 39 and 40 respectively.

Table 67: Total water bodies and their area in district Kaimur

Block Name	Total number of water bodies	Maximum Area(ha)	Minimum Area(ha)	Average Area(ha)
Adhaura	103	142.55	44.23	93.39
Bhabua	193	224.61	94.31	159.46
Bhagwanpur	112	169.67	65.66	117.67
Chainpur	148	634.68	410.77	522.72
Chand	122	220.92	95.16	158.04
Durgawati	78	69.52	32.42	50.97
Kudra	66	62.08	26.45	44.26
Mohania	91	98.11	41.93	70.02
Ramgarh	127	123.06	43.46	83.26

Table 68: Category 1water bodies and their area in district Kaimur

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Adhaura	99	107.41	20.88	21	36.28	20.88	78	71.14
Bhabua	191	208.75	94.31	108	133.32	94.31	83	75.43
Bhagwanpur	108	107.81	39.14	48	55.39	39.14	60	52.42
Chainpur	143	169.38	78.79	85	116.89	78.79	58	52.50
Chand	116	129.11	59.56	68	85.00	59.56	48	44.11
Durgawati	78	69.52	32.42	37	43.63	32.42	41	25.89
Kudra	66	62.08	26.45	40	41.60	26.45	26	20.48
Mohania	90	92.88	41.93	48	56.58	41.93	42	36.30
Ramgarh	124	104.61	43.46	54	55.14	43.46	70	49.48

Table 69: Category 2 water bodies and their area in district Kaimur

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Adhaura	3	18.35	7.92	3	18.35	7.92		
Bhabua	2	15.86	0.00					
Bhagwanpur	2	15.51	1.67	1	9.49	1.67	1	6.02
Chainpur	3	17.88	12.25	3	17.88	12.25		
Chand	3	19.24	2.97	1	6.49	2.97	2	12.75
Mohania	1	5.23	0.00				1	5.23
Ramgarh	3	18.44	0.00				3	18.44

Table 70: Category 3 water bodies and their area in district Kaimur

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Adhaura	1	16.78	15.43	1	16.78	15.43		
Bhagwanpur	2	46.35	24.86	1	30.04	24.86	1	16.30
Chainpur	1	10.62	10.25	1	10.62	10.25		
Chand	3	72.57	32.64	3	72.57	32.64		

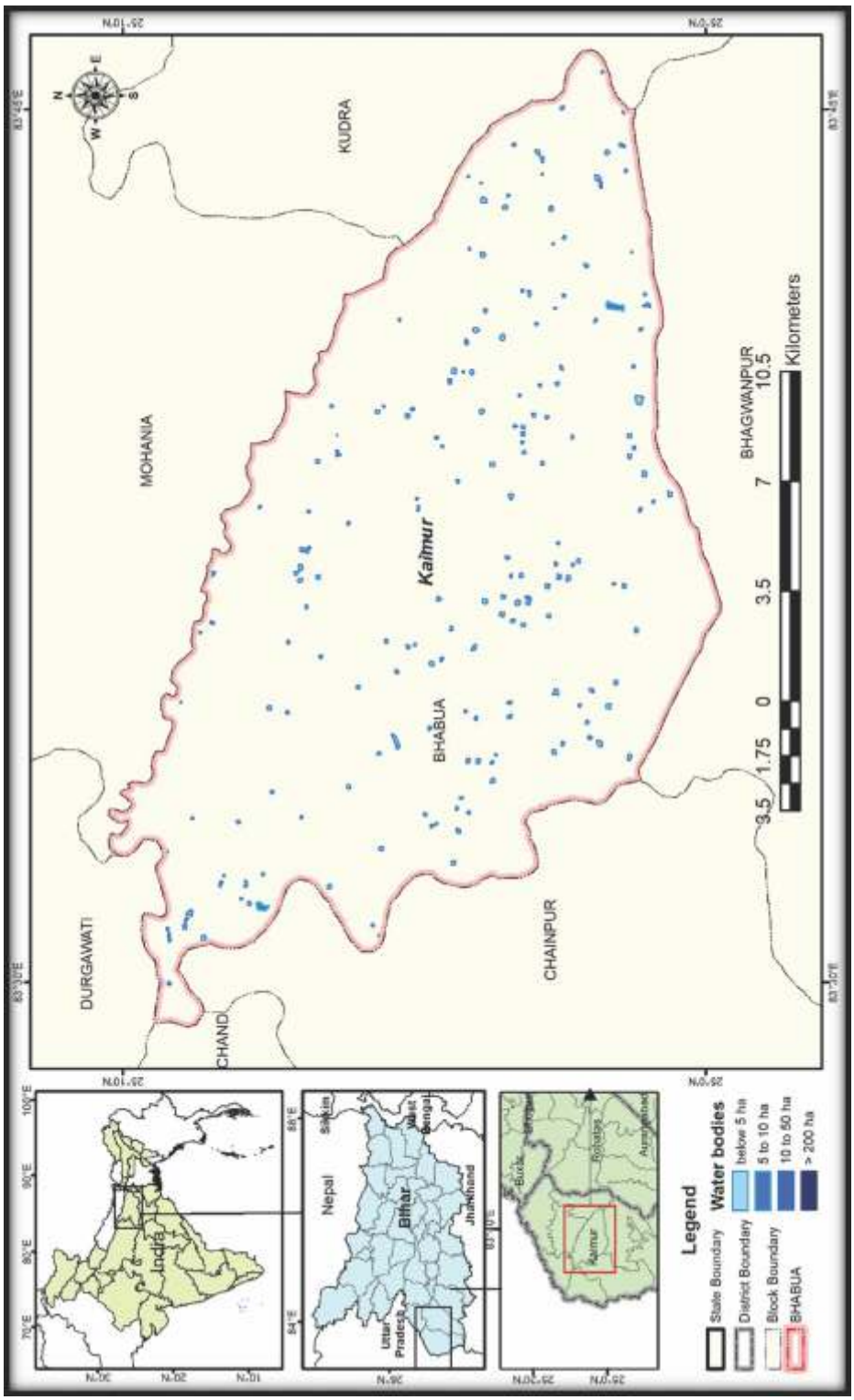


Figure 39: Waterbodies of block Bhabua of district Kaimur

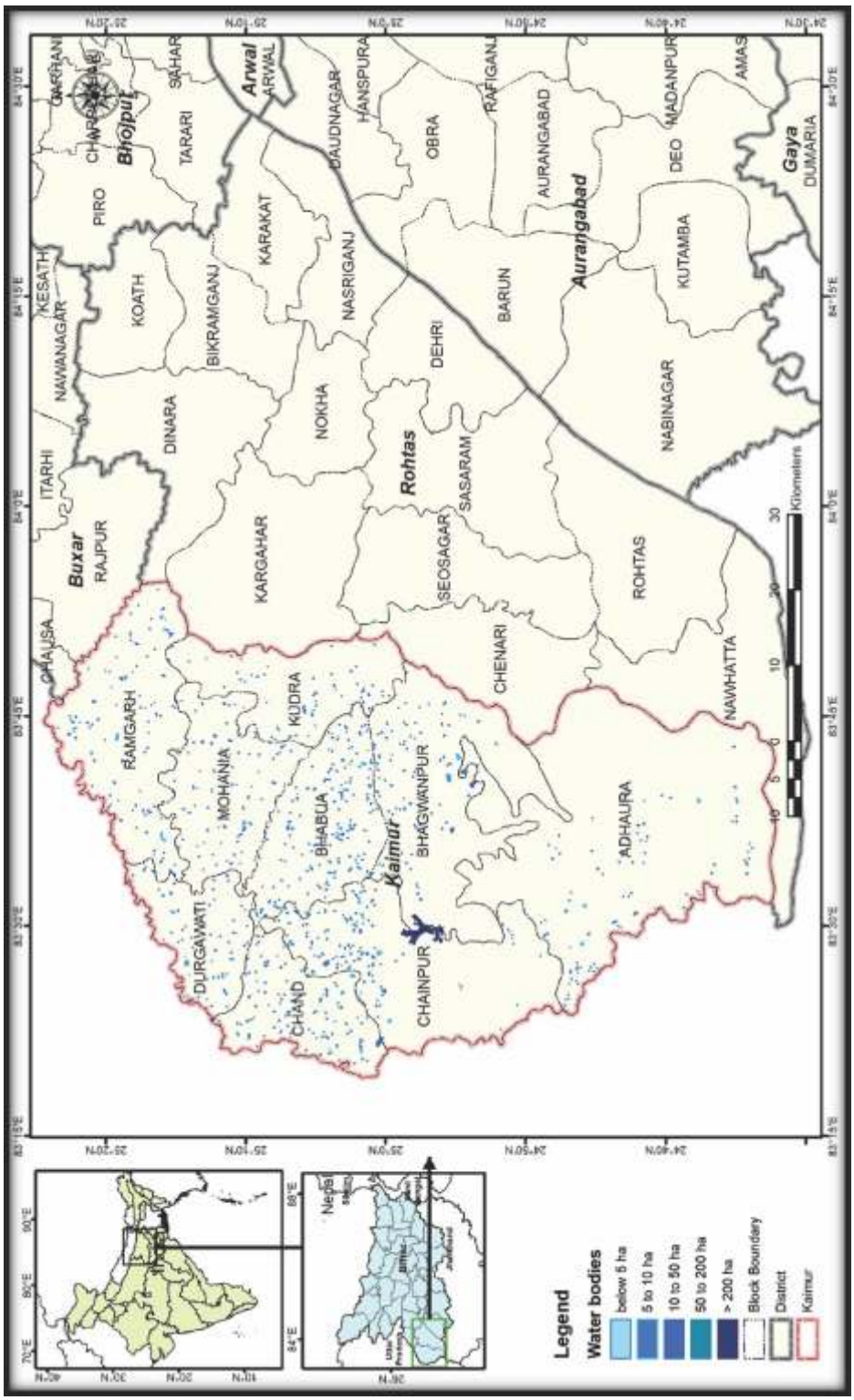


Figure 40: Waterbodies of district Kaimur

Katihar

The district was a part of Purniya Division before October 1973 but acquired status of an independent district on 2nd October 1973. Katihar shares a border with states of West Bengal and Jharkhand with the district of Purniya and Bhagalpur. The district occupies an area of 3095 km². Geo-coordinates are N-E 25°52'26"/ 87°12'00" and S-W 24°13'27"/88°05'22". District has a total population of 30,71,029 (Census 2011). For the district of Katihar, number of water bodies stand at 2482 they occupy a total maximum area of 3998.41 hectares and a total minimum area of 1678.77 hectares and a total average area of 2838.59 hectares. The share of perennial water bodies in this district stand at 700 units which have a maximum and minimum area of 2474.72 and 1678.76 hectares respectively. The seasonal water bodies have a contribution of 1782 units having a total maximum area of 1523.69 hectares. The number of water bodies and their area is given in table 71. In category 1 the total number of water bodies stand at 2327 units having a total maximum and minimum areas of 1948.05 and 480.88 hectares respectively. In this category the total units of perennial water bodies are 580 having a total maximum area and minimum area of 756.87 and 480.88 hectares respectively. Seasonal water bodies stand at 1747 units having a maximum area of 1191.17 hectares. The number of water bodies and their area under category 1 is given in table 72.

In category 2 the total number of water body units are 98 their total maximum and minimum areas are 654.91 and 311.54 hectares respectively. The numbers of perennial water bodies stand at 72 units having maximum and minimum areas of 482.67 and 311.54 hectares respectively. The numbers of seasonal water bodies stand at 25 units having maximum area of 166.81 hectares. The number of water bodies and their area under category 2 is given in table 73. In category 3 the total number of water bodies including perennial and seasonal stand at 53 units having maximum and minimum total area of 1051.34 and 585.76. Hectares respectively. In this category, the numbers of perennial water bodies

stand at 44 units with maximum and minimum area water spread area of 891.06 and 585.76 hectares respectively. In this category the number of seasonal water bodies are 9 with the maximum water spread area of 160.29 hectares. The number of water bodies and their area under category 3 is given in table 74. There are 4 perennial water bodies in this category with a maximum water spread area of 235.54 and a minimum water spread area of 219.58 as given in table 75. There is no waterbodies in category 5. Waterbodies of block Barsoi and district Katihar is given figure 41 and 42 respectively.

Table 71: Total water bodies and their area in district Katihar

Block Name	Total number of water bodies	Maximum Area(ha)	Minimum Area(ha)	Average Area(ha)
Ahmadabad	3	2.34	0	1.17
Azamnagar	398	440.2	147.42	293.81
Balarampur	388	457.42	197.73	327.58
Barari	88	183.1	55.74	119.42
Barsoi	523	527.94	180.57	354.25
Falka	131	147.32	34.41	90.86
Kadwa	335	843.53	424.28	633.90
Katihar	352	530.94	168.93	349.94
Kora	162	253.7	97.94	175.82
Maihari	21	68.53	8.59	38.56
Pranpur	81	543.39	363.16	453.28

Table 72: Category 1 water bodies and their area in district Katihar

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Ahmadabad	3	2.34	0.00				3	2.34
Azamnagar	381	283.84	63.28	82	93.75	63.28	299	190.08
Balarampur	372	301.47	97.82	119	157.64	97.82	253	143.83
Barari	81	69.79	11.50	13	15.74	11.50	68	54.05
Barsoi	505	365.13	102.77	150	177.49	102.77	355	187.64
Falka	129	118.29	23.07	18	32.82	23.07	111	85.47
Kadwa	296	272.79	88.65	100	133.05	88.65	196	139.74
Katihar	328	315.94	66.37	65	105.50	66.37	263	210.44
Kora	151	115.06	24.29	31	37.15	24.29	120	77.91
Maihari	18	17.51	0.00				18	17.51
Pranpur	63	85.89	3.13	2	3.73	3.13	61	82.16

Table 73: Category 2 water bodies and their area in district Katihar

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Azamnagar	13	82.27	42.10	11	67.40	42.10	2	14.87
Balarampur	11	82.65	45.94	9	65.01	45.94	2	17.63
Barari	2	13.66	9.20	2	13.66	9.20		
Barsoi	13	87.97	44.10	12	81.04	44.10	1	6.93
Falka	1	5.42	4.55	1	5.42	4.55		
Kadwa	22	155.71	89.86	19	135.21	89.86	3	20.50
Katihar	18	113.66	56.07	13	83.37	56.07	5	30.29
Kora	7	42.33	15.64	4	23.57	15.64	3	18.76
Maihari	1	5.42	0.00					
Pranpur	10	65.82	4.08	1	7.99	4.08	9	57.83

Table 74: Category 3 water bodies and their area in district Katihar

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Azamnagar	4	74.09	42.04	3	59.29	42.04	1	14.81
Balarampur	5	73.31	53.97	4	62.22	53.97	1	11.08
Barari	5	99.64	35.04	3	53.71	35.04	2	45.94
Barsoi	5	74.84	33.70	5	74.84	33.70		
Falka	1	23.61	6.79	1	23.61	6.79		
Kadwa	15	306.45	164.76	14	295.77	164.76	1	10.68
Katihar	6	101.35	46.49	4	74.35	46.49	2	27.00
Kora	4	96.31	58.00	3	80.15	58.00	1	16.17
Maihari	2	45.60	8.59	1	10.98	8.59	1	34.61
Pranpur	6	156.14	136.38	6	156.14	136.38		

Table 75: Category 4 water bodies and their area in district Katihar

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Kadwa	2	108.58	81.00	2	108.58	81.00		
Pranpur	2	235.54	219.58	2	235.54	219.58		

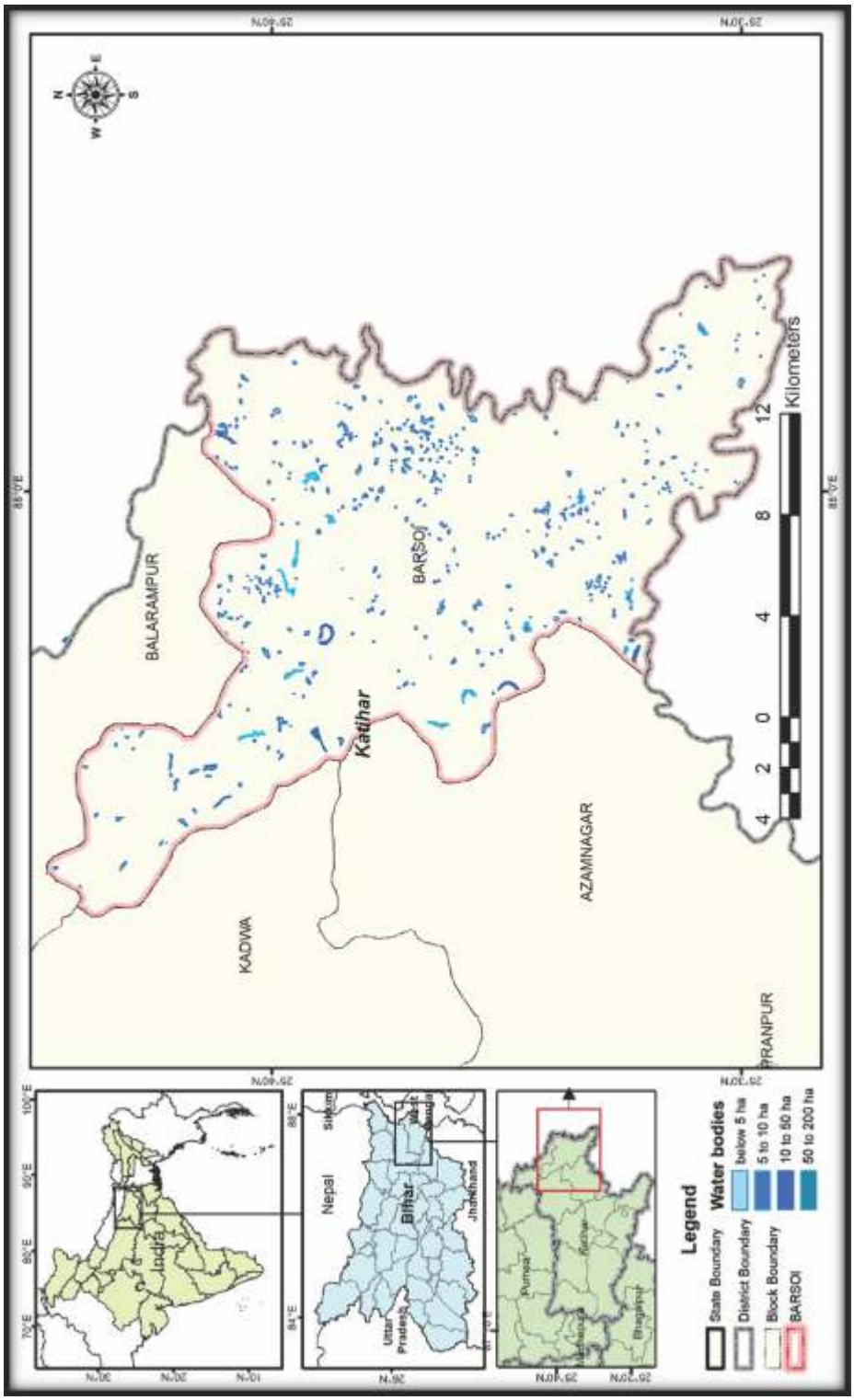


Figure 41: Waterbodies of block Barsoi of district Katihar

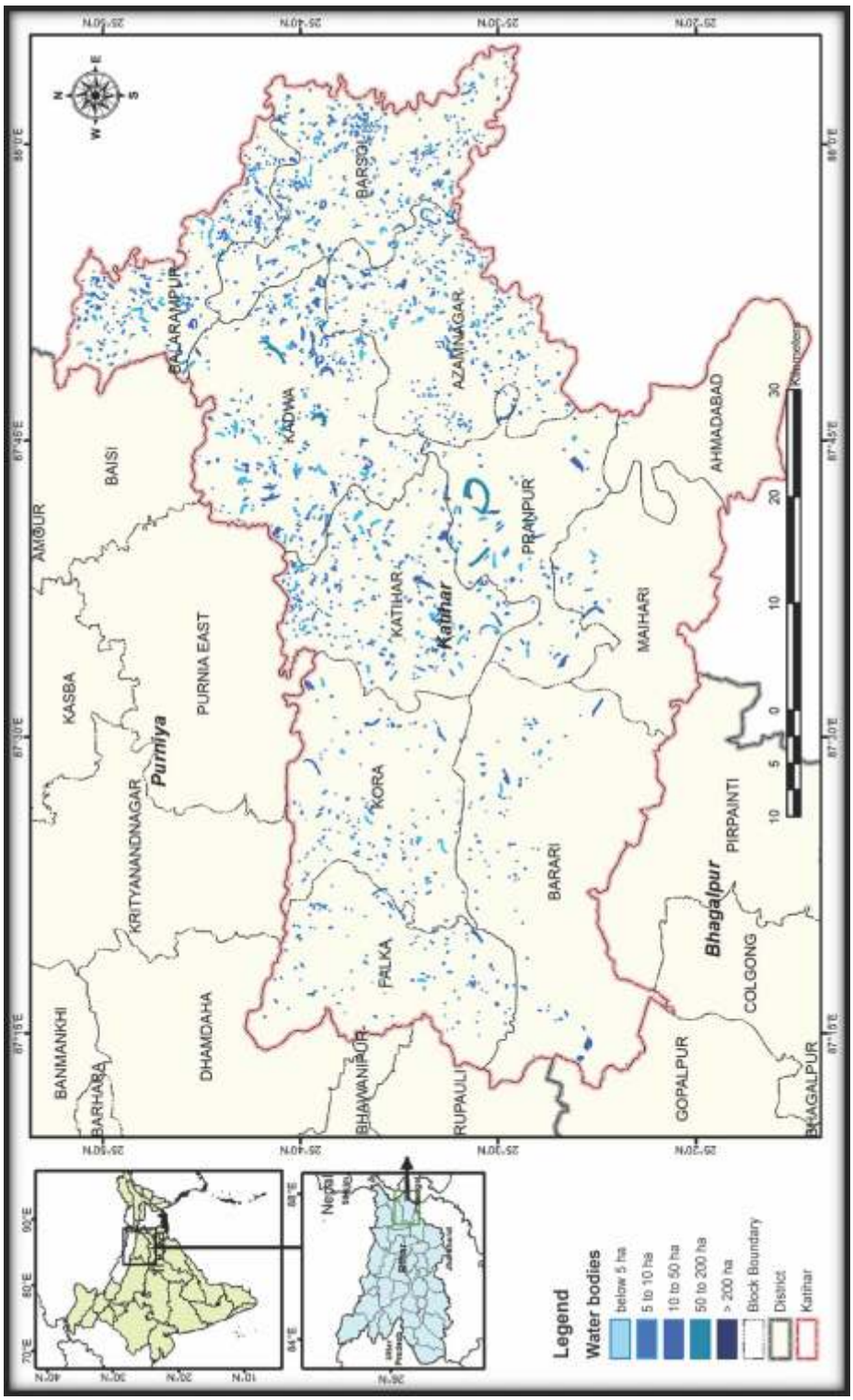


Figure 42: Waterbodies of block Barsoi of district Katihar

Khagaria

Khagaria was a part of the district of Munger, as a subdivision. It was upgraded as district, with effect from 10th May, 1981. It has a total population of 16,66,886. A part of Munger division, Khagaria is intersected by Ganga and Koshi rivers.Recurrence of floods was an annual affair of the district, as five major rivers Ganga, Gandak, Baghmati, Kamala and Koshi passed through. The district is enclosed by Madhepura, Saharsa, Bhagalpur, Samastipur Begusarai and Munger. by Geo-coordinates are N-E 25°43'46"/ 86°17'28" and S-W 25°15'34"/86°51'15". Total area of the district is 1474 km^2. District has a total population of 16,66,886 (according to census 2011).

For the district of Khagaria, number of water bodies stand at 367 They occupy a total maximum area of 1716.19 hectares and a total minimum area of 306.58 hectares and a total average area of 1011.38 hectares. The share of perennial water bodies in this district stand at 69 units which have a maximum and minimum area of 667.01 and 306.57 hectares respectively. The seasonal water bodies have a contribution of 298 units having a total maximum area of 1049.18 hectares. The number of water bodies and their area is given in table 76. In category 1 the total number of water bodies stand at 296 units having a total maximum and minimum areas of 328.71 and 41.47 hectares respectively. In this category the total units of perennial water bodies are 45 having a total maximum area and minimum area of 62.89 and 41.47 hectares respectively. Seasonal water bodies stand at 251 units having a maximum area of 265.83 hectares. The number of water bodies and their area under category 1 is given in table 77. In category 2 the total number of water body units are 23 their total maximum and minimum areas are 165.57 and 28.72 hectares respectively. The numbers of perennial water bodies stand at 7 units having maximum and minimum areas of 49.86 and 28.72 hectares respectively. The numbers of seasonal water bodies stand

at 15 units having maximum area of 110.53 hectares. The number of water bodies and their area under category 2 is given in table 78.

In category 3 the total number of water bodies including perennial and seasonal stand at 42 units having maximum and minimum total area of 727.75 and 155.87 hectares respectively. In this category, the numbers of perennial water bodies stand at 14 units with maximum and minimum area water spread area of 297.53 and 155.87 hectares respectively. In this category the number of seasonal water bodies are 28 with the maximum water spread area of 430.22 hectares. The number of water bodies and their area under category 3 is given in table 79. There are 6 number of category 4 water bodies with 3 number of perennial and 3 number of seasonal units of them. The perennial type has a maximum area of 256.7494.15 hectares and a minimum area of 80.5 hectares while the seasonal type has a maximum area of 237.45 hectares bringing the total maximum area to 494.15 hectares of water spread area as given in table 80.There is no waterbody in category 5. Waterbodies of block Khagaria and district Khagaria is given figure 43 and 44 respectively.

Table 76: Total water bodies and their area in district Khagaria

Block Name	Total number of water bodies	Maximum Area(ha)	Minimum Area(ha)	Average Area(ha)
Alauli	81	212.94	44.79	128.86
Beldaur	59	77.13	2.14	39.64
Chautham	70	326.77	76.48	201.62
Gogri	47	298	55.18	176.59
Khagaria	94	768.65	122.69	445.67
Parbatta	16	32.7	5.3	19.00

Table 77: Category 1 water bodies and their area in district Khagaria

District	Total Water bodies			Perennial waterbodies			Seasonal Waterb6odies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Alauli	75	83.95	13.69	21	23.20	13.69	54	60.75
Beldaur	56	44.00	2.14	6	3.26	2.14	50	40.75
Chautham	51	73.35	12.40	6	18.80	12.40	45	54.55
Gogri	33	24.25	2.11	3	3.15	2.11	30	21.10
Khagaria	66	82.85	5.83	4	7.47	5.83	62	75.38
Parbatta	15	20.31	5.30	5	7.01	5.30	10	13.30

Table 78: Category 2 water bodies and their area in district Khagaria

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Beldaur	1	5.17	0.00					
Chautham	9	65.44	12.10	3	20.67	12.10	6	44.77
Gogri	4	23.22	8.00	2	11.09	8.00	2	12.12
Khagaria	9	71.74	8.62	2	18.10	8.62	7	53.64

Table 79: Category 3 water bodies and their area in district Khagaria

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Alauli	6	128.99	31.10	2	57.17	31.10	4	71.82
Beldaur	2	27.96	0.00				2	27.96
Chautham	9	127.24	51.97	5	72.76	51.97	4	54.48
Gogri	9	161.00	16.02	2	49.10	16.02	7	111.90
Khagaria	15	270.17	56.78	5	118.50	56.78	10	151.67
Parbatta	1	12.39	0.00				1	12.39

Table 80: Category 4 water bodies and their area in district Khagaria.

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Chautham	1	60.73	0.00				1	60.73
Gogri	1	89.53	29.05	1	89.53	29.05		
Khagaria	4	343.89	51.45	2	167.17	51.45	2	176.72

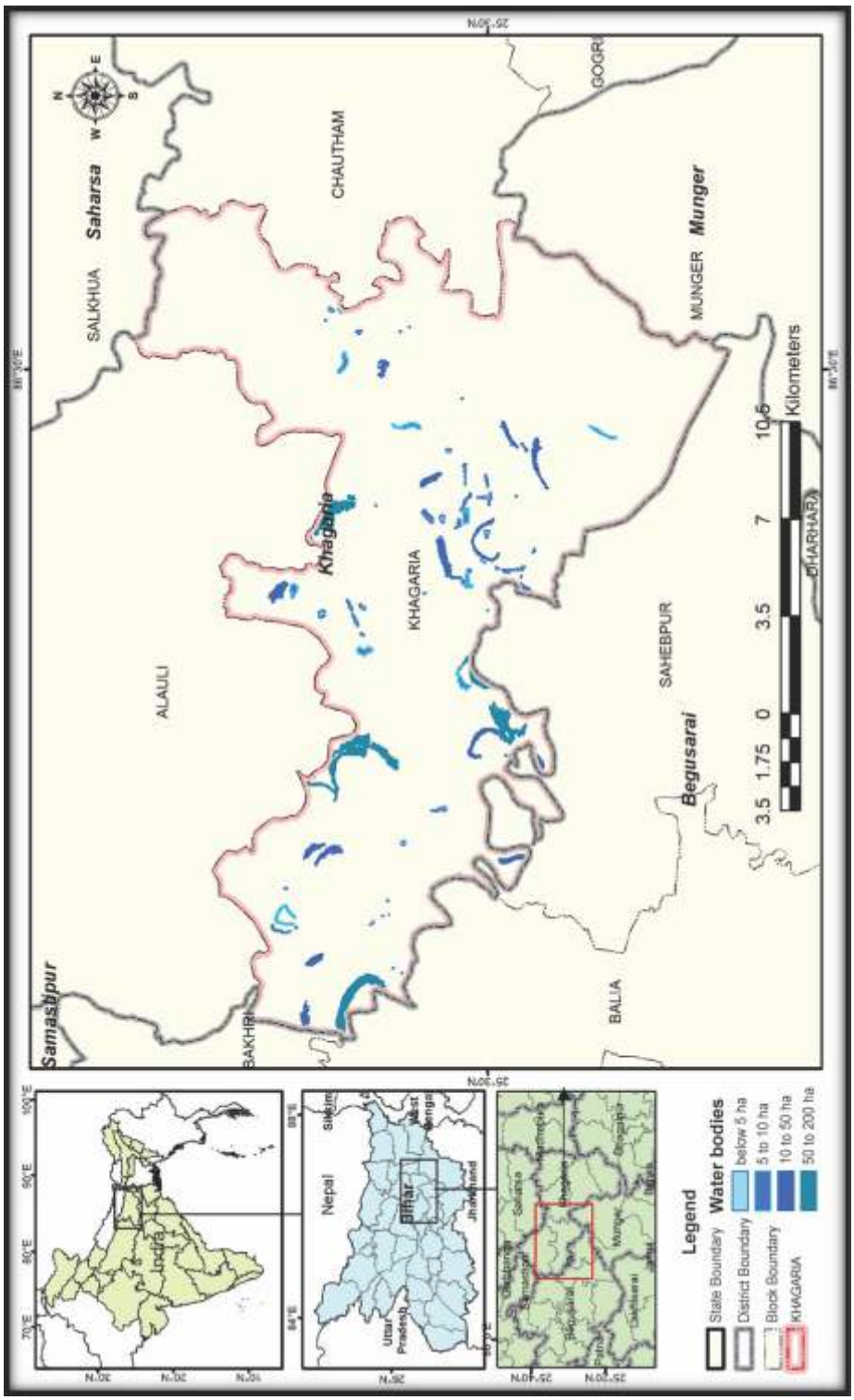


Figure 43: Waterbodies of block Khagaria of districtKhagaria

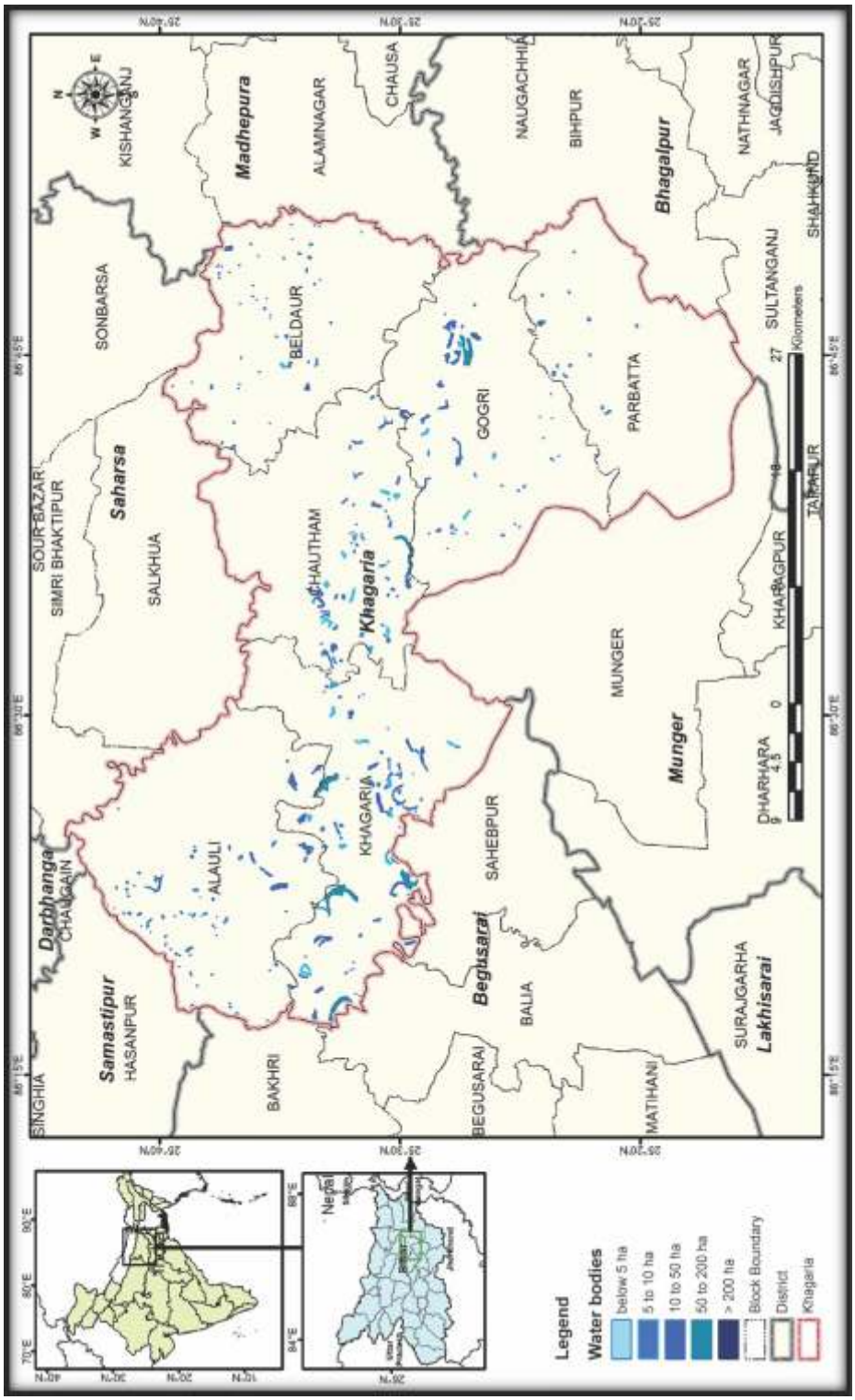


Figure 44 : Waterbodies of district Khagaria

Kishanganj

Kishanganj was the old and important Sub-Division of Purniya. Kishanganj District came into existence on 14th January 1990. It is located in between N-E 26°33'15"/ 87°36'45" and S-W 25°55'40"/88°17'47" with total area of 1979 km^2. District has a total population of 16,90,400 (according to census 2011). District shared boundary Nepal, West Bengal and two district of Bihar namely Purniya and Araria. The Ramzan River crosses through the middle of the town. For the district of Kishanganj, number of water bodies stand at 1069 they occupy a total maximum area of 1161.13 hectares and a total minimum area of 434.57 hectares and a total average area of 797.84 hectares. The share of perennial water bodies in this district stand at 242 units which have a maximum and minimum area of 683.12 and 434.56 hectares respectively. The seasonal water bodies have a contribution of 827 units having a total maximum area of 478.01 hectares. The number of water bodies and their area is given in table 81. In category 1 the total number of water bodies stand at 1030 units having a total maximum and minimum areas of 685.82 and 146.46 hectares respectively. In this category the total units of perennial water bodies are 208 having a total maximum area and minimum area of 247.82 and 146.46 hectares respectively. Seasonal water bodies stand at 822 units having a maximum area of 437.99 hectares. The number of water bodies and their area under category 1 is given in table 82. In category 2 the total number of water body units are 22 their total maximum and minimum areas are 153.56 and 75.99 hectares respectively. The numbers of perennial water bodies stand at 15 units having maximum and minimum areas of 99.93 and 61.28

hectares respectively. The numbers of seasonal water bodies stand at 1 unit having maximum area of 7.12 hectares. The number of water bodies and their area under category 2 is given in table 83. In category 3 the total number of water bodies including perennial and seasonal stand at 17 units having maximum and minimum total area of 321.74 and 212.12 hectares respectively. In this category, the numbers of perennial water bodies stand at 16 units with maximum and minimum area water spread area of 309.98 and 212.12 hectares respectively. In this category the number of seasonal water body is 1 with the maximum water spread area of 11.76 hectares. The number of water bodies and their area under category 3 is given in table 84. There is no waterbody in category 4 and 5. Waterbodies of block Kachadhamin and district Kishanganj is given figure 45 and 46 respectively.

Table 81: Total water bodies and their area in district Kishanganj

Block Name	Total number of water bodies	Maximum Area(ha)	Minimum Area(ha)	Average Area(ha)
Bahadurganj	122	106.85	26.18	66.51
Dighalbank	68	48.09	7.45	27.77
Kachadhamin	192	296.75	151.77	224.26
Kishangunj	192	285.26	118.2	201.73
Pothia	208	164.77	39.42	102.09
Terhagachh	126	68.34	8.74	38.54
Thakurganj	161	191.07	82.81	136.94

Table 82: Category 1 water bodies and their area in district Kishanganj

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Bahadurganj	118	69.42	9.65	12	14.51	9.65	106	54.90
Dighalbank	67	41.44	7.45	10	13.19	7.45	57	28.25
Kachadhamin	183	126.70	24.25	37	42.93	24.25	146	83.77
Kishangunj	182	167.09	48.31	57	82.47	48.31	125	84.62
Pothia	204	130.92	27.29	48	47.63	27.29	156	83.29
Terhagachh	125	60.62	7.42	10	12.76	7.42	115	47.85
Thakurganj	151	89.63	22.09	34	34.33	22.09	117	55.31

Table 83: Category 2 water bodies and their area in district Kishanganj

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Bahadurganj	2	15.58	14.01	2	15.58	14.01		
Dighalbank	1	6.66	0.00					
Kachadhamin	3	18.01	13.05	3	18.01	13.05		
Kishangunj	5	39.85	14.71					
Pothia	3	16.84	9.97	3	16.84	9.97		
Terhagachh	1	7.72	1.32	1	7.72	1.32		
Thakurganj	7	48.90	22.93	6	41.78	22.93	1	7.12

Table 84: Category 3 water bodies and their area in district Kishanganj

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Bahadurganj	2	21.85	2.52	1	10.09	2.52	1	11.76
Kachadhamin	6	152.03	114.47	6	152.03	114.47		
Kishangunj	5	78.32	55.18	5	78.32	55.18		
Pothia	1	17.01	2.16	1	17.01	2.16		
Thakurganj	3	52.53	37.79	3	52.53	37.79		

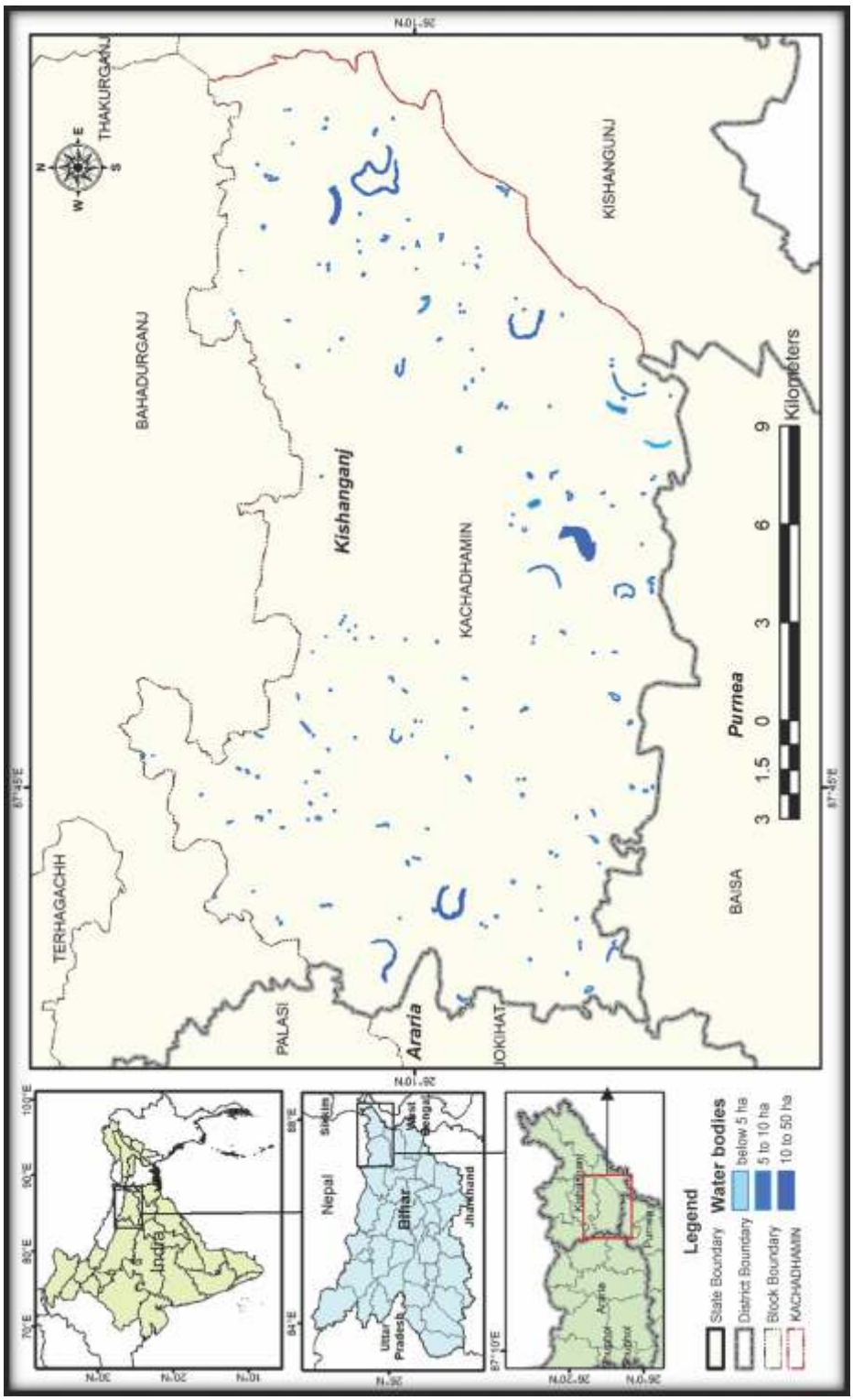


Figure 45: Waterbodies of block Kachadhamin of district Kishanganj

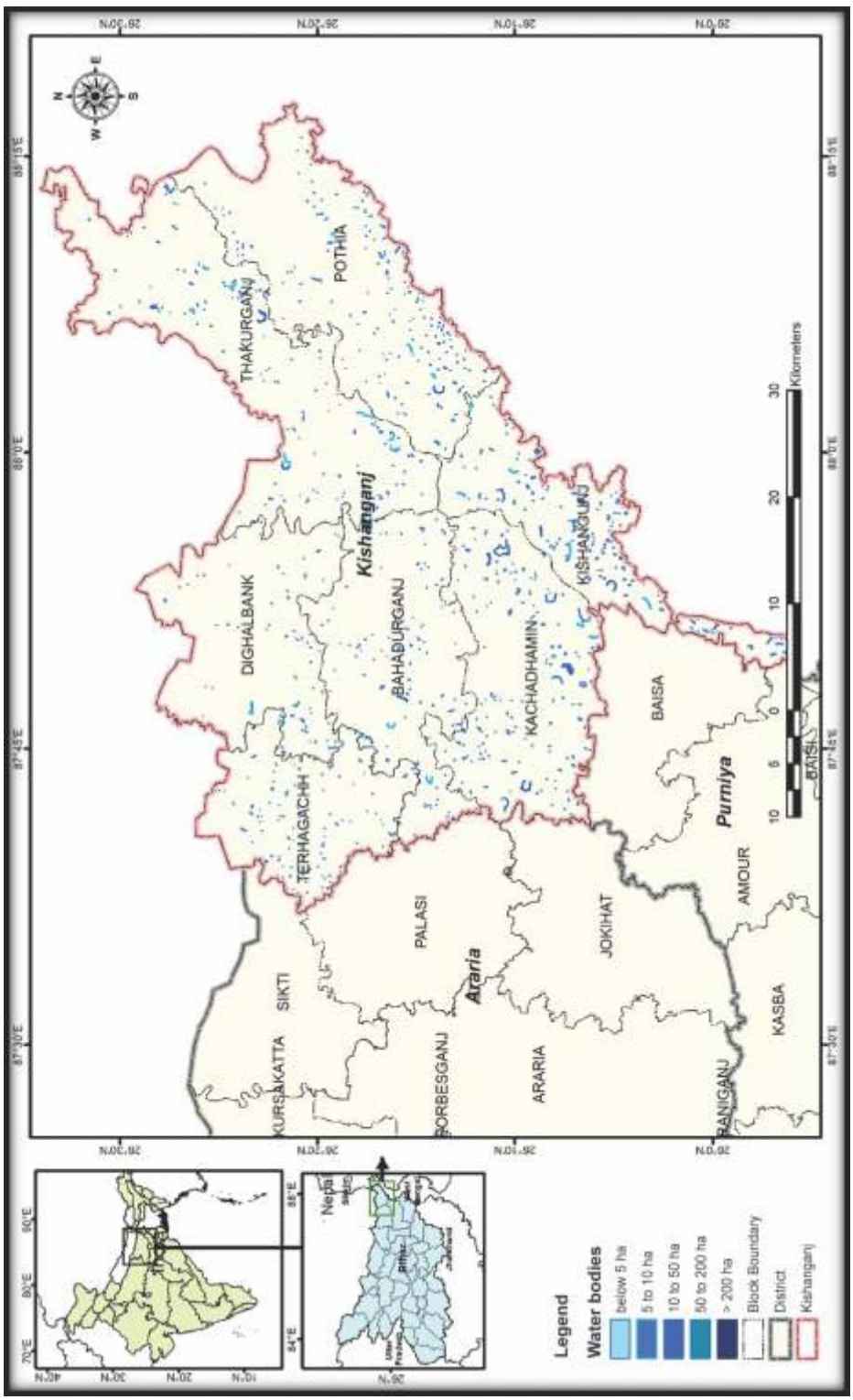


Figure 46: Waterbodies of district Kishanganj

Lakhisarai

This district was established on the 3rd of July 1994. Before coming into existence as a new district, Lakhisarai was a sub-division within Munger District and its total population is 1,000,912 (census 2011). Geo-coordinates are N-E 25°19'15"/ 85°54'15" and S-W 24°58'15"/86°23'15". Total area is 1229 km^2. Lakhisarai is bounded by Munger, Sheikhpura, Begusarai and Patna in the East, South, West and North respectively. The district can be divided into three parts viz. (i) Hilly area (ii) Flood hit area and (ii) Plain area. The hilly area comprises of hill series and rocks like Kachhua hills, Kajra Mountains Up To Abhaipur and Jaynagar Mountains including forest area. Almost whole of Pipariya block and some part of Barahiya is considered as flood hit area.

For the district of Lakhisarai., number of water bodies stand at 462 They occupy a total maximum area of 655.57 hectares and a total minimum area of 219.14 hectares and a total average area of 437.37 hectares. The share of perennial water bodies in this district stand at 155 units which have a maximum and minimum area of 426.83 and 219.14 hectares respectively. The seasonal water bodies have a contribution of 307 units having a total maximum area of 228.75 hectares. The number of water bodies and their area is given in table 85. In category 1 the total number of water bodies stand at 545 units having a total maximum and minimum areas of 342.76 and 125.1 hectares respectively. In this category the total units of perennial water bodies are 149 having a total maximum area and minimum area of 181.75 and 125.1 hectares respectively. Seasonal water bodies stand at 305 units having a maximum area of 161.01 hectares. The number of water bodies and their area under category 1 is given in table 86. In category 2 the total number of water body units are 4 their total maximum and minimum areas are 28.66 and 6.29 hectares respectively. The numbers of perennial water bodies stand at 3 units having maximum and minimum areas of 20.57 and 6.29

hectares respectively. The numbers of seasonal water bodies stand at 1 unit having maximum area of 8.08 hectares. The number of water bodies and their area under category 2 is given in table 87. In category 3 the total number of water bodies including perennial and seasonal stand at 2 units having maximum and minimum total area of 59.03 and 24.45 hectares respectively. In this category, the numbers of perennial water bodies stand at 2 units with maximum and minimum area water spread area of 59.03 and 24.45 hectares respectively. In this category there are no seasonal water bodies. The number of water bodies and their area under category 3 is given in table 88. There are 2 number of category 4 water bodies with 1 number of perennial and 1 number of seasonal units of them. The perennial type has a maximum area of 165.48 hectares and a minimum area of 63.30 hectares while the seasonal type has a maximum area of 59.66 hectares bringing the total maximum area to 225.13 hectares of water spread area as given in table 89. There is no waterbody in category 5. Waterbodies of block Halsi and district Lakhisarai is given figure 47 and 48 respectively.

Table 85: Total water bodies and their area in district Lakhisarai

Block Name	Total number of water bodies	Maximum Area(ha)	Minimum Area(ha)	Average Area(ha)
Barahiya	39	34.31	4.73	19.52
Halsi	183	128.56	54.61	91.59
Lakhisarai	120	183	66.83	124.92
Surajgarha	120	309.7	92.97	201.34

Table 86: Category 1 water bodies and their area in district Lakhisarai

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Barahiya	39	34.31	4.73	7	7.71	4.73	32	26.60
Halsi	182	122.55	53.52	74	74.94	53.52	108	47.61
Lakhisarai	116	113.96	45.90	43	68.44	45.90	73	45.52
Surajgarha	117	71.94	20.95	25	30.66	20.95	92	41.28

Table 87: Category 2 water bodies and their area in district Lakhisarai

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Halsi	1	6.01	1.09	1	6.01	1.09		
Lakhisarai	3	22.65	5.20	2	14.56	5.20	1	8.08

Table 88: Category 3 water bodies and their area in district Lakhisarai

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Lakhisarai	1	46.40	15.73	1	46.40	15.73		
Surajgarha	1	12.63	8.72	1	12.63	8.72		

Table 89: Category 4 water bodies and their area in district Lakhisarai

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Surajgarha	2	225.13	63.30	1	165.48	63.30	1	59.66

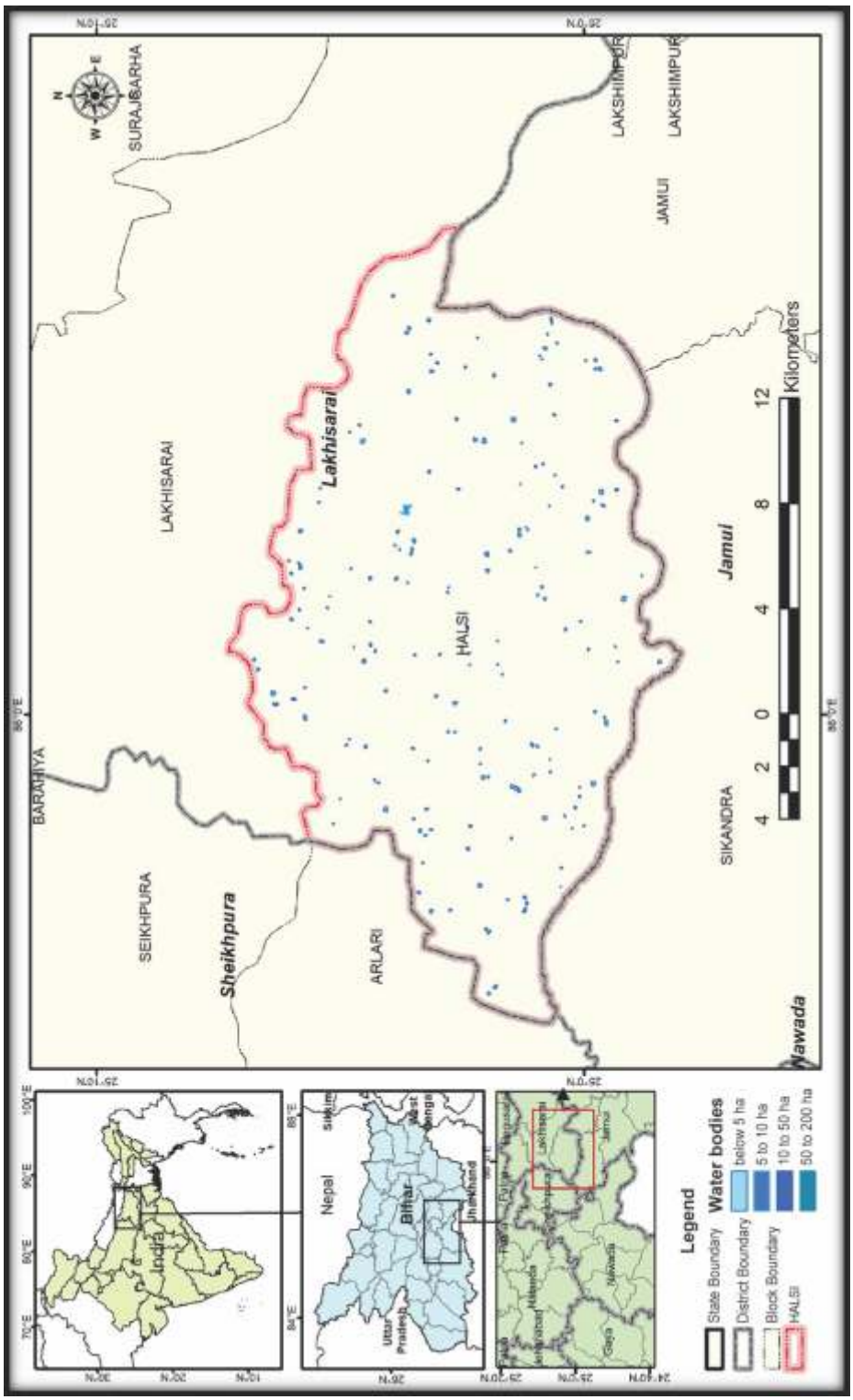


Figure 47: Waterbodies of Block Halsi of district Lakhisarai

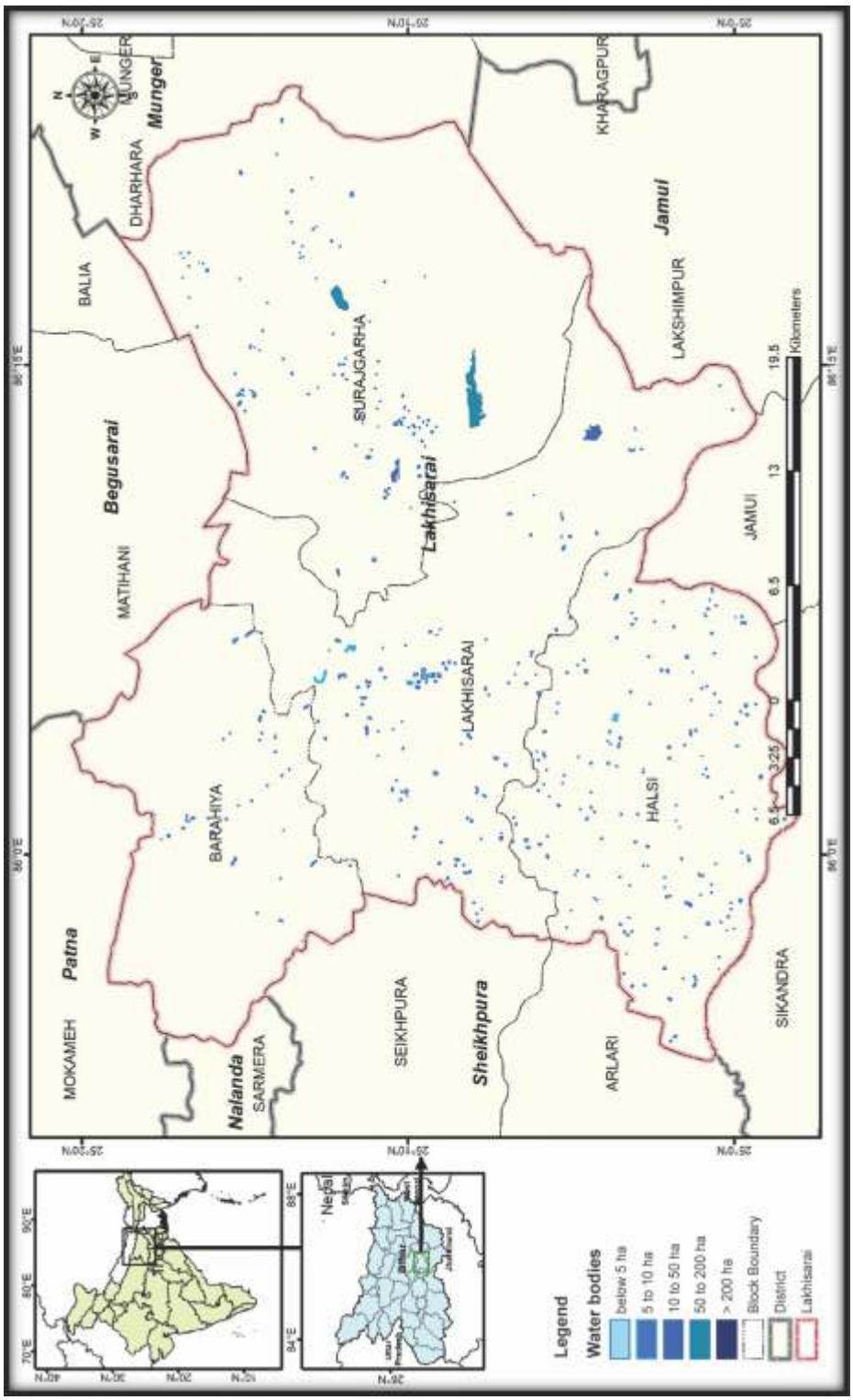


Figure 48: Waterbodiesof district Lakhisarai

Madhepura

Madhepura subdivision Saharsa District which had seven blocks at that time, was given the status of a district on 09/05/1981. It is situated in the plains of river Kosi and located in the northeastern part of Bihar. It is surrounded by Araria and Supaul district in the north, Khagaria and Bhagalpur district in the south, Purnia district in the east and Saharsa district in the West Madhepura district and is a part of Kosi division. Geo-coordinates are N-E 25°19'15"/ 85°54'15" and S-W 24°58'15"/86°23'15". Total area is 1823 km^2. District has a total population of 2001762 (according to census 2011).For the district of Madhepura, number of water bodies stand at 858. They occupy a total maximum area of 437.82 hectares and a total minimum area of 82.51 hectares and a total average area of 260.17 hectares. The share of perennial water bodies in this district stand at 149 units which have a maximum and minimum area of 136.51and 82.52 hectares respectively. The seasonal water bodies have a contribution of 709 units having a total maximum area of 301.32 hectares. The number of water bodies and their area is given in table 90. In category 1 the total number of water bodies stand at 852 units having a total maximum and minimum areas of 396.66 and 74.14 hectares respectively. In this category the total units of perennial water bodies are 145 having a total maximum area and minimum area of 108.66 and 74.14 hectares respectively. Seasonal water bodies stand at 707 units having a maximum area of 288 hectares. The number of water bodies and their area under category 1 is given in table 91. In category 2 the total

number of water body units are 6 their total maximum and minimum areas are 41.16 and 8.37 hectares respectively. The numbers of perennial water bodies stand at 4 units having maximum and minimum areas of 27.85 and 8.37 hectares respectively. The numbers of seasonal water bodies stand at 1 units having maximum area of 7.69 hectares. The number of water bodies and their area under category 2 is given in table 92. No water bodies delineated in other three categories.Waterbodies of block Babubarhi and district Madhubani is given figure 49 and 50 respectively.

Table 90: Total water bodies and their area in district Madhepura

Block Name	Total number of water bodies	Maximum Area(ha)	Minimum Area(ha)	Average Area(ha)
Alamnagar	131	67.09	11.79	39.44
Chausa	54	40.18	5.64	22.91
Kishanganj	129	59.66	8.53	34.10
Kumarkund	106	54.78	10.89	32.84
Madhepura	181	103.08	21.38	62.23
Murliganj	73	36.56	6.95	21.75
Singheswar	184	76.47	17.33	46.90

Table 91: Category 1 water bodies and their area in district Madhepura

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Alamnagar	131	67.09	11.79	18	15.04	11.79	113	52.05
Chausa	52	26.77	3.57	7	5.53	3.57	45	21.24
Kishanganj	129	59.66	8.53	17	11.72	8.53	112	47.94
Kumarkund	106	54.78	10.89	21	17.59	10.89	85	37.19
Madhepura	178	80.95	15.08	33	23.97	15.08	145	56.98
Murliganj	73	36.56	6.95	15	10.15	6.95	58	26.41
Singheswar	183	70.85	17.33	34	24.66	17.33	149	46.19

Table 92: Category 2 water bodies and their area in district Madhepura

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Chausa	2	13.41	2.07	2	13.41	2.07		
Madhepura	3	22.13	6.30	2	14.44	6.30	1	7.69
Singheswar	1	5.62	0.00					

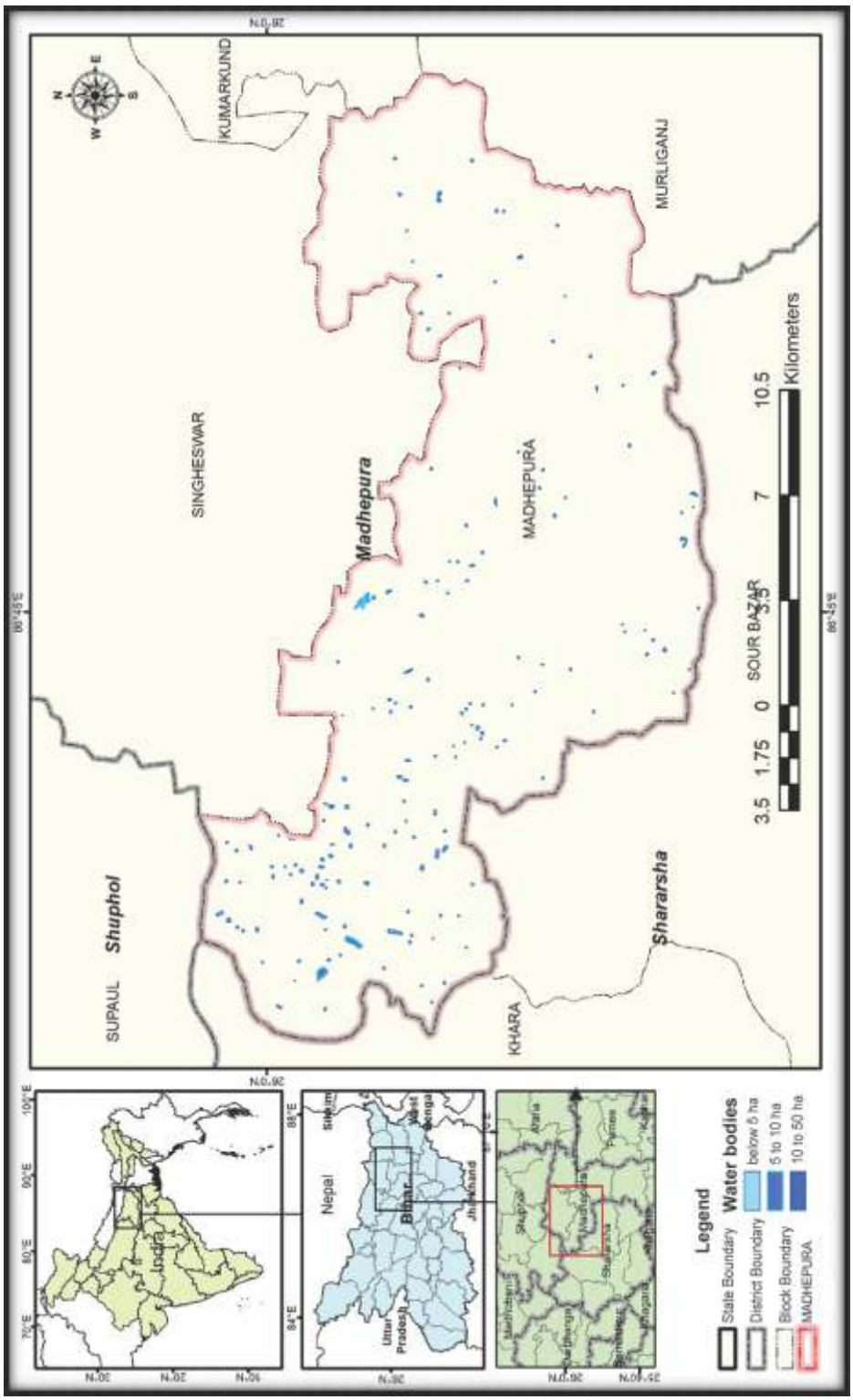


Figure 49: Waterbodies of Madhepura block of Madhepura district

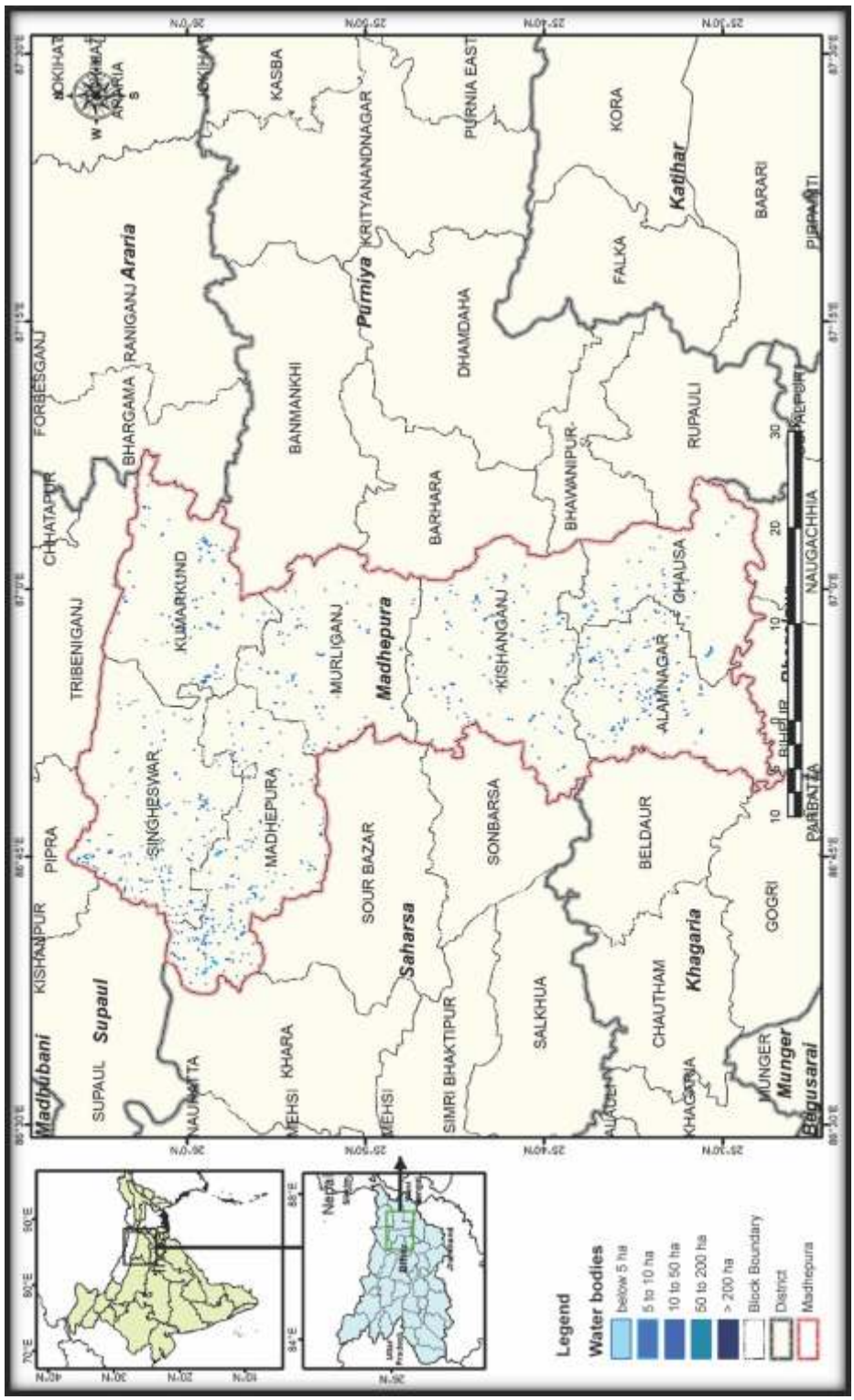


Figure 50: Waterbodies of Madhepura block of Madhepura district

Madhubani

The district of Madhubani was carved out of the old Darbhanga district in the year 1972 as a result of reorganisation of the districts in the State. This was formerly the northern subdivision of Darbhanga district. It consists of 21 Development Blocks. Bounded on the north by a hill region of Nepal and extending to the border of its parent district Darbhanga in the south, Sitamarhi in the west and Supaul in the east, Madhubani fairly represents the centre of the territory once known as Mithila and the district has maintained a distinct individuality of its own. district is located in between N-E 26°39'10"/ 85°45'30" and S-W 26°02'10"/86°43'15". Its total area is 3456 km^2. District has a total population of 44,87,379 (according to census 2011).

For the district of Madhubani, number of water bodies stand at 8761 they occupy a total maximum area of 4881.63 hectares and a total minimum area of 2071.07 hectares and a total average area of 3476.34 hectares. The share of perennial water bodies in this district stand at 3694 units which have a maximum and minimum area of 2961.86 and 2071.06 hectares respectively. The seasonal water bodies have a contribution of 5067 units having a total maximum area of 1919.76 hectares. The number of water bodies and their area is given in table 93. In category 1 the total number of water bodies stand at 8718 units having a total maximum and minimum areas of 4390.9 and 1920.4 hectares respectively. In this category the total units of perennial water bodies are 3664 having a total maximum area and minimum area of 2576.42 and 1920.4 hectares respectively. Seasonal water bodies stand at 5054 units having a maximum area of .1814.49 hectares. The number of water bodies and their area under category 1 is given in table 94. In category 2 the total number of water body units are 32 their total maximum and minimum areas are 204.43 and 89.46 hectares respectively. The numbers of perennial water bodies stand at 22 units having maximum and minimum areas of 141.45 and 87.72 hectares respectively. The numbers of seasonal water bodies stand at 7 units having maximum area of 43.51 hectares. The number of water bodies and their area under category 2 is given in table 95. In category 3

the total number of water bodies including perennial and seasonal stand at 10 units having maximum and minimum total area of 138.48 and 59.44 hectares respectively. In this category, the numbers of perennial water bodies stand at 7 units with maximum and minimum area water spread area of 96.68 and 59.44 hectares respectively. In this category the number of seasonal water bodies are 3 with the maximum water spread area of 41.8 hectares. The number of water bodies and their area under category 3 is given in table 96. There is one perennial waterbody under category 4 in Jandaha block having maximum water area 147.81 ha. The water area of this waterbody reduces to 1.76 ha in summer season. But there is no waterbody in category 5. Waterbodies of block Babubarhi and district Madhubani is given figure 51 and 52 respectively.

Table 93: Total water bodies and their area in district Madhubani

Block Name	Total number of water bodies	Maximum Area(ha)	Minimum Area(ha)	Average Area(ha)
Andhratharhi	412	199.05	79.84	139.44
Babubarhi	486	236.06	101.8	168.93
Basopatti	340	165.23	73.98	119.61
Benipatti	762	501.48	229.49	365.48
Bisfi	467	260.37	87.89	174.13
Ghoghordihi	376	160.51	57.29	108.90
Harlakhi	624	330.8	165.16	247.98
Jandaha	144	248.57	36.88	142.73
Jaynagar	189	83.69	35.91	59.80
Jhanjharpur	350	241.69	112.81	177.25
Khajauli	364	182.83	78.36	130.59
Khutona	439	170.65	62.31	116.48
Ladania	449	212.12	95.16	153.64
Lakhnaur	434	256.37	127.43	191.90
Laukahi	589	273.47	110.12	191.79
Madhubani	536	349.77	154.04	251.91
Madhwapur	313	207.03	88.86	147.94
Pandaul	586	365.28	195.92	280.60
Phulparas	444	168.61	57.29	112.95
Rajnagar	457	268.05	120.53	194.29

Table 94: Category 1 water bodies and their area in district Madhubani

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Andhratharhi	411	193.97	77.20	152	108.90	77.20	259	85.08
Babubarhi	485	227.15	101.80	199	141.53	101.80	286	85.62
Basopatti	338	153.22	68.37	153	89.41	68.37	185	63.81
Benipatti	753	423.71	188.30	348	251.74	188.30	405	171.96
Bisfi	465	236.75	85.83	170	111.80	85.83	295	124.96
Ghoghordihi	375	148.91	53.36	115	71.69	53.36	260	77.22
Harlakhi	624	330.80	165.16	296	218.40	165.16	328	112.40
Jandaha	142	95.32	35.12	54	50.23	35.12	88	45.09
Jaynagar	187	72.93	31.27	78	41.96	31.27	109	30.96
Jhanjharpur	346	203.36	102.50	178	130.40	102.50	168	72.96
Khajauli	362	163.22	76.04	171	98.96	76.04	191	64.26
Khutona	439	170.65	62.31	135	88.72	62.31	304	81.94
Ladania	449	212.12	95.16	176	126.74	95.16	273	85.38
Lakhnaur	432	241.89	113.30	191	149.68	113.30	241	92.21
Laukahi	588	265.16	109.92	237	154.40	109.92	351	110.77
Madhubani	535	338.31	154.04	249	208.09	154.04	286	130.22
Madhwapur	311	189.37	79.16	140	111.53	79.16	171	77.84
Pandaul	580	319.14	159.64	300	208.90	159.64	280	110.24
Phulparas	443	161.79	54.11	125	73.40	54.11	318	88.39
Rajnagar	453	243.13	107.81	197	139.94	107.81	256	103.18

Table 95: Category 2 water bodies and their area in district Madhubani

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Andhratharhi	1	5.07	2.63	1	5.07	2.63		
Babubarhi	1	8.91	0.00					
Basopatti	2	12.02	5.61	1	6.05	5.61	1	5.96
Benipatti	6	34.76	6.10	3	17.30	6.10	3	17.45
Bisfi	1	5.47	2.05	1	5.47	2.05		
Jandaha	1	5.44	0.00	1	5.65	2.91		
Jaynagar	2	10.76	4.65					
Jhanjharpur	2	12.10	3.59	1	5.03	3.59	1	7.07
Khajauli	1	7.41	2.32	1	7.41	2.32		
Lakhnaur	2	14.48	14.13	2	14.48	14.13		
Laukahi	1	8.30	0.20	1	8.30	0.20		
Madhwapur	2	17.66	9.71	2	17.66	9.71		
Pandaul	5	30.32	22.57	4	25.01	22.57	1	5.31
Phulparas	1	6.81	3.18	1	6.81	3.18		
Rajnagar	4	24.92	12.72	3	17.21	12.72	1	7.72

Table 96: Category 3 water bodies and their area in district Madhubani

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Benipatti	3	43.02	35.09	3	43.02	35.09		
Bisfi	1	18.14	0.00				1	18.14
Ghoghordihi	1	11.61	3.93	1	11.61	3.93		
Jhanjharpur	2	26.23	6.72	2	26.23	6.72		
Khajauli	1	12.20	0.00				1	12.20
Madhubani	1	11.46	0.00				1	11.46
Pandaul	1	15.82	13.70	1	15.82	13.70		

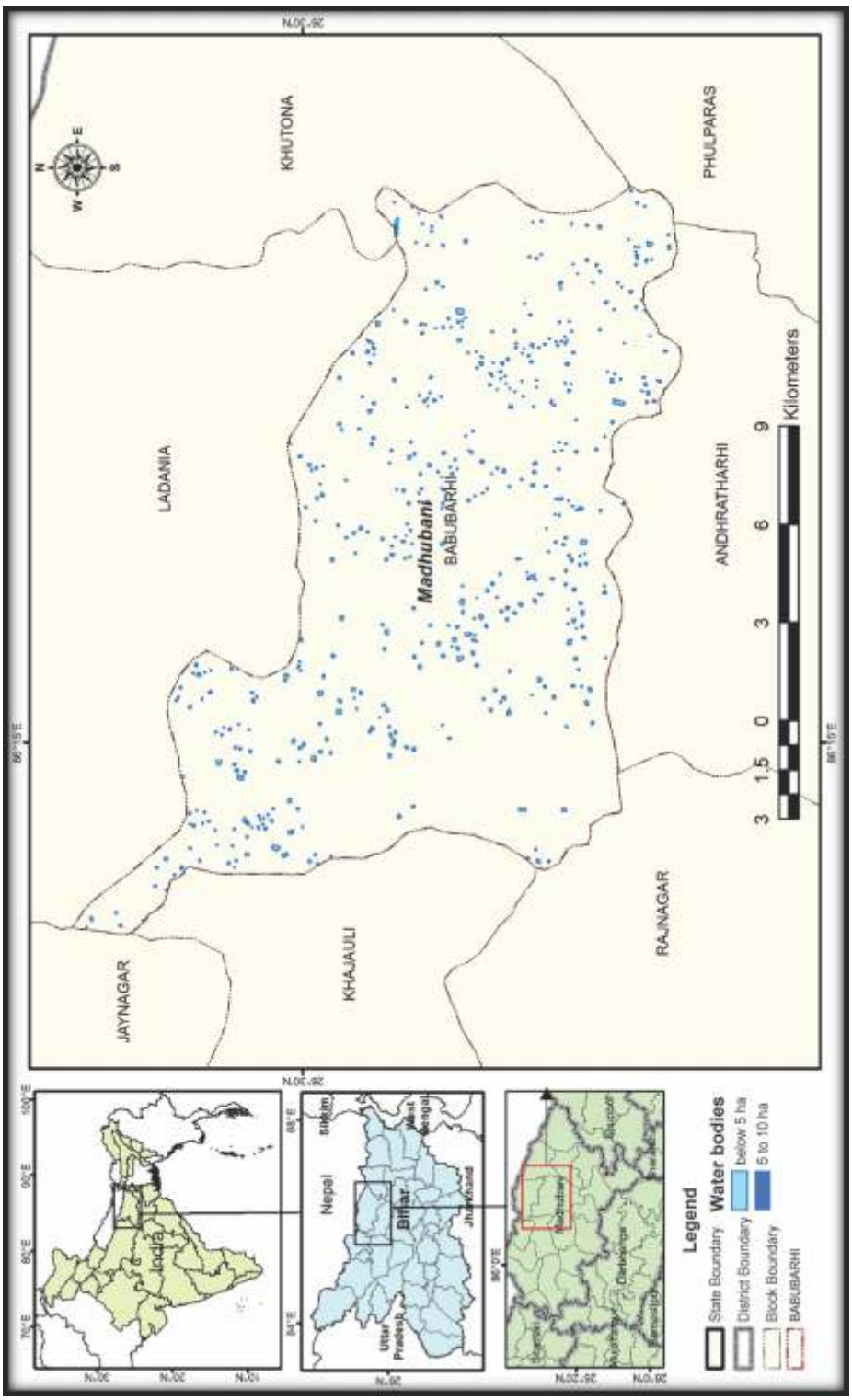


Figure 51: Waterbodies of Block Babubarhi of Madhubani district

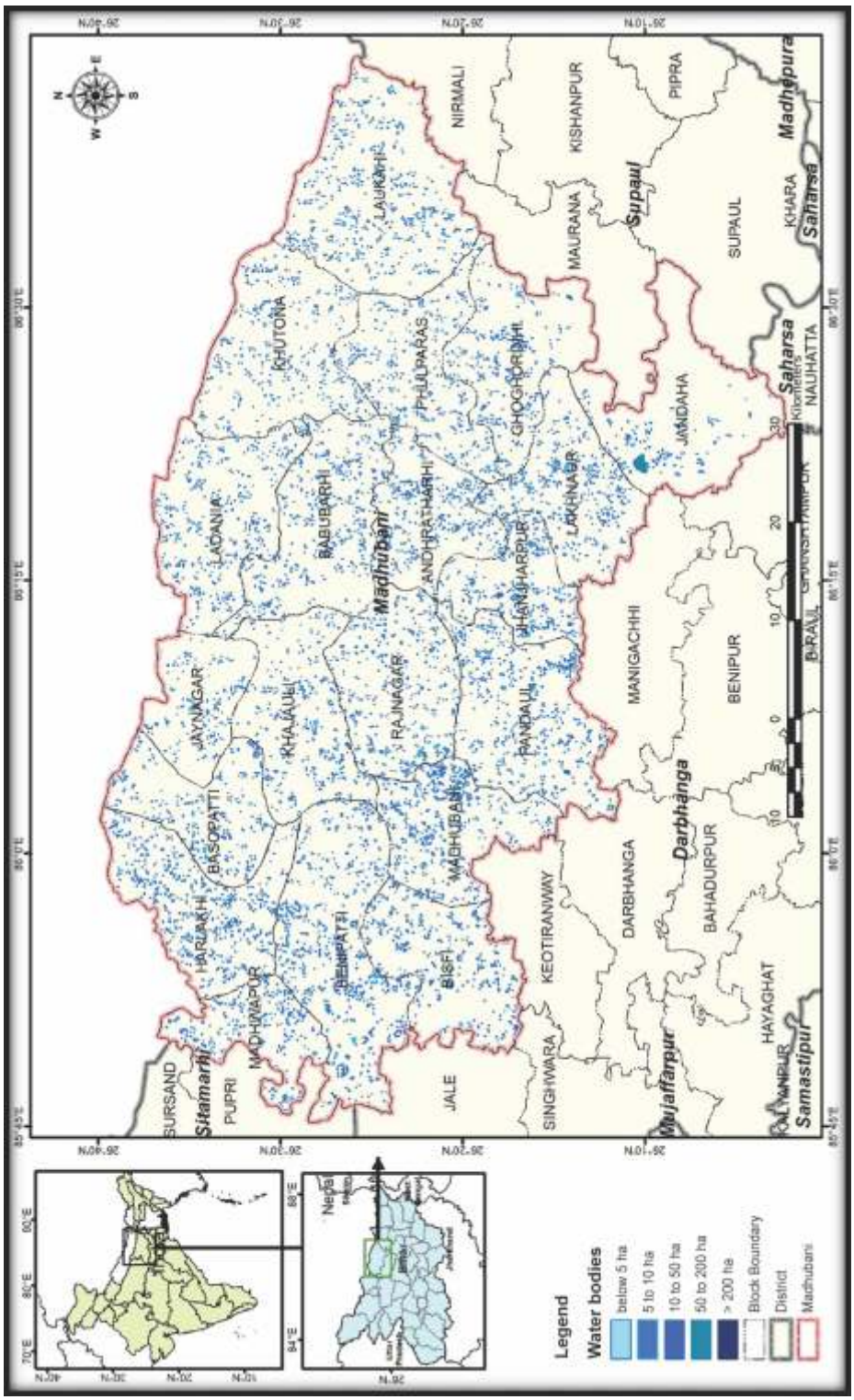


Figure 52: Waterbodies of Block Babubarhi of Madhubani district

Munger

Munger District is located in the southern part of Bihar and its headquarters is located on the southern bank of river Ganges. Munger has seen five districts partitioned off from its territory: Begusarai in 1976; Khagaria in 1988; and Jamui in 1991; and Lakhisarai district and Sheikhpura in 1994. The Geo-coordinates are N-E 25°29'35"/ 86°16'00" and S-W 24°56'35"/86°44'10". Munger shares the boundary with Bhagalpur, Banka, Jamui, Begusarai, Lakhisarai, and Khagaria. The district has total area of 1419 km^2. District has a total population of 13,67,765 (according to census 2011). For the district of Munger, number of water bodies stand at 370. They occupy a total maximum area of 472.04 hectares and a total minimum area of 167.27 hectares and a total average area of 319.65 hectares. The share of perennial water bodies in this district stand at 57 units which have a maximum and minimum area of 245.31and 167.26 hectares respectively. The seasonal water bodies have a contribution of 313 units having a total maximum area of 226.73 hectares. The number of water bodies and their area is given in table 97. In category 1 the total number of water bodies stand at 362 units having a total maximum and minimum areas of 229.35 and 40.13 hectares respectively. In this category the total units of perennial water bodies are 51 having a total maximum area and minimum area of 63.99 and 40.13 hectares respectively. Seasonal water bodies

stand at 311 units having a maximum area of 165.35 hectares. The number of water bodies and their area under category 1 is given in table 98. In category 2 the total number of water body units are 4 their total maximum and minimum areas are 24.9 and 17.09 hectares respectively. The numbers of perennial water bodies stand at 3 units having maximum and minimum areas of 19.01 and 17.09 hectares respectively. There are no seasonal water bodies in this category. The number of water bodies and their area under category 2 is given in table 99. In category 3 the total number of water bodies including perennial and seasonal stand at 2 units having maximum and minimum total area of 40.43 and 3.09 hectares respectively. In this category, the numbers of perennial water bodies stand at 2 units with maximum and minimum area water spread area of 40.43 and 3.09 hectares respectively. In this category there are no seasonal water bodies. The number of water bodies and their area under category 3 is given in table 100.

There is two waterbodies in Kheradpir block under category 4, one is seasonal and one is perennial. Perennial waterbody having the maximum area of 121.88 ha which reduces to 106.95 and seasonal waterbody maximum area is 55.48 ha. Category 5 have no waterbody. Waterbodies of block Kheradpir and district Munger is given figure 53 and 54 respectively.

Table 97: Total water bodies and their area in district Munger

Block Name	Total number of water bodies	Maximum Area(ha)	Minimum Area(ha)	Average Area(ha)
Dharhara	50	32.12	1.67	16.90
Kheradpir	110	255.03	128.86	191.94
Munger	68	97.52	23.09	60.30
Sangrampur	43	39.57	5.35	22.46
Tarapur	99	47.8	8.3	28.05

Table 98: Category 1 water bodies and their area in district Munger

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Dharhara	50	32.12	1.67	3	4.95	1.67	47	27.17
Kheradpir	107	72.47	17.64	16	23.28	17.64	91	49.19
Munger	65	53.94	8.30	12	16.96	8.30	53	36.98
Sangrampur	41	23.02	4.22	6	6.69	4.22	35	16.32
Tarapur	99	47.80	8.30	14	12.11	8.30	85	35.69

Table 99: Category 2 water bodies and their area in district Munger

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Kheradpir	1	5.20	4.26	1	5.20	4.26		
Munger	2	13.81	12.83	2	13.81	12.83		
Sangrampur	1	5.89	0.00					

Table 100: Category 3 water bodies and their area in district Munger

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Munger	1	29.77	1.96	1	29.77	1.96		
Sangrampur	1	10.66	1.13	1	10.66	1.13		

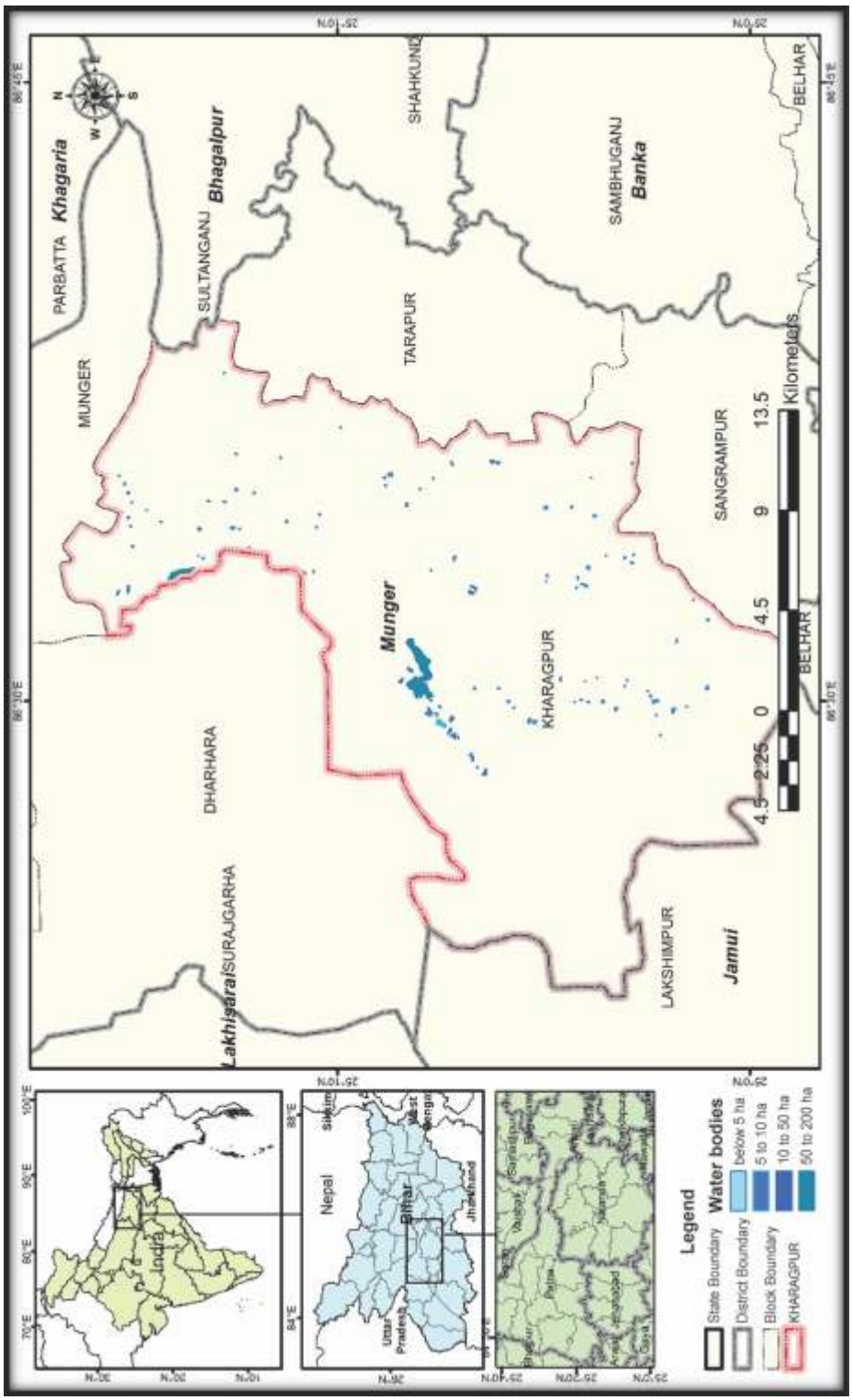


Figure 53: Waterbodies of Block Kharagpur of district Munger

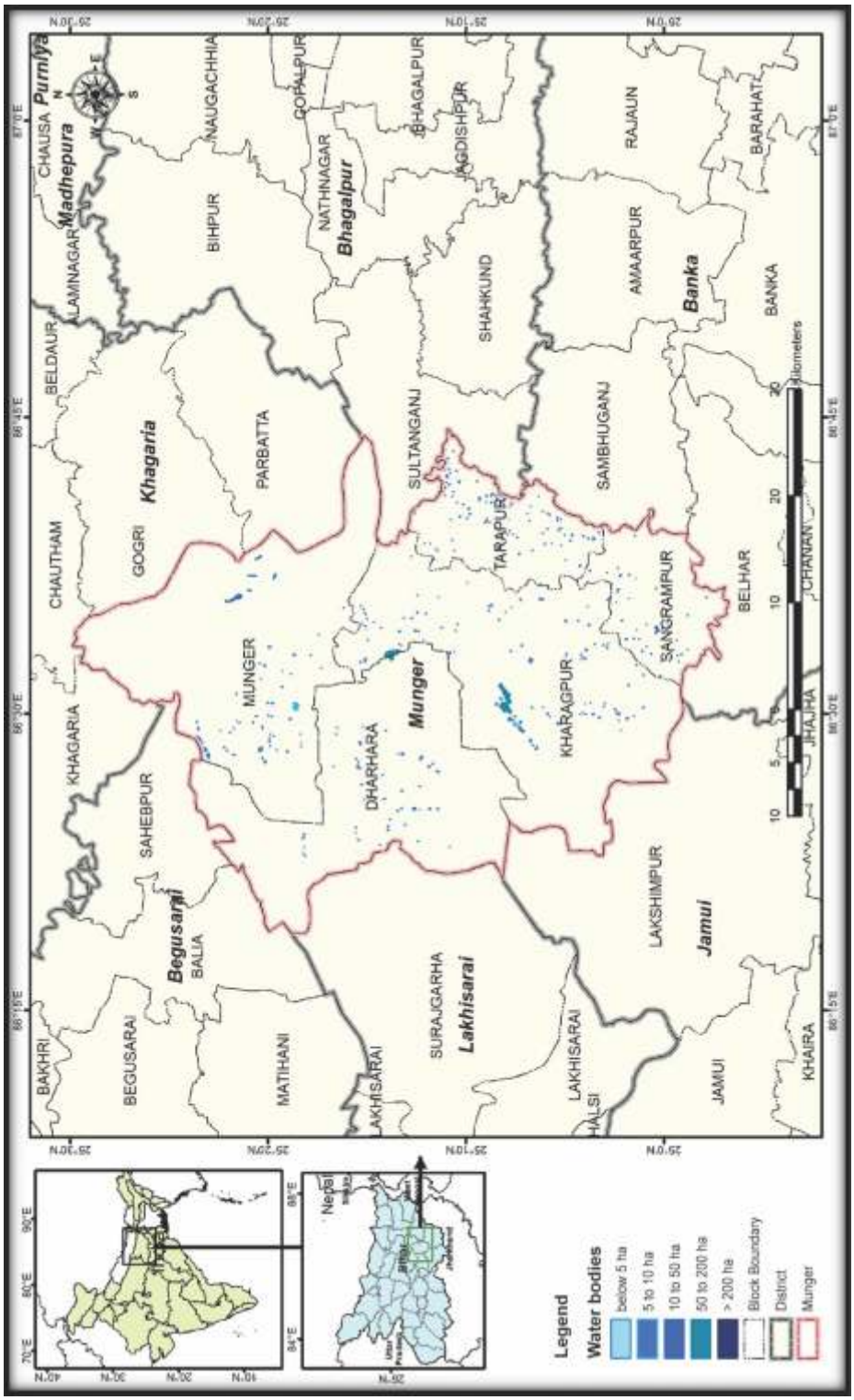


Figure 54 : Waterbodies of district Munger

Muzaffarpur

Muzaffarpur District, 'The Land Of Leechi' was created in 1875 for the sake of administrative convenience by splitting up the earlier district of Tirhut. Purbi Champaran and Sitamarhi districts on North, on the South Vaishali and Saran districts, on the East Darbhanga and Samastipur districts and on the West Saran and Gopalganj districts surround Muzaffarpur. It is located in between N-E 26°23'20"/ 84°52'25" and S-W 25°54'00"/85°44'45", with total area of 3122 km^2. District has a total population of 48,01,062 (according to census 2011). The present district of Muzaffarpur came to its existence in the 18th century.

For the district of Muzaffarpur, number of water bodies stand at 2495 they occupy a total maximum area of 4675.53 hectares and a total minimum area of 1883.3 hectares and a total average area of 3279.4 hectares. The share of perennial water bodies in this district stand at 686 units which have a maximum and minimum area of 2803.74 and 1883.31 hectares respectively. The seasonal water bodies have a contribution of 1809 units having a total maximum area of 1871.81 hectares the number of water bodies and their area is given in table 101.

In category 1 the total number of water bodies stand at 2349 units having a total maximum and minimum areas of 1651.03 and 508.53 hectares respectively. In this category the total units of perennial water bodies are 598 having a total maximum area and minimum area of 808.26 and 508.53

hectares respectively. Seasonal water bodies stand at 1751 units having a maximum area of 842.8 hectares. The number of water bodies and their area under category 1 is given in table 102.

In category 2 the total number of water body units are 63 their total maximum and minimum areas are 444 and 139.75 hectares respectively. The numbers of perennial water bodies stand at 32 units having maximum and minimum areas of 226.31 and 139.75 hectares respectively. The numbers of seasonal water bodies stand at 30 units having maximum area of 217.69 hectares. The number of water bodies and their area under category 2 is given in table 103.

In category 3 the total number of water bodies including perennial and seasonal stand at 70 units having maximum and minimum total area of 1415.84 and 667.63 hectares respectively. In this category, the numbers of perennial water bodies stand at 47 units with maximum and minimum area water spread area of 997.38 and 667.63 hectares respectively. In this category the number of seasonal water bodies are 23 with the maximum water spread area of 418.45 hectares.

The number of water bodies and their area under category 3 is given in table 104. There are 13 number of category 4 water bodies with 9 number of perennial and 4 number of seasonal units of them. The perennial type has a maximum area of 771.8 hectares and a minimum area of 567.43 hectares while the seasonal type has a maximum area of 392.88 hectares bringing the total maximum area to 1164.68 hectares of water spread area shown in fig 105. There is no waterbody in category 5. Waterbodies of block Katra and district Muzaffarpur is given figure 55 and 56 respectively.

Table 101: Total water bodies and their area in district Muzaffarpur

Block Name	Total number of water bodies	Maximum Area(ha)	Minimum Area(ha)	Average Area(ha)
Aurai	158	201.74	50.75	126.24
Baruraj	184	480.82	267.71	374.26
Bochaha	132	334.19	177.46	255.82
Dholi	116	145.92	73.7	109.81
Gaighotti	192	599.54	225.62	412.58
Kanti	238	415.7	202.06	308.88
Katra	279	441.84	161.54	301.69
Kurhani	337	282.21	50.59	166.40
Minapur	153	441.06	253.09	347.08
Muzaffarpur	202	557.4	332.45	444.92
Paro	103	181.26	12.21	96.74
Sahebgunj	39	84.4	1.67	43.03
Sakara	184	233.64	50.52	142.08
Saraiya	178	275.81	23.93	149.87

Table 102: Category 1 water bodies and their area in district Muzaffarpur

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Aurai	152	123.49	35.18	47	56.24	35.18	105	67.25
Baruraj	167	115.02	24.32	24	41.36	24.32	143	73.66
Bochaha	120	80.11	22.07	30	43.37	22.07	90	36.74
Dholi	114	86.84	34.53	34	53.30	34.53	80	33.55
Gaighotti	168	147.70	53.33	51	85.10	53.33	117	62.60
Kanti	226	124.05	25.48	35	44.70	25.48	191	79.35
Katra	262	228.47	104.64	114	155.29	104.64	148	73.19
Kurhani	332	201.97	50.59	77	83.25	50.59	255	118.72
Minapur	142	115.96	41.25	32	59.09	41.25	110	56.87
Muzaffarpur	185	117.95	38.95	52	61.49	38.95	133	56.46
Paro	96	60.28	12.21	17	19.44	12.21	79	40.85
Sahebgunj	34	21.22	1.67	2	4.18	1.67	32	17.04
Sakara	177	131.47	42.62	57	65.42	42.62	120	66.05
Saraiya	174	96.50	21.69	26	36.03	21.69	148	60.47

Table 103: Category 2 water bodies and their area in district Muzaffarpur

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Aurai	2	10.95	2.79	1	5.85	2.79	1	5.10
Baruraj	5	31.34	4.91	1	5.03	4.91	4	26.30
Bochaha	4	27.77	16.48	3	22.49	16.48	1	5.28
Gaighotti	13	96.35	42.83	9	68.32	42.83	4	28.04
Kanti	6	46.27	9.45	2	14.00	9.45	4	32.27
Katra	8	50.49	8.88	4	23.63	8.88	4	26.85
Kurhani	4	25.47	0.00				4	25.47
Minapur	4	30.90	18.78	4	30.90	18.78		
Muzaffarpur	7	50.31	27.72	6	43.70	27.72	1	6.62
Paro	4	31.20	0.00				4	31.20
Sahebgunj	2	17.46	0.00				2	17.46
Sakara	3	18.40	7.91	2	12.39	7.91	1	6.01
Saraiya	1	7.09	0.00					7.09

Table 104: Category 3 water bodies and their area in district Muzaffarpur

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Aurai	4	67.31	12.78	2	25.46	12.78	2	41.84
Baruraj	10	160.19	85.06	7	119.97	85.06	3	40.21
Bochaha	7	159.39	101.68	5	137.05	101.68	2	22.33
Dholi	2	59.08	39.18	1	48.92	39.18	1	10.16
Gaighotti	9	144.76	83.08	9	144.76	83.08		
Kanti	5	140.60	77.26	4	99.96	77.26	1	40.64
Katra	9	162.88	48.03	5	84.00	48.03	4	78.89
Minapur	5	142.86	103.95	5	142.86	103.95		
Muzaffarpur	8	172.59	114.37	8	172.59	114.37		
Paro	2	36.27	0.00				2	36.27
Sahebgunj	3	45.72	0.00				3	45.72
Sakara	4	83.78	0.00				4	83.78
Saraiya	2	40.41	2.24	1	21.81	2.24	1	18.61

Table 105: Category 4 water bodies and their area in district Muzaffarpur

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Baruraj	2	174.28	153.41	2	174.28	153.41		
Bochaha	1	66.92	37.23	1	66.92	37.23		
Gaighotti	2	210.74	46.39	1	57.94	46.39	1	152.80
Kanti	1	104.78	89.88	1	104.78	89.88		
Kurhani	1	54.77	0.00				1	54.77
Minapur	2	151.34	89.11	2	151.34	89.11		
Muzaffarpur	2	216.54	151.41	2	216.54	151.41		
Paro	1	53.50	0.00				1	53.50
Saraiya	1	131.81	0.00				1	131.81

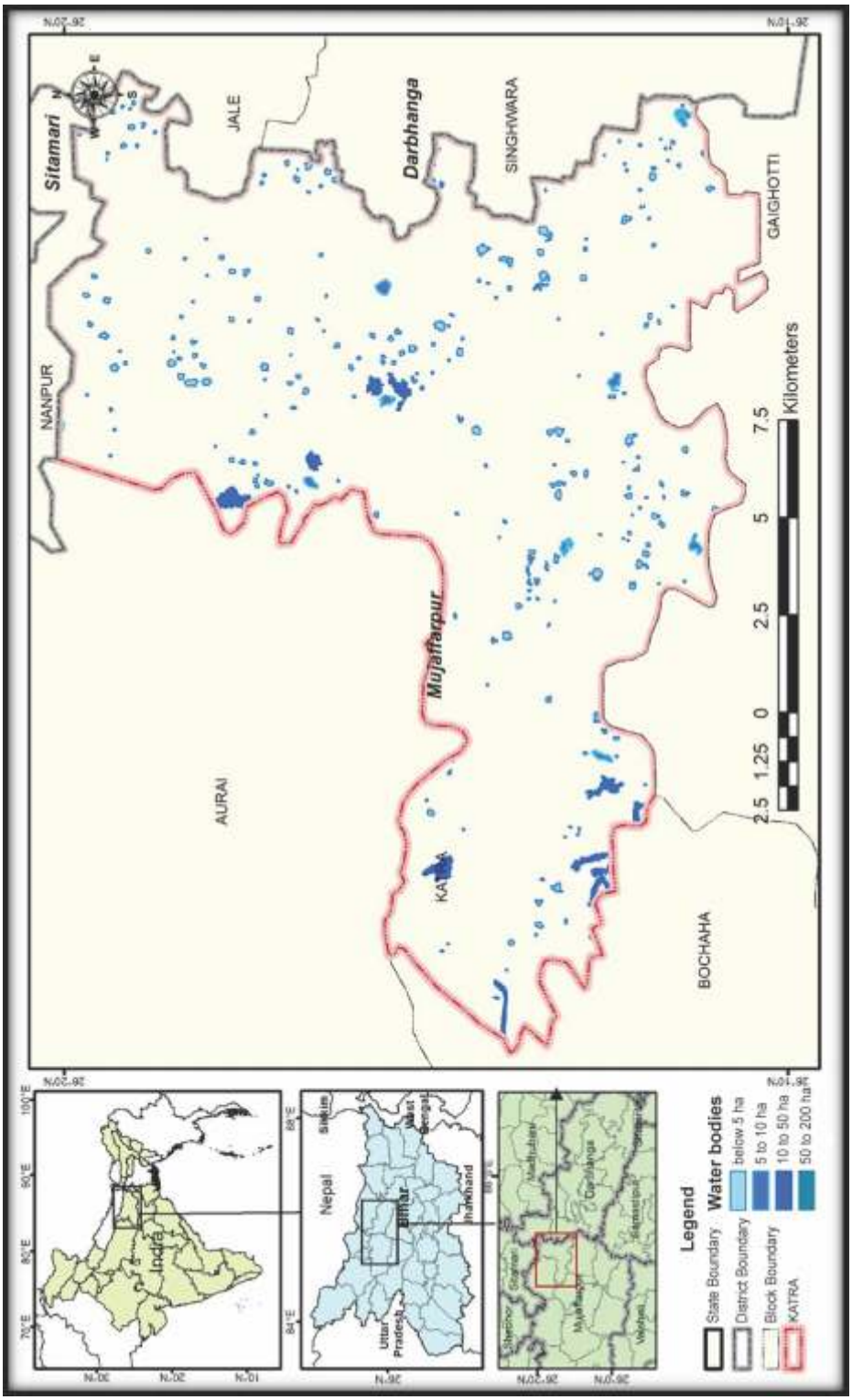


Figure 55: Waterbodies of Block Katra of Muzaffarpur

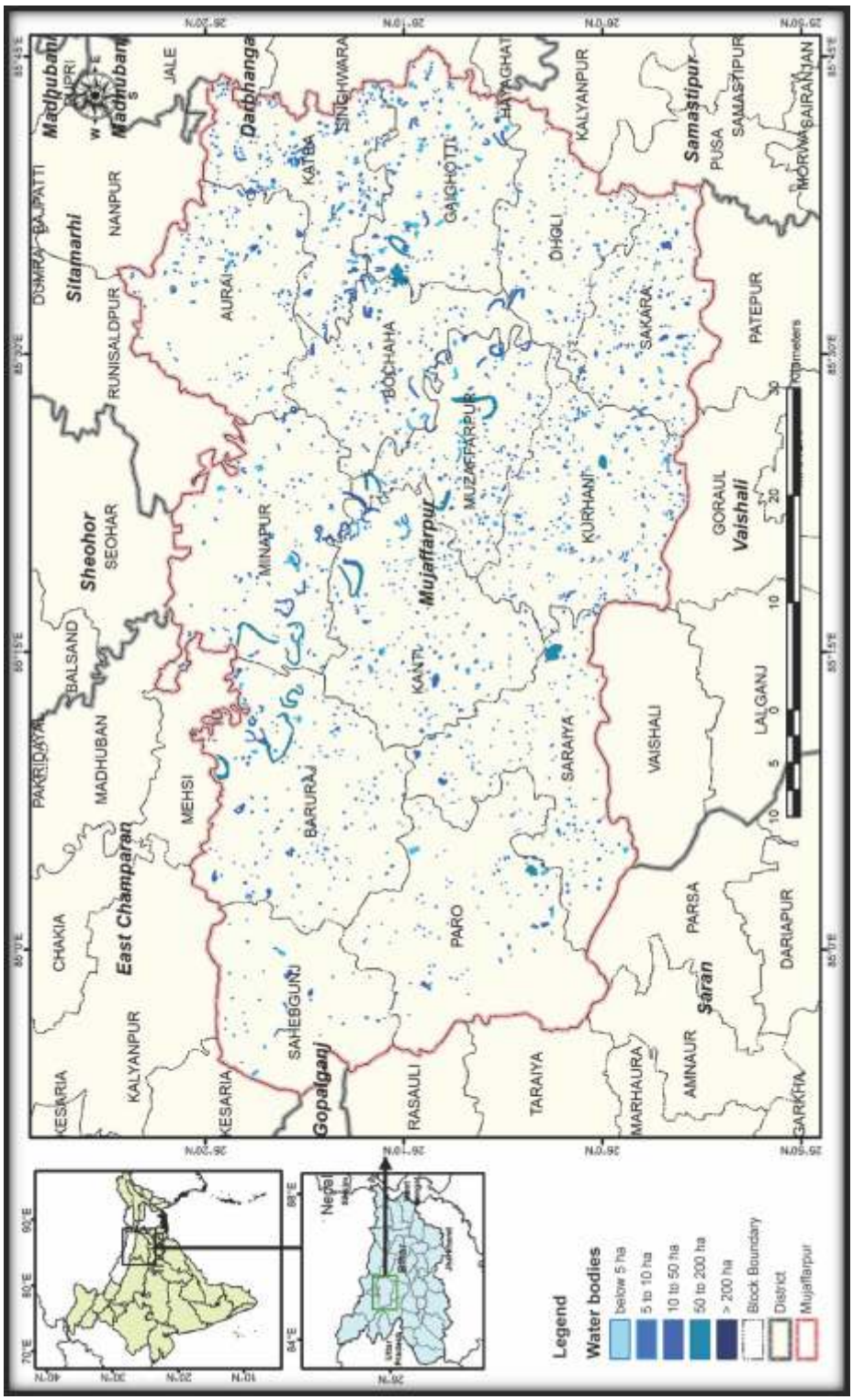


Figure 56: Waterbodies of Muzaffarpur district

Nalanda

Nalanda, is famous all over the world for the the ancient International Monastic University established in 5th century BC, which taught Vedas, Logic, Grammar, Medicine, Meta-Physics, Prose Composition and Rhetoric. Nalanda district is popularly known as Biharsharif. The rivers Phalgu, and Mohane flows through the district of Nalanda. The various sub divisions of the district are Biharsharif , Rajgir , and Hilsa. The district is divided into blocks of Giriyak, Rahui, Nursarai, Harnaut, Chandi, Islampur, Rajgir, Asthawan, Sarmera, Hilsa, Biharsharif, Ekangarsarai, Ben, Nagarnausa, Karaiparsurai, Silao, Parwalpur, Katrisarai, Bind, and Tharthari. It is located in between N-E 25°26'45"/ 85°09'15" and S-W 24°57'25"/85°53'40" and spread over the area of 2,367 sq. kms. The total population of the district is 28,77,653.

For the district of Nalanda, number of water bodies stand at 955. They occupy a total maximum area of 934.92 hectares and a total minimum area of 319.39 hectares and a total average area of 627.16 hectares. The share of perennial water bodies in this district stand at 161 units which have a maximum and minimum area of 449.78 and 319.38 hectares respectively. The seasonal water bodies have a

contribution of 794 units having a total maximum area of 485.14 hectares. The number of water bodies and their area is given in table 106.

In category 1 the total number of water bodies stand at 931 units having a total maximum and minimum areas of 655.78 and 143.92 hectares respectively. In this category the total units of perennial water bodies are 141 having a total maximum area and minimum area of 204.77 and 143.92 hectares respectively. Seasonal water bodies stand at 790 units having a maximum area of 451.02 hectares. The number of water bodies and their area under category 1 is given in table 107.

In category 2 the total number of water body units are 13 their total maximum and minimum areas are 82.23 and 54.83 hectares respectively. The numbers of perennial water bodies stand at 11 units having maximum and minimum areas of 71.05 and 54.83 hectares respectively. The numbers of seasonal water bodies stand at 2 units having maximum area of 11.18 hectares. The number of water bodies and their area under category 2 is given in table 108.

In category 3 the total number of water bodies including perennial and seasonal stand at 11 units having maximum and minimum total area of 196.9 and 120.6 hectares respectively. In this category, the numbers of perennial water bodies stand at 9 units with maximum and minimum area water spread area of 173.95 and 120.6 hectares respectively. In this category the number of seasonal water bodies are 2 with the maximum water spread area of 22.94 hectares. The number of water bodies and their area under category 3 is given in table 109. There is no waterbody in category 4 and 5. Waterbodies of block Hilsa and district Nalanda is given figure 57 and 58 respectively.

Table 106: Total water bodies and their area in district Nalanda

Block Name	Total number of water bodies	Maximum Area(ha)	Minimum Area(ha)	Average Area(ha)
Asthwan	99	67.77	23.3	45.53
Behar	233	228.05	103.8	165.93
Chandi	42	29.76	6.24	18.00
Ekangarsarai	72	69.63	17.77	43.70
Girik	58	74.09	23.4	48.74
Harnaut	32	22.47	3.22	12.84
Hilsa	29	25.23	4.57	14.90
Islampur	53	45.29	16.33	30.81
Noorsarai	85	107.28	37.91	72.60
Rahut	41	23.48	5.7	14.59
Rajgir	193	230.32	76.63	153.48
Sarmera	18	11.55	0.52	6.04

Table 107: Category 1 water bodies and their area in district Nalanda

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Asthwan	98	47.70	4.41	5	5.96	4.41	93	41.74
Behar	227	164.96	54.43	50	77.59	54.43	177	87.37
Chandi	41	24.35	2.38	1	2.51	2.38	40	21.84
Ekangarsarai	71	60.89	13.54	12	20.11	13.54	59	40.78
Girik	55	41.78	8.08	9	11.03	8.08	46	30.76
Harnaut	32	22.47	3.22	4	4.55	3.22	28	17.91
Hilsa	29	25.23	4.57	3	5.56	4.57	26	19.67
Islampur	52	37.18	9.69	14	14.08	9.69	38	23.10
Noorsarai	81	58.94	6.50	4	8.60	6.50	77	50.34
Rahut	41	23.48	5.70	5	8.17	5.70	36	15.31
Rajgir	186	137.25	30.88	33	45.35	30.88	153	91.90
Sarmera	18	11.55	0.52	1	1.26	0.52	17	10.30

Table 108: Category 2 water bodies and their area in district Nalanda

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Behar	3	16.78	13.46	3	16.78	13.46		
Chandi	1	5.41	3.86	1	5.41	3.86		
Ekangarsarai	1	8.74	4.22	1	8.74	4.22		
Girik	1	7.84	6.03	1	7.84	6.03		
Islampur	1	8.10	6.64	1	8.10	6.64		
Noorsarai	2	10.51	5.03	1	5.20	5.03	1	5.31
Rajgir	4	24.85	15.59	3	18.98	15.59	1	5.87

Table 109: Category 3 water bodies and their area in district Nalanda

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Asthwan	1	20.07	18.88	1	20.07	18.88		
Behar	3	46.31	35.91	3	46.31	35.91		
Girik	2	24.47	9.28	1	12.24	9.28	1	12.22
Noorsarai	2	37.83	26.37	1	27.11	26.37	1	10.72
Rajgir	3	68.22	30.16	3	68.22	30.16		

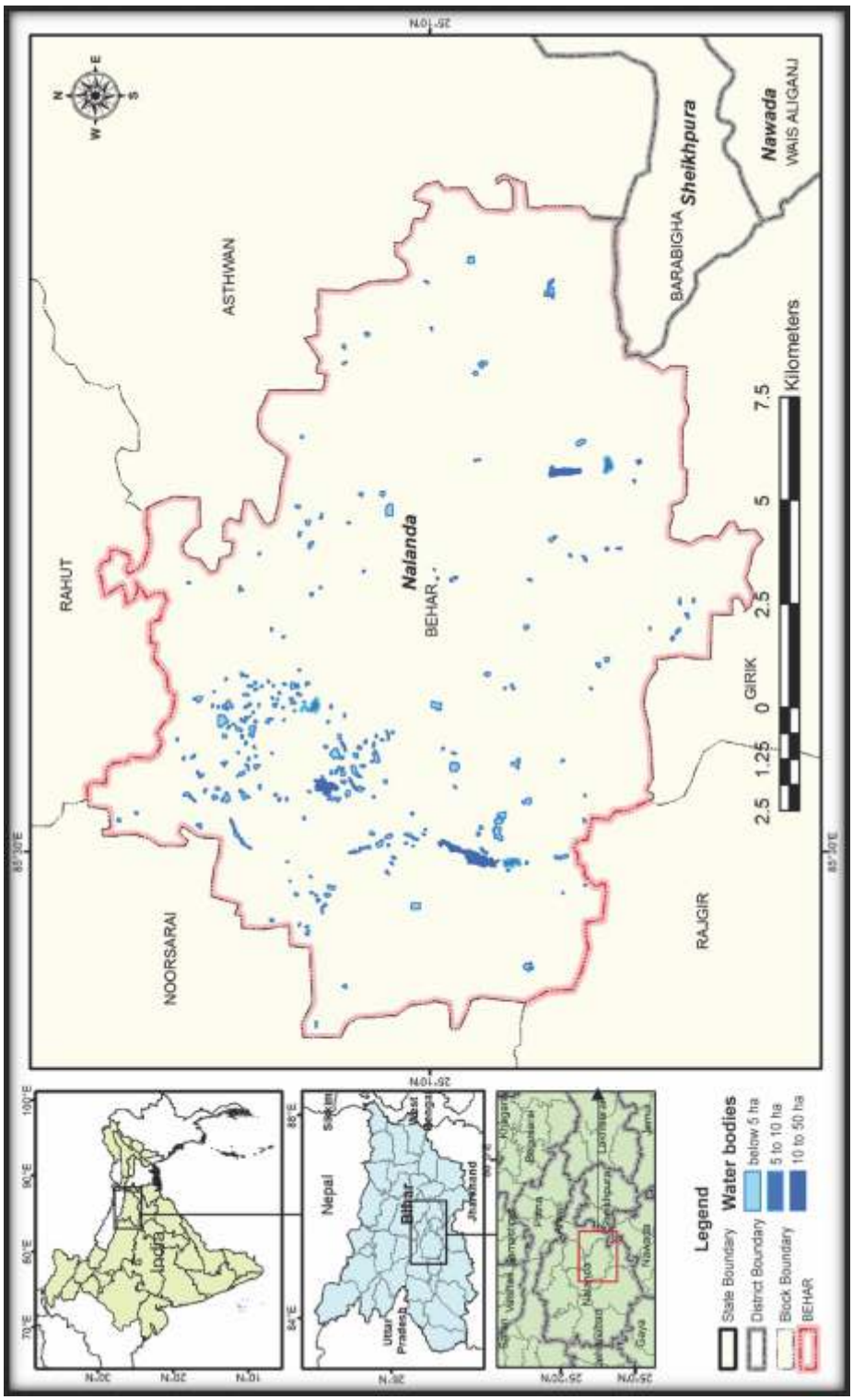


Figure 57: Waterbodies of block Hilsa of district Nalanda

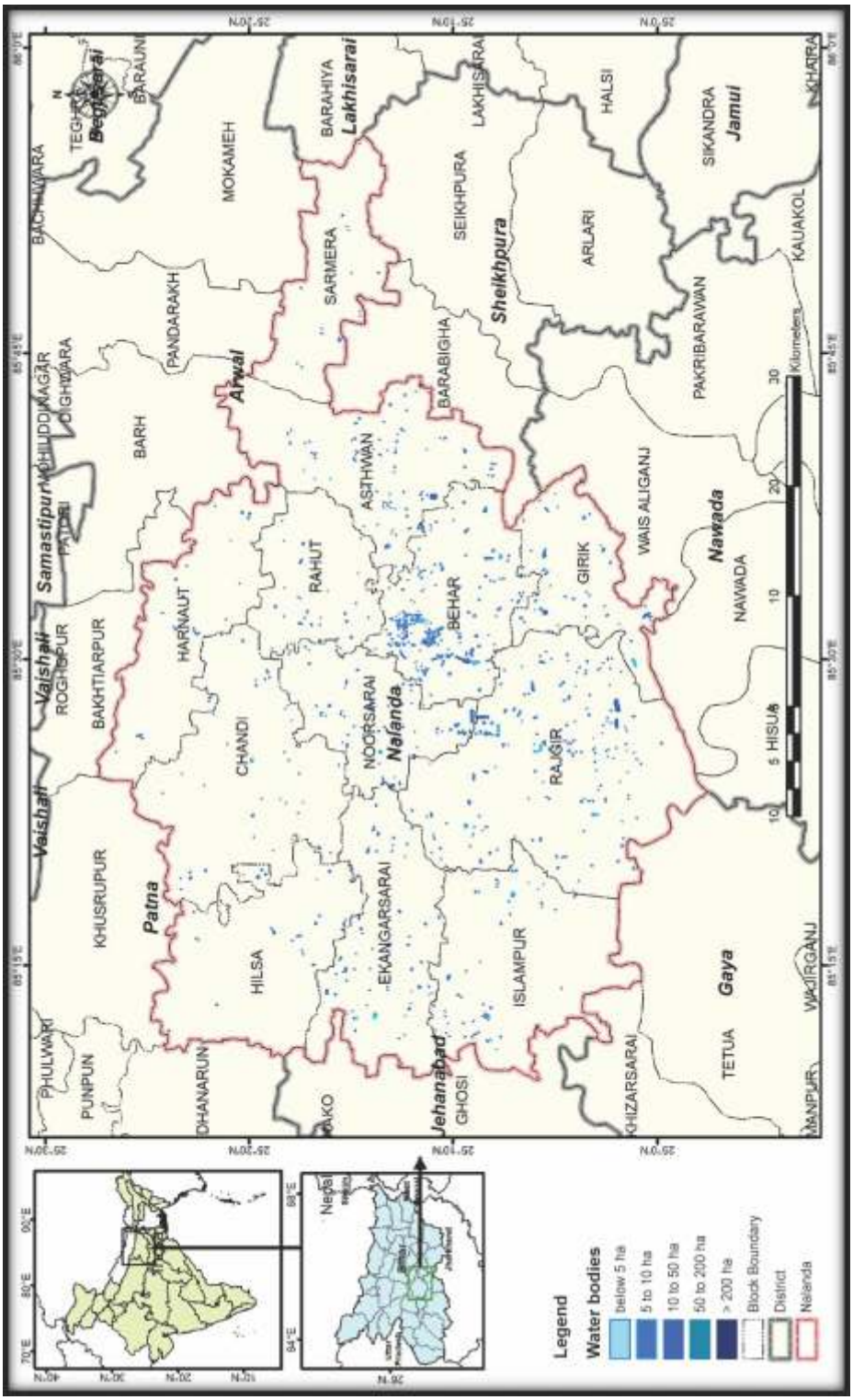


Figure 58: Waterbodies of district Nalanda

Nawada

On 26th January 1973, Nawada was formed as a separate district. It shares the boundary with state of Jharkhand in south, Nalanda and Sheikhpura in Norh, Jamui in east and Gaya in west and It is located in between N-E 25°06'54"/ 85°16'34" and S-W 24°31'18"/86°03'10". Total area is 2484.91 km^2. District has a total population of 22,19,146 (according to census 2011). For the district of Nawada, number of water bodies stand at 765 They occupy a total maximum area of 1356.84 hectares and a total minimum area of 711.42 hectares and a total average area of 1034.11 hectares. The share of perennial water bodies in this district stand at 183 units which have a maximum and minimum area of 934.23 and 711.42 hectares respectively. The seasonal water bodies have a contribution of 582 units having a total maximum area of 422.6 hectares. The number of water bodies and their area is given in table 110. In category 1 the total number of water bodies stand at 741 units having a total maximum and minimum areas of 625.31 and 177.28 hectares respectively. In this category the total units of perennial water bodies are 168 having a total maximum area and minimum area of 271.31 and 177.28 hectares respectively. Seasonal water bodies stand at 573 units having a maximum area of 354.01 hectares. The number of water bodies and their area under category 1 is given in table 111.

In category 2 the total number of water body units are 16 their total maximum and minimum areas are 106.62 and 36.21 hectares respectively. The numbers of perennial water bodies stand at 8 units having maximum and minimum areas of 50.68 and 36.21 hectares respectively. The numbers of seasonal water bodies stand at 8 units having maximum area of 55.94 hectares. The number of water bodies and their area under category 2 is given in table 112.

In category 3 the total number of water bodies including perennial and seasonal stand at 7 units having maximum and minimum total area of 138.23 and 78.96 hectares respectively. In this category, the

numbers of perennial water bodies stand at 6 units with maximum and minimum area water spread area of 125.58 and 78.96 hectares respectively. In this category the number of seasonal water bodies are 1 with the maximum water spread area of 12.66 hectares.

There is no waterbody under category 4, while under category 5 there is one perennial waterbody in Rajauli block. This waterbody has 486.17 ha water area which decrease to 418.99 ha in summer. The number of water bodies and their area under category 3 is given in table 113. Waterbodies of block Wais Aliganj and district Nawada is given figure 59 and 60 respectively.

Table 110: Total water bodies and their area in district Nawada

Block Name	Total number of water bodies	Maximum Area(ha)	Minimum Area(ha)	Average Area(ha)
Akbarpur	24	17.86	5.02	11.44
Govindpur	66	87.89	44.82	66.35
Hisua	74	61.37	15.32	38.34
Kauakol	94	122.53	21.88	72.20
Narhat	18	13.68	5.04	9.36
Nawada	93	75.23	14.58	44.90
Pakribarawan	134	99.53	33.92	66.73
Rajauli	27	548.54	460.46	504.50
Sirdala	87	158.23	46.39	102.31
Wais Aliganj	148	171.98	63.99	117.98

Table 111: Category 1 water bodies and their area in district Nawada

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Akbarpur	24	17.86	5.02	5	5.91	5.02	19	11.95
Govindpur	63	57.49	17.93	16	25.06	17.93	47	32.42
Hisua	73	56.03	15.32	18	23.52	15.32	55	32.51
Kauakol	90	86.95	16.60	22	37.80	16.60	68	49.15
Narhat	18	13.68	5.04	4	7.65	5.04	14	6.04
Nawada	92	67.68	14.58	15	24.65	14.58	77	43.03
Pakribarawan	133	94.19	32.56	28	41.14	32.56	105	53.05
Rajauli	25	20.79	9.81	9	13.02	9.81	16	7.78
Sirdala	79	88.16	21.86	19	38.53	21.86	60	49.63
Wais Aliganj	144	122.48	38.56	32	54.03	38.56	112	68.45

Table 112: Category 2 water bodies and their area in district Nawada

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Govindpur	2	11.40	10.52	2	11.40	10.52		
Hisua	1	5.34	0.00				1	5.34
Kauakol	3	22.58	2.50	1	7.39	2.50	2	15.19
Nawada	1	7.55	0.00				1	7.55
Pakribarawan	1	5.34	1.37	1	5.34	1.37		
Sirdala	6	42.38	16.80	3	19.64	16.80	3	22.74
Wais Aliganj	2	12.03	5.02	1	6.91	5.02	1	5.12

Table 113: Category 3 water bodies and their area in district Nawada

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Govindpur	1	19.00	16.37	1	19.00	16.37		
Kauakol	1	13.00	2.78	1	13.00	2.78		
Rajauli	1	41.08	31.66	1	41.08	31.66		
Sirdala	2	27.69	7.73	1	15.04	7.73	1	12.66
Wais Aliganj	2	37.46	20.42	2	37.46	20.42		

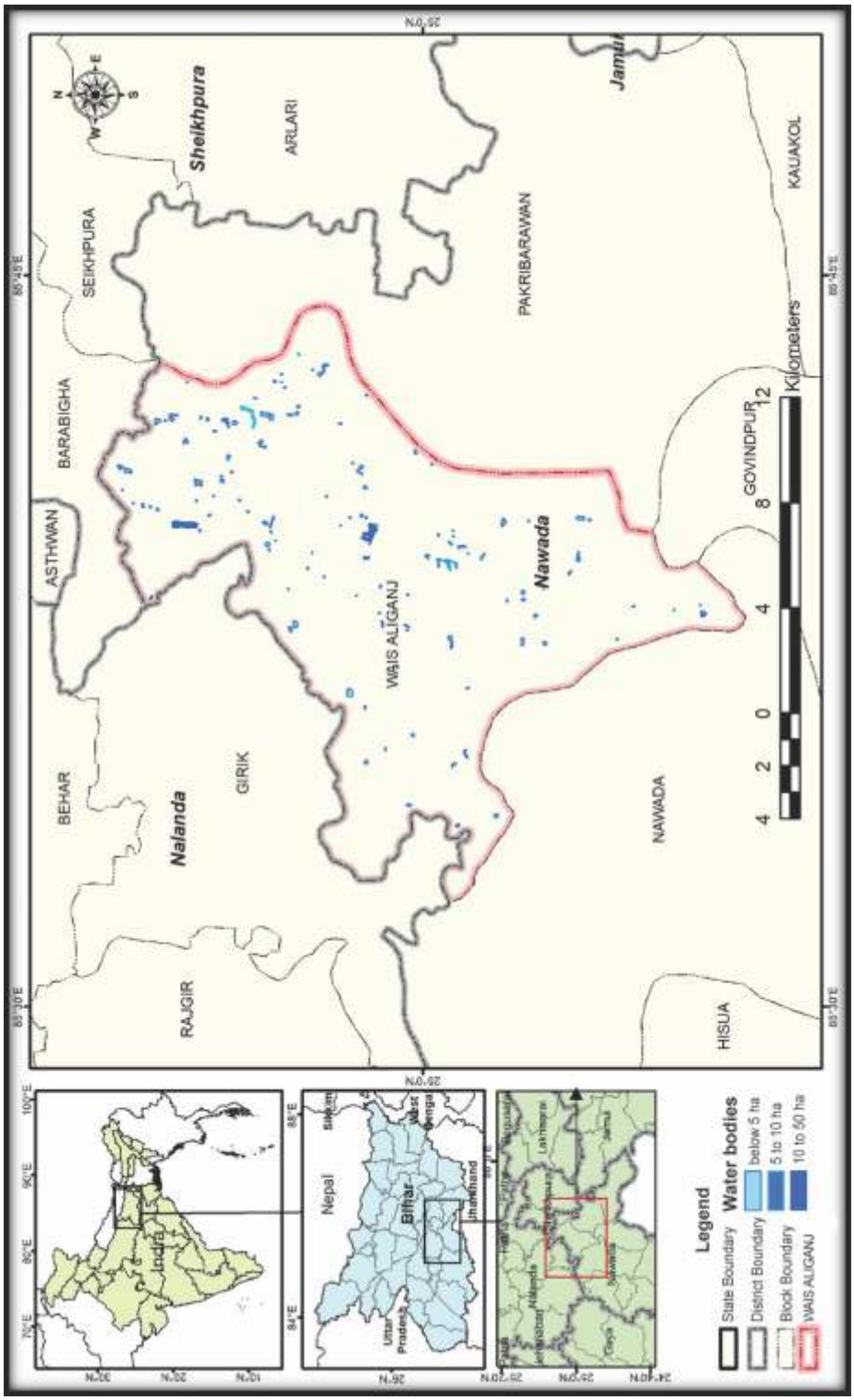


Figure 59: Waterbodies of block Wais Aliganj of district Nawada

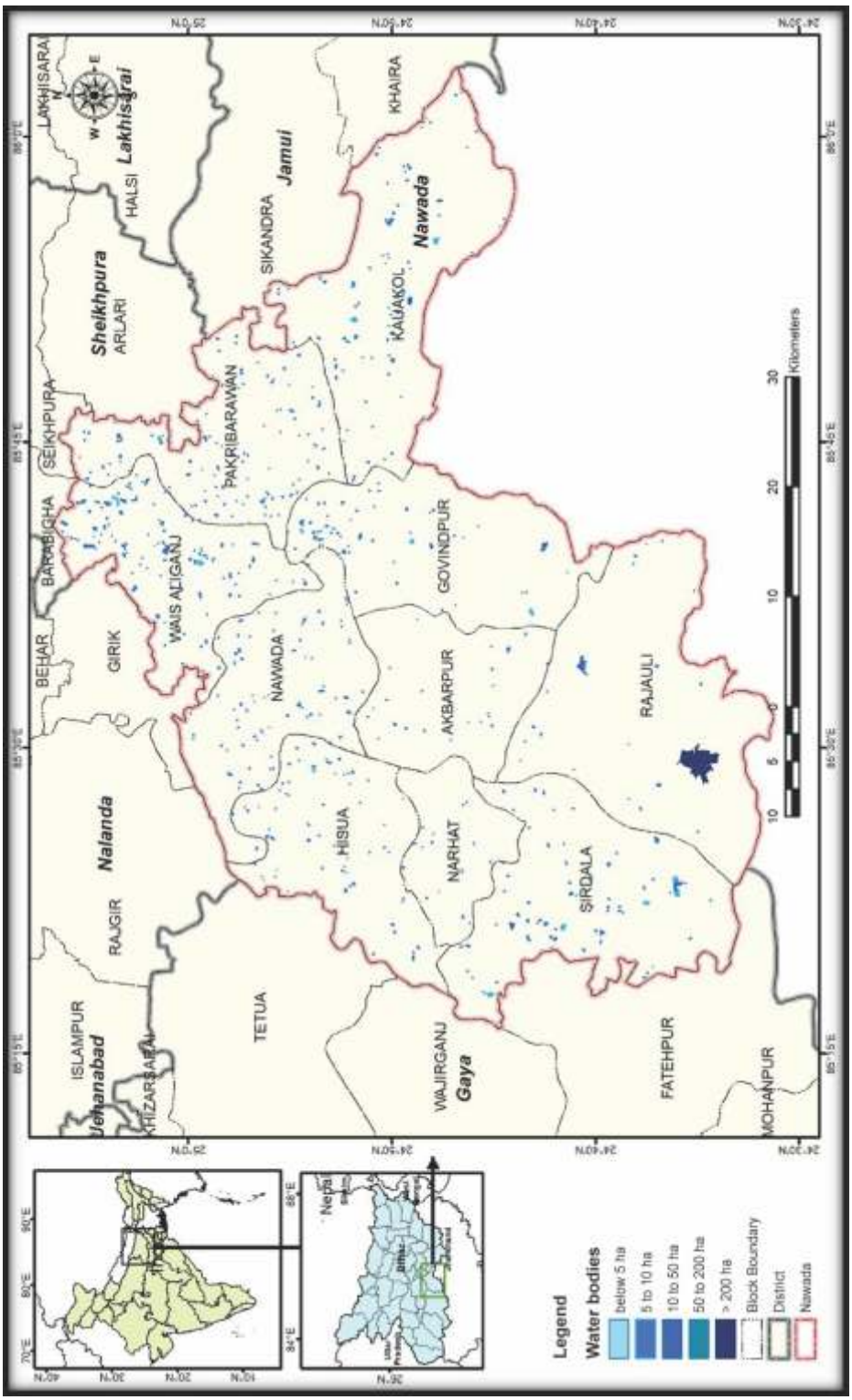


Figure 60: Waterbodies of district Nawada

Pashchim Champaran

West Champaran district was carved out of the old Champaran district in the year 1972 as a result of re-organization of the district in the state. It was formerly a subdivision of Saran district and then Champaran district with its Headquarters as Bettiah. It is located between N-E 27°31'12"/ 83°50'05" and S-W 26°35'50"/84°45'25". Total area is 5228 km^2 and has a population of 39,35,042 (according to census 2011). District shares boundary with Nepal, Uttara Pradesh and district east Champaran and Gopalganj.

For the district of Pashchim Champaran, number of water bodies stand at 1218. They occupy a total maximum area of 3068.49 hectares and a total minimum area of 1318.9 hectares and a total average area of 2193.71 hectares. The share of perennial water bodies in this district stand at 432 units which have a maximum and minimum area of 2056.85 and 1318.92 hectares respectively. The seasonal water bodies have a contribution of 786 units having a total maximum area of 1011.64 hectares. The number of water bodies and their area is given in table 114. In category 1 the total number of water bodies stand at 1146 units having a total maximum and minimum areas of 1061.78 and 306.07 hectares respectively. In this category the total units of perennial water bodies are 389 having a total maximum area and minimum area of 504.68 and 306.07 hectares respectively. Seasonal water bodies stand at 757 units having a maximum area of 557.1 hectares. The number of water bodies and their area under category 1 is given in table 115. In category 2 the total number of water body units are 42 their total maximum and minimum areas are 284.8 and 74.23 hectares respectively. The numbers of perennial water bodies stand at 23 units having maximum and minimum areas of 162.34 and 74.23 hectares respectively. The numbers of seasonal water bodies stand at 19 units having maximum area of 122.47 hectares. The number of water bodies and their area under

category 2 is given in table 116. In category 3 the total number of water bodies including perennial and seasonal stand at 21 units having maximum and minimum total area of 455.31 and 197.77 hectares respectively. In this category, the numbers of perennial water bodies stand at 12 units with maximum and minimum area water spread area of 280.96 and 197.77 hectares respectively. In this category the number of seasonal water bodies are 9 with the maximum water spread area of 174.35 hectares. The number of water bodies and their area under category 3 is given in table 117. There are 2 number of category 4 water bodies both being perennial units. The perennial type has a maximum area of 747.28 hectares and a minimum area of 556.34 hectares while the seasonal type has a maximum area of 157.72 hectares bringing the total maximum area to 747.28 hectares of water spread area as given in table 118. There is two perennial category 5 water body with a maximum area of 747.28 hectares and a minimum area of 556.34 hectares as given in table 119. Waterbodies of block Majhaulia and district Pashchim Champaran is given figure 61 and 62 respectively.

Table 114: Total water bodies and their area in district Pashchim Champaran

Block Name	Total number of water bodies	Maximum Area(ha)	Minimum Area(ha)	Average Area(ha)
Bagha	96	76.67	28.83	52.75
Bairia	75	697.11	349.7	523.41
Bettiah	53	122.26	25.43	73.85
Chanpattia	121	133.94	41.93	87.93
Gunaha	30	14.86	2.57	8.72
Jogapatti	85	151.31	64.26	107.78
Lauriya	74	113.59	41.28	77.43
Madhubani	27	26.57	8.9	17.74
Mainitanr	44	43.79	26.42	35.11
Majhaulia	172	949.27	506.26	727.76
Narhataganj	111	88.17	40.23	64.20
Nautan	78	268.18	110.68	189.43
Ramnagar	54	37.55	15.71	26.63
Sidhaw	94	230.25	30.55	130.40
Sikta	76	55.39	14.88	35.14
Thakrahan	28	59.58	11.27	35.43

Table 115: Category 1 water bodies and their area in district Pashchim Champaran

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Bagha	94	61.82	24.74	34	32.49	24.74	60	29.32
Bairia	64	90.63	12.00	14	26.06	12.00	50	64.57
Bettiah	50	62.71	20.65	22	37.84	20.65	28	24.88
Chanpattia	116	102.07	27.58	33	46.46	27.58	83	55.61
Gunaha	30	14.86	2.57	7	3.77	2.57	23	11.10
Jogapatti	80	78.18	13.72	20	26.06	13.72	60	52.12
Lauriya	70	70.47	29.75	34	51.69	29.75	36	18.77
Madhubani_P	27	26.57	8.90	8	14.12	8.90	19	12.46
Mainitanr	44	43.79	26.42	27	35.36	26.42	17	8.43
Majhaulia	146	151.86	22.08	30	41.07	22.08	116	110.79
Narhataganj	111	88.17	40.23	56	61.09	40.23	55	27.07
Nautan	69	82.67	12.39	12	25.70	12.39	57	56.98
Ramnagar	54	37.55	15.71	23	23.45	15.71	31	14.09
Sidhaw	93	72.53	30.55	45	45.73	30.55	48	26.80
Sikta	76	55.39	14.88	20	27.78	14.88	56	27.61
Thakrahan	22	22.51	3.90	4	6.01	3.90	18	16.50

Table 116: Category 2 water bodies and their area in district Pashchim Champaran

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Bairia	4	29.04	2.01	3	21.46	2.01	1	7.57
Bettiah	2	11.38	4.78	2	11.38	4.78		
Chanpattia	5	31.87	14.34	4	26.65	14.34	1	5.22
Jogapatti	3	21.52	2.52	1	7.26	2.52	2	14.27
Lauriya	2	14.61	7.64	2	14.61	7.64		
Majhaulia	16	112.21	32.93	8	61.57	32.93	8	50.64
Nautan	4	27.10	2.64	1	7.83	2.64	3	19.27
Thakrahan	6	37.07	7.37	2	11.58	7.37	4	25.50

Table 117: Category 3 water bodies and their area in district Pashchim Champaran

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Bairia	4	59.42	1.16	1	12.75	1.16	3	46.66
Bettiah	1	48.17	0.00				1	48.17
Jogapatti	2	51.60	48.02	2	51.60	48.02		
Lauriya	2	28.51	3.89	1	10.03	3.89	1	18.49
Majhaulia	8	169.06	79.73	4	108.03	79.73	4	61.03
Nautan	4	98.55	64.97	4	98.55	64.97		

Table 118: Category 4 water bodies and their area in district Pashchim Champaran

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Bairia	2	171.09	68.60	2	171.09	68.60		
Majhaulia	1	115.79	81.11	1	115.79	81.11		
Nautan	1	59.86	30.68	1	59.86	30.68		
Sidhaw	1	157.72	0.00				1	157.72

Table 119: Category 5 water bodies and their area in district Pashchim Champaran

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Bairia	1	346.93	265.93	1	346.93	265.93		
Majhaulia	1	400.35	290.41	1	400.35	290.41		

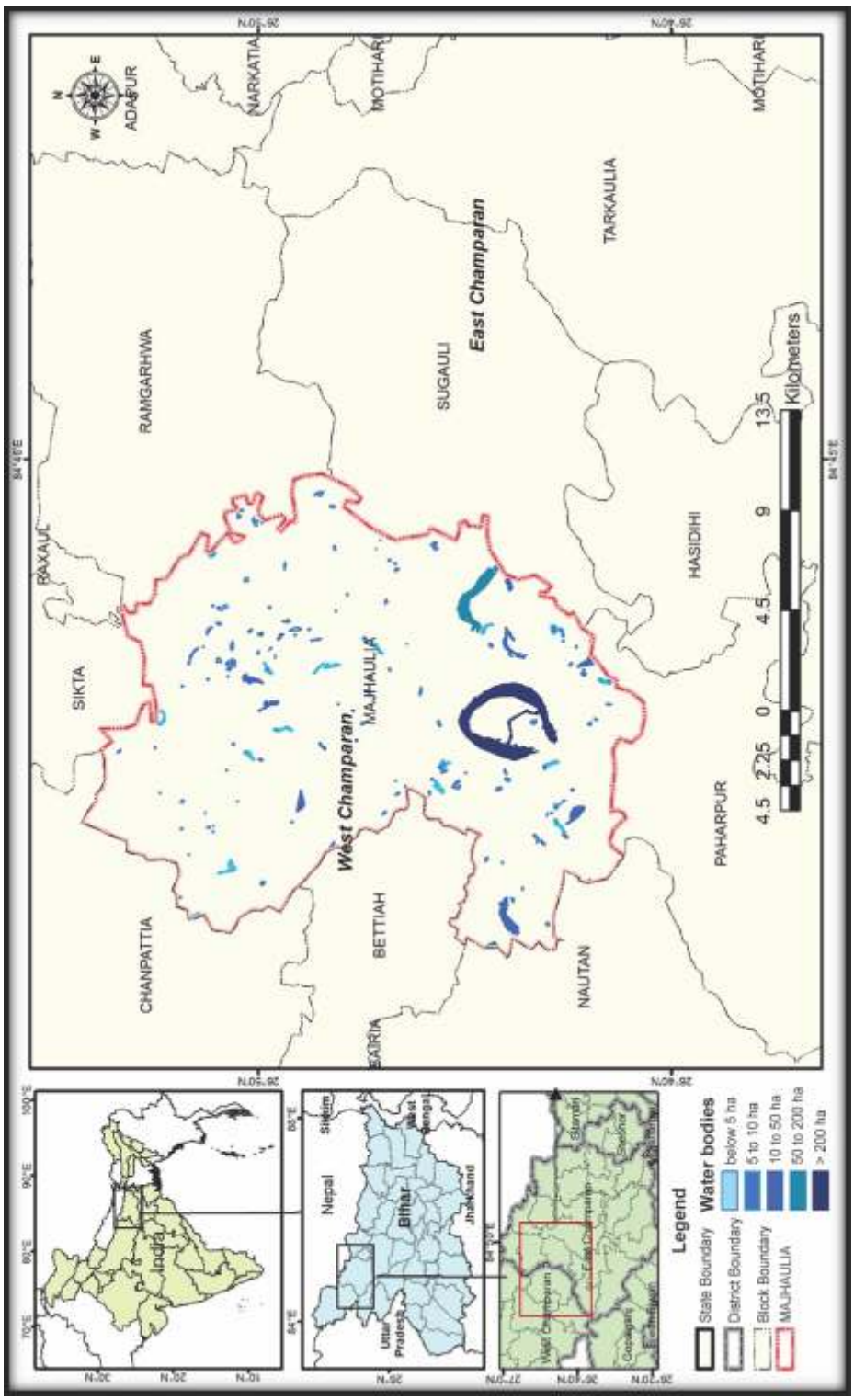


Figure 61: Waterbodies of block Majhaulia of district Pashchim Champaran

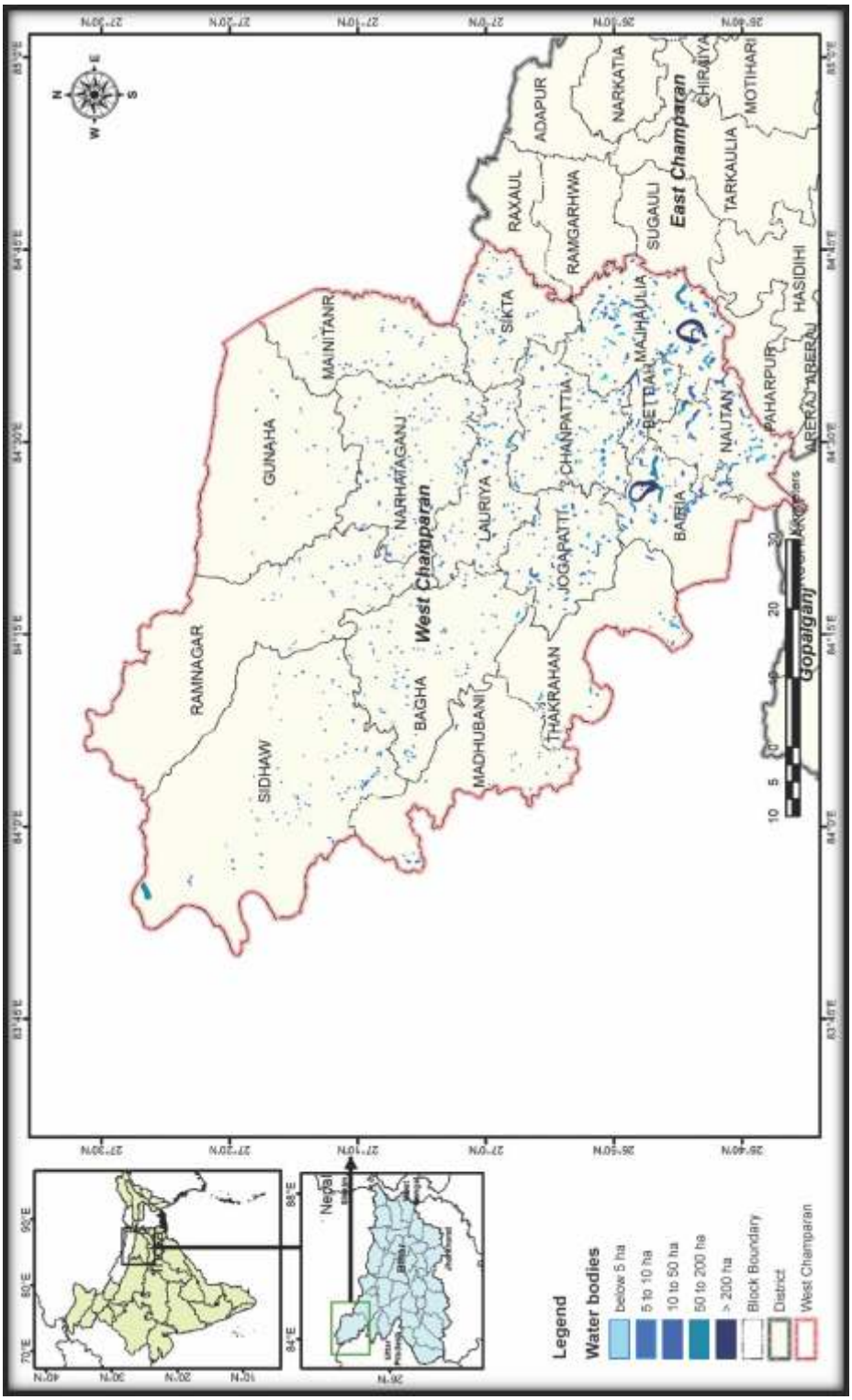


Figure 62: Waterbodies of district Pashchim Champaran

Patna

Patna is the largest town and headquarters of Patna district, Patna division and Bihar state. Patna is the capital of Bihar state. It is located on the south bank of the river Ganga. It is well connected by railway and road. It is mainly an administrative and educational centre of Bihar. It shares boundary with District Bhojpur, Arwal, Jehanabad, Nalanda, Lakhisarai, Begusarai, Samastipur, Vaishali, and Saran. It is located in between N-E 25°43'59"/ 84°41'55" and S-W 25°12'21"/86°04'00". Total area is 3226 km^2. District has a total population of 58,38,465 (according to census 2011).

For the district of Patna, number of water bodies stand at 701. They occupy a total maximum area of 879.68 hectares and a total minimum area of 208.18 hectares and a total average area of 543.92 hectares. The share of perennial water bodies in this district stand at 123 units which have a maximum and minimum area of 354.18 and 208.18 hectares respectively. The seasonal water bodies have a contribution of 578 units having a total maximum area of 525.49 hectares. The number of water bodies and their area is given in table 120.

In category 1 the total number of water bodies stand at 684 units having a total maximum and minimum areas of 576.36 and 99.46 hectares respectively. In this category the total units of perennial water bodies are 114 having a total maximum area and minimum area of 166.08 and 99.46 hectares respectively. Seasonal water bodies stand at 570 units having a maximum area of 410.26 hectares. The number of water bodies and their area under category 1 is given in table 121.

In category 2 the total number of water body units are 9 their total maximum and minimum areas are 61.53 and 21.48 hectares respectively. The numbers of perennial water bodies stand at 6 units having

maximum and minimum areas of 40.17 and 21.48 hectares respectively. The numbers of seasonal water bodies stand at 3 units having maximum area of 21.87 hectares. The number of water bodies and their area under category 2 is given in table 122.

In category 3 the total number of water bodies including perennial and seasonal stand at 7 units having maximum and minimum total area of 146.94 and 41.59 hectares respectively. In this category, the numbers of perennial water bodies stand at 2 units with maximum and minimum area water spread area of 47.67 and 41.59 hectares respectively. In this category the number of seasonal water bodies are 5 with the maximum water spread area of 99.27 hectares. The number of water bodies and their area under category 3 is given in table 123.

There is a single category 4 perennial type water body with a maximum area of 100.25 hectares and a minimum of 45.63 hectares as given in table 124.Waterbodies of block Patna city and district Purba Patna is given figure 63 and 64 respectively.

Table 120: Total water bodies and their area in district Patna

Block Name	Total number of water bodies	Maximum Area(ha)	Minimum Area(ha)	Average Area(ha)
Bakhtiarpur	38	25.15	2.79	13.97
Barh	37	29.97	5.87	17.92
Bihta	33	28.37	1.08	14.72
Bikram	24	17.02	2.24	9.63
Dhanarun	23	20.26	0	10.13
Dinapur Cum Khagaul	38	23.92	2.35	13.14
Khusrupur	56	48.7	2.62	25.66
Maner	18	17.84	4.84	11.34
Masaurhi_P	37	42.91	0.64	21.78
Mokameh	35	78.36	37.41	57.88
Naubatpur	17	11.19	0	5.59
Paliganj	34	72.58	6.82	39.70
Pandarakh	17	108.55	46.89	77.72
Patna City	186	266.85	83.69	175.27
Phulwari	82	66.73	8.3	37.51
Punpun	26	21.28	2.64	11.96

Table 121: Category 1 water bodies and their area in district Patna

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Bakhtiarpur	38	25.15	2.79	2	3.66	2.79	36	21.48
Barh	36	22.17	2.13	2	3.31	2.13	34	18.86
Bihta	32	23.33	1.08	2	3.15	1.08	30	20.18
Bikram	24	17.02	2.24	2	2.56	2.24	22	14.46
Dhanarun	23	20.26	0.00				23	20.26
Dinapur Cum Khagaul	38	23.92	2.35	5	3.79	2.35	33	20.14
Khusrupur	55	43.03	2.62	4	6.33	2.62	51	36.70
Maner	18	17.84	4.84	5	7.29	4.84	13	10.55
Masaurhi_P	37	42.91	0.64	2	4.93	0.64	35	37.97
Mokameh	32	25.36	5.36	7	9.95	5.36	25	15.41
Naubatpur	17	11.19	0.00				17	11.19
Paliganj	33	27.05	6.82	8	10.95	6.82	25	16.10
Pandarakh	16	8.31	1.26	1	1.36	1.26	15	6.95
Patna City	178	191.19	56.39	60	90.98	56.39	118	100.20
Phulwari	81	56.35	8.30	11	11.77	8.30	70	44.58
Punpun	26	21.28	2.64	3	6.05	2.64	23	15.23

Table 122: Category 2 water bodies and their area in district Patna

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Barh	1	7.29	3.73	1	7.80	3.73		
Bihta	1	7.29	0.00				1	7.29
Khusrupur	1	7.29	0.00				1	7.29
Mokameh	1	7.29	0.00				1	7.29
Patna City	5	32.37	17.75	5	32.37	17.75		

Table 123: Category 3 water bodies and their area in district Patna

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Mokameh	2	47.74	32.05	1	36.06	32.05	1	11.68
Paliganj	1	45.53	0.00				1	45.53
Patna City	3	43.29	9.54	1	11.61	9.54	2	31.68
Phulwari	1	10.38	0.00				1	10.38

Table 124: Category 4 water bodies and their area in district Patna

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Pandarakh	1	100.25	45.63	1	100.25	45.63		

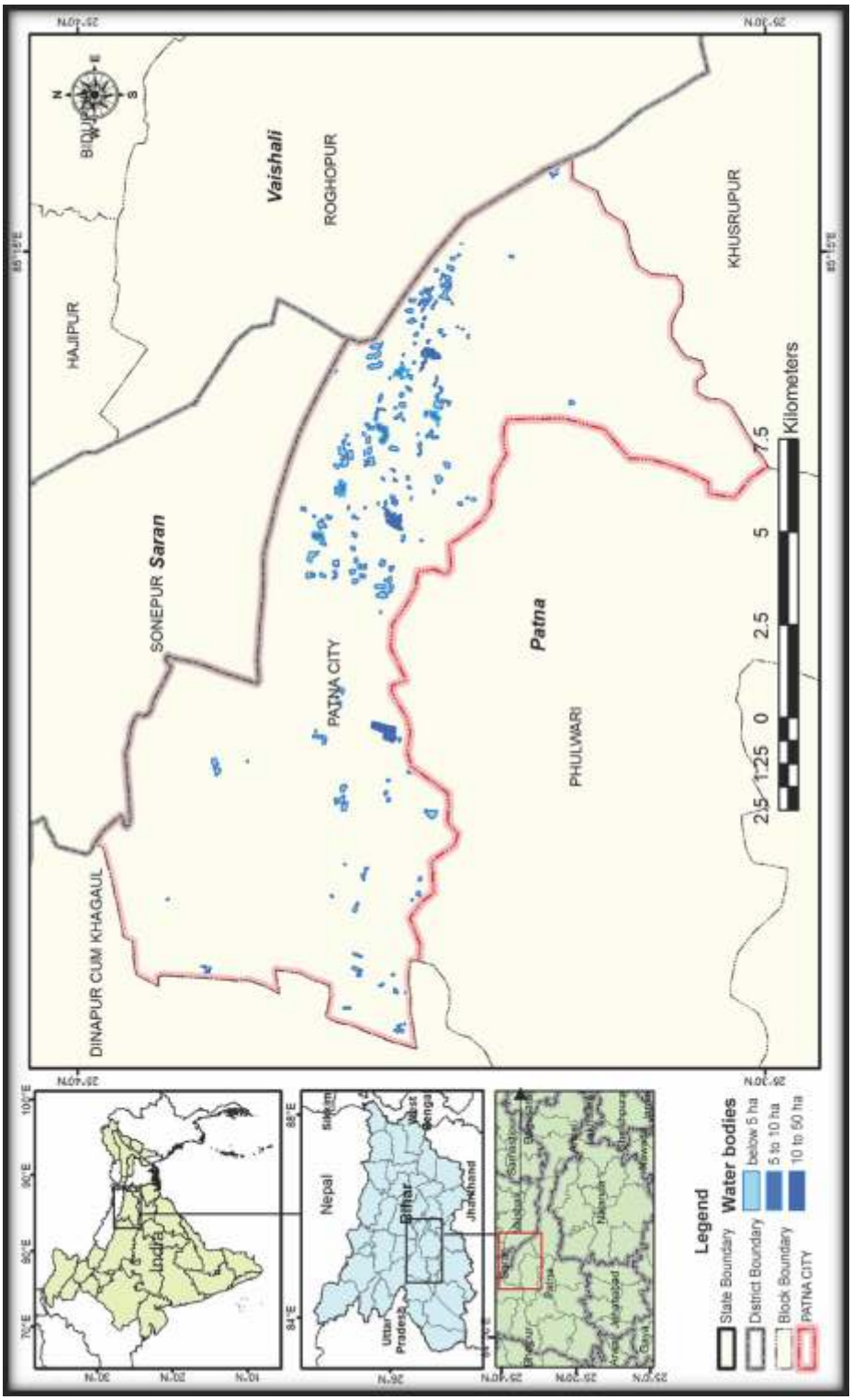


Figure 63: Waterbodies of block Patna city of district Patna

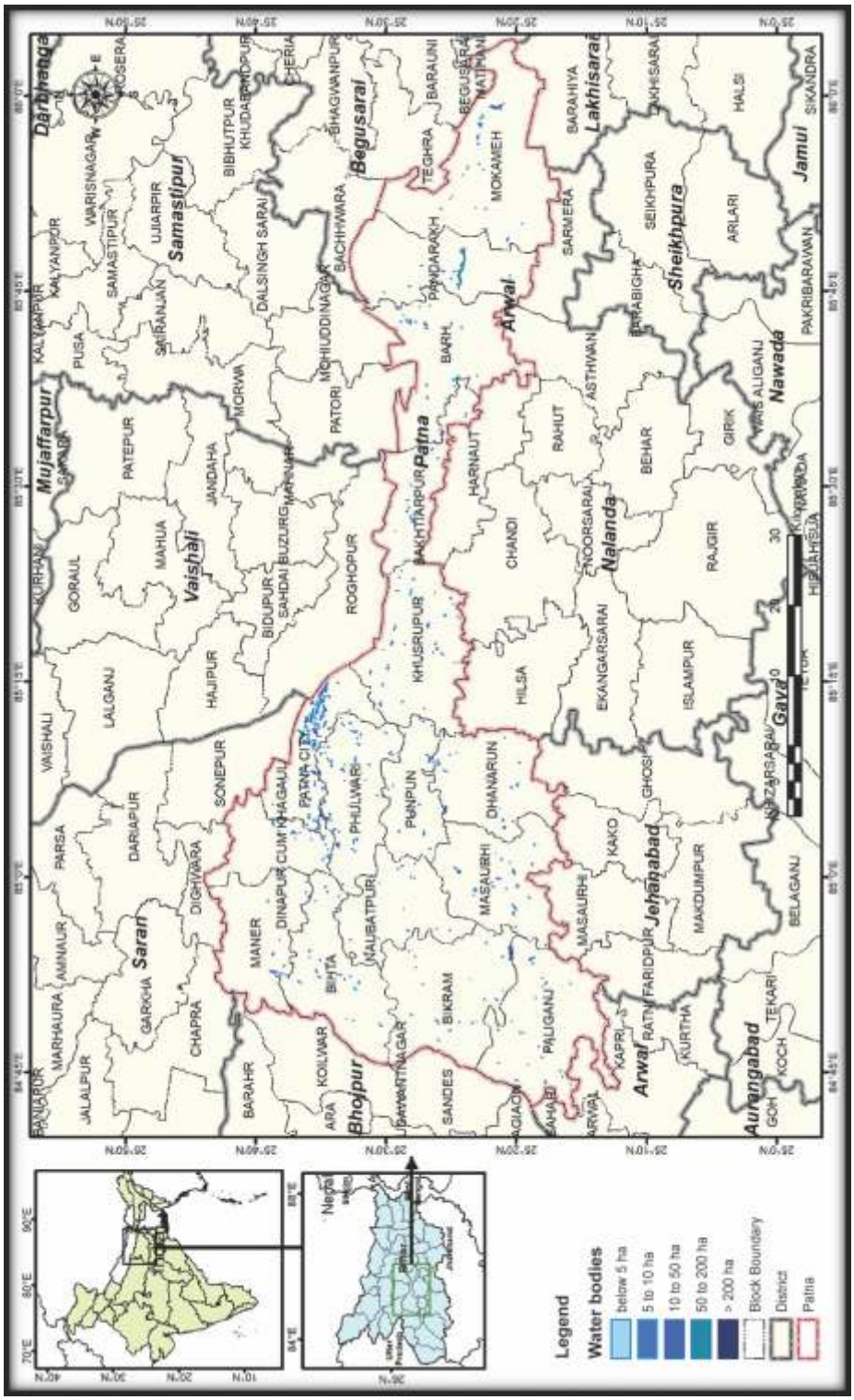


Figure 64: Waterbodies of district Patna

Purba Champaran

On 2nd November 1972 Champaran district was split up Into two districts, viz. Purbi Champaran and Paschim Champaran. East Champaran is a part of Tirhut Division. The headquarter of Purbi Champaran district is at Motihari. Presently Purbi Champaran consists of Six Subdivisions and Twenty Seven Blocks. Nepal makes its northern boundary, Sitamadhi and Sheohar eastern while Muzaffarpur South and with part of Gopalganj bounds it in western side. Geo-coordinatesare N-E 27°01'23"/ 84°28'55" and S-W 26°15'42"/85°18'09". Total area is 3962 km^2 and has a population of 50,99,371 (Census 2011).

For the district of Purba Champaran, number of water bodies stand at 2343. They occupy a total maximum area of 6165.83 hectares and a total minimum area of 2620.12 hectares and a total average area of 4392.95 hectares. The share of perennial water bodies in this district stand at 564 units which have a maximum and minimum area of 4195.24 and 2620.12 hectares respectively. The seasonal water bodies have a contribution of 1779 units having a total maximum area of 1970.58 hectares. The number of water bodies and their area is given in table 125. In category 1 the total number of water bodies stand at 2241 units having a total maximum and minimum areas of 2028.35 and 500.78 hectares respectively. In this category the total units of perennial water bodies are 503 having a total maximum area and minimum area of 818.08 and 500.78 hectares respectively. Seasonal water bodies stand at 1738 units having a maximum area of 1210.23 hectares. The number of water bodies and their area under category 1 is given in table 126. In category 2 the total number of water body units are 39 their total maximum and minimum areas are 273.35 and 52.14 hectares respectively. The numbers of perennial water bodies stand at 16 units having maximum and minimum areas of 114.53 and 52.14

hectares respectively. The numbers of seasonal water bodies stand at 21 units having maximum area of 146.61 hectares. The number of water bodies and their area under category 2 is given in table 127. In category 3 the total number of water bodies including perennial and seasonal stand at 41 units having maximum and minimum total area of 835.7 and 330.84 hectares respectively. In this category, the numbers of perennial water bodies stand at 24 units with maximum and minimum area water spread area of 524.15 and 300.73 hectares respectively. In this category the number of seasonal water bodies are 15 with the maximum water spread area of 278.42 hectares. The number of water bodies and their area under category 3 is given in table 128. There are 20 number of category 4 water bodies with 17 number of perennial and 3 number of seasonal units of them. The perennial type has a maximum area of 1754.83 hectares and a minimum area of 1240.83 hectares while the seasonal type has a maximum area of 323.09 hectares bringing the total maximum area to 2077.92 hectares of water spread area. The number of water bodies and their area under category 4 is given in table 129. There are 2 perennial water body units in this category with a maximum of 950.54 hectares and a minimum of 495.54 hectares water spread area as given in table 130. Waterbodies of block Tarkaulia and district Purba Champaran is given figure 65 and 66 respectively.

Table 125: Total water bodies and their area in district Purba Champaran

Block Name	Total number of water bodies	Maximum Area(ha)	Minimum Area(ha)	Average Area(ha)
Adapur	106	106.49	48.24	77.36
Areraj	156	141.39	15.86	78.62
Chakia	111	476.12	164.04	320.08
Chiraiya	151	121.93	45.92	83.92
Dhaka	108	84.45	32.78	58.61
Ghorasahan	115	103.03	31.84	67.44
Hasidihi	100	863.86	536.18	700.02
Kalyanpur	152	151.46	15.07	83.27
Kesaria	83	324.4	28.32	176.36
Madhuban	78	611.57	210.96	411.27
Mehsi_P	83	242.69	166.03	204.36
Motihari	215	887.85	504.38	696.11
Narkatia	122	127.27	46.78	87.03
Paharpur	77	251.31	81.55	166.43
Pakridayal	56	122.67	54.93	88.80
Patahi	60	128.98	81.95	105.46
Ramgarhwa	156	141.84	48.02	94.93
Raxaul	122	108.18	35.55	71.86
Sugauli	124	363.17	107.26	235.21
Tarkaulia	168	807.17	364.46	585.81

Table 126: Category 1 water bodies and their area in district Purba Champaran

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Adapur	105	100.18	43.16	43	57.88	43.16	62	42.30
Areraj	154	110.22	15.39	20	28.05	15.39	134	82.17
Chakia	100	97.78	11.33	11	23.32	11.33	89	74.45
Chiraiya	151	121.93	45.92	44	63.68	45.92	107	58.25
Dhaka	108	84.45	32.78	29	49.51	32.78	79	34.94
Ghorasahan	114	92.76	31.84	27	44.63	31.84	87	48.13
Hasidihi	95	105.94	15.20	21	37.02	15.20	74	68.92
Kalyanpur	148	84.82	12.21	10	20.78	12.21	138	64.04
Kesaria	78	53.90	8.46	8	13.98	8.46	70	39.92
Madhuban	69	69.03	9.73	10	28.57	9.73	59	40.45
Mehsi_P	79	49.94	8.17	9	18.81	8.17	70	31.12
Motihari	197	197.80	36.82	38	62.59	36.82	159	135.21
Narkatia	122	127.27	46.78	44	68.50	46.78	78	58.77
Paharpur	71	78.60	10.03	8	17.73	10.03	63	60.87
Pakridayal	52	60.23	13.29	11	18.79	13.29	41	41.44
Patahi	56	47.64	15.43	14	25.18	15.43	42	22.46
Ramgarhwa	155	136.79	44.39	49	66.29	44.39	106	70.50
Raxaul	120	90.19	35.55	32	48.29	35.55	88	41.89
Sugauli	112	139.80	31.34	39	62.73	31.34	73	77.07
Tarkaulia	155	179.08	32.96	36	61.75	32.96	119	117.33

Table 127: Category 2 water bodies and their area in district Purba Champaran

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Adapur	1	6.30	5.08	1	6.30	5.08		
Areraj	1	6.80	0.46	1	6.80	0.46		
Chakia	4	23.09	1.47	1	6.15	1.47	3	16.94
Hasidihi	1	7.19	0.00					

Kalyanpur	2	16.03	2.86	1	6.94	2.86	1	9.09
Kesaria	1	9.40	5.61	1	9.40	5.61		
Madhuban	5	36.96	14.01	3	23.11	14.01	2	13.85
Mehsi_P	1	7.29	0.00				1	7.29
Motihari	6	39.51	3.19	2	13.23	3.19	4	26.28
Paharpur	1	5.04	0.00					
Pakridayal	2	12.79	3.10	1	7.76	3.10	1	5.04
Patahi	1	5.48	3.79	1	5.48	3.79		
Ramgarhwa	1	5.05	3.63	1	5.05	3.63		
Raxaul	1	6.27	0.00				1	6.27
Sugauli	6	42.47	4.90	1	8.35	4.90	5	34.13
Tarkaulia	5	43.68	4.04	2	15.96	4.04	3	27.72

Table 128: Category 3 water bodies and their area in district Purba Champaran

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Areraj	1	24.37	0.00				1	24.37
Chakia	5	137.47	44.97	4	123.31	44.97	1	14.16
Ghorasahan	1	10.28	0.00				1	10.28
Hasidihi	1	11.64	0.00				1	11.64
Kalyanpur	2	50.61	0.00				2	50.61
Kesaria	3	64.80	14.25	1	22.95	14.25	2	41.85
Madhuban	2	25.81	4.49	1	12.24	4.49	1	13.56
Mehsi_P	2	33.11	30.11					
Motihari	6	102.17	48.80	5	71.15	48.80	1	31.02
Paharpur	4	91.25	17.96	1	32.59	17.96	3	58.65
Pakridayal	2	49.65	38.54	2	49.65	38.54		
Patahi	3	75.86	62.73	3	75.86	62.73		
Raxaul	1	11.72	0.00				1	11.72
Sugauli	5	81.70	40.12	4	71.14	40.12	1	10.56
Tarkaulia	3	65.26	28.87	3	65.26	28.87		

Table 129: Category 4 water bodies and their area in district Purba Champaran

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Chakia	2	217.79	106.27	1	150.21	106.27	1	67.58
Hasidihi	2	188.22	128.39	2	188.22	128.39		
Kesaria	1	196.30	0.00				1	196.30
Madhuban	1	80.11	79.79	1	80.11	79.79		
Mehsi_P	1	152.36	127.75	1	152.36	127.75		
Motihari	6	548.37	415.58	6	548.37	415.58		
Paharpur	1	76.43	53.56	1	76.43	53.56		
Sugauli	1	99.20	30.90	1	99.20	30.90		
Tarkaulia	5	519.14	298.59	4	459.93	298.59	1	59.21

Table 130: Category 5 water bodies and their area in district Purba Champaran

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Hasidihi	1	550.88	392.59	1	550.88	392.59		
Madhuban	1	399.66	102.95	1	399.66	102.95		

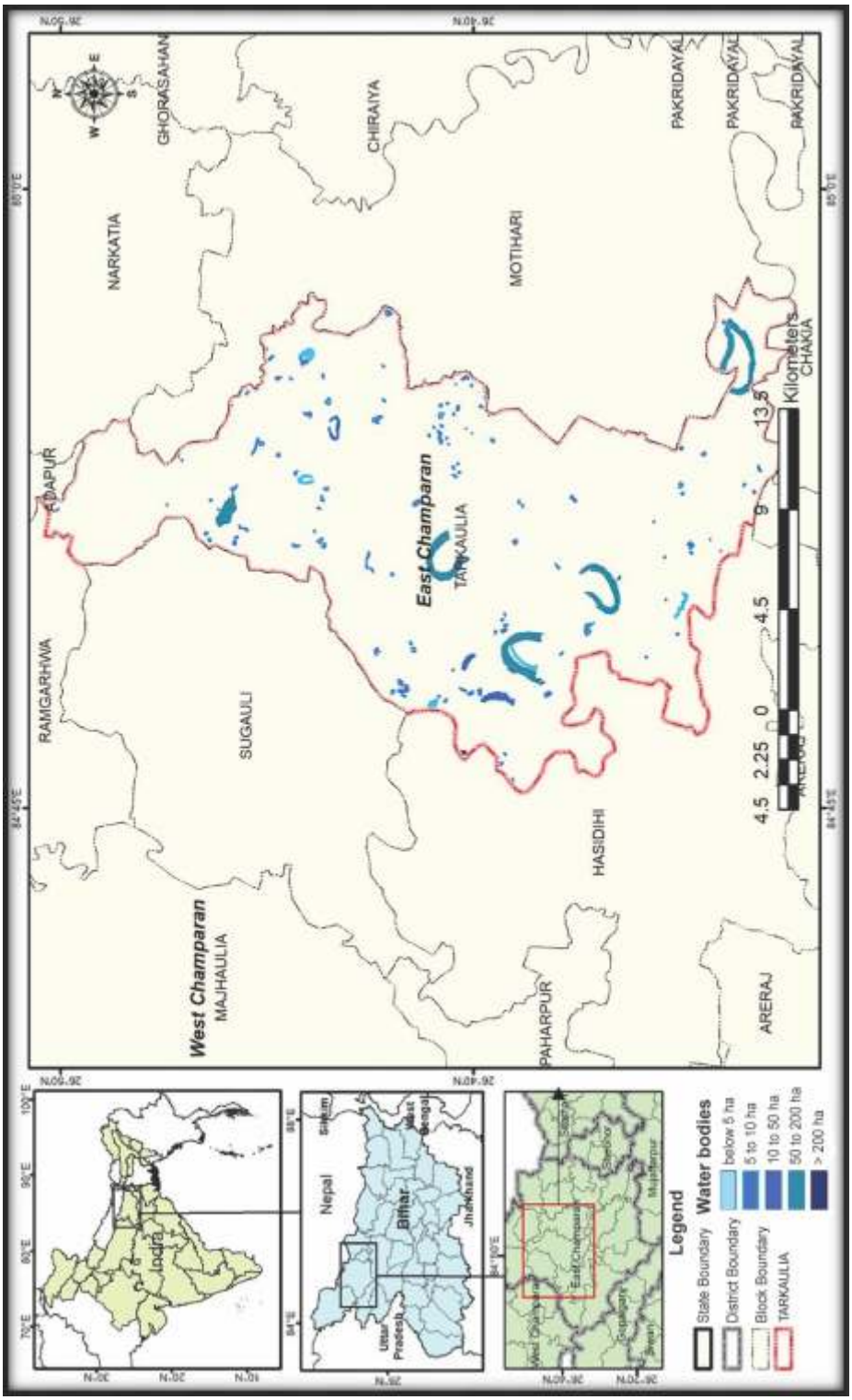


Figure 65: Waterbodies of block Tarkaulia of district Purba Champaran

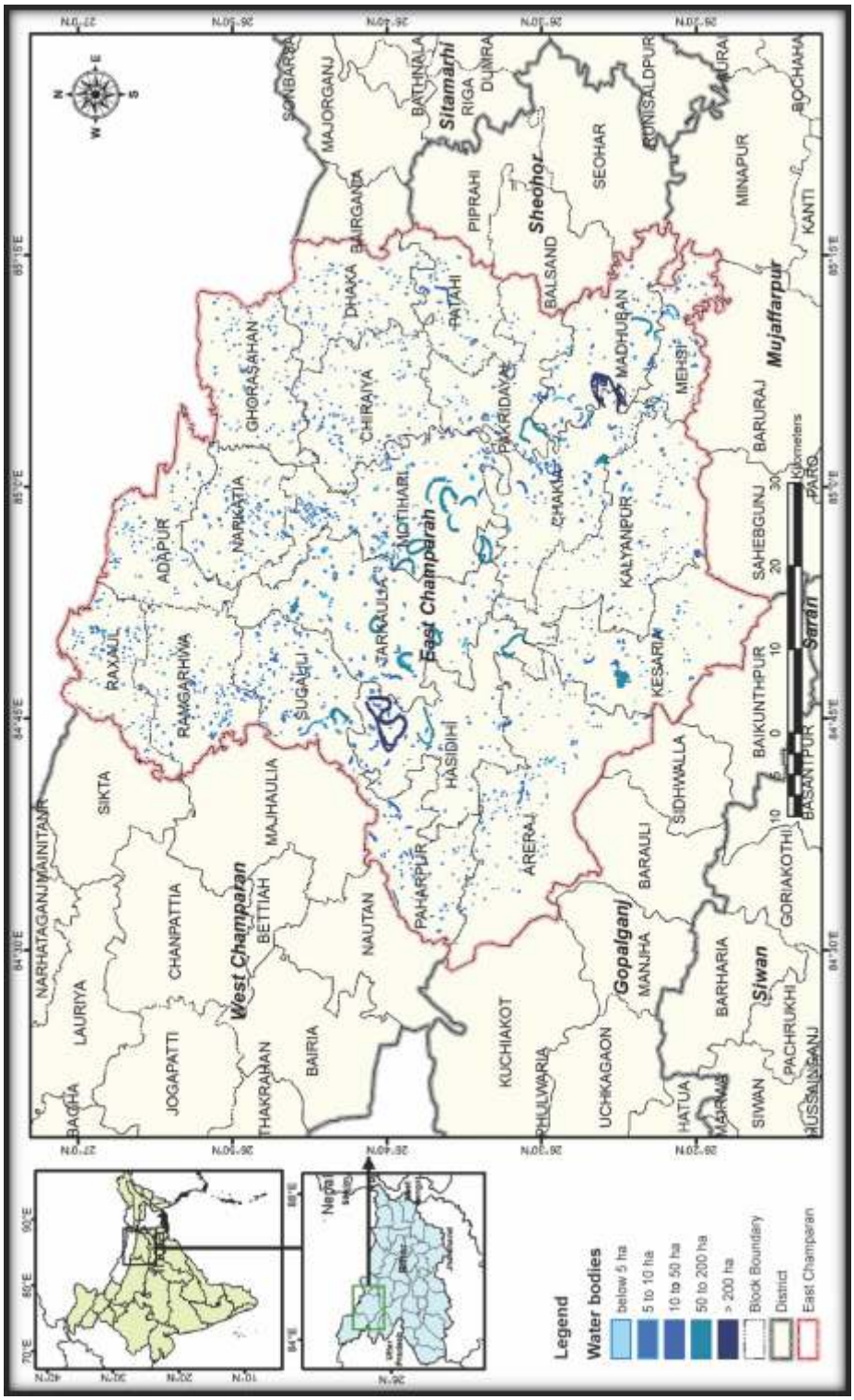


Figure 66: Waterbodies of district Purba Champaran

Purniya

The district lies in the Gangetic Alluvial Plain. The river Kosi is the extreme west boundary of the district. The Mahananda forms the boundary between Purnia and Bengal. The Ganga forms the southern boundary of the district. District Purniya surrounded by District Kishanganj, Araria, Madepura, Bhagalpur and Katihar. Small portion of district also shares boundary with Stae of West Bengal. Geo-coordinates are N-E 26°06'40"/ 86°59'28" and S-W 25°25'40"/87°52'23". Total area is 3229 km^2. District has a total population of32,64,619 (according to census 2011).

For the district of Purniya, number of water bodies stand at 2117 they occupy a total maximum area of 2656.98 hectares and a total minimum area of 1067.46 hectares and a total average area of 1862.21 hectares. The share of perennial water bodies in this district stand at 659 units which have a maximum and minimum area of 1707.6 and 1067.47 hectares respectively. The seasonal water bodies have a contribution of 1458 units having a total maximum area of 949.37 hectares. The number of water bodies and their area is given in table 131.

In category 1 the total number of water bodies stand at 2027 units having a total maximum and minimum areas of 1680.98 and 540.75 hectares respectively. In this category the total units of perennial water bodies are 583 having a total maximum area and minimum area of 868.13 and 540.75 hectares respectively. Seasonal water bodies stand at 1444 units having a maximum area of 812.88 hectares. The number of water bodies and their area under category 1 is given in table 132.

In category 2 the total number of water body units are 60 their total maximum and minimum areas are 388.23 and 198.57 hectares respectively. The numbers of perennial water bodies stand at 50 units having maximum and minimum areas of 320.98 and 198.57 hectares respectively. The numbers of seasonal water bodies stand at 10 units having maximum area of 67.23 hectares. The number of water bodies and their area under category 2 is given in table 133.

In category 3 the total number of water bodies including perennial and seasonal stand at 28 units having maximum and minimum total area of 467.24 and 239.29 hectares respectively. In this category, the

numbers of perennial water bodies stand at 24 units with maximum and minimum area water spread area of 397.97 and 239.29 hectares respectively. In this category the number of seasonal water bodies are 4 with the maximum water spread area of 69.27 hectares. The number of water bodies and their area under category 3 is given in table 134.

There are 2 perennial water body units in this category with a maximum of 120.52 hectares and a minimum of 88.85 hectares water spread area as given in table 135. There is no waterbody in category 5. Waterbodies of block Amour and district Purniya is given figure 67 and 68 respectively.

Table 131: Total water bodies and their area in district Purniya

Block Name	Total number of water bodies	Maximum Area(ha)	Minimum Area(ha)	Average Area(ha)
Amour	226	354.77	158.15	256.46
Baisa	152	231.48	99.72	165.60
Baisi	233	390.85	199.16	295.00
Banmankhi	230	186.8	57.15	121.97
Barhara	87	50.49	17.07	33.78
Bhawanipur	58	97.55	30.93	64.24
Dhamdaha	161	156.89	41.67	99.28
Kasba	237	223.14	74.83	148.99
Krityanandnagar	279	332.48	112.28	222.38
Purnia East	397	586.6	269.39	427.99
Rupauli	57	45.93	7.11	26.52

Table 132: Category 1 water bodies and their area in district Purniya

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Amour	208	212.11	74.11	70	118.64	74.11	138	93.47
Baisa	141	119.30	39.86	41	72.39	39.86	100	46.91
Baisi	216	248.56	103.42	90	168.50	103.42	126	80.06
Banmankhi	225	134.29	41.23	64	64.50	41.23	161	69.79
Barhara	87	50.49	17.07	23	23.97	17.07	64	26.52
Bhawanipur-	54	34.46	9.54	14	15.40	9.54	40	19.07
Dhamdaha	158	117.01	29.30	42	47.18	29.30	116	69.83
Kasba	229	156.22	45.05	50	64.31	45.05	179	91.91
Krityanandnagar	269	209.12	45.79	56	78.48	45.79	213	130.64
Purnia East	385	369.43	130.74	124	205.59	130.74	261	163.85
Rupauli	55	29.99	4.64	9	9.17	4.64	46	20.83

Table 133: Category 2 water bodies and their area in district Purniya

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Amour	14	92.60	60.19	13	82.92	60.19	1	9.68
Baisa	8	58.79	32.89	7	51.59	32.89	1	7.19
Baisi	13	81.37	45.74	10	65.50	45.74	3	15.87
Banmankhi	3	18.49	8.73	3	18.49	8.73		
Dhamdaha	2	16.15	2.59	1	7.83	2.59	1	8.31
Kasba	6	37.63	23.32	6	37.63	23.32		
Krityanandnagar	5	30.97	7.43	2	10.51	7.43	3	20.46
Purnia East	8	46.51	17.68	8	46.51	17.68		
Rupauli	1	5.72	0.00				1	5.72

Table 134: Category 3 water bodies and their area in district Purniya

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Amour	4	50.06	23.85	4	50.06	23.85		
Baisa	3	53.39	26.98	3	53.39	26.98		
Baisi	4	60.91	50.00	4	60.91	50.00		
Banmankhi	2	34.01	7.18	1	15.93	7.18	1	18.08
Bhawanipur-	4	63.09	21.39	2	29.25	21.39	2	33.84
Dhamdaha	1	23.74	9.79	1	23.74	9.79		
Kasba	2	29.29	6.46	1	11.94	6.46	1	17.35
Krityanandnagar	5	92.40	59.06	5	92.40	59.06		
Purnia East	2	50.14	32.11	2	50.14	32.11		
Rupauli	1	10.21	2.47	1	10.21	2.47		

Table 135: Category 4 water bodies and their area in district Purniya

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Purnia East	2	120.52	88.85	2	120.52	88.85		

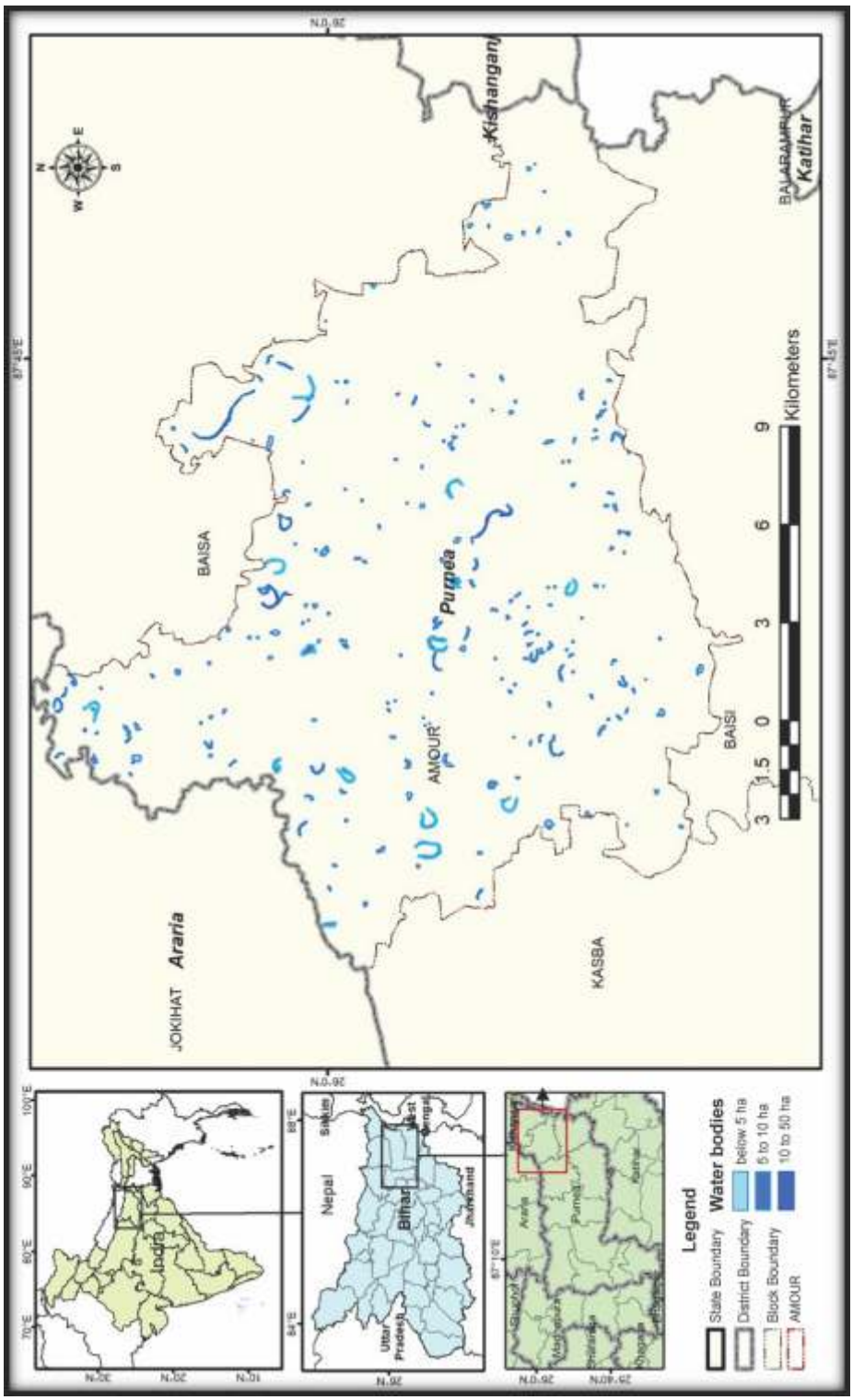


Figure 67: Waterbodies of block Amour of district Purniya

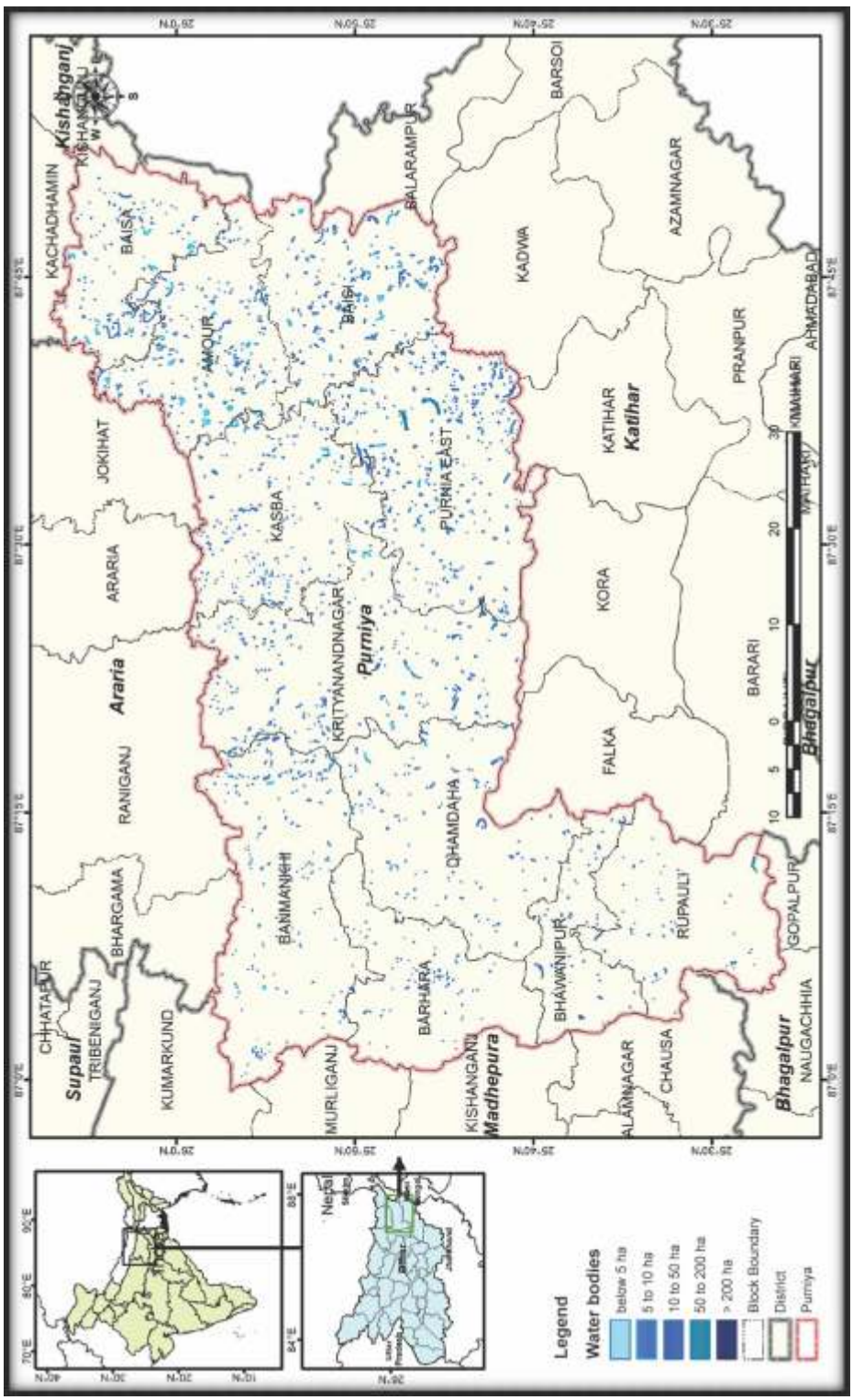


Figure 68: Waterbodies of district Purniya

Rohtas

District Rohtas came into existence when Shahabad District was bifurcated into Bhojpur & Rohtas in 1972. It shares boundary with Bhojpur & Buxar districts in the north, state of Jharkhand in the south, Aurangabad districtin the east and Kaimur district in the west. Geo-coordinates are N-E 25°22'33"/ 83°30'25" and S-W 24°29'54"/84°27'50". Total area is 3869 km^2. District has a total population of 29,59,918 (according to census 2011).

For the district of Rohtas, number of water bodies stand at 635. They occupy a total maximum area of 633.89 hectares and a total minimum area of 294.15 hectares and a total average area of 464.03 hectares. The share of perennial water bodies in this district stand at 284 units which have a maximum and minimum area of 418.42 and 294.14 hectares respectively. The seasonal water bodies have a contribution of 351 units having a total maximum area of 215.48 hectares. The number of water bodies and their area is given in table136.

In category 1 the total number of water bodies stand at 620 units having a total maximum and minimum areas of 520.87 and 225.01 hectares respectively. In this category the total units of perennial water bodies are 270 having a total maximum area and minimum area of 313.8 and 225.01 hectares respectively. Seasonal water bodies stand at 350 units having a maximum area of 207.07hectares. The number of water bodies and their area under category 1 is given in table 137.

In category 2 the total number of water body units are 12 their total maximum and minimum areas are 77.17and 43.62 hectares respectively. The numbers of perennial water bodies stand at 11 units having maximum and minimum areas of 68.75 and 43.62 hectares respectively. The numbers of seasonal water bodies stand at 1 units having maximum area of 8.42 hectares. The number of water bodies and their area under category 2 is given in table 138.

There are 3 perennial water bodies in this category with a maximum area of 35.85 hectares and a minimum area of 25.51 hectares. The number of water bodies and their area under category 3 is given in table 139.

There is no waterbody in category 4 and 5. Waterbodies of block Samsara and district Rohtas is given figure 69 and 70 respectively.

Table 136: Total water bodies and their area in district Rohtas

Block Name	Total number of water bodies	Maximum Area(ha)	Minimum Area(ha)	Average Area(ha)
Bikramganj	51	56.37	14.95	35.66
Chenari	72	62.2	29.31	45.76
Dehri	14	19.17	8.27	13.72
Dinara	87	61.63	23.7	42.67
Karakat	22	17.66	4.88	11.27
Kargahar	91	66.56	37.05	51.80
Koath	31	22.6	4.24	13.42
Nasriganj	23	24.39	10.32	17.36
Nawhatta	7	9.72	6.49	8.10
Nokha	28	37.83	20.24	29.04
Rohtas	15	36.74	24.38	30.56
Sasaram	63	120.31	63.49	91.90
Seosagar	131	98.71	46.83	72.77

Table 137: Category 1 water bodies and their area in district Rohtas

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Bikramganj	50	47.95	14.95	17	23.29	14.95	33	24.67
Chenari	72	62.20	29.31	35	39.62	29.31	37	22.58
Dehri	13	13.54	2.73	3	5.13	2.73	10	8.41
Dinara	86	56.48	22.08	32	30.40	22.08	54	26.08
Karakat	22	17.66	4.88	8	9.16	4.88	14	8.50
Kargahar	91	66.56	37.05	52	48.28	37.05	39	18.27
Koath	31	22.60	4.24	7	7.80	4.24	24	14.80
Nasriganj	22	17.88	5.62	8	9.98	5.62	14	7.89
Nawhatta	7	9.72	6.49	5	8.83	6.49	2	0.90
Nokha	27	26.85	9.86	10	14.49	9.86	17	12.36
Rohtas	12	18.26	8.47	4	10.76	8.47	8	7.50
Sasaram	56	62.46	32.50	26	42.55	32.50	30	19.91
Seosagar	131	98.71	46.83	63	63.51	46.83	68	35.20

Table 138: Category 2 water bodies and their area in district Rohtas

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Bikramganj	1	8.42	0.00				1	8.42
Dehri	1	5.63	5.53	1	5.63	5.53		
Dinara	1	5.15	1.62	1	5.15	1.62		
Nasriganj	1	6.51	4.70	1	6.51	4.70		
Rohtas	3	18.48	15.92	3	18.48	15.92		
Sasaram	5	32.98	15.85	5	32.98	15.85		

Table 139: Category 3 water bodies and their area in district Rohtas

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Nokha	1	10.98	10.38	1	10.98	10.38		
Sasaram	2	24.87	15.13	2	24.87	15.13		

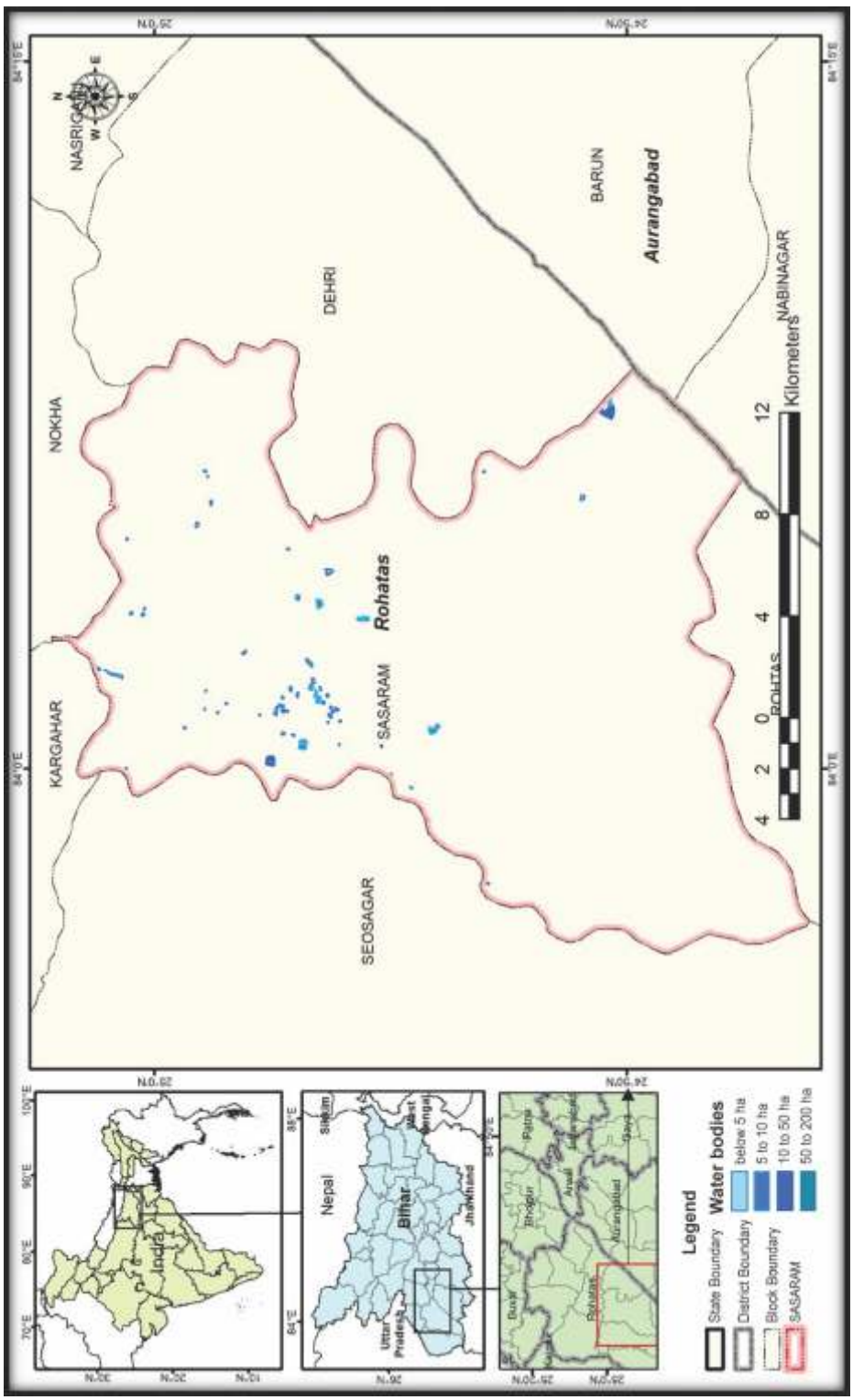


Figure 69: Waterbodies of block Sasaram of district Rohtas

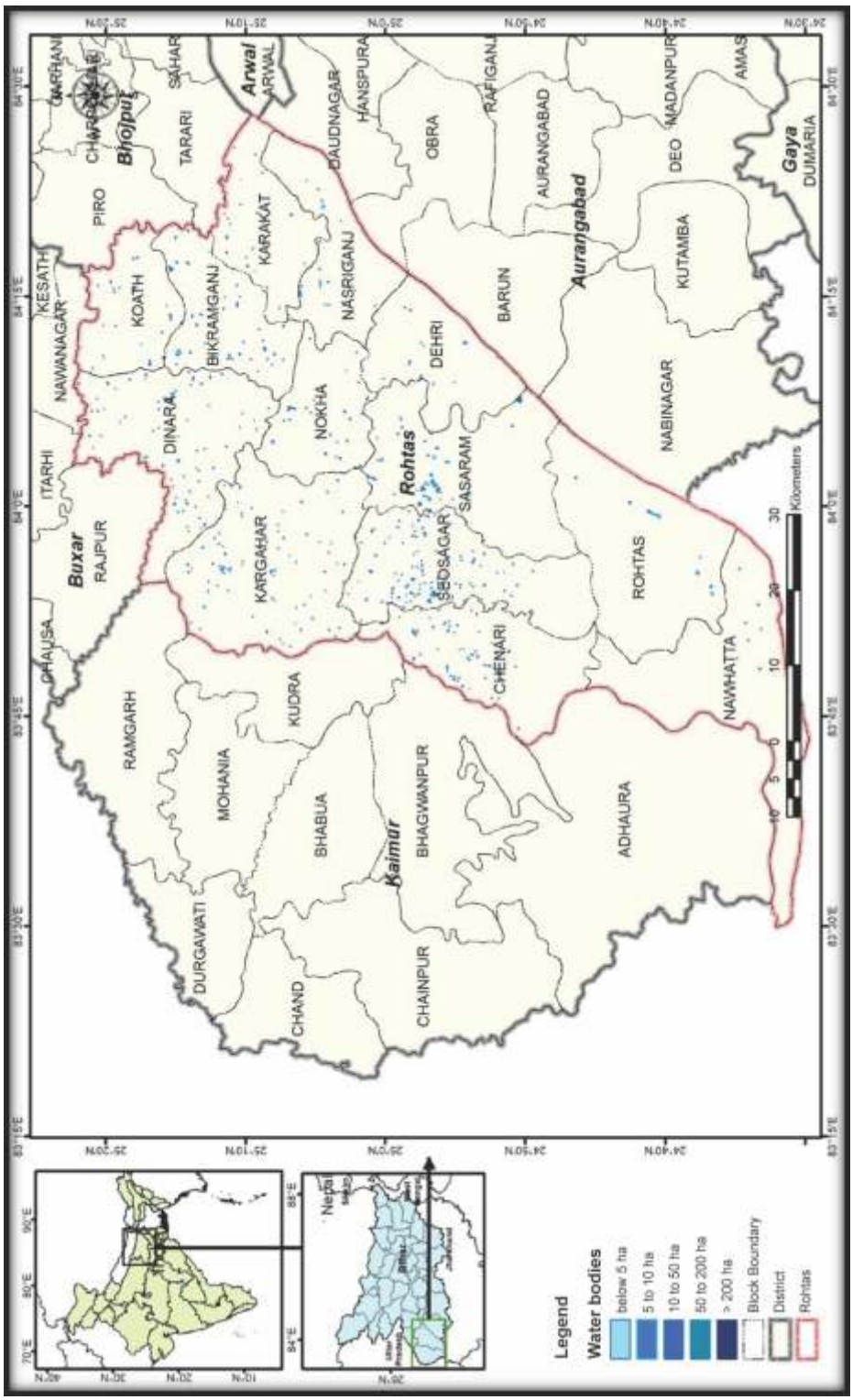


Figure 70: Waterbodies of district Rohtas

Saharsa

Saharsa was created on 1st of April 1954. Earlier Saharsa district was within Bhagalpur Division. Two new districts Madhepura & Supaul have been formed from Saharsa district on 30.04.1981 and 1991. Now Saharsa district consists of 2 subdivisions, viz. Saharsa Sadar and Simri Bakhtiarpur. The district consists of 10 development blocks. Saharsa shares boundary with Madhepura Supaul, Madhubani, Khagariya and Darbhanga. The district is having geo-coordinates N-E 26°04'10"/ 86°19'15" and S-W 25°35'18"/86°52'30" Total area of the district is 1661 km^2 with population of 19,00,661.

For the district of Saharsa, number of water bodies stand at 1156 they occupy a total maximum area of 1132.72 hectares and a total minimum area of 505.86 hectares and a total average area of 819.29 hectares. The share of perennial water bodies in this district stand at 305 units which have a maximum and minimum area of 682.38 and 505.85 hectares respectively. The seasonal water bodies have a contribution of 851 units having a total maximum area of 450.34 hectares.The number of water bodies and their area is given in table140. In category 1 the total number of water bodies stand at 1130 units having a total maximum and minimum areas of 604.84 and 157.02 hectares respectively. In this category the total units of perennial water bodies are 285 having a total maximum area and minimum area of 231.96 and 157.02 hectares respectively. Seasonal water bodies stand at 845 units having a maximum area of 372.89 hectares. The number of water bodies and their area under category 1 is given in table 141. In category 2 the total number of water body units are 9 their total maximum and minimum areas are 53.52 and 16.01 hectares respectively. The numbers of perennial water bodies stand at 5 units having maximum and minimum areas of 28.36 and 16.01 hectares respectively. The numbers of seasonal

water bodies stand at 3 units having maximum area of 20.03 hectares. The number of water bodies and their area under category 2 is given in table 142. In category 3 the total number of water bodies including perennial and seasonal stand at 16 units having maximum and minimum total area of 307.36 and 169.87 hectares respectively. In this category, the numbers of perennial water bodies stand at 14 units with maximum and minimum area water spread area of 255.05 and169.87 hectares respectively. In this category the number of seasonal water bodies are 2 with the maximum water spread area of 52.31 hectares. The number of water bodies and their area under category 3 is given in table 143. There is a single perennial water body in this category with a maximum area of 167.00 hectares and a minimum area of 162.97 hectares as mention in table 144.There is no waterbody in category 5.Waterbodies of block khara and district Saharsa is given figure 71 and 72 respectively.

Table 140: Total water bodies and their area in district Saharsa

Block Name	Total number of water bodies	Maximum Area(ha)	Minimum Area(ha)	Average Area(ha)
Khara	389	236.22	60.65	148.43
Mehsi	86	66.46	12.85	39.66
Nauhatta	107	67.28	15.2	41.24
Salkhua	132	155.44	70.4	112.92
Simri Bhaktipur	216	476.94	303.61	390.28
Sonbarsa	63	26.15	6.38	16.26
Sour Bazar	163	104.23	36.77	70.50

Table 141: Category 1 water bodies and their area in district Saharsa

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Khara	386	178.22	60.65	111	83.73	60.65	275	94.49
Mehsi	83	48.94	8.92	13	16.70	8.92	70	32.25
Nauhatta	107	67.28	15.20	23	20.32	15.20	84	46.96
Salkhua	128	83.49	17.44	37	27.27	17.44	91	56.22
Simri Bhaktipur	202	131.96	31.85	51	52.79	31.85	151	79.17
Sonbarsa	63	26.15	6.38	13	8.35	6.38	50	17.80
Sour Bazar	161	68.80	16.58	37	22.80	16.58	124	46.00

Table 142: Category 2 water bodies and their area in district Saharsa

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Khara	1	5.69	0.00				1	5.69
Mehsi	3	17.52	3.93	1	5.10	3.93	1	7.29
Salkhua	1	7.05	0.00				1	7.05
Simri Bhaktipur	4	23.26	12.08	4	23.26	12.08		

Table 143: Category 3 water bodies and their area in district Saharsa

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Khara	2	52.31	0.00				2	52.31
Salkhua	3	64.90	52.97	3	64.90	52.97		
Simri Bhaktipur	9	154.72	96.71	9	154.72	96.71		
Sour Bazar	2	35.43	20.19	2	35.43	20.19		

Table 144: Category 4 water bodies and their area in district Saharsa

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Simri Bhaktipur	1	167.00	162.97	1	167.00	162.97		

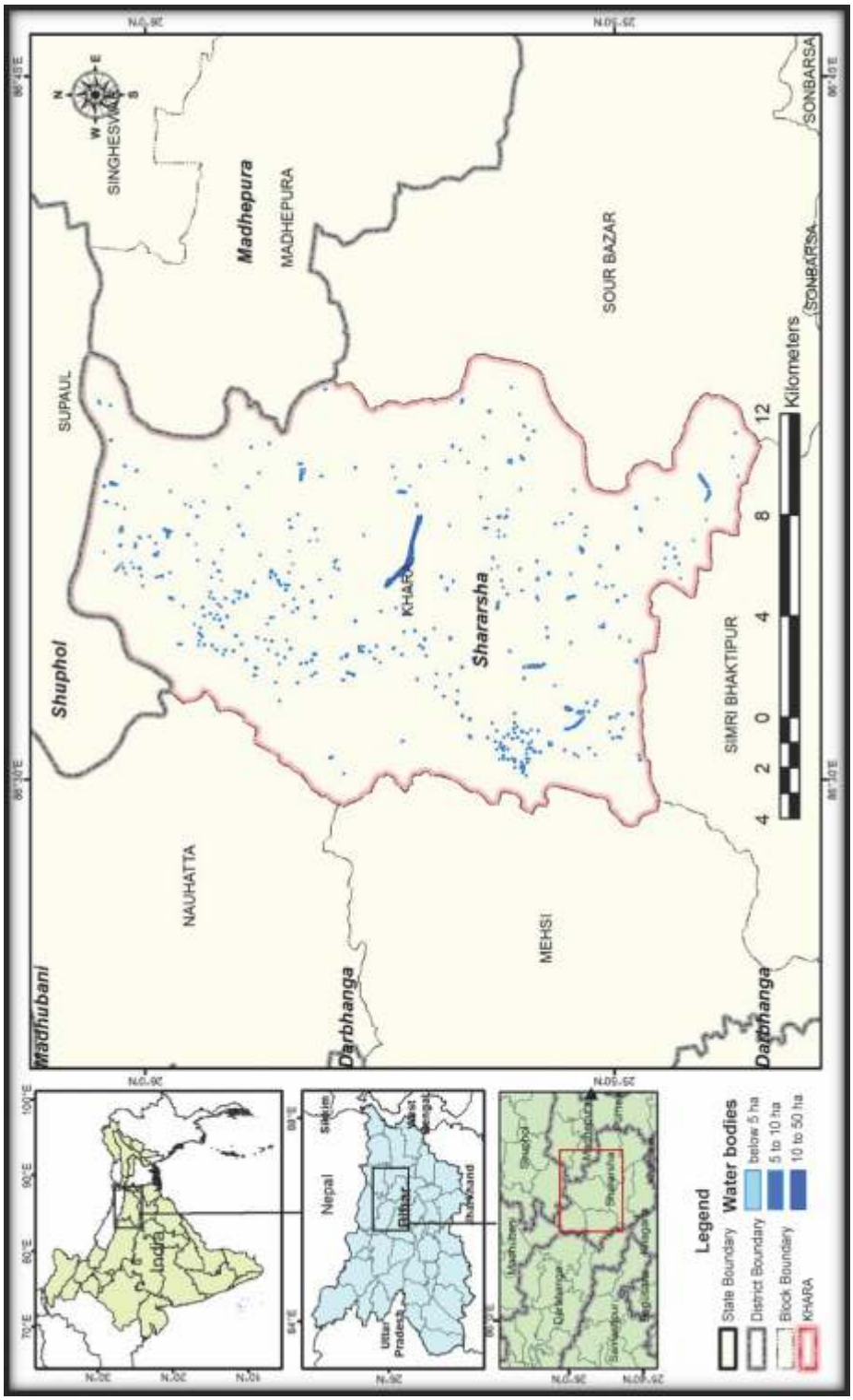


Figure 71: Waterbodies of block Khara of district Saharsa

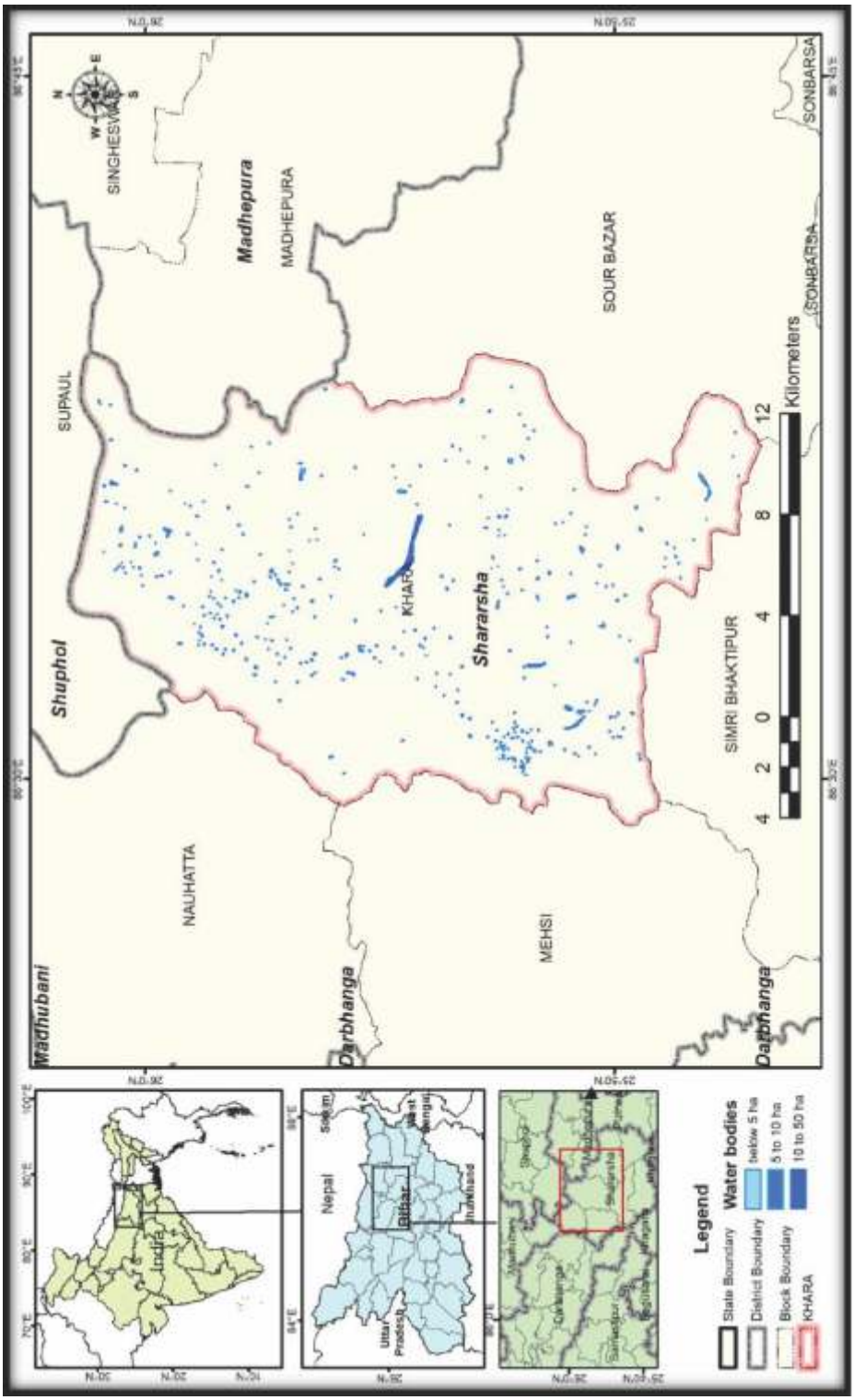


Figure 72: Waterbodies of district Saharsa

Samastipur

Samastipur became a district in 1972 when it was split from Darbhanga district. Samastipur is spread over an area of 2904 km^2. Samastipur is bounded on the north by the Bagmati River which separates it from Darbhanga district. On the west it is bordered by Vaishali and some part of Muzaffarpur district, on the south by the Ganges, while on its east it has Begusarai and some part of Khagaria district. District has a total population of 4,261,566 (according to census 2011).

For the district of Samastipur, number of water bodies stand at 1800 they occupy a total maximum area of 2625.58 hectares and a total minimum area of 660.57 hectares and a total average area of 1643.1 hectares. The share of perennial water bodies in this district stand at 428 units which have a maximum and minimum area of 1153.6 and 660.58 hectares respectively. The seasonal water bodies have a contribution of 1372 units having a total maximum area of 1471.99 hectares. The number of water bodies and their area is given in table145. In category 1 the total number of water bodies stand at 1732 units having a total maximum and minimum areas of 1315.15 and 320.66 hectares respectively. In this category the total units of perennial water bodies are 390 having a total maximum area and minimum

area of 463.57 and 320.66 hectares respectively. Seasonal water bodies stand at 1342 units having a maximum area of 851.55 hectares. The number of water bodies and their area under category 1 is given in table 146. In category 2 the total number of water body units are 32 their total maximum and minimum areas are 229.57 and 60.93 hectares respectively. The numbers of perennial water bodies stand at 16 units having maximum and minimum areas of 116.1 and 60.93 hectares respectively. The numbers of seasonal water bodies stand at 16units having maximum area of. 113.49 hectares. The number of water bodies and their area under category 2 is given in table 147. In category 3 the total number of water bodies including perennial and seasonal stand at 33 units having maximum and minimum total area of 778.63 and 238.05 hectares respectively. In this category, the numbers of perennial water bodies stand at 21 units with maximum and minimum area water spread area of 523.56 and 238.05 hectares respectively. In this category the number of seasonal water bodies are 12 with the maximum water spread area of 255.08 hectares. The number of water bodies and their area under category 3 is given in table 148. There are 3 number of category 4 water bodies with 1 number of perennial and 2 number of seasonal units of them. The perennial type has a maximum area of 50.34 hectares and a minimum area of 40.95 hectares while the seasonal type has a maximum area of 251.87 hectares bringing the total maximum area to 302.21 hectares of water spread area as given in table 149. There is are 2 water body units of perennial type in category 5 with a maximum water area of 747.28 hectares and a minimum water area of 556.34 hectares as mention in table 150. Waterbodies of block Rosera and district Samastipur is given figure 73 and 74 respectively.

Table 145: Total water bodies and their area in district Samastipur

Block Name	Total number of water bodies	Maximum Area(ha)	Minimum Area(ha)	Average Area(ha)
Bibhutpur	115	156.2	30.34	93.27
Dalsingh Sarai	63	213.91	8.43	111.17
Hasanpur	169	210.67	41.24	125.96
Kalyanpur	176	304.06	112.13	208.10
Mohiuddinagar	46	133.47	64.11	98.79
Morwa	89	50.95	9.13	30.04
Patori	61	84.4	25.14	54.77
Pusa	104	68.22	13.19	40.71
Rosera	297	572.46	142.89	357.68
Sairanjan	103	109.69	6.33	58.01
Samastipur	151	120.71	20.5	70.60
Singhia	113	172.09	75.43	123.76
Ujiarpir	103	76.38	16.49	46.44
Warisnagar	210	352.37	95.22	223.80

Table 146: Category 1 water bodies and their area in district Samastipur

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Bibhutpur	110	66.74	3.74	5	4.43	3.74	105	62.31
Dalsingh Sarai	62	43.44	8.43	6	12.68	8.43	56	30.75
Hasanpur	163	111.32	31.64	48	46.63	31.64	115	64.69
Kalyanpur	168	138.72	41.21	53	60.22	41.21	115	78.49
Mohiuddinagar	39	36.34	5.47	5	8.77	5.47	34	27.57
Morwa	89	50.95	9.13	7	12.09	9.13	82	38.86
Patori	57	42.12	8.16	6	9.96	8.16	51	32.16
Pusa	103	58.75	12.98	14	18.31	12.98	89	40.44
Rosera	279	252.15	76.31	112	122.11	76.31	167	130.04
Sairanjan	102	64.66	6.33	5	7.51	6.33	97	57.15
Samastipur	149	88.77	18.32	18	24.39	18.32	131	64.38
Singhia	109	92.07	42.04	49	57.21	42.04	60	34.86
Ujiarpir	101	64.91	9.92	11	15.22	9.92	90	49.68
Warisnagar	201	204.21	46.98	51	64.04	46.98	150	140.17

Table 147: Category 2 water bodies and their area in district Samastipur

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Bibhutpur	2	13.18	3.78	1	5.58	3.78	1	7.61
Hasanpur	1	7.85	0.00				1	7.85
Kalyanpur	3	22.31	12.00	2	13.82	12.00	1	8.50
Mohiuddinagar	4	28.91	10.56	2	15.41	10.56	2	13.50
Patori	3	23.78	7.88	1	9.90	7.88	2	13.88
Pusa	1	9.47	0.21	1	9.47	0.21		
Rosera	9	63.84	2.33	2	16.10	2.33	7	47.74
Samastipur	1	5.04	0.00				1	5.04
Singhia	2	16.40	1.63	1	7.03	1.63	1	9.37
Ujiarpir	2	11.48	6.57	2	11.48	6.57		
Warisnagar	4	27.31	15.97	4	27.31	15.97		

Table 148: Category 3 water bodies and their area in district Samastipur

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Bibhutpur	3	76.27	22.83	3	76.27	22.83		
Hasanpur	5	91.49	9.60	2	25.24	9.60	3	66.25
Kalyanpur	5	143.03	58.93	3	100.73	58.93	2	42.30
Mohiuddinagar	3	68.22	48.07	3	68.22	48.07		
Patori	1	18.51	9.10	1	18.51	9.10		
Rosera	7	124.72	23.30	2	50.28	23.30	5	74.44
Sairanjan	1	45.03	0.00				1	45.03
Samastipur	1	26.90	2.18	1	26.90	2.18		
Singhia	2	63.61	31.77	1	36.56	31.77	1	27.06
Warisnagar	5	120.85	32.27	5	120.85	32.27		

Table 149: Category 4 water bodies and their area in district Samastipur

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Dalsingh Sarai	1	170.47	0.00				1	170.47
Rosera	2	131.74	40.95	1	50.34	40.95	1	81.40

Table 150: Category 5 water bodies and their area in district Pashchim Champaran

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Bairia	1	346.93	265.93	1	346.93	265.93		
Majhaulia	1	400.35	290.41	1	400.35	290.41		

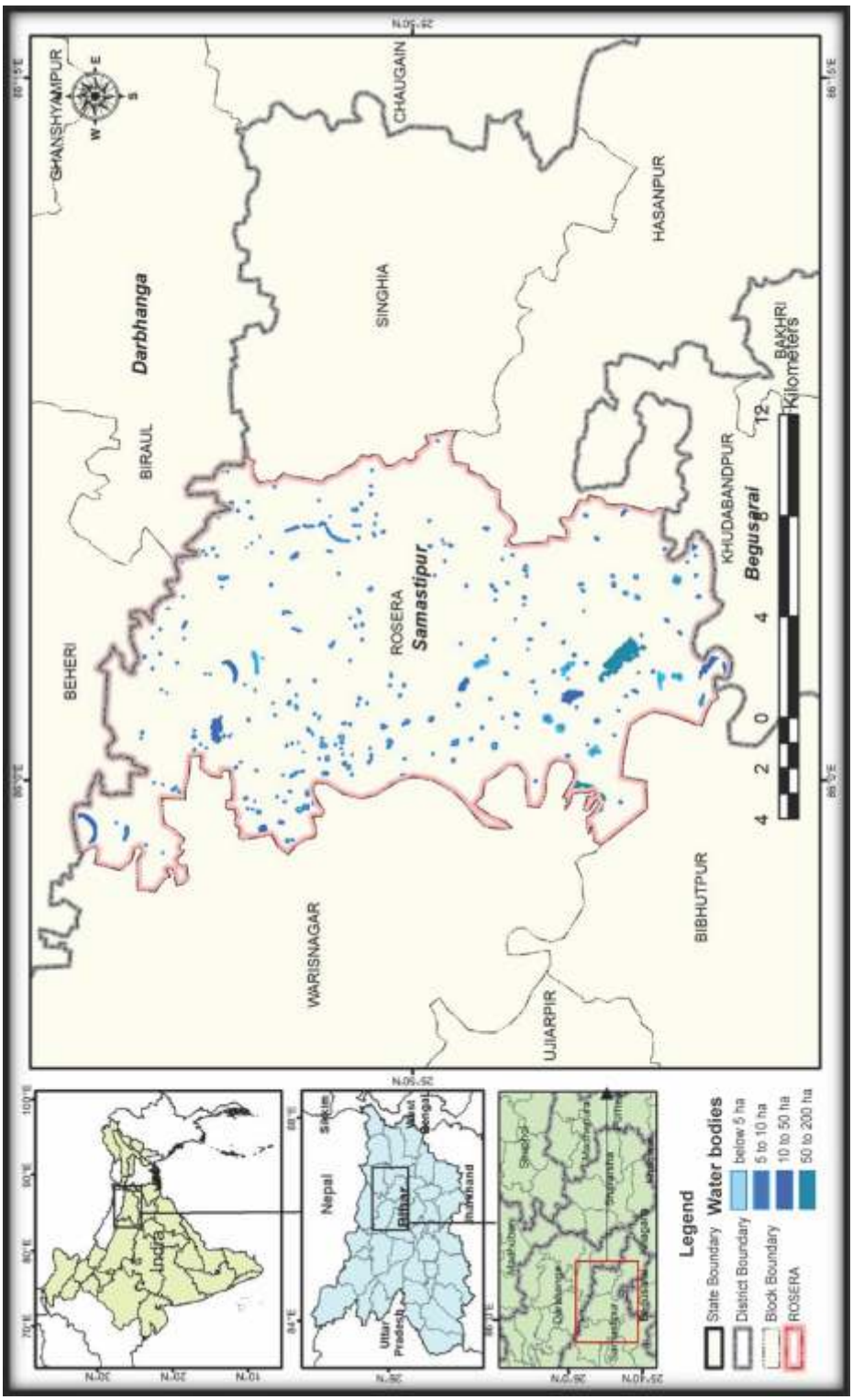


Figure 73: Waterbodies of block Rosera of district Samastipur

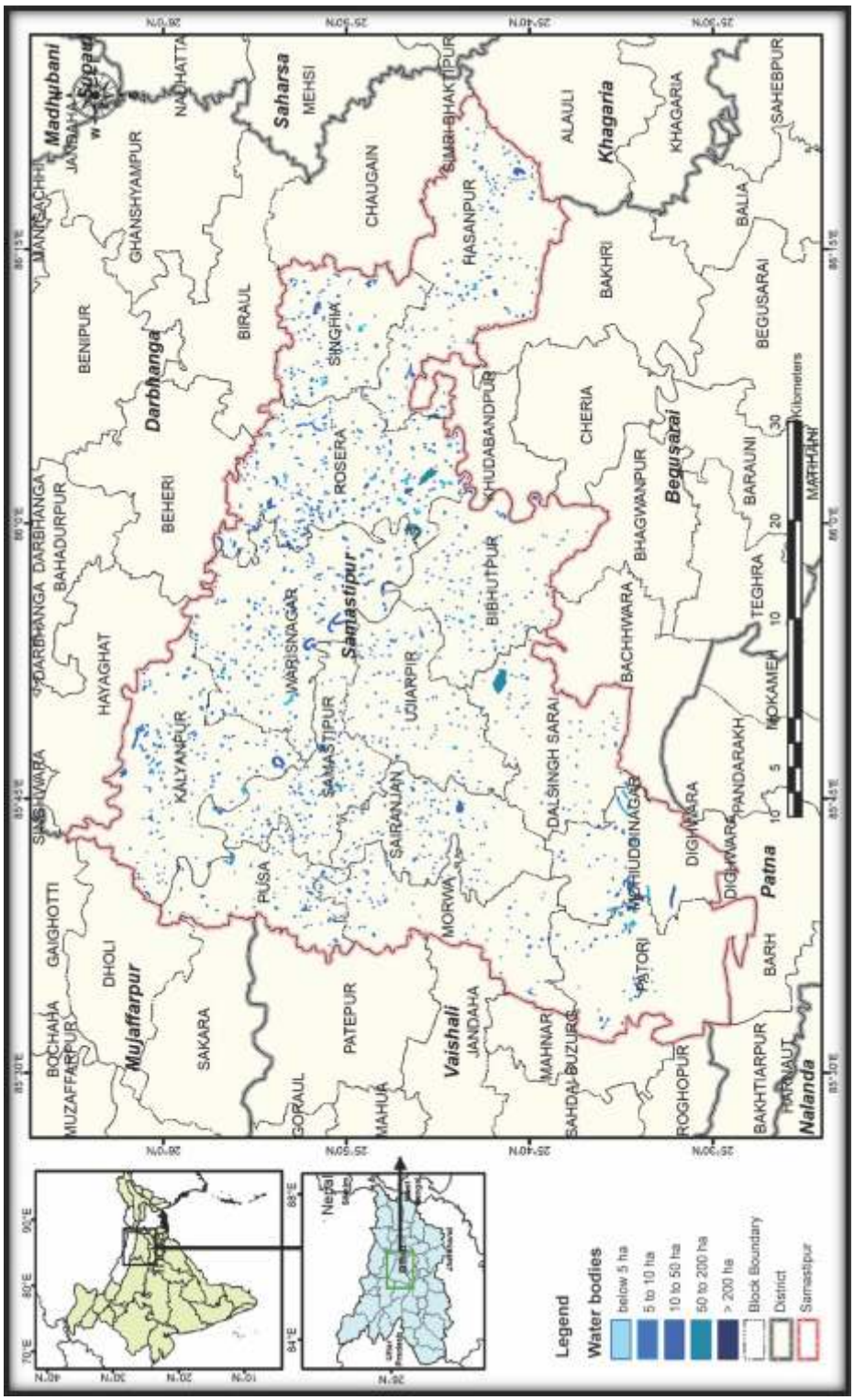


Figure 74: Waterbodies of district Samastipur

Saran

The district is a part of the Saran Division, is also known as Chapra district after the headquarters of the district – Chapra. Saran district occupies an area of 2,641 km^2. Saran District comprises Three(3) Sub-divisions: Chapra, Marhaura, Sonpur. District shares boundary with Siwan, Muzaffarpur, Gopalganj, Vaishali, Patna, Bhojpur and Uttar Pradesh State. The population of thr district is 39,51,862. (According to census 2011)

For the district of Saran, number of water bodies stand at 1340 they occupy a total maximum area of 1794.1 hectares and a total minimum area of 340.94 hectares and a total average area of 1067.52 hectares. The share of perennial water bodies in this district stand at 368 units which have a maximum and minimum area of 796.72 and 340.92 hectares respectively. The seasonal water bodies have a contribution of 972 units having a total maximum area of 997.37 hectares. The number of water bodies and their area is given in table 151.

In category 1 the total number of water bodies stand at 1306 units having a total maximum and minimum areas of 908.28 and 244.26 hectares respectively. In this category the total units of perennial water bodies are 355 having a total maximum area and minimum area of 412.54 and 244.26 hectares respectively. Seasonal water bodies stand at 951 units having a maximum area of 495.78 hectares. The number of water bodies and their area under category 1 is given in table 152.

In category 2 the total number of water body units are 12 their total maximum and minimum areas are 81.89 and 8.44 hectares respectively. The numbers of perennial water bodies stand at 4 units having maximum and minimum areas of 29.92 and 8.44 hectares respectively. The numbers of seasonal water

bodies stand at 8 units having maximum area of 51.97 hectares. The number of water bodies and their area under category 2 is given in table 153. In category 3 the total number of water bodies including perennial and seasonal stand at19 units having maximum and minimum total area of 472.65 and 43.65 hectares respectively. In this category, the numbers of perennial water bodies stand at 7 units with maximum and minimum area water spread area of 181.77 and 43.65 hectares respectively. In this category the number of seasonal water bodies are 12 with the maximum water spread area of 290.87 hectares. The number of water bodies and their area under category 3 is given in table 154.

There are 3 number of category 4 water bodies with 2 number of perennial and 1 number of seasonal units of them. The perennial type has a maximum area of 172.49 hectares and a minimum area of 44.59 hectares while the seasonal type has a maximum area of 158.77 hectares bringing the total maximum area to 331.26 hectares of water spread area. The number of water bodies and their area under category 4 is given in table 155. There is no waterbodies in category 5. Waterbodies of block Jalalpur and district Saran is given figure 75 and 76 respectively.

Table 151: Total water bodies and their area in district Saran

Block Name	Total number of water bodies	Maximum Area(ha)	Minimum Area(ha)	Average Area(ha)
Amnaur	71	62.51	23.67	43.09
Baniapur	114	124.58	17.1	70.84
Chapra	155	121.18	40.36	80.77
Dariapur	60	74.51	23.99	49.25
Dighwara	14	13.88	2.55	8.22
Ekma	161	138.6	37.48	88.04
Garkha	82	58.16	16.73	37.44
Jalalpur	168	185.94	24.32	105.13
Manjhi	170	268.09	30.79	149.44
Marhaura	60	44.96	10.02	27.49
Parsa	90	109.31	16.67	62.99
Rasauli	40	43.05	6.31	24.68
Revelganj	64	66.27	13.25	39.76
Sonepur	44	54.21	4.05	29.13
Taraiya	47	428.85	73.65	251.25

Table 152: Category 1 water bodies and their area in district Saran

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Amnaur	70	56.13	22.82	29	39.50	22.82	41	16.64
Baniapur	109	70.32	14.08	21	26.84	14.08	88	43.48
Chapra	153	109.85	40.36	58	67.38	40.36	95	42.47
Dariapur	57	44.05	18.11	21	24.76	18.11	36	19.29
Dighwara	14	13.88	2.55	3	3.06	2.55	11	10.83
Ekma	158	89.12	15.73	21	24.78	15.73	137	64.34
Garkha	82	58.16	16.73	21	30.11	16.73	61	28.05
Jalalpur	164	97.14	21.61	38	35.69	21.61	126	61.45
Manjhi	166	106.35	27.46	41	44.86	27.46	125	61.49
Marhaura	60	44.96	10.02	23	16.73	10.02	37	28.23
Parsa	89	60.75	16.67	27	32.06	16.67	62	28.69
Rasauli	38	30.90	6.31	10	11.03	6.31	28	19.88
Revelganj	63	52.29	13.25	20	26.23	13.25	43	26.07
Sonepur	43	37.11	4.05	7	8.55	4.05	36	28.56
Taraiya	40	37.27	14.51	15	20.96	14.51	25	16.31

Table 153: Category 2 water bodies and their area in district Saran

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Amnaur	1	6.38	0.85	1	6.38	0.85		
Baniapur	1	8.57	1.32	1	8.57	1.32		
Chapra	2	11.33	0.00				2	11.33
Dariapur	1	6.66	0.00				1	6.66
Ekma	2	12.71	3.95	1	5.02	3.95	1	7.69
Jalalpur	2	18.50	2.32	1	9.95	2.32	1	8.55
Manjhi	1	5.60	0.00				1	5.60
Rasauli	2	12.14	0.00				2	12.14

Table 154: Category 3 water bodies and their area in district Saran

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Baniapur	4	45.69	1.70	1	13.89	1.70	3	31.80
Dariapur	2	23.80	5.88	1	11.57	5.88	1	12.22
Ekma	1	36.77	17.80	1	36.77	17.80		
Jalalpur	2	70.30	0.39	1	22.86	0.39	1	47.44
Manjhi	2	46.40	0.70	1	35.19	0.70	1	11.21
Parsa	1	48.55	0.00				1	48.55
Revelganj	1	13.98	0.00				1	13.98
Sonepur	1	17.10	0.00				1	17.10
Taraiya	5	170.06	17.18	2	61.49	17.18	3	108.57

Table 155: Category 4 water bodies and their area in district Saran

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Manjhi	1	109.74	2.63	1	109.74	2.63		
Taraiya	2	221.52	41.96	1	62.75	41.96	1	158.77

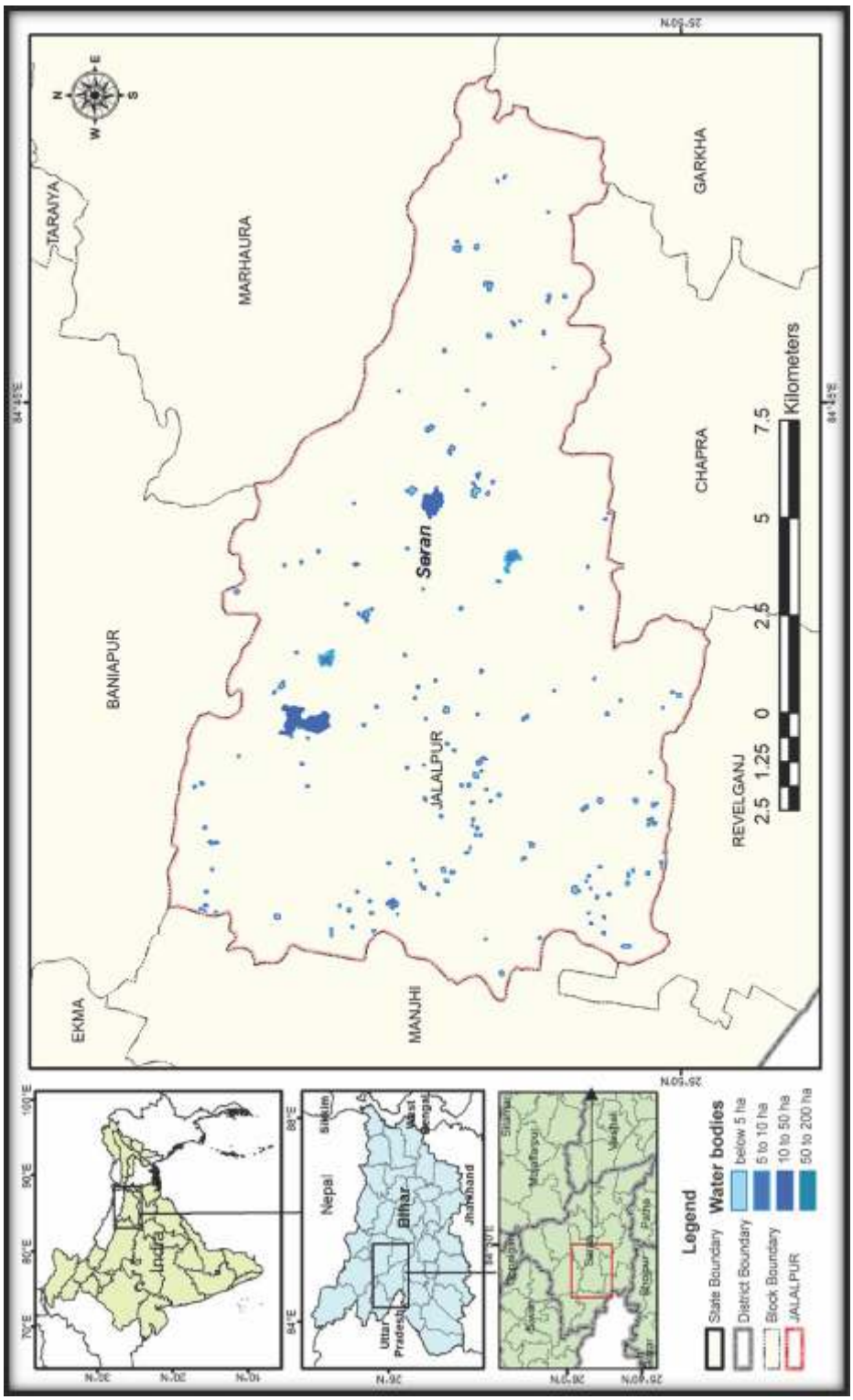


Figure 75: Waterbodies of block Jalalpur of district Saran

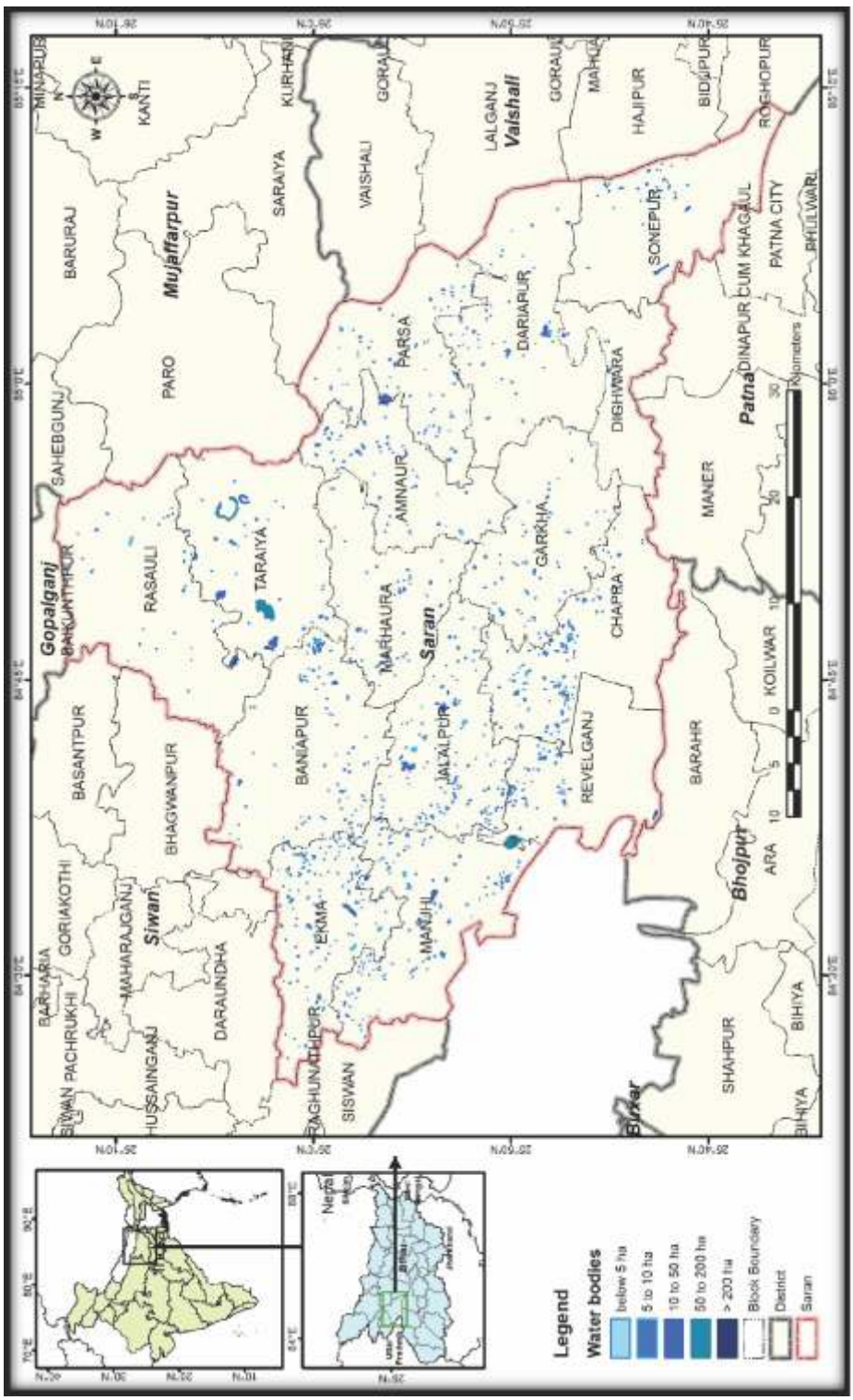


Figure 76: Waterbodies of district Saran

Sheikhpura

Sheikhpura is a new district carved out of Munger district on 31-07-1994. This district lies in the southern part of Bihar that is bounded by Nalanda & Patna district in North, Nawada & Jamui district in South, Lakhisarai district in East and Nalanda & Nawada district in West. The district spanning in 689 km^2 is situated between North latitudes 24º45′ and 25º and East longitude 85º45′ and 86º45′. According to census 2011 the population of district is 6,36,342.

For the district of Sheikhpura, number of water bodies stand at 333 They occupy a total maximum area of 335.88 hectares and a total minimum area of 116.64 hectares and a total average area of 226.26 hectares. The share of perennial water bodies in this district stand at 93 units which have a maximum and minimum area of 165.97 and 116.64 hectares respectively. The seasonal water bodies have a contribution of 240 units having a total maximum area of 169.91 hectares. The number of water bodies and their area is given in table 156.

In category 1 the total number of water bodies stand at 328 units having a total maximum and minimum areas of 243.45 and 91.39 hectares respectively. In this category the total units of perennial water bodies are 90 having a total maximum area and minimum area of 120.22 and 91.39 hectares respectively. Seasonal water bodies stand at 238 units having a maximum area of 123.23 hectares. The number of water bodies and their area under category 1 is given in table 157.

In category 2 there is 1 perennial water body with a maximum water area of 6.80 hectares and a minimum water area of 5.66 hectares. The number of water bodies and their area under category 2 is given in table 158.

In category 3 the total number of water bodies including perennial and seasonal stand at 4 units having maximum and minimum total area of 85.63 and 19.59 hectares respectively. In this category, the numbers of perennial water bodies stand at 2 units with maximum and minimum area water spread area of 38.95 and 19.59 hectares respectively. In this category the number of seasonal water bodies are 2 with the maximum water spread area of 46.68 hectares. The number of water bodies and their area under category 3 is given in table 159.

Waterbodies of block Sheikhpura and district Sheikhpura is given figure 77 and 78 respectively.

Table 156: Total water bodies and their area in district Sheikhpura

Block Name	Total number of water bodies	Maximum Area(ha)	Minimum Area(ha)	Average Area(ha)
Arlari	140	91.02	30.55	60.78
Barabigha	57	73.15	14.95	44.05
Seikhpura	136	171.71	71.14	121.43

Table 157: Category 1 water bodies and their area in district Sheikhpura

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Arlari	140	91.02	30.55	30	39.94	30.55	110	51.08
Barabigha	56	45.86	14.95	14	21.06	14.95	42	24.80
Seikhpura	132	106.57	45.89	46	59.22	45.89	86	47.35

Table 158: Category 2 water bodies and their area in district Sheikhpura

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Seikhpura	1	6.80	5.66	1	6.80	5.66		

Table 159: Category 3 water bodies and their area in district Sheikhpura

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Barabigha	1	27.29	0.00				1	27.29
Seikhpura	3	58.34	19.59	2	38.95	19.59	1	19.39

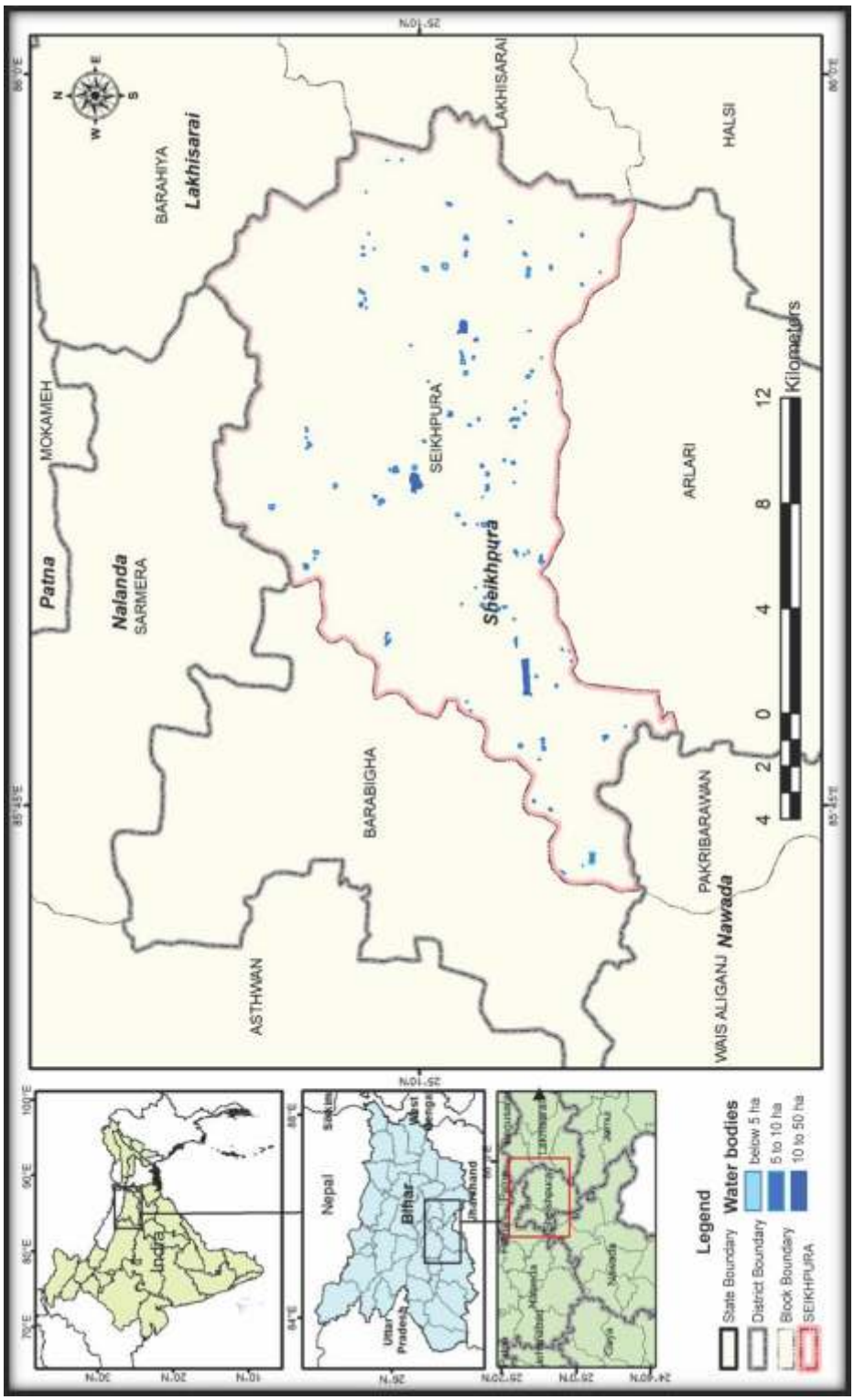


Figure 77: Waterbodies of block Sheikhpura of district Sheikhpura

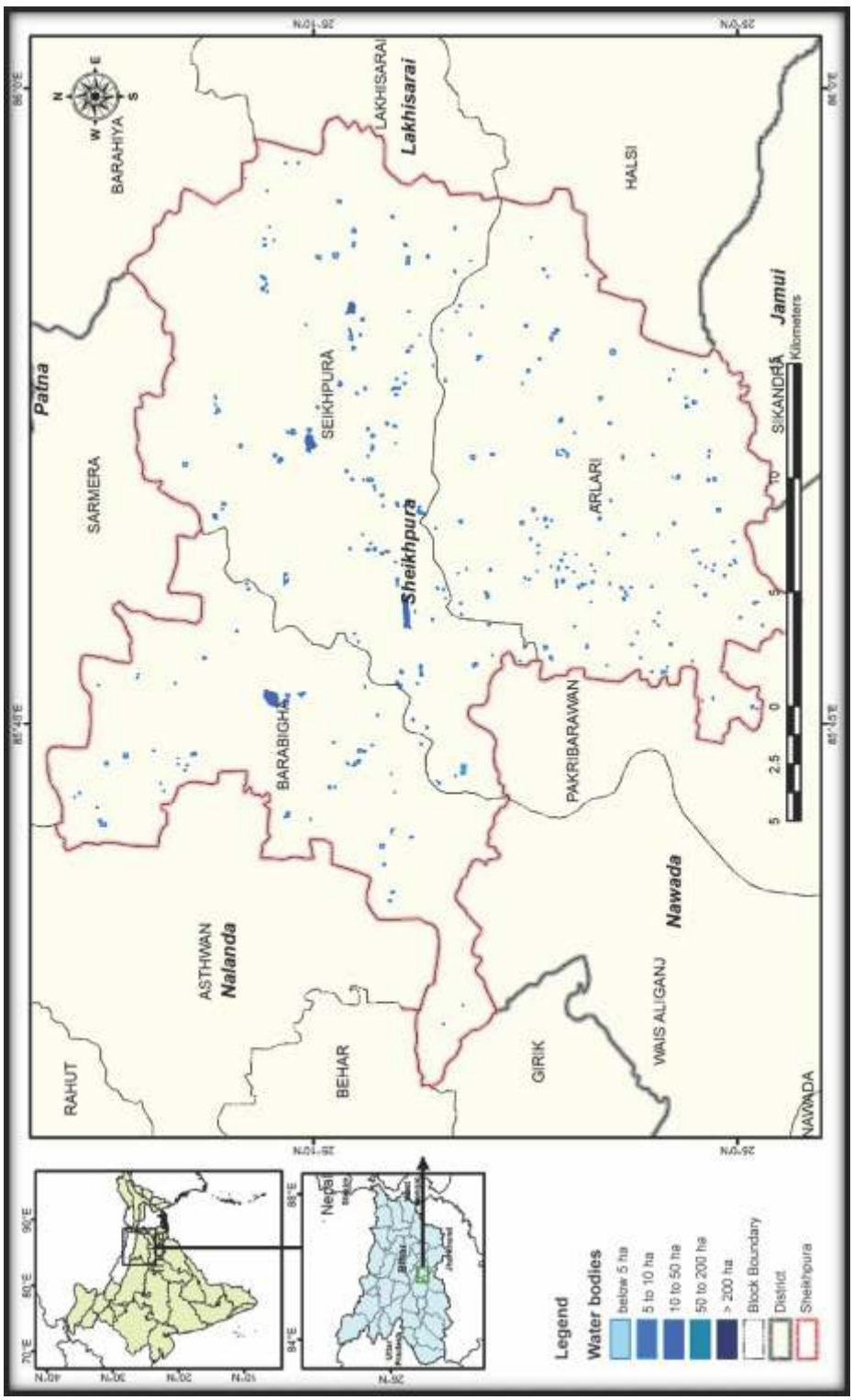


Figure 78: Waterbodies of district Sheikhpura

Sheohar

This district was carved out of Sitamarhi district in 1994. The district occupies an area of 443 km^2 and has a population of 656,916 (as of 2011). Sheohar is known for its greenery and cleanest. Cadamba and teak are the principle trees of this district.

It is bounded by three districts. Sitamarhi is in the north and east, East Champaran is in the west and Muzaffarpur is in the south. Sheohar district has only one sub-division named Sheohar.

For the district of Sheohar, number of water bodies stand at 194. They occupy a total maximum area of 145.29 hectares and a total minimum area of 26.35 hectares and a total average area of 85.82 hectares. The share of perennial water bodies in this district stand at 30 units which have a maximum and minimum area of 45.65 and 26.35 hectares respectively. The seasonal water bodies have a contribution of 164 units having a total maximum area of 99.65 hectares. The number of water bodies and their area is given in table 160.

In category 1 the total number of water bodies stand at 193 units having a total maximum and minimum areas of 139.71 and 25.19 hectares respectively. In this category the total units of perennial water bodies are 29 having a total maximum area and minimum area of 40.07 and 25.19 hectares respectively. Seasonal water bodies stand at 164 units having a maximum area of 99.65 hectares. The number of water bodies and their area under category 1 is given in table 161.

There is a single water body of perennial type in category 2 with a maximum water area of 5.58 hectares and a minimum water area of 1.16 hectares. The number of water bodies and their area under category 2 is given in table 162. There is no waterbodies in category 3,4 and 5.Waterbodies of block Sheohar and district Sheohar is given figure 79 and 80 respectively.

Table 160: Total water bodies and their area in district Sheohar

Block Name	Total number of water bodies	Maximum Area(ha)	Minimum Area(ha)	Average Area(ha)
Balsand	41	43.04	10.58	26.81
Piprahi	46	37.62	8.13	22.87
Seohar	107	64.63	7.64	36.14

Table 161: Category 1 water bodies and their area in district Sheohar

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Balsand	41	43.04	10.58	11	14.54	10.58	30	28.51
Piprahi	45	32.04	6.97	7	11.36	6.97	38	20.68
Seohar	107	64.63	7.64	11	14.17	7.64	96	50.46

Table 162: Category 2 water bodies and their area in district Sheohar

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Piprahi	1	5.58	1.16	1	5.58	1.16		

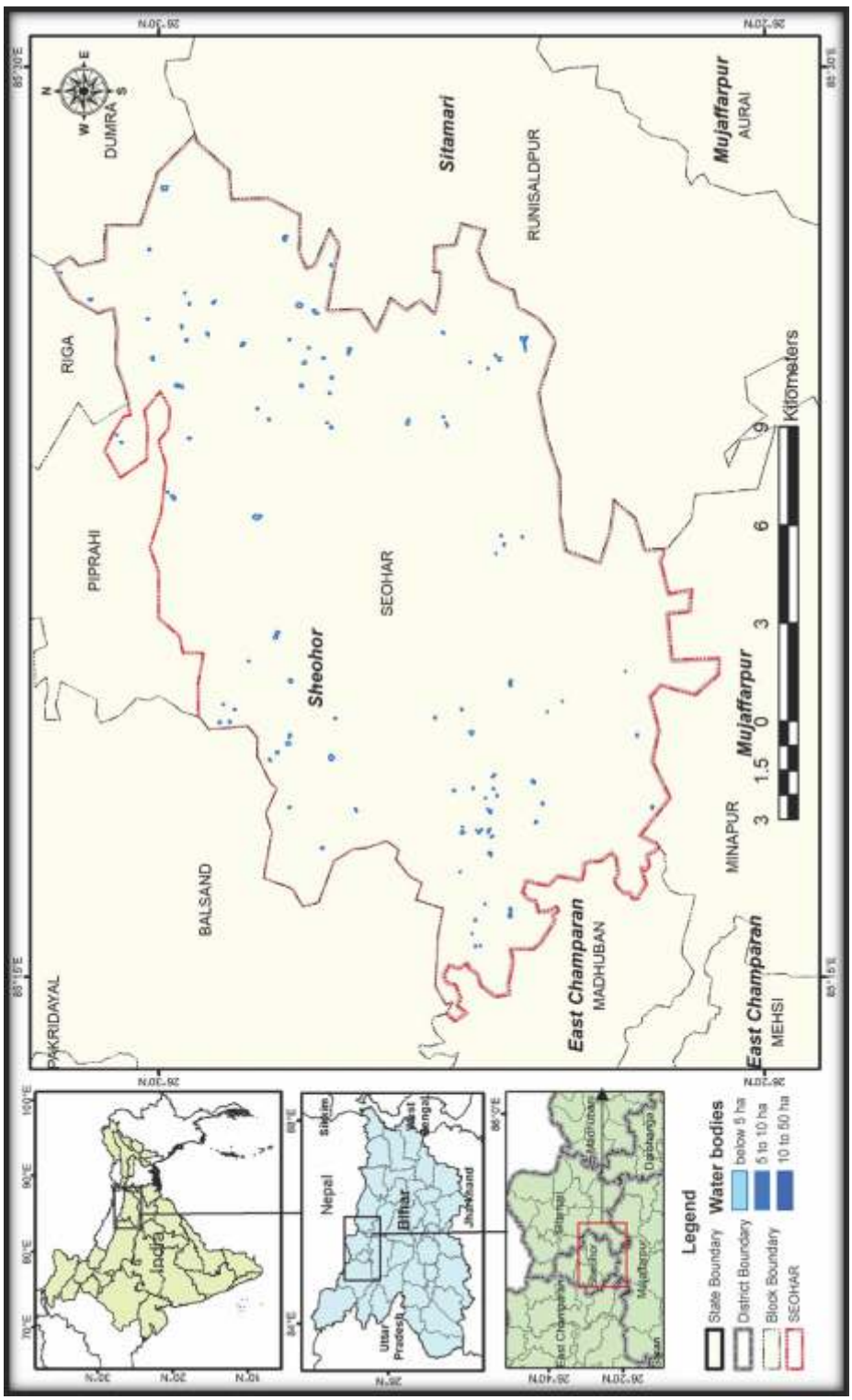


Figure 79: Waterbodies of block Seohar of district Sheohar

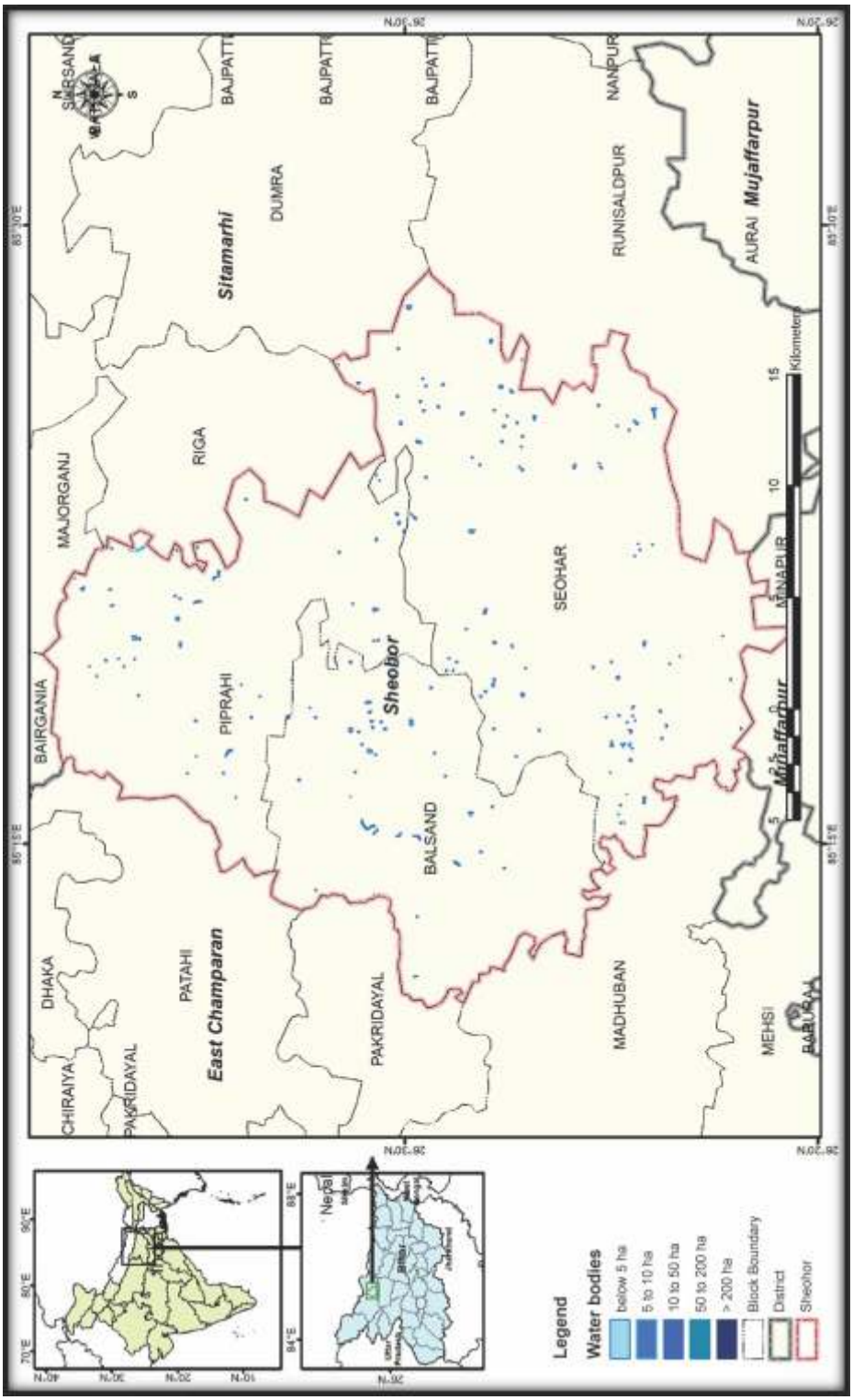


Figure 80: Waterbodies of district Sheohar

Sitamarhi

The district of Sitamarhi was carved out of Muzaffarpur district on 11th December 1972. It is situated in the northern part of Bihar. Its headquarter is located at Dumra, five kilometers south of Sitamarhi. Sitamarhi spread over 2295 km^2 and sahres boundary with East Champaran and sheohar in west, Nepal in North, Madhubani and Darbhanga in east and Muzaffarpur in South. The population of state is 34,23,574 as per the 2011 census.

For the district of Sitamarhi, number of waterbodies stand at 2240. They occupy a total maximum area of 1893.57 hectares and a total minimum area of 629.57 hectares and a total average area of 1261.56 hectares. The share of perennial water bodies in this district stand at 739 units which have a maximum and minimum area of 1001.73 and 629.56 hectares respectively. The seasonal water bodies have a contribution of 1501 units having a total maximum area of 891.83 hectares. The number of water bodies and their area is given in table 163.

In category 1 the total number of water bodies stand at 2208 units having a total maximum and minimum areas of 1536.48 and 493.91 hectares respectively. In this category the total units of perennial water bodies are 720 having a total maximum area and minimum area of 750.92 and 493.91 hectares respectively. Seasonal water bodies stand at 1488 units having a maximum area of 785.56 hectares. The number of water bodies and their area under category 1 is given in table 164.

In category 2 the total number of water body units are 18 their total maximum and minimum areas are 132.2 and 19.88 hectares respectively. The numbers of perennial water bodies stand at 7 units having maximum and minimum areas of 55.44 and 19.88 hectares respectively. The numbers of seasonal water bodies stand at 10 units having maximum area of 71.15 hectares. The number of water bodies and their area under category 2 is given in table 165.

In category 3 the total number of water bodies including perennial and seasonal stand at 14 units having maximum and minimum total area of 224.87 and 115.77 hectares respectively. In this category, the numbers of perennial water bodies stand at 12 units with maximum and minimum area water spread area of 195.37 and 115.77 hectares respectively. In this category the number of seasonal water bodies are 2 with the maximum water spread area of 29.5 hectares. The number of water bodies and their area under category 3 is given in table 166.

There is no waterbody in category 4 and 5. Waterbodies of block Pariharr and district Sitamarhi is given figure 81 and 82 respectively.

Table 163: Total water bodies and their area in district Sitamarhi

Block Name	Total number of water bodies	Maximum Area(ha)	Minimum Area(ha)	Average Area(ha)
Bairgania	51	77.16	32.73	54.94
Bajpatti	153	106.18	30.13	68.15
Bathnala	116	105.72	24.62	65.17
Dumra	159	159.87	25.13	92.50
Majorganj	75	100.98	38.6	69.79
Nanpur	312	383.57	157.77	270.67
Pariharr	409	209.36	81.5	145.43
Pupri	282	253.98	92.71	173.35
Riga	81	66.45	20.37	43.41
Runisaldpur	108	121.17	27.17	74.17
Sonbarsa	232	141.62	24.05	82.83
Sursand	262	167.51	74.79	121.15

Table 164: Category 1 water bodies and their area in district Sitamarhi

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Bairgania	49	45.40	10.13	10	21.55	10.13	39	23.85
Bajpatti	151	91.44	29.54	48	46.23	29.54	103	45.21
Bathnala	114	71.87	10.67	16	22.39	10.67	98	49.48
Dumra	155	121.42	23.34	29	39.30	23.34	126	82.11
Majorganj	72	50.20	5.08	7	9.93	5.08	65	40.27
Nanpur	301	271.01	114.93	140	176.53	114.93	161	94.48
Pariharr	409	209.36	81.50	171	109.01	81.50	238	100.35
Pupri	279	224.27	84.48	111	124.16	84.48	168	100.11
Riga	81	66.45	20.37	20	32.29	20.37	61	34.17
Runisaldpur	104	86.48	24.07	19	37.03	24.07	85	49.45
Sonbarsa	232	141.62	24.05	25	35.56	24.05	207	106.06
Sursand	261	156.96	65.75	124	96.94	65.75	137	60.02

Table 165: Category 2 water bodies and their area in district Sitamarhi

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Bajpatti	2	14.74	0.59	1	8.46	0.59	1	6.29
Bathnala	**1**	**8.85**	**0.46**	**1**	**8.85**	**0.46**		
Dumra	2	16.22	0.00				2	16.22
Majorganj	**2**	**13.50**	**0.00**				**2**	**13.50**
Nanpur	7	49.58	16.35	4	28.44	16.35	3	21.13
Pupri	**1**	**5.61**	**0.00**					
Runisaldpur	3	23.70	2.48	1	9.69	2.48	2	14.01

Table 166: Category 3 water bodies and their area in district Sitamarhi

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Bairgania	2	31.76	22.60	2	31.76	22.60		
Bathnala	1	25.00	13.49	1	25.00	13.49		
Dumra	2	22.22	1.78	2	22.22	1.78		
Majorganj	1	37.27	33.52	1	37.27	33.52		
Nanpur	4	62.99	26.49	2	33.49	26.49	2	29.50
Pupri	2	24.10	8.23	2	24.10	8.23		
Runisaldpur	1	10.99	0.62	1	10.99	0.62		
Sursand	1	10.54	9.04	1	10.54	9.04		

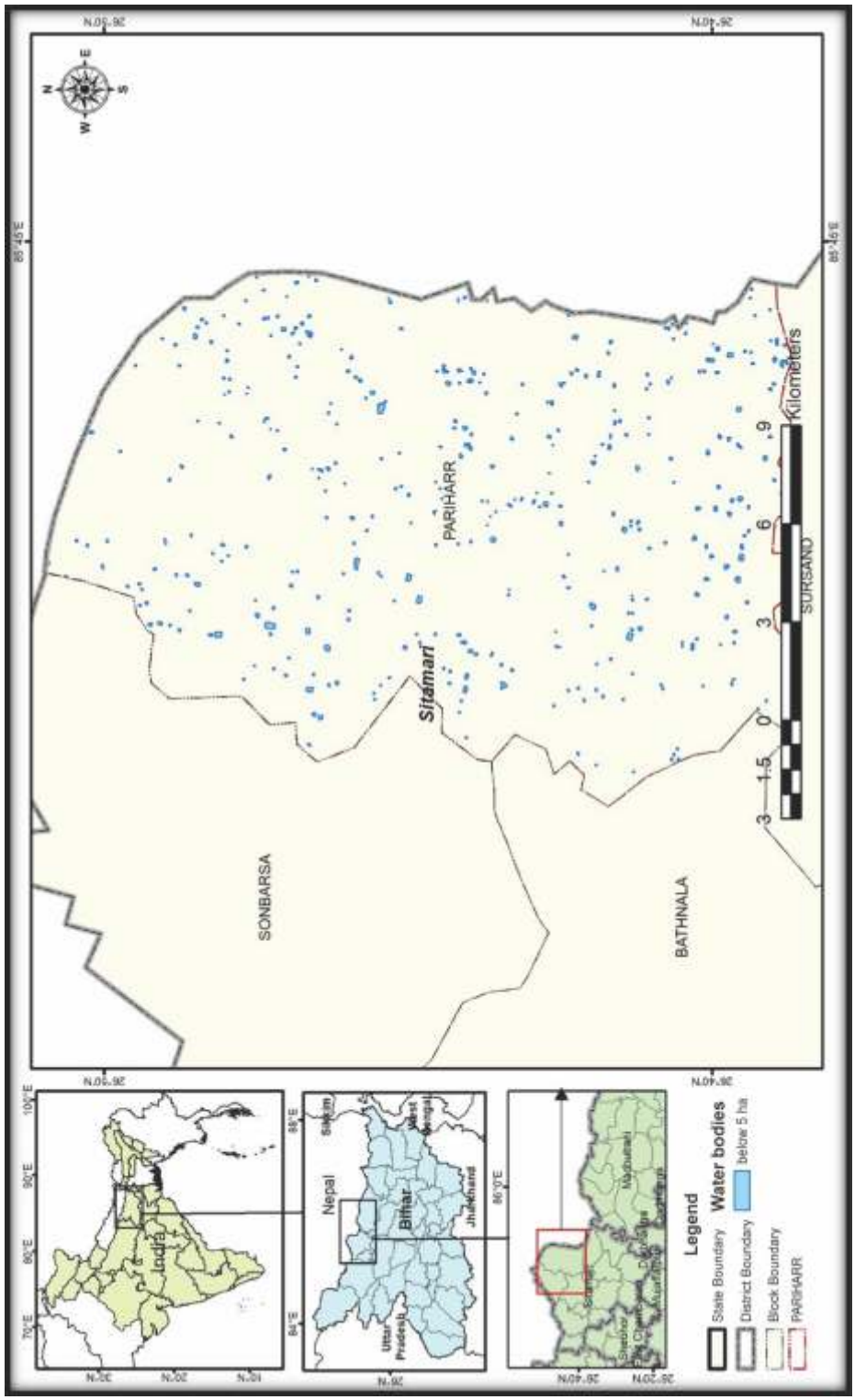


Figure 81: Waterbodies of block Pariharr of district Sitamarhi

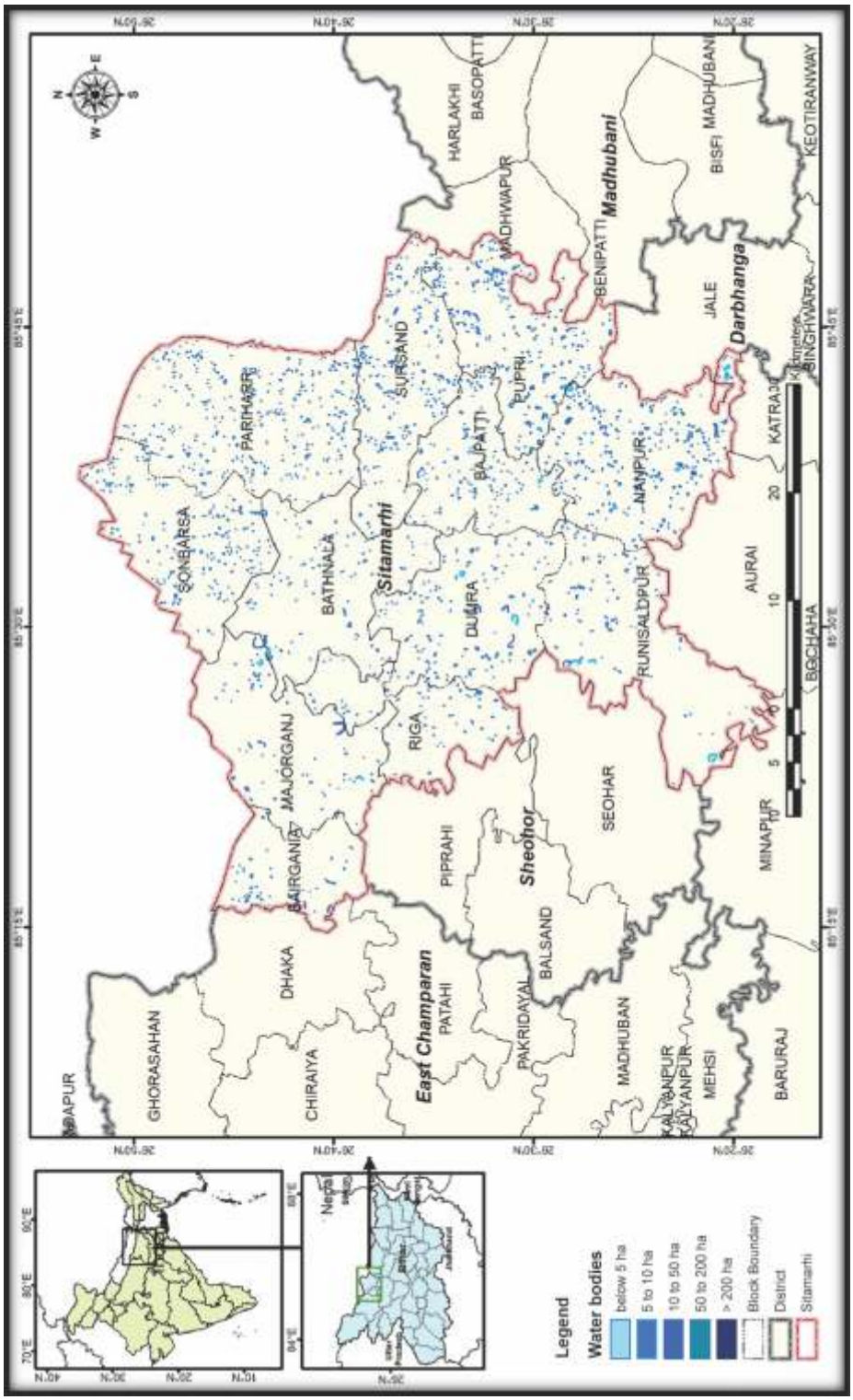


Figure 82: Waterbodies of district Sitamarhi

Siwan

Siwan, situated in the western part of the State, was originally a sub-division of Saran District, which in ancient days formed a part of Kosala Kingdom. The present district limits came into existence only in 1972, which is geographically situated at 25.58 to 26.23 North and 84.10 to 84.47 east. The total area of the Siwan district is about 2219 Sq. Km. with a population of 33,30,464 as per the 2011 census. The district is bounded on the east by the Saran district, on the north by Gopalganj district and on the west and south by two districts of Uttar Pradesh.

For the district of Siwan, number of water bodies stand at 1908. They occupy a total maximum area of 2099.86 hectares and a total minimum area of 326.19 hectares and a total average area of 1213.04 hectares. The share of perennial water bodies in this district stand at 472 units which have a maximum and minimum area of 799.48 and 326.2 hectares respectively. The seasonal water bodies have a contribution of 1436 units having a total maximum area of 1300.39 hectares. The number of water bodies and their area is given in table 167. In category 1 the total number of water bodies stand at 1871 units having a total maximum and minimum areas of 1263.53 and 304.88 hectares respectively. In this category the total units of perennial water bodies are 463 having a total maximum area and minimum area of 489.01 and 304.88 hectares respectively. Seasonal water bodies stand at 1408 units having a

maximum area of 774.53 hectares. The number of water bodies and their area under category 1 is given in table 168. In category 2 the total number of water body units are 17 their total maximum and minimum areas are 118.24 and 12.41 hectares respectively. The numbers of perennial water bodies stand at 4 units having maximum and minimum areas of 26.08 and 12.41 hectares respectively. The numbers of seasonal water bodies stand at 13 units having maximum area of 92.16 hectares. The number of water bodies and their area under category 2 is given in table 169. In category 3 the total number of water bodies including perennial and seasonal stand at 15 units having maximum and minimum total area of 361.59 and 6.1 hectares respectively. In this category, the numbers of perennial water bodies stand at 3 units with maximum and minimum area water spread area of 71.88 and 6.57 hectares respectively. In this category the number of seasonal water bodies are 13 with the maximum water spread area of 306.62 hectares. The number of water bodies and their area under category 3 is given in table 170. There are 5 number of category 4 water bodies with 3 number of perennial and 2 number of seasonal units of them. The perennial type has a maximum area of 229.44 hectares and a minimum area of 2.8 hectares while the seasonal type has a maximum area of 127.07 hectares bringing the total maximum area to 356.51 hectares of water spread area. The number of water bodies and their area under category 4 is given in table 171. Waterbodies of block Daruli and district Siwan is given figure 83 and 84 respectively.

Table 167: Total water bodies and their area in district Siwan

Block Name	Total number of water bodies	Maximum Area(ha)	Minimum Area(ha)	Average Area(ha)
Andar	303	210.32	54.3	132.31
Barharia	91	64.86	13.56	39.21
Basantpur	31	85.35	2.31	43.83
Bhagwanpur	41	104.22	5.16	54.69
Darauli	241	159.64	12.73	86.19
Daraundha	145	208.94	36.77	122.86
Goriakothi	35	96.16	3.95	50.06
Guthani	172	262.36	16.48	139.42
Hussainganj	187	182.79	47.32	115.06
Maharajganj	34	70.43	3.81	37.12
Mairwa	213	175.88	45.92	110.90
Pachrukhi	93	95.85	22.53	59.19
Raghunathpur	123	69.47	14.03	41.75
Siswan	59	204.37	9.88	107.12
Siwan	140	109.22	37.44	73.33

Table 168: Category 1 water bodies and their area in district Siwan

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Andar	302	172.02	54.30	94	81.58	54.30	208	90.44
Barharia	90	57.77	12.17	16	20.45	12.17	74	37.32
Basantpur	27	23.64	2.31	3	4.65	2.31	24	18.99
Bhagwanpur	36	33.86	5.16	7	8.65	5.16	29	25.21
Darauli	238	121.02	12.73	19	19.37	12.73	219	101.65
Daraundha	143	108.81	36.46	59	59.75	36.46	84	49.06
Goriakothi	32	25.68	3.95	5	5.82	3.95	27	19.86
Guthani	167	93.54	4.59	6	8.87	4.59	161	84.67
Hussainganj	184	163.81	47.32	69	78.17	47.32	115	85.64
Maharajganj	32	23.44	3.81	5	6.75	3.81	27	16.70
Mairwa	212	166.76	45.92	65	72.16	45.92	147	94.60
Pachrukhi	90	69.75	17.98	25	29.24	17.98	65	40.51
Raghunathpur	123	69.47	14.03	25	24.39	14.03	98	45.08
Siswan	55	24.74	6.71	10	9.99	6.71	45	14.75
Siwan	140	109.22	37.44	55	59.17	37.44	85	50.05

Table 169: Category 2 water bodies and their area in district Siwan

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Barharia	1	7.09	1.39	1	7.09	1.39		
Basantpur	1	6.82	0.00				1	6.82
Bhagwanpur	3	21.93	0.00				3	21.93
Darauli	1	6.78	0.00				1	6.78
Daraundha	1	7.45	0.00				1	7.45
Goriakothi	1	9.95	0.00				1	9.95
Guthani	2	13.89	9.63	2	13.89	9.63		
Hussainganj	3	18.99	0.00				3	18.99
Maharajganj	1	5.74	0.00				1	5.74
Mairwa	1	9.12	0.00				1	9.12
Pachrukhi	2	10.48	1.39	1	5.10	1.39	1	5.38

Table 170: Category 3 water bodies and their area in district Siwan

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Andar	1	38.30	0.00				1	38.30
Basantpur	3	54.89	0.00	1	16.91	0.47	3	54.89
Bhagwanpur	2	48.43	0.00				2	48.43
Darauli	2	31.84	0.00				2	31.84
Goriakothi	2	60.53	0.00				2	60.53
Guthani	1	20.64	0.00				1	20.64
Maharajganj	1	41.25	0.00				1	41.25
Pachrukhi	1	15.63	3.16	1	15.63	3.16		
Siswan	2	50.08	2.94	1	39.34	2.94	1	10.74

Table 171: Category 4 water bodies and their area in district Siwan

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Daraundha	1	92.68	0.31	1	92.68	0.31		
Guthani	2	134.29	2.26	1	63.88	2.26	1	70.41
Siswan	2	129.54	0.23	1	72.88	0.23	1	56.66

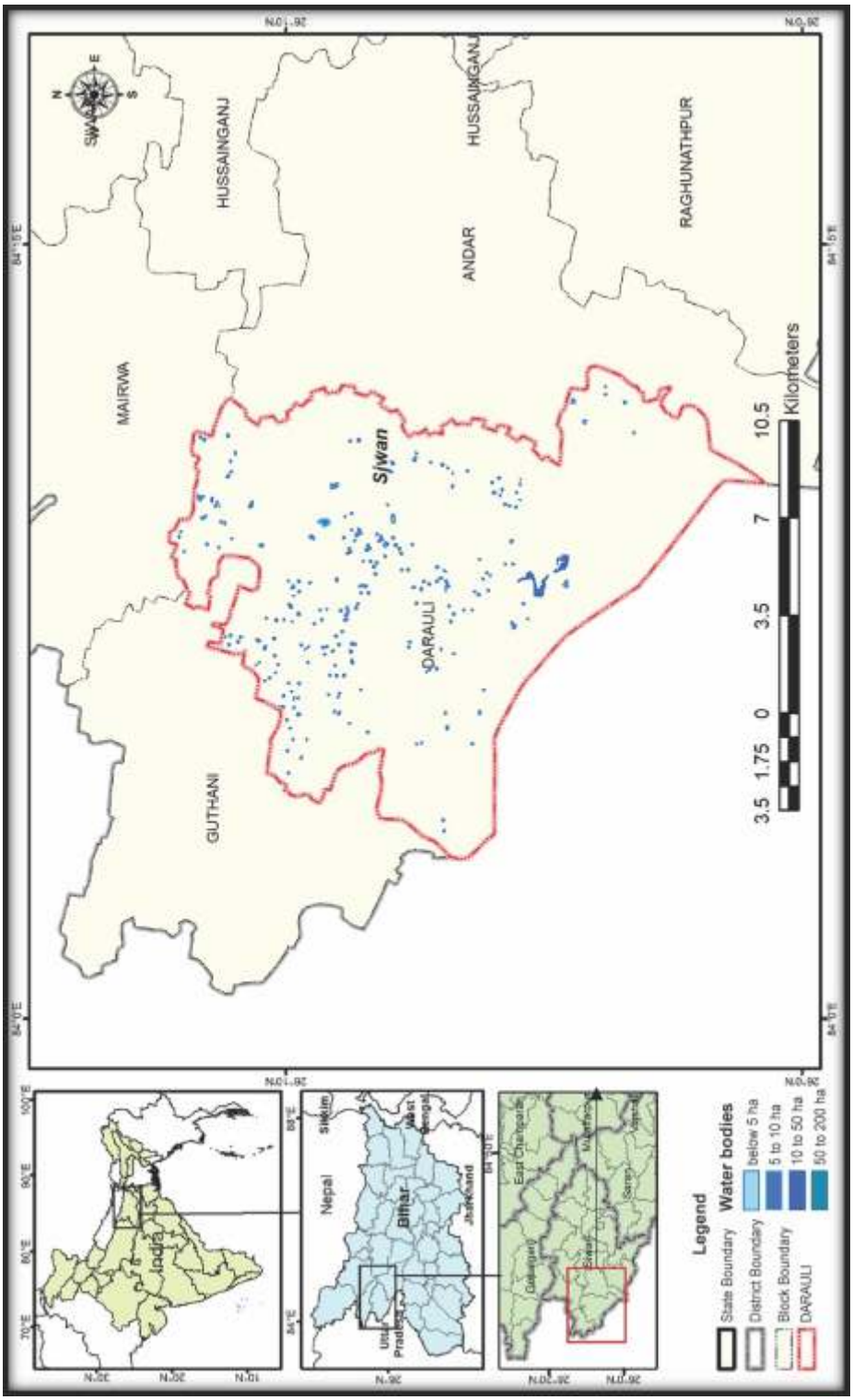


Figure 83: Waterbodies of block Daruli of district Siwan

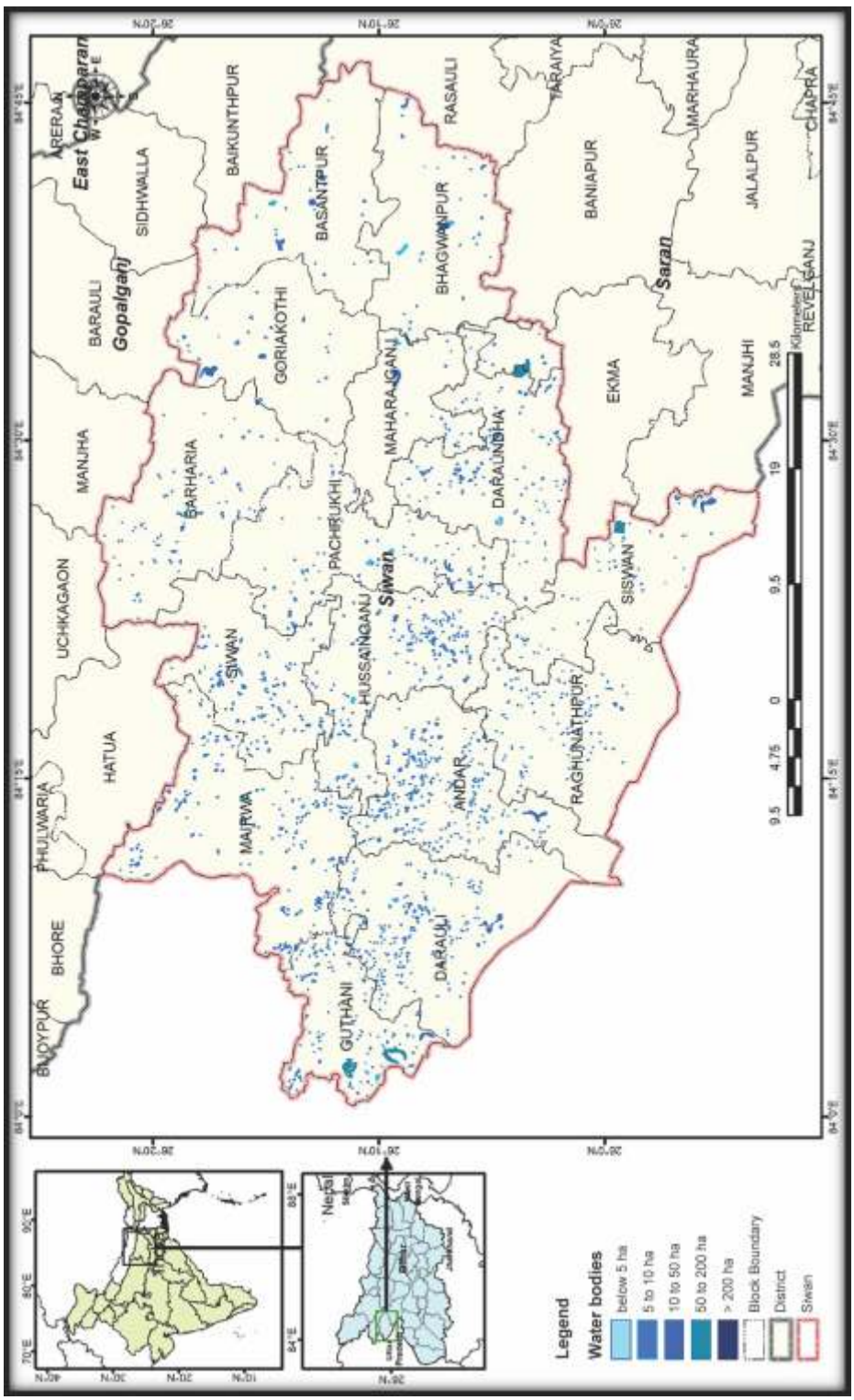


Figure 84:Waterbodies of district Siwan

Supaul

Supaul is situated at 25 deg 37'-26 deg 25' N latitude and 86 deg 22'-87 deg 10' E longitude. Soil is alluvial type. The river Koshi flows through the district which is consider as the sorrow of not only this area, but whole of the state of Bihar, tilyuga chhaimra, kali, tilawe, bhenga, mirchaiya, sursar are the tributaries to it .The type of soil is sandy. Some where it is acetic and somewhere it is basic in nature. Supaul district in Bihar covers an area of 2,420 km^2. Supaul district is part of the Koshi division. Supaul town is the administrative headquarter of the district. The district is bounded by Nepal in the north, Saharsa in the south, by Araria district in the east and on the west by Madhubani district.

For the district of Supaul, number of water bodies stand at 1226. They occupy a total maximum area of 654.64 hectares and a total minimum area of 170.23 hectares and a total average area of 412.43 hectares. The share of perennial water bodies in this district stand at 322 units which have a maximum and minimum area of 266.28 and 170.23 hectares respectively. The seasonal water bodies have a contribution of 904 units having a total maximum area of 388.35 hectares. The number of water bodies

and their area is given in table 172. In category 1 the total number of water bodies stand at 1212 units having a total maximum and minimum areas of 534.49 and 134.78 hectares respectively. In this category the total units of perennial water bodies are 317 having a total maximum area and minimum area of 204.81 and 134.78 hectares respectively. Seasonal water bodies stand at 895 units having a maximum area of 329.67 hectares. The number of water bodies and their area under category 1 is given in table 173. In category 2 the total number of water body units are 10 their total maximum and minimum areas are 61.55 and 7.48 hectares respectively. The numbers of perennial water bodies stand at 2 units having maximum and minimum areas of 13.6 and 7.48 hectares respectively. The numbers of seasonal water bodies stand at 8 units having maximum area of 47.95 hectares. The number of water bodies and their area under category 2 is given in table 174. In category 3 the total number of water bodies including perennial and seasonal stand at 4 units having maximum and minimum total area of 58.62 and 27.98 hectares respectively. In this category, the numbers of perennial water bodies stand at 2 units with maximum and minimum area water spread area of 30.96 and 27.51 hectares respectively. In this category the number of seasonal water bodies are 1 with the maximum water spread area of 10.75 hectares. The number of water bodies and their area under category 3 is given in table 175. There is no waterbody in category 4 and 5. Waterbodies of block Kishanpur and district Supaul is given figure 85 and 86 respectively.

Table 172: Total water bodies and their area in district Supaul

Block Name	Total number of water bodies	Maximum Area(ha)	Minimum Area(ha)	Average Area(ha)
Basantpur	32	36.04	6.89	21.46
Chhatapur	54	16.35	2.24	9.29
Kishanpur	178	84.3	21.51	52.91
Maurana	52	39.43	8	23.72
Nirmali	80	45.5	17.65	31.57
Pipra	149	49.97	7.66	28.81
Raghopur	227	121.43	34.51	77.97
Supaul	349	200.88	64.56	132.72
Tribeniganj	105	60.74	7.21	33.98

Table 173: Category 1 water bodies and their area in district Supaul

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Basantpur	30	11.29	2.23	7	4.43	2.23	23	6.86
Chhatapur	54	16.35	2.24	7	2.84	2.24	47	13.51
Kishanpur	177	78.49	21.51	57	32.17	21.51	120	46.32
Maurana	50	28.46	4.72	12	8.97	4.72	38	19.49
Nirmali	79	39.89	17.65	26	22.35	17.65	53	17.54
Pipra	148	44.48	7.66	23	9.88	7.66	125	34.60
Raghopur	225	98.64	22.93	51	36.12	22.93	174	62.52
Supaul	346	168.50	48.63	117	76.18	48.63	229	92.32
Tribeniganj	103	48.39	7.21	17	11.87	7.21	86	36.51

Table 174: Category 2 water bodies and their area in district Supaul

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Basantpur	1	7.84	4.19	1	7.84	4.19		
Kishanpur	1	5.81	0.00				1	5.81
Maurana	2	10.97	3.29	1	5.76	3.29	1	5.21
Nirmali	1	5.61	0.00				1	5.61
Pipra	1	5.49	0.00				1	5.49
Supaul	2	13.47	0.00				2	13.47
Tribeniganj	2	12.36	0.00				2	12.36

Table 175: Category 3 water bodies and their area in district Supaul

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Basantpur	1	16.91	0.47					
Raghopur	2	22.79	11.58	1	12.04	11.58	1	10.75
Supaul	1	18.92	15.93	1	18.92	15.93		

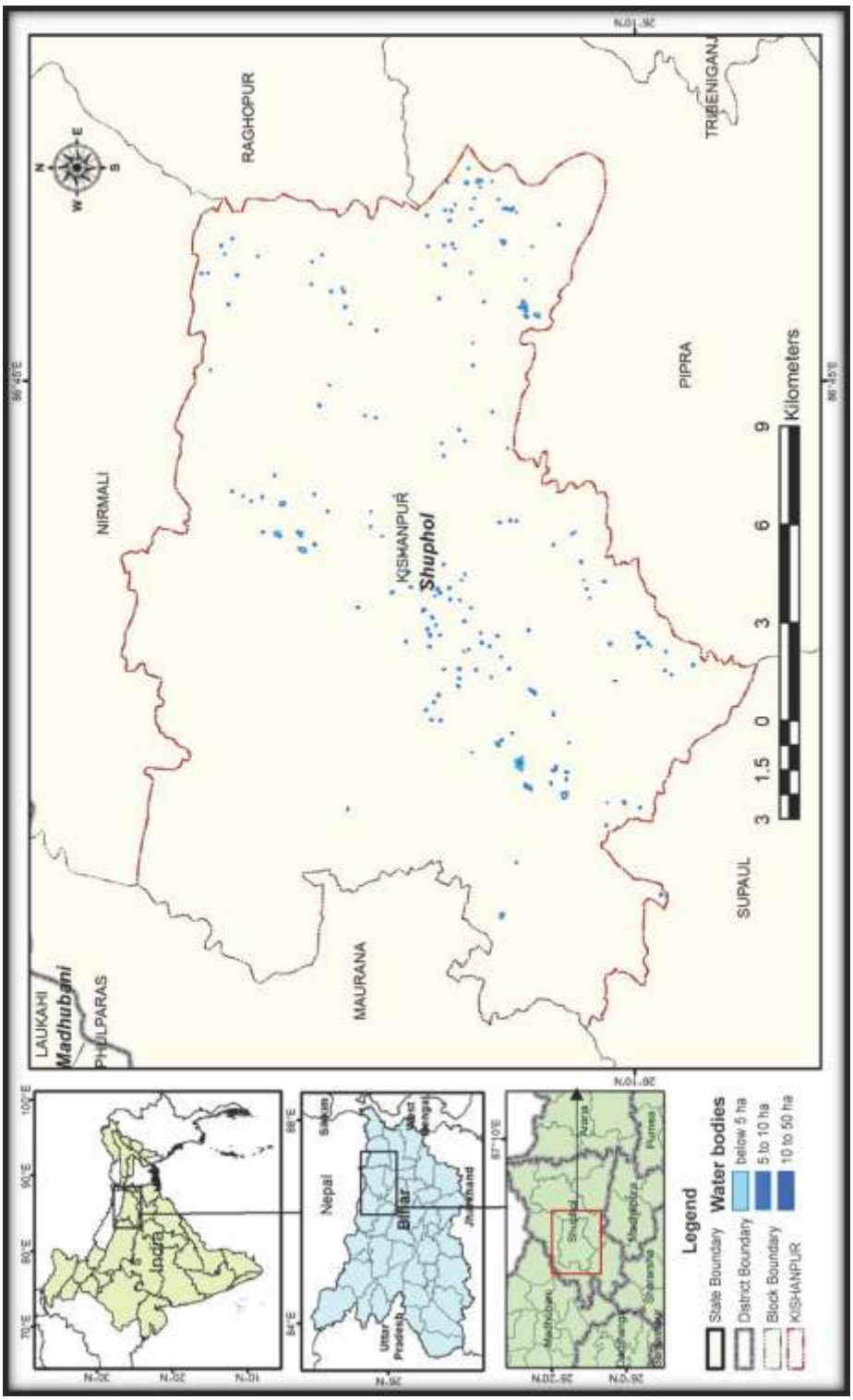


Figure 85: Waterbodies of block Kishanpur of district Supaul

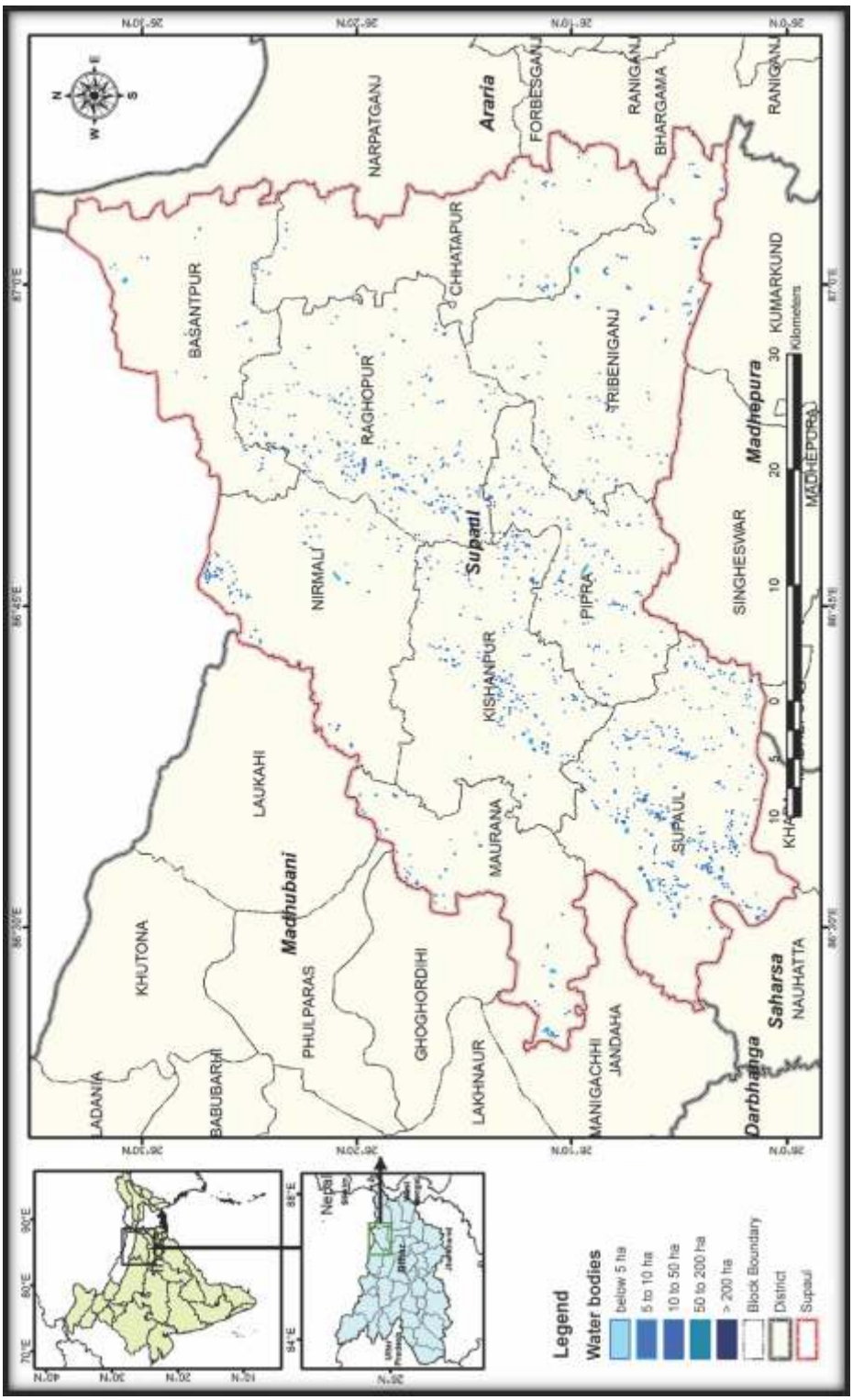


Figure 86: Waterbodies of block Kishanpur and district Supaul

Vaishali

Vaishali find its origin way back in history from the Mahabharata period. The district gained the status of independent district in year of 1972, prior to which it was a part of old Muzaffarpur district. Hajipur is the district headquarters of Vaishali. The District is spread over 2036 km^2 area and located at 25°41′N 85°13′E / 25.68°N 85.22°E. The district is surrounded by Muzaffarpur (North), Patna (South), Samastipur (East) and Saran (West).). The population of district is 34,95,021 as per census 2011.

For the district of Vaishali, number of water bodies stand at 1153. They occupy a total maximum area of 4344.32 hectares and a total minimum area of 302.89 hectares and a total average area of 2323.6 hectares. The share of perennial water bodies in this district stand at 235 units which have a maximum and minimum area of 847.76 and 302.89 hectares respectively. The seasonal water bodies have a contribution of 908 units having a total maximum area of 3496.58 hectares. The number of water bodies and their area is given in table 176. In category 1 the total number of water bodies stand at 1111 units having a total maximum and minimum areas of 735.31 and 165.03 hectares respectively. In this category the total units of perennial water bodies are 219 having a total maximum area and minimum area of 281.56 and 165.03 hectares respectively. Seasonal water bodies stand at 892 units having a maximum area of 453.76 hectares. The number of water bodies and their area under category 1 is given in table 177. In category 2 the total number of water body units are 13 their total maximum and minimum areas are

93.03 and 30.45 hectares respectively. The numbers of perennial water bodies stand at 7 units having maximum and minimum areas of 50.19 and 30.45 hectares respectively. The numbers of seasonal water bodies stand at 5 units having maximum area of 36.05 hectares. The number of water bodies and their area under category 2 is given in table 178. In category 3 the total number of water bodies including perennial and seasonal stand at 14 units having maximum and minimum total area of 341.57 and 62.28 hectares respectively. In this category, the numbers of perennial water bodies stand at 5 units with maximum and minimum area water spread area of 121.68 and 62.28 hectares respectively. In this category the number of seasonal water bodies are 9 with the maximum water spread area of 219.91 hectares. The number of water bodies and their area under category 3 is given in table 179. There are 11 number of category 4 water bodies with 4 number of perennial and 7 number of seasonal units of them. The perennial type has a maximum area of 394.34 hectares and a minimum area of 45.15 hectares while the seasonal type has a maximum area of 614.62 hectares bringing the total maximum area to 1008.96 hectares of water spread area. The number of water bodies and their area under category 3 is given in table 180. There are 4 perennial water bodies in this category with a maximum area of 2165.46 hectares as shown in table 181. Waterbodies of block Patepur and district Vaishali is given figure 87 and 88 respectively.

Table 176: Total water bodies and their area in district Vaishali

Block Name	Total number of water bodies	Maximum Area(ha)	Minimum Area(ha)	Average Area(ha)
Bidupur	42	53.19	13.15	33.17
Goraul	213	1,326.52	15.93	671.23
Hajipur	162	217.01	67.21	142.11
Jandaha	62	284.11	45.33	164.72
Lalganj	199	328.42	46.34	187.38
Mahnar	25	107.9	1.24	54.57
Mahua	128	294.93	22.68	158.80
Patepur	170	1,593.33	53.59	823.46
Roghopur	8	7.2	3.57	5.38
Sahdai Buzurg	44	39.09	15.23	27.16
Vaishali	100	92.62	18.62	55.62

Table 177: Category 1 water bodies and their area in district Vaishali

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Bidupur	39	24.98	7.29	13	11.37	7.29	26	13.61
Goraul	205	113.33	15.62	24	29.08	15.62	181	84.26
Hajipur	160	153.67	48.93	62	84.35	48.93	98	69.32
Jandaha	57	28.89	2.05	3	2.75	2.05	54	26.14
Lalganj	196	131.91	37.83	56	60.26	37.83	140	71.64
Mahnar	23	10.51	1.24	1	1.26	1.24	22	9.25
Mahua	122	81.16	17.81	21	30.88	17.81	101	50.29
Patepur	161	95.69	16.20	18	27.44	16.20	143	68.25
Roghopur	8	7.20	3.57	3	5.72	3.57	5	1.48
Sahdai Buzurg	43	23.97	1.75	1	1.78	1.75	42	22.19
Vaishali	97	64.00	12.74	17	26.67	12.74	80	37.33

Table 178: Category 2 water bodies and their area in district Vaishali

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Bidupur	2	12.60	5.86	2	12.60	5.86		
Goraul	1	6.78	0.00					
Jandaha	1	5.65	2.91	1	5.65	2.91		
Lalganj	1	7.90	5.19	1	7.90	5.19		
Mahua	3	19.92	4.88	1	6.92	4.88	2	13.00
Patepur	3	24.74	5.73	1	9.42	5.73	2	15.31
Vaishali	2	15.44	5.88	1	7.70	5.88	1	7.74

Table 179: Category 3 water bodies and their area in district Vaishali

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Bidupur	1	15.61	0.00				1	15.61
Goraul	1	49.81	0.00				1	49.81
Hajipur	2	63.34	18.28	1	23.12	18.28	1	40.23
Jandaha	2	58.74	23.00	1	27.01	23.00	1	31.73
Mahnar	1	12.55	0.00				1	12.55
Mahua	2	36.57	0.00				2	36.57
Patepur	3	76.64	7.52	2	56.42	7.52	1	20.23
Sahdai Buzurg	1	15.13	13.48	1	15.13	13.48		
Vaishali	1	13.18	0.00				1	13.18

Table 180: Category 4 water bodies and their area in district Vaishali

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Goraul	3	231.58	0.31	1	68.01	0.31	2	163.58
Jandaha	2	190.84	17.36	1	135.48	17.36	1	55.36
Lalganj	2	188.62	3.33	1	134.08	3.33	1	54.54
Mahnar	1	84.84	0.00				1	84.84
Mahua	1	157.27	0.00				1	157.27
Patepur	2	155.81	24.15	1	56.77	24.15	1	99.03

Table 181: Category 5 water bodies and their area in district Vaishali

District	Total Water bodies			Perennial waterbodies			Seasonal Waterbodies	
	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)	Minimum Area(ha)	No.	Maximum Area(ha)
Goraul	3	925.01	0.00				3	925.01
Patepur	1	1240.45	0.00				1	1240.45

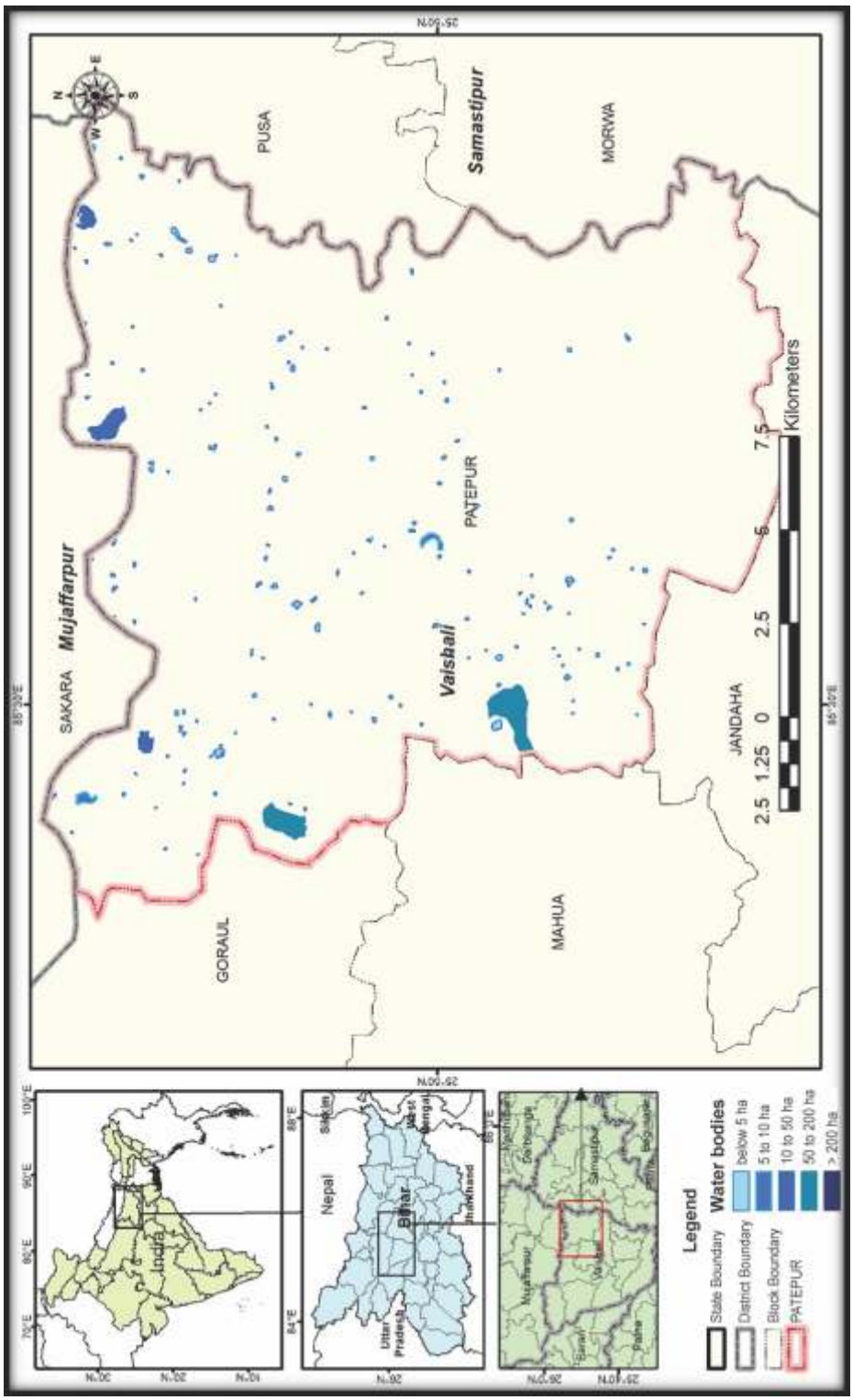


Figure 87: Waterbodies of block Patepur of district Vaishali

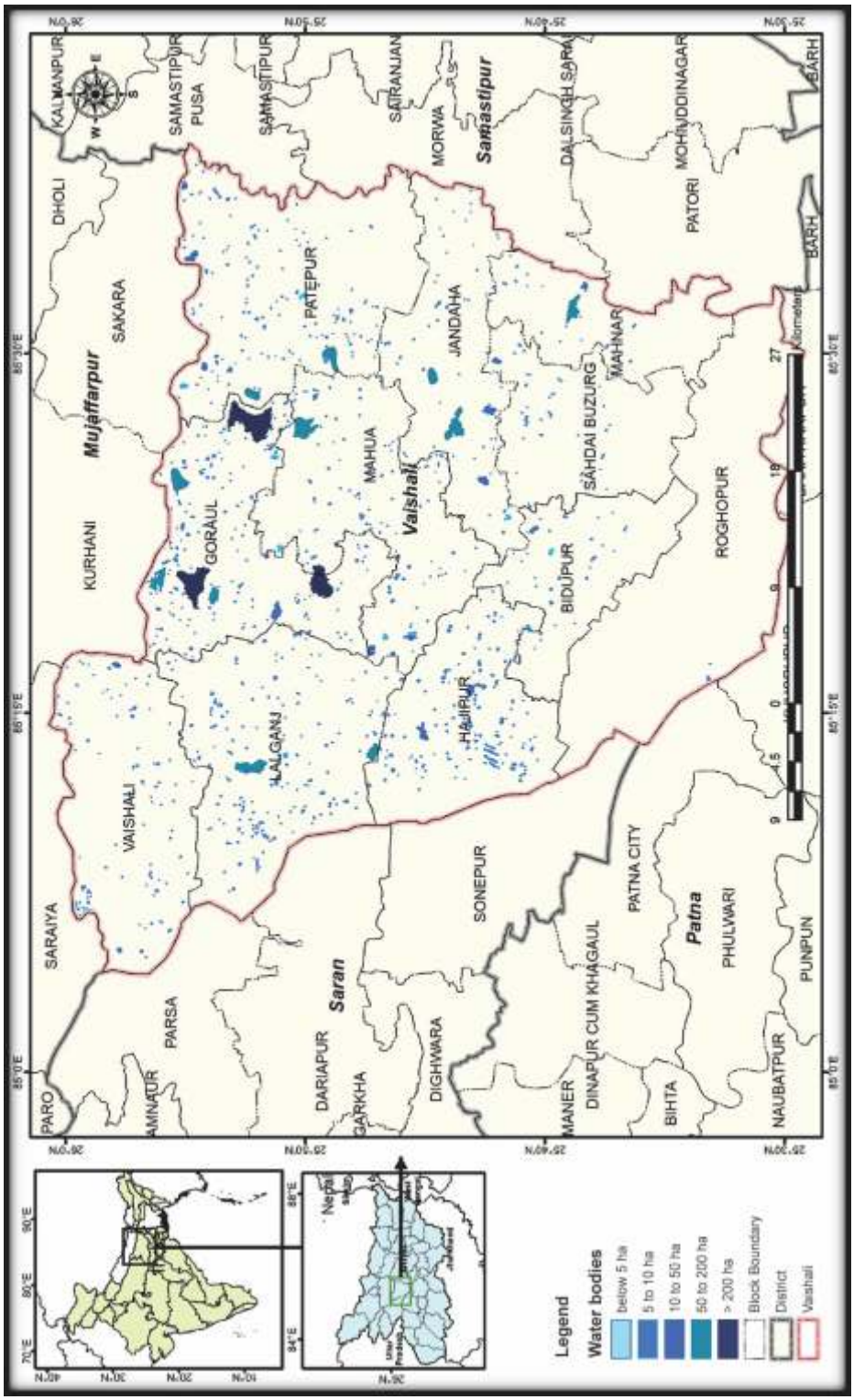


Figure 88: Waterbodies of district Vaishali

Some Important Wetlands of Bihar

Kusheshwar Asthan

Kushehwar Asthan has a geographical spread from 25°49′27″ N to 25° 50′ 5.76″ N latitudinally and from 86°18′23.2″ E to 86°18′ 4.41″ E longitudinally and has an approximate water spread area of 14.3 hectares. The sanctuary was notified in 1994 and it covers 29 square km area. Land use pattern of the wetland is shown in figure 89.

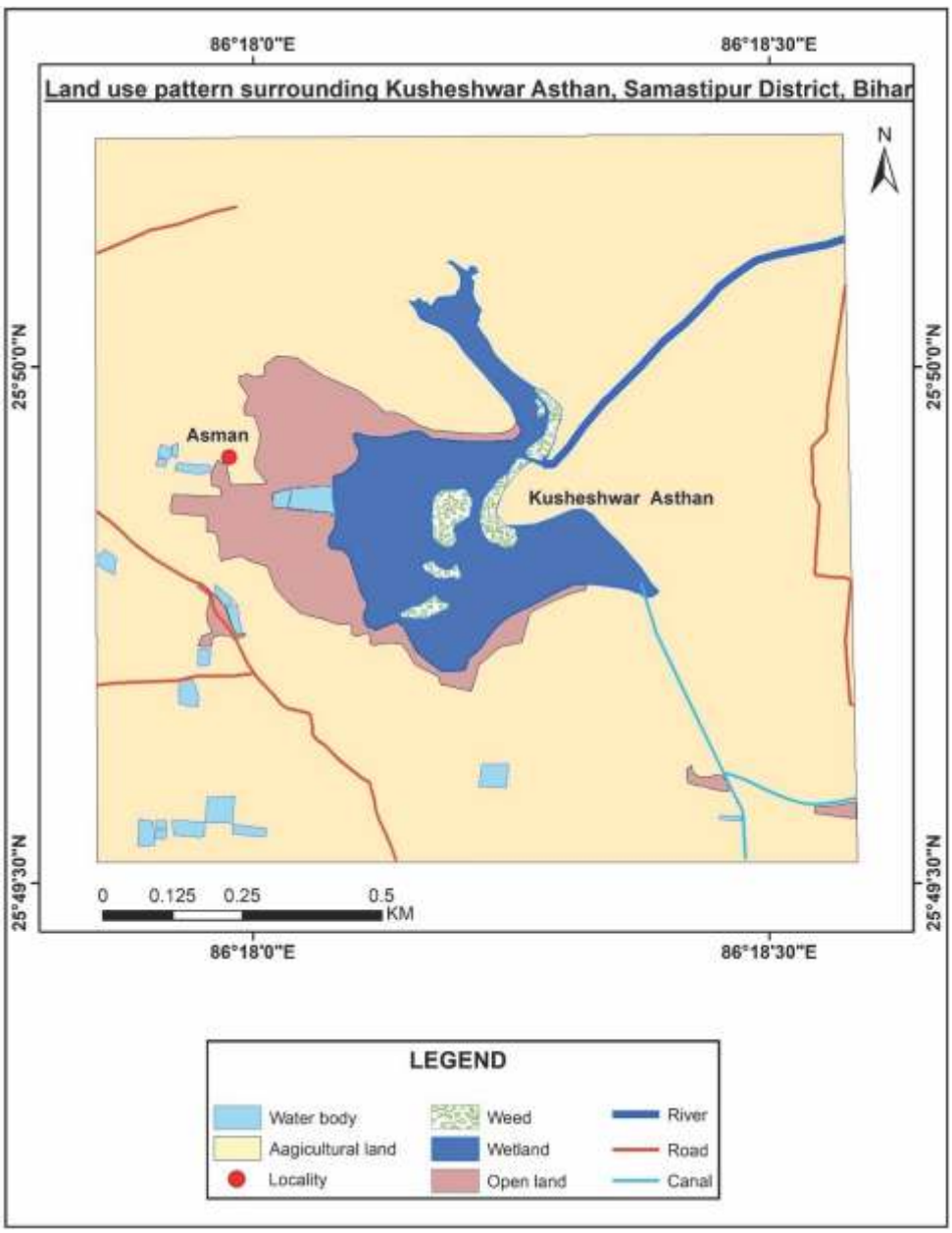


Figure 89: Land use pattern of Kusheshwar Asthan wetland

It is an important religious place noted for the temple of Lord Shiva known as Kusheshwarasthan. The origin of this temple is traced to the epic period. There are fourteen water logged villages in Kuseshwarasthan block which has great ecological, faunal, floral, geomorphological and natural importance and therefore declared as Kuseshwarasthan Bird Sanctuary under Wild Life Protection Act 1972 (as amended upto 1991). Important Migratory Birds seen in Kusheshwar Asthan Birds Sanctuary include Dalmatian pelican (Pelicanus erisups), Indian darter (Anlinga rufa), Bar-headed goose, White winged wood duck (Cairiva scutulata), Marbled teal (Marmaronetta anqustirostris), Baers Pochad (Aythya baeri), Siberian Crane (Grus leuogranus), Indian Skimmer (Rynchops albicollis), Oriental qoosander (Merqus qoosander).

Kabar TAL

Kabar Tal includes a large wet land area with prominent water marks which surround small concentrations of water filled area accounting for approximately 22 smaller water bodies. These smaller units are ubiquitously scattered within the larger wetland and retain water over a longer time of the year. The geographical extent of Kabar Tal is from 25° 35′ 22.99″ N up to 26° 38′ 15.81″ N latitudinally, and from 86° 7′ 25.02″ E up to 86 ° 9 ′ 58.5 2″ E longitudinally. It has a water spread area of 1033.29 hectares. {(7400 hectares Source : http://www.rainwaterharvesting.org/kabar_tal/kabar_tal.htm ; Self calculated 1033.29 ha)} The outlet of this Tal is towards it's south east corner near Jaimangalpur. This has been developed into a canal draining into an ox-bow lake near the intersection of Baghras Chowk Road and Baghras-Bishanpur Road. It is ecologically one of the most important wetlands in the state and is considered one of South Asia's largest freshwater lakes. Land use pattern of the wetland is shown in figure 89.

The lake hosts 106 species of resident birds and is a nesting ground for 59 species of migratory birds. In addition, the wetland supports a large number of flora and fauna round the year. Economically, too, the lake is significant because it yields about two tonnes of fish everyday and is the single biggest source of irrigation in the area. The wetland is used simultaneously for rice cultivation, fishing, and many other uses. Agriculture is the most important use of the wetland and the basic source of income in the area. In 2004, more than 41 species of fish were recorded from the lake. The lake is known to support a rich and diverse aquatic flora.

In 1986, Kabar Tal was declared a protected area. The wetland, despite being a proposed Ramsar site since 1987, was not included among the 13 others declared as wetlands of international importance in 2002. Kabar Tal of late has drawn national and international attention and the Union government has identified it among the wetlands of national importance-- the only one with this designation in Bihar. The Ministry of environment and forest has identified more wetlands, including Kabar Tal, to be included in the list of wetlands of national importance.

There is shrinkage in the wetland's area from 6,786 ha in 1984 to 6,043 ha in 2002. Despite the government's declaration of Kabar Tal as a Bird sanctuary in 1989 and subsequent prohibitory measures, Kabar Tal continues to be exploited for fodder, fuel, fish, and other wetland products. The wetland is under threat from anthropogenic pressures. There is threat because of reclamation of land for agriculture and excessive removal of biomass by human population. The lake is threatened by

pollution and effluents released by the local habitants. The water of the lake is turbid and acidic in nature. The DO in the lake is 7.6 mg/L. The lake is categorized as highly eutrophic lake. Due to this, the use of the water by the local people has resulted in dermatological and digestive disorders among the inhabitants. The massive inflow of silt is also decreasing the depth of the lakes. Every year about 3.8 cm of silt is deposited in the Kabar Tal Lake.

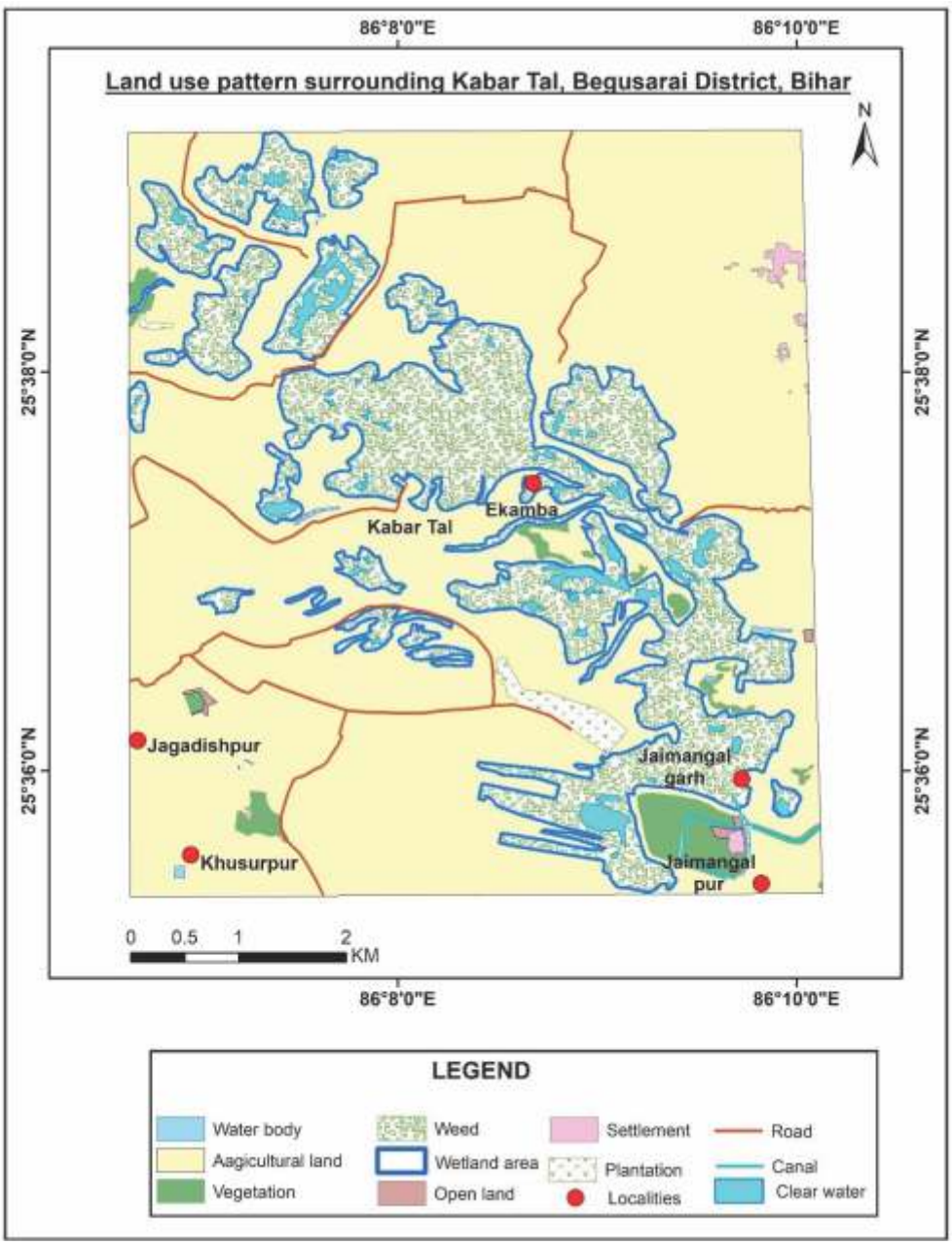


Figure 90 : Land use pattern of Kabar tal wetland

As a part of its flood control strategy, the State government had constructed a canal in the decade of the fifties, to drain out the excess floodwaters into the Ganga River during the monsoons. However, in the succeeding decades, lack of maintenance caused the sediment deposits to choke this outlet. In 1994, State government wanted to drain the water out of Kabar Tal and convert it into a farmland. According to them, it would be a service to the farmers who have their names entered in the state revenue records as owners of the lake area. This resulted in the loss of biodiversity in the wetland. (Source : http://www.rainwaterharvesting.org/kabar_tal/kabar_tal.htm)

Tal Barila

Jhil Baraila village is located in Patepur Tehsil of Vaishali district in Bihar, India. Agriculture is the main profession of this village. Still this village is waiting for Industrial development. Education, Drinking water, Road and Electricity are the main concern of this village. If banks and finance institutions provided loan and other financial support to the villagers, this village will also be developed. Medical and health services have to be improved.

Baraila lake is one of the many weed infested wetlands in Bihar which can be changed from their present state of being barren land to highly productive and profitable aquaculture units. Geographically the lake spreads from 25° 44′ 54.73′′ N up to 25° 46′ 44.05′′ N and from 85° 34′ 50.64′′ E to 85° 31′ 49.40′′ E having an approximate area of 1050 hectares. It had dried up completely in the year 2010-11. Prior to 2019 the lake was dry after which heavy rainfall during the late September 2019 the lake was filled with water again. The immediate benefit was that, from the water in the lake, there has also been water in the dry handpumps and borings of the surrounding villages. Land use pattern of the wetland is shown in figure 90.

The vicinity of Chaur is mainly inhabited by mustaches (Sahani) who live by fishing. Floods, aquatic plants and multicultural land on the Chaur lands are the main obstacles to fish production in Barela Chaur. Under the NAIP-3 project, fisheries technology (pen culture) was being done to improve the livelihood of the local people at Sakri Chaur, Jandaha Cluster. Fishermen of Dosi village Dulaur were inspired by the activities done at Sakri Chaur. They wanted this kind of work to be done for them also in Barela Chaur. Keeping in mind the possibilities of spreading technology, fishermen of Dulore were motivated to form groups so that they could be provided with the necessary materials. Thereafter, a group of ten fishermen were sent to the Central Inland Fisheries Research Institute (CIFRI), Barrackpore for training under NAIP for knowledge empowerment. After training, fishermen expressed interest in adopting pen culture at Barela Chaur.

To make the group responsible and make their participation active, 50 percent of the entire cost of pen culture was taken from fishermen and 50 percent was given by N.A.I.P. To enclose an area of 1.0 hectare, 330 m HDPE net was used while the fourth side was the slightly elevated land. The group was provided with technical support for the installation and management of pens. Keeping in mind the ecology of Chaur, 400 g fingerlings of Katla, Rohu, Nayani, Grass carp and Common carp. (11660 numbers) were stored in pens. No supplementary diet was given to the fish. In five months, 2.77 tonnes (7170 nos.) of fish were harvested with 61.49 percent survival. The fishermen received Rs. 2,13,330 / - (Rs. 21,333 / group member) additional net income which is equivalent to about 106 labour days.

Benefit expense ratio 2.33 was achieved for pen culture. After achieving success and profit, the group increased the pen area to 2 hectares for the next season and 4 hectares for the next season. The adoption of pen culture at Barela Chaur by the group of Dulaur village has become a model for fisheries development in the Chaur areas of Bihar.

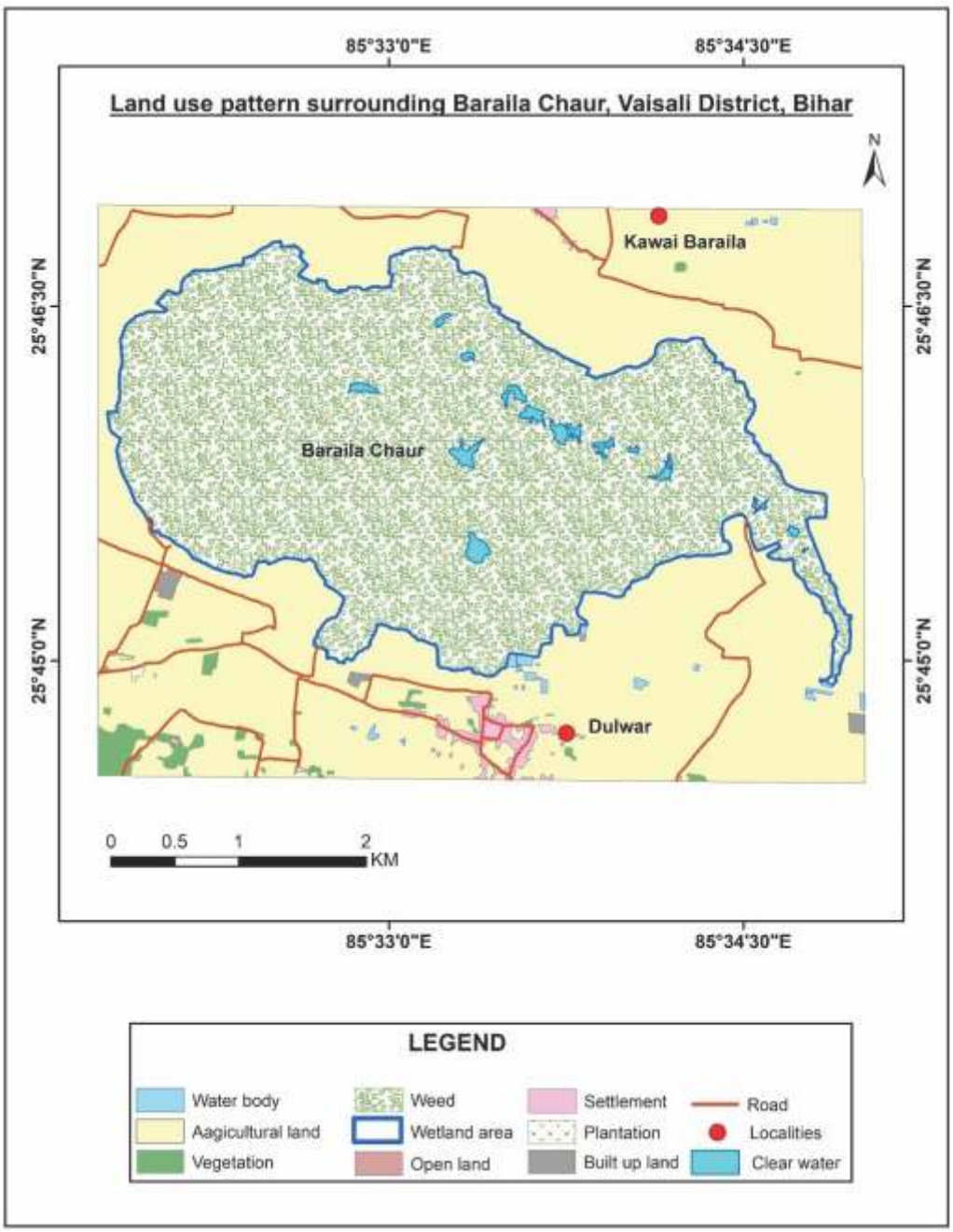


Figure 91: Land use pattern of Baraila Chaur wetland.

Kothiya Maun

Kothia Maun has a geographical extent of 26° 22′ 49.67″ N to 26° 24′ 10.84″ N and from 85° 10′ 57.93″ E to 85° 9′ 54.41″ E spreading over an approximate area of 44.5 hectares. It is located 38 kms South-East of Motihari Town. It has a typical "Oxbow" shape with 200 fishers' families earning their livelihoods by carrying out fishing under the control of Tetaria Block Fisherman Cooperative Society. The fish composition includes Indian Major Carp Rohu, Catla, Mrigal, Exotic carps Amur carp, Grass carp and small fishes like Gudusia chapra. Land use pattern of Kothiya man is shown in figure 92. The ICAR-Central Inland Fisheries Research Institute, Barrackpore initiated development project at this wetland in August, 2018 for implementing the scientific management norms in a participatory mode. The programme "Wetland Fisheries Development Projects of Bihar under Central Sector Scheme (CSS) Blue Revolution" has successfully demonstrated the Institute's technological intervention in optimum exploitation of under-exploited wetlands of Bihar in respect of fish yield with financial assistance from NFDB, Hyderabad. The three prolonged strategies adopted by the institute was input, infrastructure and information dissemination to implement fisheries enhancement protocol developed for ox-bow lakes.

The ICAR-CIFRI's technological interventions in Kothia maun have brought several fold improvements in catch per unit effort, increase in fishing days from 30 days to 90 days and fish yield from 55 to 160 Kg/ha. The prolonged fishing days have also reduced migration of fishers for non-fishing jobs to other cities.

Kararia Maun

Kararia maun extends from 26° 37′ 9.05″ N to 26° 38′ 41.49″ N and from 84° 56′ 38.73″ E to 84° 55′ 39.58″ E geographically covering an approximate water spread are of 125 hectares and the depth varies between 2.5 to 5 meters. Nearly 120 fishers are dependent on this water bodies. Pataura tola, Bariyarpur, Lauthaha, Chhatauni and Bankat are the habitat near the Kararia Maun. The land use pattern of waterbodies and nearby is shown in figure 93.

Majhariya Maun

Majharia Maunis located in Majharia village in West Champaran district in the Indian state of Bihar. Majharia maun is one of the major wetland along with many water. It has a geographical extent from 26° 24′ 3.08″ N to 26° 33′ 11.35″ N and 84° 55′ 2.41″ E to 84° 56′ 44.8″ E. Kazipur, Pipara Kothi, Chand sariya and Surujpur are the other habitat near the Majshariya Maun. The maximum water area of this maun is 120 ha and the depth varies between 2 to 7 meters. Nearly 240 fishers are dependent on this water bodies. The land use pattern of waterbodies and nearby is shown in figure 94.

Rulhi Maun

Rulhi Maun spatially extends from 26° 25′ 21.51″ N to 26° 36′ 5.14″ N and from 84° 58′ 9.89″ E to 84° 57′ 7.48″ E with an approximate water spread area of 46.4 hectares and the depth varies between 1.6 to

6.5 meters. Nearly 150 fishers are dependent on this water bodies. Rulhi bazar and Rulhi Calony are the two main habitat near to the wetland. The land use pattern of waterbodies and nearby is shown in figure 95.

Sirsa Maun

Sirsa Maun - The wetland complex of **Sirsa** consists of 2 wetlands by the names of **Sirsa Mal** and **Sirsa Khap** spatially spreading from 26^{O} 35′ 39.49″ N to 26^{O} 37′ 26.49″ N and 85^{O} 0′ 34.00″ E to 84^{O} 58′ 26.79″ E. **Sirsa Mal** has an approximate area of 74.2 hectares and **Sirsa Khap** has an approximate area of 77.9 hectares and the depth varies between 3.2 to 8.5 meters. Nearly 125 fishers are dependent on this water bodies. The land use pattern of waterbodies and nearby is shown in figure 96.

The ICAR-Central Inland Fisheries Research Institute, Barrackpore initiated development project at these four wetland in August, 2017 for implementing the scientific management norms in a participatory mode. The programme "Wetland Fisheries Development Projects of Bihar under Central Sector Scheme (CSS) Blue Revolution" has successfully demonstrated the Institute's technological intervention in optimum exploitation of under-exploited wetlands of Bihar in respect of fish yield with financial assistance from NFDB, Hyderabad. ICAR CIFRI had organised no of training program for the fisher of these wetlands and other wetlands for fisheries enhancement

Dr. Prem Kumar, Honourable Minister of Agriculture, Animal and Fisheries Resources, Government of Bihar in his address to a Workshop on "Management of Wetland Fisheries of Bihar" organized by ICAR-CIFRI at Patna, on 20 November 2019, had highlighted that the Fish yield increase from 180 Kg/Ha/Yr to 675 Kg/Ha/Yr in Kararia Maun; 190 Kg/Ha/Yr to 320 Kg/Ha/Yr In Sirsa Maun; 70 Kg/Ha/Yr to 140 Kg/Ha/Yr in Rulhi Maun and 60 Kg/Ha/Yr to 120 Kg/Ha/Yr in Majharia Maun has proved that through the technological intervention, the wetland's production and productivity can be enhanced.

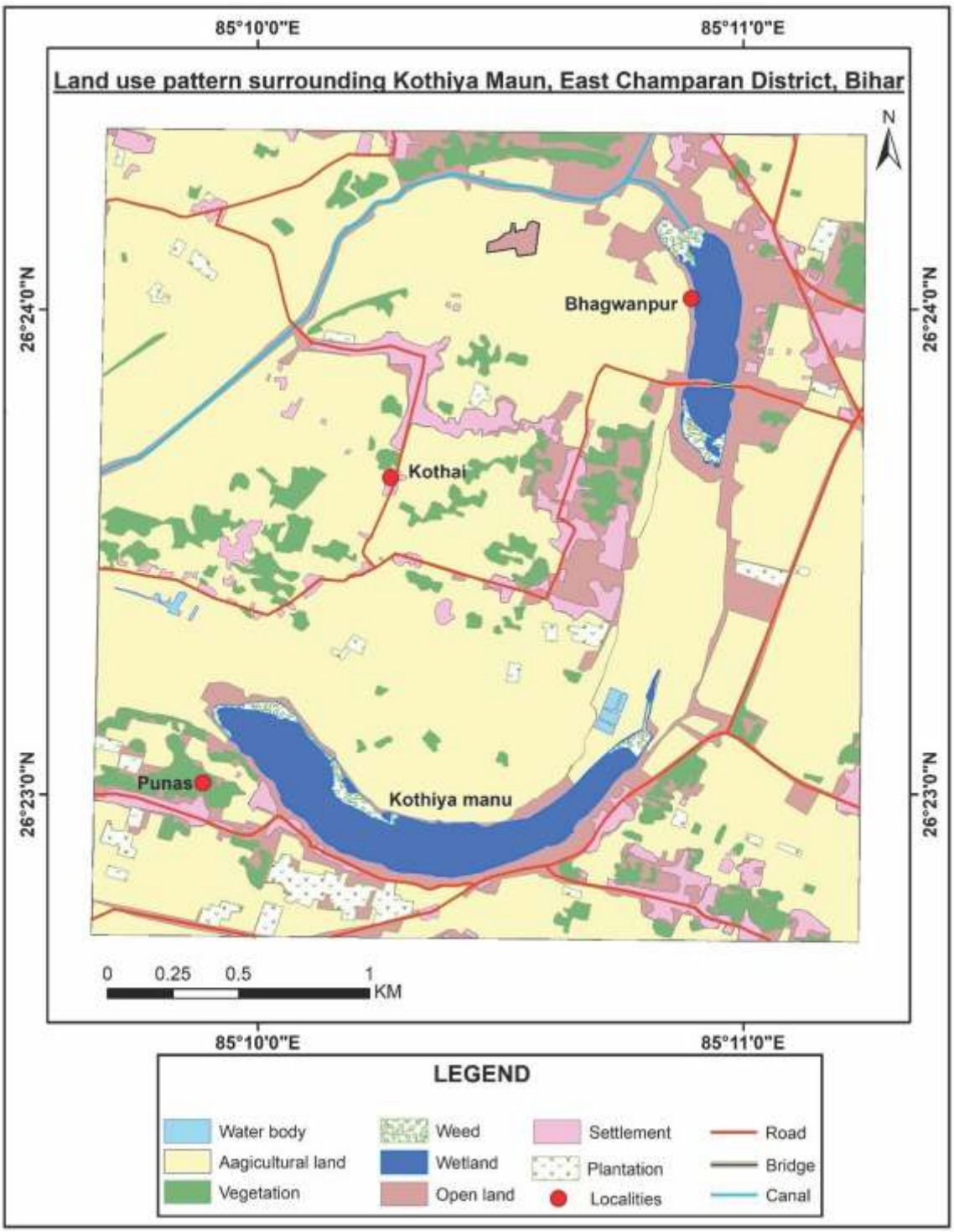


Figure 92 : Land use pattern Kothiya maun wetlands.

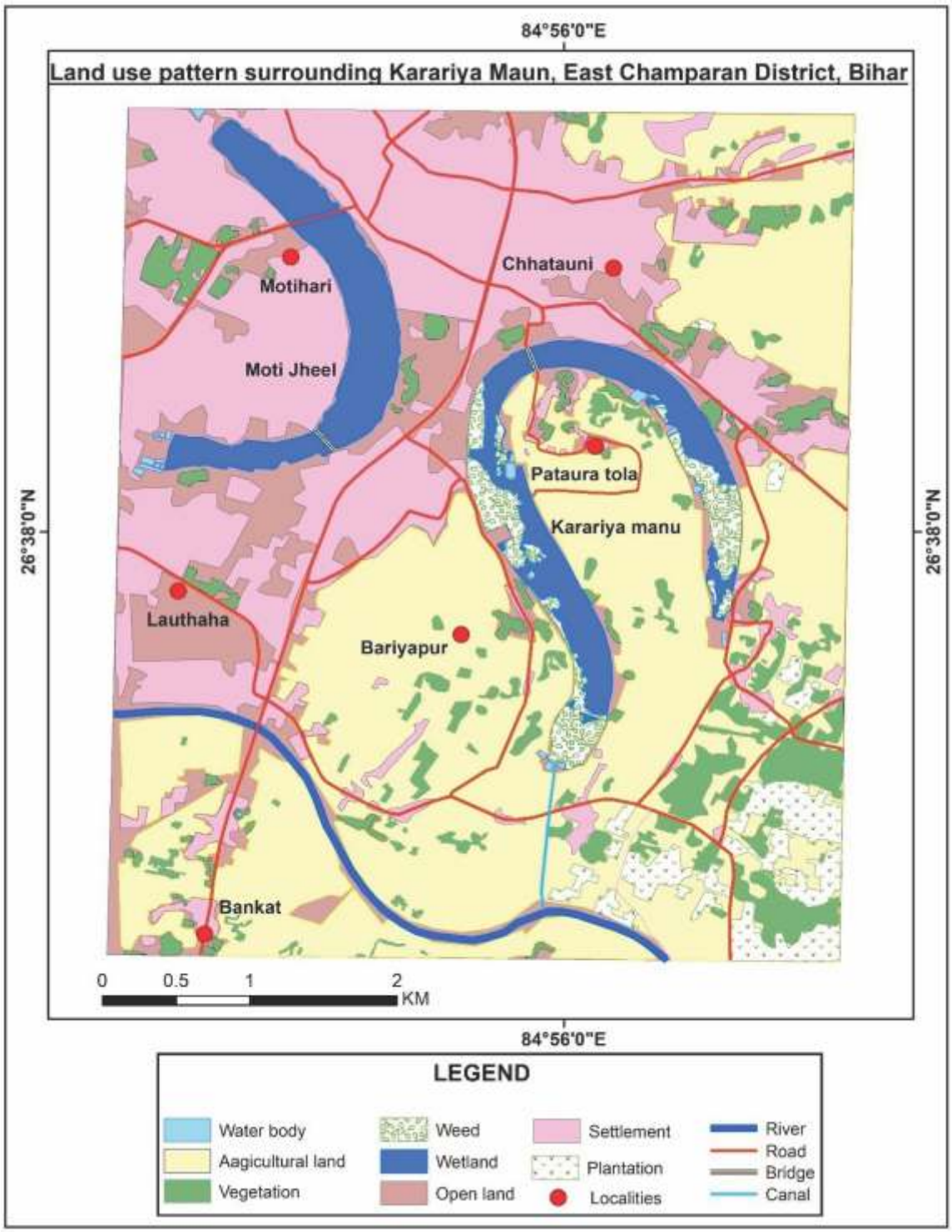


Figure 93: Land use pattern Kararіya Maun wetlands.

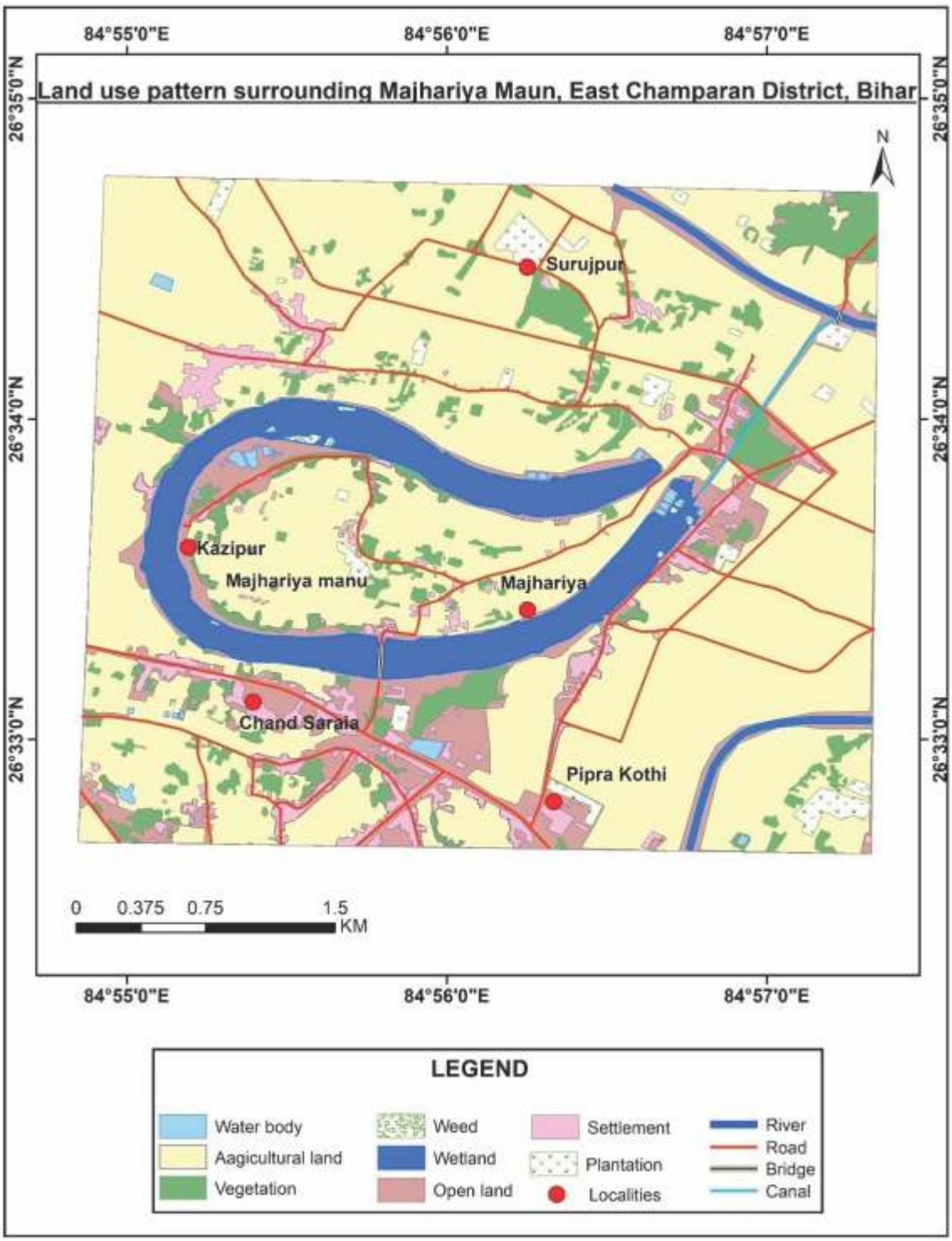


Figure 94: : Land use pattern Majhariya Maun wetlands.

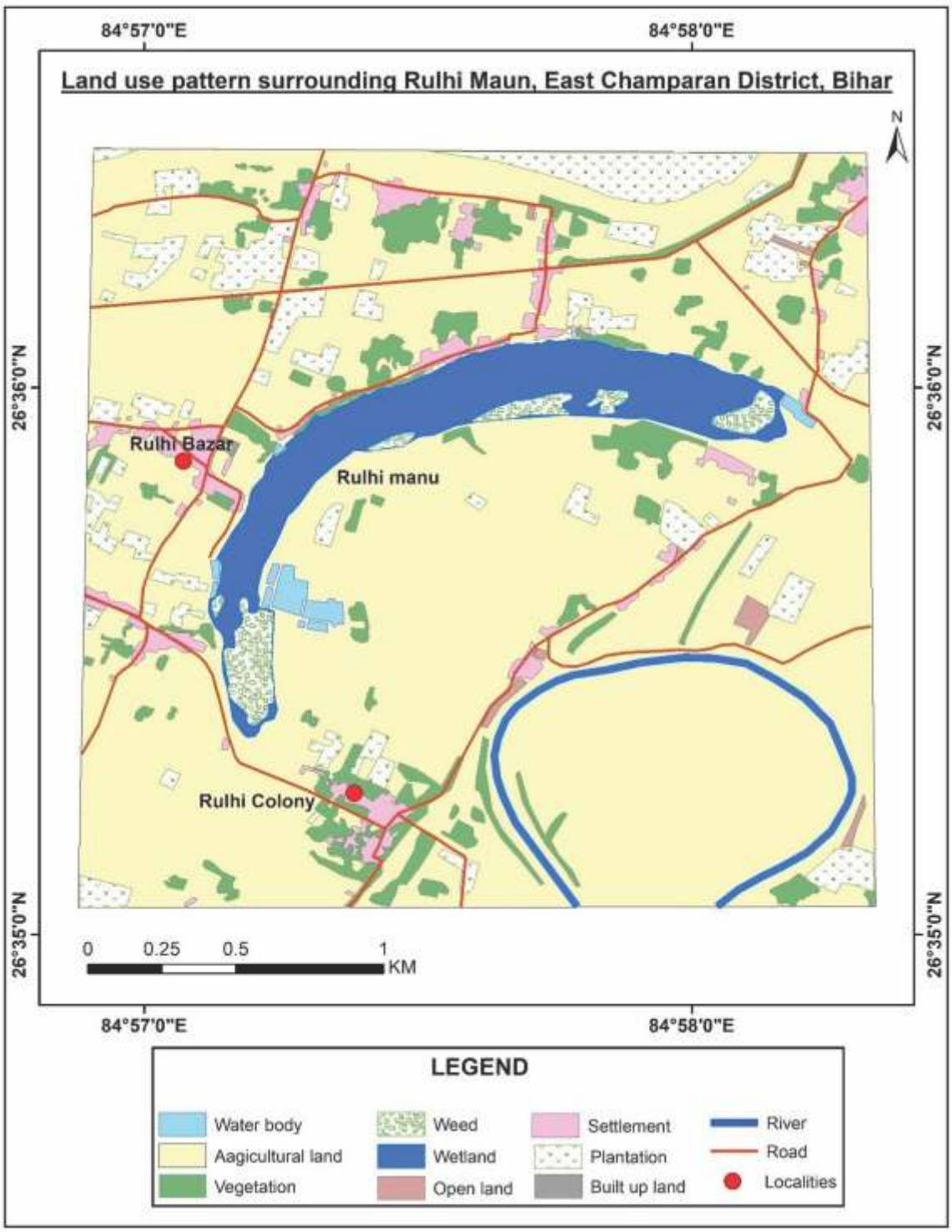


Figure 95: Land use pattern Rulhi Maun wetlands.

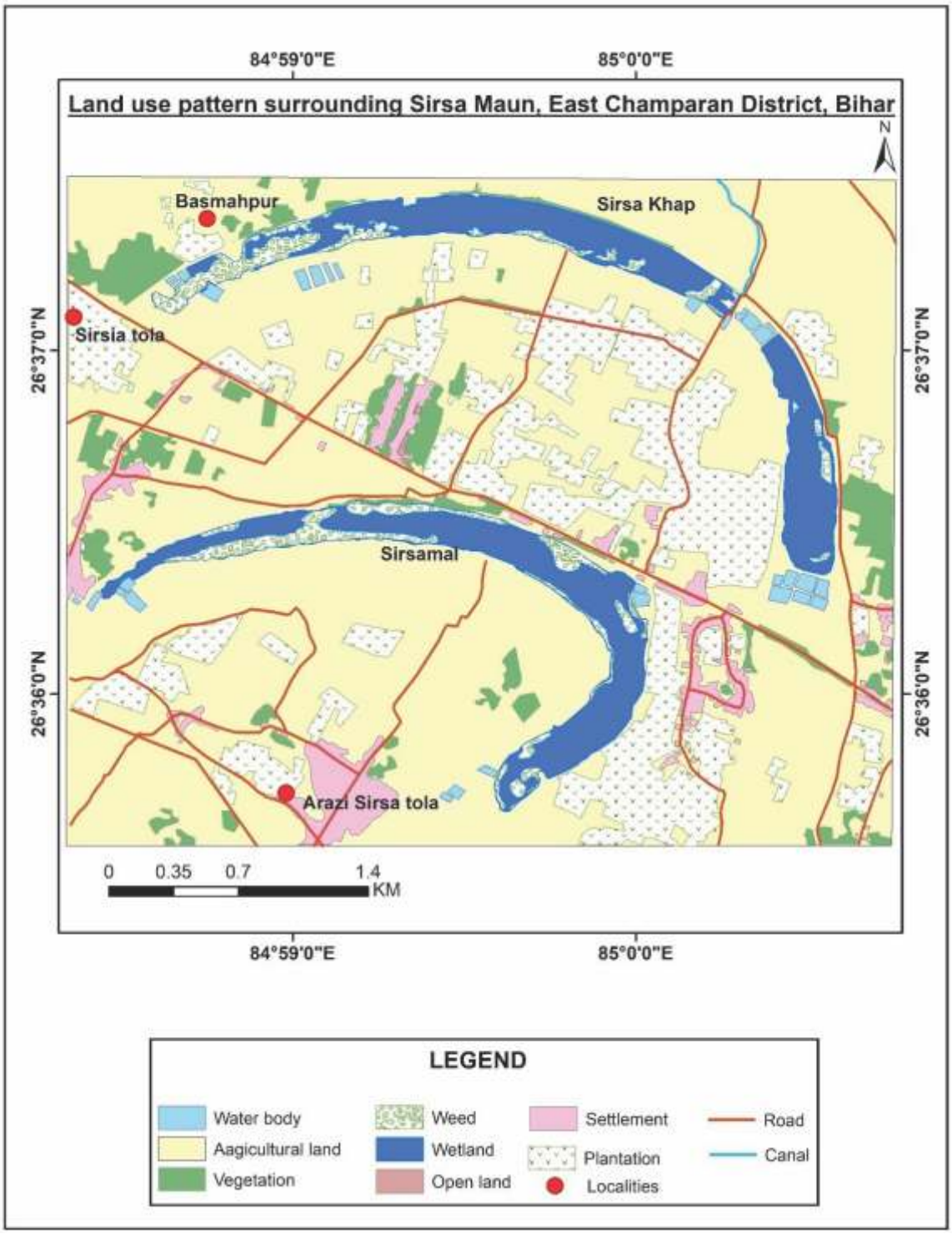


Figure 96: Land use pattern Sirsa Maun wetlands.

Some Important Reservoirs of Bihar

There are 26 reservoirs in Bihar as per the register of dam prepared and published by Central Water Commission, Ministry of Jal Shakti, Department of Water Resources, River Development and Ganga Rejuvenation, Government of India. Most of the reservoirs are southern part of Bihar as shown in figure 90. All the reseroires are irrigation pupose. Out of 26 reservoirs re under construction namely Durgavati dam, Barnar dam and Sindhwani dam. Three reservoirs namely Satgharwa dam, Tarkol dam, and Badua Dam are non-functional. One reservoir Gaighat Dam is also proposed by government on river Baghara River in district Munger. Most of the reservoiers of are located in Jamui district. List of the reservoirs is given in table 182. Distribution of reservoirs are shown in figure 98. There are five reservoirs which have more than 1000 ha area as shown in Figure 97.

Table 182: List of reservoirs in Bihar

Sl.No.	Dam Name	District	Area in ha	Completion Year
1	Badua Dam	Banka	1133.5	1965
2	Chandan Dam	Banka	1081	1968
3	Bilasi Dam	Banka	583	2001
4	Belharna Dam	Banka	268	1987
5	Orhni Dam	Banka	202.4	2000
6	Upper Badua Dam	Banka	106.3	1985
7	Durgawati Dam	Kaimur	2341	Under construction
8	Kohira Dam	Kaimur	526	1962
9	Upper Kiul Dam	Jamui	1230	2004
10	Nagi Dam	Jamui	425	1958
11	Barnar Dam	Jamui	375	Under construction
12	Nakti Dam	Jamui	364	1980
13	Ajan Dam	Jamui	344	1989
14	Amrity Dam	Jamui	166	1965
15	Tarakol	Jamui	109	1980
16	Kailash Ghati Dam	Jamui	102	1980
17	Srikhandi Dam	Jamui	16.6	1965
18	Morwy Dam	Lakhisarai	1620	1960

19	Baskund Dam	Lakhisarai	60	1984
20	Sindhwarni Dam	Munger	700	Under construction
21	Khargpur Lake Dam	Munger	384	1876
22	Jalkund Dam	Munger	69	1968
23	Satgharwa	Munger	36	1976
24	Gaighat Dam	Munger		Proposed
25	Phulwaria Dam	Nawada	963	1988
26	Job Dam	Nawada	213	1977
27	Kolmahadeo Dam	Nawada	57	1966

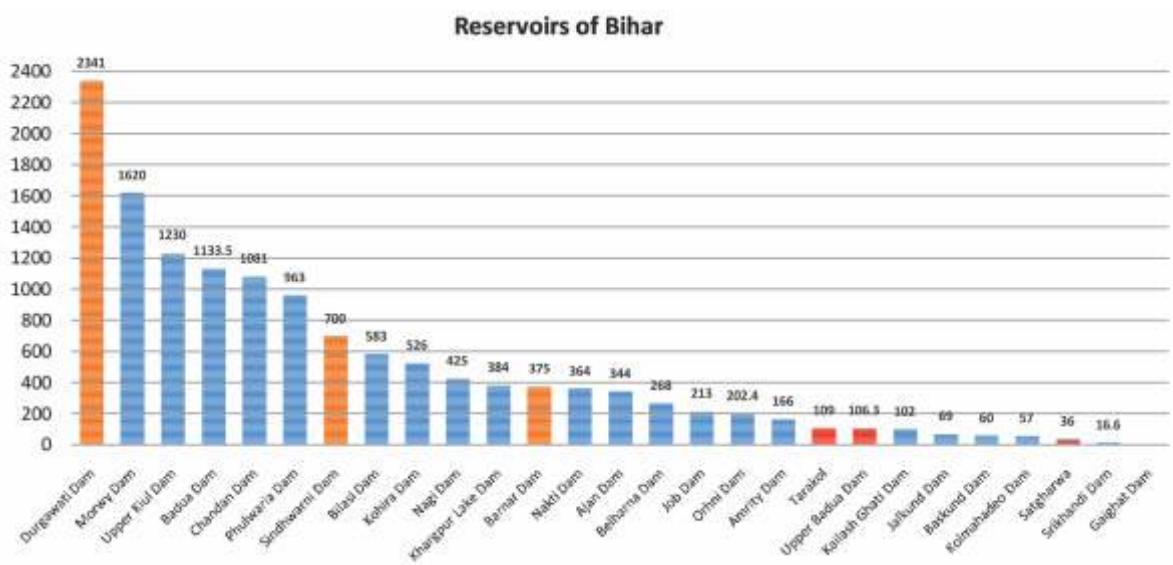


Figure 97: Reservoirs of Bihar with their area

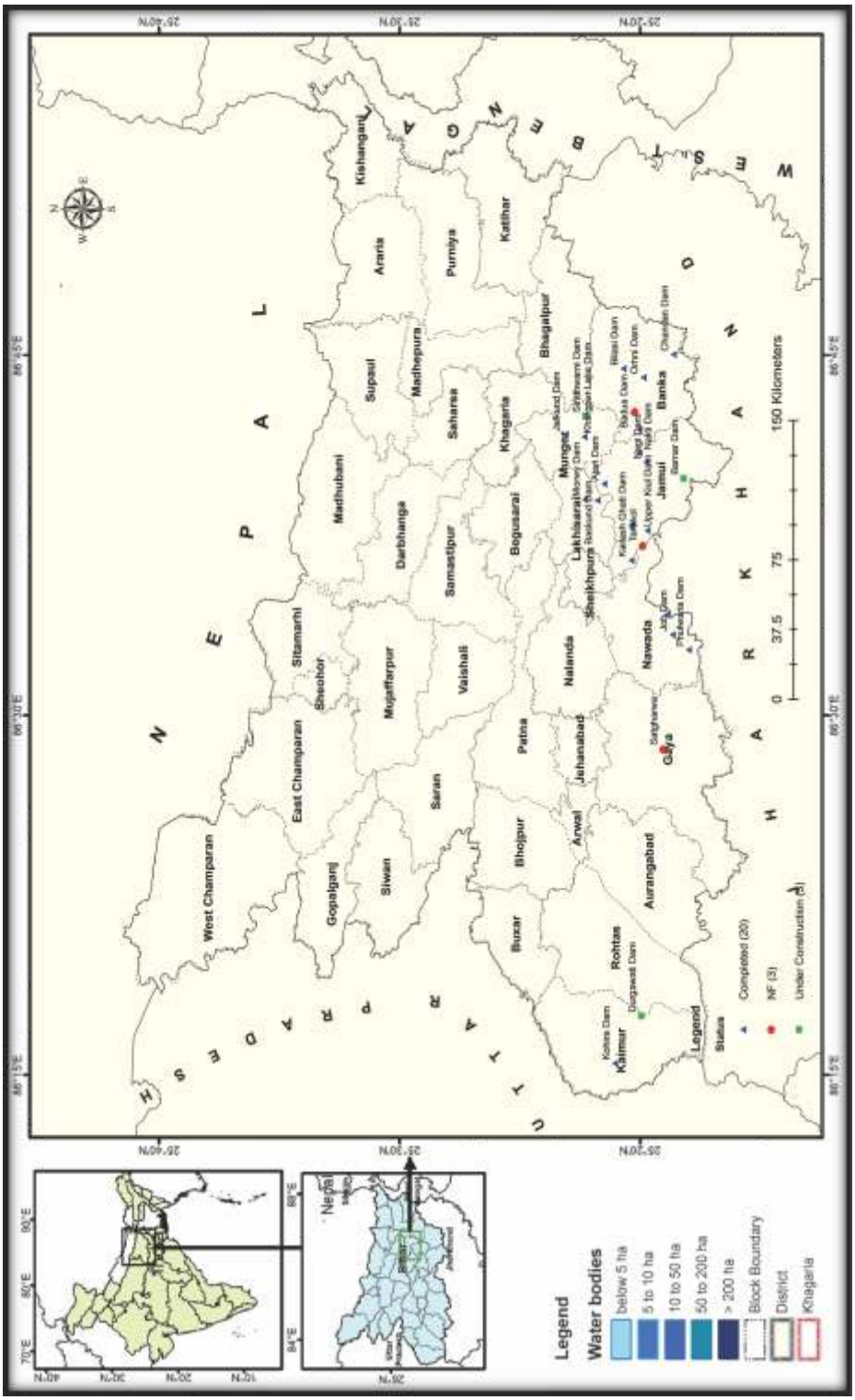


Figure 98: Distribution of reservoirs in Bihar (triangle shows functional reservoirs, circle shows non-functional reservoirs and square represent under construction)

Khargpur lake dam

Figure 99: False colour image (FCC) and True colour (Google) of Kharagpur lake dam

Kharagpur lake is the oldest lake of Munger district located near Haveli Kharagpur town. It constructed 1876. Full reservoier level area of the lake is 384 ha. In last eight years its got maximum area in January 2014. Generally its reduces to 50 ha approximately every years except 2013 and 2014. In last two years the water body have crunch of water. More then seven month water is 150 ha and more. In the month of May and June water reduces to 50 ha or leser. Google image and False colour composition of water spread is given in figure 99. Figure 100 shows montly water area variation and figure 101 shows surface water area variation between 2012 to 2020.

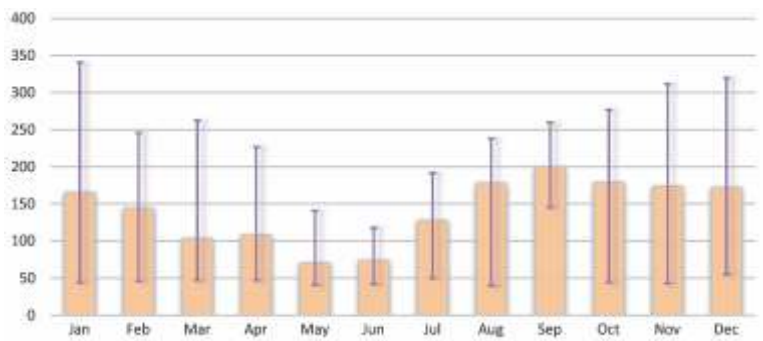


Figure 100: Monthly water area variation of Kharagpur Lake

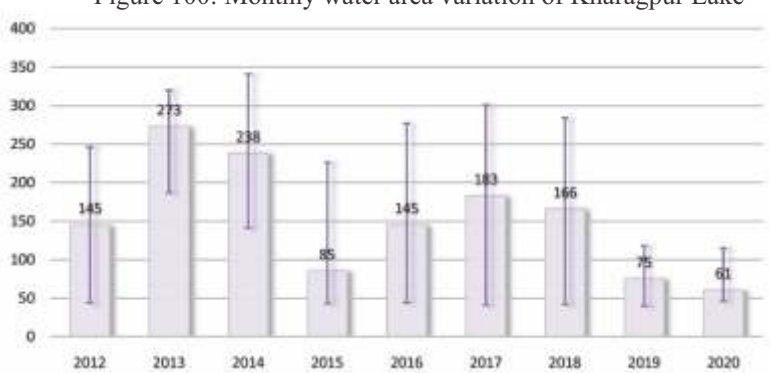


Figure 101: Yearly water area variation of Kharagpur Lake during 2012 to 2020

Ajan Dam

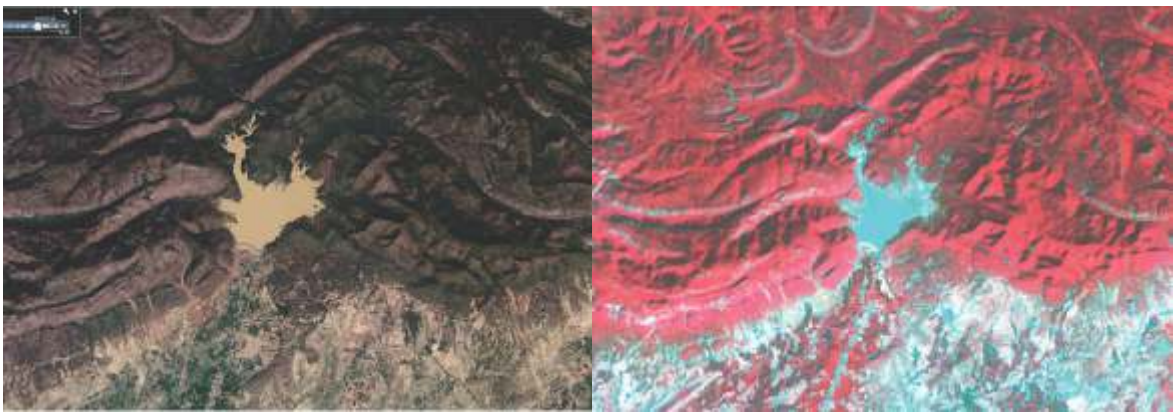


Figure 102: False colour image (FCC) and True colour (Google) of Ajan dam

Ajan Dam is the third largest waterbody in district Jamui located in Barhat block. It was constructed in 1989 and the full reservoier level area of the lake is 344 ha. In last eight years its got maximum area in Oct 2017. Generally its reduces to 75 ha approximately every years except 2018 and 2019, in these two years it reduces to 25 ha. More then nine month water is 100 ha and more. In the month of February water reduces to 90 ha or leser. It is also knowen as Barhat dam and Kukurjhap dam. Water spresd Google image and False colour composition is given in figure 102. Figure 103 shows monthly water area variation and figure 104 shows surface water area variation between 2012 to 2020.

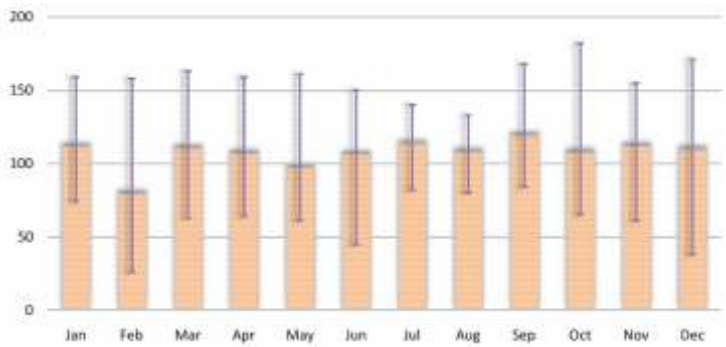


Figure 103: Monthly water area variation of Ajan Dam

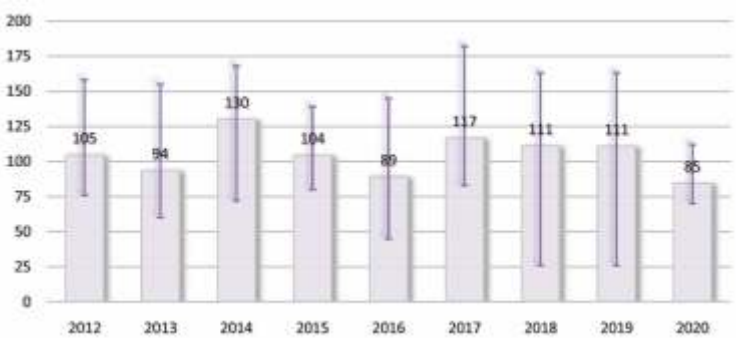


Figure 104: Yearly water area variation of Ajan Dam during 2012 to 2020

Upper Quil Dam

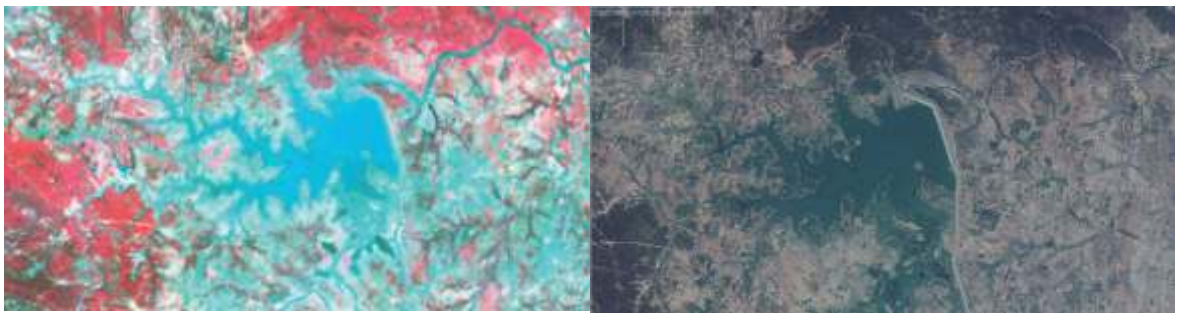


Figure 105: False colour image (FCC) and True colour (Google) of Upper Quil dam

Upper Quil Dam is the largest waterbody in district Jamui located Khaira block. It was constructed in 2004 on Kiul river and the full reservoier level area of the reservoir is 1230 ha. In last eight years its got maximum area in April 2016. The average water area varies near to 320 ha between January to July while August to December it varies between 248 to 588 ha. In last eight years average dam water are varies between 228 to 569 ha. It is also known as Garhi reservoir and Roopbel reservoir dam. Water spresd Google image and False colour composition is given in figure 105. Figure 106 shows monthly water area variation and figure 107 shows surface water area variation between 2012 to 2019. Hrakara, Garhi, Rajaun, and Mahuliyatanr are the nearest village of reservoir.

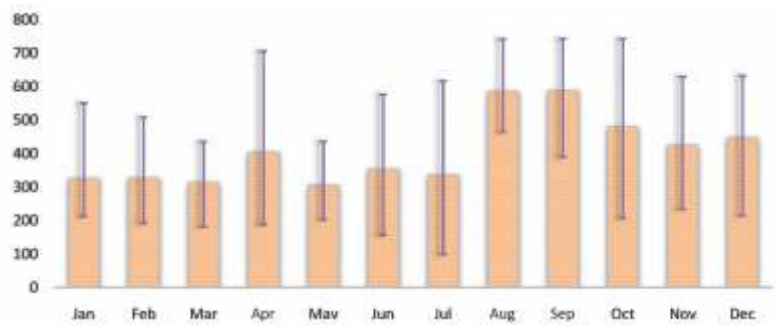


Figure 106: Monthly water area variation of Upper Quil dam

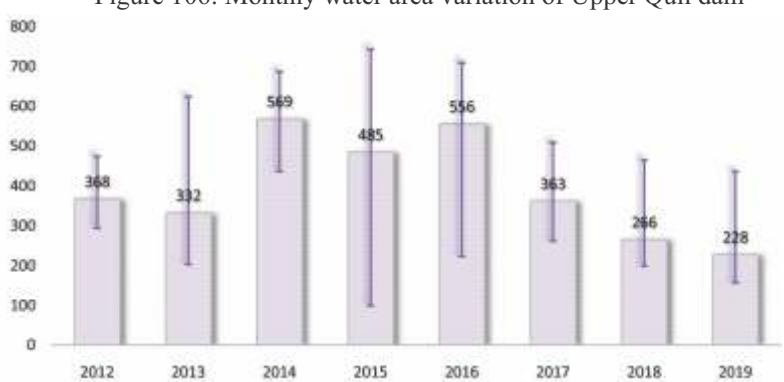


Figure 107: Yearly water area variation of Upper Quil dam during 2012 to 2019

Nakati Dam

Figure 108: False colour image (FCC) and True colour (Google) of Nakati dam

Nakati Dam fourth largest waterbody in district Jamui located Jhajha block. It was constructed in 1980 on Nakati river and the full reservoier level area of the reservoir is 364 ha. There is a bird santury on this reservoir. In last eight years its got maximum area in August 2015. Average water area the waterbody reduces to 75 ha in the month of April and May and again gain to 170 ha or more after monsoon. As per the one technical report of Bhagalpur University the ph of water varies between 7.5 to 9.5, TDS 115 to 125 mg/l, conductivity 243 µS and turbudity 4.1 to 9.8 NTU. Google image and False colour composition image of water spresd is given in figure 108. Figure 109 shows monthly water area variation and figure 110 shows surface water area variation between 2012 to 2020. Reservoer sourounded by tola Kita Kusauna, tola kita Bat Bajra, tola Baijla and Tola Sairia villages.

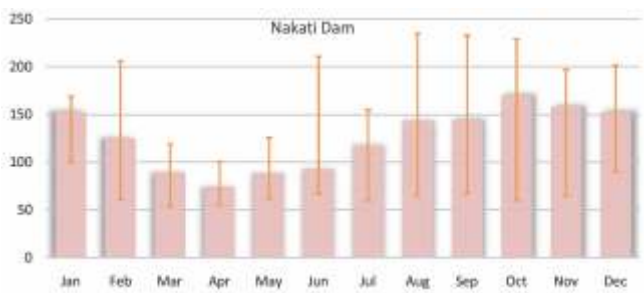


Figure 109: Monthly water area variation of Nakati dam

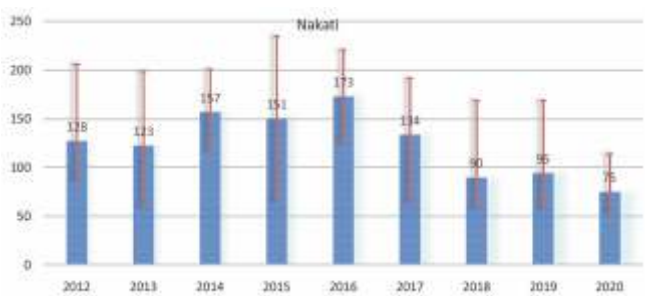


Figure 110: Yearly water area variation of Nakati dam during 2012 to 2020

Nagi Dam

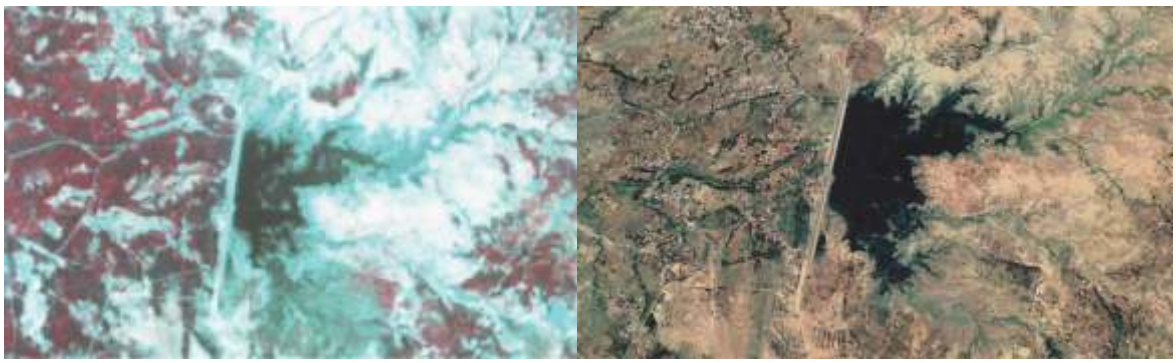


Figure 111: False colour image (FCC) and True colour (Google) of Nagi dam

Nagi Dam is the second largest waterbody in district Jamui located Jhajha block. It was constructed in 1958 on Nagi river and the full reservoier level area of the reservoir is 425 ha. There is a Nagi bird santury on this reservoir. In last eight years its got maximum water area in July 2016. Average water area the waterbody reduces to 50 ha in the month of April and May and again gain to 150 ha or more after monsoon. As per the one technical report of Bhagalpur University ph of water is 7.5 and TDS varies between 125 to 126 mg/l, conductivity 248µS and turbudity 7.8NTU to 15.8 NTU. Google image and False colour composition image of water spresd is given in figure 111. Figure 112 shows monthly water area variation and figure 113 shows surface water area variation between 2012 to 2020. Reservoer Nagi is sourounded by Tola Kakarnia, Tola Harhanja, tola katma and Tola Tara Kurachapa.

Figure 112: Monthly water area variation of Nagi dam

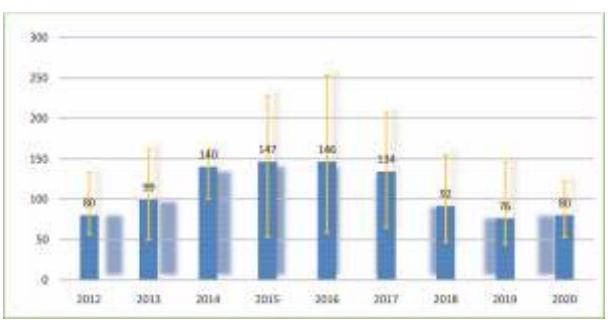


Figure 113: Yearly water area variation of Nagi dam during 2012 to 2020

Belharna

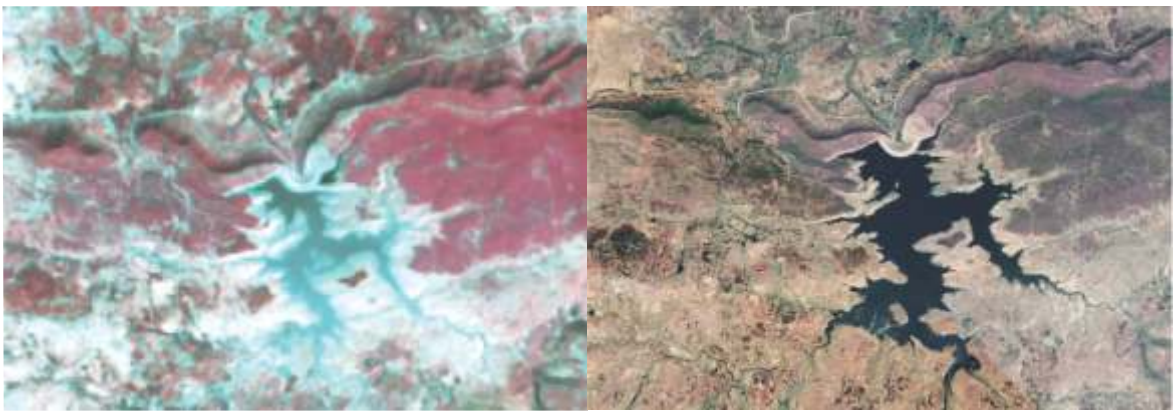


Figure 114 : False colour image (FCC) and True colour (Google) of Belharna dam

Brlaharna Dam is located in village Bela, Taluka Belahar of district Banka constructed for irrigation purpose. It was constructed in 1987 on Belharana river and the full reservoier level area of the reservoir is 268 ha. In last eight years its got maximum area in June 2016. Average water area the waterbody reduces to 50 ha in the month of April and May and again gain to 70 ha or more after monsoon. In last eight years the average water area flactuted between 48 to 92 ha. Google image and False coloor composition image of water spresd is given in figure 114. Figure 115 shows monthly water area variation and figure 116 shows surface water area variation between 2012 to 2020.

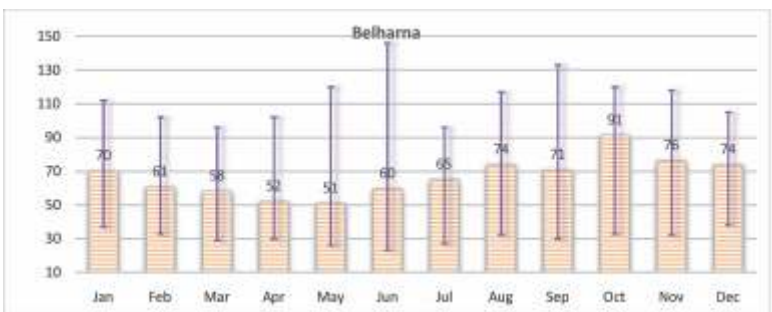


Figure 115: Monthly water area variation of Belharna dam

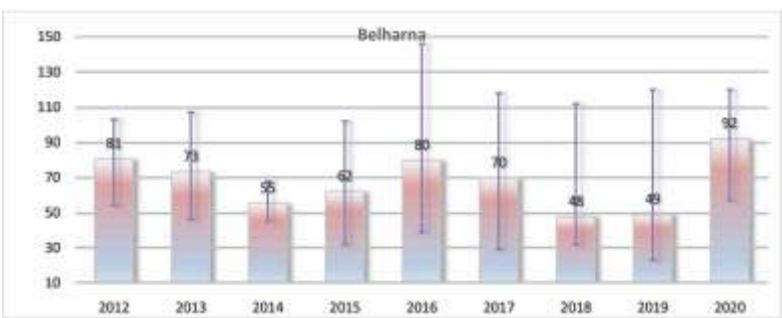


Figure 116:Yearly water area variation of Belharna dam during 2012 to 2020

Orihini

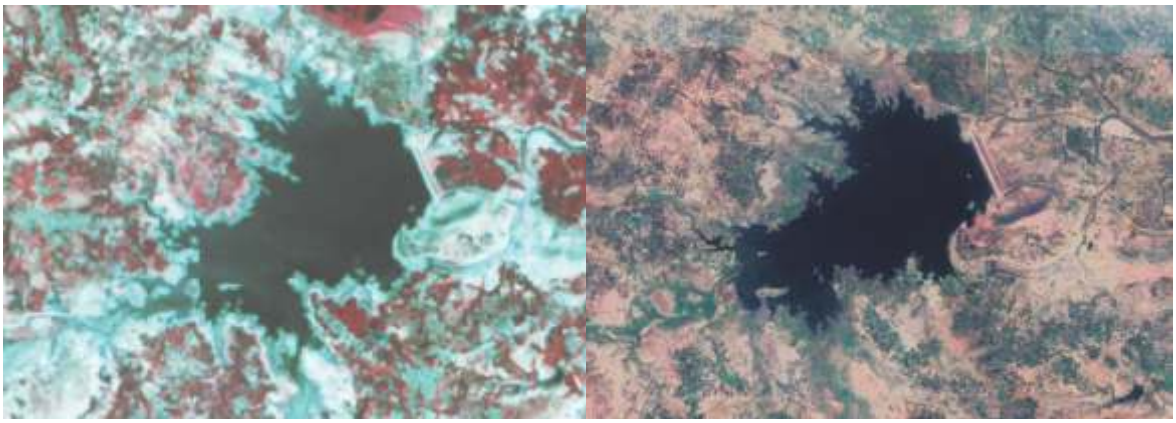


Figure 117 : False colour image (FCC) and True colour (Google) of Orihini dam

Orihini Dam is located in village Lodhan, Taluka Banka of district Banka constructed for irrigation purpose. It was constructed in 2000 on Orini river and the full reservoier level area of the reservoir is 202 ha. In last eight years its got maximum area in June 2016. Average water area the waterbody reduces to 200 ha in the month of May and again gain to 450 ha or more after monsoon. In last eight years the average water area flactuted between 350 to 450 ha. Google image and False coloor composition image of water spresd is given in figure 117. Figure 118 shows monthly water area variation and figure 119 shows surface water area variation between 2012 to 2020.

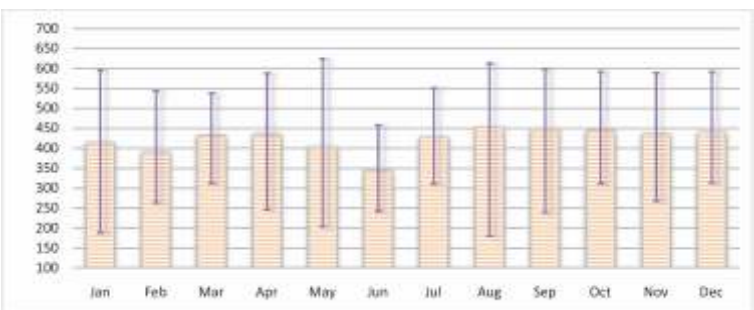


Figure 118: Monthly water area variation of Orihini dam

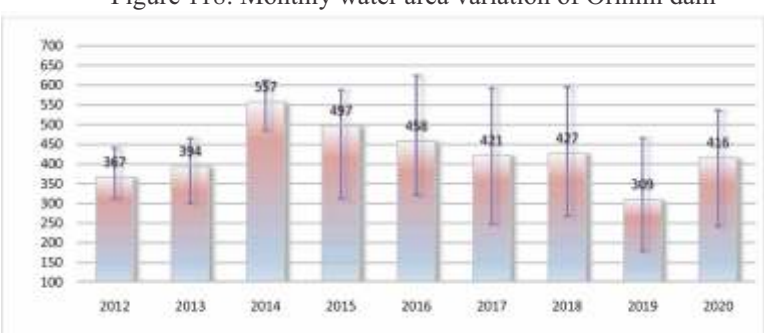


Figure 119: Yearly water area variation of Orihini dam during 2012 to 2020

Bilasi

Figure 120 : False colour image (FCC) and True colour (Google) of Bilasi dam

Bilasi Dam (Khoji Dam) is located in taluka Banka of district Banka constructed for irrigation purpose. It was constructed in 2001 on Bilasi river and the full reservoier level area of the reservoir is 583 ha. In last eight years its got maximum area in Feburary 2019. Average water area the waterbody reduces to 200 ha in the month of October. In last eight years the average water area flactuted between 185 to 335 ha. Google image and False colour composition image of water spresd is given in figure 120. Figure 121 shows monthly water area variation and figure 122 shows surface water area variation between 2012 to 2020.

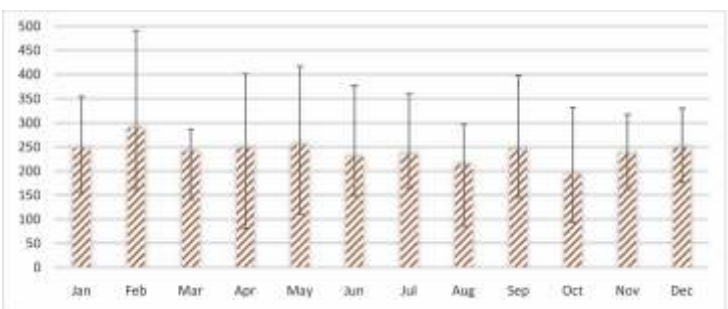


Figure 121: Monthly water area variation of Bilasi dam

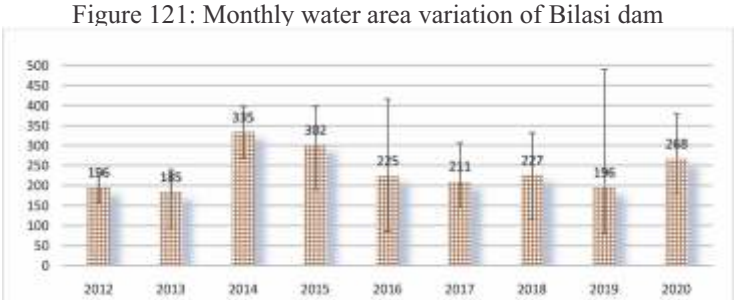


Figure 122:Yearly water area variation of Bilasi dam during 2012 to 2020

Badua

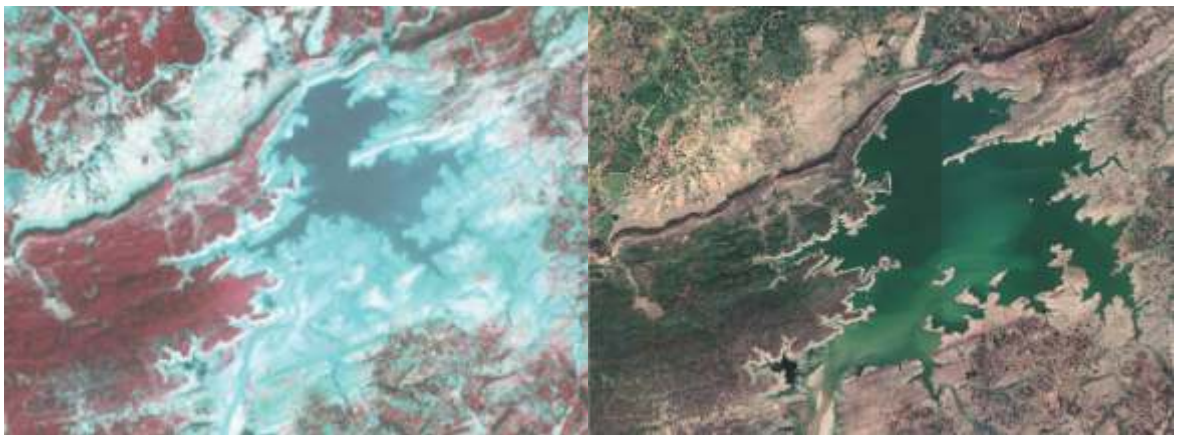


Figure 123 : False colour image (FCC) and True colour (Google) of Badua dam

Badua Dam is the largest waterbody in district Banka located Katoria block. It was constructed in 1965 on Badua river. The full reservoier level area of the reservoir is 1133 ha mean depth is 15.57 meter. In last eight years its got maximum area in April 2019. Average water area the waterbody reduces to 400 ha in the month of April and May and again gain to more then 600 ha after monsoon. As per the ICAR –CIFRI study of 1991 the ph of water varies between 7.5 to 8.1, Disolve oxygen 5.6 to 8.3 mg/l, Free carbon di oxide nil to 2.0 mg/l, Phosphate 0.067 to 0.321 mg/l nitrate 0.34 to 8.5 mg/l and silicate 23. To 33 mg/l. Cyanophycease are Bacillariophycease are the two dominant group of physics Google image and False coloor composition image of water spresd is given in figure 124. Figure 125 shows monthly water area variation and figure 123 shows surface water area variation between 2012 to 2020. Reservoer sourounded by Tola kita Kusauna, Tola kita Bat Bajra, tola Baijla and Tola Sairia villages

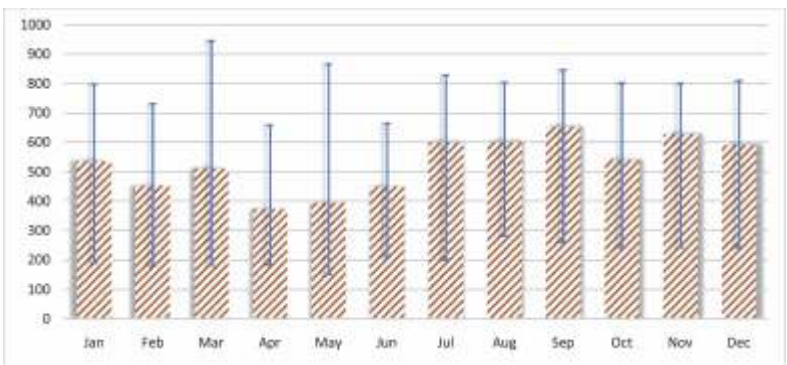


Figure 124: Monthly water area variation of Badua dam

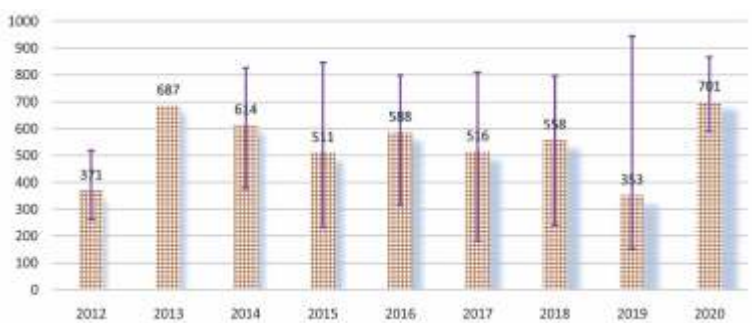


Figure 125: Yearly water area variation of Badua dam during 2012 to 2020

Chandan

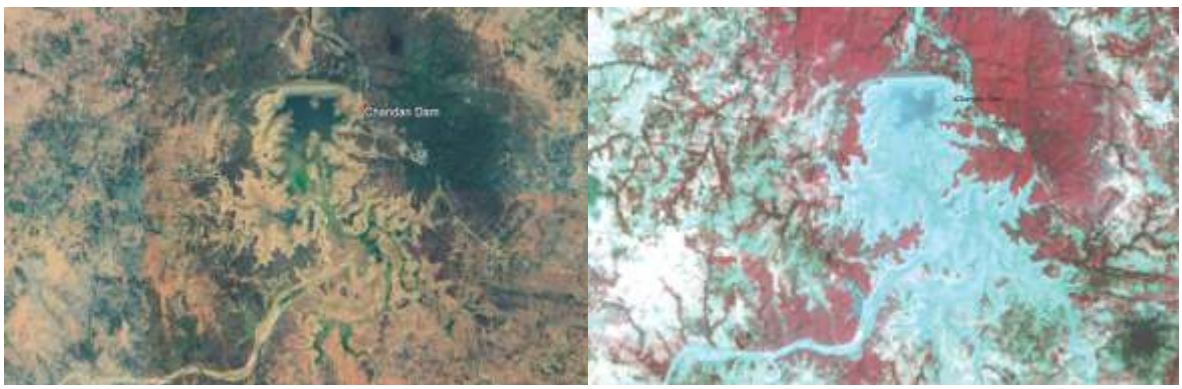


Figure 126 : False colour image (FCC) and True colour (Google) of Chandan dam

Chandan Dam is located in Banka taluka of Banka district built for the purpose of irrigation. It was constructed on the Chandan River in 1968 and the reservoir has a full reservoir level of 1081 hectares. Its water area reached 600 hectares in 2013, 2015, 2017 and 2018 in the last eight years. Its average water area decreases to 300 hectares in the months of January and April. The average water area in the last eight years has been found to be between 197 and 562 hectares. The Google image and false color composition image of the reservoir are given in figure 126. Figure 127 shows the monthly water area change and figure 128 shows the annual change of surface water area during the years 2012 to 2020.

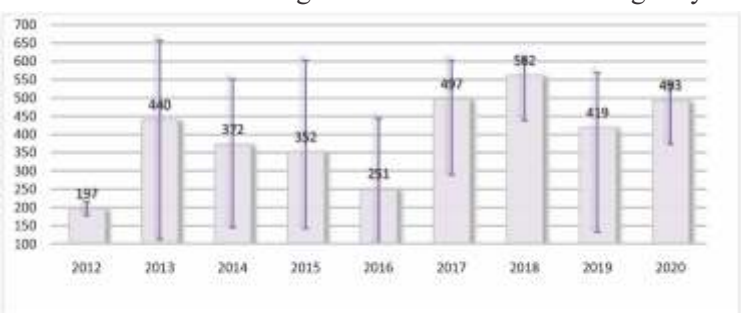


Figure 127: Monthly water area variation of Chandan dam

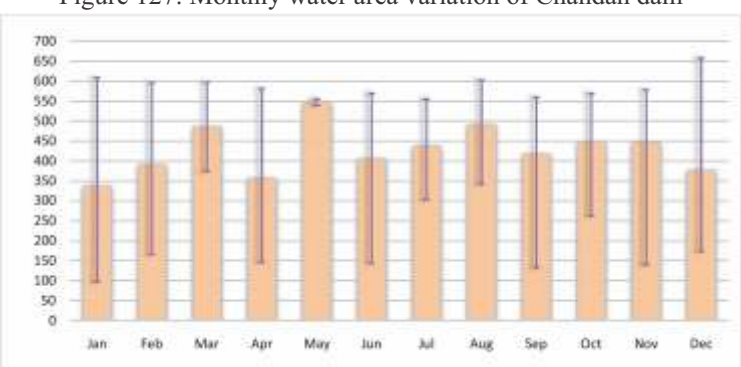


Figure 128: Yearly water area variation of Chandan dam during 2012 to 2020

Important Rivers of Bihar

In Bihar there are many rivers which flows through the states some of them are snow fed and others area rain fed. Most of the rivers orginates from Himalya or the foothillas of Himalaya and enters in the state through Nepal or Uttar Pradesh State. Some rain fed rivers Whish originates from plateue region end enteres through Jharkhand and Uttar Pradesh. The Ganga is the longest river in Bihar divides Bihar into two unequal parts. Therefore, the rivers of Bihar have been classified under two major categories i.e. river of North and South Bihar.

The major rivers of northern Bihar have Himalayan Origin and the considerable portion of their catchment lies in the glacial region. Due to their Himalayan origin, these rivers lie between Nepal and Tibet. During the monsoon season, these rivers receive an abundant amount of precipitation which is 80 to 90 times larger than the fair weather. Some of the rivers of this region namely Gandak, Burhi Gandak and Ghagra are more or less stable. these rivers also form chaurs (Ox-bow lakes). On the other hand, the other rivers of northern Bihar namely Baghmati, Adhawra groups, Kamla-Balan and Kosi are still very unstable.

The zone of the south Bihar is drained mainly by the rivers namely Karmnasa, Sone, Punpun, Kiul, and Badua Chandan etc. all falling into the Ganga. The rivers of southern Bihar have their origin either in the Vindhyanchal hills or in the hills of Chhotanagpur and Rajmahal. The southern bank of the Ganga is formed as a leeve, obstructing the drainage of the land. Also, the southern plains of Bihar are marked by the Tal formation (a low-lying area) due to the course of several rivers Stremas and rivers of Bihar is shown in figure 129.

The listing of rivers given below.

Ganga

The river known as the Ganges is officially and popularly known by its Hindu name, Ganga. It is a snow fed and major river of the Indian subcontinent. Its source at Gaumakh in the southern Himalayan Glaciersin the Indian side of the Tibetan border. It crosses the cities: Gangotri, Haridwar, Kanpur, Allahabad, Varanasi, Ghazipur in UP and enter in the boundary of Bihar at Chausa, near Buxar after its confluence with Karmanasa. It passes through the cities& towns- Patna, Barh, Mokama, Begusarai, Munger, Khagaria, Bhagalpur, Kahalgaon, Pirpainti, in Bihar and exit to Saheb ganj in Jharkhand and then to West Bengal. One branch of the river goes on to form the River Hooghly in West Bengaland ultimately meet to the sea (Bay of Bengal).Ganga River covers 445 km in Bihar.

It is joined by the three great effluents - the Ghaghra, the Gandak, and the Son and their tributaries in Patna district. Further Punpun joins it at Fatuha in Patna district, Koshi joins it at Khagaria district while the Harohar and the Kiul join it near Surajgarha, Distrct - Lakhisarai. Most of the river which flowers through the Bihar shown in figure 130.

Ghaghar

Ghaghara is a perennial trans-boundary river, originating from the Tibetan Plateau near Lake Mansarovar in Nepal. It is a major left bank and largest tributary of the Ganges. After meeting with tributaries in UP it enters into Bihar near Guthani of Siwan district and joins Ganga at Revilganj (Chapra) in district Saran. It carries more water than the Ganges before its confluence. Towns of Ghaghra River catchment area are Siwan, Saran (Chapra) and Sonepur in Bihar.

Gandak

The Gandak River originates from melting of snow, glaciers and from lakes of Himalayan streams in Nepal and its border with Tibet, which contribute substantially to the lean season flows of the river. It is one of the major left bank tributary of the Ganga and also known as the Narayani mainly in Nepal. It enters into Bihar at the Indo-Nepal border Triveni (in Nepal) and Valmikinagar in Bagha sub division of District-West Champaran, Bihar. The Gandak flows through West Champaran, East Champaran, Gopalganj, Saran, Muzaffarpur and Vaishali districts. It joins the Ganges after flowing approx. 260 km near Patna just downstream with one of river bank at near Kaunhara Ghat, Hajipur, District-Vaishali and other at near Hariharnath Mandir, Sonepur, District-Saran.

Buri Gandak

The Budhi Gandak originates from Chautarwa Chaur near Bisambharpur, West Champaran. It is a rain fed river and flows through West Champaran, East Champaran, Muzaffarpur, Samastipur, and Begusarai and ultimately flows in to the Gangesin Khagaria. This river initially known as Sikrahana Riverup to Lalbagia Ghat, East Champaran. From its downwards journey it is known as Budhi Gandak. The main tributaries of this river are Ramrekha, Harboura, Kohra, Sirisia and Bagmati.

Bagamati

The Bagmati originates from Shivapuri Hills about few kms from Kathmandu in Nepal. It is a rain fed river and passes the center of Kathmandu, Tarai then enters into India near Dheng, district Sitamarhi, Bihar. It flows across Sitamarhi, Sheohar, Muzaffarpur and Darbhanga districts. Main tributaries of this river are Manusmar, Lakhandei and Kamla Balan. It finally joins Budhi Gandak near Hayaghat, District-Darbhanga. This river is also causing flood in northern Bihar which results damage of lives and property.

Kamala

The Kamala originates from Churia Range near Maithan which is near Sindhuliagarhi in Sindhuli District of Nepal at an elevation of 1,200 metres (3,900 ft). It flows in a south direction crossing Kamala Khoj area and after passing through a gorge above Chauphat it flows into the terai area of Nepal at Chisapani. It enters in Indian from Madhubani district in Bihar, 3.5 kilometres (2.2 mi) upstream of Jainagar. A barrage known as Kamala barrage has been constructed by the State Government near

Jainagar. It joins the river Bagmati at Badlaghat in Khagaria district and the combined stream flows into the Kosi nearby. In the lower reaches it follows the course of the Balan and is therefore also known as Kamala-Balan.

Kosi

The Kosi is a trans-boundary river flowing through Nepal and India. In Nepal it emerges from the mountains with other tributaries and becomes the Koshi. After flowing through Birat nagar & other places in Nepal it enters into Bihar near Bhimnagar, district Supaul and after flowing approx. 260 km joins the Ganges near Kursela, district Katihar.

It is a river of unstable nature and shift its course frequently. The river, which flowed near Purniya in the earlier, now flows west of Saharsa. Its unstable nature has been attributed to the heavy silt carried during the monsoon season. Koshi has been the main responsible river for extreme flooding in Bihar. For this reason, the Koshi River is known as "The Sorrow of Bihar" as it has been causing huge damage of lives and property through flooding and very frequent changes in course. The worst flood affected districts includes Supaul, Araria, Saharsa, Madhepura, Purnea, Katihar, parts of Khagaria and northern parts of Bhagalpur, as well as adjoing regions of Nepal also..

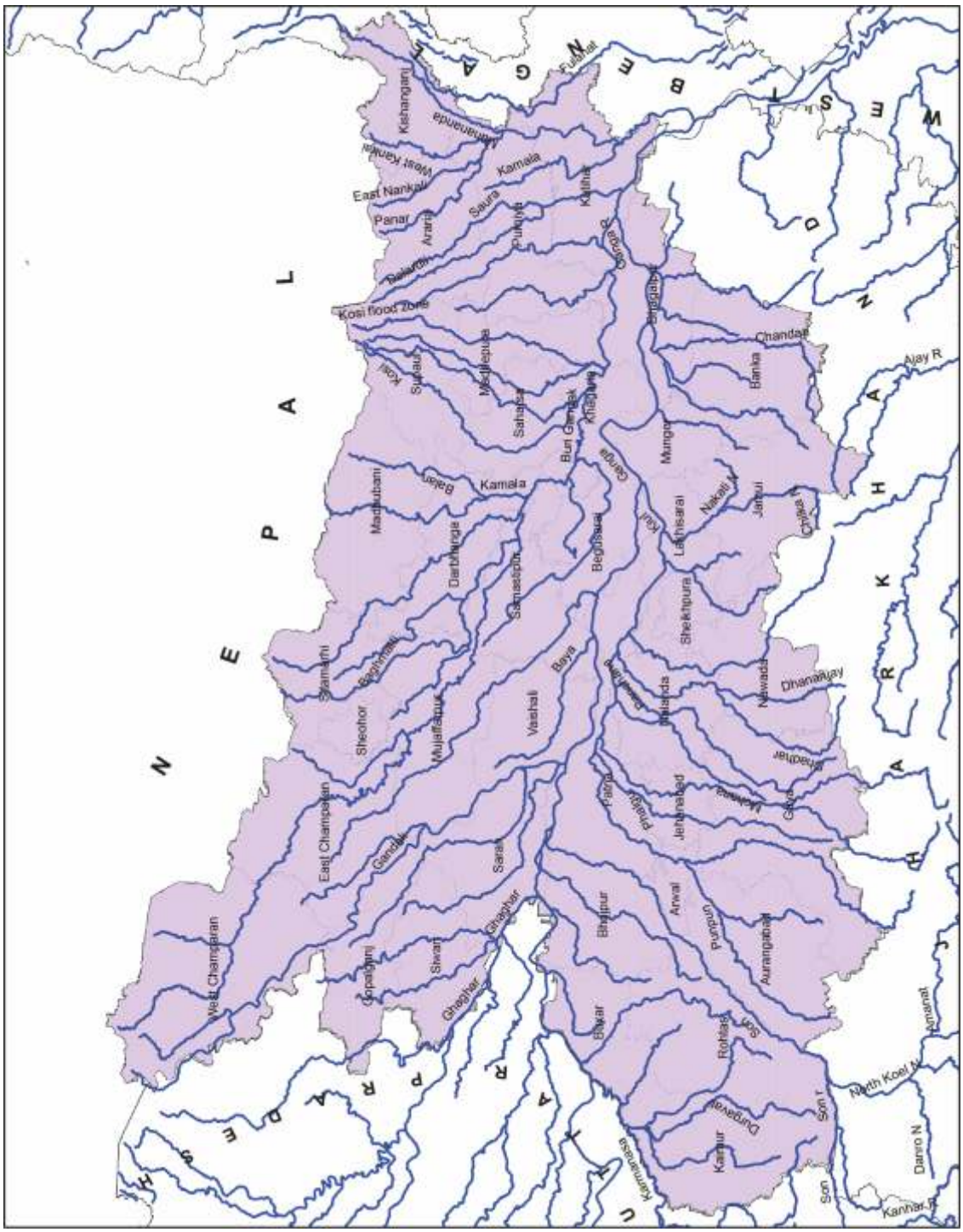


Figure 129: Rivers and Streams of Bihar

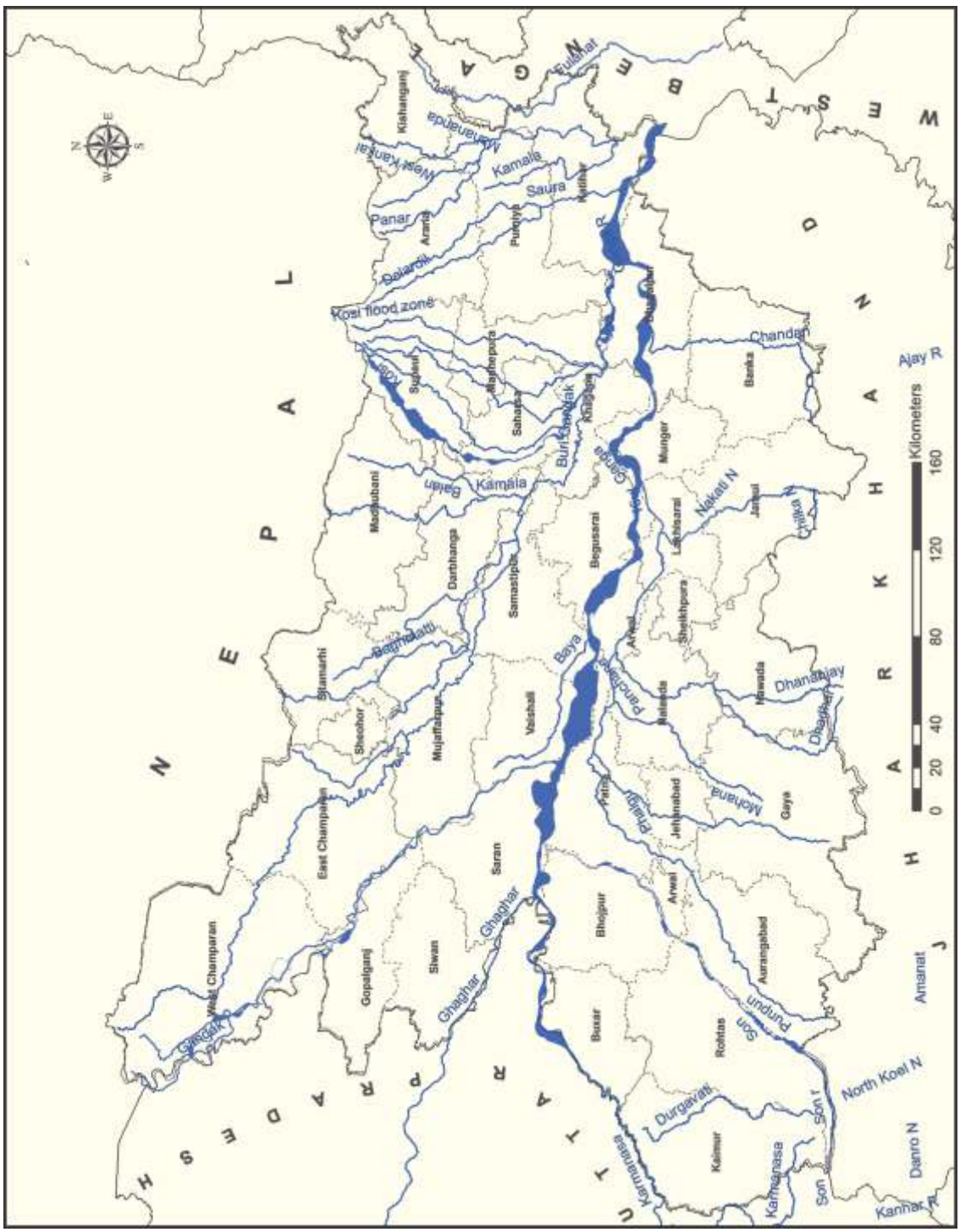


Figure 130: River of Bihar

Mahananda

Mahananda River is one of the tributaries of the Ganga. The origin of this mighty Mahananda River is hills of Darjeeling, West Bengal.The Mahananda River flows through siliguri, then enters to Thakurganj, District-Kishanganj, Bihar and flows through the fertile agricultural area of Purnea & Katihar and then leaves to West Bengal. The Mahananda River is mainly rain fed in the monsoon and floodalso occurby this river. It has a low water level during the summer or winter.

Kiul

The Kiul River is a tributary of Ganges. It originates in Giridih of Jharkhand and flows through Lakhisarai, Sheikhpura and Jamui districts of Bihar. The Kiul originates from the Tisri Hill Range in Kharagdiha police station area of Giridih district. After forming the boundary of the district for a short distance it enters Jamui district through a narrow gorge near the Satpahari hill. It falls into the Ganges near Surajgarha. Until it meets the Harohar the Kiul has broad sandy bed and in some places is as much as half a mile wide, though it contains very little water in summer. In the course of its run the river traverses a total length of 111 kilometres

Punpun

The Punpun River is a tributary of the Ganges. It originates in Palamu district of Jharkhand and flows through Chatra (Jharkhand), Aurangabad, Gaya and Patna districts of Bihar. The river joins the Ganges at Fatuha, 25km downstream of Patna. The river is mostly rain fed and carries little water in the dry season, however, during rains the Punpun often causes heavy flood in the Patna area.

Son

The Sone originates from the hills of Madhya Pradesh near Amarkantak. Its main tributaries are Rihand (Uttar Pradesh) and North Koel (Palamu District, Jharkhand). It also receives over flow of Bansagar Dam, Dist-Rewa, Madhaya Pradesh. After flowing through the states Madhya Pradesh, Uttar Pradesh and Jharkhand it enters to Bihar, near south of District - Kaimur. It passes through Aurangabad, Dehri – on - son, Rohtas, Daudnagar (Jahanabad), Koilwer, and rural areas of Patna district and finally joins the Ganges in downstream of Chapra, nearby Doriganj, Distrct - Saran. The Sone has a steep gradient with quick run-off and ephemeral regimes, becoming a roaring river with the rain-waters in the catchment area butturning quickly into a fordable stream. The Sone, being wide and shallow, leaves disconnected pools of water in the remaining part of the year.

Phalgu

Falgu River has historical importance as Gaya is located on the bank of this river. Falgu is not a separate river. It finds its existence by combination of Niranjana and Mohana rivers. Niranjana originates from Simaria region of western Hazaribagh District of Jharkhand. Mohana River also originates from Shila village region of Hazaribagh District. Mohana is also known as Mahanadi and Saraswati. Niranjana

joins Mohana river in down stream of Bodh Gaya and known as Falgu River in its downwards journey. It is rain fed river and almost find dry in summer season. The river is simply a vast stretch of sand dunes, wide, flat and generally dry. But the mass of water is available below the sand dunes. If one digs even a meter, the water seeps out and a small crater full of water is formed. But in some places, water flows are also available.

Durgawati

The Durgavati River which flows through Kaimur district of Bihar, is a tributary of the Karmanasa joins at right bank. There is one fall knowan as urgavati Falls of 80 metres (260 ft) high, on the Durgavati River at the edge of the Rohtas Plateau

Karmanasa

Karmanasa (Karmanasha) River is a tributary of the Ganga River. Karmanasa River originates originates at a height of 350 metres (1,150 ft) on the northern face of Kaimur Range near Sarodag in Kaimur district of Bihar and flows through Uttar Pradesh. Along the boundary between Uttar Pradesh and Bihar, this river covers the districts like the Sonbhadra district, Chandauli district, Varanasi district and Ghazipur district on its left and the districts of Kaimur district and Buxar district on its right.

Chandan

The Chandan River flows near the city of Bhagalpur and it originate Tola Jhausa of Banka district. It is a seasonal river. It has been identified as probably being the river Champa on whose banks was located the ancient city of Champa, capital of the Anga mahajanapada.

List other smaller seasonal rivers.

Saura

West Kanakai

Panar

Delardil

Nakati

Nagi

Dhananjy

Dhadhar Mohana

Panchane

Balan

Orini

Riparian villages of Bihar on the Ganga river

The river Ganga enters the Bihar border at Chausa near Buxar after the confluence of Karmnasa. It passes through 52 blocks of 11 districts. 549 villages are on the banks of the Ganges River or near the Ganges. It provides the livelihood of the fishing community and the group dependent on the fisheries of these areas. The listing of districts blocks and vilaages is given in table 183.

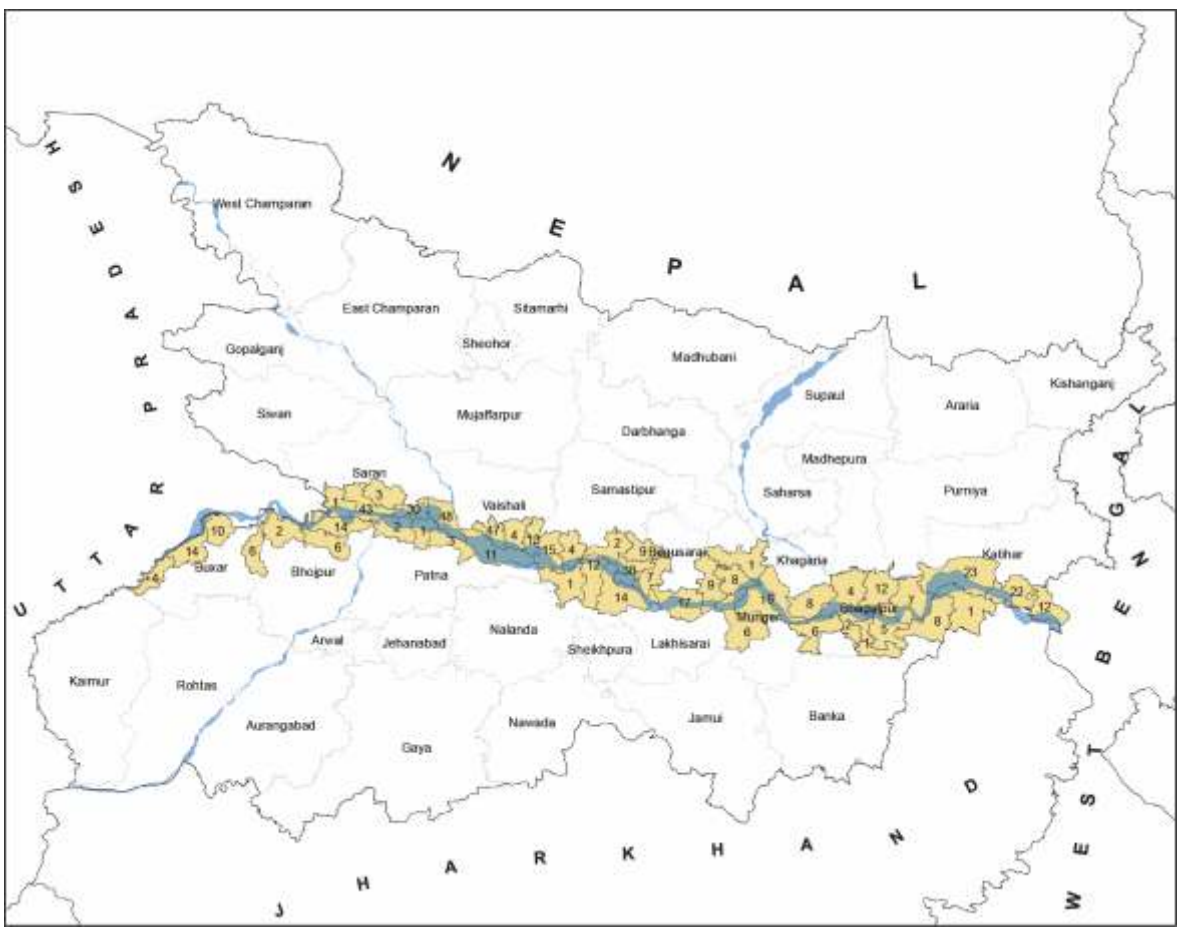


Figure 131: Blocks map of riprine villages of Bihar

Table 183: List of riprine villges of River Ganga

Block	Village	
	No.	Name
		District : Buxor
Barhamp	4	Baghi, Dangrabad, Pirthi Chapra (Pa, Rudrapur) and Chulhan Chak
Simri	10	Bhirgu Ashram, Rajpur Kalan (Par), Rajpur Kalan (Jag), Rajpur Kalan (Sul), Rajapur Taufir, Partappur, Rajpur Kalan (Par), and RajpurKalan(Parna), RajpurKalan(Parna) and Keshopur
Buxar	14	Umarpur Diara, Majharia, Khutaha, Simra, Arjunpur, Ahirauli, Sarimpur, Bibiganj, Thoragangbarar, Kiratpura, Laropur, Kamhariya, Kamarpur, and Misraulia
Chausa	4	Hadipur, Bahadurpur, Chausa, and Narbatpur
		District : Bhojpur
Barhara	14	Sheo Diara, Sinha, Parasrampur, Nurpur, Khawaspur, Khawaspur, Khawaspur, Khawaspur, Sohra, Piparpanti, Jokahri, Majhauli, Keotia, and Balua
Arrah	6	Salempur, Mahadewa, Teksemar, Rampur, Baghakol, and Sundarpur Bar
Shahpur	2	Jagdeopur and Sonki
		District : Saran
Chapra	43	Gheghta, Sherpur, Maharajganj, Dariyawganj, Ekauna, Dhusaria, Badalpura, Makhdumganj, Manupur Jahangir, Khalpura Bala, Nauadih, Khalpura Kamala, Dumri, Lodipur, Phul Chak, Bhairopur Aima, Chak Jamali, Lodipur Diara, Chirand, Kans Diar, Chak Haji, Taufir Maharajgan, Daftarpur, Singahi, Qazipur, Gopalpur, Gopalpur, Madanipattiv, Badalpura Diara, Mohaddipur, Bhairopur Nizamat, Raipur, ingawan, Ismailpur, Barhara Mahazi, Balua, Qazipur, Khawaspur, Diara Singahi, Gopalpur, Gopalpur, Jatia Bajidpur, Mehrauli, and Khawaspur Khurd
Dariapu	1	Sumerpatti
Dighwar	30	Fakuli, Kanakpur, Parsotimpur, Haraji, Kuraia, Kesarpur, Rampur Ami, Jhaua, Barua, Pakaulia, Tilok Chak, Malkha Chak, Bodha Chhapra, Ismaila, Milki, Chatra, Manupur, Goraipur, Ami, Dharipur, Mathurapur, Baguraha, Pipra Salehpur, Kakaria, Bishunpur Mohan, Anu CHak, Sobarna, Yusufpur, Pharhada, and Jaitipur
Garkha	3	Maddupur, Santha and Moazampur
Sonepur	48	Dumari Buzurg, Rasulpur, Mahmud Chak, Kasturi Chak, Naya Ganw, Hasanpur, Gopalpur, Rajapur, Sobhepur, Lahlad Chak, Chaturpur, Milki, Kapur Chak, Chhittu Pakar, Babhanganwan, Hasilpur, Makra, Khuntaha, Rasen chak, Murthan, Ladanpur, Lawang Patti, Mahammadali, hak, Shekh Duman, Parmanandpur, Mustafa Chak, Abdul Hai, Naudiha, Rahimpur, Salehpur, Gheghta, ChakDaria, Saidpur, Nawada, Kharika, Kasmar, Jan Mohammad, Rasulpur, Shahpur, Gangajal, Lodipur, Badurahi, Nazarmira, Sabalpur, Pahleza, Mohabatpur, Sabalpur and Raipur Hasanpur

District : Patna		
Mokameh	14	Jazira Mekra, Diara Mahazi Mekr, Diara Sultanpur, Diara, orasdabad, Aunta, Dariapur, Hathdeh, Diara Maranchi Ur, Dariapur, Hathidah Buzurg, Maranchi, Jazira Dumra, Rampur Dumra, and Sherpur
Dinapur	1	Shankarpatti
Barh	1	Nawada
Maner	2	Mangarpal and Haldi Chhapra
Pandara	12	Jazira Raili, Sahnaura (Diara), Diara Dariapur D, Diara, Andarakh, Raili, Lachhmipur (Diara), Bariarpur (Diara), Ballipur Pachmahl, Nawada (Diara), Lachhmipur, Pachmahla, Raili, Hardaspur, and Ramnagar Diara(Pt)
District : Vaishali		
Raghopu	11	Terahrasia, Sorabpur urf Sara, Ashpatpur Singhia, AshpatpurSinghia, Saidpur Singhia, Chak Thakru, Paroha, sukwarpur, Jahangirpur Pirth, Ramdauli Barari and Jahangirpur Phuli
Bidupur	47	Mayil, Daudnagar Motaluk, Biddupur, Kamalpur Singhia, Khilwat, Sitalpur Kamalpur, Chak Mangar, Dilawarpur Hemti, Bishunpur Rajkhan, Mathura, Sultanpur, Dilawar Gobardhan, Madhurapur, Bibharpur, Shampur Dayal Deo, Ramdauli, Maniarpur, Chechar, Nawanagar, Amer, Kutubpur, Mustafapur, Gobindpur, Kaithaulia, Sadullahpur Chak, Nawa Nagar, Shampur Dayal, Nawanagar, Jurawanpur Gopalp, Gobindpur Gokhula, Bishunpur KishunD, Chak Sadaili Urf, Gopalpur Chaknai, Bazidpur Saidat M, Bishunpur Kishund, Gobindpur, Chak Khaje Ahmad, Bagh Said Khan, Gopalpur Urf Sadu, Chak Shama, Kutubpur Khalsa, Chandpur Shadab, Suhai Ram Das, Panapur Sirpal Mo, Chak Mohammad, Gokhulpur, Chak Sultan, and Bishunpur Said Al
Desri	3	Babhangawan, Chandpur Nankar, and Bhojpur
Mahnar	13	Kutubpur, Lawapur Harnaraya, Lawapur Mahnar, Chak, so, Bagh Naucha, Mokhtarpur, Alipur Hatta, Hasanpur, Juned, Majlispur, Sulhulpur, Dharampur Palwaia, Gopalpur Palwaia, andBahlolpur
Sahdai	4	Hitanpur Shankar, Jagdishpur Beli, Khaspatti and Raepura
District : Samastipur		
Mohiud	4	Raspur Patasia, Chapar, Balagachh, and Arazi Barari Chapar
Mohanp	15	Dharnipatti, Rampur Sin, Bariarpur, Shah Alampur, Matiaur, Chapra, Jamunapur Rudar, Karwari, Arazi Barari Ram Na, Motiaur Bishunpur, Ratanpur, Hardarpur, Kutubpur, Rampur, Math, and Hasimpur
District : Begusarai		
Bachhwara	2	Chamtha, Dularpur.
Balia	9	Shekh Dih Kasba, PaharpurHusena, Bazidpur, Ramnathpur, Bhagwanpur, Mamrezpur, Ramdatpur, and Nathullapur
Barauni	7	Garhara, Salempur, Amarpu, Chckbal Sirinath, Semaria, Ganga Prasad, and Malhipur,

Bhagwaanpur	9	Chak Amla, Fatehpur, Chakamla, Bhagwatpur Teai, Chak Jadupat, Paigambarpur, Burhi Ban, Chak Inaet, Raja Ramdadpur,
Teghara	38	Binalpur, Partappur, Tajpur, Chakkipur, Barauni, Amarpur, Fajlipur, Shakhawatpur, Ratgaon, Matlupur, Paigambarpur, Paigambarpur, Kasba, Kagjania, Chak Saidu, Matlupur, Makhdumpur, Sultanpur, Chak Deal, Madhurapur Chauthia, Kasba, Makhdumpur, Santanpur, Chak Daud, Makhdumpur, Kasba, Matlupur, Nipania, Chak Daud, Baro, Madhurapur, HarirampurJadu, Ehiyapur, Mirzapur Anman, Nipania, and Chak Surjai
Shamho	3	Singhpur, Hemarpur, and Salha
Sahebp	8	Raghunathpur Barar, Malhipur Karari, Malhipur Barari, Phulmalik, Rasulpur, Malhipur Barari, Parora, and Salemabad
Matiha	17	Ramdiri, Sihman Barari, Sihman Karari, Sihman Barari Bandoba, Balahpur, Khurampur Chakor, Chak, Chhitraur, Nayagaon, Laldiara, Mahindarpur Barari, Mahindarpur, Chak Bhelu, Bagdobh, Jafarpur, Ramnagar, and Sirnia
		District: Lakhisari
Barahi	1	Jaitpur
		District: Khagaria
Khagar	1	Durgapur Barari
Parbat	8	Rupauli Inglish, Temtha Karari, Inglish Timapur, Temtha Siadatpur Aguani, Dumaria, Bazurg Siadatpur Aguani, and Temtha Patpar Gan
		District : Munger
Bariar	5	Binda Diara, Bariarpur, Paria, and Katgala
Munger	16	Tikarampur, Taufir, Sawal Khas, Ganga Prashad, Hulasarai Jagir, Paran Singh Jagir, Mangli Khan jagir, Bhelwa, Harnathpur Barni, Tarapur Diara, Jafarnagar, Zamin Digri, Manikpur, Mirzapur Bardah, Kutlupur Diara, and Kutlupur Bangli
Jamalp	1	Itahri
		District : Bhagalpur
Bihpur	4	Narkatia, Sonbarsa, Jamaluddinpur, Tekwazpur,
Colgong	8	Jagesarpur, Mathurapur, Khajuria, Mathurapur, Mathurapur Arazi, and Umapur
Gopalpur	2	Tintanga (Pt-Gopal), andBudhuchak
Ismail	5	Ismail Pur, Kamlakund, Basgarha, Joth Gobind, and Emadpur
Kharik	7	Lodipur, Sobnathpur, Lachhmipur Maheshp, Jhausarai Kazi Kor, Faridpur, Jhausarai Bhagwati, and Jhau
Naraya	12	Bishunpur Amri, Shankarpur Gosaind, Baikatpur, Mirzapur, Bishunpur Gopal, Gangapur, Saiduddinpur, Jagdish chak, Jaganchak, Shahabad, Shahzadpur, and Shirazuddinpur
Nathna	2	Mohanpur, and Shankarpur
Rangra	1	Tintanga (Pt-Rangr)
Sabour	5	Makhajan, Raziuddinpur, Pannochak, Barari, and Fatehpur

Sultan	6	Tahawarnagar, Tilakpur, Nawada, Ghorghat Mal, Ghorghat Milik, and Gangania
	1	Khawaspur Diara ur
		District : Katihar
Amdaba	12	Karimullahpur, Harnarainpur, Ram Nagar, Basantpur, Bhagwanpur, Sakari Galiurf Kala D, Nandgaon Kala Diara, Murela, Par Diara, Untmari, Gadai Maharajpur, Chaukia , and Paharpur
Barari	23	Barinagar, Gurmaila, Bhandartal, Jawania, Pachgachhia Badh, Sisia, Baidanda, Bishunpur, Bahora, Saira Milik, Mirwan Milik, Kant Nagar, Kolgawan, Telgawan Milik, Mahna Chandpur, Bhawanipur, Bahora, Jot Ram Rai, Modi Chak, Milik Gachh, Bakiasukhai, Sahoria Nandlal, and Khagha Patti
Kursel	9	Muradpur(Pt-Kursela), Basuhar, Jarlahi, Santokhpur, Jawania, Milik, Gobrahi Diara, Tingharia, Khatiaha Badh, and Batesarpur
Maniha	22	Shahpur, Dhuriahi, Dilarpur, Samda, Raghunathpur, Nandanpur, Abdullahpur, Jot Talih, Kebala, Baijnathpur, Kamalpur Ogaireh, Katakus, Maheshpur, Googachhi, Baghar, Bhogwanpur Ogairah, Mirzapur, Kebala, Amirabad, Alinagar, Ganges River Milik Ba and Saidpur

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