



GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

MINISTRY OF WATER RESOURCES

DEPARTMENT OF BANGLADESH HAOR & WETLANDS DEVELOPEMENT

CLASSIFICATION OF WETLANDS OF BANGLADESH

Volume 3 Annexure 2: Haors of Bangladesh



December 2016



PROSOIL FOUNDATION CONSULTANT
BANGLADESH



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**PROSOIL FOUNDATION CONSULTANT
BANGLADESH**

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Classification of Wetlands of Bangladesh

Final Report

The Final Report on 'Classification of Wetlands of Bangladesh', submitted in December, 2016 contains the following volumes:

Volume 1: Main Report

Volume 2: Annexure 1: Rivers of Bangladesh

Volume 3: Annexure 2: Haors of Bangladesh

Volume 4: Annexure 3: Maps of Wetlands of Bangladesh

Volume 5: Annexure 4: Beels of Bangladesh

Annexure 5: Reversible Wetlands

 5A: List of Polders of Bangladesh

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Annexure 6: Biodiversity of Wetlands of Bangladesh

 6A: Plants of Inland Wetlands

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 6D: Birds of Tanguar Haor

 6E: Animals of Tanguar Haor

 6F: Freshwater Fishes of Bangladesh

Volume 6: Supporting Documents

 Annexure 7: Feedback from the Stakeholders

 Annexure 8: TOR of the Project

Volume 7: Annexure 9: Soil of Wetlands of Bangladesh

Volume 8: Annexure 10: Wetland Photo Gallery

Preface

This Volume (Volume 3) contains the “Annexure 2: Haors of Bangladesh” of the Final Report on “Classification of Wetlands of Bangladesh”.

Haors are special type of **Inland Wetlands** of Bangladesh situated in the north-eastern zone of the country. They are freshwater (seasonal) inland lakes. Considering the importance of Haor in the national economy as well as of its hydrological characteristics and very rich biodiversity, it was felt necessary to prepare a separate volume of the report, exclusively dealing with Haors.

This Annexure includes the name, location and map (district and Upazila wise) of all the 373 Haors as identified in the “Master Plan of Haor Area” (BHWDB, 2012). The Annexure has been prepared by extracting data from the “Master Plan of Haor Area” as well as the data acquired during the preparation of the said “Master Plan of Haor Area”.

We deeply acknowledge the “Department of Bangladesh Haor and Wetlands Development (DBHWD)” and the “Center for Environmental and Geographic Information Services (CEGIS)” for developing a comprehensive Master Plan of Haor area. We are thankful to the CEGIS for helping us to formulate the Report including this Annexure. We acknowledge the Water Resources Planning Organization (WARPO) for providing data and maps from the National Water Resources Data (NWRD) Base.

We are grateful to the Technical Committee of this project for their support and guidance. We are thankful to Mr. Md. Majibur Rahman, Director General, DBHWD and Mrs. Afroza Moazzam, former Director General of the DBHWD for their active support and co-operation.

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Chapter 1 Introduction

1.1 Background

Haors are bowl-shaped depressions of considerable aerial extent lying between the natural levees of rivers or high lands of the northeast region of Bangladesh. In most cases, Haors have formed as a result of peripheral faulting leading to the depression of haor areas (BHWDB, 2012). There are 373 Haors in Bangladesh as identified in the “Master Plan of Haor Area” (BHWDB, 2012).

The “Department of Bangladesh Haor and Wetlands Development” (the then “Bangladesh Haor and Wetland Development Board”) through the “Center for Environmental and Geographic Information Services (CEGIS)” has prepared the “Master Plan of Haor Area” (BHWDB, 2012). This Annexure has been prepared mainly with the data extracted from the Master Plan. It includes District and Upazila wise list of all the Haors along with their location, area and maps. Furthermore, it includes short description of some important Haors and Beels within the Haors.

The word Haor (হাওর) is a corrupt form of the Sanskrit word “Sagor” meaning sea. In parts of Bangladesh, people often pronounce the Bengali alphabet স (Sa) as হ (Ha), and sometimes গ (Ga) as হ (Ha). Thus, “Sagor” has become Haor (Shamsul et al., 2012). The origin of Haors is possibly connected with the rise of Madhupur Tract (Shamsul et al., 2012). There are about 373 Haors located in the districts of Sunamganj, Habiganj, Netrakona, Kishoreganj, Sylhet, Maulvibazar and Brahmanbaria covering 1.99 million ha of area and having population of 19.37 million (BHWDB, 2012). The Haors vary in size from a few hectares to several thousand hectares and cover an area of 858,000 ha which is about 43% of the total area of the Haor Region. The core Haor Region, known as the “Sylhet Basin” or “Haor Basin” is bounded by the hill ranges of India – Meghalaya on the north, Tripura and Mizoram on the south, and Assam and Manipur on the east. The basin extends north to the foot of the Garo and Khasia Hills, and east along the upper Surma Valley to the Indian border (BHWDB, 2012).

The Surma and Kushiyara in association with other minor hilly streams like Manu, Khowai, Jadhukata, Piyain, etc. form the dense drainage network of the Haors draining from the

eastern border towards the Sylhet Basin. Between the Surma and Kushiyara, there lies a complex basin area comprised of several Haors. Most of the Surma system falls in the Haor basin, where the line of drainage is not clear or well defined. In the piedmont tract from Durgapur to Jaintiapur, the network of streams and channels overflows in the rainy season and creates vast sheets of water which connect the Haors with the rivers (BHWDB, 2012).

The Haor Region is gradually becoming a popular tourist spot in Bangladesh for its beauty. At the end of the monsoons, around August-September, the Haors are full with water attracting tourists from all over the country and abroad. Thereafter, the water in the Haors starts receding but still provides a magnificent sight. In winter, the Haors and Beels receive thousands of migratory birds. It is the ideal season for bird-watchers. As summer sets in the Haors, most of the water has drained out but one can still see numerous Beels, which act as sanctuary for mother fisheries.

1.2 Beels within Haors

Beels are shallow lakes, which form in the lowest parts of the Haor. Normally, the Haors are full of water in the wet season and they dry up during winter. But there remains some deep pockets within the Haors that do not dry up even in the winter. These deep points within the Haors are known as Beels within Haor area. Beels are sustained from groundwater to a large extent. These Beels act as mother fishery. The Beels of Haor Basin (Sylhet Basin) area are smaller in size. According to the National Water Management Plan (NWMP, 2004), in the Haor Basin, there are some 6,300 Beels of varying size, out of which about 3,500 are permanent and 2,800 are seasonal (WARPO, 2004).

1.3 Importance of Haors

Haors are considered as the most productive wetland resources of Bangladesh. They provide livelihood for thousands of people through subsistence and commercial fisheries. The seasonally flooded lake margins provide ideal condition for Boro rice cultivation (BHWDB, 2012). The Haor Basin supports a rich variety of bio-diversity and acts as a natural reservoir. Thousands of migratory birds visit this region every year attracting tourists in the winter. The

Region is considered as one of the most fascinating and beautiful places in Bangladesh. It is estimated that the Haor Region has contributed on average around 2% of the national GDP with the average worth of BDT 37,740 million over the last decade (BHWDB, 2004).

1.3.1 Economy

Agriculture and fisheries are the main base of the diversified economic resources of the area. The major cropping patterns in the Haor Region are rice based and almost all segments of cultivated lands are used for at least one rice crop a year. About 16% of the total rice area of Bangladesh falls in this Region. Boro rice or dry season rice is the main crop grown in here. The aquatic vegetation grown here provides a rich grazing for domestic livestock. Various herbs and aquatic plants are being used for alternative sources of fuel and fertilizer by the local people.

Fish culture is an important economic practice in the Haor area. Many fishermen depend on fishing as their only means of earning. Haors are rich in aquatic bio-diversity, particularly in diverse fish species. The Haor Region comprises a wide variety of fin fish including 143 indigenous and 12 exotic species along with several species of freshwater prawns. Tangar Haor is characterized by approximately 141 fish species including some exotic introduced species which represents more than half of the country's fresh water fish species (BHWDB, 2012). Among these species are Air, Gang Magur, Baim, Tara Baim, Gutum, Gulsha, Tengra, Titna, Garia, Beti, Kakia etc. Overfishing and habitat destruction as well as sedimentation in rivers, canals and waterbodies creates disturbance in the local ecology in terms of disruption of fish breeding cycles and migration routes, which leads to reduction of fish population. As a result, many species are facing danger of extinction. The nearly extinct enlisted species comprises Nandina, Angrot, Pangus, Tor Mohasol, Baghayre etc. Some fish species which are at risk of extinction include Chital, Raik/Lasu, Ghonia, Rani, Kani Pabda, Madhu Pabda, Kajuli/Banshpata, Telo Taki And Kuchia (BHWDB, 2012).

1.3.2 Flora and Fauna

Through gradual sedimentation from the tributaries of the Meghna River, the Haor Basin has become shallower and fertile. As a result, various wetland plants like reeds and sedges grow

which provide food and shelter for fish and other aquatic fauna, resulting in a vast variety of wetland bio-diversity. Due to continuous submergence, wetland habitat is characterized by anaerobic conditions which inhibits normal plant growth apart from a group of plants known as hydrophytes. Flood tolerant plant species like the hijal or hual, korij or koroch, bhui dumur, nol, khagra, ban golap and barun are mainly found in the swamp forests (IUCN, 2002).

One of the most important feature of Haor Region is that they are sanctuaries for both permanent and migratory birds. A large variety of small fishes, oysters, water snails and bivalves, and pasture spread over the surface attracting a large number of migratory birds. They use the Haor basin as their resting and roosting ground attracting tourists from all over the country and thus making the Haor Region a popular tourist spot. They also contribute to the process of eutrophication by adding fertility to the waterbodies by their excreta promoting rich growth of phytoplankton and macrophytes. The “Master Plan of Haor Area” estimated that about 208 species of birds live or visit Bangladesh. Among the birds 30% are waterfowls, 26% waders, 20% bush and her bland birds and the rest are grassland, air hawking prey. Of these fresh water birds 129 species (62.3%) are resident and the other are migratory. The list of extinct wetland birds include spotbill pelican, pelican, scavenger vulture, Bengal florican, pink headed duck, greater adjutant and king vulture. There are several endangered species also (Jamal, 2007).

1.4 Wetland Type

According to proposed classification system of Wetlands of Bangladesh shown in Box 1.1, Haors are Inland Wetlands. There are 2 classes namely permanent and non-permanent. The permanent portion of the Haors are called Beels within Haors. According to the classification these Beels within the Haors are of BO type wetlands. The seasonal Haors are of BP type of wetlands.

Box 1.1 Classification System of Wetlands of Bangladesh

Systems	Classes	Types Symbols	Name of wetland types
Marine/Coastal Wetlands	Permanent	BA	Permanent shallow marine waters in most cases less than six metres deep at low tide; includes sea bays and straits
		BB	Marine subtidal aquatic beds; includes kelp beds, sea-grass beds, tropical marine meadows
		BC	Coral Reefs
		BF	Estuarine waters; permanent water of estuaries and estuarine systems of deltas
	Non-Permanent	BE	Sand, shingle or pebble shores; includes sand bars, spits and sandy islets; includes dune
		BG	Intertidal mud, sand or salt flats
		BI	Intertidal forested wetlands; includes mangrove swamps, nipah swamps and tidal freshwater swamp forests
Inland Wetlands	Permanent	BL	Permanent inland deltas
		BM	Permanent rivers/streams/creeks; includes waterfalls
		BO	Permanent freshwater lakes (over 8 ha); includes large oxbow lakes
		BTP	Permanent freshwater marshes/pools; ponds (below 8 ha), marshes and swamps on inorganic soils; with emergent vegetation water-logged for at least most of the growing season
	Non-Permanent	BN	Seasonal/intermittent/irregular rivers/streams/creeks
		BP	Seasonal/intermittent freshwater lakes (over 8 ha); includes floodplain lakes
		BTS	Seasonal/intermittent freshwater marshes/pools on inorganic soils; includes sloughs, potholes, seasonally flooded meadows, sedge marshes
		BU	Non-forested peatlands; includes shrub or open bogs, swamps, fens
		BW	Shrub-dominated wetlands; shrub swamps, shrub-dominated freshwater marshes, shrub carr, alder thicket on inorganic soils
		BXF	Freshwater, tree-dominated wetlands; includes freshwater swamp forests, seasonally flooded forests, wooded swamps on inorganic soils
		BXP	Forested peatlands; peatswamp forests

Systems	Classes	Types Symbols	Name of wetland types
Human-made Wetlands	Permanent	B1	Aquaculture (e.g., fish/shrimp) ponds
		B2	Ponds; includes farm ponds, stock ponds, small tanks; (generally below 8 ha)
		B6	Water storage areas; reservoirs/barrages/dams/impoundments (generally over 8 ha)
		B8	Wastewater treatment areas; sewage farms, settling ponds, oxidation basins, etc.
		B9	Canals and drainage channels, ditches
	Non-Permanent	B3	Irrigated land; includes irrigation channels and rice fields
		B4	Seasonally flooded agricultural land (including intensively managed or grazed wet meadow or pasture)
		B5	Salt exploitation sites; salt pans, salines, etc.
		B7	Excavations; gravel/brick/clay pits; borrow pits, mining pools
Reversible Wetlands		Brvc	Coastal polders and embankments
		Brvi	FCD and FCDI projects; flood protected inlands with embankments
		Brve	Environmentally degraded, but restorable wetlands

[Note 1:

BX – ‘B’ stands for Bangladesh, ‘X’ stands for corresponding X type of Ramsar wetland type

Example:

BA – ‘B’ stands for Bangladesh, ‘A’ stands for Ramsar Type A Wetland:

Permanent shallow marine waters in most cases less than six meters deep at low tide; includes sea bays and straits

B1 – ‘B’ stands for Bangladesh, ‘1’ stands for Ramsar Type I Wetland:

Aquaculture (e.g., fish/shrimp) ponds

Note 2:

Brvc – ‘B’ stands for Bangladesh, ‘rv’ stands for Reversible Wetlands, ‘c’ stands for Coastal Polders and embankments.

Brvi – ‘B’ stands for Bangladesh, ‘rv’ stands for Reversible Wetlands, ‘i’ stands for FCD and FCDI projects; flood protected inlands with embankments.

Brve – ‘B’ stands for Bangladesh, ‘rv’ stands for Reversible Wetlands, ‘e’ stands for environmentally degraded, but restorable wetlands.]

1.5 The Haor Region

The Haors are located in the Haor Region which consists of 7 districts of the northeast region known as the Haor Districts (Fig 1.1). They are:

- Sunamganj
- Sylhet
- Habiganj
- Maulvibazar
- Netrakona
- Kishoreganj
- Brahmanbaria

A very brief description of the 7 Haor Districts is given below:

Sunamganj: Sunamganj is located in the Sylhet Division with the Sylhet District to its east, Habiganj District is to its south and Netrakona District to its west (Fig. 1.1). It has an area of 367,000 ha and a population of 2,443,000 (Census, 2011). The Surma River and Kushiyara River run through the district whilst Ratna River crisscrosses the district and beyond. The River Da'uka or Danuka also run through district Sunamganj. It has 11 Upazilas: Bishwambarpur, Chhatak, Derai, Dharmapasha, Dowarabazar, Jagannathpur, Jamalganj, Sulla, Sunamganj Sadar, Dakshin Sunamganj and Tahirpur. There are 95 Haors and numerous Beels in this districts. Sunamganj is a major source of freshwater fish. This district is famous for fishery business. Dekar, Kalikota, Naluar, Pagnar, Shanir, Tanguar Haor are some of the many Haors of Sunamganj District among which Tanguar Haor has been declared as Ramsar site.

Sylhet: Sylhet is the main town of the division, where the divisional headquarters as well as Sylhet district headquarters are located. It has an area of 349,000 ha and a population of 3,404,000 (Census, 2011). There are 13 Upazilas in Sylhet and they are Balaganj, Beani Bazar, Bishwanath, Companiganj, Fenchuganj, Golapganj, Gowainghat, Jaintiapur, Kanaighat, Osmani Nagar, Dakshin Surma, Sylhet Sadar and Zakiganj. Sylhet District is bordered by Khasia-Jainta Hill tracts of Indian Border area to the north, Maulvibazar district to the south, Kachhar and Karimganj districts of Assam (India) to the east, Sunamganj district to the west (Fig. 1.1). Its most famous natural tourist spot is Jaflong and it is also home to the grave of the Muslim saint, Hazrat Shah Jalal Yamani, located in Sylhet town. There are 105 Haors in this district. Boro Haor, Patharchuli Haor, Dhamrir Haor, Banaiya Haor are some of the largest Haors in this district.

Annexure 2: Haors of Bangladesh

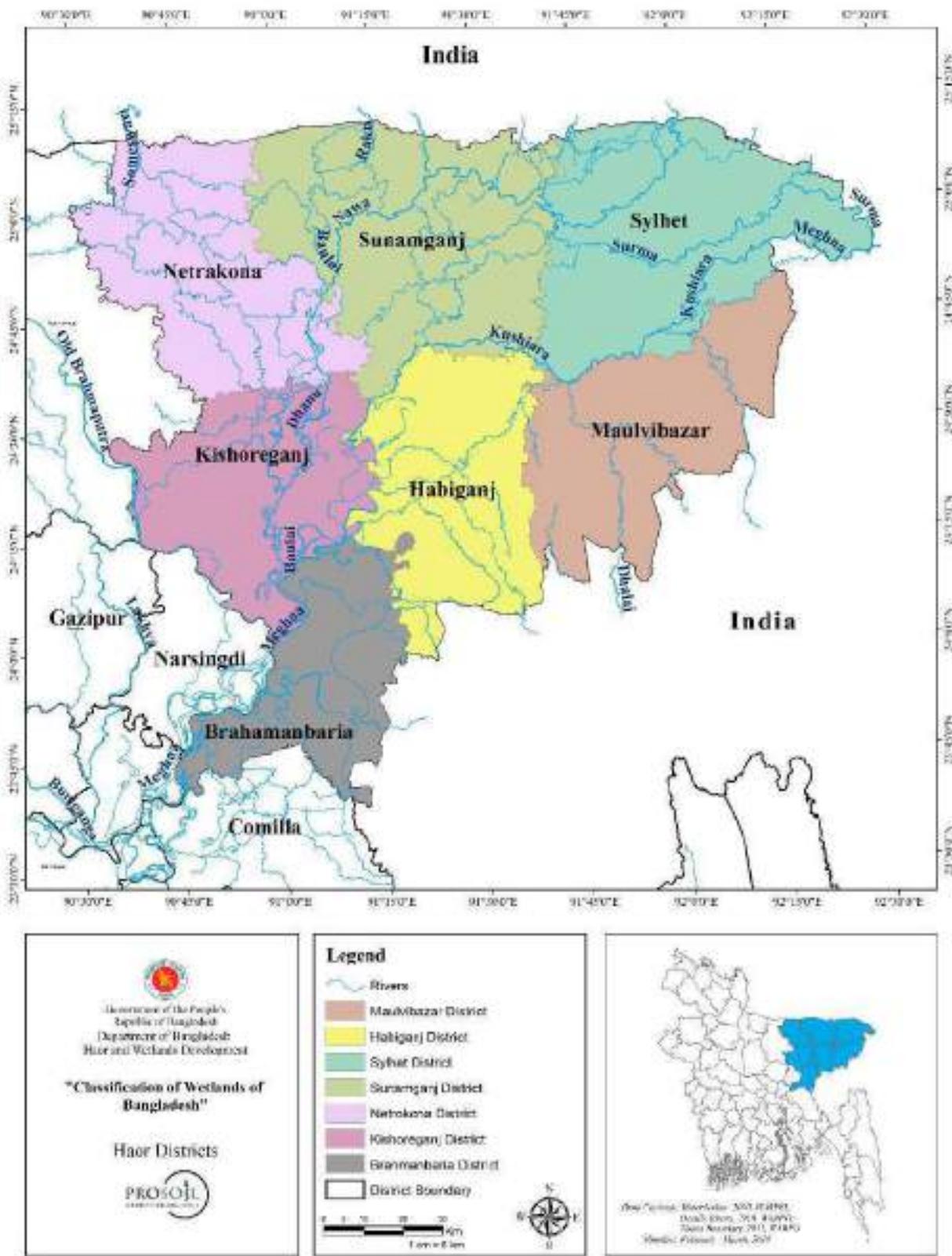


Figure 1.1: Haor Districts of Bangladesh

Habiganj: Habiganj district is located in the south central part of Surma basin and in the north- eastern part of Bangladesh. Habiganj District is bordered by Sylhet and Sunamganj districts to the north, Tripura (Indian state) to the south, Maulvibazar district to the east, and Brahmanbaria and Kishoreganj districts to the west (Fig. 1.1). It has an area of 263,700 ha and a population of 2,059,000 (Census, 2011). There are 8 Upazilas in Habiganj and they are Ajmiriganj, Bahubal, Baniachong, Chunarughat, Habiganj Sadar, Lakhai, Madhabpur and Nabiganj Upazila. The rivers Borak, Kalni, Kushiyara, Khoay, Gopali, Ratna, Karongi, Katati, Sutang etc. run through Habiganj. There are only 14 Haors in this district among which Gungiajuri, Ikram-Sangar, Makalkandi Haors are of considerable sizes.

Maulvibazar: Maulvibazar district is located in the north- eastern borderline of Bangladesh and is bordered by Sylhet district to the north, Tripura (Indian State) is to the south, Assam and Tripura states of India are to the east, Habiganj district is to the west (Fig. 1.1). It has an area of 279,900 ha and a population of 1,902,000 (Census, 2011). They are 7 Upazilas in Maulvibazar and they are Barlekha, Kamalganj, Kulaura, Maulvibazar Sadar, Rajnagar, Sreemangal and Juri Upazila. The rivers Monu, Dholai, Sonai, Fanai, Gopala, Continala, Juri, Bilam etc. run through this district. It has only 3 Haors- Hail, Hakaluki and Kauadighi Haor. Hakaluki Haor is one of Bangladesh's biggest and one of Asia's largest Haor. It has also been declared as Ramsar Site. Lawachara National Park, Madhabkunda Falls are some of the famous tourist spots in this area.

Netrakona: Netrakona is a part of Mymensingh Division. It is situated in the northern part of Bangladesh, near the Meghalayan border (Fig 1.1). There are four main rivers in Netrakona and they are: Kangsha, Dhala, Magra, and Teorkhali. It has an area of 274,400 ha and a population of 2,229,642 (Census, 2011). There are 10 Upazilas in this district and they are Atpara, Barhatta, Durgapur, Khalijuri, Kalmakanda, Kendua, Madan, Mohanganj, Netrakona Sadar and Purbadhala Upazila. The economy of Netrakona is largely agrarian. Susang Durgapur, an Upazila of Netrakona, is one of the major sources of country's China-Clay used for ceramic products. It has 52 Haors and they provide wide varieties of fishes. Birishiri is a hill of white clay, situated in this district and is one of the most beautiful places of Bangladesh. Dingi Pota, Medar Beel, Talar are some of the major Haors of Netrakona.

Kishoreganj: Kishoreganj is a district in the central Bangladesh. It is a part of Dhaka Division. Kishoreganj is bordered by Mymensingh, Netrakona and a part of Sunamganj District to the north, Narsingdi district to the south, Brahmanbaria and Habiganj districts to the east, Gazipur and Mymensingh districts to the west (Fig. 1.1). It has an area of 273,100 ha and a population of 3,029,000 (Census, 2011). There are 13 Upazilas in Kishoreganj and they are Austagram, Bajitpur, Bhairab, Hossainpur, Itna, Karimganj, Katiadi, Kishoreganj Sadar, Kuliarchar, Mithamain, Nikli, Pakundia and Tarail Upazila. The rivers Old Brahmaputra, Meghna, Kalni, Dhanu, Ghorautra, Baurii, Narasunda and Piyain run through the district. There are 97 Haors in this district. Khunkhuni, Mithamain, Boro Haor are some of the major Haors of Kishoreganj.

Brahmanbaria: Brahmanbaria district is under Chittagong Division. It is bordered by Kishoreganj and Habiganj district to the north, Comilla district to the south, Habiganj district and Tripura (Indian State) to the east, The Meghna River and a part of Kishoreganj, Narayanganj and Narsingdi districts to the west (Fig. 1.1). It has an area of 192,700 ha and a population of 2,954,000 (Census, 2011). There are 9 Upazilas in Brahmanbaria and they are Akhaura, Ashuganj, Bijoynagar, Bancharampur, Brahmanbaria Sadar, Kasba, Nabinagar, Nasirnagar and Sarail. The rivers Meghna, Titas, Shalda, Hawra, Pagla, Putia, Sonai, Hawra, Ropa, Buri, Bizna, Balua, Bolak, Dholbanga etc. run through this district. There are 7 Haors in Brahmanbaria among which Dattakhola, Tikkar Par are the largest Haors in Brahmanbaria.

1.6 Haors

As mentioned earlier, there are 373 Haors among which 47 has been considered to be major Haors according to FAP 6 (1994) considering their size, economic and environmental importance. All the Haors have importance of some kind but some of them are identified for their national and international importance. Two Haors namely: Tanguar Haor and Hakaluki Haor have been declared as Ramsar Sites of International importance. The criteria for the designation of wetlands of International importance is given in Box 1.2.

Box 1.2 Ramsar Criteria for the Designation of Wetlands of International Importance

Group A of the criteria Sites containing representative, rare or unique wetland types		Criterion 1: A wetland should be considered internationally important if it contains a representative, rare, or unique example of a natural or near-natural wetland type found within the appropriate biogeographic region.
Group B of the criteria Sites of international importance for conserving biodiversity	Criteria based on species and ecological communities	<p>Criterion 2: A wetland should be considered internationally important if it supports vulnerable, endangered, or critically endangered species or threatened ecological communities.</p> <p>Criterion 3: A wetland should be considered internationally important if it supports populations of plant and/or animal species important for maintaining the biological diversity of a particular biogeographic region.</p> <p>Criterion 4: A wetland should be considered internationally important if it supports plant and/or animal species at a critical stage in their life cycles, or provides refuge during adverse conditions.</p>
	Specific criteria based on waterbirds	<p>Criterion 5: A wetland should be considered internationally important if it regularly supports 20,000 or more waterbirds.</p> <p>Criterion 6: A wetland should be considered internationally important if it regularly supports 1% of the individuals in a population of one species or subspecies of waterbird.</p>
	Specific criteria based on fish	<p>Criterion 7: A wetland should be considered internationally important if it supports a significant proportion of indigenous fish subspecies, species or families, life-history stages, species interactions and/or populations that are representative of wetland benefits and/ or values and thereby contributes to global biological diversity.</p> <p>Criterion 8: A wetland should be considered internationally important if it is an important source of food for fishes, spawning ground, nursery and/or migration path on which fish stocks, either within the wetland or elsewhere, depend</p>
	Specific criteria based on other taxa	Criterion 9: A wetland should be considered internationally important if it regularly supports 1% of the individuals in a population of one species or subspecies of wetland-dependent non-avian animal species

Source: Ramsar, 1971

Brief description of some Haors has been provided below:

- **Tanguar Haor:** Tanguar Haor is located in Dharampasha and Tahirpur Upazila of Sunamganj District. It has an area of 11700 ha and consists of 120 Beels. It was declared a Ramsar site - wetland of international importance in 2000. Due to overexploitation of its natural resources, the Government of Bangladesh declared it as an Ecologically Critical Area in 1999. The Haor plays an important role in fish production of the country as well as providing livelihood for over 40,000 people. It functions as a mother fishery. More than 140 species of freshwater fishes are available here. The more predominant among them are: ayir, gang magur, baim, tara, gutum, gulsha, tengra, titna, garia, beti, kakia etc. The freshwater wetland trees of this Haor include Hijal, karach, gulli, balua, ban tulsi, nalkhagra, etc. The haor is a sanctuary for the migratory birds. Every winter about 200 types of migratory birds visit this haor and make their temporary habitat here (IUCN, 2012).
- **Hakaluki Haor:** Hakaluki Haor is stretched over Maulvibazar and Sylhet Districts. It is one of the biggest Haors of Bangladesh and one of Asia's largest Haor. It has an area of approximately 21500 Ha (BHWDB, 2012). The haor is situated in Kulaura, Juri and Barlekha upazilla under Maulvibazar district and Fenchuganj and Golabganj Upazilas under Sylhet district. The Government declared Hakaluki Haor as an Ecologically Critical Area. It is a protected Ramsar site of International Importance for the conservation and sustainable utilization of wetlands. The Hakaluki Haor offers a marsh wetland ecological system. It is home of many kind of fishes, birds and animal. There are 107 species of fishes available here, according to IUCN report, 2008. But 75 species remain present day. Some species are: Chela, Dhela, Pabda, Lal chanda etc. People of this area are mainly fisher man. Hakaluki Haor is also home of many country bird and migratory birds. Every winter, tens and thousands of migratory birds of about 150 species from Siberian and other cold country flock to the Haors. Bright and Rose King-duck, Pati-duck, Bali Hash, Lenja, Chity, Sorali, Boikal, Nilshir Piyan, Pantamukhi, Pankouri, Buti-duck, China, Rangamuri, Black-duck, Peributhi, Chokachoki, Giria, Khonjona, Patari, Dolpipi, Water-hen, North-Giria, Dahuk, Patibatan, Common-chill, Cotton-Chill, Gergini, Cottontail, Pintail, Toughed Duck are some of the species of migratory birds (Talukdar et al., 2015).

- **Hail Haor:** Hail Haor is located in Maulvibazar Sadar, Sreemangal under Maulvibazar District. It has an area of 15100 ha. It is in between the Tarap and Banugach hill ranges in the southeast. It is a shallow permanent lake and supports a rich variety of Aquatic plants, resident and migratory birds. Some of the species are scarce in other regions of the country.

Baikka Beel: Baikka Beel is a 100 ha wetland sanctuary located in Hail Haor. It comprises of open water with emergent vegetation (mostly lotus), and a fringe of native swamp forest. The Beel is protected to conserve and restore fish and it supports about 90 species of fish. About 141 species of migratory birds use this place in the winter for resting and roosting. Fish Eagles, large flocks of ducks including up to 4,500 Fulvous Whistling-duck, great Spotted Eagle good numbers and diversity of shorebirds, marshland warblers and other birds visit the Beel in winter.

- **Kauadighi Haor:** It is situated in Rajnagar Upazila under Maulvibazar and Balaganj Upazila under Sylhet district. It has an area of 15200 ha. The Haor is very important for a wide variety of waterfowl. It provide attractive habitat for large numbers of shorebirds and is a breeding site for Whiskered Tern and Black-winged Stilts, species not previously seen breeding in Bangladesh. It was of regional importance as mother fishery but is now enclosed within the “Manu River Irrigation Project”.
- **Dekar Haor:** Dekar Haor is situated in Dakshin Sunamganj, Dowarabazar, and Sunamganj Sadar under Sunamganj district. It has an area of 25100 ha. It consists of a number of large shallow Beels with a considerable amount of floating and emergent aquatic vegetation, surrounded by rice fields. Kuri Beel differs from the others in being much deeper and being surrounded by steep grassy banks. The haor is of some value for a wide variety of wintering waterfowl, and also supports a small number of resident species. Around 30 species of birds visit the Haor in winter including the only Bar-headed Geese recorded during the surveys.

Chapter 2 Haors of Bangladesh

Haors are one of the most important “Inland Wetlands” of the country. According to the proposed wetland classification system of Bangladesh, Haors are classified as the Wetland type BP (Seasonal/intermittent freshwater lakes (over 8 ha); includes floodplain lakes) and the Beels within Haors are classified as BO (Permanent freshwater lakes (over 8 ha); includes large oxbow lakes). The complete list of all 373 Haors as identified in the “Master Plan of Haor Area”, 2012 is given below along with their location, area and maps. The following Table 2.1 shows district wise number of Haors and their areas. Haor system of Bangladesh is shown in Figure 2.1. Table 2.2 shows the District wise list of all 373 Haors of Bangladesh.

Table 2.1 Haor Area of Bangladesh

District	Total Area of the District (ha)	Haor Area (ha)	No. of Haors
Sunamganj	367,000	268,531	95
Sylhet	349,000	189,909	105
Habiganj	263,700	109,514	14
Maulvibazar	279,900	47,602	3
Netrakona	274,400	79,345	52
Kishoreganj	273,100	133,943	97
Brahmanbaria	192,700	29,616	7
Total	1,999,800	858,460	373

Source: Master Plan of Haor Area (BHWDB, 2012)

Annexure 2: Haors of Bangladesh

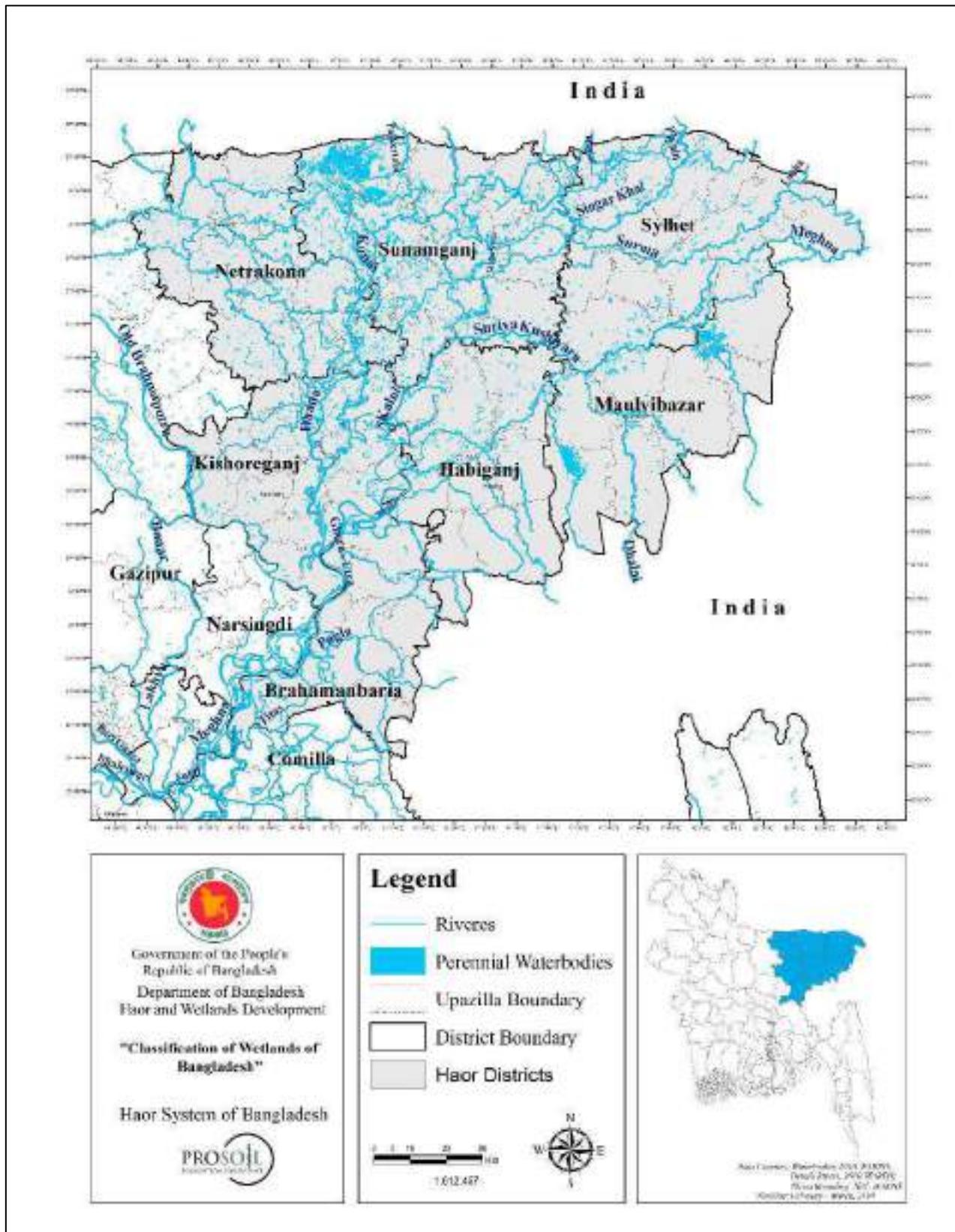


Figure 2.1: Haor System of Bangladesh

Table 2.2 List of Haors of Bangladesh

Serial No.	Name of Haor	Serial No.	Name of Haor	Serial No.	Name of Haor
Haors of Sunamganj District					
1	Angurali	33	Hasharani Beel	65	Meda Beel
2	Arong Beel	34	Holdir	66	Medir Beel-1
3	Atla Beel	35	Huramondira	67	Morichapuri
4	Bahara	36	Jahidpur	68	Naidar
5	Bainchapra	37	Jaldhara/ Keuti	69	Naingoan
6	Balda Gulaghat	38	Jaliar	70	Naluar
7	Baram	39	Jamaikata	71	Naya Beel
8	Bedar Dohar	40	Jamkhola	72	Pagnar
9	Bhanda	41	Jaydhuna	73	Parua
10	Bhera Mohana	42	Joal Bhanga	74	Pingla
11	Chaliyar	43	Kachibanga	75	Rowail
12	Chaol	44	Kahilani- Sreekuli	76	Ruiyer Beel
13	Chaptir	45	Kainjar	77	Saidabad
14	Chawlar	46	Kalianibeel	78	Sakitpur
15	Chayer	47	Kalikota	79	Sangshar Beel
16	Chichrar	48	Kalnar	80	Saratir
17	Chilaura	49	Kalnikuri Beel	81	Sashkar
18	Choto Hijla- Baro Hijlar Beel	50	Kanir	82	Saytanhali Beel
19	Choukhali	51	Karchar	83	Shaldighar
20	Dekar	52	Katare Beel	84	Shanghair
21	Derai	53	Khai	85	Shanir
22	Dhakua	54	Kumuria Beel	86	Shimultala- Jalla
23	Dhamai	55	Kuri	87	Soilchapra
24	Dhankuniar	56	Kurshi Chak	88	Sonamorol
25	Dharam	57	Kuti Beel	89	Suktiar
26	Doyalong	58	Lepa	90	Sullal
27	Dubail	59	Lubar	91	Suraya Bibiyana
28	Gomrar	60	Lusni Beel	92	Tangua
29	Goradoba	61	Lusni Beel	93	Tanguar
30	Gurmar	62	Maddhanagar Boalar	94	Togar
31	Halir	63	Maheshpur	95	Udgal Beel
32	Harinagar	64	Matian		

Annexure 2: Haors of Bangladesh

(Table 2.2 continued)

Serial No.	Name of Haor	Serial No.	Name of Haor	Serial No.	Name of Haor
Haors of Sylhet District					
1	Adinabad	36	Chiluar	71	Nainda
2	Ambari	37	Dalairkandi	72	Nandirgaon
3	Amura	38	Damdama	73	Nateshower
4	Aral	39	Daubari	74	Natun Bhanga
5	Asam Para	40	Deochapra	75	Naya Para Bir Mangal
6	Bagaiya	41	Dhamrir	76	Nayagram
7	Bagha	42	Dhupni	77	Nij Dhargram
8	Balait	43	Dubriary	78	Niraiya
9	Balait	44	Fatehganj	79	Panichapra
10	Baldi	45	Fultail Chhagram	80	Panichhara
11	Banaiya	46	Gakter	81	Paschim Ruhilakandi
12	Baon	47	Gauripurl	82	Patharchuli
13	Barkipur	48	Gurukchi	83	Pekerkhal
14	Barni	49	Jhingarkhal	84	Pekerkhal
15	Baurbhag	50	Kaiya	85	Piprakhai
16	Baurbhag	51	Kakunakhai	86	Purna Chhagram
17	Bayiar	52	Kamalpur Uttar	87	Rautir
18	Bedu	53	Keoti	88	Roa Beel
19	Bheri Bil	54	Khagra	89	Ruhilakani
20	Bhitrikhel	55	Kharu Beel	90	Sahapur
21	Bijoy Parua	56	Khas	91	Sankibhanga
22	Birdhal	57	Lakhair	92	Sarbananda
23	Boga	58	Lakshmi	93	Satir
24	Boro	59	Lakshmi Prashad	94	Shafique
25	Borobandh	60	Lamasatain	95	Shamshernagar
26	Budhigai	61	Lamagaon	96	Shimul Bil
27	Chadibhadi	62	Lengura	97	Siala
28	Chalkrohi	63	Lubha	98	Sikar Khan
29	Chatal	64	Lular	99	Silchand
30	Chatol	65	Maijail	100	Thubri
31	Chatol	66	Mailat	101	Titgulil
32	Chatol Beel	67	Medhar	102	Tolu
33	Chauldhani	68	Muktarpur	103	Turukbhag
34	Chhitinger	69	Muria	104	Umanpur
35	Chhota Khal	70	Naigul	105	Zilkar

Annexure 2: Haors of Bangladesh

(Table 2.2 continued)

Serial No.	Name of Haor	Serial No.	Name of Haor	Serial No.	Name of Haor
Haors of Habiganj District					
1	Baharchar-Rabiarghona	6	Daskhin-Paschimer	11	Luxmibaur-Nalair
2	Baniachang Puber	7	Gazaria Beel	12	Makalkandi
3	Bhatipara	8	Gungiajuri	13	Mokhar
4	Birat	9	Ikram-Sangar	14	Shibpasha
5	Brithangol	10	Khagapasha		
Haors of Maulvibazar district					
1	Hail	2	Hakaluki	3	Kauadighi
Haors of Netrakona District					
1	Aron-Baruk Beel	19	Ghorachalirbagh	37	Mosha Gatir
2	Baganir	20	Hatiar	38	Muldair
3	Baidyar	21	Hatimara	39	Naniya Beel
4	Bansharir	22	Huglir Beel	40	Narunshor Beel
5	Baraikuri	23	Jagannathpur	41	Pagla
6	Baro Daider	24	Jaliyar	42	Pangachia
7	Bawaeter	25	Kankhola Bil	43	Patunia
8	Bayrar	26	Kattar	44	Putiyar
9	Boro	27	Kauar Banda	45	Ruail Haor
10	Chakua	28	Khilkhilir	46	Sarisha Bil
11	Chatoler	29	Kirtonkholar	47	Satbila
12	Chautara	30	Koyar	48	Shibpur
13	Chelapaiar	31	Lodar-Mendikhali	49	Sonadubi
14	Daikyar Kuri	32	Lori-Kankati	50	Talar
15	Dhali Band	33	Meda	51	Talenga Beel
16	Digli Beel	34	Medar Beel-2	52	Urar Band
17	Dingi Pota	35	Medi Beel		
18	Ganesh	36	Mohishaura		

Annexure 2: Haors of Bangladesh

(Table 2.2 continued)

Serial No.	Name of Haor	Serial No.	Name of Haor	Serial No.	Name of Haor
Haors of Kishoreganj District					
1	Agar Band	34	Gopdighi	67	Madhainagar
2	Ayner Gupi	35	Goradigha	68	Mahitulpa
3	Badlar	36	Goyila Halda	69	Mairar Band
4	Banaul	37	Guja	70	Makhrarband
5	Bariar	38	Gurai	71	Mander Beel
6	Barurar Beel	39	Haliya	72	Mathorar Band
7	Beel Purush Badiya	40	Hijlir	73	Mender Beel
8	Bhatibaratia	41	Hingruil Beel	74	Methamain Uttar
9	Bhusha Kanda Beel	42	Huliar	75	Mithamain Dhakhin
10	Bogadubi	43	Jaraitala	76	Mosti Beel
11	Borkha Khilabandh	44	Joluir	77	Mriga
12	Boro Ghop	45	Joya Siddhi/ Uttorer	78	Nanesshwar
13	Boro (Austagram)	46	Joyeriya	79	Naogaon
14	Boro (Kishoreganj)	47	Kagatiya Band	80	Noapara
15	Bullar	48	Kairail Bondh	81	Nobagia Beel
16	Chandnia	49	Kakuar	82	Nunnir
17	Chandpur	50	Kalahuliya Beel	83	Panch Aatiya Beel
18	Char Bulai	51	Kaliain Beel (Borar)	84	Parkachua
19	Char Katkhali	52	Kaliar Beel	85	Paschim Baid
20	Charia Sharifpur	53	Kalma	86	Paschimband
21	Chatal	54	Kanchanpur	87	Pathar Char Bandh
22	Chaudanta Band	55	Kataiya Band	88	Purbardiya Beel
23	Chengamara Beel	56	Katarchaa Beel	89	Purber Band
24	Daiyar Beel	57	Keorjori	90	Sapanta
25	Dakhshiner	58	Khaishar	91	Sarishapur
26	Dakhshiner Band	59	Khama Beel	92	Satkandir
27	Dewghar	60	Khunkhuni	93	Sherpur
28	Dhupchura Beel	61	Koichura	94	Shukhia Beel
29	Dilhi Akhra	62	Korati Beel	95	Sona Band
30	Dulalpur	63	Kuniarbandh	96	Sunair
31	Dulalpur	64	Kuniar Band	97	Uttarer Band
32	Feualanga	65	Lahundi		
33	Golaimara	66	Madhabdi		

Annexure 2: Haors of Bangladesh

(Table 2.2 continued)

Serial No.	Name of Haor	Serial No.	Name of Haor	Serial No.	Name of Haor
Haors of Brahmanbaria District					
1	Akashi-Shapla Beel	4	Dattakhola	7	Tikkar Par
2	Balinga Beel	5	Katiajuri		
3	Churakuri	6	Shelnir		

2.1 Haors of Sunamganj District

2.1 Haors of Sunamganj District

There are 11 Upazilas and 95 Haors in Sunamganj District. Among these Upazilas, Bishwambarpur does not have any Haors. Haors of the rest 10 Upazilas and their maps have been given below. Table 2.3 shows the number of Haors (Upazila wise) of Sunamganj District.

Table 2.3 Haors of Sunamganj District

Serial No.	Name of Upazila	Number of Haors
1	Bishwambarpur	-
2	Chhatak	11
3	Dakshin Sunamganj	10
4	Derai	11
5	Dharampasha	36
6	Dowarabazar	4
7	Jagannathpur	13
8	Jamalganj	10
9	Sulla	11
10	Sunamganj Sadar	6
11	Tahirpur	8
Total		95

It is to be noted that:

- Some Haors are stretched over more than one Upazila, sometimes over more than one district. While recording these Haors, they have been shown in all Upazilas, hence the apparent discrepancy is observed in the total number of Haors.
- In Sunamganj District, the following Haors are stretched over more than one Upazilas: Baram, Chaol, Dekar, Dhakua, Dhamai, Dhankuniar, Dubail, Gurmar, Huramondira, Jamaikata, Joal Bhanga, Kalnar, Lusni Beel, Naidar, Naluar, Pagnar, Sashkar, Shanghair, Shanir, Suktiar, Suraya Bibiyana and Tanguar Haor.
- Chayer, Doyalong, Gomrar, Goradoba, Kalikota, Shimultala- Jalla Haors are stretched over more than one district.

Figure 2.2 shows the perennial waterbodies (wetlands) of Sunamganj district. Figure 2.3 shows the Satellite Image Map of the wetlands of Sunamganj. Upazila wise list of Haors of Sunamganj has been presented in Tables 2.4 to Table 2.13 whereas Upazila wise maps of Haors have been presented in Figures 2.4 to Figure 2.13.

Annexure 2: Haors of Bangladesh
Haors of Sunamganj District

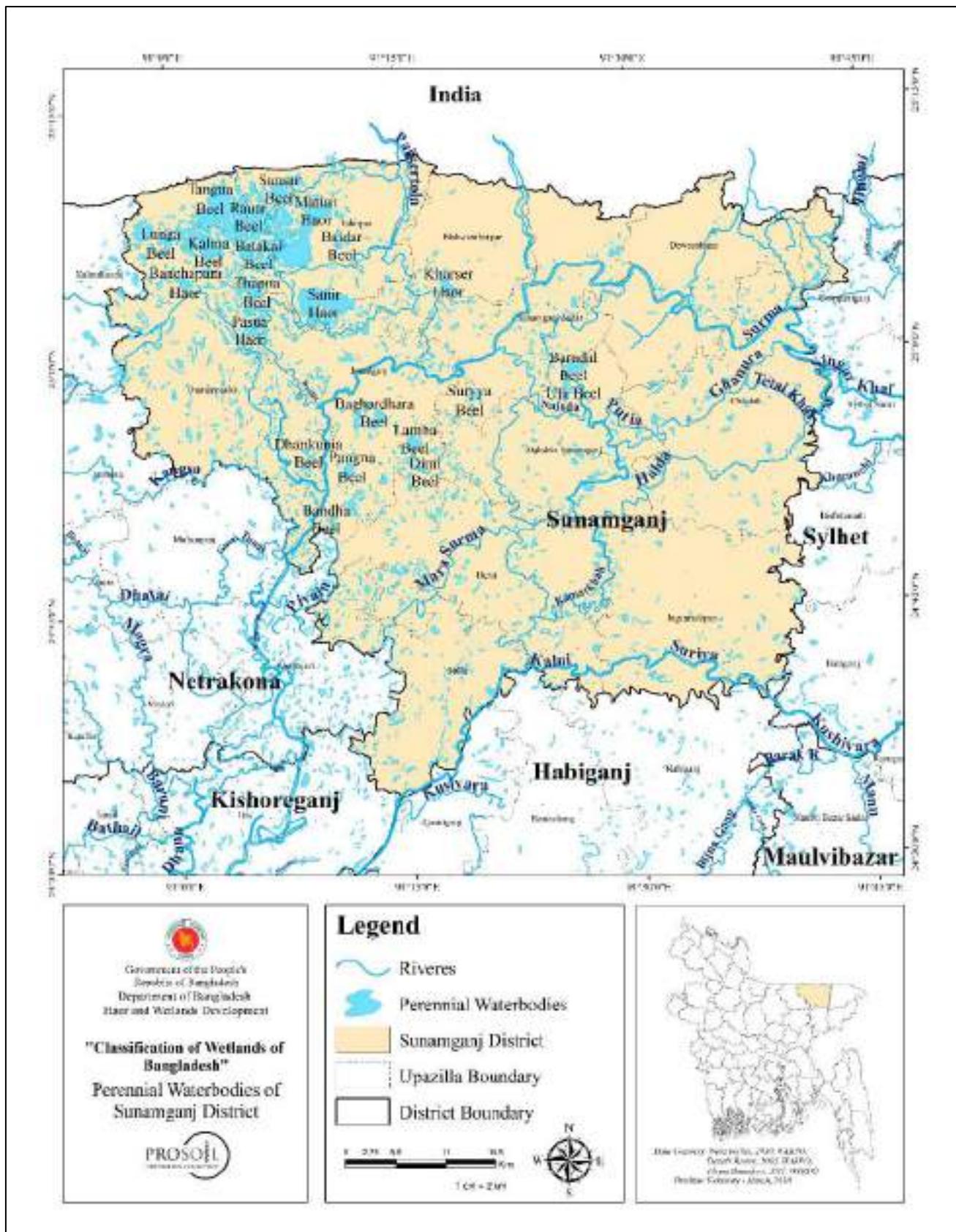


Figure 2.2: Perennial Waterbodies of Sunamganj District

Annexure 2: Haors of Bangladesh
Haors of Sunamganj District

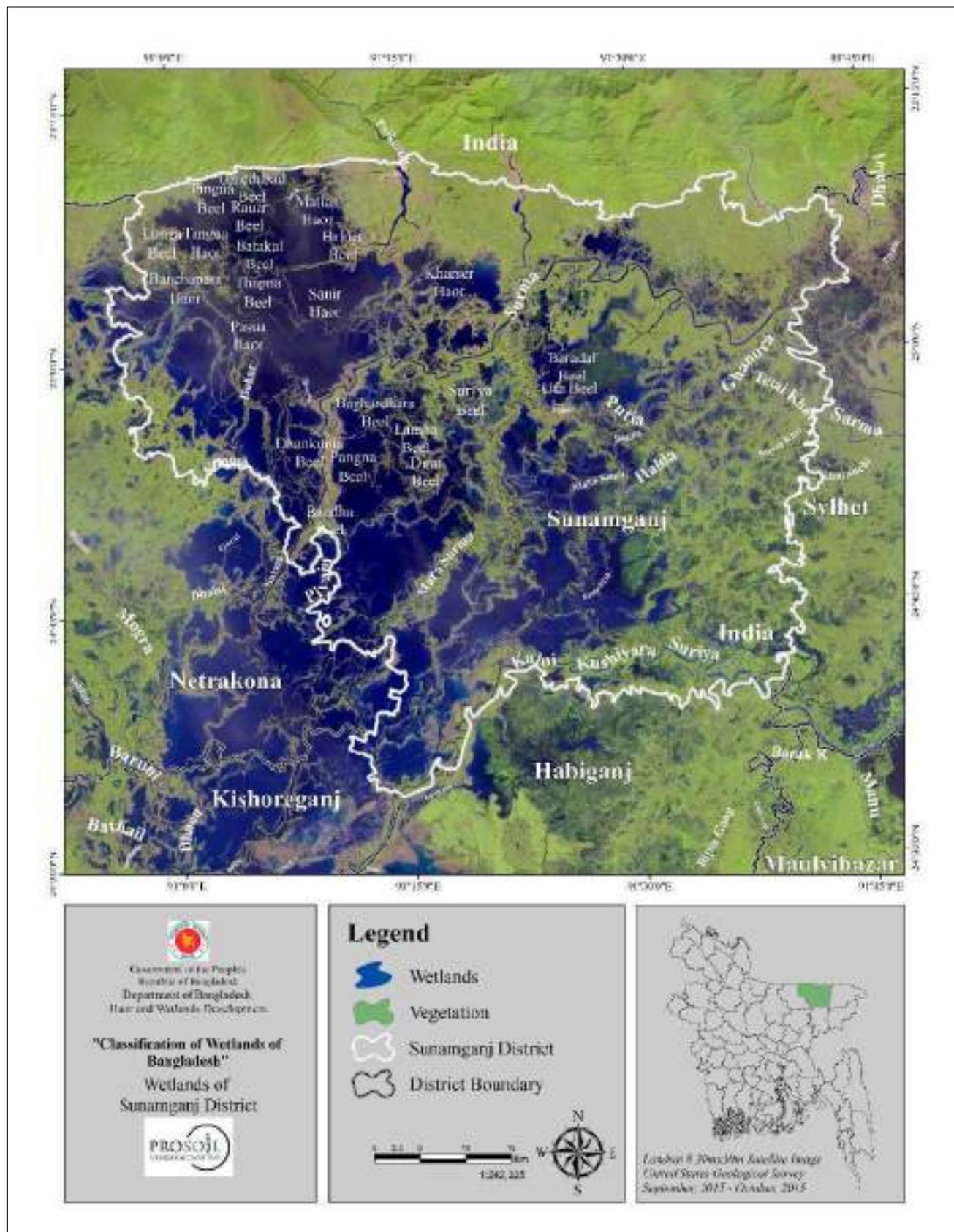


Figure 2.3: Wetlands of Sunamganj District (Satellite Image Map)

Annexure 2: Haors of Bangladesh
Haors of Sunamganj District

• Chhatak:

Table 2.4 Haors of Chhatak Upazila

Serial No.	Name Of Haor	Area (ha)
1	Chawlar Haor	3781
2	Jahidpur Haor	469
3	Jaliar Haor	2466
4	Jamaikata Haor	-
5	Kachibanga Haor	3071
6	Kurshi Chak Haor	1380
7	Lepa Haor	653
8	Naidar Haor	3543
9	Saidabad Haor	1111
10	Shimultala -Jalla Haor	1089
11	Suktiar Haor	1897
Total		19460

Annexure 2: Haors of Bangladesh
 Haors of Sunamganj District

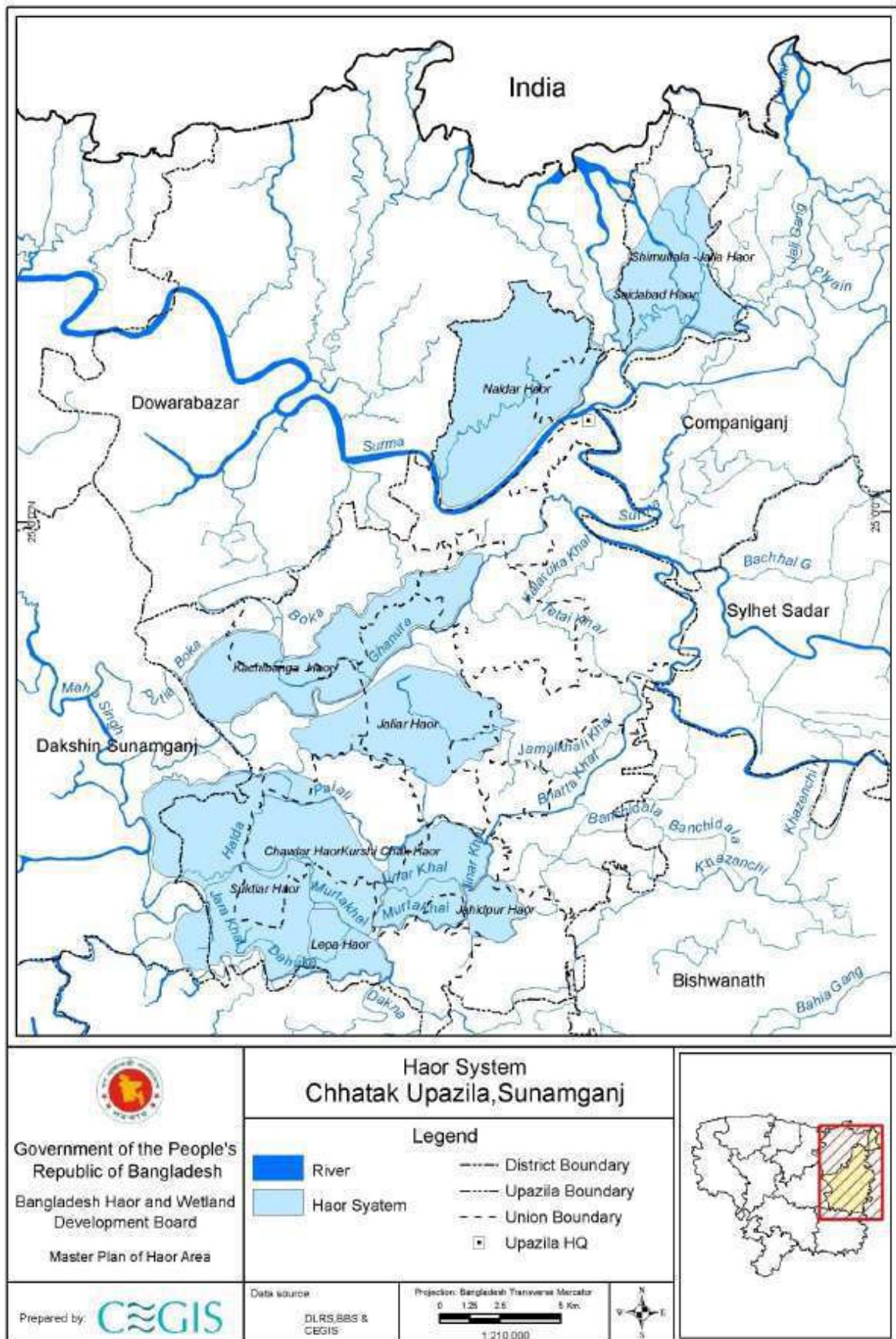


Figure 2.4: Haor System of Chhatak Upazila

Annexure 2: Haors of Bangladesh
Haors of Sunamganj District

• **Dakshin Sunamganj:**

Table 2.5 Haors of Dakshin Sunamganj Upazila

Serial No.	Name Of Haor	Area (ha)
1	Chaoi Haor	1474
2	Dekar Haor	5833
3	Dhakua Haor	1420
4	Dhamai Haor	812
5	Jamkhola Haor	2104
6	Kalikota Haor	3
7	Khai Haor	5387
8	Naluar Haor	1
9	Pagnar Haor	1
10	Shanghair Haor	3760
Total		20793

Annexure 2: Haors of Bangladesh
Haors of Sunamganj District

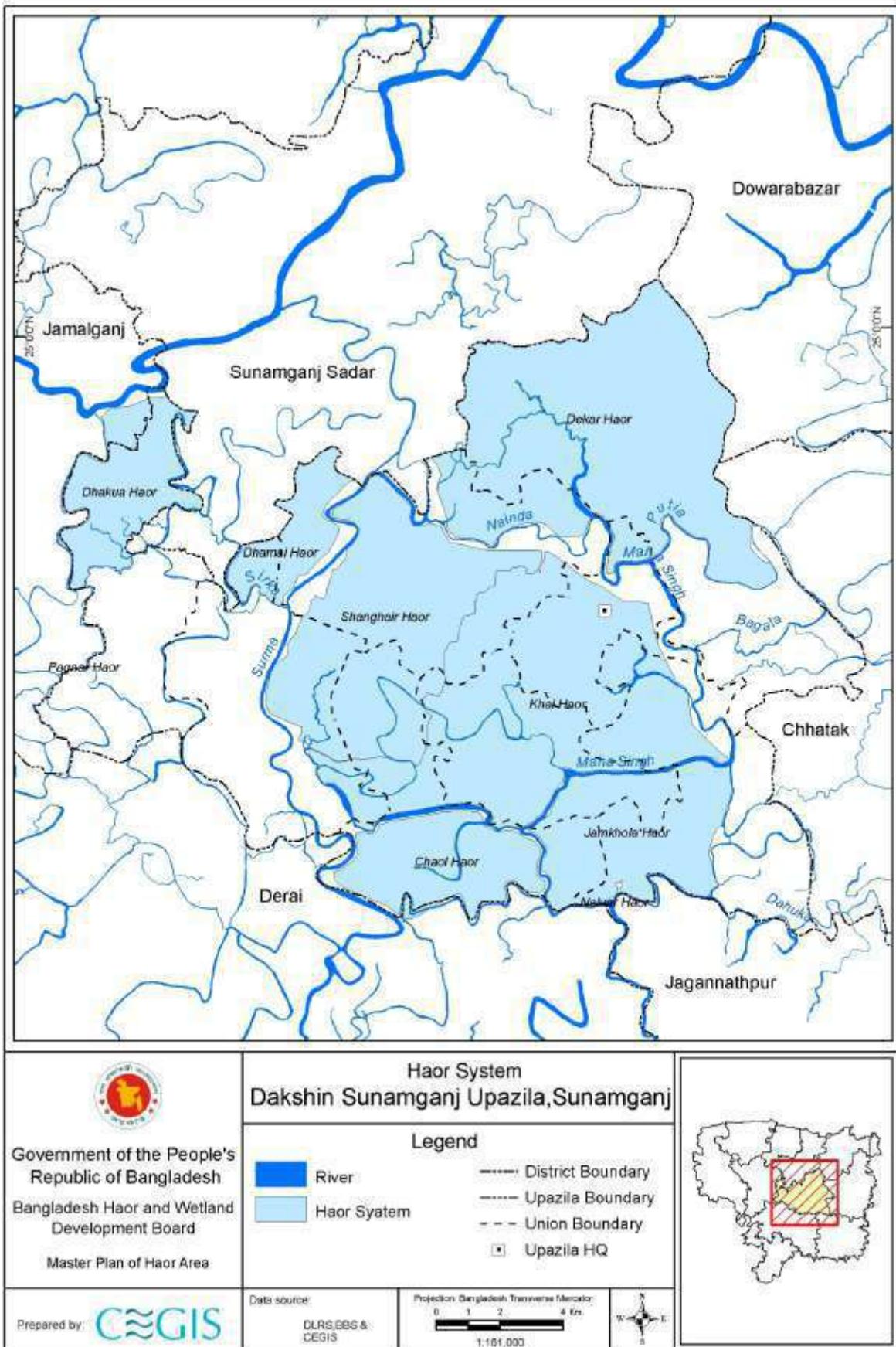


Figure 2.5: Haor System of Dakshin Sunamganj Upazila

Annexure 2: Haors of Bangladesh
Haors of Sunamganj District

• **Derai:**

Table 2.6 Haors of Derai Upazila

Serial No.	Name Of Haor	Area (ha)
1	Baram Haor	3210
2	Chaoi Haor	1
3	Chaptir Haor	4574
4	Derai Haor	428
5	Huramondira Haor	1766
6	Kalikota Haor	13387
7	Naluar Haor	2
8	Sakitpur Haor	490
9	Suraya Bibiyana Haor	1146
10	Tangua Haor	4674
11	Udgal Beel Haor	4569
Total		34249

Annexure 2: Haors of Bangladesh
 Haors of Sunamganj District

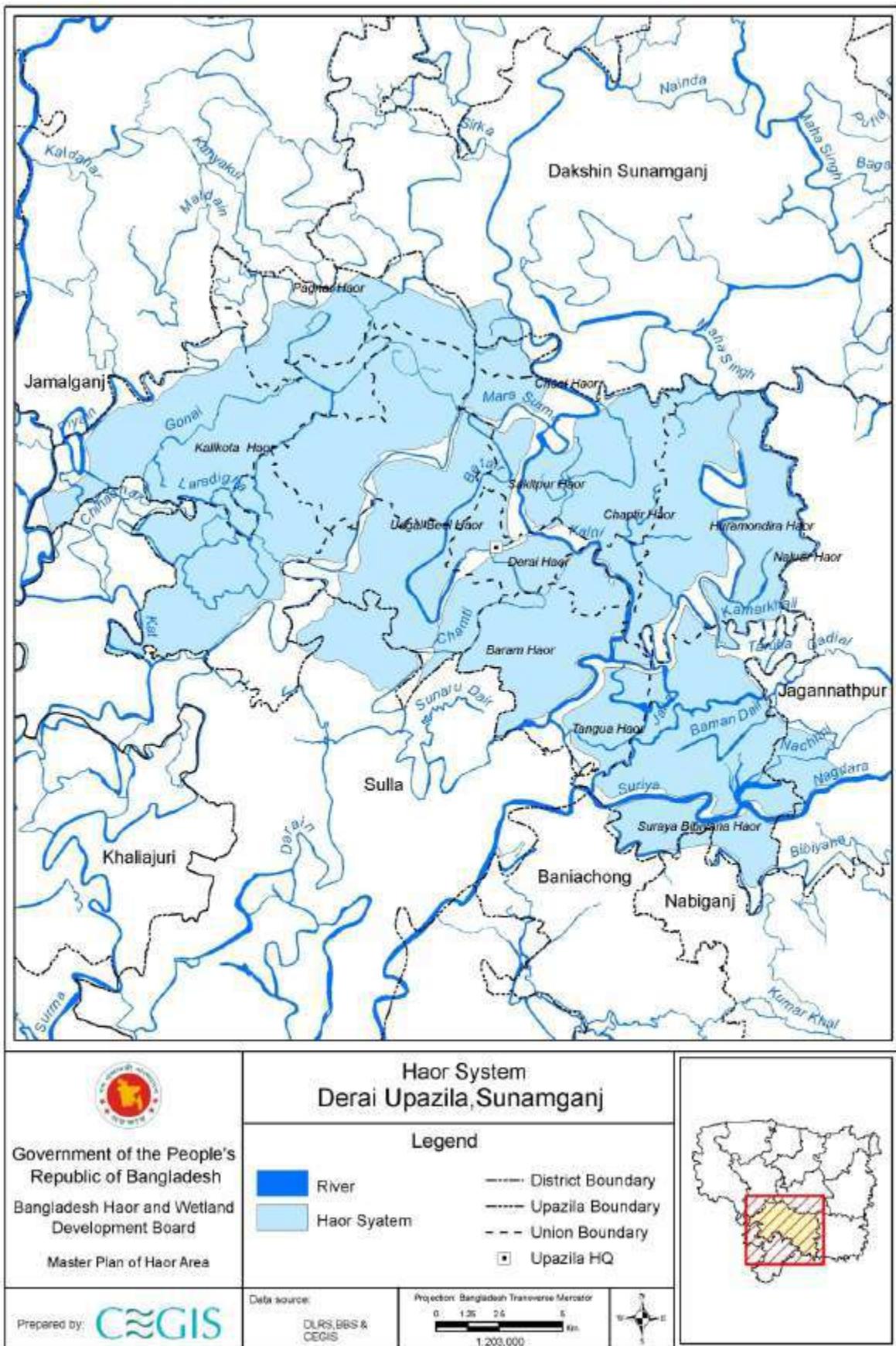


Figure 2.6: Haor System of Derai Upazila

Annexure 2: Haors of Bangladesh
 Haors of Sunamganj District

- Dharampasha:**

Table 2.7 Haors of Dharampasha Upazila

Serial No.	Name Of Haor	Area (ha)
1	Arong Beel Haor	676
2	Atla Beel Haor	248
3	Bainchapra Haor	1621
4	Boro Haor(Netrokona)	207
5	Chichrar Haor	1460
6	Choto Hijla- Baro Hijlar Beel Haor	576
7	Dhankuniar Haor	1759
8	Dharam Haor	2628
9	Dubail Haor	2264
10	Goradoba Haor	688
11	Gurmar Haor	1218
12	Hasharani Beel Haor	274
13	Holdir Haor	223
14	Jaldhara/ Keuti Haor	705
15	Jaydhuna Haor	420
16	Kahilani-Sreekuli Haor	1609
17	Kainjar Haor	771
18	Kalianibeel Haor	373
19	Kalnikuri Beel	152
20	Kanir Haor	484
21	Kumuria Beel Haor	354
22	Lusni Beel Haor	359
23	Maddhanagar Boalar Haor	1865
24	Maheshpur Haor	646
25	Medar Beel-2 Haor	2010

Annexure 2: Haors of Bangladesh
Haors of Sunamganj District

(Table 2.7 continued)

Serial No.	Name Of Haor	Area (ha)
26	Medir Beel-1 Haor	914
27	Morichapuri Haor	92
28	Naya Beel Haor	266
29	Ruiyer Beel Haor	230
30	Sashkar Haor	965
31	Saytakhali Beel	367
32	Shaldighar Haor	420
33	Soilchapra Haor	1875
34	Sonamorol Haor	2302
35	Tangur Haor	7115
36	Togar Haor	4358
Total		42494

Annexure 2: Haors of Bangladesh
 Haors of Sunamganj District

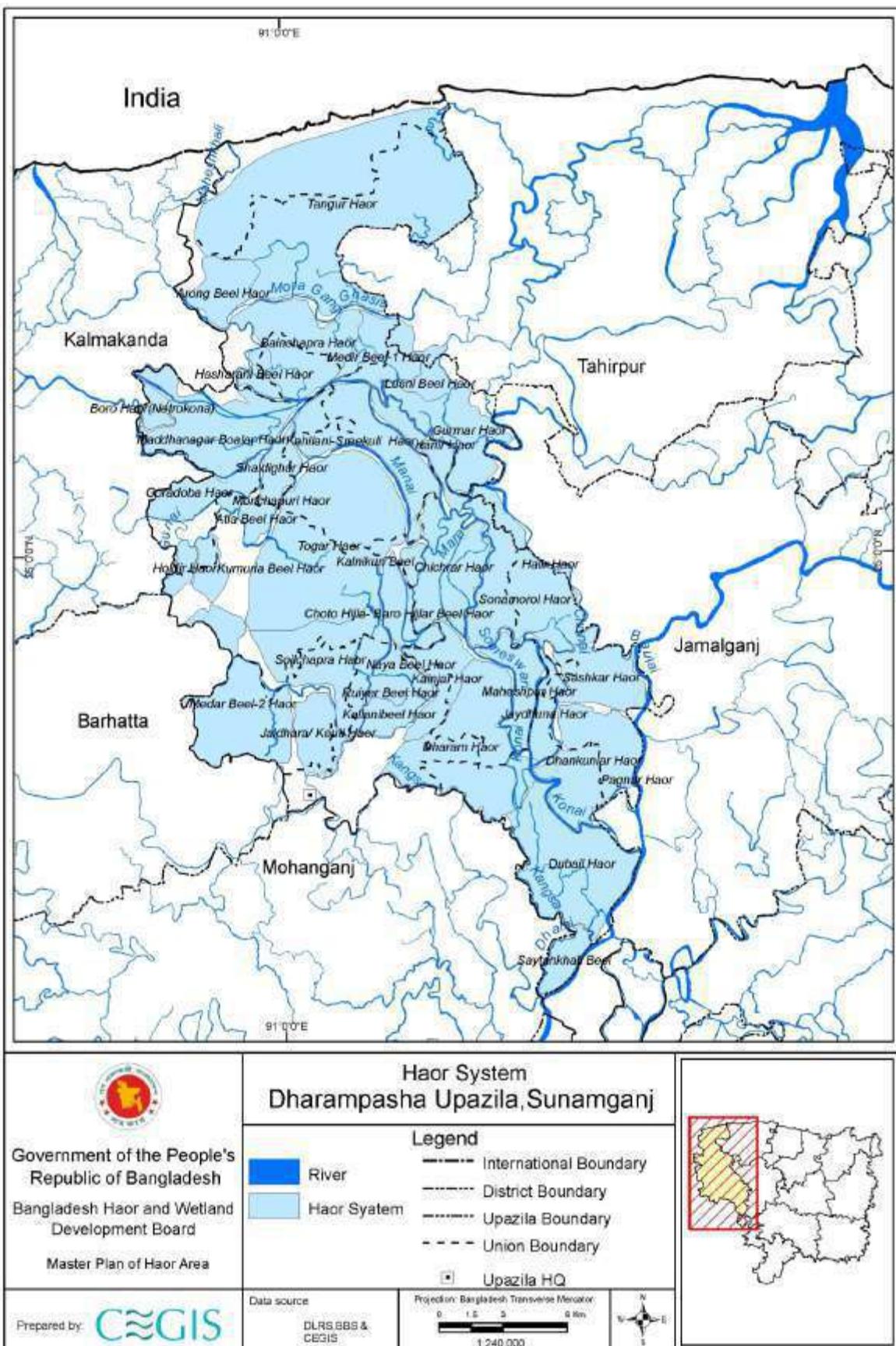


figure 2.7: Haor System of Dharampasha Upazila

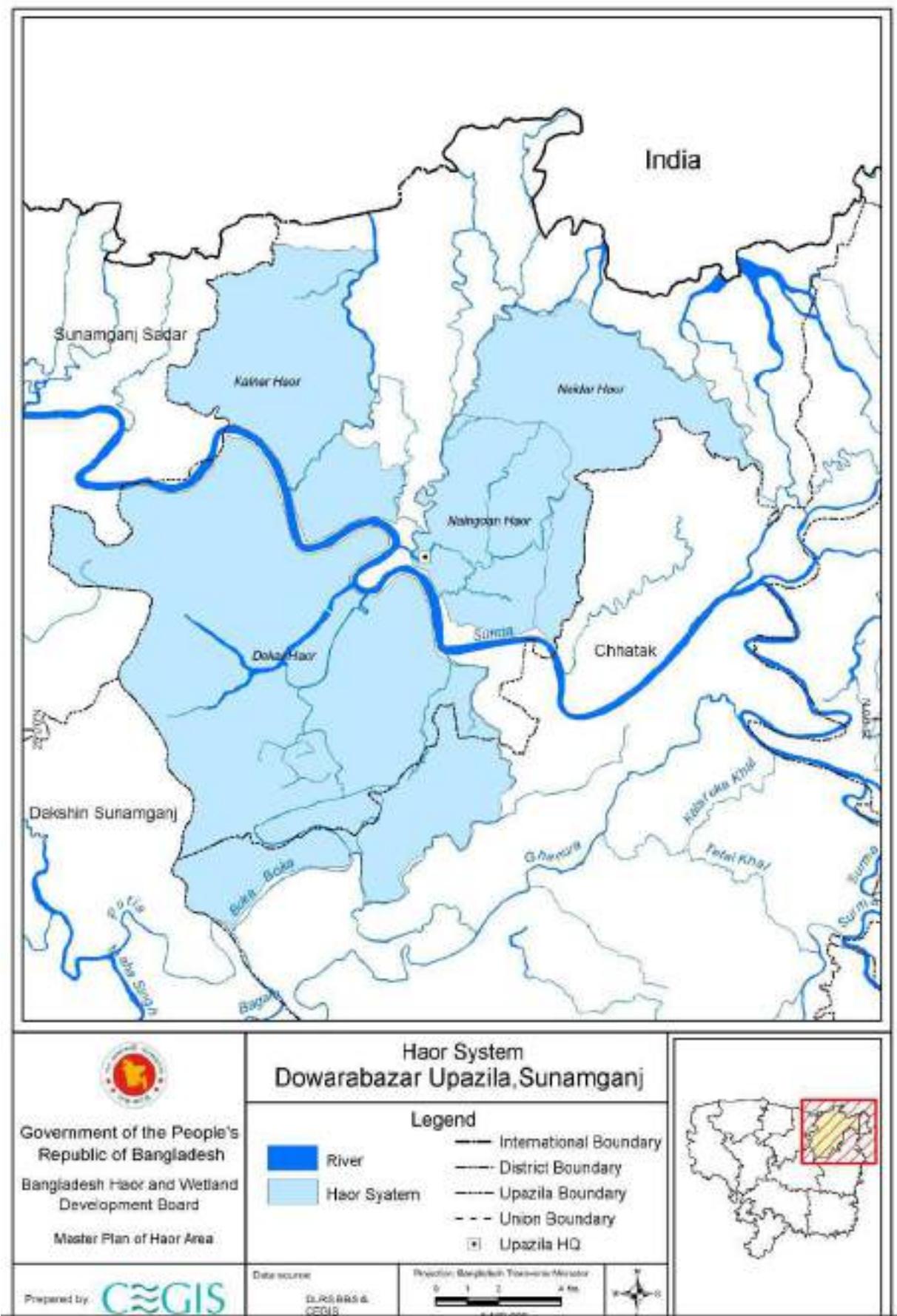
Annexure 2: Haors of Bangladesh
Haors of Sunamganj District

• **Dowarabazar:**

Table 2.8 Haors of Dowarabazar Upazila

Serial No.	Name Of Haor	Area (ha)
1	Dekar Haor	12015
2	Kalnar Haor	3852
3	Naidar Haor	3286
4	Naingoan Haor	2506
Total		21660

Annexure 2: Haors of Bangladesh
Haors of Sunamganj District



Annexure 2: Haors of Bangladesh
Haors of Sunamganj District

• **Jagannathpur:**

Table 2.9 Haors of Jagannathpur Upazila

Serial No.	Name Of Haor	Area (ha)
1	Banaiya Haor	3658
2	Chaliyar Haor	1149
3	Chilaura Haor	743
4	Doyalong Haor	598
5	Huramondira Haor	4
6	Jamaikata Haor	1413
7	Naluar Haor	9954
8	Parua Haor	598
9	Pingla Haor	1536
10	Rowail Haor	103
11	Saratir Haor	1836
12	Suktiar Haor	1
13	Suraya Bibiyana Haor	3156
Total		24751

Annexure 2: Haors of Bangladesh
 Haors of Sunamganj District

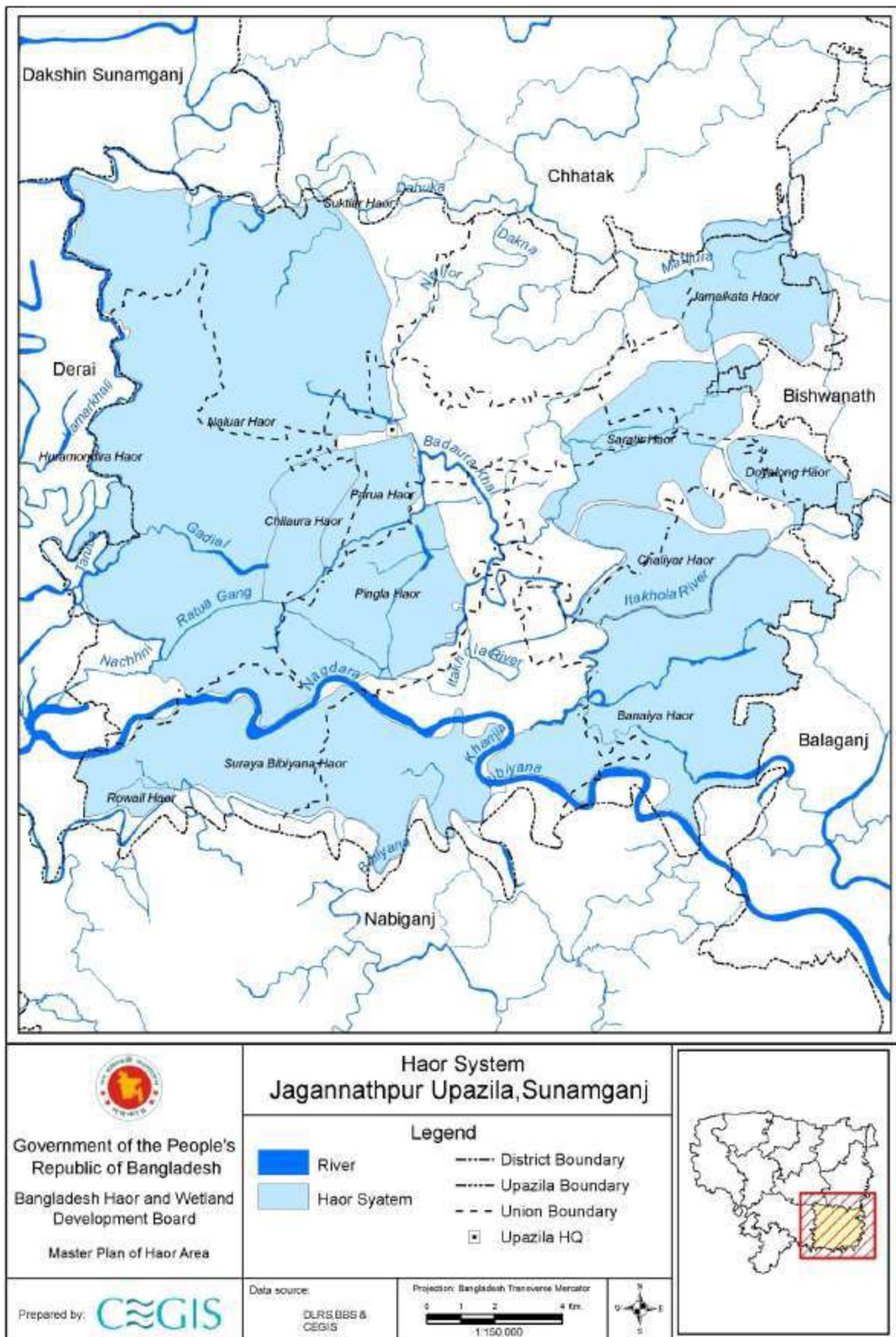


Figure 2.9: Haor System of Jagannathpur Upazila

Annexure 2: Haors of Bangladesh
Haors of Sunamganj District

• **Jamalganj:**

Table 2.10 Haors of Jamalganj Upazila

Serial No.	Name Of Haor	Area (ha)
1	Dhakua Haor	1
2	Dhankuniar Haor	1
3	Dubail Haor	1
4	Gurmar Haor	1
5	Halir Haor	7889
6	Harinagar Haor	706
7	Joal Bhanga Haor	1163
8	Kuri Haor	655
9	Sashkar Haor	24
10	Pagnar Haor	17382
Total		27825

Annexure 2: Haors of Bangladesh
 Haors of Sunamganj District

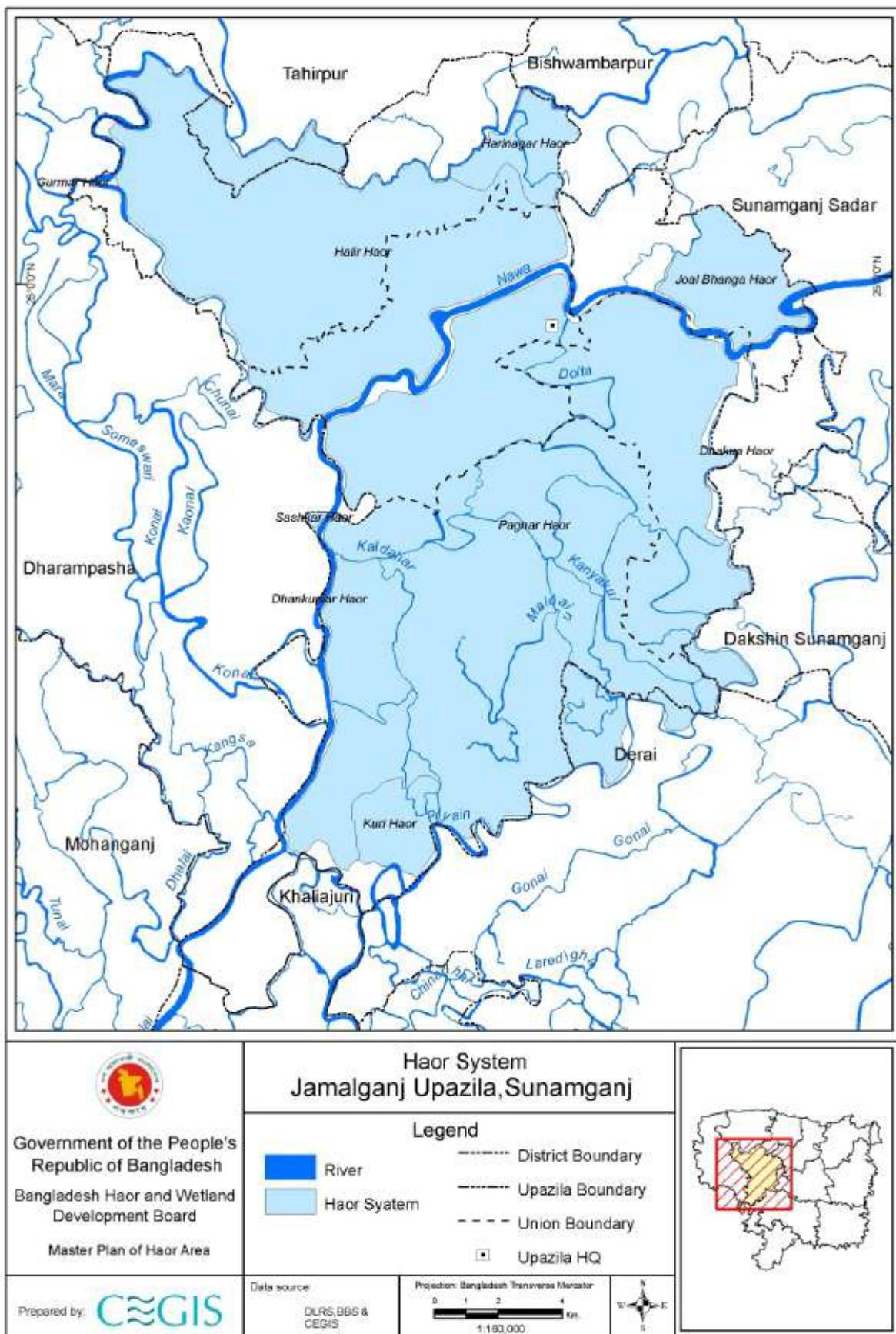


Figure 2.10: Haor System of Jamalganj Upazila

Annexure 2: Haors of Bangladesh
Haors of Sunamganj District

• **Sulla:**

Table 2.11 Haors of Sulla Upazila

Serial No.	Name Of Haor	Area (ha)
1	Bahara Haor	622
2	Baram Haor	1431
3	Bedar Dohar Haor	2133
4	Bhanda Haor	4207
5	Bhera Mohana Haor	703
6	Chayer Haor	5632
7	Choukhali Haor	1960
8	Kalikota Haor	4470
9	Katare Beel Haor	711
10	Meda Beel Haor	186
11	Sullal Haor	880
Total		22935

Annexure 2: Haors of Bangladesh
 Haors of Sunamganj District

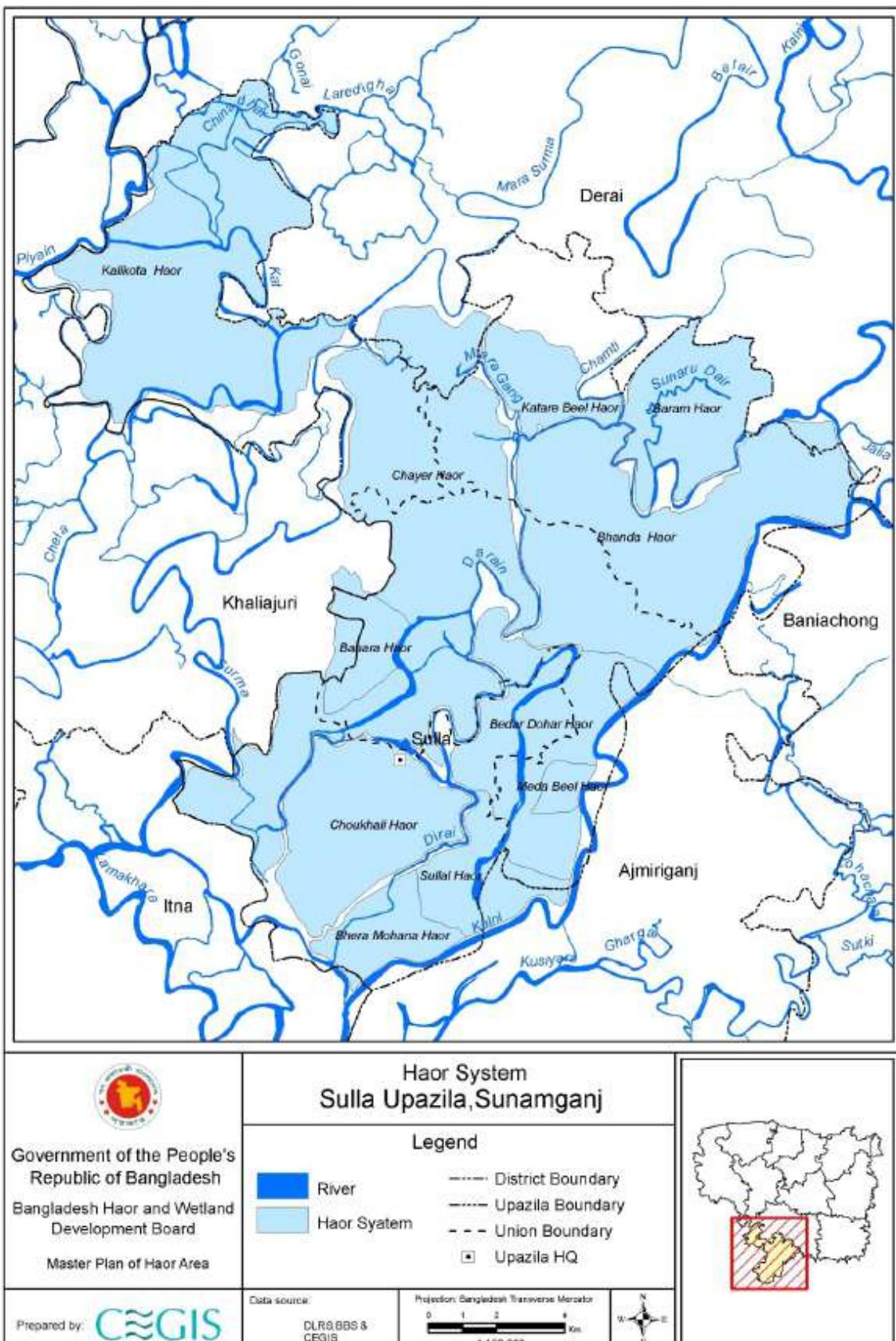


Figure 2.11: Haor System of Sulla Upazila

Annexure 2: Haors of Bangladesh
Haors of Sunamganj District

• **Sunamganj Sadar:**

Table 2.12 Haors of Sunamganj Sadar Upazila

Serial No.	Name Of Haor	Area (ha)
1	Dekar Haor	7282
2	Dhakua Haor	3032
3	Dhamai Haor	932
4	Joal Bhanga Haor	3366
5	Kalnar Haor	4638
6	Shanghair Haor	1
Total		19251

Annexure 2: Haors of Bangladesh
 Haors of Sunamganj District

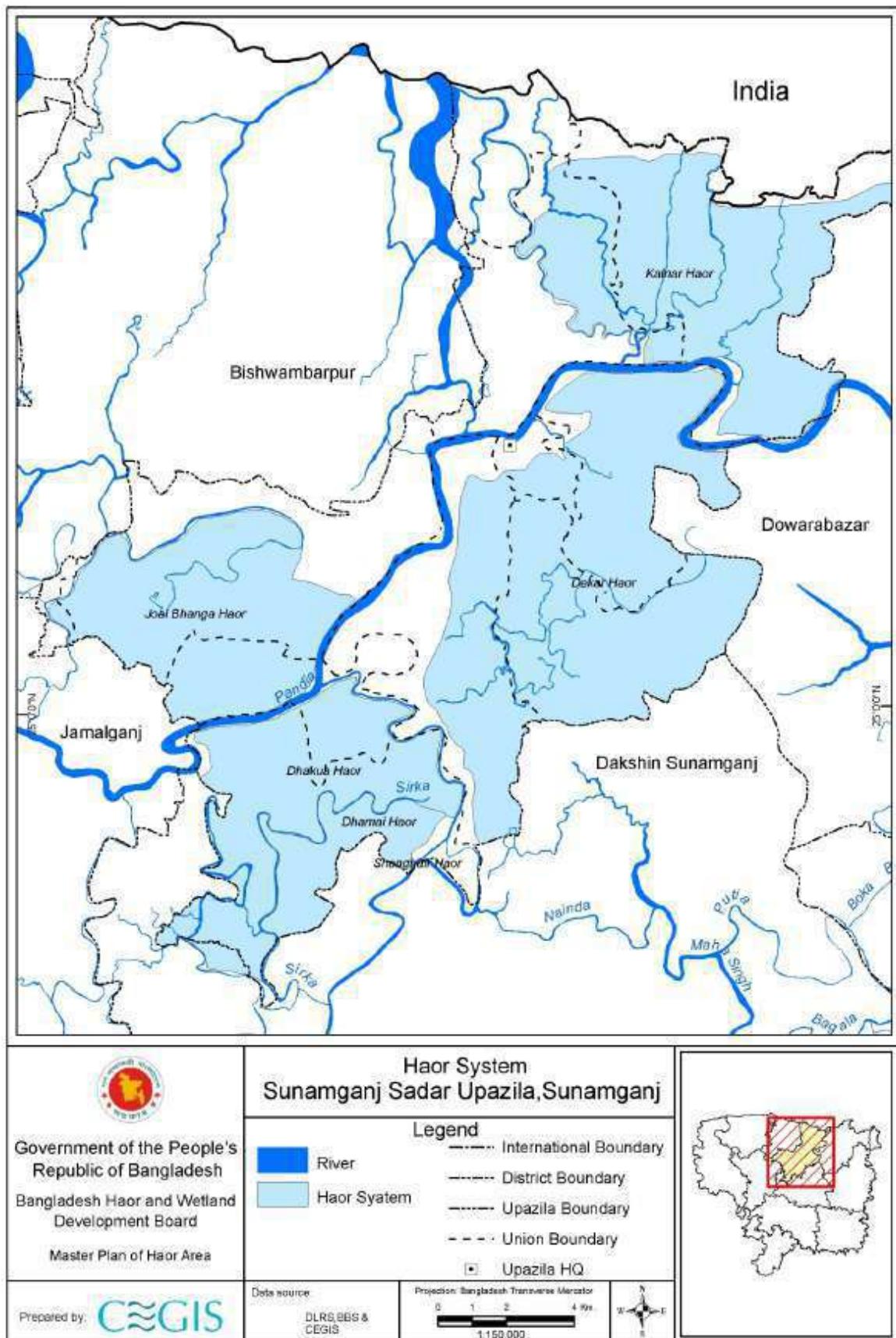


Figure 2.12: Haor System of Sunamganj Sadar Upazila

Annexure 2: Haors of Bangladesh
Haors of Sunamganj District

• **Tahirpur:**

Table 2.13 Haors of Tahirpur Upazila

Serial No.	Name Of Haor	Area (ha)
1	Balda Gulaghat Haor	882
2	Kuti Beel Haor	407
3	Lubar Haor	1636
4	Lusni Beel Haor	1708
5	Matian Haor	5336
6	Sangshar Beel Haor	925
7	Shanir Haor	6777
8	Tanguar Haor	4535
Total		22206

Annexure 2: Haors of Bangladesh
 Haors of Sunamganj District

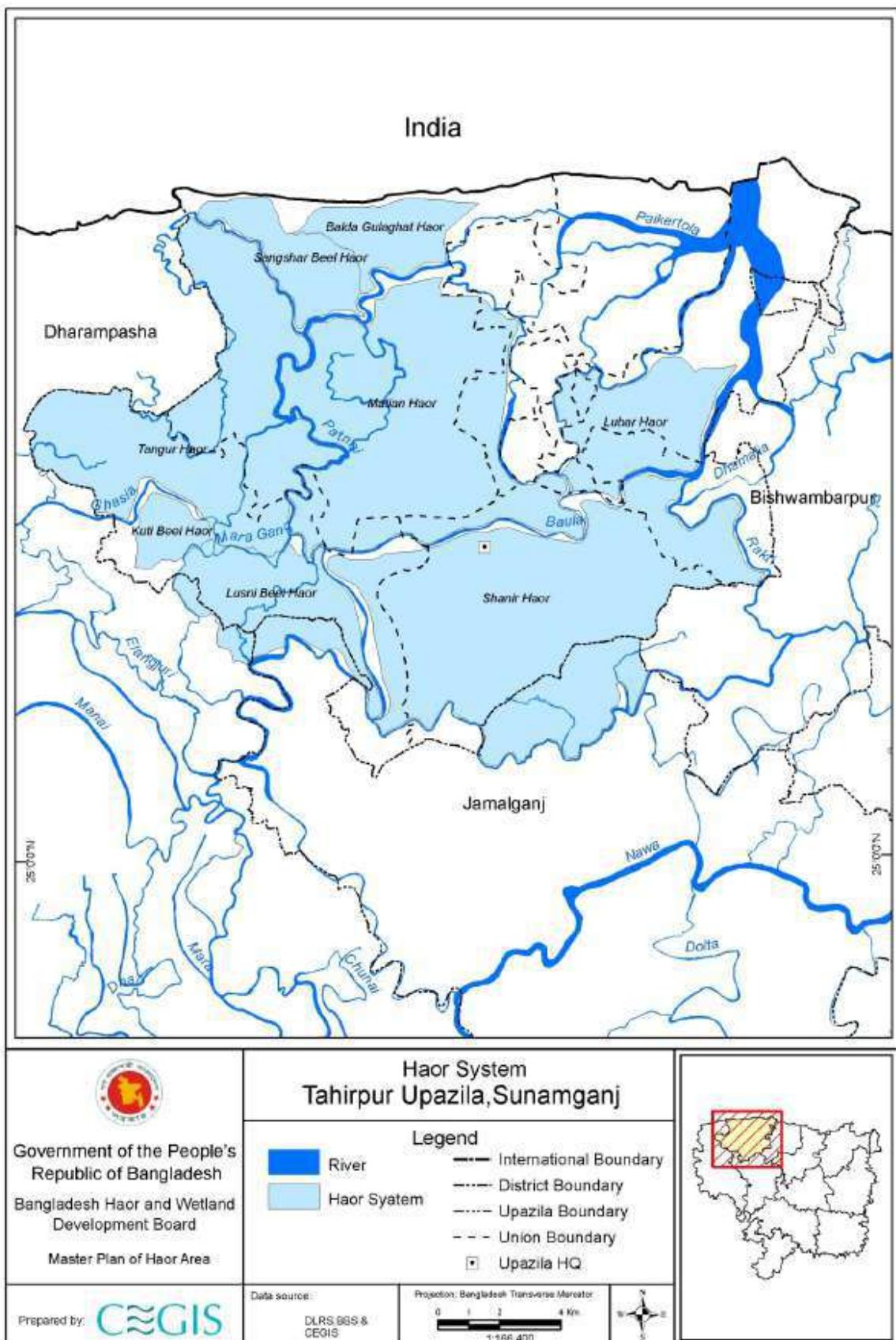


Figure 2.13: Haor System of Tahirpur Upazila

2.2 Haors of Sylhet District

2.2 Haors of Sylhet District

There are 13 Upazilas and 105 Haors in Sylhet District. Among these Upazilas, Osmani Nagar does not have any Haors. Haors of the rest 12 Upazilas and their maps have been given below. Table 2.14 shows the number of Haors (Upazila wise) of Sylhet District.

Table 2.14 Haors of Sylhet District

Serial No.	Name of Upazila	Number of Haors
1	Balaganj	13
2	Beani Bazar	4
3	Bishwanath	3
4	Companiganj	15
5	Dakshin Surma	4
6	Fenchuganj	4
7	Golapganj	9
8	Gowainghat	47
9	Jaintiapur	18
10	Kanaighat	9
11	Sylhet Sadar	3
12	Zakiganj	2
13	Osmani Nagar	-
Total		105

It is to be noted that:

- Some Haors are stretched over more than one Upazila, sometimes over more than one district. While recording these Haors, they have been shown in all Upazilas, hence the apparent discrepancy is observed in the total number of Haors.
- In Sylhet District, the following Haors are stretched over more than one Upazilas: Amura, Baldi, Baurbhag, Bedu, Borobandh, Budhigai, Damdama, Dhamrir, Dubriary, Fatehganj, Jhingarkhal, Khagra, Khas, Lakhair, Lamagaon, Lubha, Lular, Patharchuli, Purna Chahagram, Ruhilakani Haor.
- Banaiya and Chiluar Haors are stretched over more than one district.

Figure 2.14 shows the perennial waterbodies (wetlands) of Sylhet district. Figure 2.15 shows the Satellite Image Map of the wetlands of Sylhet. Upazila wise list of Haors of Sylhet has been presented in Tables 2.15 to Table 2.26 whereas Upazila wise maps of Haors have been presented in Figures 2.16 to 2.27.

Annexure 2: Haors of Bangladesh
 Haors of Sylhet District

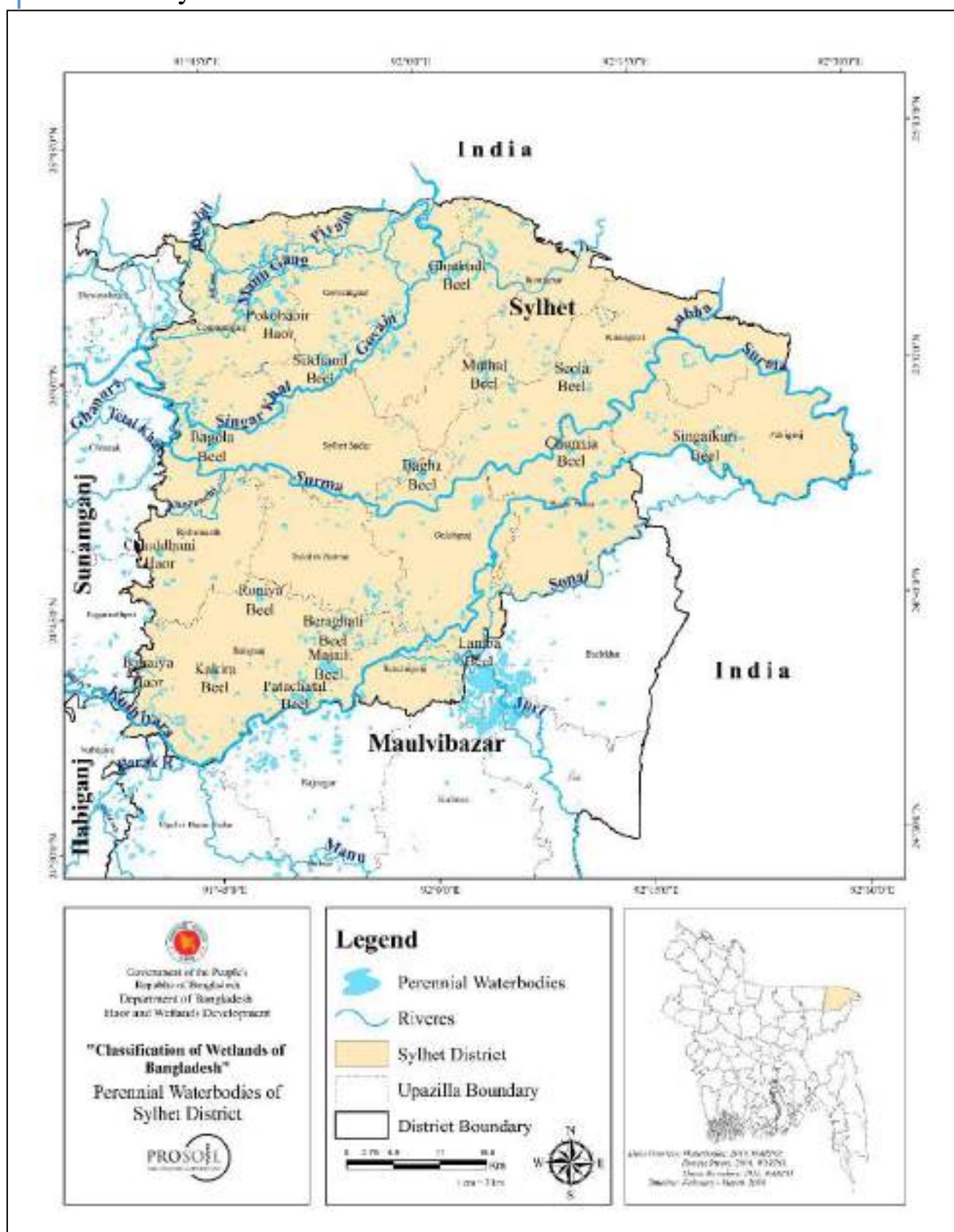


Figure 2.14: Perennial Waterbodies of Sylhet District

Annexure 2: Haors of Bangladesh Haors of Sylhet District

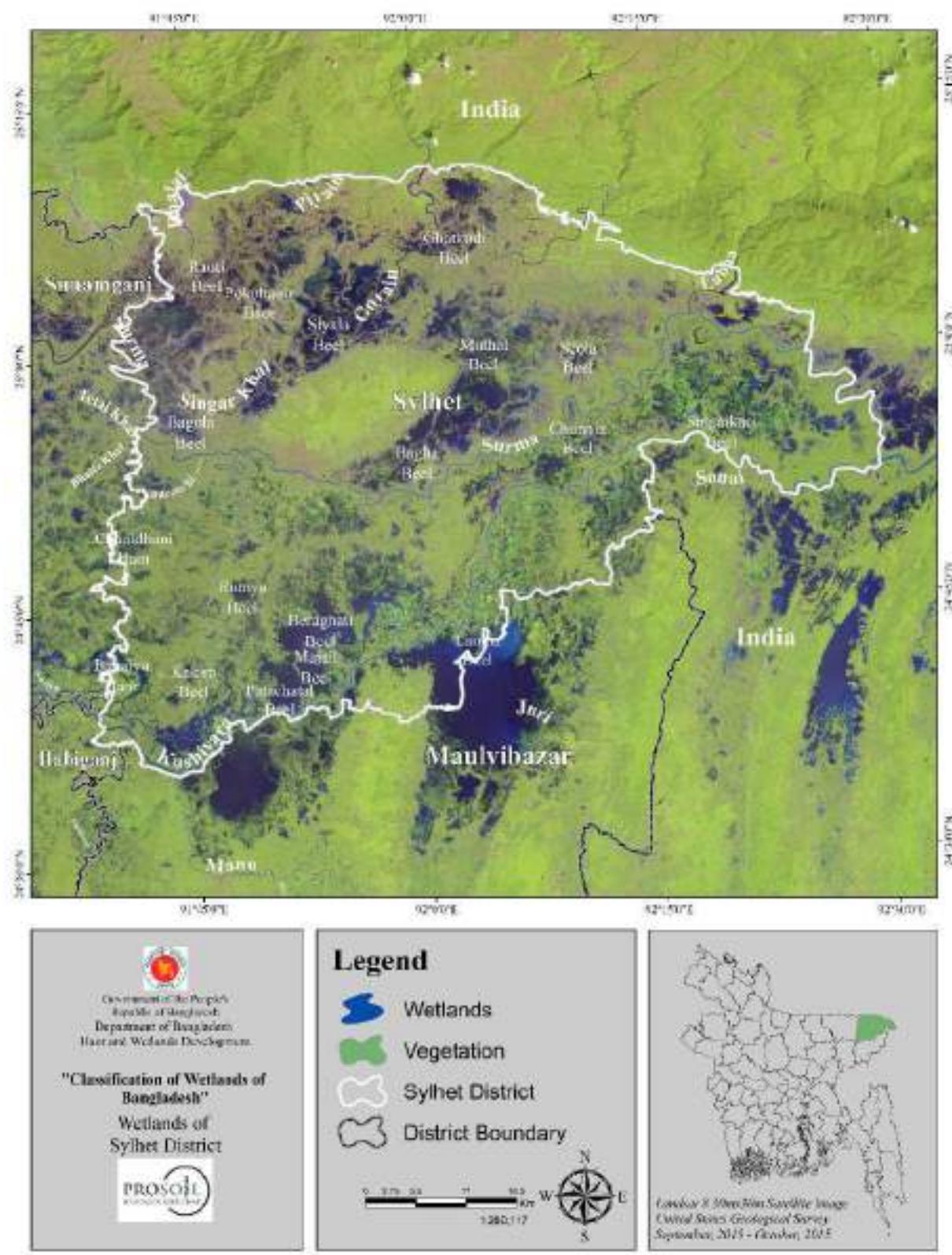


Figure 2.15: Wetlands of Sylhet District (Satellite Image Map)

Annexure 2: Haors of Bangladesh
Haors of Sylhet District

• **Balaganj:**

Table 2.15 Haors of Balaganj Upazila

Serial No.	Name Of Haor	Area (ha)
1	Banaiya Haor	4883
2	Borobandh Haor	1507
3	Chalkrohi Haor	1012
4	Chatol Haor	320
5	Chiluar Haor	1
6	Doyalong Haor	868
7	Dubriary Haor	3489
8	Gauripurl Haor	2735
9	Kauadighi Haor	5
10	Maijail Haor	2900
11	Muktarpur Haor	5089
12	Niraiya Haor	1117
13	Roa Beel Haor	613
Total		24540

Annexure 2: Haors of Bangladesh
 Haors of Sylhet District

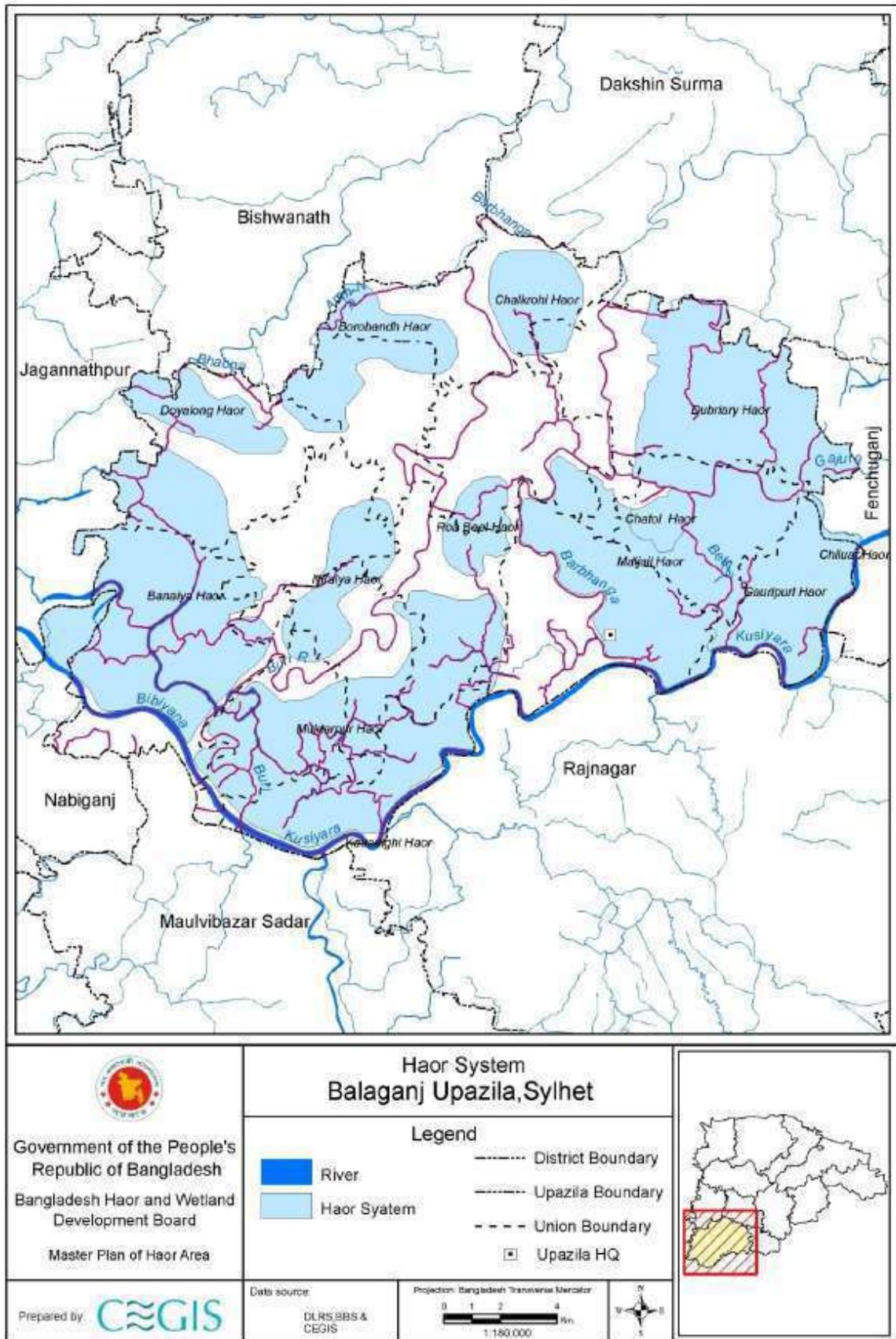


Figure 2.16: Haor System of Balaganj Upazila

Annexure 2: Haors of Bangladesh
Haors of Sylhet District

• **Beani Bazar:**

Table 2.16 Haors of Beani Bazar Upazila

Serial No.	Name Of Haor	Area (ha)
1	Adinabad Haor	2199
2	Amura Haor	305
3	Muria Haor	3814
4	Nateshower Haor	2786
Total		9104

Annexure 2: Haors of Bangladesh
 Haors of Sylhet District

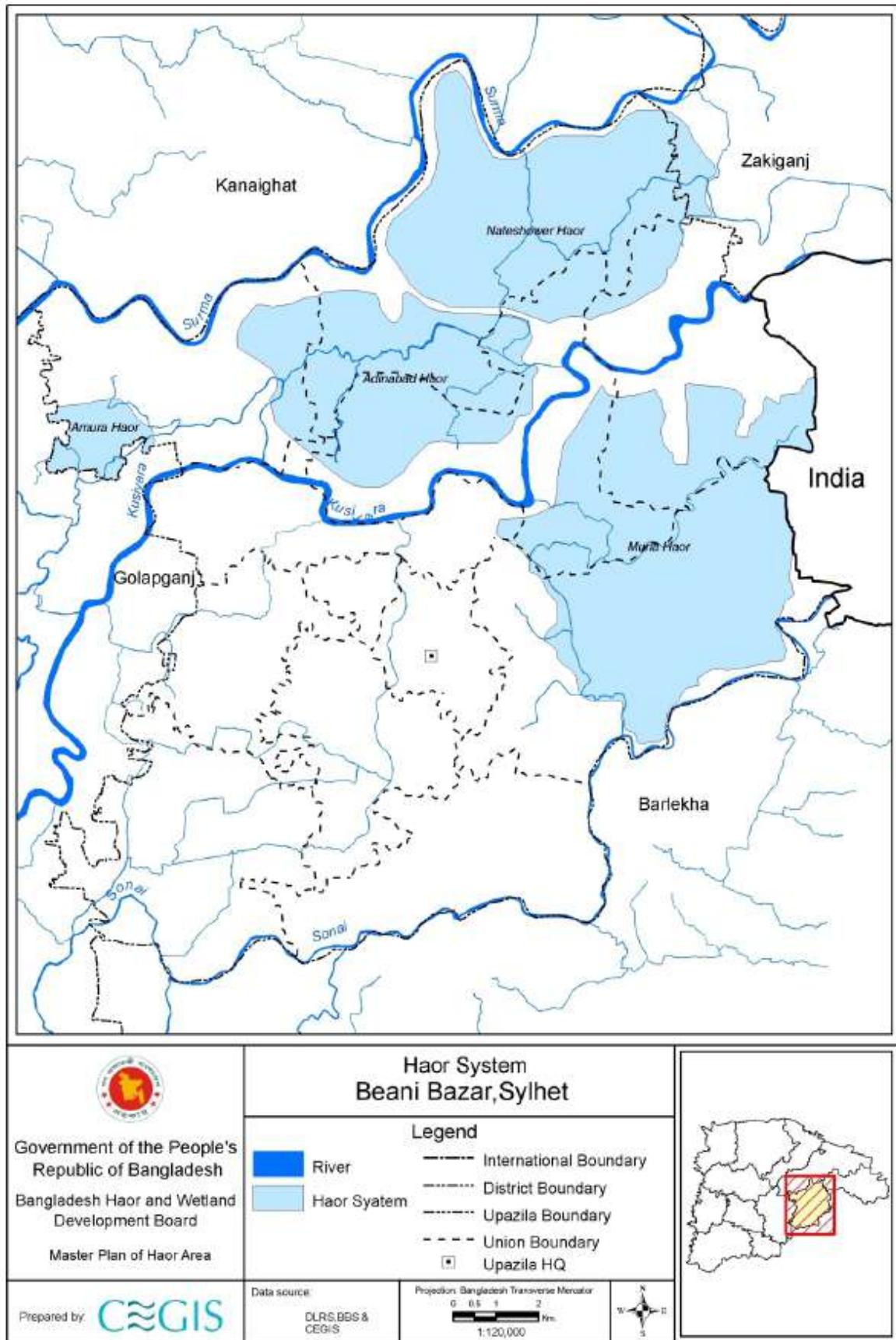


Figure 2.17: Haor System of Beani Bazar Upazila

Annexure 2: Haors of Bangladesh
Haors of Sylhet District

• **Bishwanath:**

Table 2.17 Haors of Bishwanath Upazila

Serial No.	Name Of Haor	Area (ha)
1	Borobandh Haor	566
2	Chauldhani Haor	4067
3	Kamalpur Uttar Haor	1095
Total		5728

Annexure 2: Haors of Bangladesh
 Haors of Sylhet District

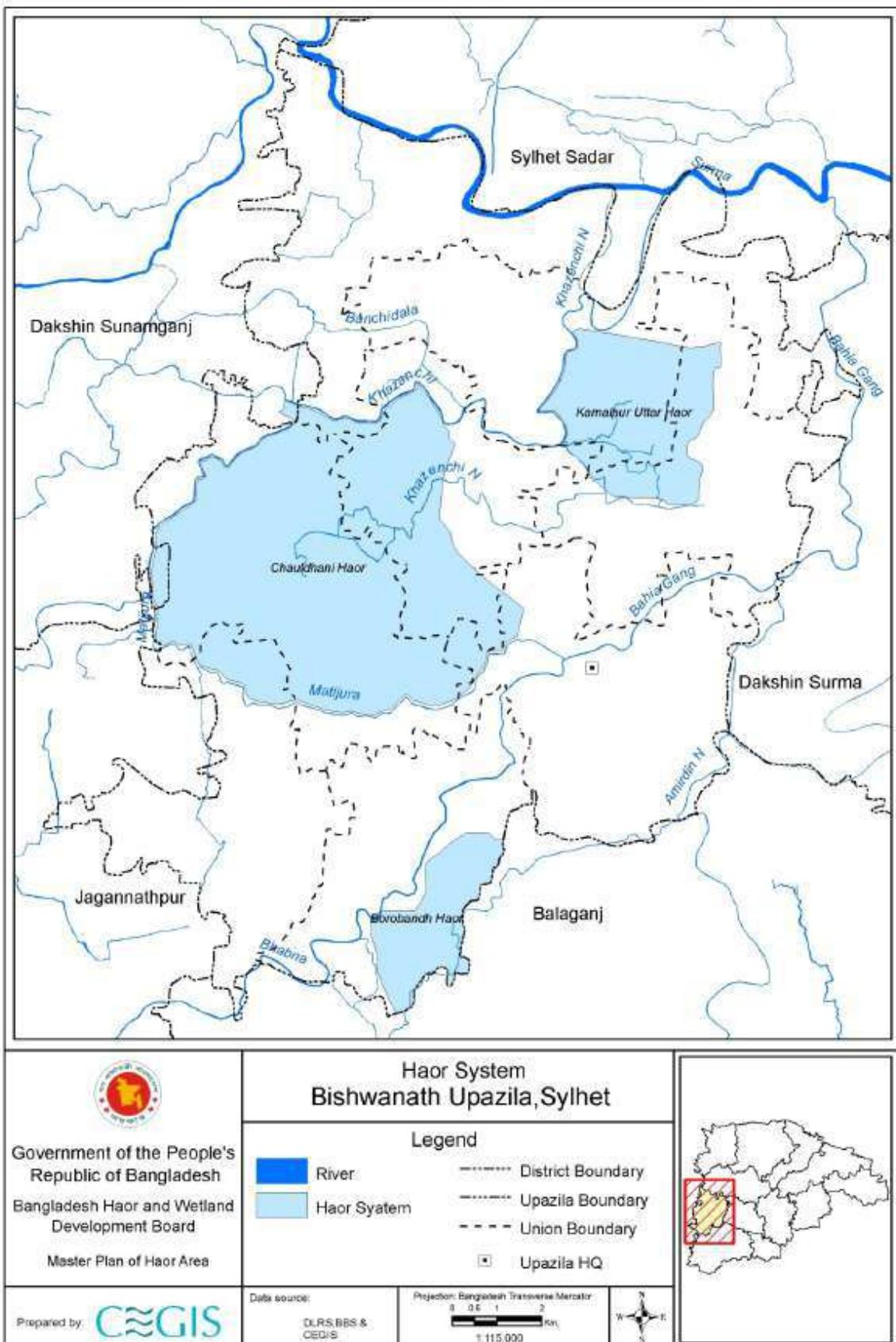


Figure 2.18: Haor System of Bishwanath Upazila

Annexure 2: Haors of Bangladesh
Haors of Sylhet District

• Companiganj:

Table 2.18 Haors of Companiganj Upazila

Serial No.	Name Of Haor	Area (ha)
1	Baldi Haor	123
2	Barni Haor	1167
3	Bijoy Parua Haor	1106
4	Damdama Haor	1
5	Fultail Chhagram Haor	902
6	Lakhair Haor	423
7	Lamagaon Haor	437
8	Lubha Haor	1595
9	Panichapra Haor	247
10	Patharchuli Haor	9614
11	Piprakhai Haor	623
12	Purna Chhagram Haor	1071
13	Rautir Haor	2952
14	Shamshernagar Haor	875
15	Shimultala -Jalla Haor	780
Total		21915

Annexure 2: Haors of Bangladesh
 Haors of Sylhet District

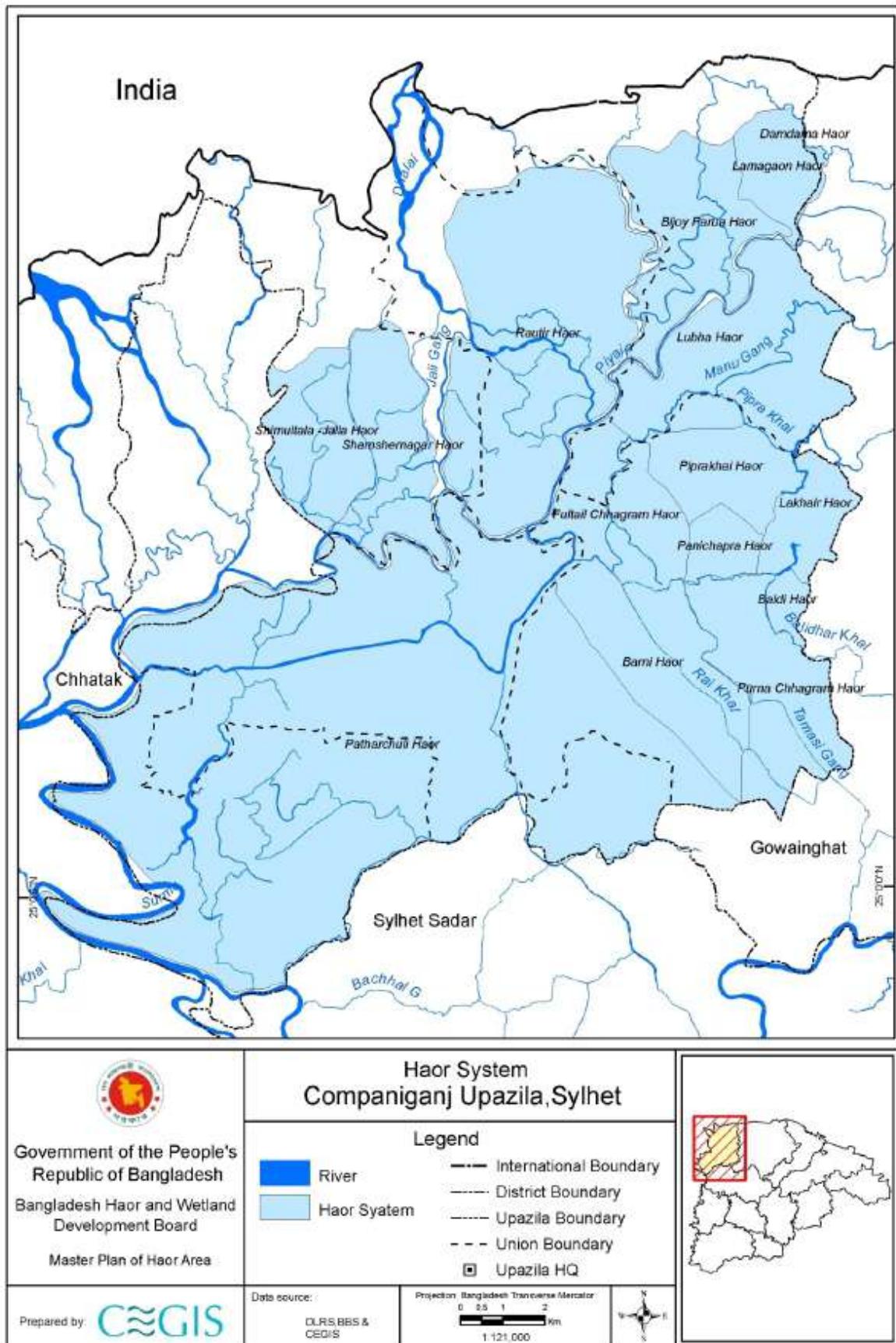


Figure 2.19: Haor System of Companiganj Upazila

Annexure 2: Haors of Bangladesh
Haors of Sylhet District

• **Dakshin Surma:**

Table 2.19 Haors of Dakshin Surma Upazila

Serial No.	Name Of Haor	Area (ha)
1	Dhamrir Haor	2695
2	Dubriary Haor	2602
3	Gakter Haor	1130
4	Lular Haor	1579
Total		8006

Annexure 2: Haors of Bangladesh

Haors of Sylhet District

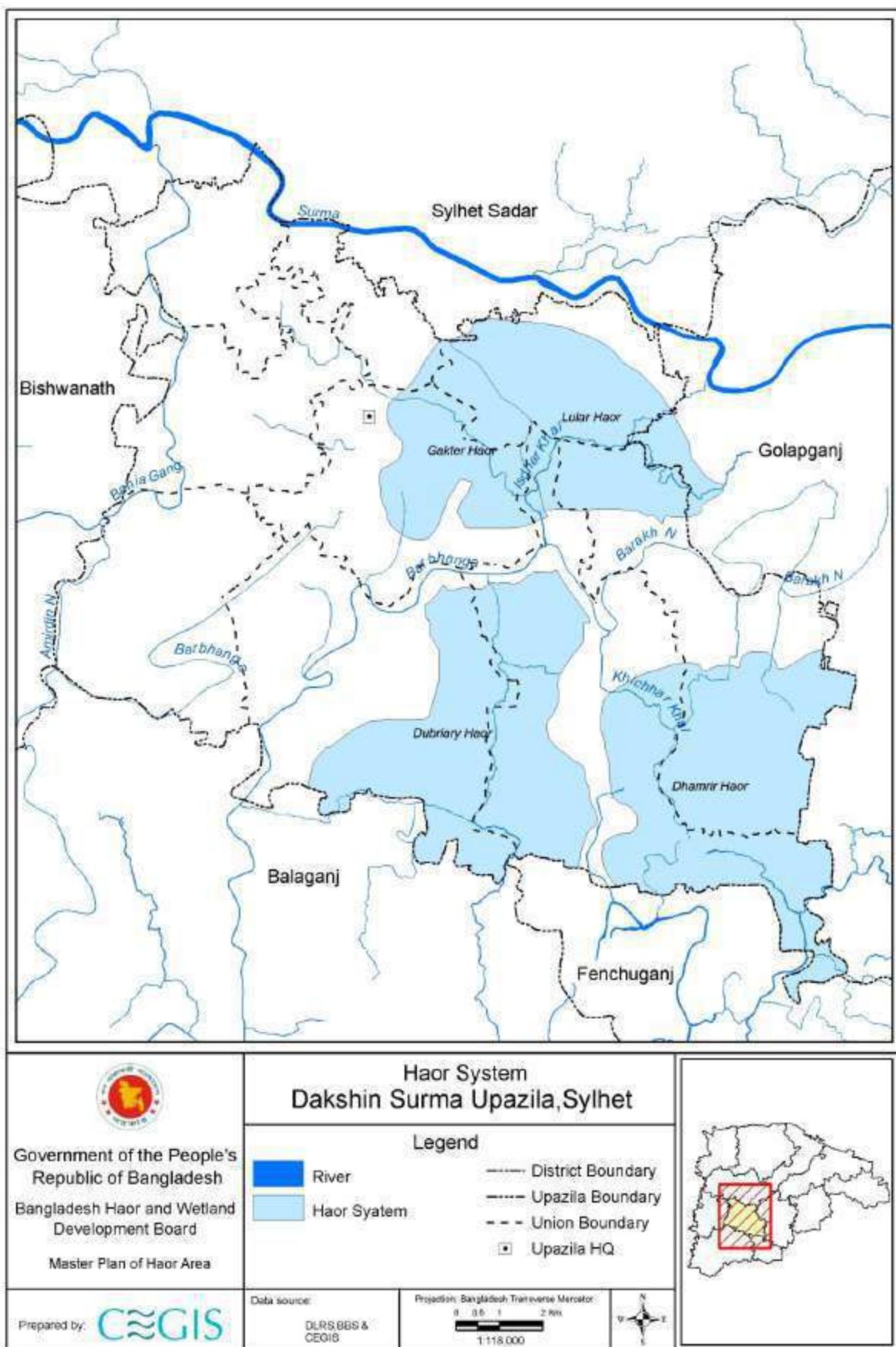


Figure 2.20: Haor System of Dakshin Surma Upazila

Annexure 2: Haors of Bangladesh
Haors of Sylhet District

• Fenchuganj:

Table 2.20 Haors of Fenchuganj Upazila

Serial No.	Name Of Haor	Area (ha)
1	Chiluar Haor	441
2	Dhamrir Haor	1603
3	Dubriary Haor	1391
4	Hakaluki Haor	2905
Total		11331

Annexure 2: Haors of Bangladesh
Haors of Sylhet District

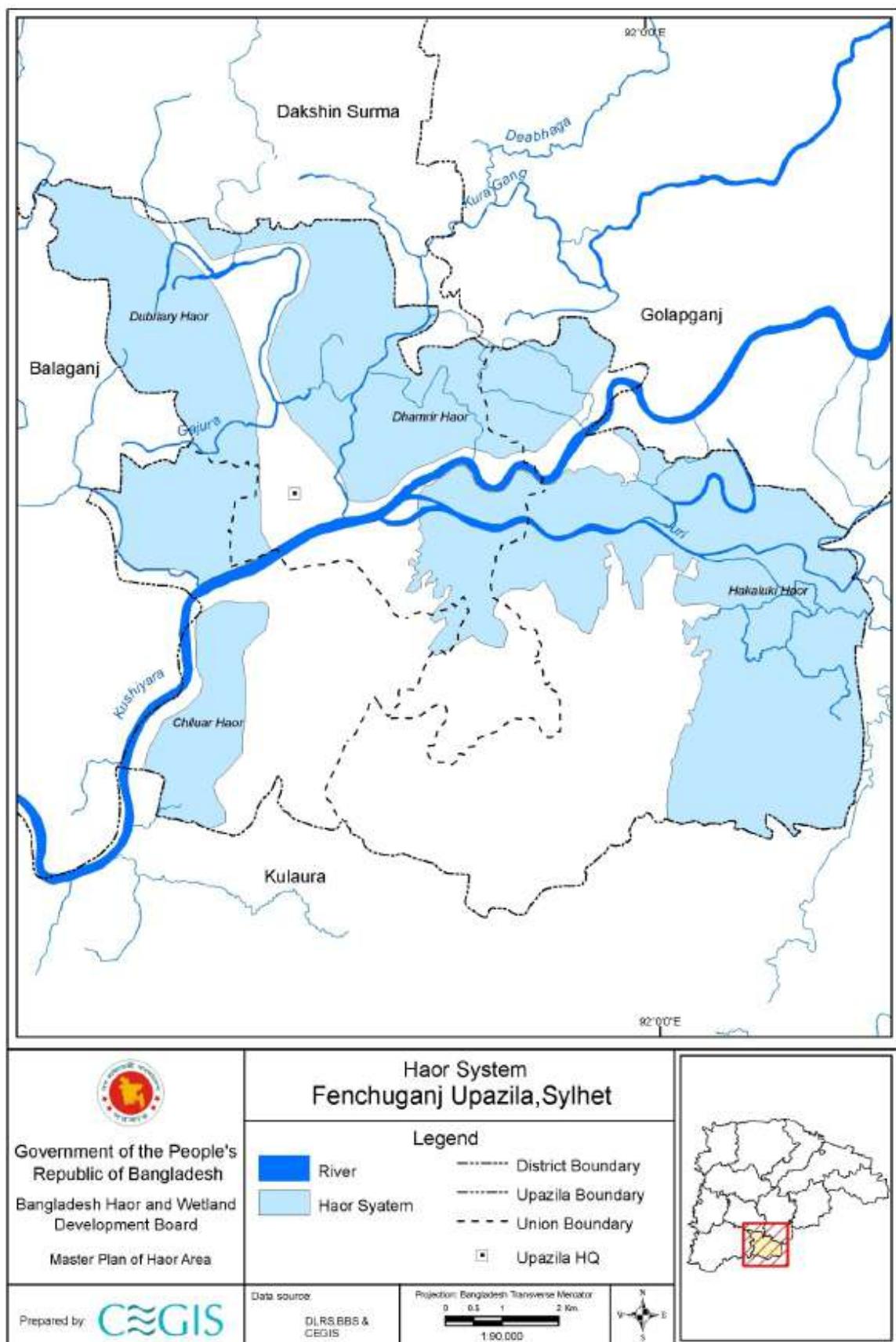


Figure 2.21: Haor System of Fenchuganj Upazila

Annexure 2: Haors of Bangladesh
Haors of Sylhet District

• **Golapganj:**

Table 2.21 Haors of Golapganj Upazila

Serial No.	Name Of Haor	Area (ha)
1	Amura Haor	1201
2	Aral Haor	442
3	Bagha Haor	1883
4	Bayiar Haor	590
5	Chatol Beel Haor	1094
6	Dhamrir Haor	2958
7	Fatehganj Haor	609
8	Hakaluki Haor	1286
9	Lular Haor	1
Total		10064

Annexure 2: Haors of Bangladesh
 Haors of Sylhet District

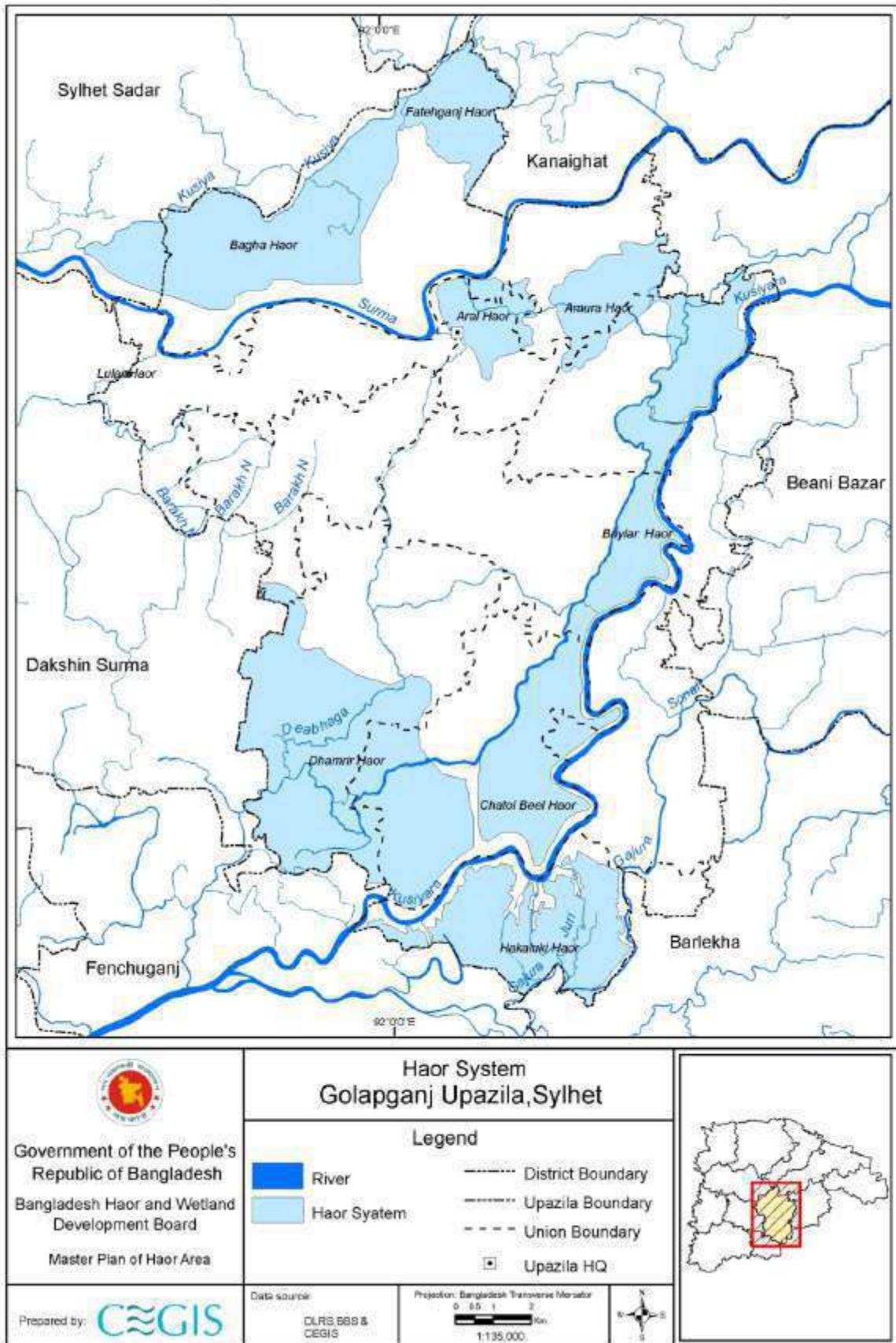


Figure 2.22: Haor System of Golapganj Upazila

Annexure 2: Haors of Bangladesh
Haors of Sylhet District

- **Gowainghat:**

Table 2.22 Haors of Gowainghat Upazila

Serial No.	Name Of Haor	Area (ha)
1	Ambari Haor	725
2	Asam Para haor	370
3	Bagaiya Haor	825
4	Baldi Haor	125
5	Baon Haor	637
6	Barkipur Haor	444
7	Baurbhag Haor	128
8	Bedu Haor	1474
9	Bheri Bil Haor	529
10	Bhitrikhel Haor	1342
11	Boga Haor	2848
12	Budhigai Haor	198
13	Chadibhadi Haor	108
14	Chatal Haor	279
15	Chhitinger Haor	817
16	Chhota Khal Haor	951
17	Damdama Haor	190
18	Daubari Haor	4065
19	Gurukchi Haor	427
20	Kaiya Haor	162
21	Kakunakhai Haor	250
22	Khagra Haor	757
23	Khas Haor	950
24	Lakhair Haor	702
25	Lakshmi Haor	75
26	Lama Satain Haor	687

Annexure 2: Haors of Bangladesh
Haors of Sylhet District

(Table 2.22 Continued)

Serial No.	Name Of Haor	Area (ha)
27	Lamagaon Haor	1
28	Lengura Haor	698
29	Lubha Haor	2987
30	Naigul Haor	619
31	Nainda Haor	76
32	Nandirgaon Haor	2055
33	Natun Bhanga Haor	165
34	Naya Para Bir Mangal Haor	890
35	Nayagram Haor	201
36	Nij Dhargram Haor	1192
37	Pekerkhal Haor	1185
38	Purna Chhagram Haor	841
39	Sahapur Haor	490
40	Sankibhanga Haor	115
41	Satir Haor	783
42	Shimul Bil Haor	813
43	Siala Haor	231
44	Silchand Haor	839
45	Thubri Haor	99
46	Titgulil Haor	209
47	Turukbhag Haor	716
Total		35272

Annexure 2: Haors of Bangladesh
 Haors of Sylhet District

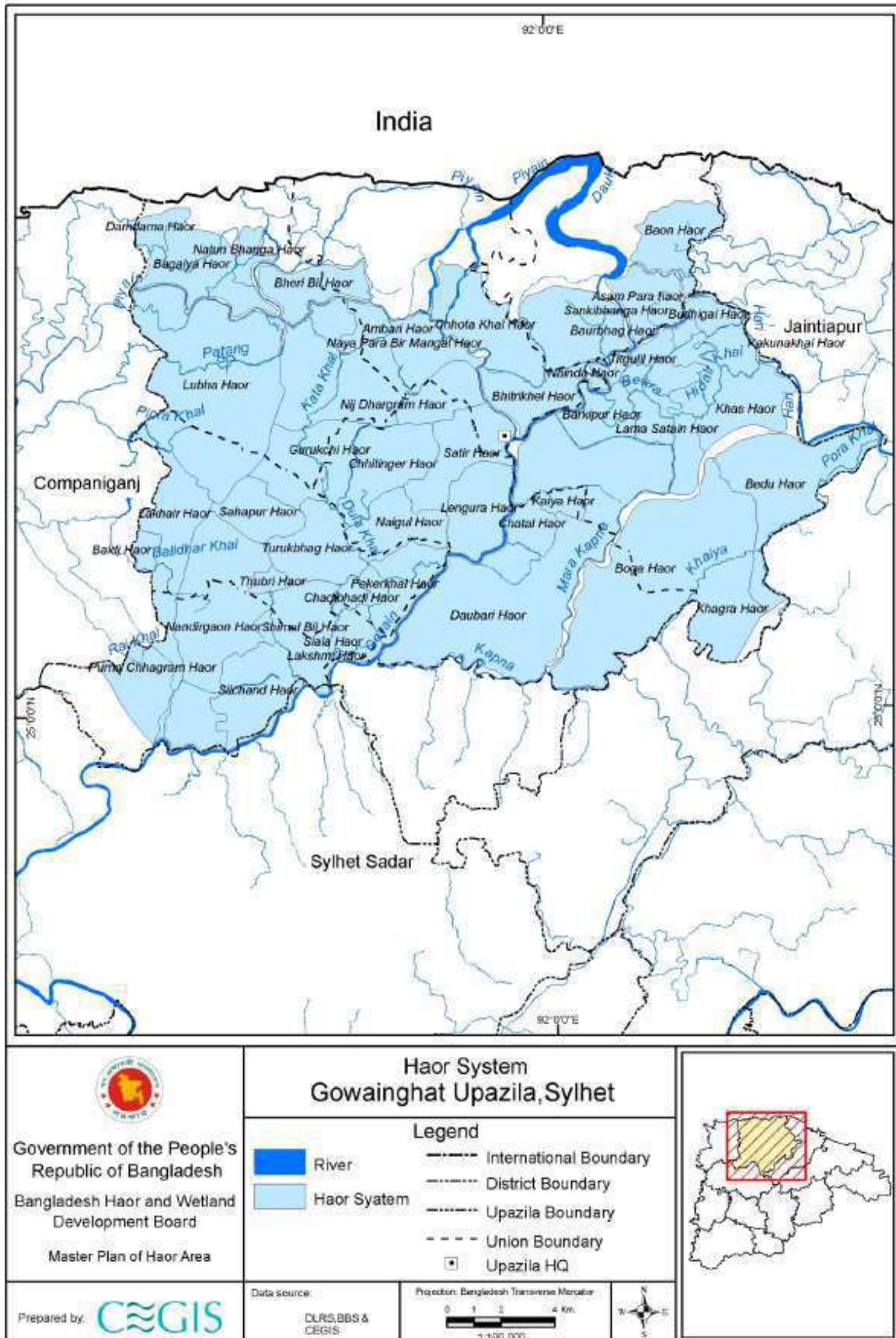


Figure 2.23: Haor System of Gowainghat Upazila

Annexure 2: Haors of Bangladesh
Haors of Sylhet District

- **Jaintiapur:**

Table 2.23 Haors of Jaintiapur Upazila

Serial No.	Name Of Haor	Area (ha)
1	Baon Haor	1024
2	Baurbhag Haor	1785
3	Bedu Haor	913
4	Budhigai Haor	1
5	Deochapra Haor	586
6	Dhupni Haor	1605
7	Jhingarkhal Haor	3
8	Khagra Haor	659
9	Kharu Beel Haor	674
10	Khas Haor	1
11	Lakshmi Prashad Haor	915
12	Medhar Haor	1188
13	Panichhara Haor	540
14	Paschim Ruhilakandi Haor	531
15	Ruhilakani Haor	902
16	Sikar Khan Haor	477
17	Tolu Haor	403
18	Umanpur Haor	375
Total		12582

Annexure 2: Haors of Bangladesh
 Haors of Sylhet District

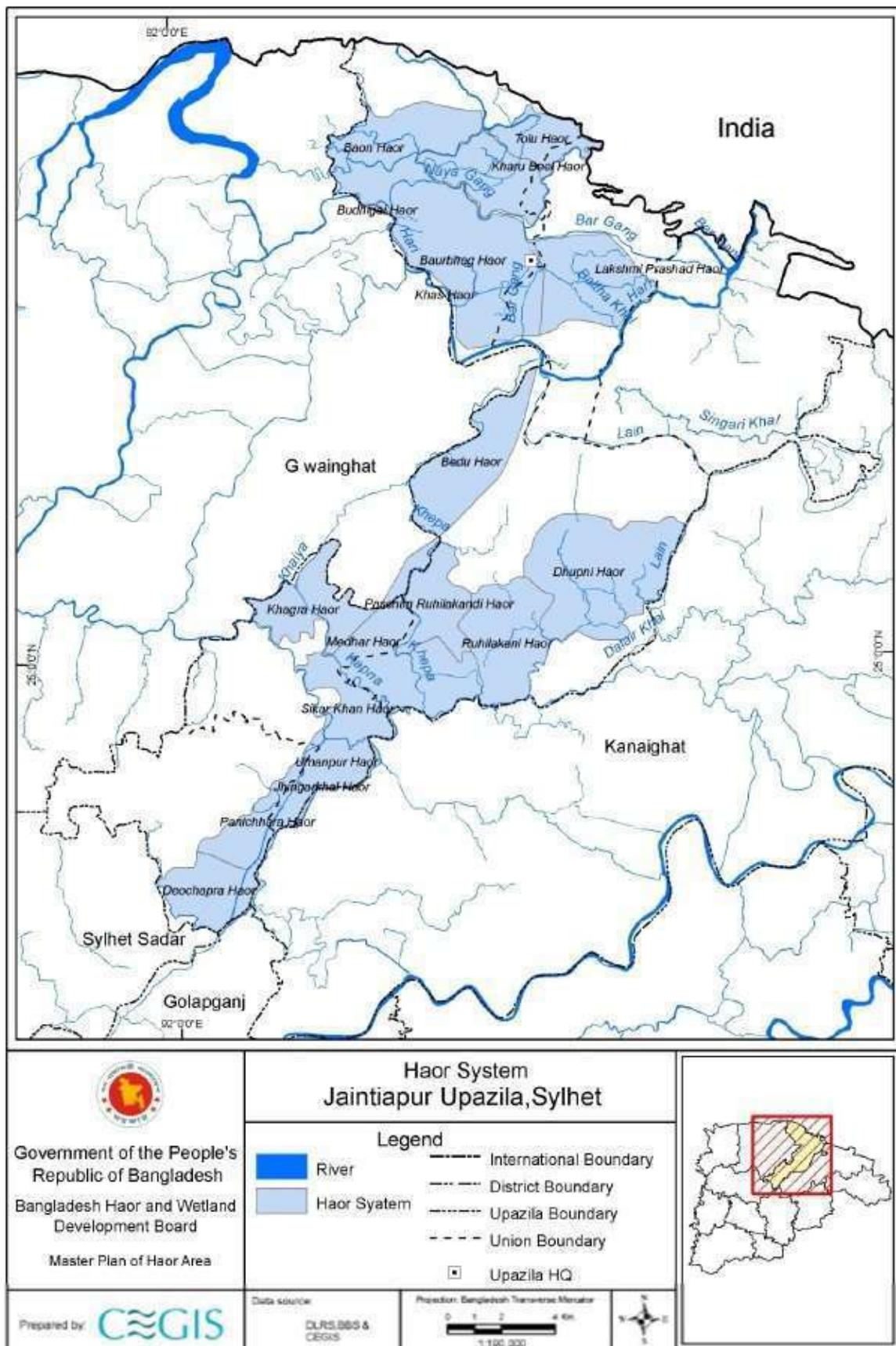


Figure 2.24: Haor System of Jaintiapur Upazila

Annexure 2: Haors of Bangladesh
Haors of Sylhet District

• **Kanaighat:**

Table 2.24 Haors of Kanaighat Upazila

Serial No.	Name Of Haor	Area (ha)
1	Birdhal Haor	746
2	Boro Haor(Sylhet)	21195
3	Chatol Haor	2471
4	Dalairkandi Haor	698
5	Fatehganj Haor	890
6	Jhingarkhal Haor	4624
7	Keoti Haor	1155
8	Ruhilakani Haor	0
9	Shafique Haor	1963
Total		37742

Annexure 2: Haors of Bangladesh
Haors of Sylhet District

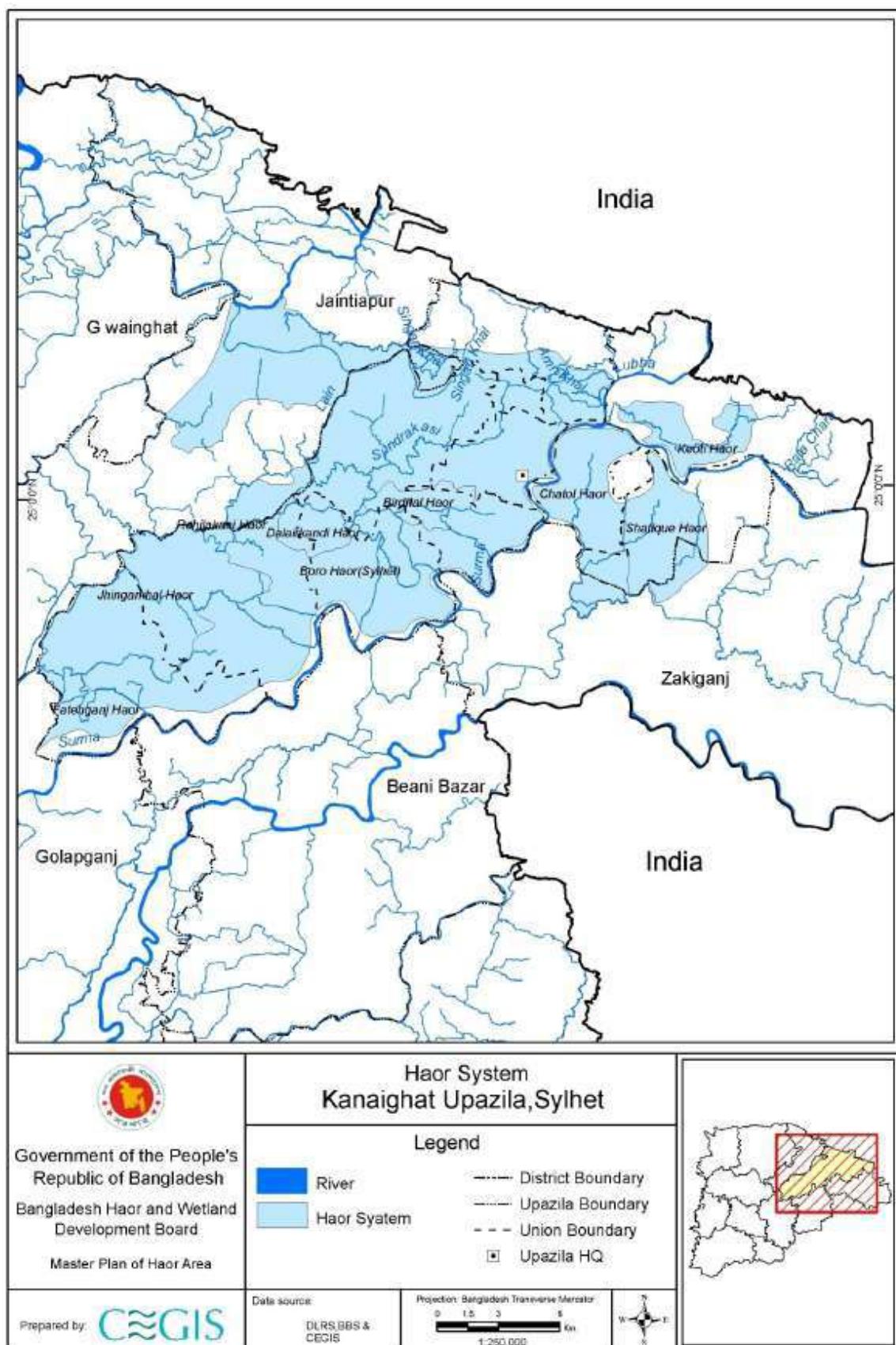


Figure 2.25: Haor System of Kanaighat Upazila

Annexure 2: Haors of Bangladesh
Haors of Sylhet District

• **Sylhet Sadar:**

Table 2.25 Haors of Sylhet Sadar Upazila

Serial No.	Name Of Haor	Area (ha)
1	Patharchuli Haor	6844
2	Sarbananda Haor	1858
3	Zilkar Haor	4600
Total		13302

Annexure 2: Haors of Bangladesh
Haors of Sylhet District

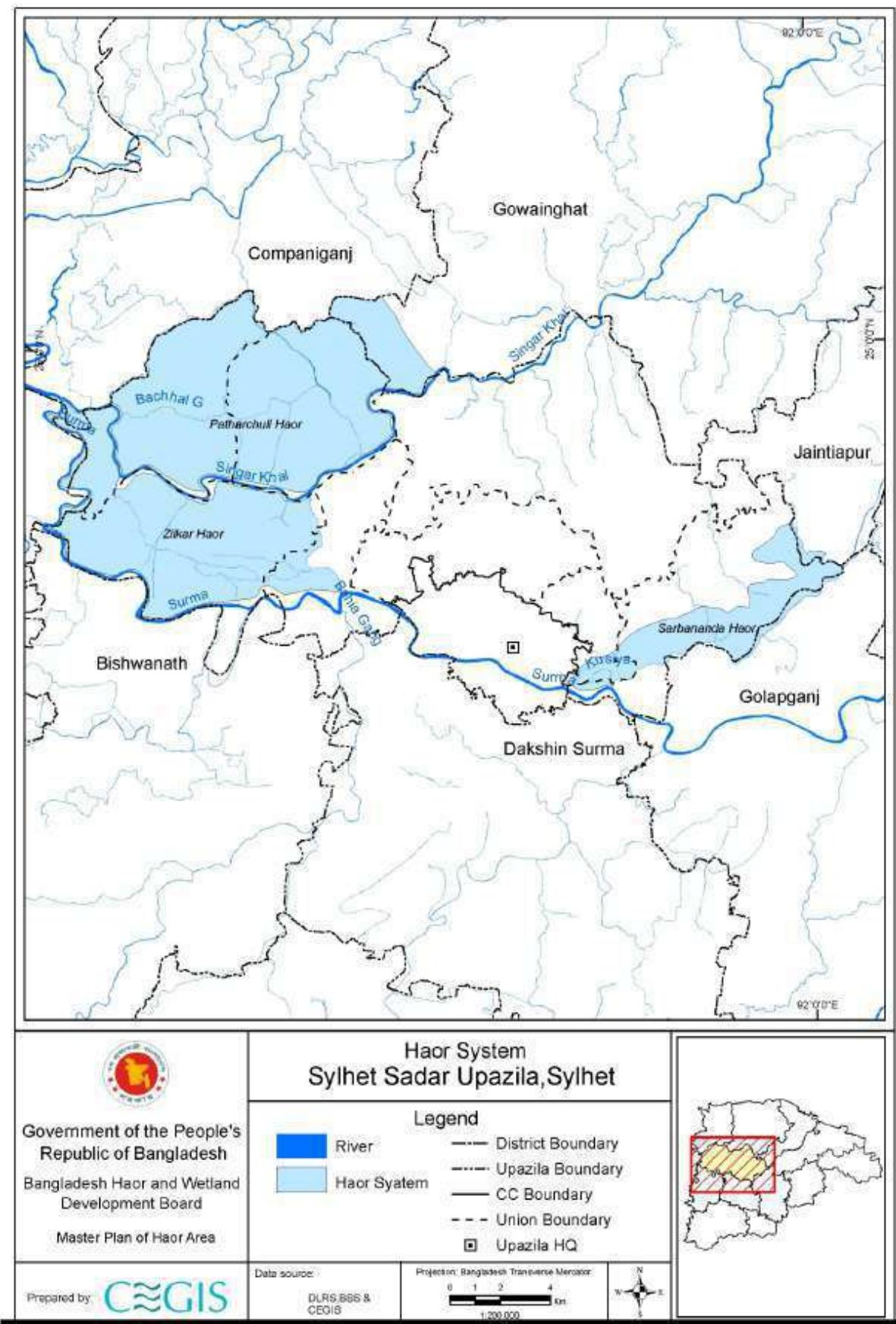


Figure 2.26: Haor System of Sylhet Sadar Upazila

Annexure 2: Haors of Bangladesh
Haors of Sylhet District

• **Zakiganj:**

Table 2.26 Haors of Zakiganj Upazila

Serial No.	Name Of Haor	Area (ha)
1	Balait Haor	10113
2	Mailat Haor	1125
Total		11237

Annexure 2: Haors of Bangladesh
 Haors of Sylhet District

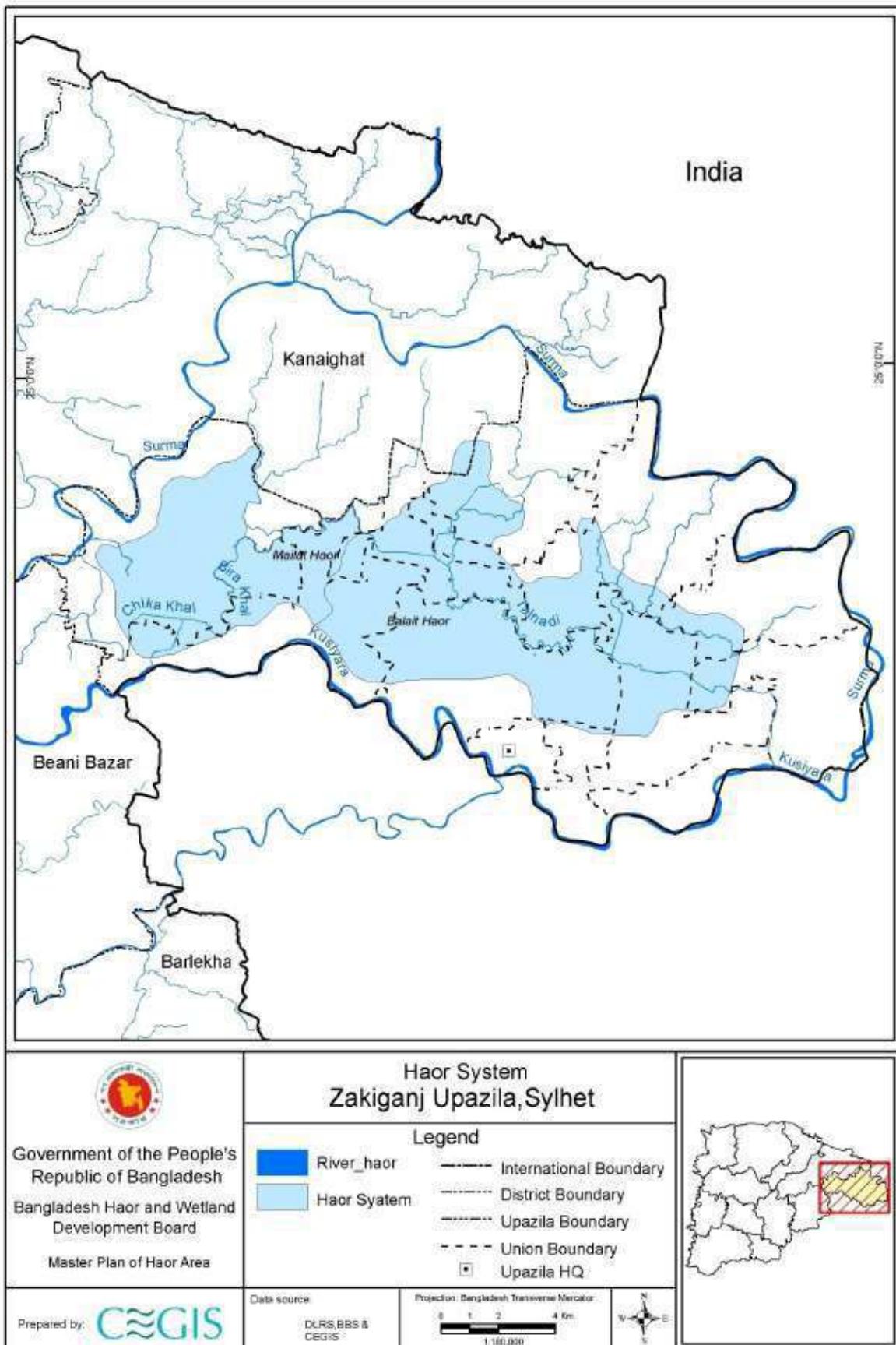


Figure 2.27: Haor System of Zakiganj Upazila

2.3 Haors of Habiganj District

2.3 Haors of Habiganj District

There are 8 Upazilas and 14 Haors in Habiganj District. Among these Upazilas, Chunarughat does not have any Haors. Haors of these Upazilas and their maps have been given below. Table 2.27 shows the number of Haors (Upazila wise) of Habiganj District.

Table 2.27: Haors of Habiganj District

Serial No.	Name of Upazila	Number of Haors
1	Ajmiriganj	3
2	Bahubal	1
3	Baniachong	9
4	Chunarughat	-
5	Habiganj Sadar	2
6	Lakhai	3
7	Madhabpur	1
8	Nabiganj	3
Total		14

It is to be noted that:

- Some Haors are stretched over more than one Upazila, sometimes over more than one district. While recording these Haors, they have been shown in all Upazilas, hence the apparent discrepancy is observed in the total number of Haors.
- In Habiganj District, the following Haors are stretched over more than one Upazilas: Dakshin-Paschimer, Gazaria Beel, Gungiajuri, Ikram-Sangar, Makalkandi, Mokhar and Shibpasha Haor.
- Brithangol Haor is stretched over more than one district.

Figure 2.28 shows the perennial waterbodies (wetlands) of Habiganj district. Figure 2.29 shows the Satellite Image Map of the wetlands of Habiganj. Upazila wise list of Haors of Habiganj has been presented in Tables 2.28 to Table 2.34 whereas Upazila wise maps of Haors have been presented in Figures 2.30 to Figure 2.35.

Annexure 2: Haors of Bangladesh **Haors of Habiganj District**

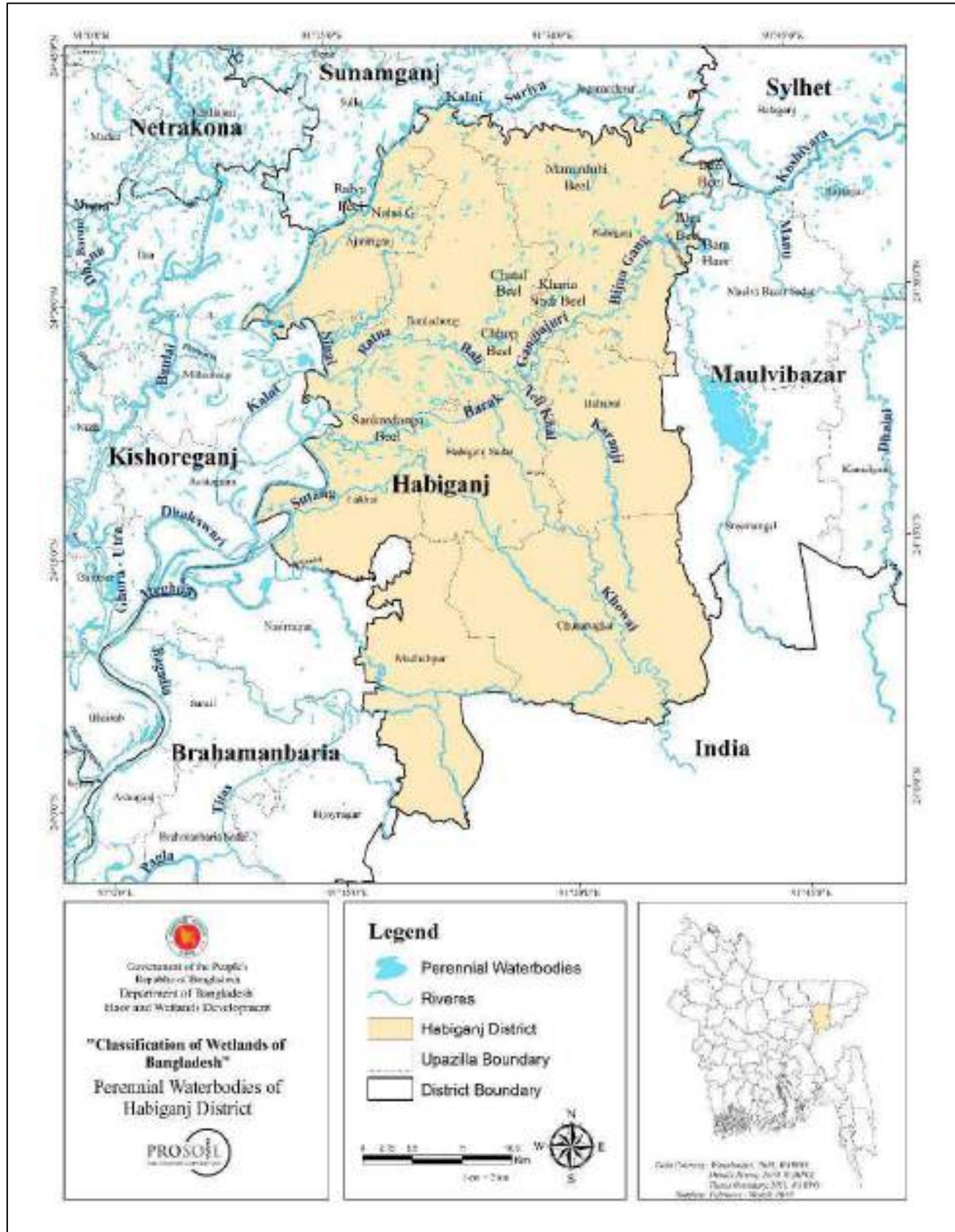


Figure 2.28: Perennial Waterbodies of Habiganj District

Annexure 2: Haors of Bangladesh
Haors of Habiganj District

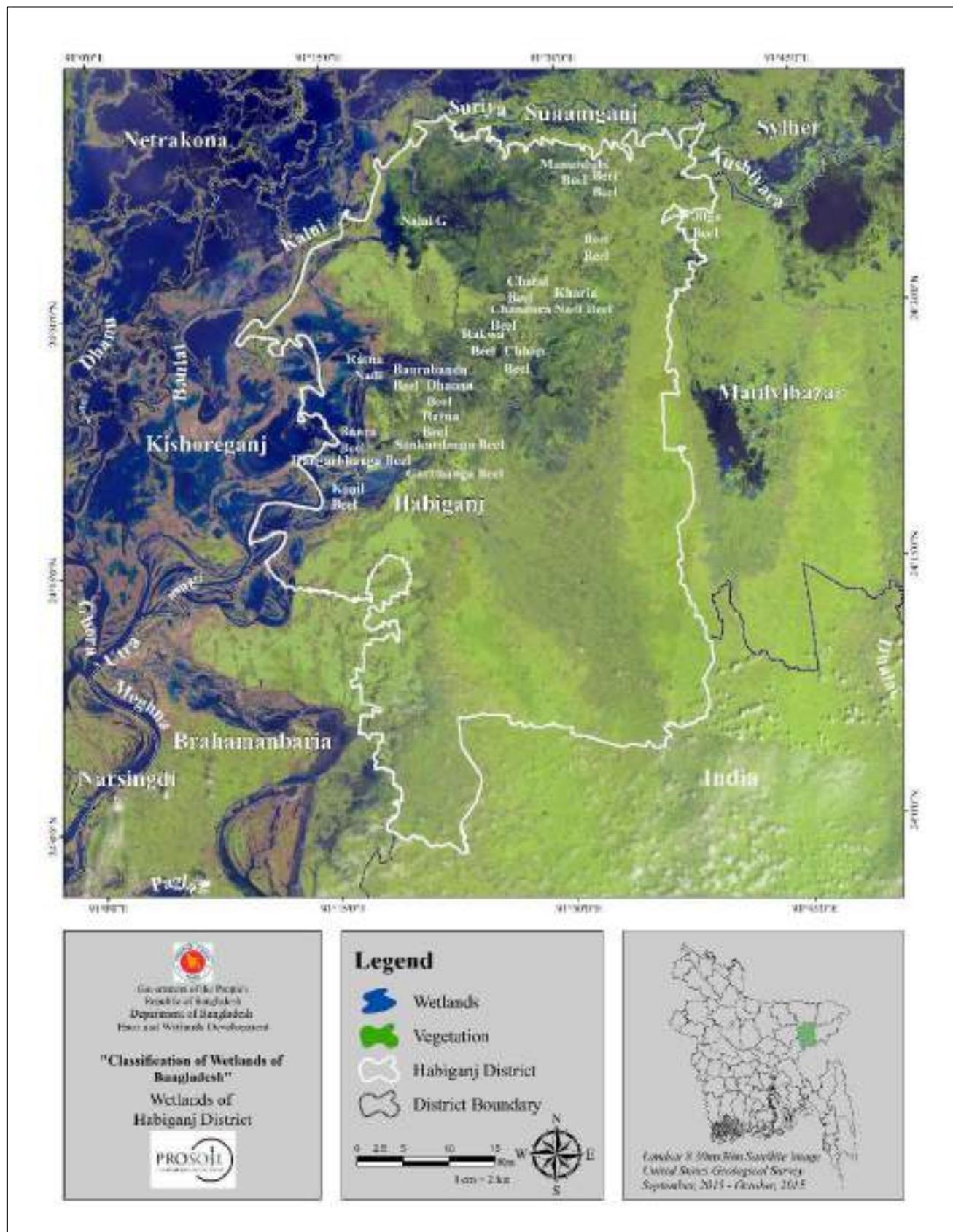


Figure 2.29: Wetlands of Habiganj District (Satellite Image Map)

Annexure 2: Haors of Bangladesh
Haors of Habiganj District

• Ajmiriganj

Table 2.28 Haors of Ajmiriganj Upazila

Serial No.	Name Of Haor	Area (ha)
1	Satkandir Haor	605
2	Luxmibaur-Nalair Haor	5365
3	Birat Haor	8779
Total		14749

Annexure 2: Haors of Bangladesh
 Haors of Habiganj District

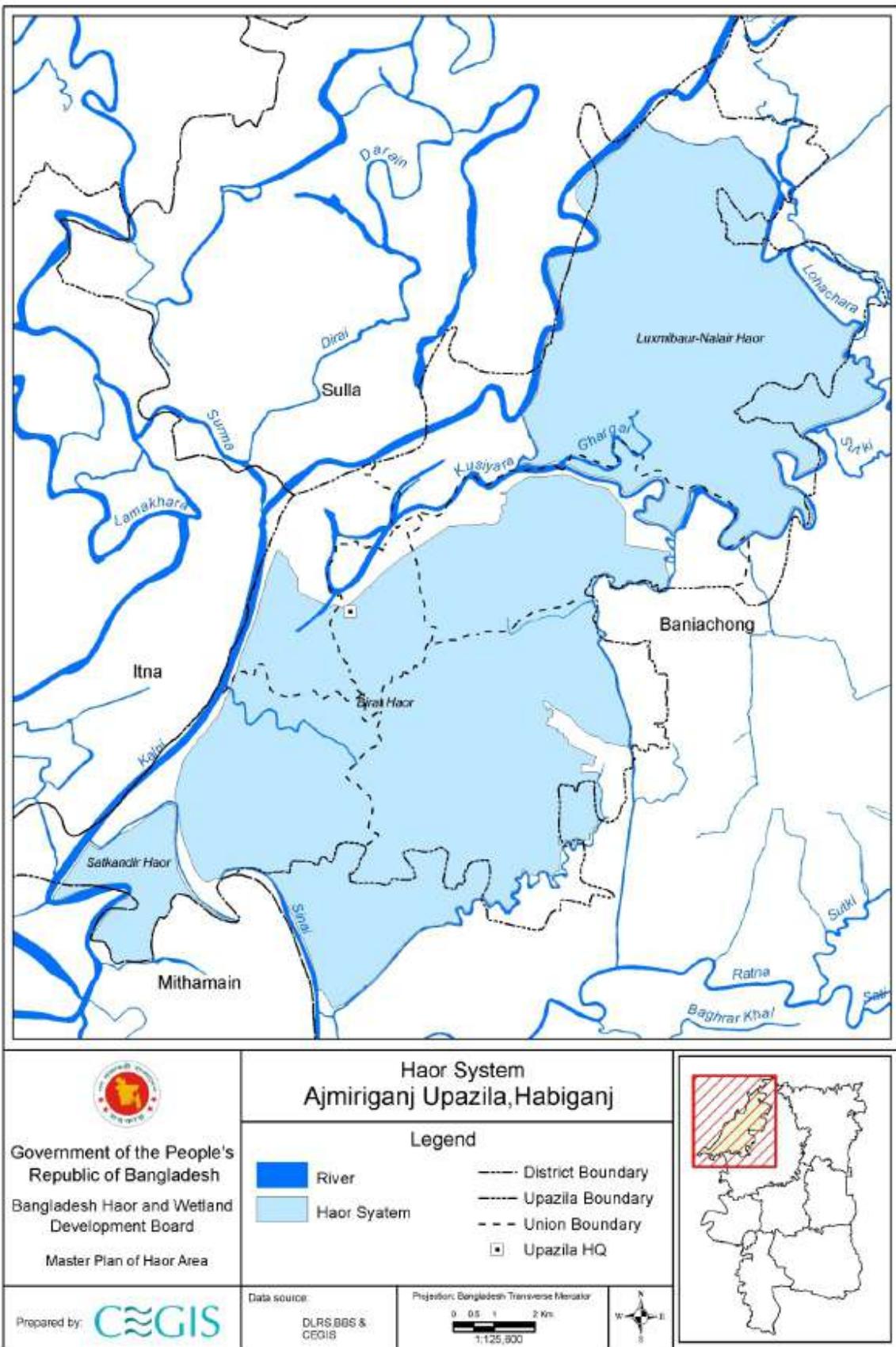


Figure 2.30: Haor System of Ajmiriganj Upazila

Annexure 2: Haors of Bangladesh
Haors of Habiganj District

• **Bahubal**

Table 2.29 Haors of Bahubal Upazila

Serial No.	Name Of Haor	Area (ha)
1	Gungajuri Haor	12209

Annexure 2: Haors of Bangladesh
Haors of Habiganj District

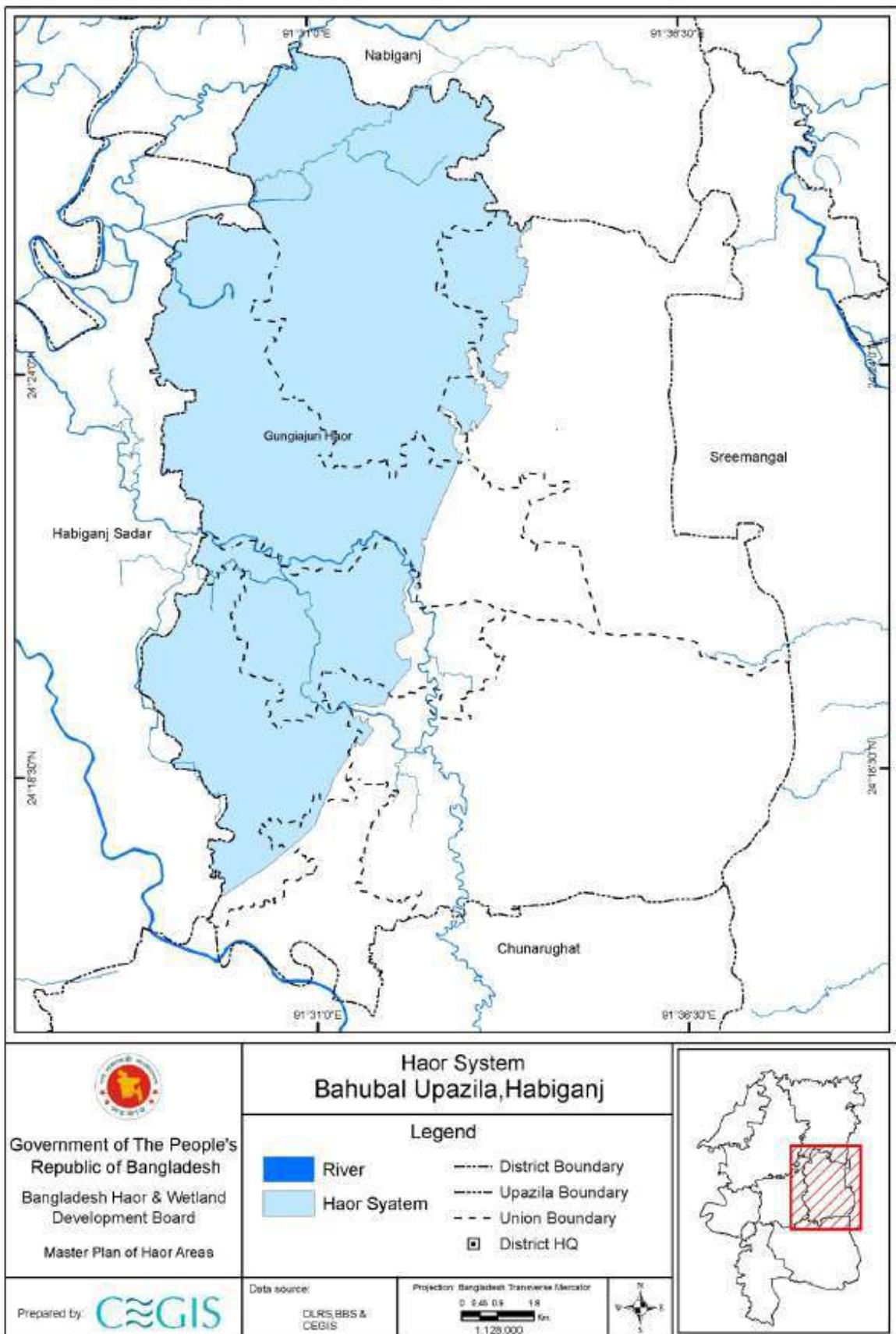


Figure 2.31: Haor System of Bahubal Upazila

Annexure 2: Haors of Bangladesh
Haors of Habiganj District

• **Baniachong**

Table 2.30 Haors of Baniachong Upazila

Serial No.	Name Of Haor	Area (ha)
1	Ikram-Sangar Haor	13300
2	Baniachang Puber Haor	2116
3	Bhatipara Haor	11478
4	Gungiajuri Haor	7
5	Daskhin-Paschimer Haor	4048
6	Khagapasha Haor	4229
7	Mokhar Haor	4374
8	Makalkandi Haor	5387
9	Shibpasha Haor	1936
Total		46875

Annexure 2: Haors of Bangladesh
 Haors of Habiganj District

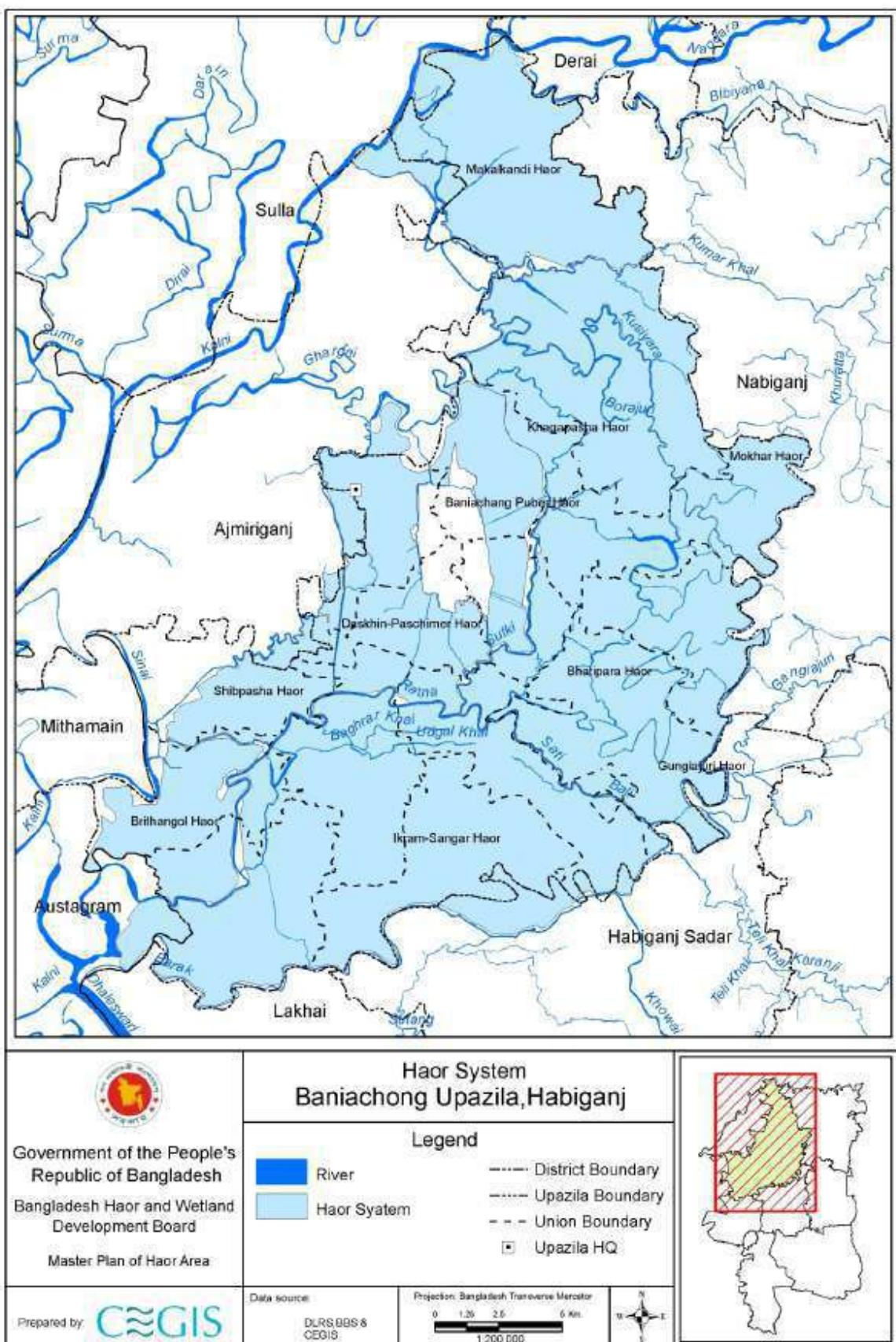


Figure 2.32: Haor System of Baniachong Upazila

Annexure 2: Haors of Bangladesh
Haors of Habiganj District

• **Habiganj Sadar**

Table 2.31 Haors of Habiganj Sadar Upazila

Serial No.	Name Of Haor	Area (ha)
1	Gungajuri Haor	6438
2	Gazaria Beel Haor	2556
Total		8994

Annexure 2: Haors of Bangladesh
 Haors of Habiganj District



Figure 2.33: Haor System of Habiganj Sadar Upazila

Annexure 2: Haors of Bangladesh
Haors of Habiganj District

• **Lakhai**

Table 2.32 Haors of Lakhai Upazila

Serial No.	Name Of Haor	Area (ha)
1	Baharchar-Rabiarghona Haor	1887
2	Gazaria Beel Haor	6866
3	Tikkar Par Haor	2111
Total		10864

• **Madhabpur**

Table 2.33 Haors of Madhabpur Upazila

Serial No.	Name Of Haor	Area (ha)
1	Shelnir Haor	1526

Annexure 2: Haors of Bangladesh
Haors of Habiganj District

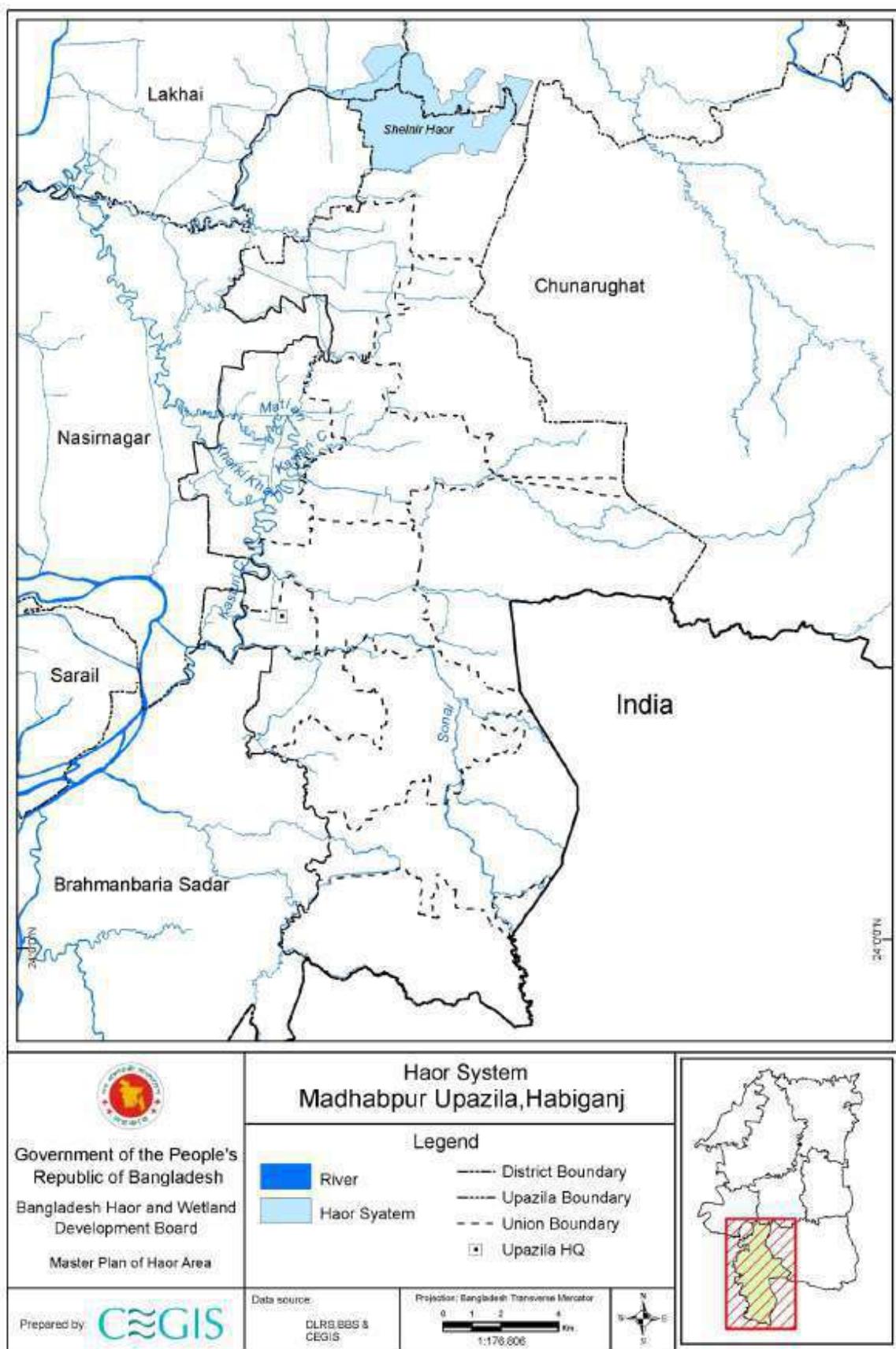


Figure 2.34: Haor System of Madhabpur Upazila

Annexure 2: Haors of Bangladesh
Haors of Habiganj District

• **Nabiganj**

Table 2.34 Haors of Nabiganj Upazila

Serial No.	Name Of Haor	Area (ha)
1	Gungiajuri Haor	9617
2	Makalkandi Haor	7548
3	Mokhar Haor	3737
Total		20902

Annexure 2: Haors of Bangladesh
 Haors of Habiganj District

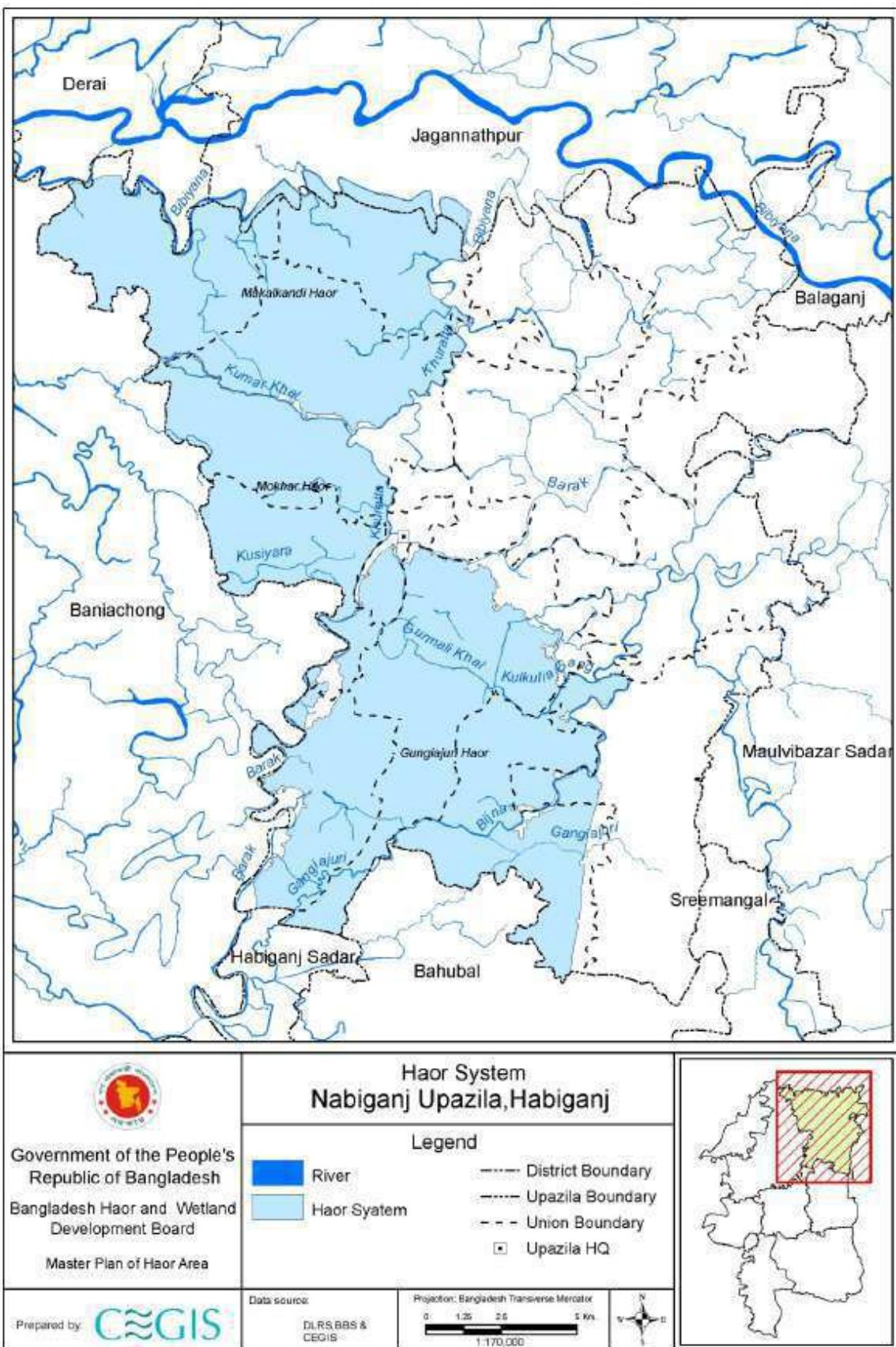


Figure 2.35: Haor System of Nabiganj Upazila

2.4 Haors of Maulvibazar District

2.4 Haors of Maulvibazar District

There are 7 Upazilas and 3 Haors in Maulvibazar District. Among these Upazilas, Kamalganj does not have any Haors. Haors of the rest 6 Upazilas and their maps have been given below. Table 2.35 shows the number of Haors (Upazila wise) of Maulvibazar District.

Table 2.35 Haors of Maulvibazar District

Serial No.	Name of Upazila	Number of Haors
1	Barlekha	1
2	Juri	1
3	Kamalganj	-
4	Kulaura	1
5	Maulvibazar Sadar	1
6	Rajnagar	2
7	Sreemangal	1
Total		3

It is to be noted that:

- Some Haors are stretched over more than one Upazila, sometimes over more than one district. While recording these Haors, they have been shown in all Upazilas, hence the apparent discrepancy is observed in the total number of Haors.
- In Maulvibazar District, Hail Haor is stretched over more than one Upazilas.
- Hakaluki and Kauadighi Haors are stretched over more than one district.

Figure 2.36 shows the perennial waterbodies (wetlands) of Maulvibazar district. Figure 2.37 shows the Satellite Image Map of the wetlands of Maulvibazar. Upazila wise list of Haors of Maulvibazar has been presented in Tables 2.36 to Table 2.41 whereas Upazila wise maps of Haors have been presented in Figures 2.38 to Figure 2.43.

Annexure 2: Haors of Bangladesh
 Haors of Maulvibazar District

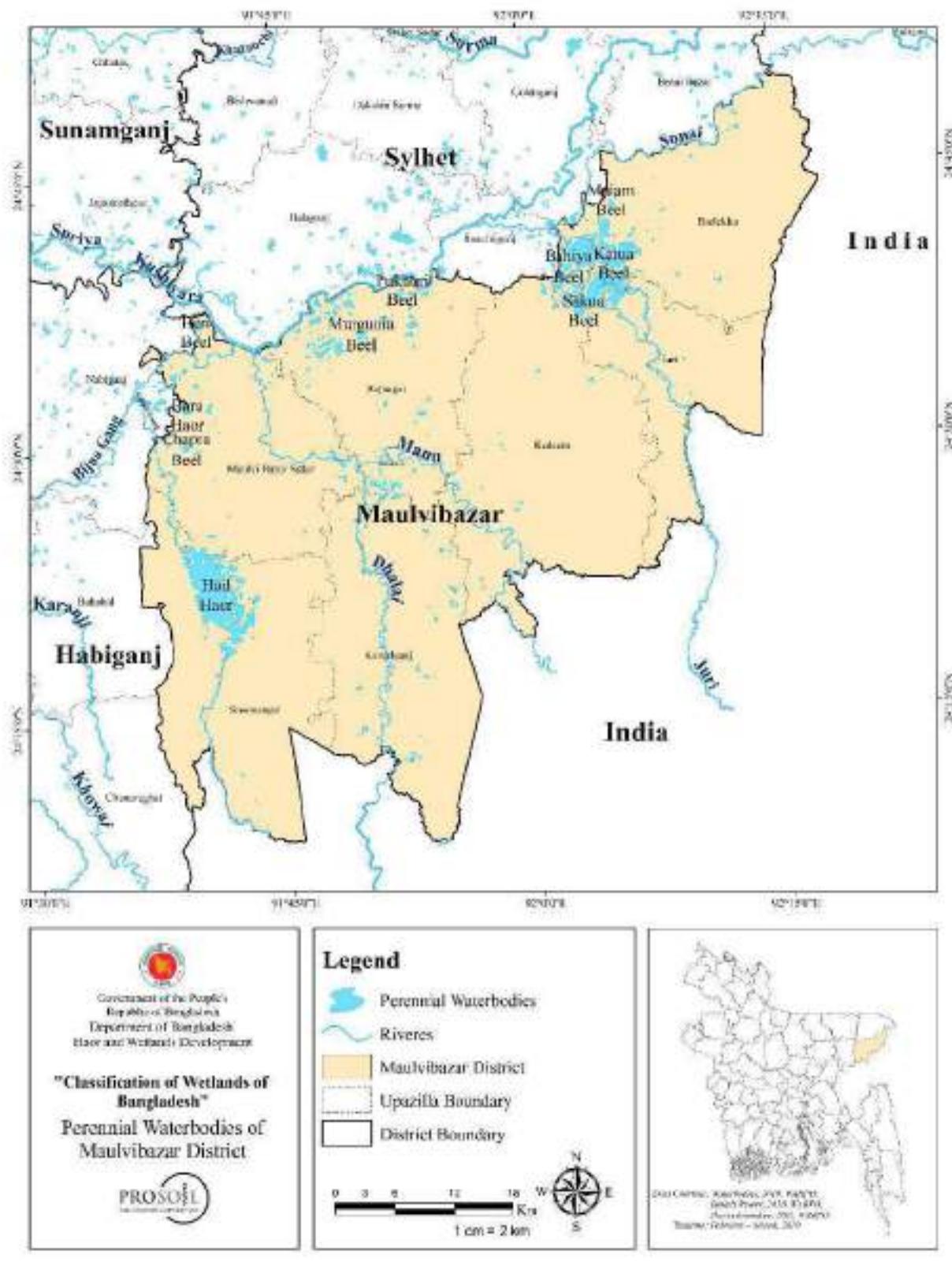


Figure 2.36: Perennial Waterbodies of Maulvibazar District

Annexure 2: Haors of Bangladesh
Haors of Maulvibazar District

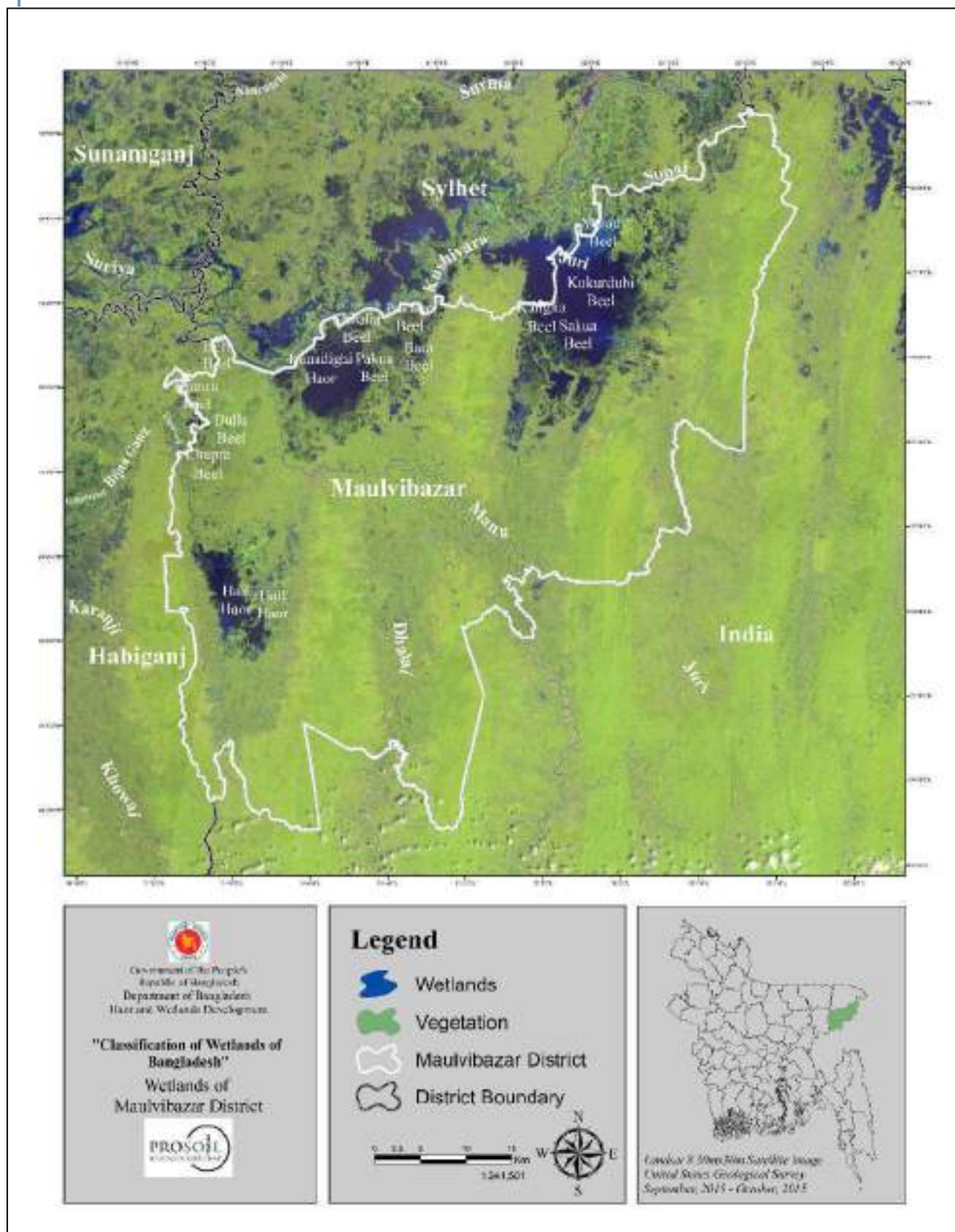


Figure 2.37: Wetlands of Maulvibazar District (Satellite Image Map)

Annexure 2: Haors of Bangladesh
Haors of Maulvibazar District

• Barlekha

Table 2.36 Haors of Barlekha Upazila

Serial No.	Name Of Haor	Area (ha)
1	Hakaluki Haor	6103

Annexure 2: Haors of Bangladesh
Haors of Maulvibazar District

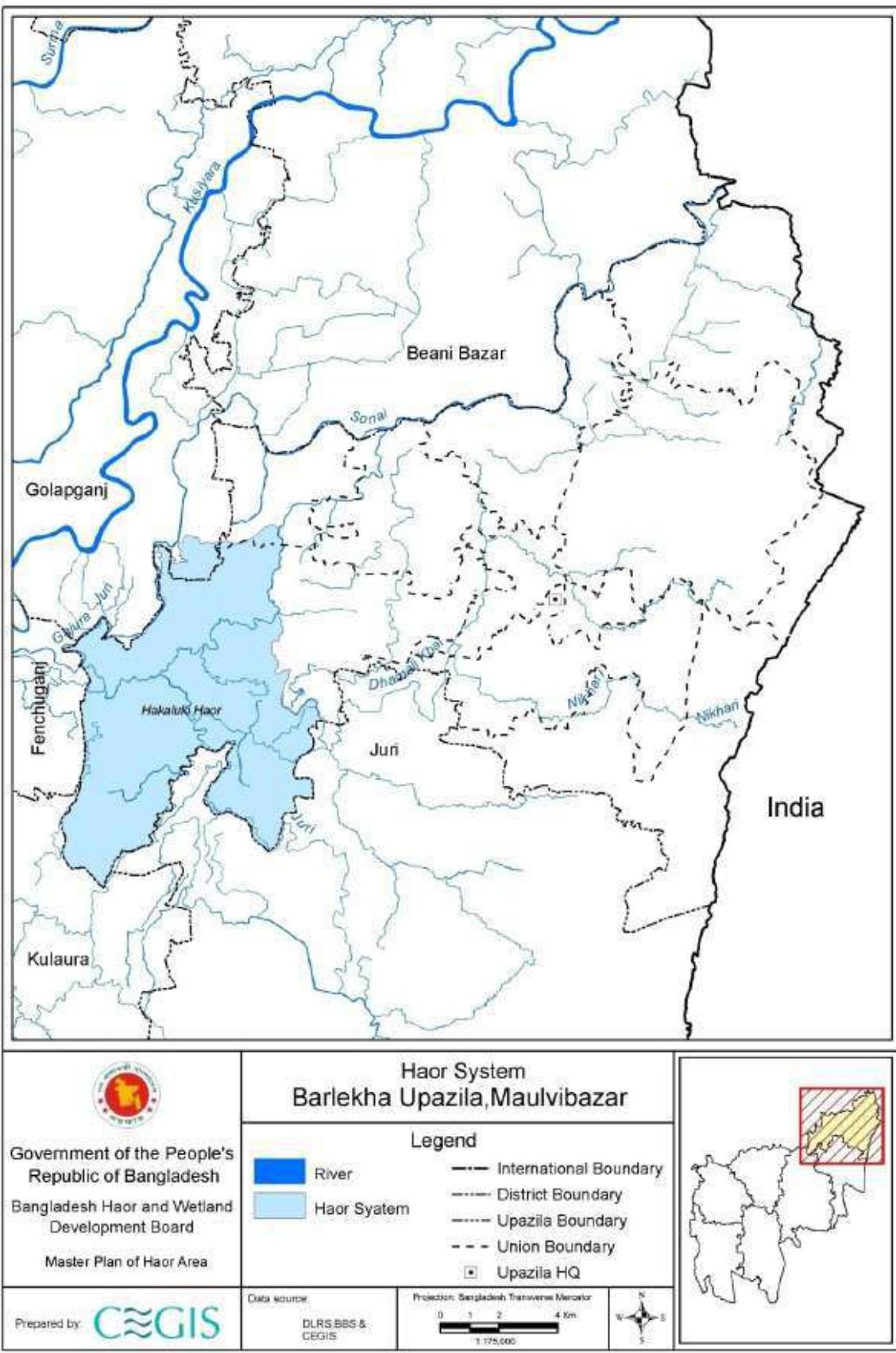


Figure 2.38: Haor System of Barlekha Upazila

Annexure 2: Haors of Bangladesh
Haors of Maulvibazar District

• Juri

Table 2.37 Haors of Juri Upazila

Serial No.	Name Of Haor	Area (ha)
1	Hakaluki Haor	4236

Annexure 2: Haors of Bangladesh
 Haors of Maulvibazar District

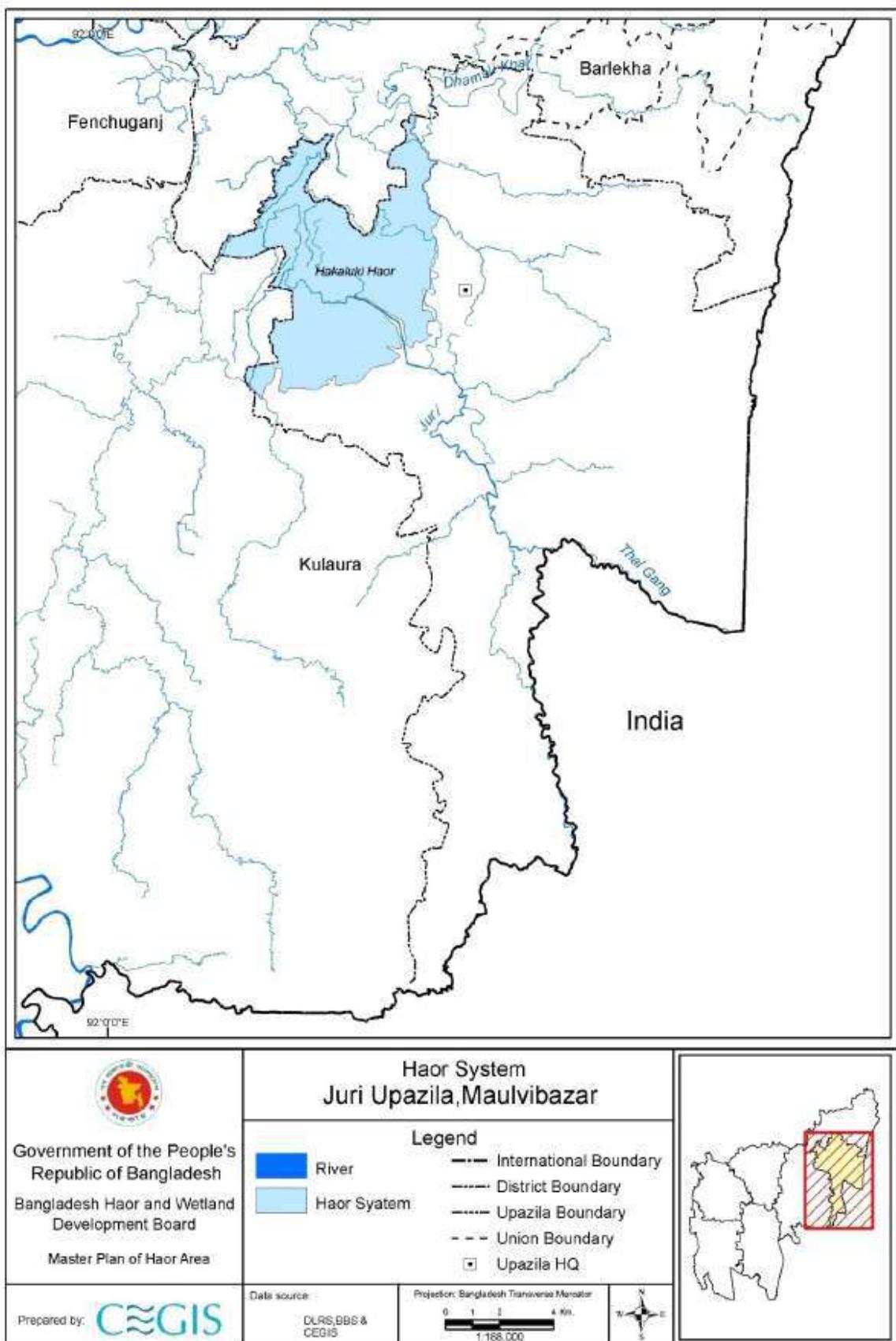


Figure 2.39: Haor System of Juri Upazila

Annexure 2: Haors of Bangladesh
Haors of Maulvibazar District

• **Kulaura**

Table 2.38 Haors of Kulaura Upazila

Serial No.	Name Of Haor	Area (ha)
1	Hakaluki Haor	2771

Annexure 2: Haors of Bangladesh
Haors of Maulvibazar District

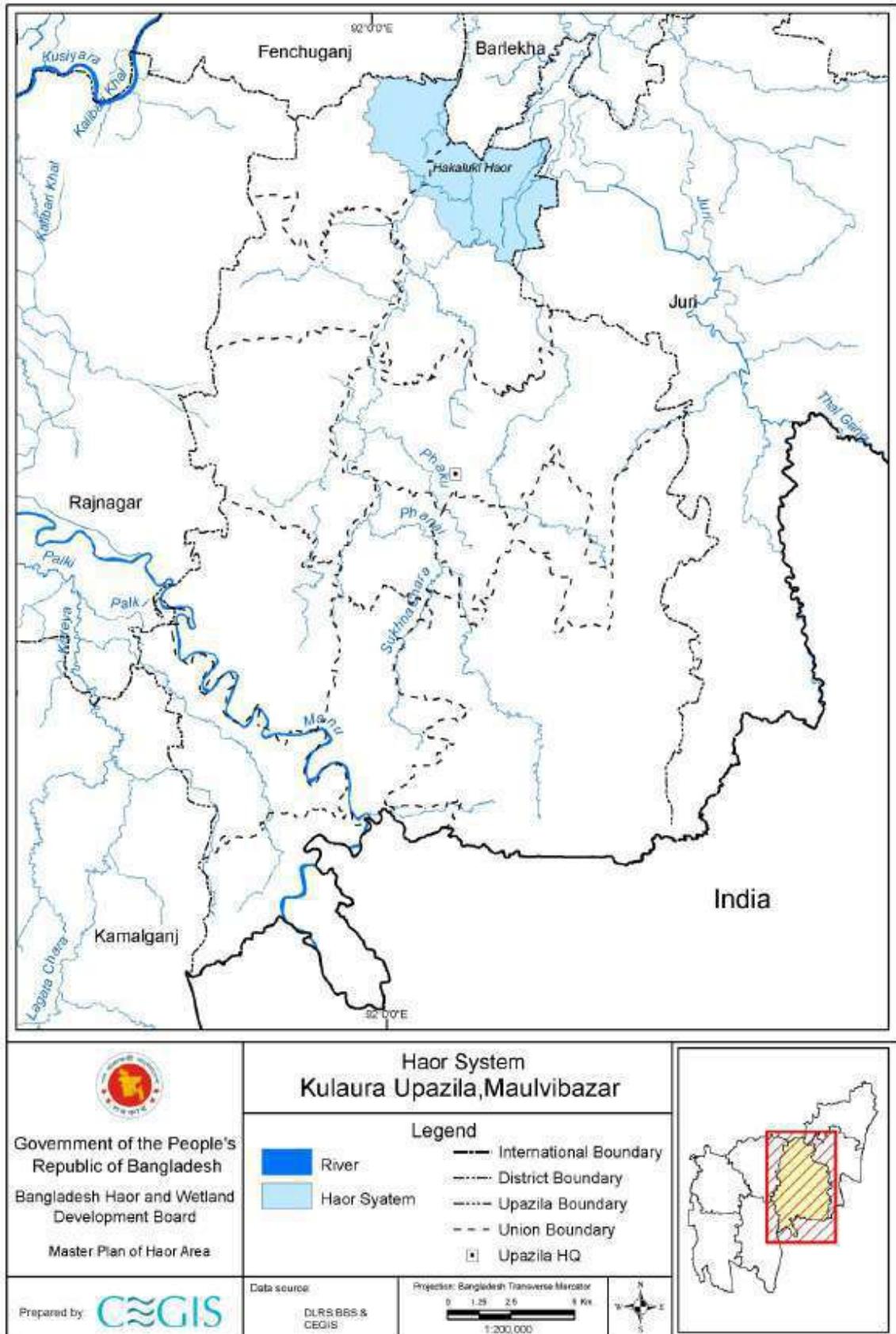


Figure 2.40: Haor System of Kulaura Upazila

Annexure 2: Haors of Bangladesh
Haors of Maulvibazar District

• **Maulvibazar Sadar**

Table 2.39 Haors of Maulvibazar Sadar Upazila

Serial No.	Name Of Haor	Area (ha)
1	Hail Haor	4918

Annexure 2: Haors of Bangladesh
Haors of Maulvibazar District



Figure 2.41: Haor System of Maulvibazar Sadar Upazila

Annexure 2: Haors of Bangladesh
Haors of Maulvibazar District

• Rajnagar

Table 2.40 Haors of Rajnagar Upazila

Serial No.	Name Of Haor	Area (ha)
1	Chiluar Haor	193
2	Kauadighi Haor	15158
Total		15351

Annexure 2: Haors of Bangladesh
Haors of Maulvibazar District

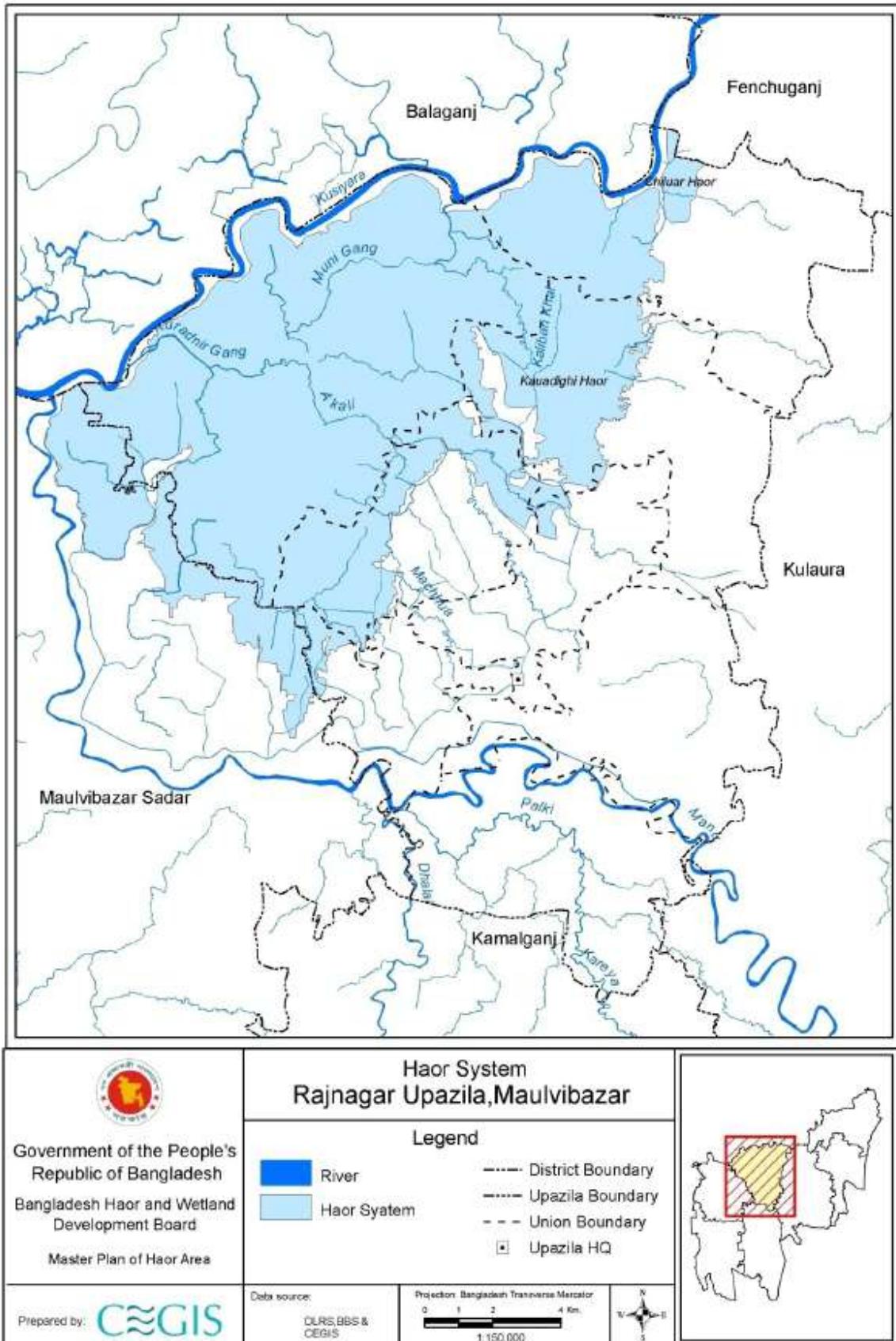


Figure 2.42: Haor System of Rajnagar Upazila

Annexure 2: Haors of Bangladesh
Haors of Maulvibazar District

• **Sreemangal**

Table 2.41 Haors of Sreemangal Upazila

Serial No.	Name Of Haor	Area (ha)
1	Hail Haor	10220

Annexure 2: Haors of Bangladesh
Haors of Maulvibazar District

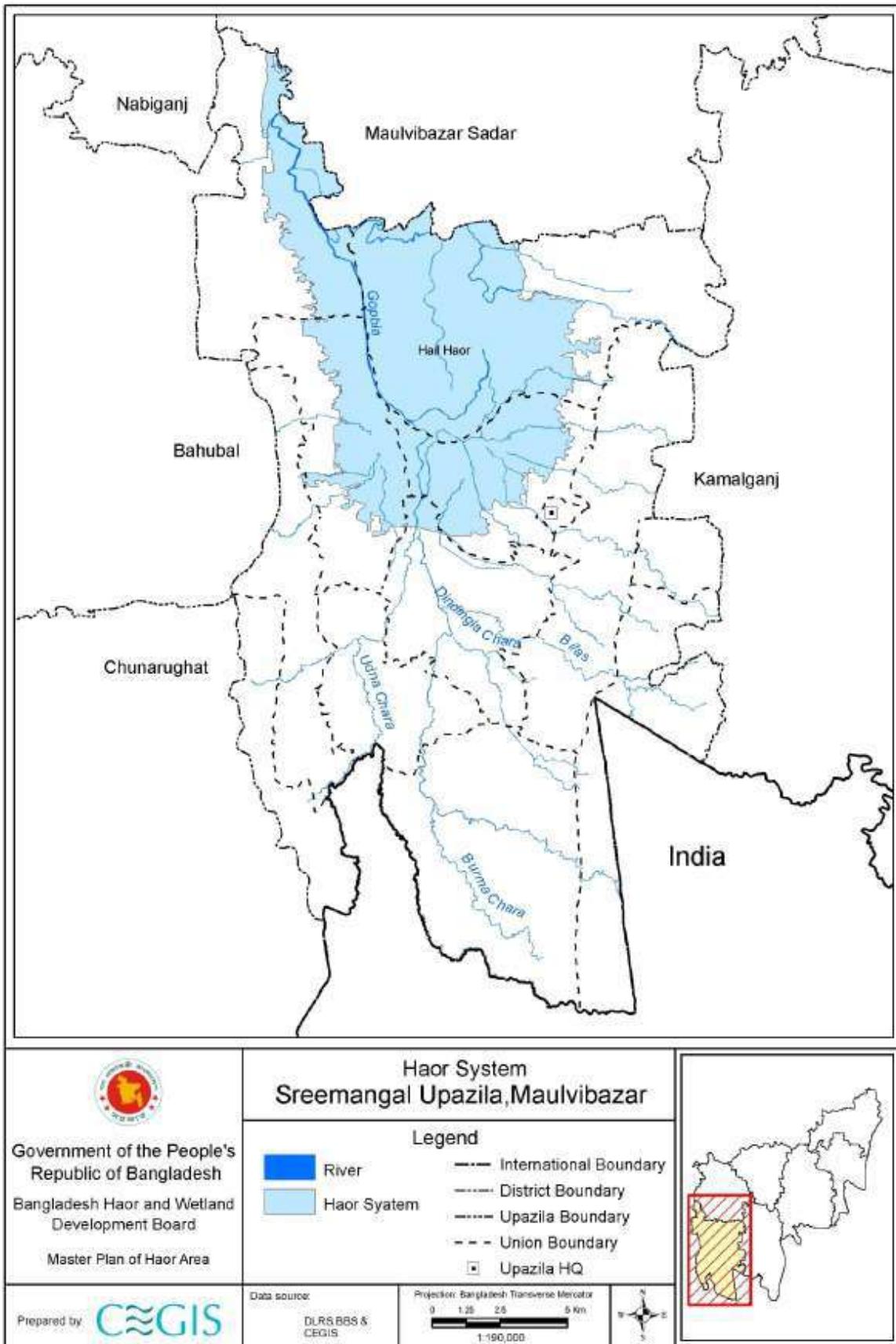


Figure 2.43: Haor System of Sreemangal Upazila

2.5 Haors of Netrakona District

2.5 Haors of Netrakona District

There are 10 Upazilas and 52 Haors in Netrakona District. Among these Upazilas, Durgapur, Kendua, Netrakona Sadar and Purbadhala do not have any Haors. Haors of the rest 6 Upazilas and their maps have been given below. Table 2.42 shows the number of Haors (Upazila wise) of Netrakona District.

Table 2.42 Haors of Netrakona District

Serial No.	Name of Upazila	Number of Haors
1	Atpara	5
2	Barhatta	1
3	Durgapur	-
4	Kalmakanda	9
5	Khaliajuri	28
6	Kendua	-
7	Madan	16
8	Mohanganj	6
9	Netrakona Sadar	-
10	Purbadhala	-

It is to be noted that:

- Some Haors are stretched over more than one Upazila, sometimes over more than one district. While recording these Haors, they have been shown in all Upazilas, hence the apparent discrepancy is observed in the total number of Haors.
- In Netrakona District, the following Haors are stretched over more than one Upazilas: Bawaeter, Dhali Band, Ganesh, Jagannathpur, Khilkhilir, Mosha Gatir, Pagla and Sarisha Bil Haor.
- Baraikuri and Medar Beel-2 Haors are stretched over more than one district.

Annexure 2: Haors of Bangladesh
 Haors of Netrakona District

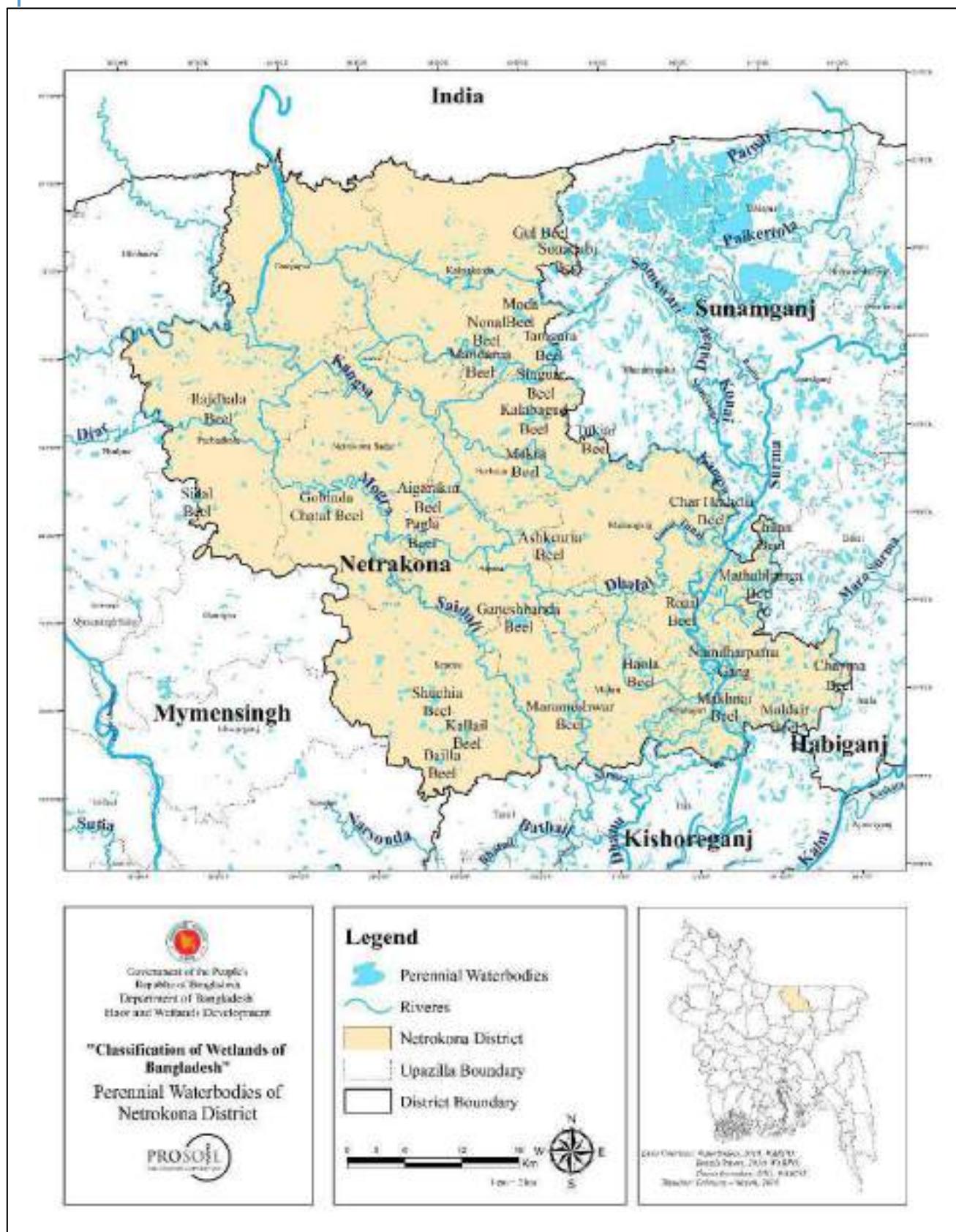


Figure 2.44: Perennial Waterbodies of Netrakona District

Annexure 2: Haors of Bangladesh Haors of Netrakona District

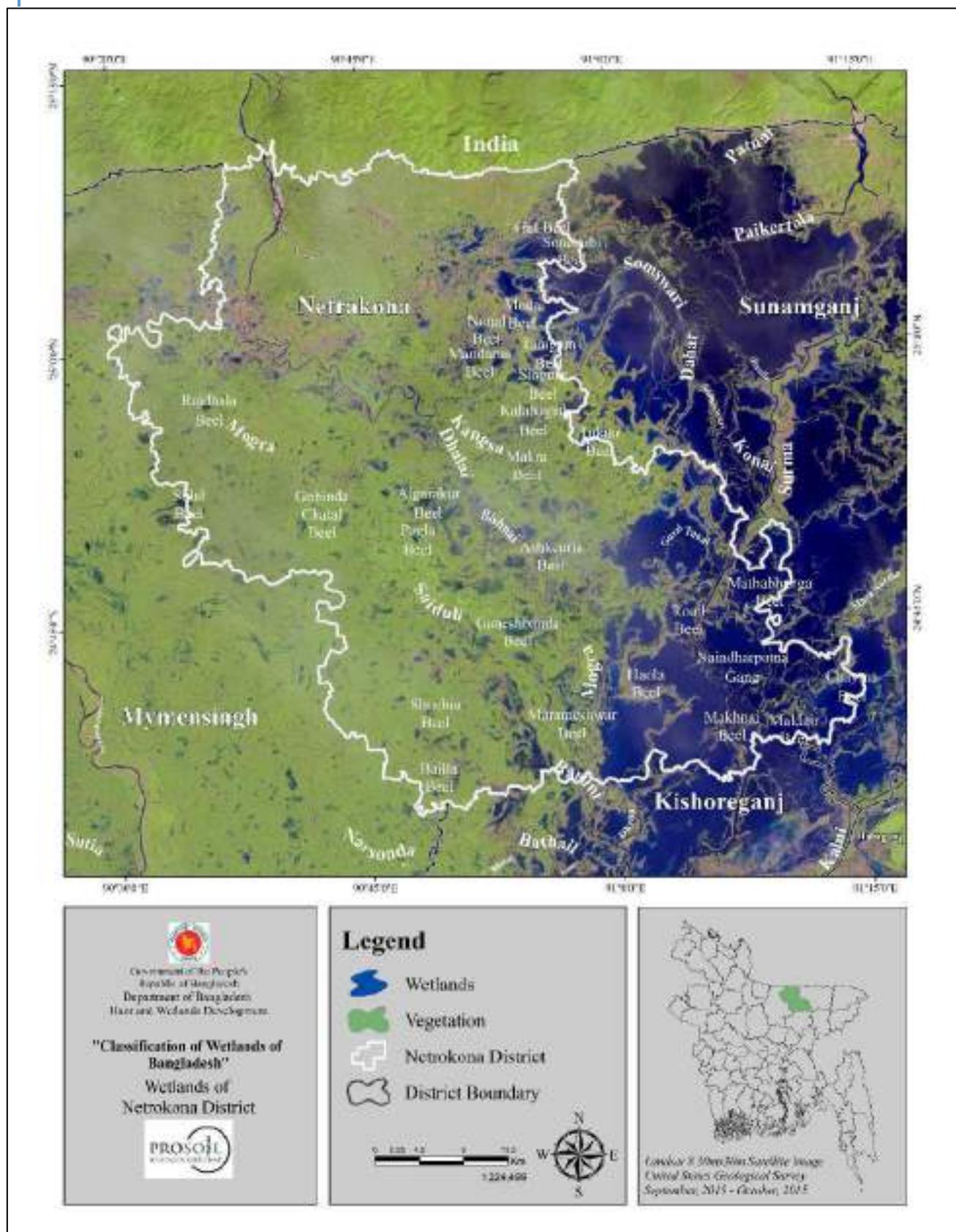


Figure 2.45: Wetlands of Netrakona District (Satellite Image Map)

Annexure 2: Haors of Bangladesh
Haors of Netrakona District

• Atpara

Table 2.43 Haors of Atpara Upazila

Serial No.	Name Of Haor	Area (ha)
1	Dhali Band Haor	355
2	Ganesh Haor	1742
3	Mosha Gatir Haor	528
4	Pagla Haor	1056
5	Sarisha Bil Haor	816
Total		4497

Annexure 2: Haors of Bangladesh
 Haors of Netrakona District

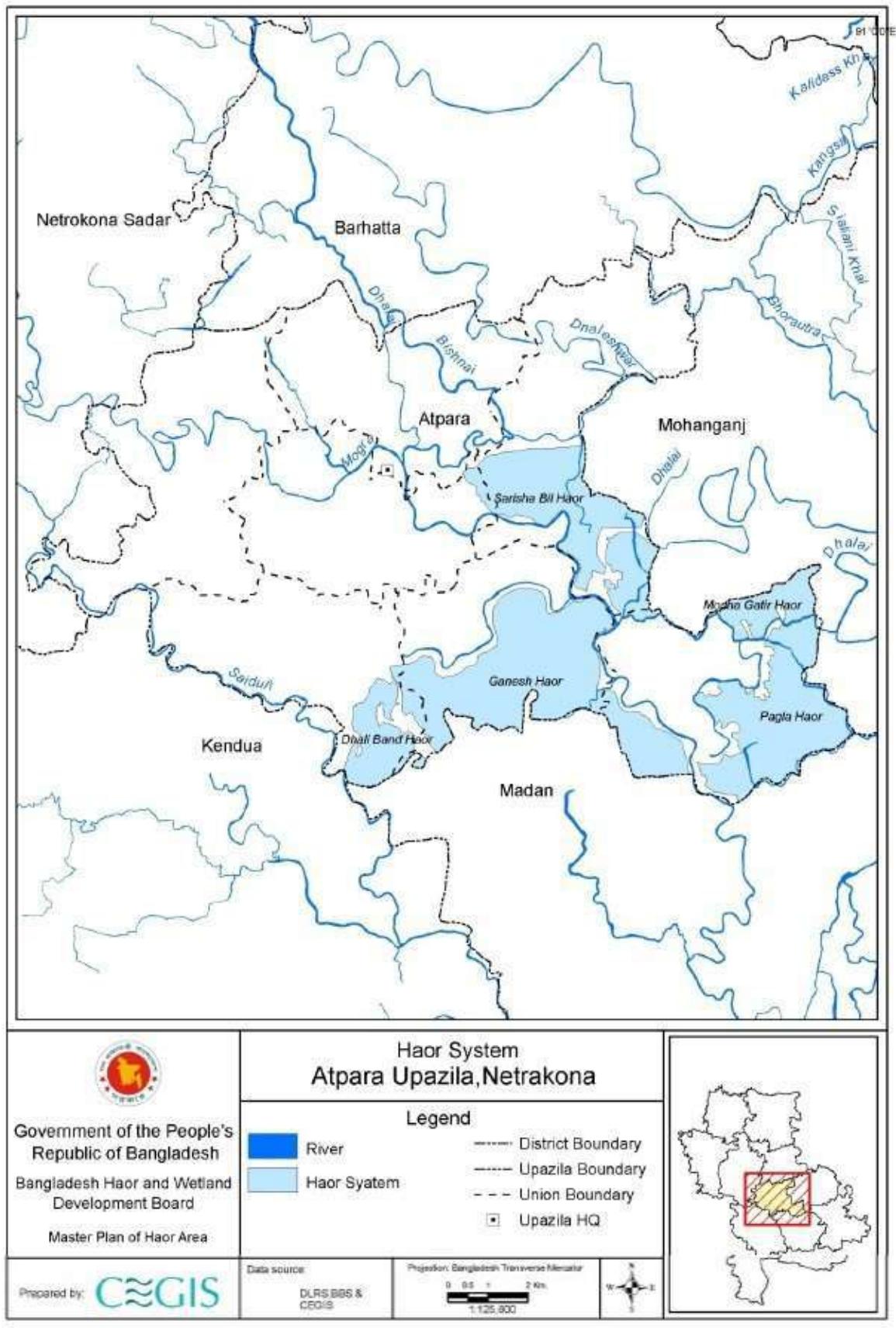


Figure 2.46: Haor System of Atpara Upazila

Annexure 2: Haors of Bangladesh
Haors of Netrakona District

• Barhatta

Table 2.44 Haors of Barhatta Upazila

Serial No.	Name Of Haor	Area (ha)
1	Medar Beel-2 Haor	1678

Annexure 2: Haors of Bangladesh
 Haors of Netrakona District

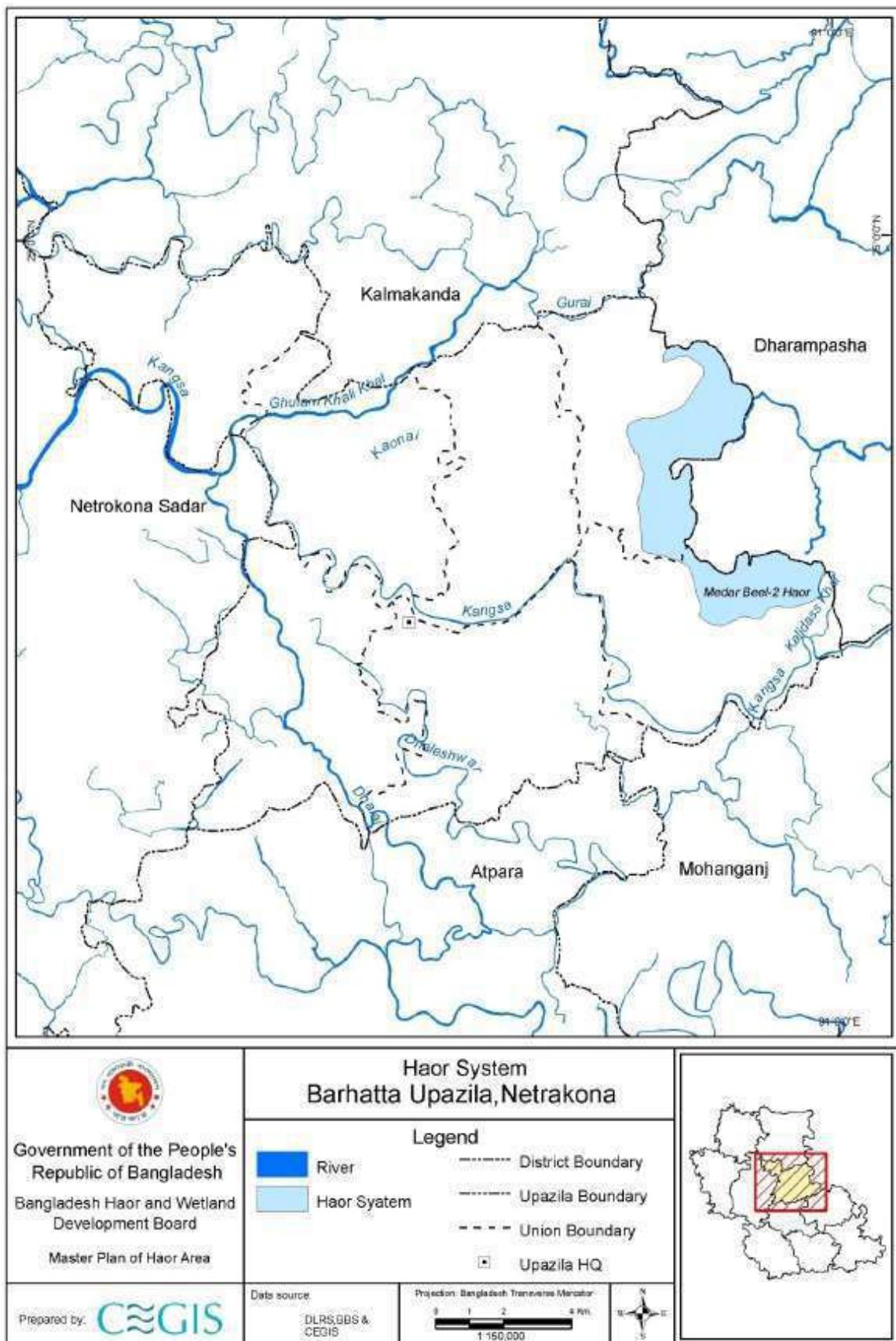


Figure 2.47: Haor System of Barhatta Upazila

Annexure 2: Haors of Bangladesh
Haors of Netrakona District

• **Kalmakanda**

Table 2.45 Haors of Kalmakanda Upazila

Serial No.	Name Of Haor	Area (ha)
1	Boro Haor(Netrokona)	403
2	Digli Beel	25
3	Goradoba Haor	885
4	Meda Haor	563
5	Medi Beel Haor	666
6	Mohishaura Haor	1705
7	Naniya Beel Haor	2545
8	Sonadubi Haor	2624
9	Talenga Beel	359
Total		9774

Annexure 2: Haors of Bangladesh
 Haors of Netrakona District

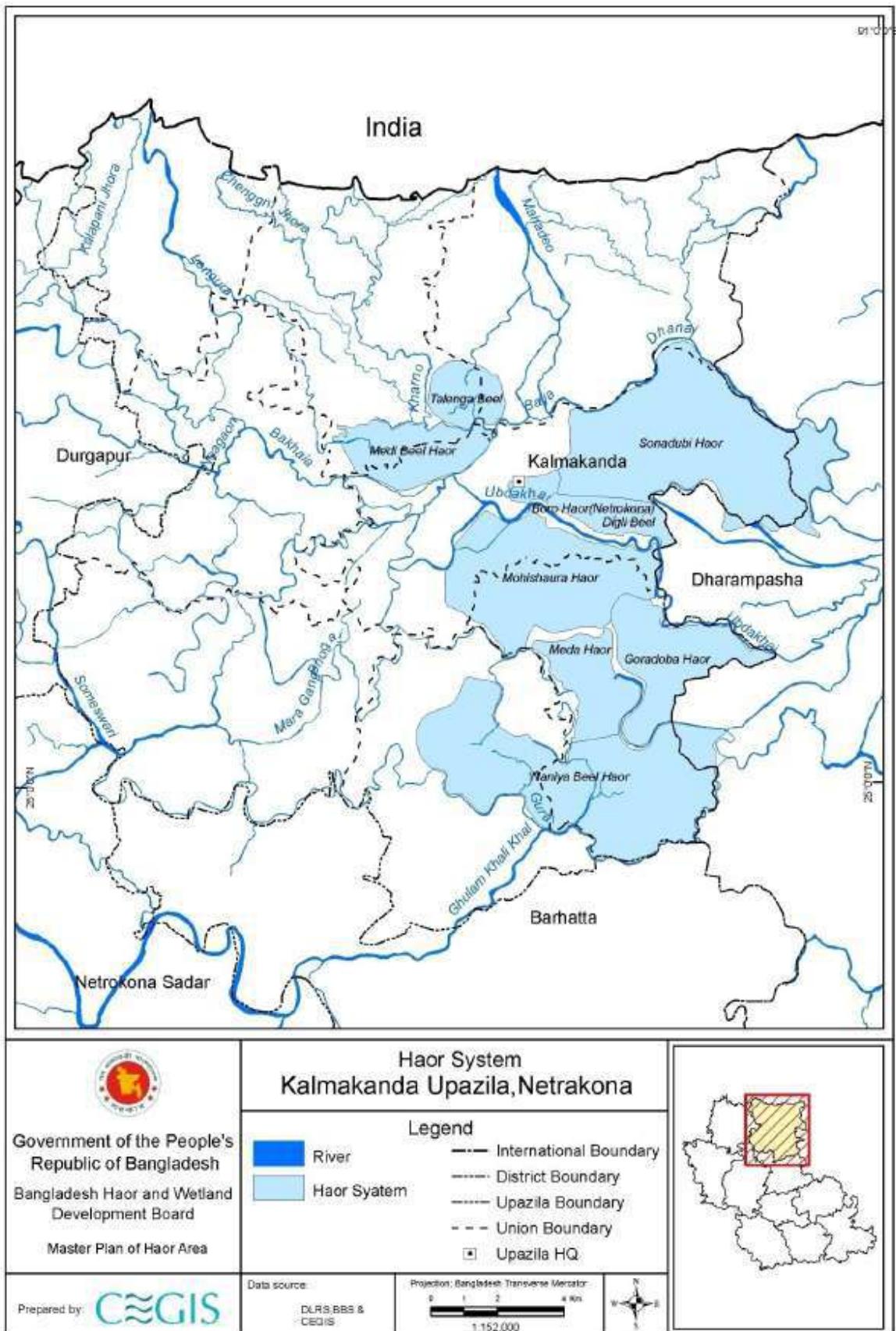


Figure 2.48: Haor System of Kalmakanda Upazila

Annexure 2: Haors of Bangladesh
Haors of Netrakona District

- **Khaliajuri**

Table 2.46 Haors of Khaliajuri Upazila

Serial No.	Name Of Haor	Area (ha)
1	Baganir Haor	445
2	Baidyar Haor	474
3	Baraikuri Haor	1489
4	Baro Daider Haor	118
5	Bayrar Haor	508
6	Chakua Haor	1810
7	Chatoler Haor	1552
8	Chautara/ Chan-Tara Haor	1473
9	Chayer Haor	1475
10	Chelapaiar Haor	1309
11	Daikyar Kuri Haor	468
12	Ghorachalirbagh Haor	229
13	Gomrar Haor	1422
14	Hatimara Haor	356
15	Huglir Beel	499
16	Jagannathpur Haor	1299
17	Kalikota Haor	1
18	Kauar Banda Haor	1217
19	Khilkhilir Haor	970
20	Kirtonkholar Haor	355
21	Lodar-Mendikhali Haor	175
22	Lori-Kankati Haor	133
23	Muldair Haor	128
24	Pangachia Haor	1107
25	Putiyar Haor	2159
26	RuailHaor	1948
27	Satbila Haor	377
28	Shibpur Haor	285
Total		23779

Annexure 2: Haors of Bangladesh
 Haors of Netrakona District

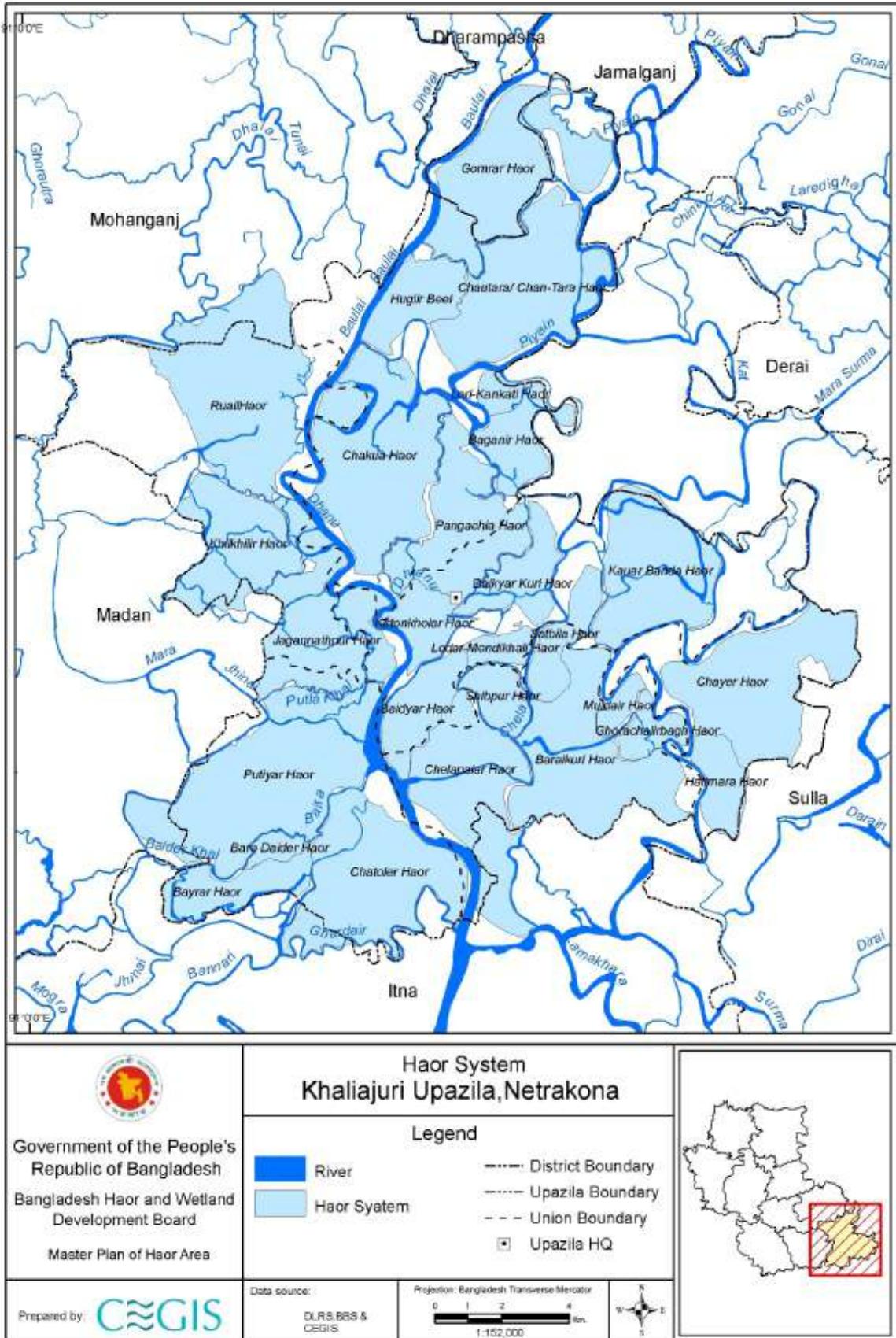


Figure 2.49: Haor System of Khalijuri Upazila

Annexure 2: Haors of Bangladesh
Haors of Netrakona District

- **Madan**

Table 2.47 Haors of Madan Upazila

Serial No.	Name Of Haor	Area (ha)
1	Aron-Baruk Beel Haor	1134
2	Bansharir Haor	1172
3	Bawaeter Haor	631
4	Dhali Band Haor	387
5	Ganesh Haor	1433
6	Hatiar Haor	1270
7	Jagannathpur Haor	419
8	Jaliyar Haor	2234
9	Katlar Haor	493
10	Khilkhilir Haor	1711
11	Koyar Haor	471
12	Narunshor Beel Haor	825
13	Pagla Haor	386
14	Patunia Haor	537
15	Talar Haor	5831
16	Urar Band Haor	767
Total		19701

Annexure 2: Haors of Bangladesh
 Haors of Netrakona District

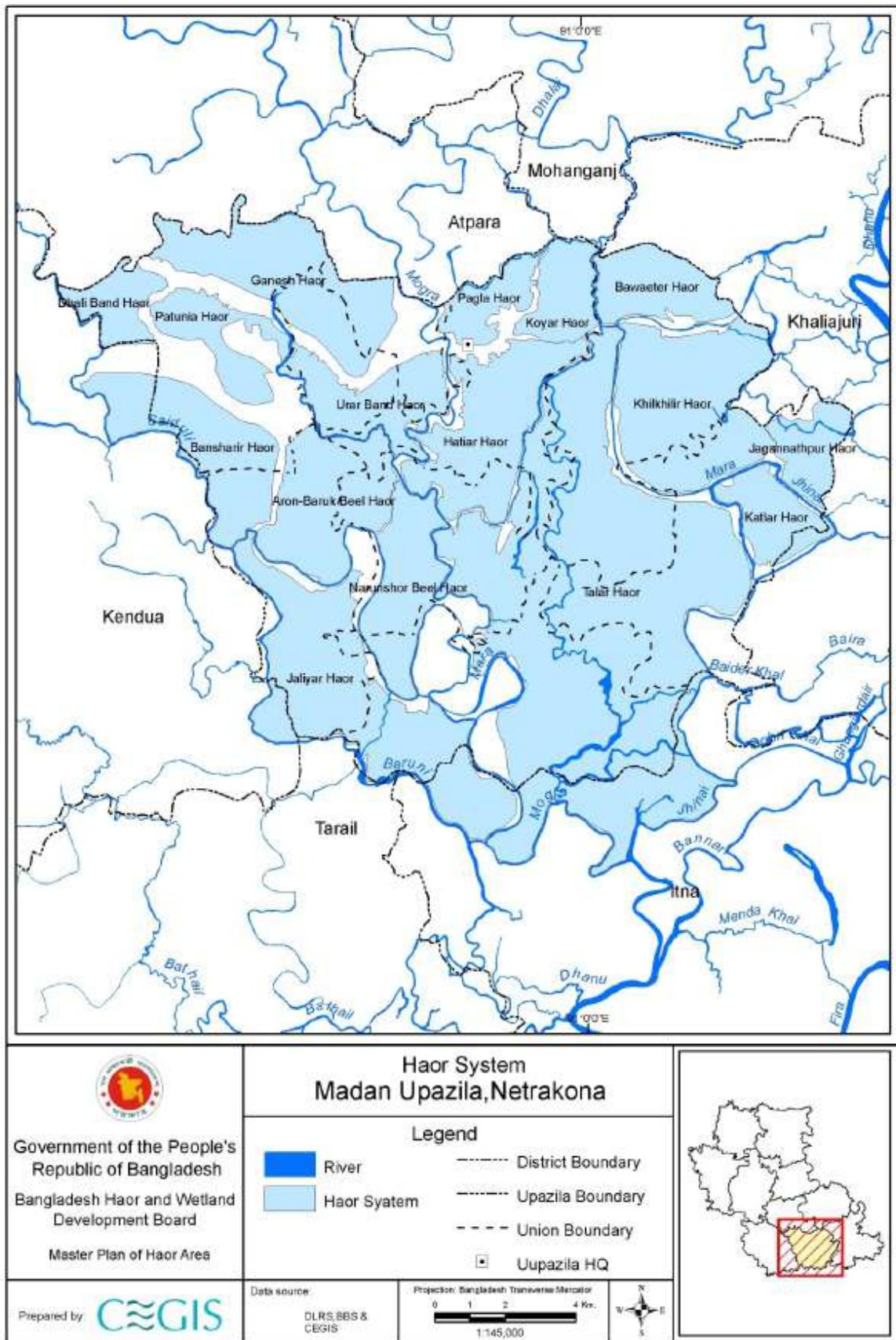


Figure 2.50: Haor System of Madan Upazila

Annexure 2: Haors of Bangladesh
Haors of Netrakona District

• **Mohanganj**

Table 2.48 Haors of Mohanganj Upazila

Serial No.	Name Of Haor	Area (ha)
1	Bawaeter Haor	1161
2	Dingi pota Haor	14555
3	Kankhola bil Haor	607
4	Mosha Gatir Haor	1029
5	Pagla Haor	693
6	Sarisha Bil Haor	792
Total		18837

Annexure 2: Haors of Bangladesh
Haors of Netrakona District

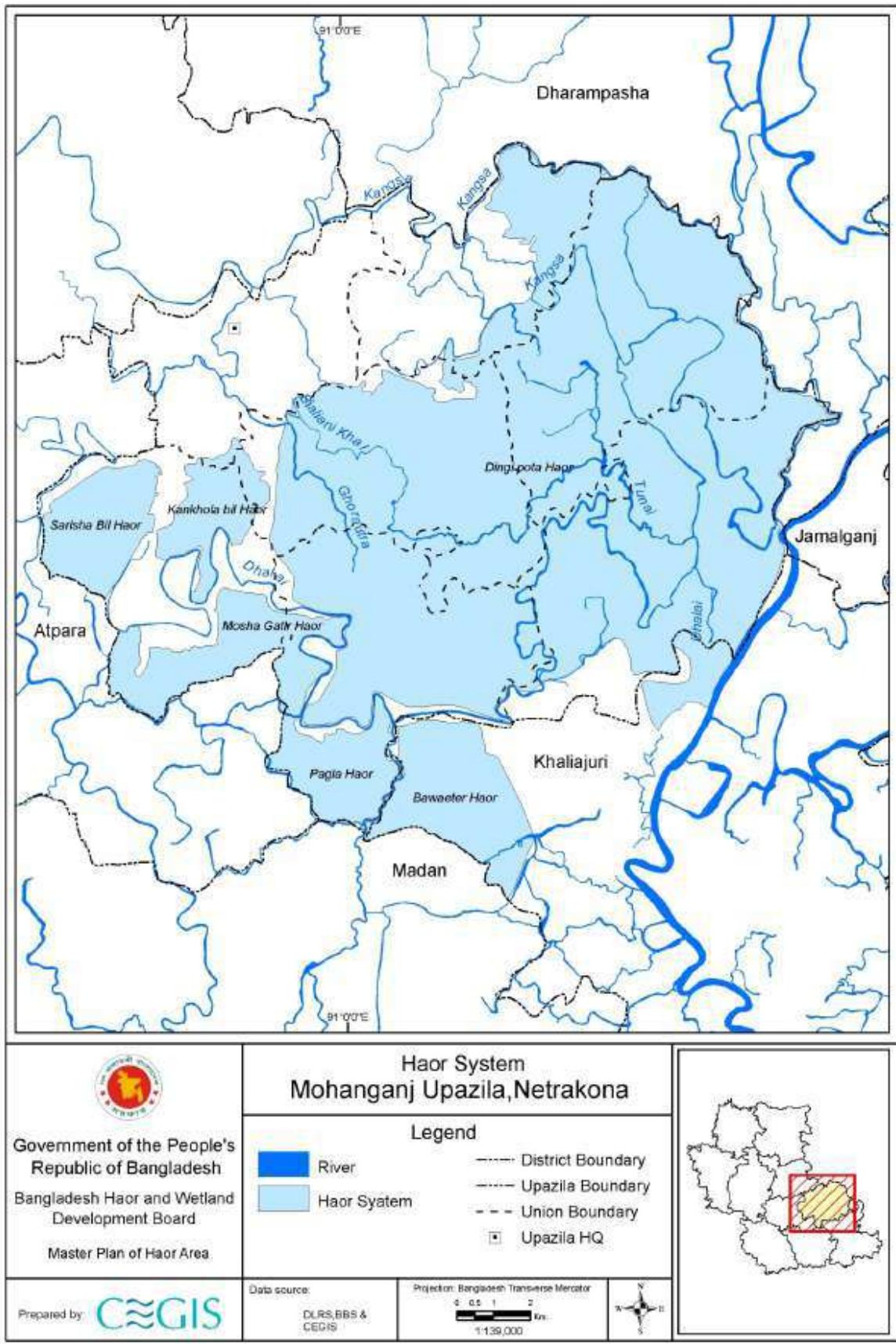


Figure 2.51: Haor System of Mohanganj Upazila

2.6 Haors of Kishoreganj District

2.6 Haors of Kishoreganj District

There are 13 Upazilas and 97 Haors in Kishoreganj District. Among these Upazilas, Bhairab and Hossainpur do not have any Haors. Haors of the rest 11 Upazilas and their maps have been given below. Table 2.49 shows the number of Haors (Upazila wise) of Kishoreganj District.

Table 2.49 Haors of Kishoreganj District

Serial No.	Name of Upazila	Number of Haors
1	Austagram	16
2	Bajitpur	14
3	Bhairab	-
4	Hossainpur	-
5	Itna	21
6	Karimganj	14
7	Katiadi	6
8	Kishoreganj Sadar	1
9	Kuliarchar	5
10	Mithamain	16
11	Nikli	19
12	Pakundia	6
13	Tarail	10
Total		97

It is to be noted that:

- Some Haors are stretched over more than one Upazila, sometimes over more than one district. While recording these Haors, they have been shown in all Upazilas, hence the apparent discrepancy is observed in the total number of Haors.
- In Kishoreganj District, the following Haors are stretched over more than one Upazilas: Bariar, Bhusha Kanda Beel, Boro (Kishoreganj), Chandpur, Chatal, Dakhshiner, Dhupchura Beel, Dilhi Akhra, Feualanga, Goradigha, Hingruil Beel, Jaraitala, Joyariya, Kaliain Beel (Borar), Keorjori, Khunkhuni, Kuniarbandh, Mahitulpa, Methamain Uttar, Mithamain Dakhin, Naogaon, Paschim Baid, Paschimband Haor.
- Satkandir Haor is stretched over more than one district.

Annexure 2: Haors of Bangladesh
Haors of Kishoreganj District

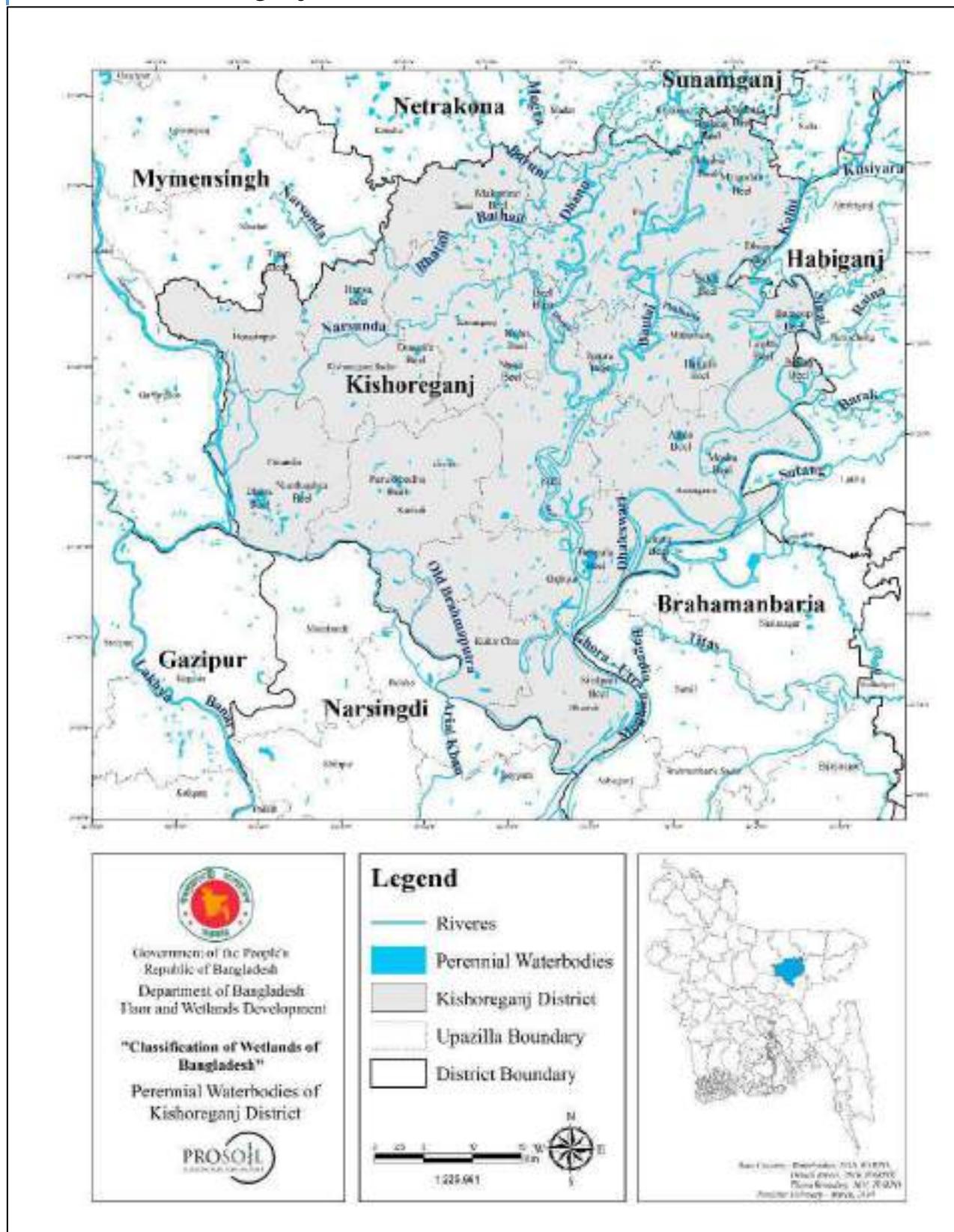


Figure 2.52: Perennial Waterbodies of Kishoreganj District

Annexure 2: Haors of Bangladesh
Haors of Kishoreganj District

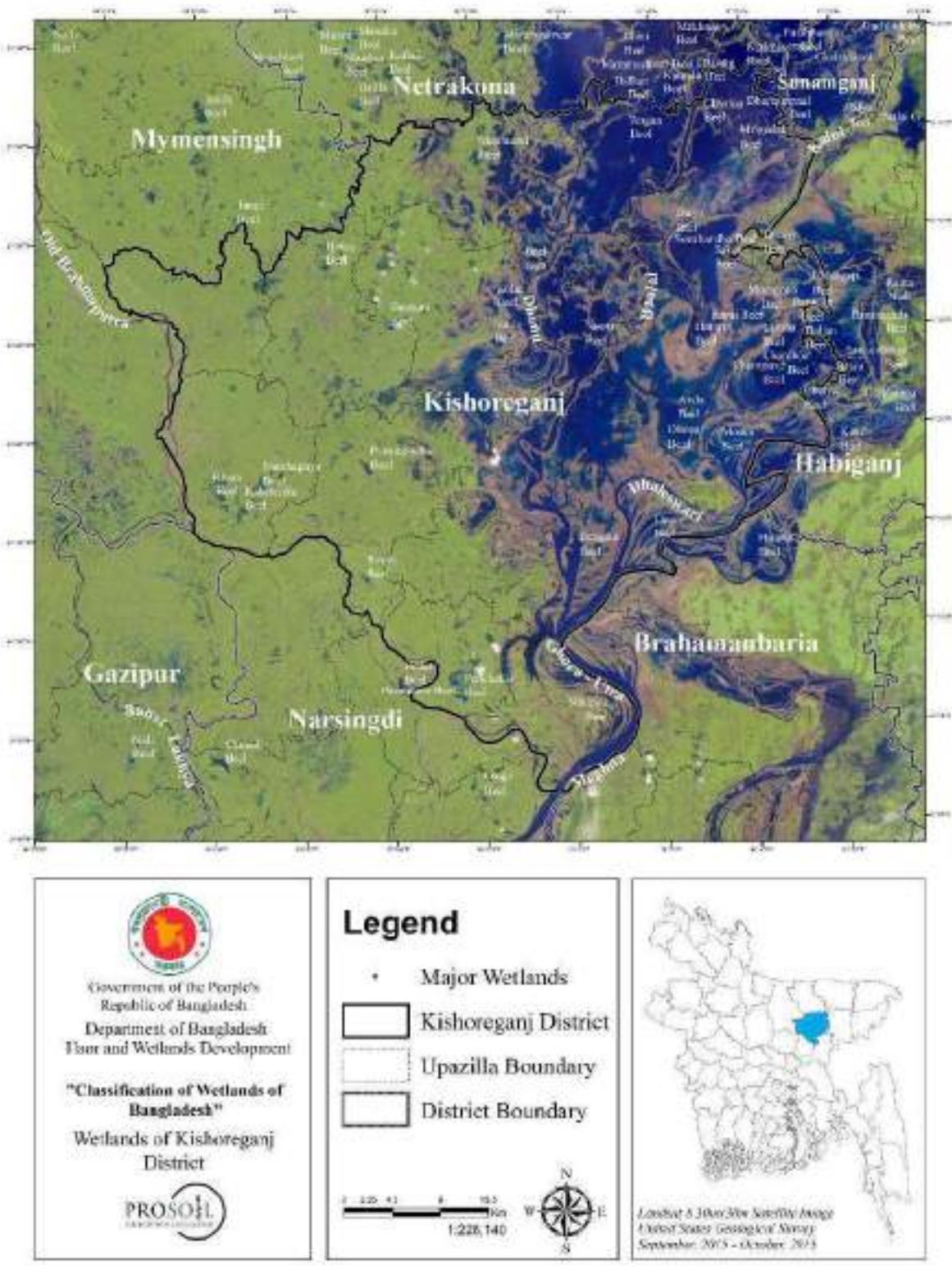


Figure 2.53: Wetlands of Kishoreganj District (Satellite Image Map)

Annexure 2: Haors of Bangladesh
Haors of Kishoreganj District

• **Austagram**

Table 2.50 Haors of Austagram Upazila

Serial No.	Name Of Haor	Area (ha)
1	Borkha Khilabandh Haor	3480
2	Boro Haor(Austagram)	2741
3	Brithangol Haor	1057
4	Charia Sharifpur Haor	824
5	Chaudanta Band Haor	936
6	Dewghar Haor	3318
7	Dilhi Akhra Haor	1
8	Goradigha Haor	1
9	Kairail Bondh Haor	311
10	Kalma Haor	3215
11	Keorjori Haor	21
12	Khunkhuni Haor	474
13	Mahitulpa Haor	549
14	Mithamain Dhakhin Haor	5026
15	Pathar Char Bandh Haor	736
16	Sapanta Haor	893
Total		23583

Annexure 2: Haors of Bangladesh
 Haors of Kishoreganj District

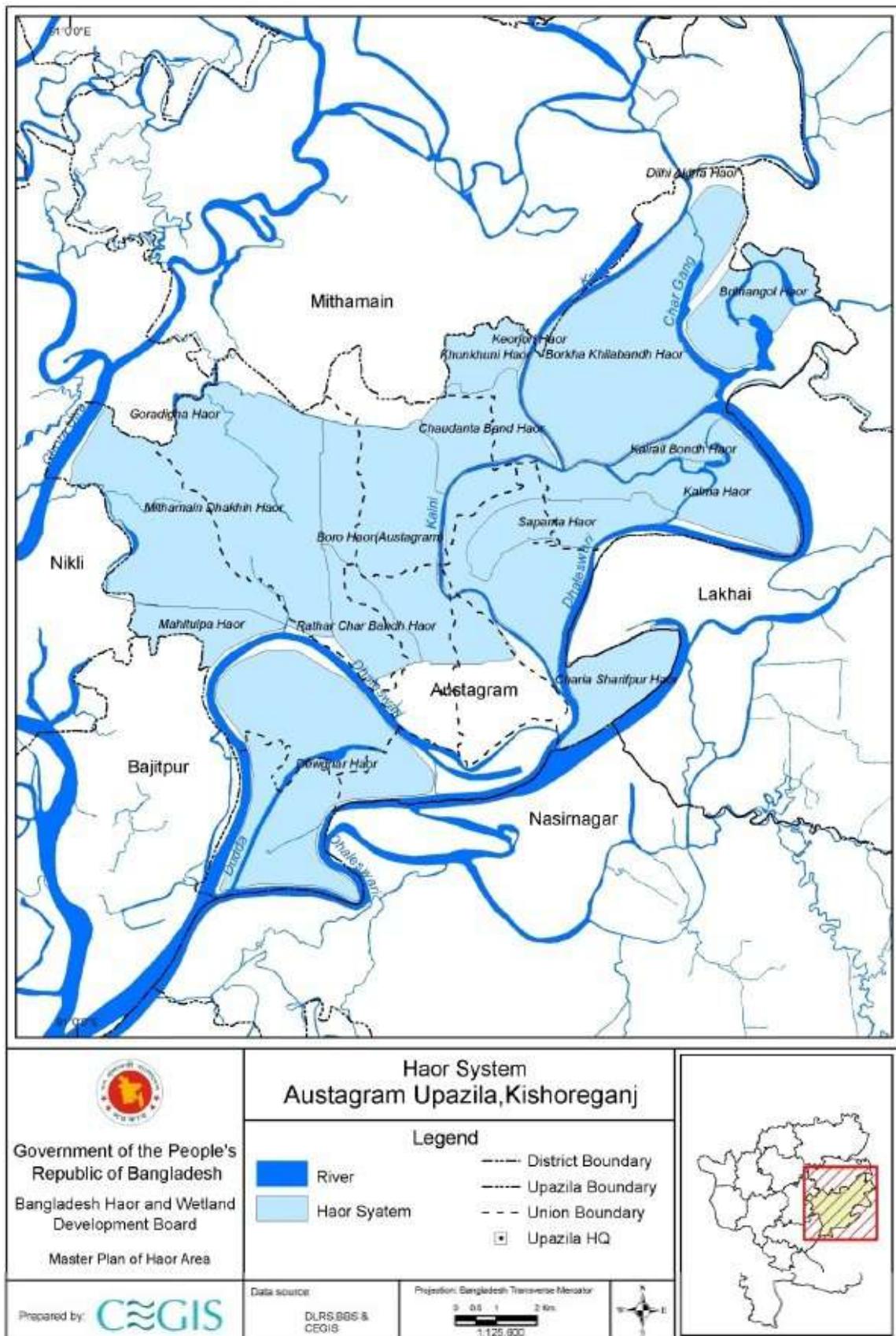


Figure 2.54: Haor System of Austagram Upazila

Annexure 2: Haors of Bangladesh
Haors of Kishoreganj District

• Bajitpur

Table 2.51 Haors of Bajitpur Upazila

Serial No.	Name Of Haor	Area (ha)
1	Ayner Gupi Haor	809
2	Banaul Haor	362
3	Dulalpur Haor	511
4	Golaimara Haor	610
5	Goyila Halda haor	310
6	Guja Haor	83
7	Joyariya Haor	1432
8	Kuniarbandh Haor	853
9	Lahundi Haor	279
10	Mahitulpa Haor	569
11	Nunnir Haor	1501
12	Parkachua Haor	983
13	Paschim Baid Haor	1419
14	Sarishapur Haor	572
Total		10291

Annexure 2: Haors of Bangladesh
 Haors of Kishoreganj District

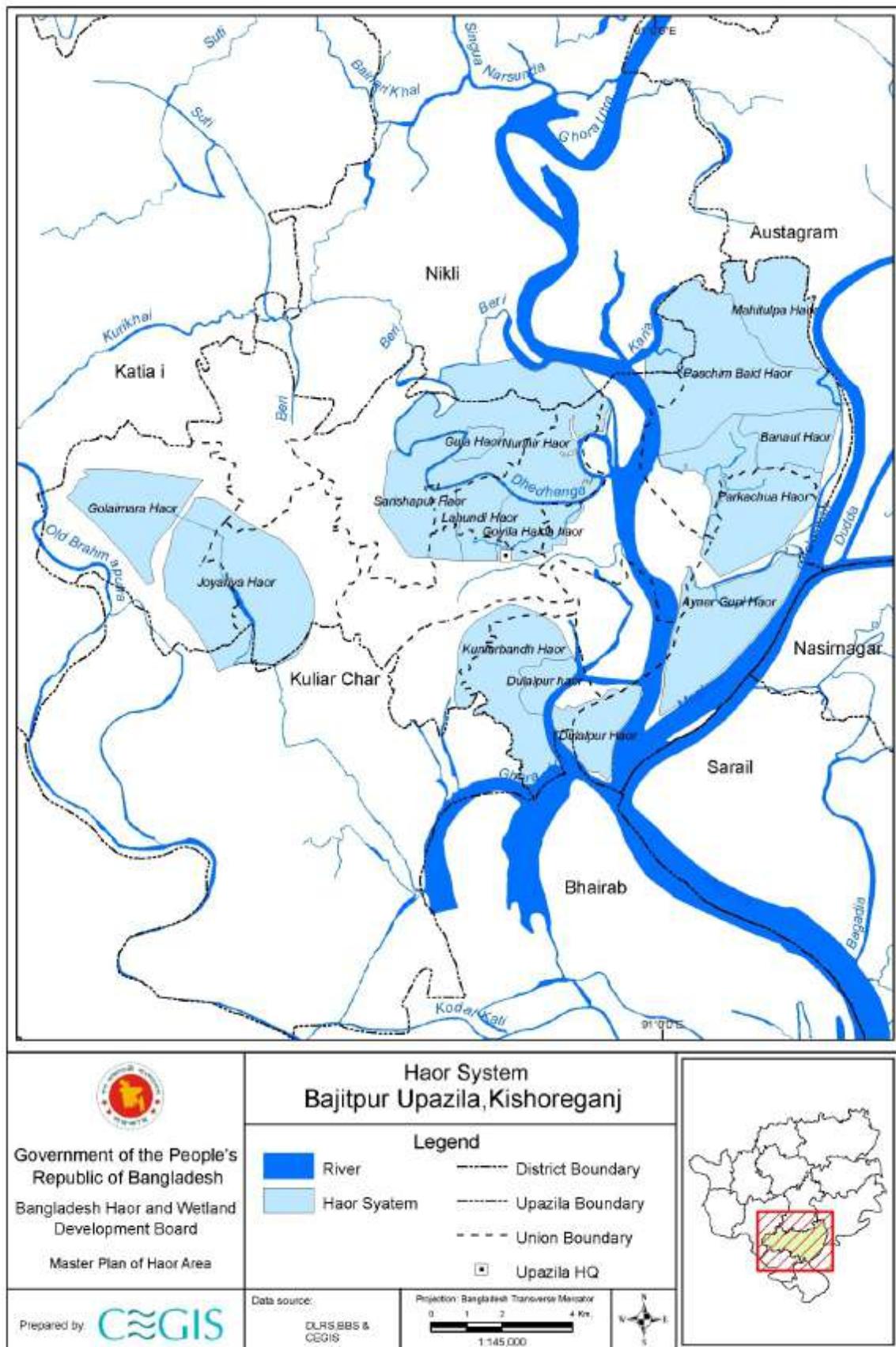


Figure 2.55: Haor System of Bajitpur Upazila

Annexure 2: Haors of Bangladesh
Haors of Kishoreganj District

- **Itna**

Table 2.52 Haors of Itna Upazila

Serial No.	Name Of Haor	Area (ha)
1	Badlar Haor	2777
2	Baraikuri Haor	1120
3	Barurar Beel	889
4	Bogadubi Haor	276
5	Chandnia Haor	678
6	Chatal Haor	698
7	Chayer Haor	2203
8	Dakhshiner Band Haor	1944
9	Dakhshiner Haor	1654
10	Hijlir Haor	1840
11	Joluir Haor	313
12	Joya Siddhi/ Uttorer Haor	3596
13	Kataiya Band Haor	3642
14	Khaishar Haor	909
15	Koichura Haor	261
16	Mendar Beel	460
17	Mriga Haor	927
18	Naogaon Haor	2548
19	Purber Band Haor	2693
20	Sherpur Haor	99
21	Uttarer Band Haor	3972
Total		33498

Annexure 2: Haors of Bangladesh
 Haors of Kishoreganj District

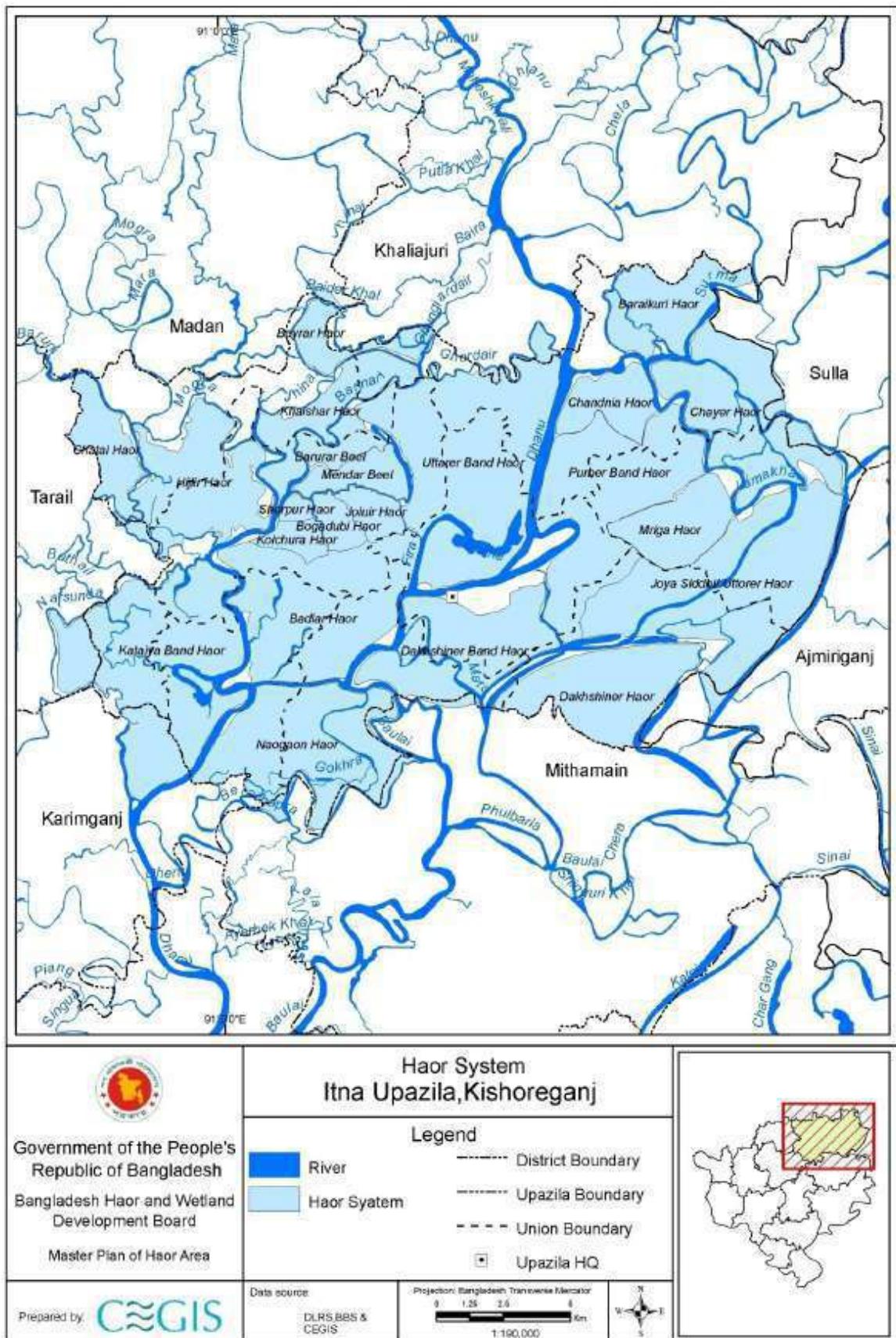


Figure 2.56: Haor System of Itna Upazila

Annexure 2: Haors of Bangladesh
Haors of Kishoreganj District

- **Karimganj**

Table 2.53 Haors of Karimganj Upazila

Serial No.	Name Of Haor	Area (ha)
1	Bariar Haor	20
2	Bhusha Kanda Beel Haor	690
3	Boro Haor(Kishoreganj)	3294
4	Dhupchura Beel	2
5	Feualanga Haor	667
6	Haliya Haor	783
7	Hingruil Beel	228
8	Kalahuliya Beel	321
9	Kaliain Beel Haor (Borar Haor)	120
10	Katarchaa Beel	285
11	Korati Beel Haor	1972
12	Mander Beel Haor	1212
13	Nanesshwar Haor	2497
14	Naogaon Haor	903
Total		12994

Annexure 2: Haors of Bangladesh
 Haors of Kishoreganj District

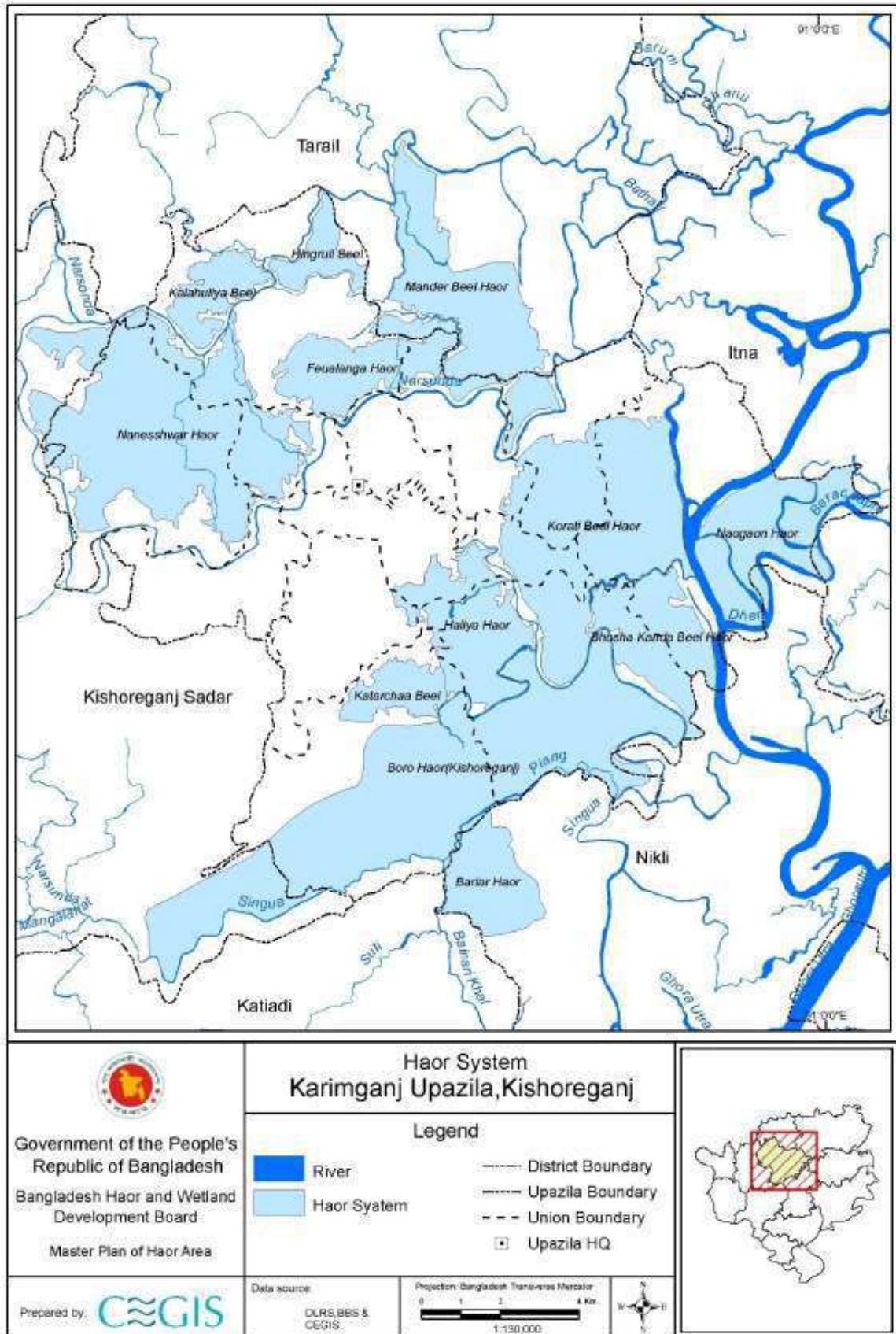


Figure 2.57: Haor System of Karimganj Upazila

Annexure 2: Haors of Bangladesh
Haors of Kishoreganj District

• Katiadi

Table 2.54 Haors of Katiadi Upazila

Serial No.	Name Of Haor	Area (ha)
1	Beel Purush Badiya	823
2	Boro Haor(Kishoreganj)	334
3	Chandpur Haor	2294
4	Jaraitala Haor	1
5	Kaliain Beel Haor (Borar Haor)	3014
6	Paschimbond Haor	1
Total		6466

Annexure 2: Haors of Bangladesh
 Haors of Kishoreganj District

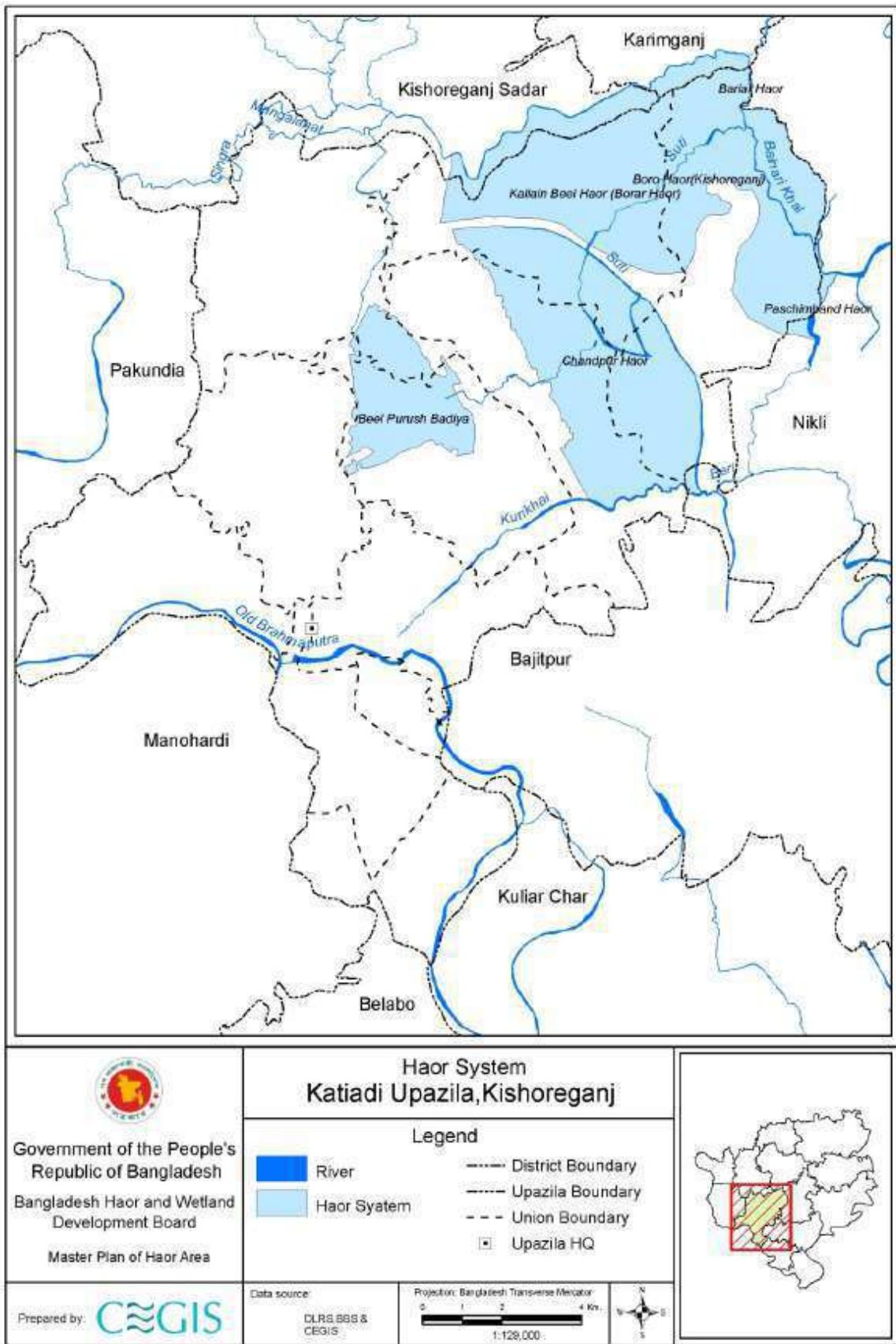


Figure 2.58: Haor System of Katiadi Upazila

Annexure 2: Haors of Bangladesh
Haors of Kishoreganj District

• **Kishoreganj Sadar**

Table 2.55 Haors of Kishoreganj Sadar Upazila

Serial No.	Name Of Haor	Area (ha)
1	Dhupchura Beel	38

• **Kuliar Char**

Table 2.56 Haors of Kuliar char Upazila

Serial No.	Name Of Haor	Area (ha)
1	Joyariya Haor	1
2	Kuniar Band Haor	643
3	Kuniarbandh Haor	318
4	Madhabdi Haor	390
5	Panch Aatiya Beel	1046
Total		2397

Annexure 2: Haors of Bangladesh
Haors of Kishoreganj District

- **Mithamain**

Table 2.57 Haors of Mithamain Upazila

Serial No.	Name Of Haor	Area (ha)
1	Boro Ghop Haor	409
2	Char Bulai Haor	284
3	Char Katkhal Haor	328
4	Daiyar Beel	180
5	Dakhshiner Haor	1083
6	Dilhi Akhra Haor	246
7	Gopdighi Haor	1571
8	Goradigha Haor	4
9	Kakuar Haor	630
10	Kanchanpur Haor	1076
11	Keorjori Haor	1669
12	Khunkhuni Haor	7351
13	Methamain Uttar Haor	2136
14	Naogaon Haor	1
15	Satkandir Haor	671
16	Sona Band Haor	2308
Total		19948

Annexure 2: Haors of Bangladesh
Haors of Kishoreganj District

- **Nikli**

Table 2.58 Haors of Nikli Upazila

Serial No.	Name Of Haor	Area (ha)
1	Bariar Haor	508
2	Bhatibaratia Haor	1304
3	Bhusha Kanda Beel Haor	301
4	Boro Haor(Kishoreganj)	1625
5	Bullar Haor	1075
6	Chandpur Haor	17
7	Goradigha Haor	731
8	Gurai Haor	1938
9	Jaraitala Haor	1210
10	Kaliain Beel Haor (Borar Haor)	1
11	Kaliar Beel	25
12	Khunkhuni Haor	4
13	Madhainagar haor	501
14	Mahitulpa Haor	1241
15	Methamain Uttar Haor	1443
16	Mithamain Dhakhin Haor	836
17	Noapara Haor	1876
18	Paschim Baid Haor	3
19	Paschimbond Haor	206
Total		14845

Annexure 2: Haors of Bangladesh
Haors of Kishoreganj District

• Pakundia

Table 2.59 Haors of Pakundia Upazila

Serial No.	Name Of Haor	Area (ha)
1	Chengamara Beel	87
2	Khama Beel	604
3	Mosti Beel Haor	660
4	Nobagia Beel	141
5	Purbardiya Beel	430
6	Shukhia Beel	164
Total		2086

Annexure 2: Haors of Bangladesh
Haors of Kishoreganj District

• Tarail

Table 2.60 Haors of Tarail Upazila

Serial No.	Name Of Haor	Area (ha)
1	Agar Band Haor	364
2	Chatal Haor	1089
3	Feualanga Haor	0
4	Hingruil Beel	179
5	Huliar Haor	1938
6	Kagatia band Haor	293
7	Mairar Band Haor	359
8	Makhrarband Haor	242
9	Mathorar Band Haor	274
10	Sunair Haor	3920
Total		8657

Annexure 2: Haors of Bangladesh
 Haors of Kishoreganj District

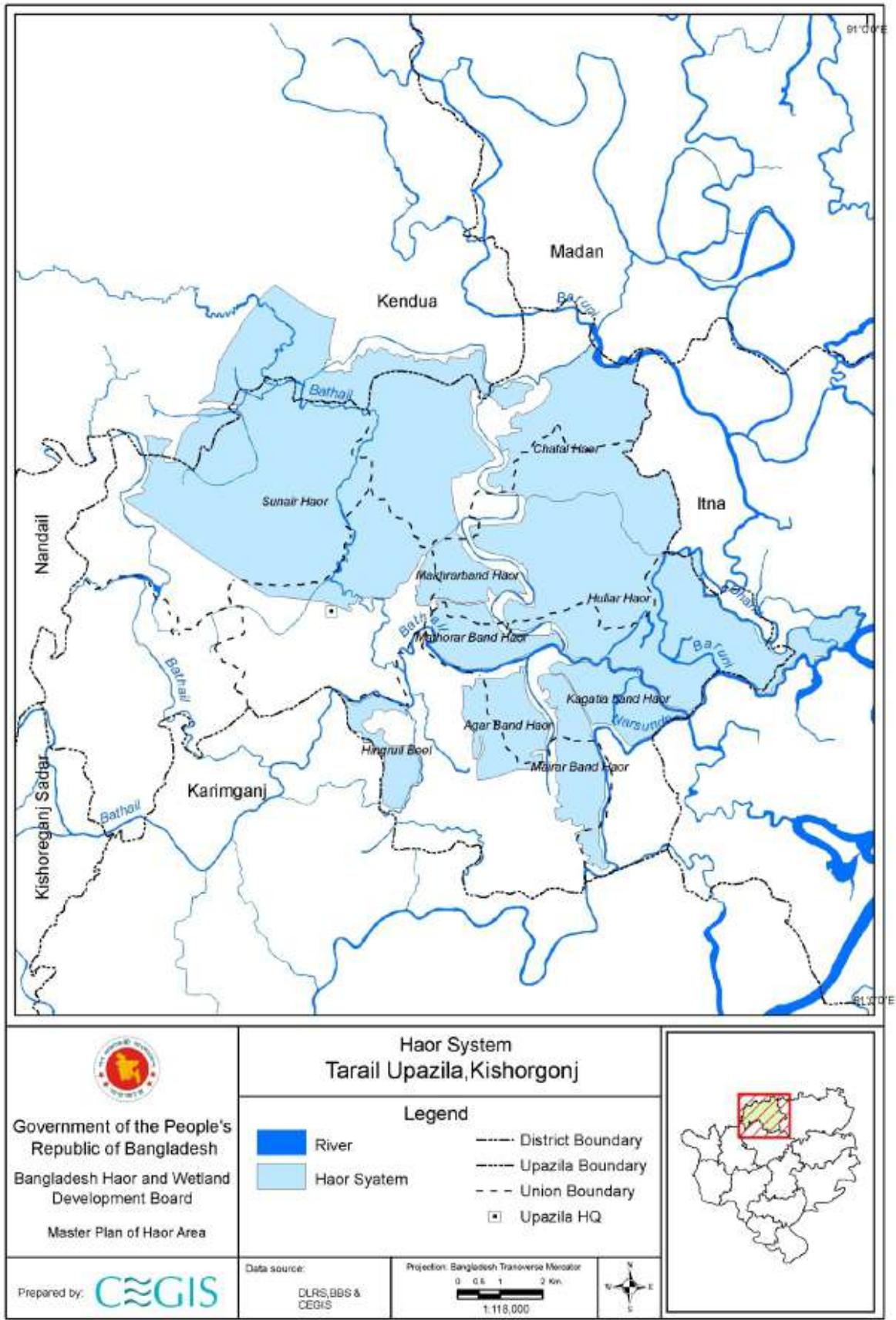


Figure 2.59: Haor System of Tarail Upazila

2.7 Haors of Brahmanbaria District

2.7 Haors of Brahmanbaria District

There are 9 Upazilas and 7 Haors in Brahmanbaria District. Among these Upazilas, Ashuganj, Bijoynagar, Bancharampur, Kasba and Nabinagar do not have any Haors. Haors of the rest 4 Upazilas and their maps have been given below. Table 2.61 shows the number of Haors (Upazila wise) of Brahmanbaria District.

Table 2.61 Haors of Brahmanbaria District

Serial No.	Name of Upazila	Number of Haors
1	Akhaura	1
2	Ashuganj	-
3	Bijoynagar	-
4	Bancharampur	-
5	Brahmanbaria Sadar	1
6	Kasba	-
7	Nabinagar	-
8	Nasirnagar	4
9	Sarail	2
Total		7

It is to be noted that:

- Some Haors are stretched over more than one Upazila, sometimes over more than one district. While recording these Haors, they have been shown in all Upazilas, hence the apparent discrepancy is observed in the total number of Haors.
- In Sunamganj District, Dattakhola Haor is stretched over more than one Upazilas.
- Tikkar Par Haor is stretched over more than one district.

Annexure 2: Haors of Bangladesh
 Haors of Brahmanbaria District

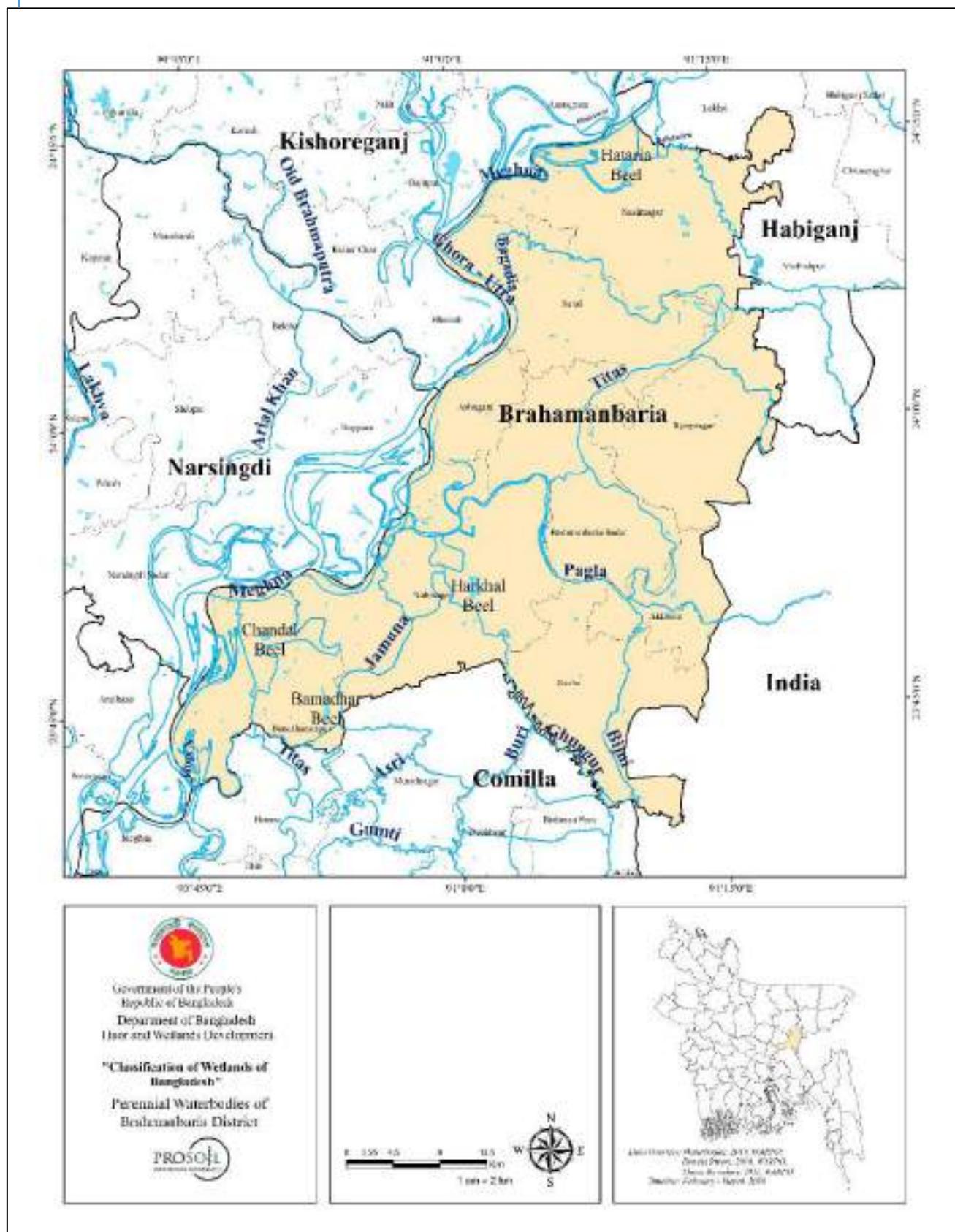


Figure 2.60: Perennial Waterbodies of Brahmanbaria District

Annexure 2: Haors of Bangladesh
Haors of Brahmanbaria District

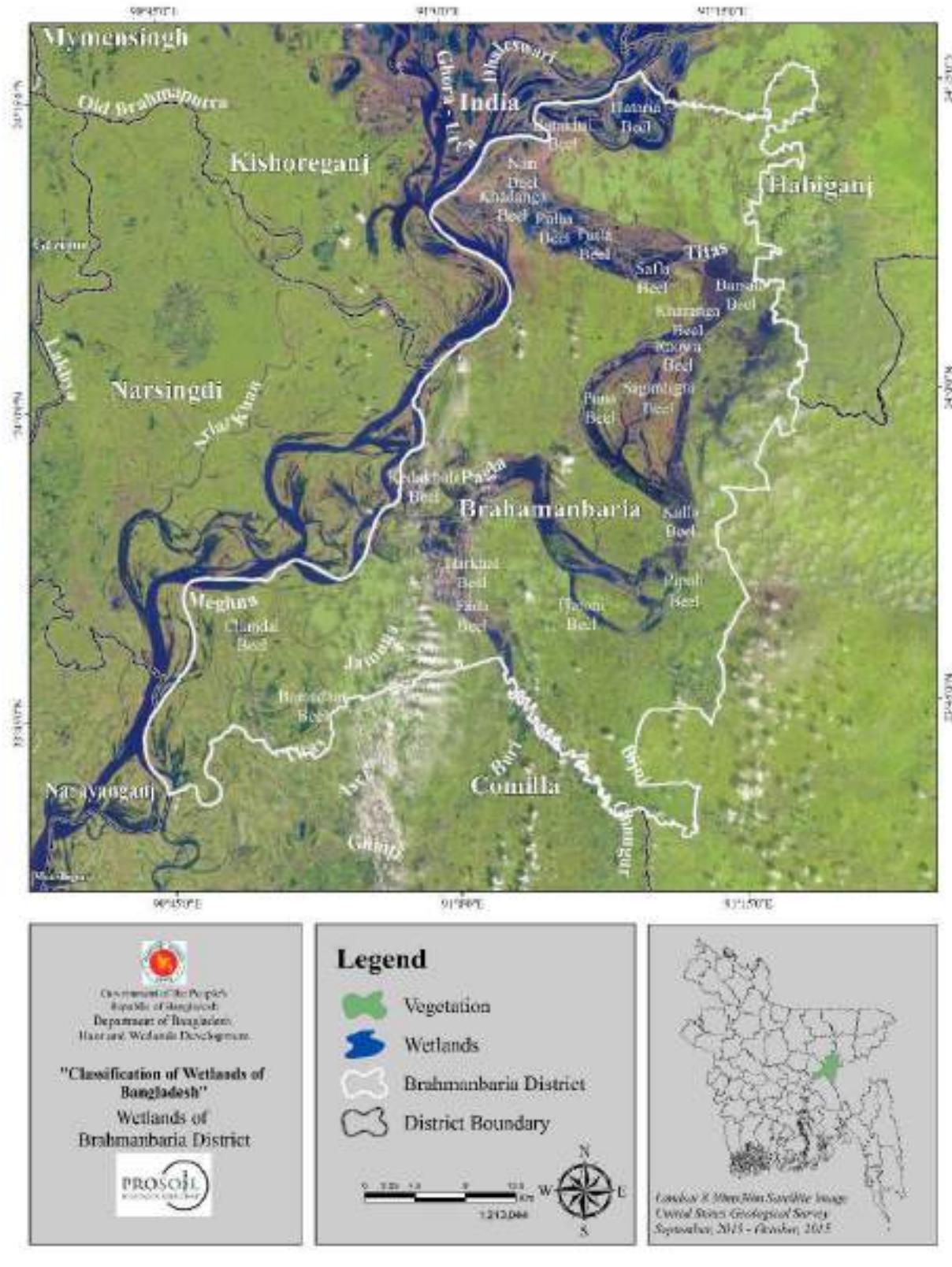


Figure 2.61: Wetlands of Brahmanbaria District (Satellite Image Map)

Annexure 2: Haors of Bangladesh
Haors of Brahmanbaria District

• Akhaura

Table 2.62 Haors of Akhaura Upazila

Serial No.	Name Of Haor	Area (ha)
1	Dattakhola Haor	7.48

• Brahmanbaria Sadar

Table 2.63 Haors of Brahmanbaria Sadar Upazila

Serial No.	Name Of Haor	Area (ha)
1	Dattakhola Haor	10033

Annexure 2: Haors of Bangladesh
Haors of Brahmanbaria District

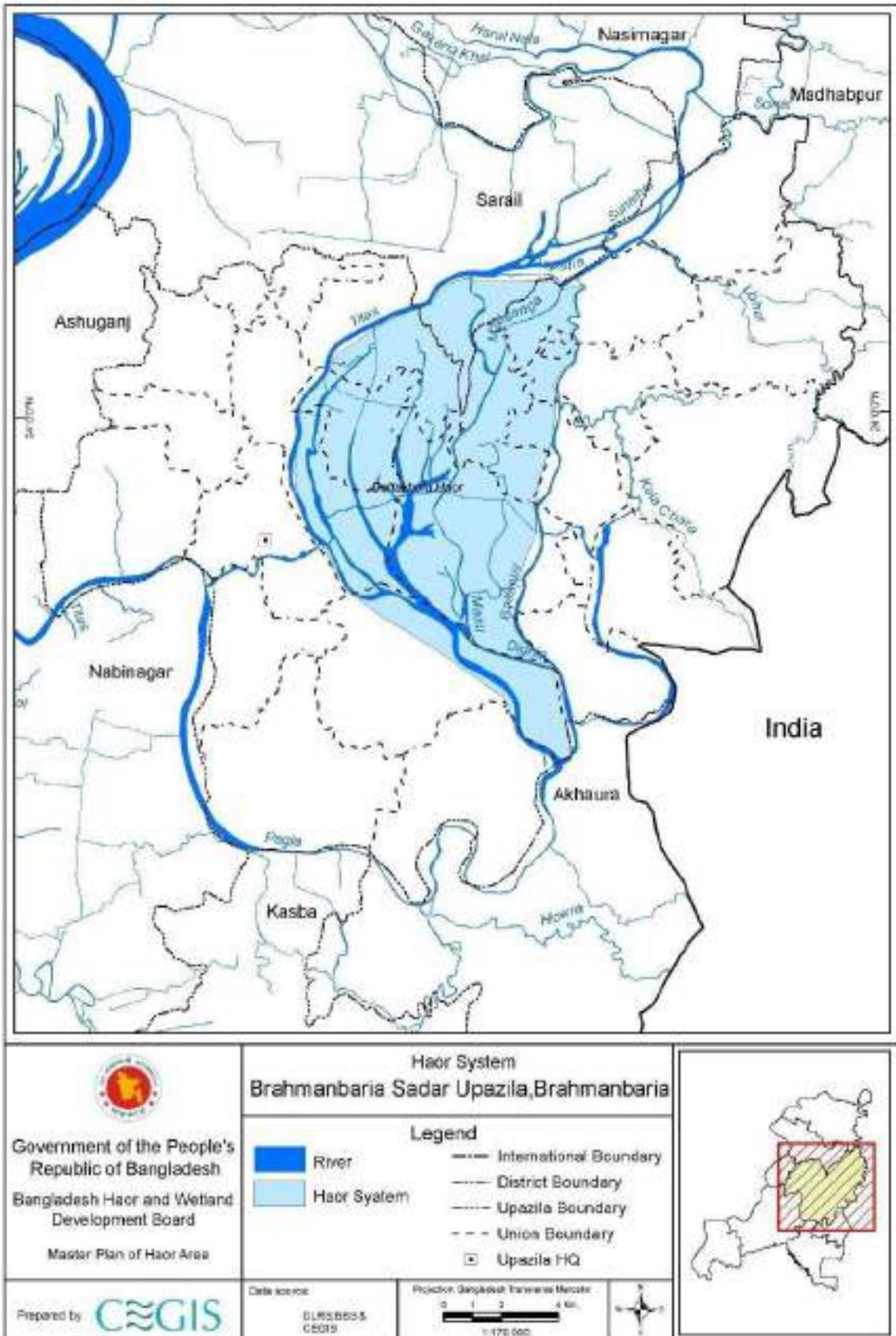


Figure 2.62: Haor System of Brahmanbaria Sadar Upazila

Annexure 2: Haors of Bangladesh
Haors of Brahmanbaria District

• Nasirnagar

Table 2.64 Haors of Nasirnagar Upazila

Serial No.	Name Of Haor	Area (ha)
1	Akashi-Shapla Beel Haor	3148
2	Churakuri Haor	1300
3	Shelnir Haor	1503
4	Tikkar Par Haor	2883
Total		8834

Annexure 2: Haors of Bangladesh
Haors of Brahmanbaria District

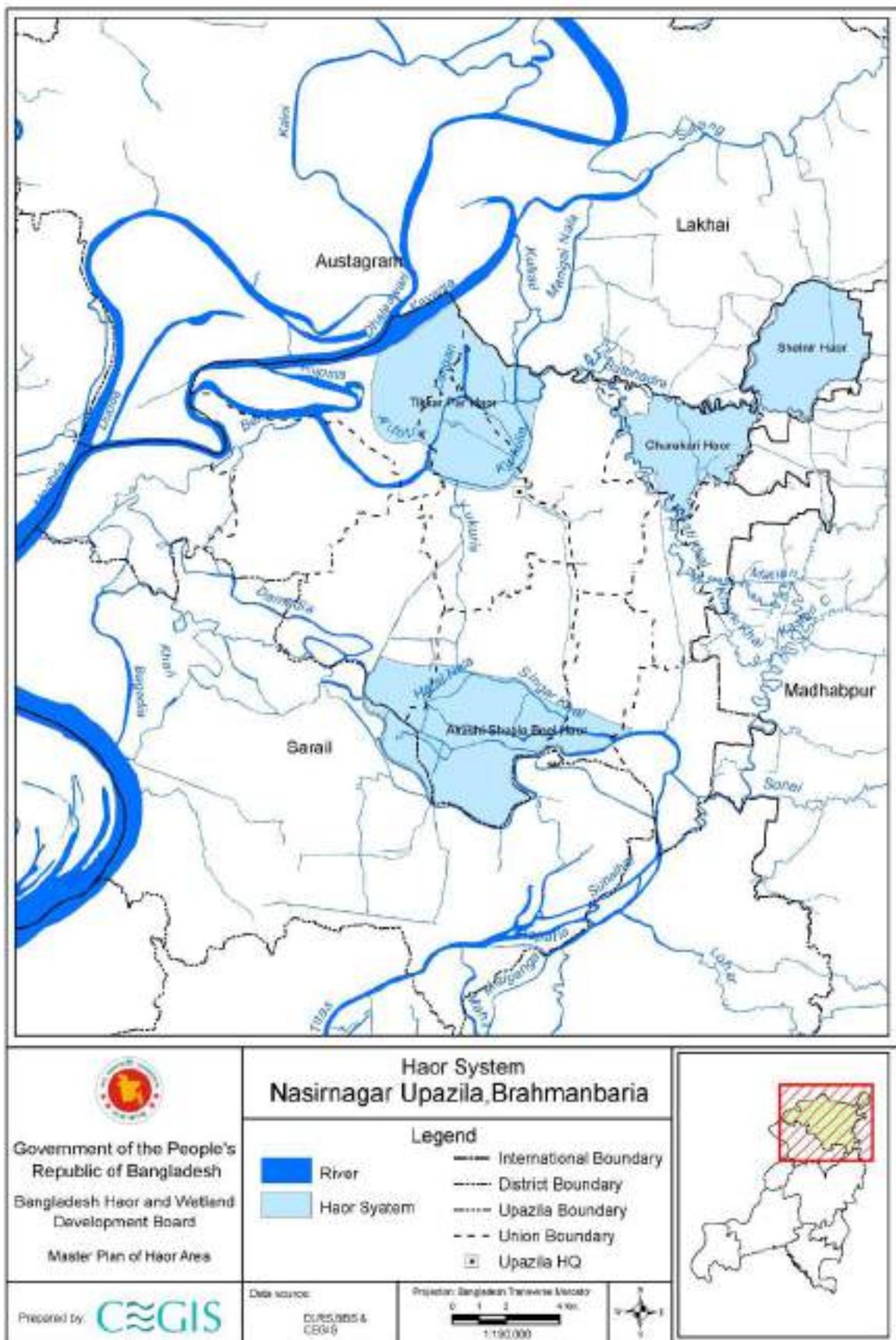


Figure 2.63: Haor System of Nasirnagar Upazila

Annexure 2: Haors of Bangladesh
Haors of Brahmanbaria District

• Sarail

Table 2.65 Haors of Sarail Upazila

Serial No.	Name Of Haor	Area (ha)
1	Balinga Beel Haor	3443
2	Katiajuri Haor	3658
Total		7101

Annexure 2: Haors of Bangladesh
Haors of Brahmanbaria District

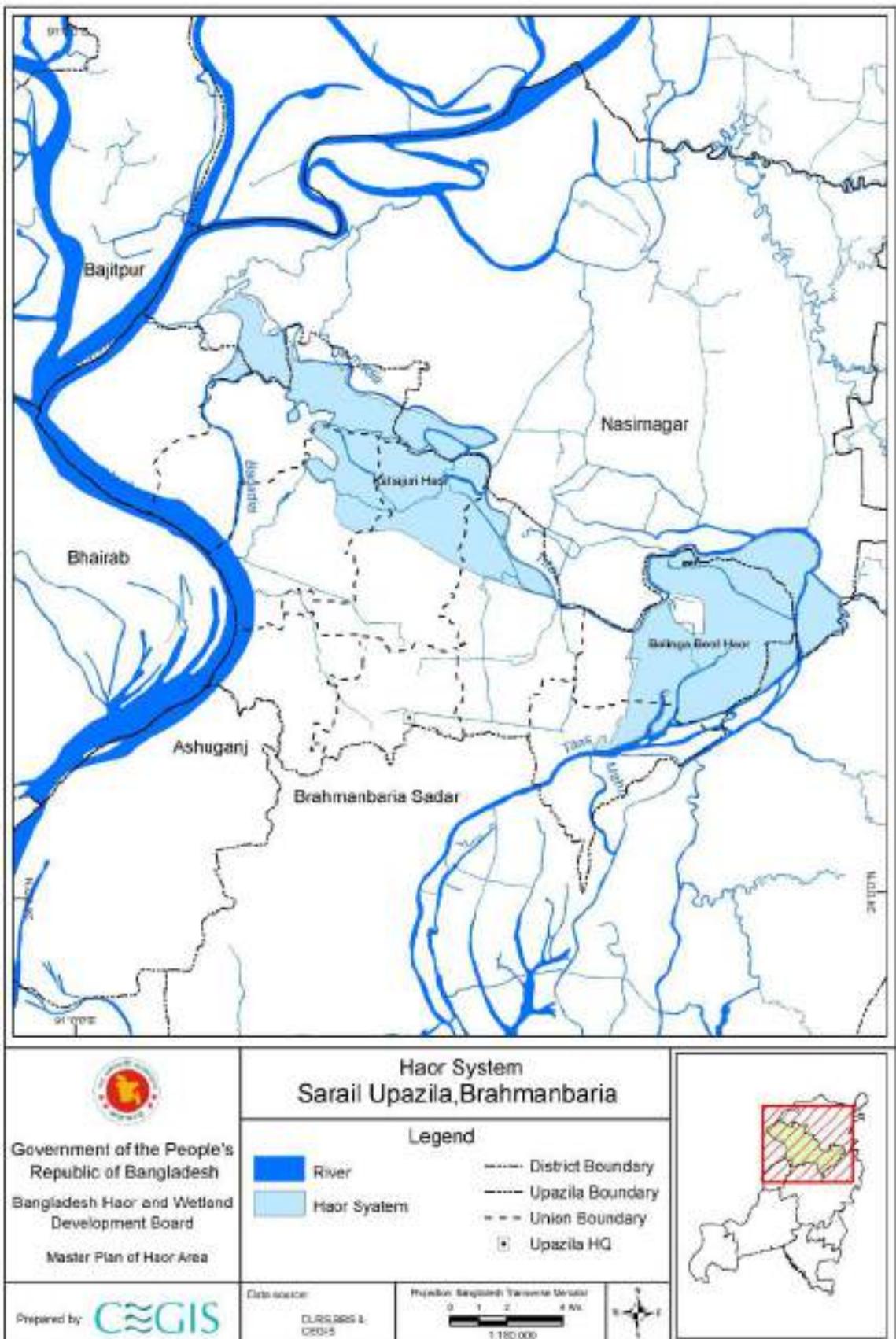


Figure 2.64: Haor System of Sarail Upazila

References

1. Bangladesh Haor and Wetland Development Board (Now Department of Bangladesh Haor and Wetlands Development), Master Plan Of Haor Area, 2012
2. Md. Shamsul Alam and Md. Sazzad Hossain, “Haor”, Banglapedia: National Encyclopedia of Bangladesh (Second ed.), 2012
3. Md. Shamsul Alam and Md. Sazzad Hossain, “Beel”, Banglapedia: National Encyclopedia of Bangladesh (Second ed.), 2012
4. Jamal Anwar, “Migratory and other Birds in Bangladesh in Danger”, SOS-arsenic.net, Retrieved 2007
5. SNC, LAVALIN International Northwest Hydraulic Consultants, “Northeast Regional Water Management Project”, Flood Action Plan, 1994
6. Water Resources Planning Organization (WARPO), National Water Management Plan (NWMP), 2004
7. International Union for Conservation of Nature (IUCN), Bio-ecological Zones of Bangladesh, International Union for Conservation of Nature and Natural Resources, Bangladesh Country Office, The World Conservation Union, 2002
8. International Union for Conservation of Nature (IUCN), Biodiversity of Tanguar Haor: A Ramsar Site of Bangladesh, 2012
9. Nixon Talukder and Sanzida Murshed, “Hakaluki Haor”, Banglapedia: National Encyclopedia of Bangladesh (Second ed.), 2015
10. Ramsar Convention Secretariat, The Ramsar Convention Manual: A Guide to The Convention on Wetlands (Ramsar, Iran, 1971), 6th Edition, 2013