



# USER MANUAL ON BANGLADESH RIVER INFORMATION MANAGEMENT SYSTEM (BRIMS)

**Operational Definition of River**

A river is generally a natural watercourse that runs perennially or seasonally from definite sources (e.g. hills, rivers, waterbodies), with defined banks, contributes to the water and sediment budget of the basin/catchment, and discharges into an outfall (e.g. rivers, waterbodies, Bay of Bengal). A socially and historically recognized watercourse will also be considered as a river.

Category	Count
Major Rivers	5
Medium Rivers	92
Small Rivers	659
Total Rivers	756
Transboundary Rivers	57

Developed by  
Center for Environmental and Geographic Information Services (CEGIS)

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## 1. Introduction

The Bangladesh River Information Management System (BRIMS) is a comprehensive web-based GIS application developed to provide detailed information and management tools related to rivers in Bangladesh. BRIMS aim to facilitate efficient management and decision-making regarding Bangladesh's river systems. It serves as a centralized platform for accessing and analyzing river-related data for various stakeholders, including government agencies, researchers, and policymakers. BRIMS integrates diverse datasets related to rivers, including hydrological, ecological, and socio-economic data. Data sources may include satellite imagery, remote sensing data, ground-based measurements, and government databases. BRIMS provide interactive maps that display various river features, including river networks, tributaries, water quality parameters, and flood risk zones. Users can visualize spatial data layers and overlay different datasets to gain insights into river dynamics and associated phenomena. The system is designed to be user-friendly, with intuitive interfaces and interactive features for easy navigation. BRIMS serve as a valuable tool for river management and decision-making, offering integrated data, mapping, analysis, and decision support capabilities to support sustainable development and resilience.

### 1.1 System Architecture of the Portal

The portal has been designed and developed using the standard four-tier architecture of software development. It consists of the following layers:

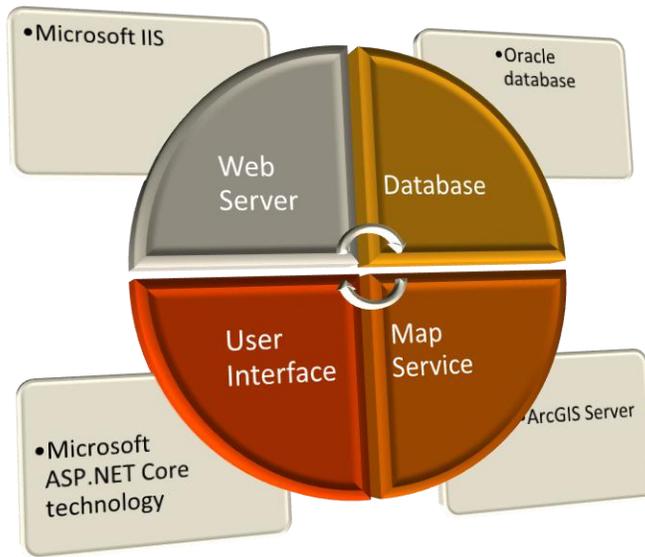
- Presentation (user-interface)
- Web server
- Application server
- Data server

- **Presentation Layer**

The presentation layer represents user-interfaces that a user uses to interact with the application. This layer has been developed using ASP .Net. HTML5 and CSS3 with jQuery are also used to develop the user interface. The design and look of the interfaces have been made simple and user-friendly.

- **Web server**

The main service component for a web-based application is the web server. It is a program that manages and delivers web pages and allows users to communicate with the server for data service through the Internet or the intranet. The web server is configured using Internet Information Services.



*Figure 1.1: System Architecture*

- **Application Server**  
The application layer is the main development area which consists of business and data components. The business component is used to impose different business rules and logics. The data component is responsible for retrieving data from the server. The application layer has been developed using Asp .Net Core.
- **Data Server**  
The data server contains data, views, triggers and stored procedures. It executes SQL statements, views, triggers and stored procedures for data manipulation and presentation. A relational database Oracle is used to store and organize data.

## **1.2 Technology Used**

The following technology has been used to develop BRIMS in different components:

- Programming Language: C#, Java Script
- Framework: Microsoft .NET framework 8
- Database: Oracle 19c
- Map service: ArcGIS Server

### 1.3 Dashboard

The Dashboard of the BRIMS is presented in Figure 1.2.

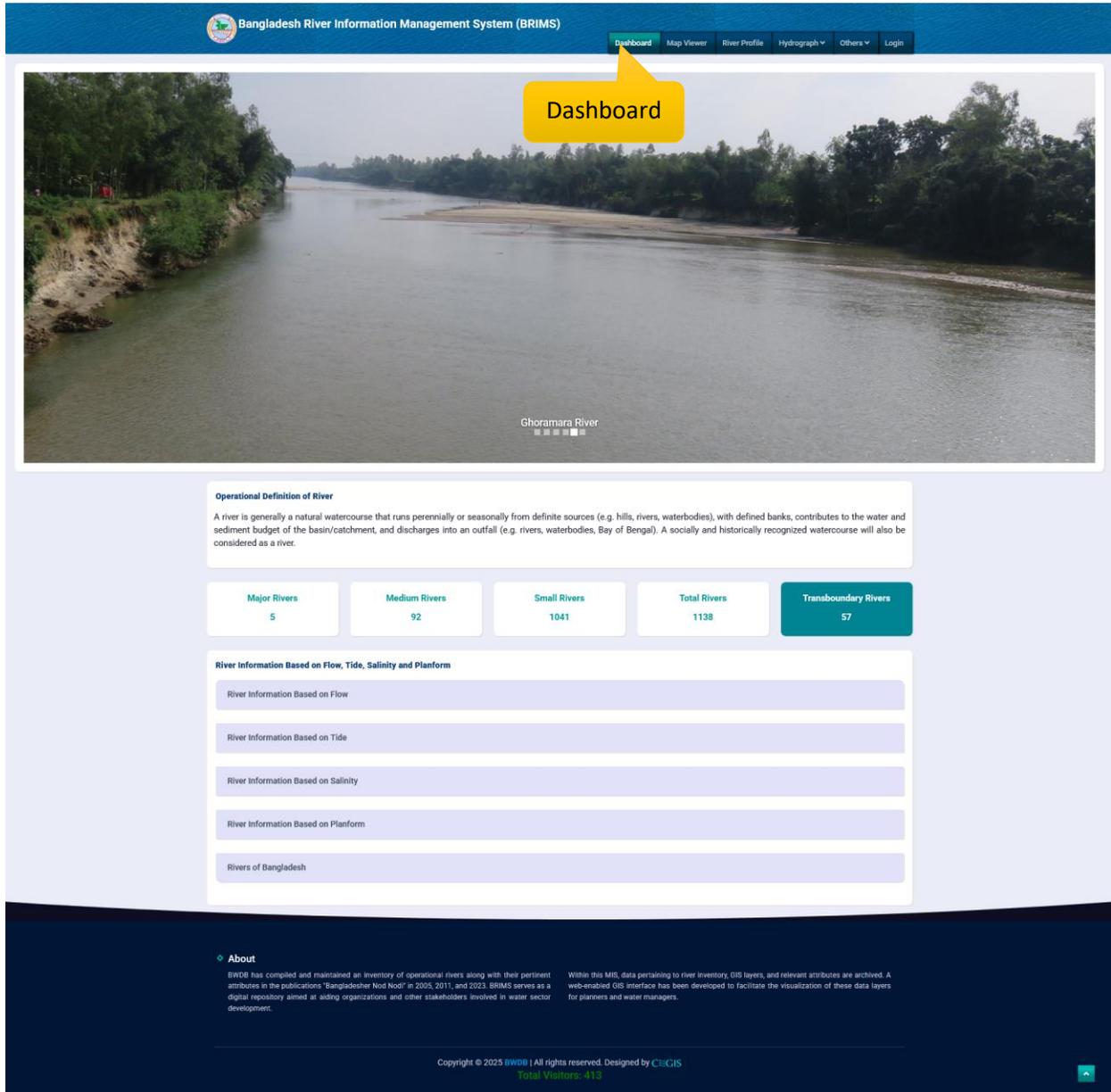


Figure 1.2: Dashboard screen of the BRIMS

## 2. Major Components of BRIMS

The major components of the BRIMS are as follows:

1. Dashboard
2. River Profile
3. Map Viewer
4. Other (User manual, Video Tutorial, Contacts and Feedbacks)
5. User (Access Control)

### 2.1 User Login

User login is required when any user will add, edit or delete data then login is mandatory. To login put the mouse pointer to the **Login** menu then click on Login (Figure 1.3).

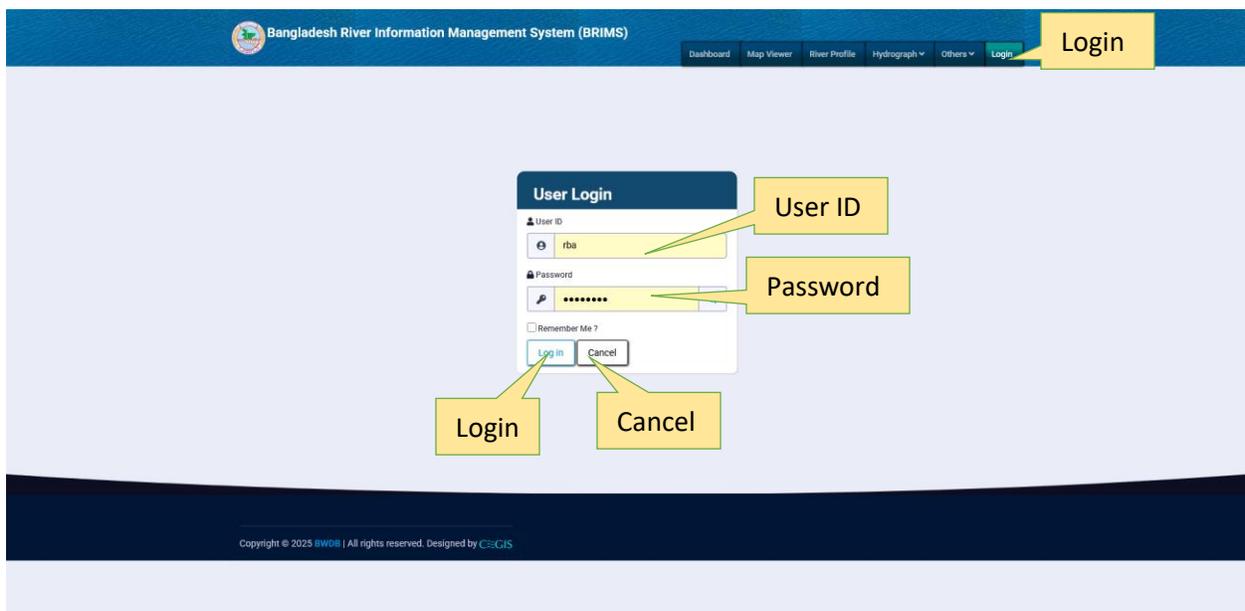


Figure 1.3: Login UI

## 2.2 Dashboard

The Dashboard is the home page which contains menu options, image slider, counting's of different river types and categories and some summery reports (Figure 2.1). These summery reports are Percentage of River Types in Pie chart, Hydrological Region wise River counting in Tabular format and a digital Map.

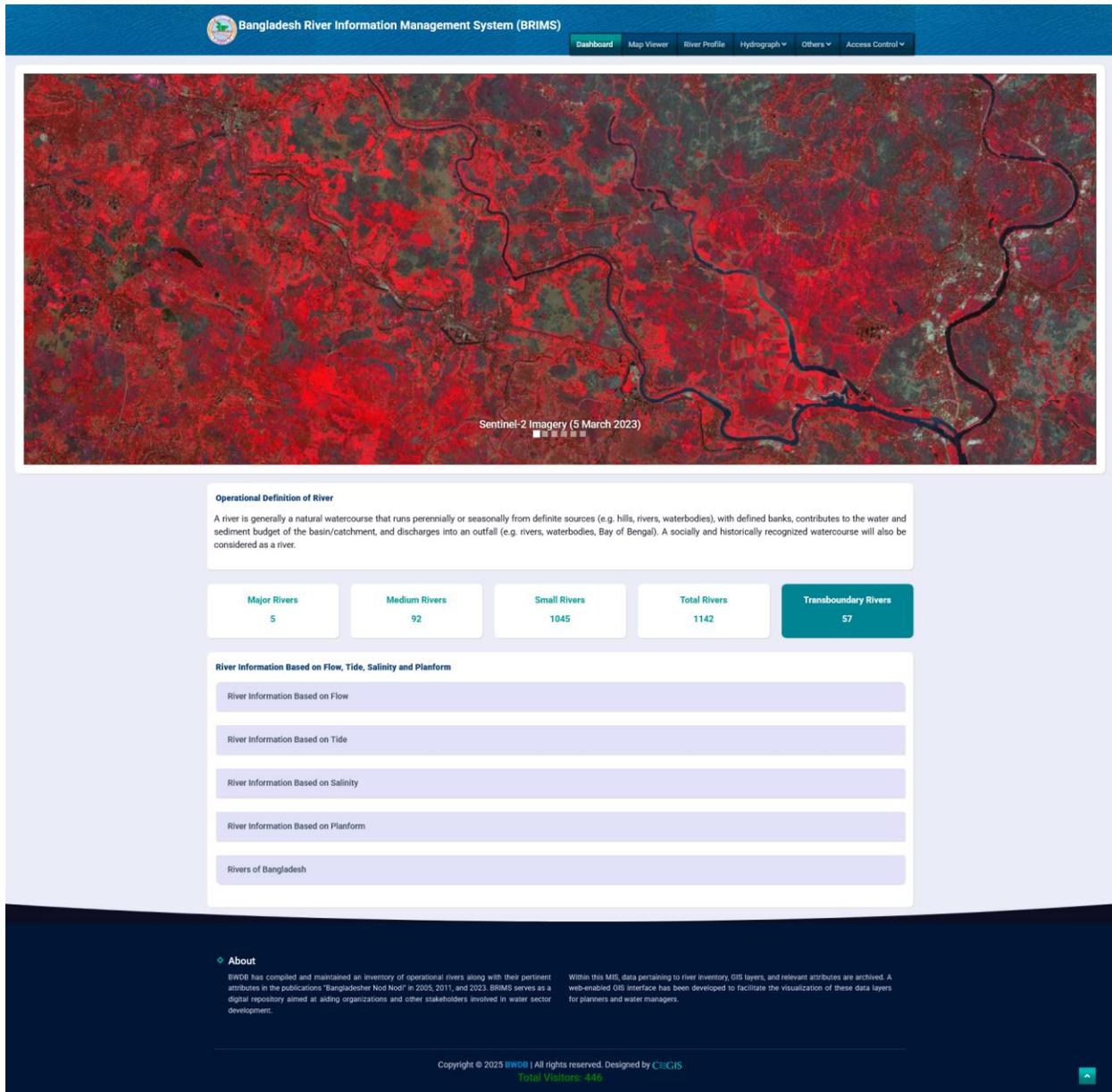
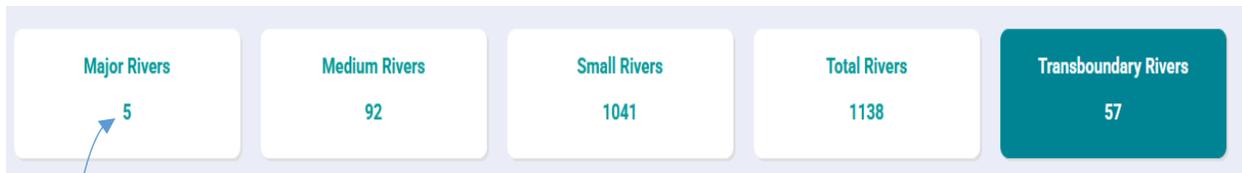


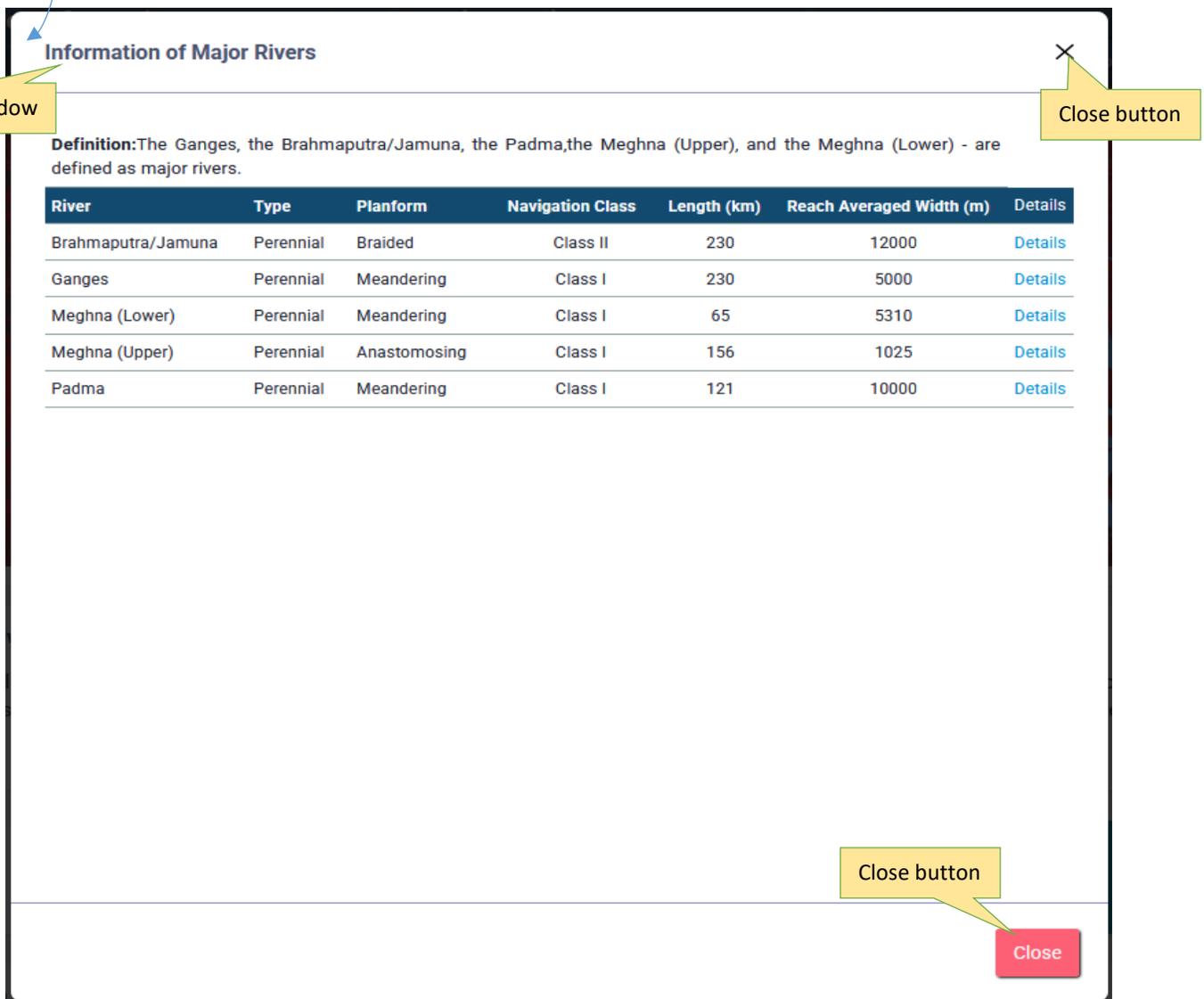
Figure 2.1: Dashboard



There are some clickable links in dashboard to view tabular data (Figure 2.2).

**Figure 2.2: Clickable links to view data**

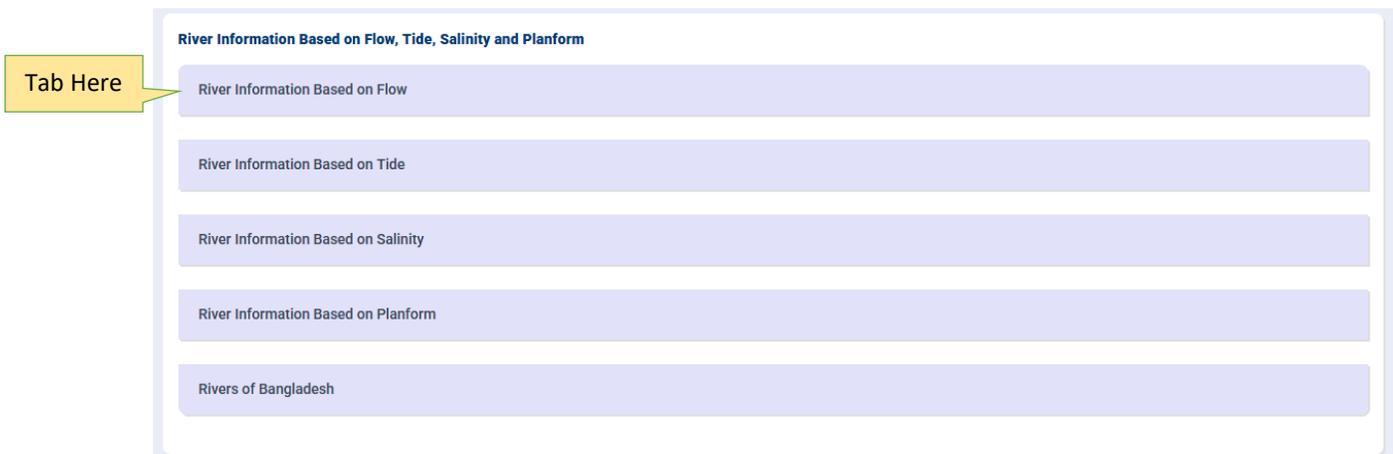
Click on these links to view tabular data (Figure: 2.3)



**Figure 2.3: River Information using POPUP**

After this we see **River Information Based on Flow, Tide, Salinity and Planform** section. This section contains five collapsible tabs, each representing a different category of river information:

1. **River Information Based on Flow**
2. **River Information Based on Tide**
3. **River Information Based on Salinity**
4. **River Information Based on Planform**
5. **Rivers of Bangladesh**



1. The image shows the "**River Information Based on Flow**" section, which includes:
  - A Table of Hydrological Regions
    - Displays the number of Seasonal Rivers and Perennial Rivers across different regions.
    - The Total column sums both types of rivers for each region.
    - The overall total is 1,138 rivers, with 841 seasonal rivers (73.9%) and 297 perennial rivers (26.1%).
  - A Pie Chart
    - Visually represents the proportion of Seasonal and Perennial Rivers.
    - Seasonal Rivers make up 73.9% of the total.
    - Perennial Rivers account for 26.1%.

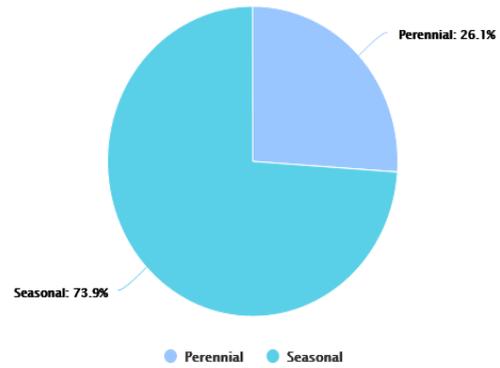
This section helps in understanding the distribution of rivers based on their flow characteristics across various hydrological regions.

River Information Based on Flow

Hydrological Regions	Seasonal Rivers	Perennial Rivers	Total
North-West	285	28	313
North-Central	80	23	103
North-East	305	21	326
South-West and South-Central	97	191	288
South-East	53	24	77
Eastern-Hills	21	10	31
<b>Total</b>	<b>841</b>	<b>297</b>	<b>1138</b>

Click Here

Percentage of Seasonal and Perennial Rivers



River Information



River	Type	Planform	Navigation Class	Length (km)	Reach	Averaged Width (m)	Details
Adi Jamuna	Perennial	Meandering	-	0	0	0	<a href="#">Details</a>
Agorpur	Perennial	Meandering	-	0	0	0	<a href="#">Details</a>
Agun Mukha	Perennial	Meandering	Class I	20	2525	20	<a href="#">Details</a>
Algi	Perennial	Meandering	-	19	19	20	<a href="#">Details</a>
Amtali	Perennial	Meandering	-	19	19	18	<a href="#">Details</a>
Andarmanick	Perennial	Meandering	Class I	42	42	180	<a href="#">Details</a>
Arci	Perennial	Meandering	-	0	0	0	<a href="#">Details</a>
Arial Khan	Perennial	Meandering	Class II	154	154	115	<a href="#">Details</a>
Arial Khan Narsingdi (Lower)	Perennial	Meandering	Class III	31	31	40	<a href="#">Details</a>
Arial Khan Narsingdi (Upper)	Perennial	Meandering	Class III	19	19	55	<a href="#">Details</a>
Arpangasia	Perennial	Meandering	Class I	58	58	1105	<a href="#">Details</a>
Arpangasia (Barguna)	Perennial	Meandering	-	31	31	10	<a href="#">Details</a>
Asokathi	Perennial	Meandering	-	9	9	20	<a href="#">Details</a>
Atai	Perennial	Meandering	Class II	17	17	180	<a href="#">Details</a>
Atrai	Perennial	Meandering	Class III	217	217	30	<a href="#">Details</a>
Atrai (Naogaon-Natore)	Perennial	Meandering	-	33	33	70	<a href="#">Details</a>
Ayla	Perennial	Meandering	Class II	0	0	0	<a href="#">Details</a>
Baleswar	Perennial	Meandering	Class I	137	137	10	<a href="#">Details</a>
Balu	Perennial	Meandering	Class II	44	44	20	<a href="#">Details</a>
Balu (Sunderban)	Perennial	Meandering	-	34	34	259	<a href="#">Details</a>

Close

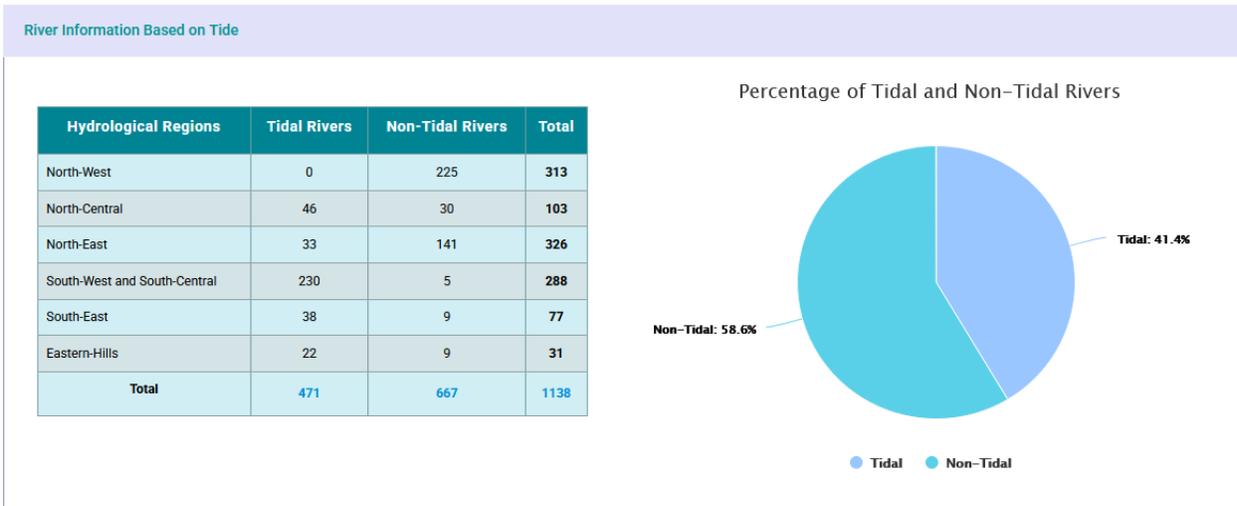
2. The image shows the " **River Information Based on Tide**" section, which includes:

➤ A Table of Hydrological Regions

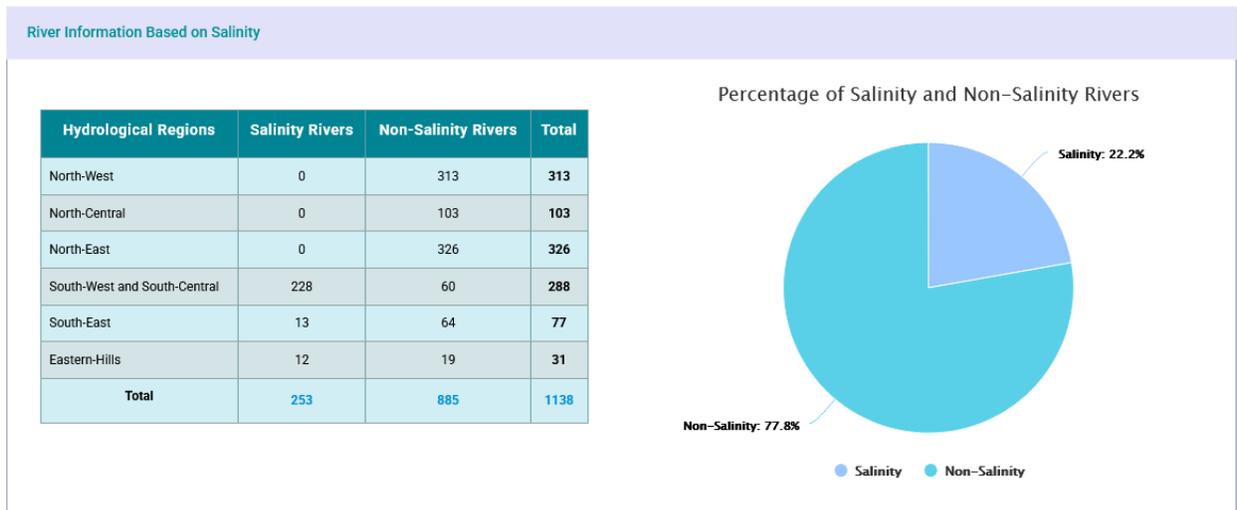
- It categorizes rivers into Tidal Rivers and Non-Tidal Rivers across different regions.
- The Total column sums both types of rivers for each region.
- The overall total is 1,138 rivers, with 471 tidal rivers (41.4%) and 667 non-tidal rivers (58.6%).

➤ A Pie Chart

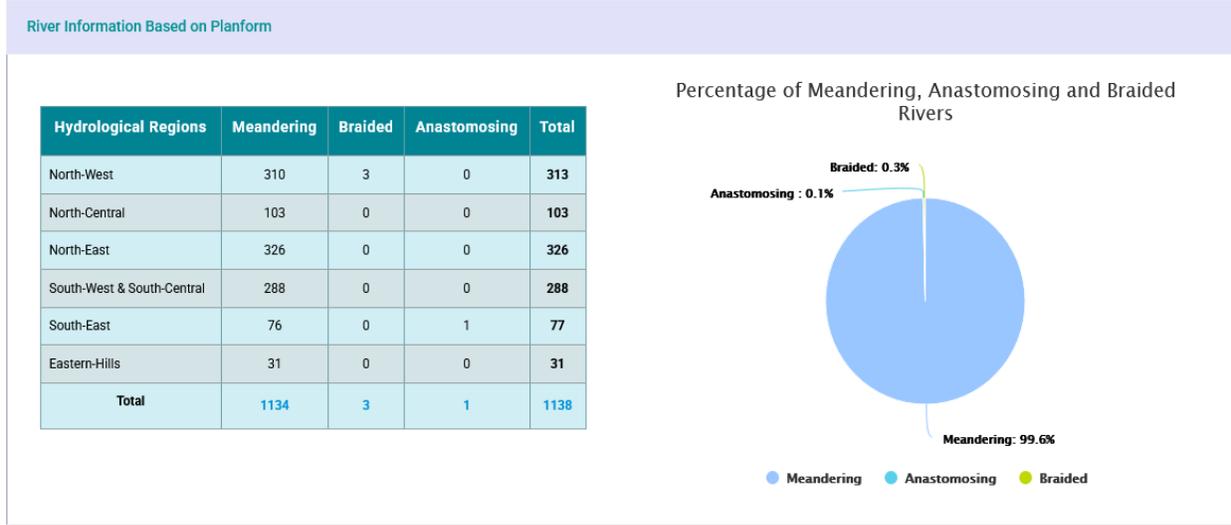
- Visually represents the proportion of Tidal and Non-Tidal Rivers.
- Non-Tidal Rivers make up 58.6% of the total.
- Tidal Rivers account for 41.4%.



3. **River Information Based on Salinity** (Same as previous section image)



## 4. River Information Based on Planform (Same as previous section image)



### 2.2 Map Viewer

This module has been designed to display and analyze spatial data with Zoom-in, zoom-out, pan, superimpose and other standard facilities of spatial data viewer. The Map Viewer also provides facilities to view identity and attribute information of the spatial data layers. Powerful search capabilities for rivers have been added to find target information with zone, Admin Boundary and River wise. Initially loaded all river information in the system. Users can be shown the specific river details information by clicking the target river as a Popup View. In this popup view for some parameters like water level, Discharge and Rainfall, the action buttons are added to view Hydrological Status, Frequency Analysis and Data Availability.

While adding data such as water level or discharge, then added summary information of those parameters information in the left panel. The Map Export feature has also been incorporated into this system.

#### 1.1 View River Information

In the Map Viewer Module, user can view river data with geological location and many analytical data on the map dynamically (Figure 3.1).

The image displays a panel titled "Data Layer View and Analysis" with the following elements:

- 1. Dropdown: Data Layer Selection**
  - Example value: "Satellite".
- 2. Button: Reset Selection**
  - Clears selections and resets filters.
- 3. Expandable Section: River Selection By**
  - **Checkbox: Name**
  - **Toggle: River Label**
  - **Checkbox: Hydrological Region**
  - **Checkbox: Admin Boundary**
- 4. Button: View Report**

- Generates a report based on selected criteria.
5. **Collapsible Sections:**
- **Data Layers**
  - **Frequency Analysis**
  - **Hydrological Status**
  - **Data Availability**

Click Here

**Data Layer View and Analysis**
↓

Satellite
Reset Selection

**River Selection By**
^

Name
River Label

Hydrological Region

Admin Boundary

Zone
North-West

× Akhira-Maccha (NW-1)
↻

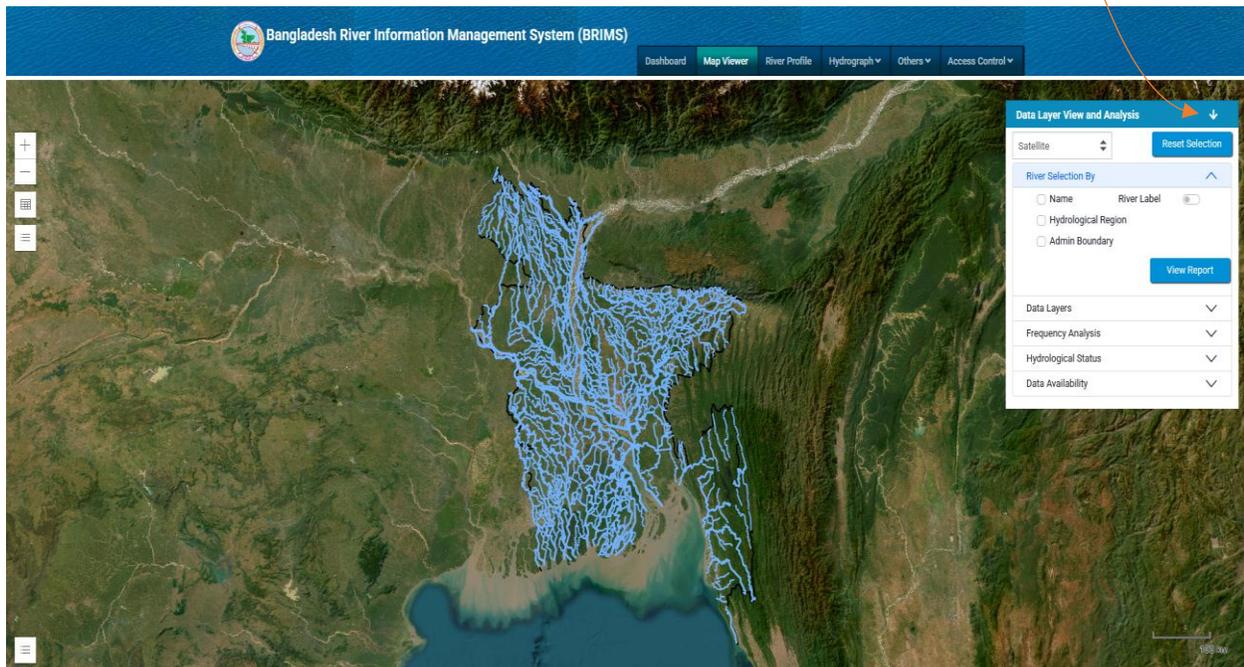
View Report

Data Layers
∨

Frequency Analysis
∨

Hydrological Status
∨

Data Availability
∨



**Figure 3.1: Map Window**

Users can be able to find a river using three options (Admin Boundary, Hydrological Zone and River) (Figure 3.2)

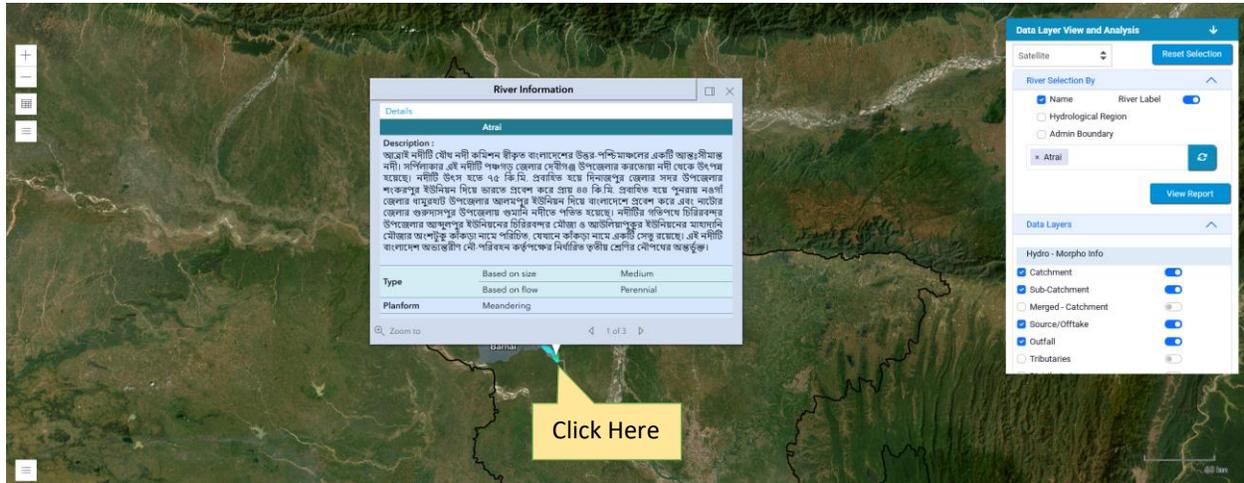


Figure 3.2: View River Information

## 1.2 Searching River using 'river' option (Figure: 3.3, 3.4)

- Step 1: Select 'Name' option from the search options
- Step 2: Then search river name as 'atrai' on the search-box and rivers will be displayed

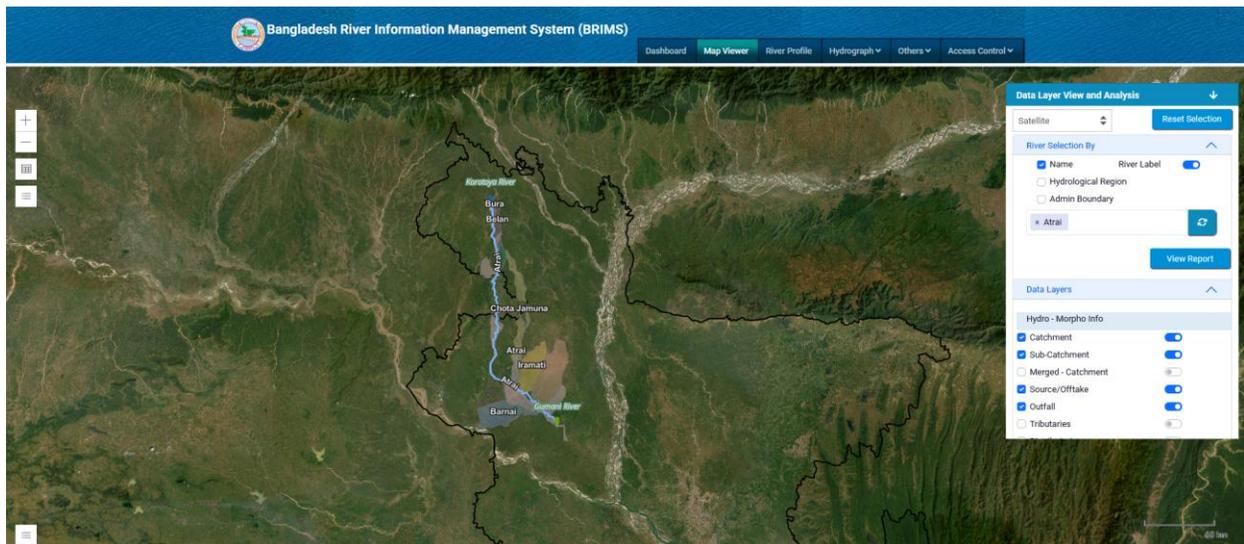
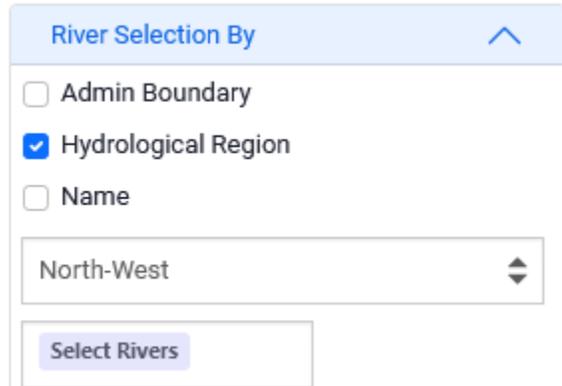


Figure 3.3: Result for Searching River using 'river' option

### 1.3 Searching River using 'Hydrological Region' option (Figure: 3.4, 3.5)

- Step 1: Select 'Hydrological Region' option from the search options  
Step 2: Select a Zone from the drop-down list and rivers will be displayed



River Selection By

Admin Boundary

Hydrological Region

Name

North-West

Select Rivers

Figure 3.4: Searching River using 'Hydrological Region' option

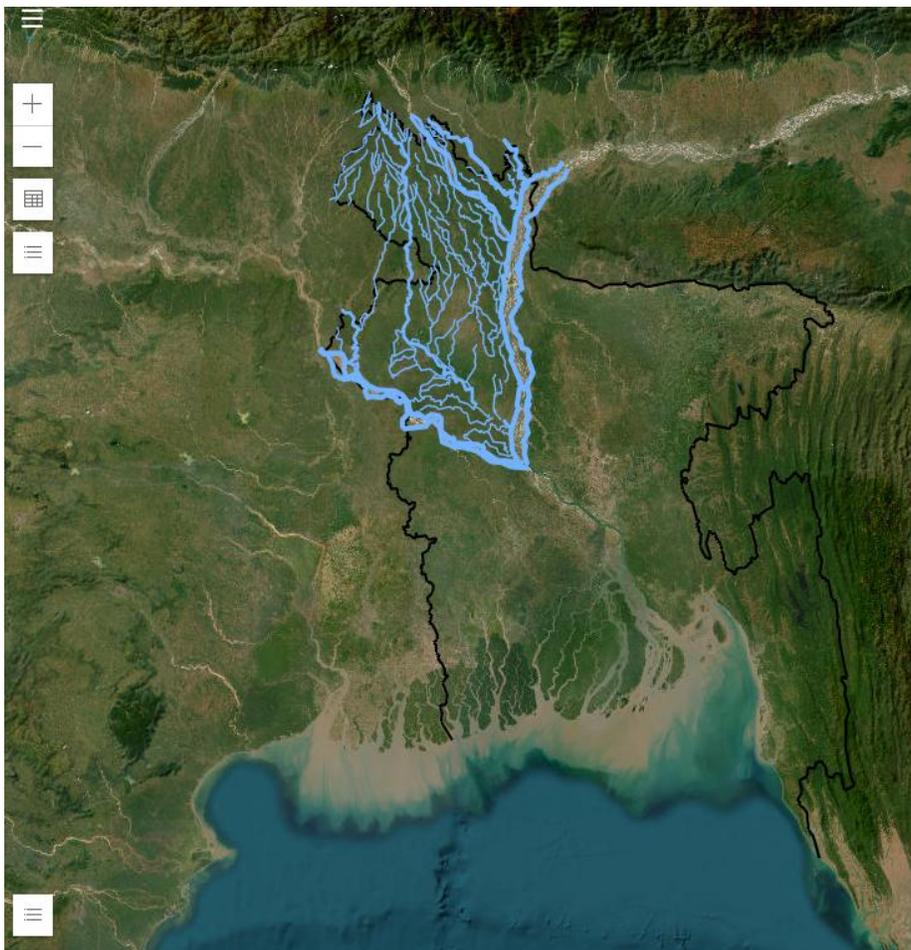


Figure 3.5: Result of Searching River

1.4 Select rivers from list and rivers will be displayed (Figure 3.6)

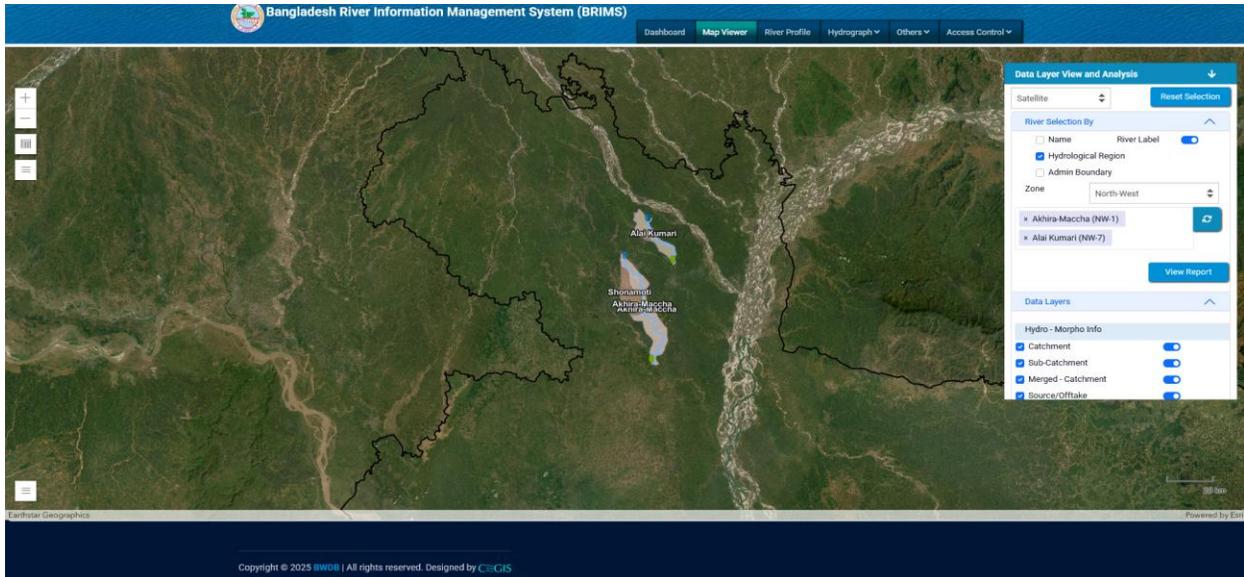


Figure 3.6: Searching River using 'Hydrological Region' option using list

1.5 Searching River using 'Admin Boundary' option (Figure 3.7. 3.8)

- Step 1: Select 'Admin Boundary' option from the search options
- Step 2: Select a Division Name as 'Dhaka' from the drop-down list and maps will be zoom to the selected Division.
- Step 3: Select a District Name as 'Narsingdi' from the drop-down list and maps will be zoom to the selected District.
- Step 4: Select an Upazila Name from the drop-down list and map of the source will be displayed.

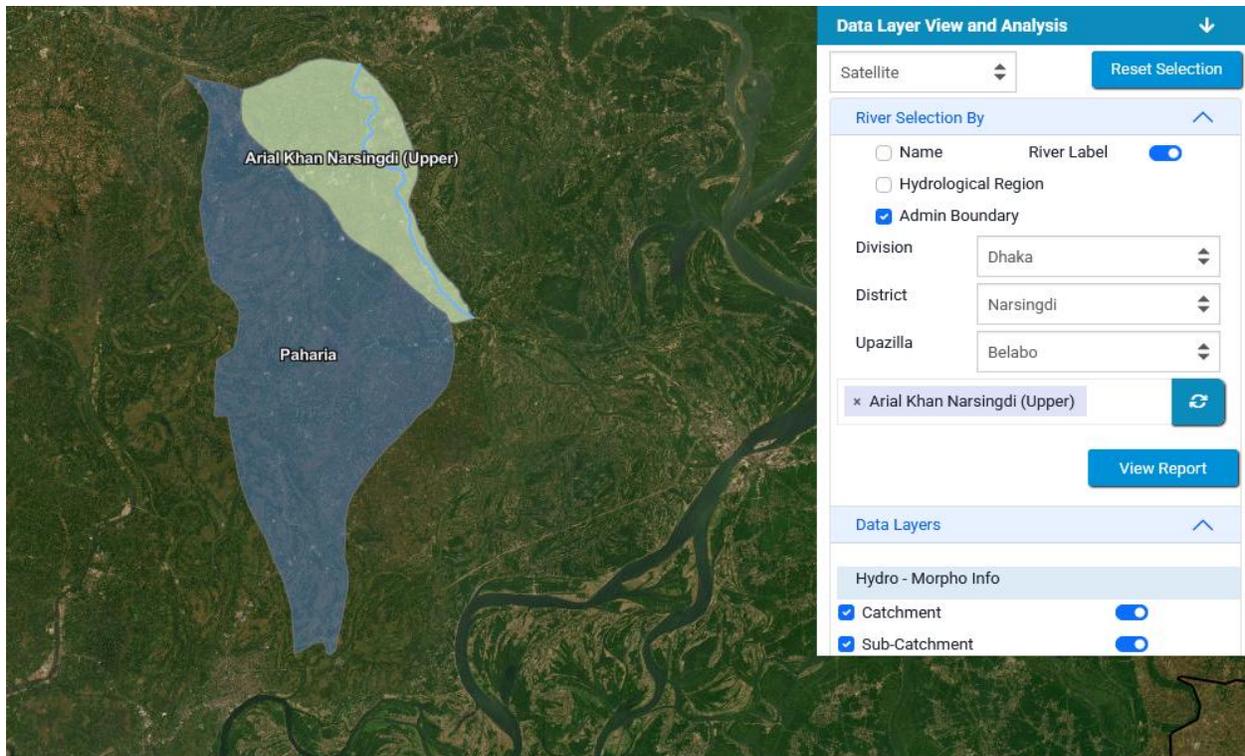
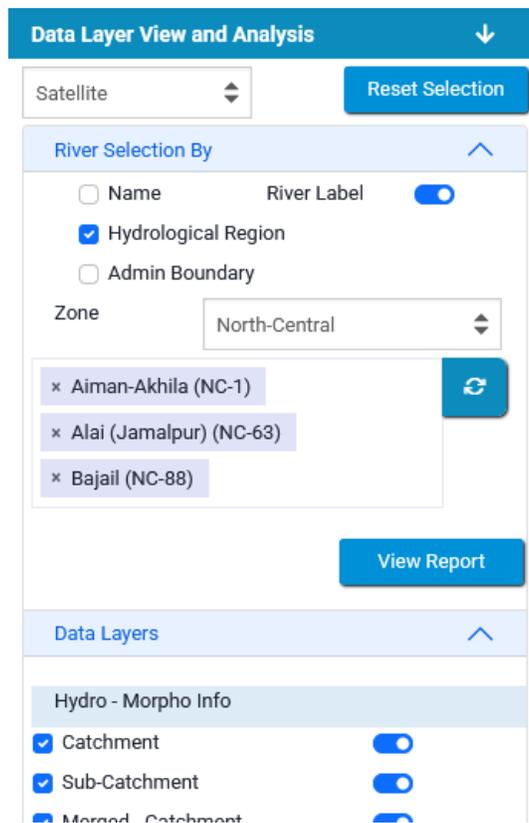


Figure 3.7: Searching River using 'Admin Boundary' option





**Figure 3.8: Display Result of Searching River using 'Hydrological Region' option**

The image displays a form within a collapsible panel titled "**Data Layer View and Analysis**", with the "**Frequency Analysis**" section expanded. Below are the input fields present in the form:

1. **Parameter (\*)**
  - Dropdown selection (e.g., "Discharge (Tidal)").
2. **River (\*)**
  - Multi-select input (e.g., "Arial Khan").
3. **Station (\*)**
  - Multi-select input (e.g., "Chowdhury Char").
4. **Method (\*)**
  - Dropdown selection (e.g., "Normal Distribution").
5. **Function (\*)**
  - Dropdown selection (e.g., "Maximum").
6. **Interval (\*)**
  - Dropdown selection (e.g., "TenDays").
7. **Start-End (\*)**
  - Date range picker (e.g., "01/01/1980 - 30/12/1985").
8. **Return Period**
  - Text input (e.g., "10,20"), possibly for multiple return periods.
9. **Button: "Get Frequency Result"**
  - Action button to submit the form.

Data Layer View and Analysis	
Data Layers	▼
Frequency Analysis	▲
Parameter*	Discharge (Tidal) ▲▼
River*	× Arial Khan
Station*	× Chowdhury Char
Method*	Normal Distribution ▲▼
Function*	Maximum ▲▼
Interval*	TenDays ▲▼
Start-End *	01/01/1980 - 30/12/1985
Return Period *	10,20
<a href="#">Get Frequency Result</a>	
Hydrological Status	▼
Data Availability	▼

## Frequency Analysis of Discharge Data



StationId	Return Period	Month	Ten Days	Discharge(m3/sec)
4A	10	January	1	165.34
4A	10	January	2	149.20
4A	10	January	3	162.84
4A	10	February	1	166.04
4A	10	February	2	139.04
4A	10	February	3	119.31
4A	10	March	1	127.00
4A	10	March	2	147.39
4A	10	March	3	169.14
4A	10	April	1	224.96
4A	10	April	2	325.80
4A	10	April	3	291.33
4A	10	May	1	446.91
4A	10	May	2	383.40
4A	10	May	3	519.55
4A	10	June	1	1042.11
4A	10	June	2	1170.98
4A	10	June	3	1499.69
4A	10	July	1	1979.56
4A	10	July	2	2289.59
4A	10	July	3	2605.19
4A	10	August	1	2922.56
4A	10	August	2	2272.83
4A	10	August	3	2406.40
4A	10	September	1	2584.91
4A	10	September	2	2666.18
4A	10	September	3	2948.96
4A	10	October	1	2091.55
4A	10	October	2	1861.88
4A	10	October	3	1726.00
4A	10	November	1	1183.25
4A	10	November	2	883.48

The image displays a form within a collapsible panel titled "**Hydrological Status**". Below are the input fields present in the form:

1. **Parameter (\*)**
  - Dropdown selection (e.g., "Discharge (Tidal)").
2. **River (\*)**
  - Dropdown selection (e.g., "Arial Khan").
3. **Stations (\*)**
  - Dropdown selection (e.g., "Chowdhury Char").
4. **Function (\*)**
  - Multi-select options (e.g., "Maximum", "Minimum").
5. **Interval (\*)**
  - Dropdown selection (e.g., "Ten Days").
6. **Start-End (\*)**
  - Date range picker (e.g., "01/01/1980 - 30/12/1985").
7. **Button: "Get Hydro Result"**
  - Action button to submit the form.

The image shows a web interface with a blue header bar containing the text "Data Layer View and Analysis" and a downward arrow. Below the header is a "View Report" button. A list of menu items includes "Data Layers", "Frequency Analysis", "Hydrological Status" (which is highlighted in light blue and has an upward arrow), and "Data Availability". The "Hydrological Status" section contains the following fields:

- Parameter \***: A dropdown menu with "Discharge (Tidal)" selected.
- River\***: A dropdown menu with "Arial Khan" selected.
- Stations \***: A dropdown menu with "Chowdhury Char" selected.
- Function \***: A multi-select menu with "× Maximum" and "× Minimum" selected.
- Interval\***: A dropdown menu with "Ten Days" selected.
- Start-End \***: A date range picker showing "01/01/1980 - 30/12/1985".

At the bottom of the form is a "Get Hydro Result" button.

Discharge (Tidal) of station						
Station ID	Station Name	Year	Month	DaysPart	Maximum Value (m <sup>3</sup> /sec)	Minimum Value (m <sup>3</sup> /sec)
4A	Chowdhury Char	1980	1	1	16.30	4.36
4A	Chowdhury Char	1980	1	2	4.58	2.94
4A	Chowdhury Char	1980	1	3	4.21	2.02
4A	Chowdhury Char	1980	2	1	3.93	2.11
4A	Chowdhury Char	1980	2	2	13.30	0.89
4A	Chowdhury Char	1980	2	3	9.02	1.13
4A	Chowdhury Char	1980	3	1	8.03	3.63
4A	Chowdhury Char	1980	3	2	15.80	0.92
4A	Chowdhury Char	1980	3	3	16.70	0.83
4A	Chowdhury Char	1980	4	1	4.32	1.57
4A	Chowdhury Char	1980	4	2	26.30	3.85
4A	Chowdhury Char	1980	4	3	80.60	16.90
4A	Chowdhury Char	1980	5	1	434.00	101.00
4A	Chowdhury Char	1980	5	2	330.00	266.00
4A	Chowdhury Char	1980	5	3	372.00	182.00
4A	Chowdhury Char	1980	6	1	386.00	286.00
4A	Chowdhury Char	1980	6	2	951.00	303.00
4A	Chowdhury Char	1980	6	3	1030.00	948.00
4A	Chowdhury Char	1980	7	1	1030.00	935.00
4A	Chowdhury Char	1980	7	2	1510.00	1080.00
4A	Chowdhury Char	1980	7	3	1900.00	1560.00
4A	Chowdhury Char	1980	8	1	1850.00	1800.00
4A	Chowdhury Char	1980	8	2	2160.00	1870.00
4A	Chowdhury Char	1980	8	3	2260.00	2040.00
4A	Chowdhury Char	1980	9	1	2060.00	1900.00
4A	Chowdhury Char	1980	9	2	1860.00	1490.00
4A	Chowdhury Char	1980	9	3	1440.00	1260.00
4A	Chowdhury Char	1980	10	1	1230.00	809.00
4A	Chowdhury Char	1980	10	2	788.00	545.00
4A	Chowdhury Char	1980	10	3	653.00	468.00
4A	Chowdhury Char	1980	11	1	495.00	104.00

### 1.6 View Report of Details River as Tabular Format

After river selection then Click on 'View Report' Button to view River Details Information (Figure 3.10)

#### River Information

Home / List of Rivers / River Information

Back to List
Print

General Information
 Hydrology
 Morphology
 Water Uses
 Ecology
 Structure
 Map

নদীর নাম: আত্রাই

আইডি নং: NW-2

১. সাধারণ তথ্যাবলি

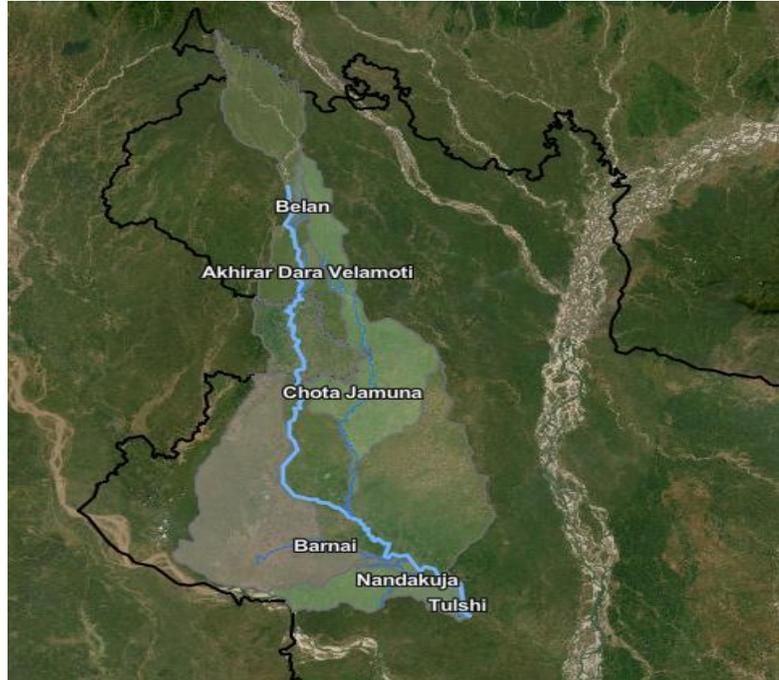
১.১	বর্ণনা	<p>আত্রাই নদীটি বাংলাদেশের উত্তর-পশ্চিমাঞ্চলের একটি আন্তঃসীমান্ত নদী। সর্পিলাকার এই নদীটি দিনাজপুর জেলার বানাসামা উপজেলার আলোকখাড়া ইউনিয়নের করতোয়া নদী থেকে উৎপন্ন হয়েছে। নদীটি বানাসামা উপজেলায় সিয়া সেতুর কিছুটা উজান থেকে ছোট আত্রাই নাম ধারণ করে যাত্রা শুরু করে। পরবর্তীতে নদীটি দিনাজপুর জেলার সদর উপজেলার শংকরপুর ইউনিয়নে এসে আত্রাই নাম ধারণ করে ভারতে প্রবেশ করে, ভারতের মধ্য দিয়ে প্রবাহিত হয়ে পুনরায় নওগাঁ জেলার ধানুহাট উপজেলার আলমপুর ইউনিয়ন দিয়ে বাংলাদেশে প্রবেশ করে এবং পাবনা জেলার তাড়াইকা উপজেলার অষ্টমখিয়া ইউনিয়নের গুমাদী নদীতে পতিত হয়েছে। বাশাই, গদাই, বেলান, আখিয়ার ডারা ভেলামতি, ছোট যমুনা, মন্দকুজা এবং তুলশী এই নদীর উপনদী। ঢেপা, গভেশ্বরী, শীব ও ফকিরকণী এই নদীর শাখা-নদী। নিরমখালী বাল, আত্রাই (নওগাঁ-নাটোর)/গড়, বেলানী, আত্রাই (দিনাজপুর) এই নদীর আন্তঃশাখা নদী। নদীটিতে সবসময়ই পানির প্রবাহ থাকে এবং সারাবছরই এ নদীতে নৌকা চলাচল করে। গুত মৌসুমে নদীর কিছু অংশে মাটির বাঁধ দিয়ে পানি আটকিয়ে তা সেচ কাজে ব্যবহার করা হয়। আবার বর্ষা মৌসুমে নদীর পানির প্রবাহ বেড়ে যায় এসময় নদীর দু'কূল উপত্যকে পানি গ্লাবনভূমির মধ্য দিয়ে প্রবাহিত হয়। নদীটিতে যথেষ্ট পরিমাণের উপস্থিতি লক্ষ্য করা যায় এবং বেশ কিছু অবকাঠামো রয়েছে। এই নদীটি বাংলাদেশ অভ্যন্তরীণ নৌ-পরিবহন কর্তৃপক্ষের নির্ধারিত তৃতীয় শ্রেণির নৌপথের অন্তর্ভুক্ত।</p>
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Figure 3.10: Display Result of View Report of Details River as Tabular Format

**1.7 Visualize catchment, Tributaries and other parameters like Water Level , Discharge of selected rivers**

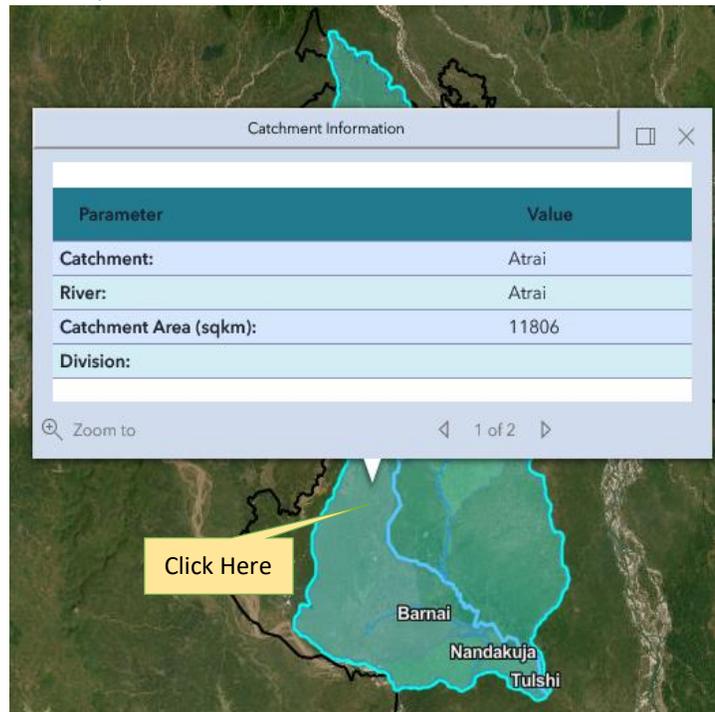
Step 1: Check on Catchment Checkbox to add catchment layer

Step 2: Check on Tributaries to add Tributaries layer (Figure 3.11).



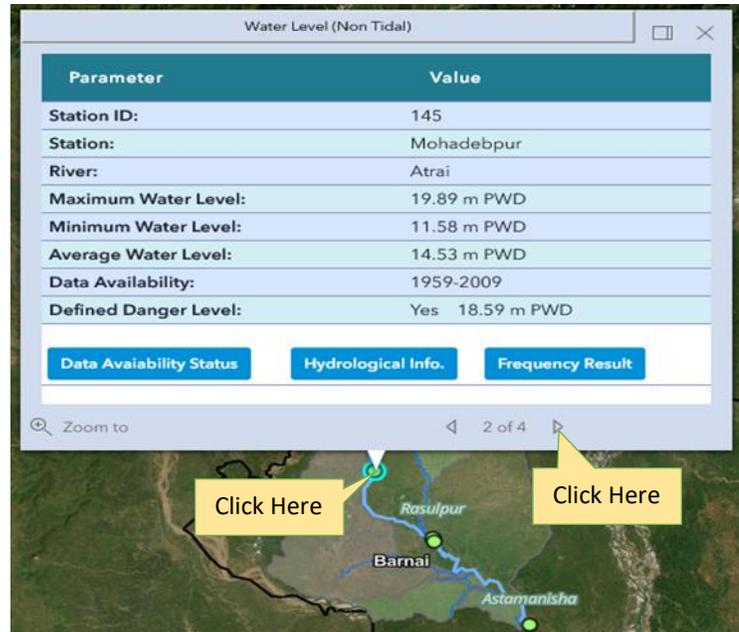
**Figure 3.11: Display after adding Catchment layer with tributaries**

Step 3: Click on Catchment Portion on Map Window to view catchment Information (Figure 3.12).



**Figure 3.12: Display Catchment Information of Selected River**

Step 4: Check on Water Level to add the stations of Water Level of Selected Catchment and click on target station to view data (Figure 3.13)



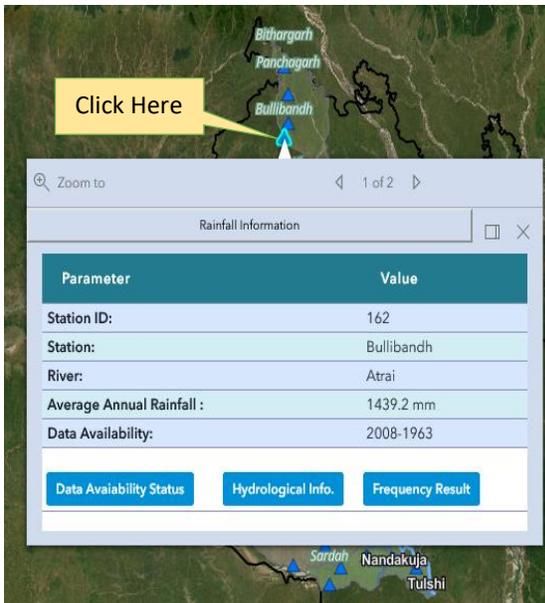
**Figure 3.13: Display Water Level Information**

Step 5: Check on Discharge to add the stations of Discharge of selected Catchment and click on target station to view data (Figure 3.14).



**Figure 3.14: Display Discharge Information**

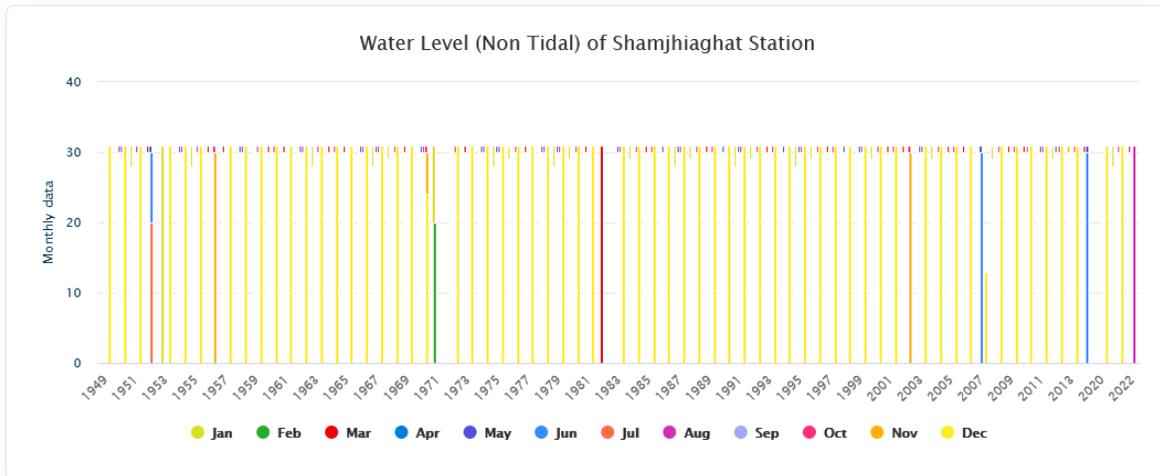
Step 6: Check on Rainfall to add the stations of Discharge of selected Catchment and click on target station to view data (Figure 3.15).



**Figure 3.15: Display Rainfall Information**

**1.8 Data Availability of Water Level, Discharge and Rainfall from Popup Window**

To view data Availability, click on 'Data Availability Status' Button and the status will be displayed in Tabular and Graph Format (Figure 3.16, 3.17).



**Figure 3.16: Display the status of data availability in Graph Format**

Water Level (Non Tidal) of Shamjhiaghat Station												
Year	January	February	March	April	May	June	July	August	September	October	November	December
1949	0	0	0	0	0	10	31	31	30	31	30	31
1950	31	28	31	30	31	30	31	31	30	31	30	31
1951	31	28	31	30	31	30	31	31	30	31	30	31
1952	31	29	31	30	31	30	20	0	0	0	0	0
1953	31	0	0	0	0	0	0	31	30	31	30	31
1954	31	0	31	30	31	30	31	31	30	31	30	31
1955	31	28	31	30	31	30	31	31	30	31	30	31
1956	31	29	31	30	31	30	31	31	30	31	30	0
1957	31	28	31	30	31	30	31	31	30	31	30	31
1958	31	28	31	30	31	30	31	31	30	31	30	31
1959	0	0	0	30	31	30	31	31	30	31	30	31
1960	31	29	31	30	31	30	31	31	30	31	30	31
1961	31	28	31	30	31	30	31	31	30	31	30	31
1962	31	28	31	30	31	30	31	31	30	31	30	31
1963	31	28	31	30	31	30	31	31	30	31	30	31
1964	31	29	31	30	31	30	23	31	30	31	30	31
1953	31	0	0	0	0	0	0	31	30	31	30	31
1954	31	0	31	30	31	30	31	31	30	31	30	31
1955	31	28	31	30	31	30	31	31	30	31	30	31
1956	31	29	31	30	31	30	31	31	30	31	30	0
1957	31	28	31	30	31	30	31	31	30	31	30	31
1958	31	28	31	30	31	30	31	31	30	31	30	31
1959	0	0	0	30	31	30	31	31	30	31	30	31
1960	31	29	31	30	31	30	31	31	30	31	30	31

Figure 3.17: Display the status of data availability in Tabular Format

### 1.9 Hydrological Status of Water Level, Discharge and Rainfall from Popup Window

To view data Availability, click on 'Hydrological Status' Button and the status will be displayed in Tabular and Graph Format (Figure 3.18, 3.19).

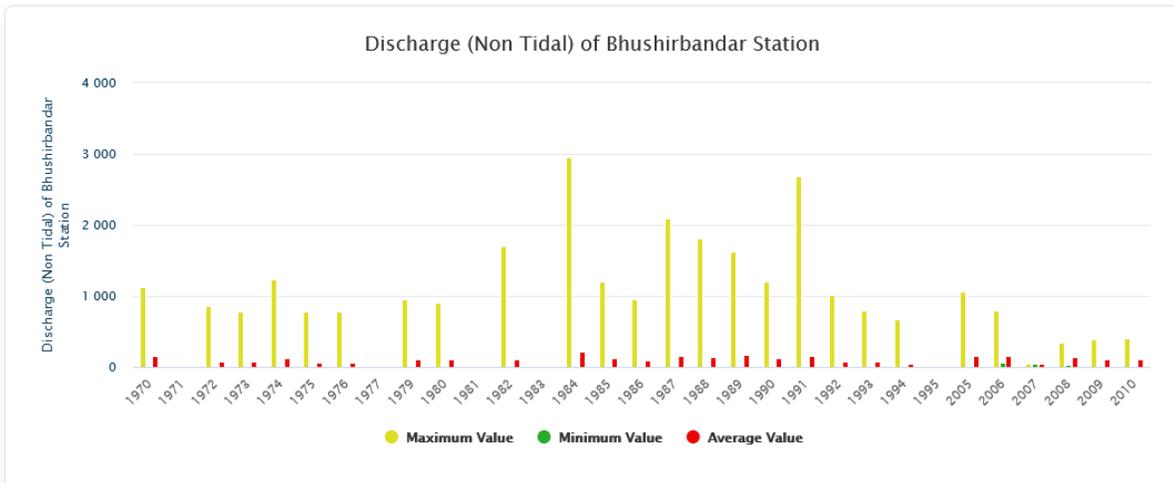


Figure 3.18: Display Hydrological Status in Graph Format

Discharge (Non Tidal) of Bhushirbandar Station					
Station	Year	Maximum Value	Minimum Value	Average Value	Sum
142.1	1970	1120	14.2	148.45714285714286	54038.4
142.1	1971	20.9	12.7	17.420454545454547	766.5
142.1	1972	852	8.91	80.19167272727273	22052.71
142.1	1973	784	6.23	80.6617808219178	29441.55
142.1	1974	1230	8.07	123.03583561643836	44908.08
142.1	1975	787	3.11	70.15435616438356	25606.34
142.1	1976	778	8.72	65.14968208092486	22541.79
142.1	1977	8.01	6.08	6.913636363636364	380.25
142.1	1979	948	3.93	104.21729411764706	26575.41
142.1	1980	908	11.2	107.44518828451884	25679.4
142.1	1981	17.9	8.18	12.790666666666667	1151.16
142.1	1982	1710	10.2	110.45037313432836	29600.7
142.1	1970	1120	14.2	148.45714285714286	54038.4
142.1	1971	20.9	12.7	17.420454545454547	766.5
142.1	1970	1120	14.2	148.45714285714286	54038.4
142.1	1971	20.9	12.7	17.420454545454547	766.5
142.1	1972	852	8.91	80.19167272727273	22052.71
142.1	1973	784	6.23	80.6617808219178	29441.55
142.1	1974	1230	8.07	123.03583561643836	44908.08
142.1	1975	787	3.11	70.15435616438356	25606.34
142.1	1976	778	8.72	65.14968208092486	22541.79
142.1	1977	8.01	6.08	6.913636363636364	380.25
142.1	1979	948	3.93	104.21729411764706	26575.41
142.1	1980	908	11.2	107.44518828451884	25679.4
142.1	1981	17.9	8.18	12.790666666666667	1151.16
142.1	1982	1710	10.2	110.45037313432836	29600.7
142.1	1983	19.3	10.1	14.766666666666667	1329
142.1	1984	2950	9.49	211.8992337164751	55305.7
142.1	1985	1210	12.9	124.32	39160.8
142.1	1986	948	11.6	100.38304498269896	29010.7
142.1	1987	2090	11.2	160.28438356164384	58503.8
142.1	1988	1820	13.1	134.39441340782122	48113.2

Figure 3.19: Display Hydrological Status in Tabular Format

### 1.10 Frequency Analysis of Water Level, Discharge and Rainfall from Popup Window

To view the result of frequency analysis, click on 'Frequency Result' Button and the status will be displayed in Tabular (Figure 3.20, 3.21).

Frequency Analysis of Yearly Discharge Data (Non-Tidal Rivers)		
StationId	ReturnPeriod	Discharge(m3/sec)
142.1	5	1986.55
142.1	10	2435.66
142.1	15	2661.09

Close

Figure 3.20: Display result of frequency in Tabular Format

### 1.11 Frequency Analysis of Water Level, Discharge and Rainfall from Data Layer Panel

**Figure 3.21: Selection Panel of Frequency Analysis**

After clicking the 'Get Frequency Result' Button, Frequency Result will be displayed.

Frequency Analysis of Yearly Discharge Data (Non-Tidal Rivers) ×

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StationId	ReturnPeriod	Discharge(m3/sec)
142.1	5	1986.55
142.1	10	2435.66
142.1	15	2661.09

---

Close

**Figure 3.22: Display result of Frequency Analysis**

**1.12 Hydrological Status of Water Level, Discharge and Rainfall from Data Layer Panel**

**Figure 3.23: Selection Panel of Hydrological Status**

After clicking the 'Get Hydro Result' Button, Hydrological Status will be displayed in Tabular and Graph (Figure 3.23).

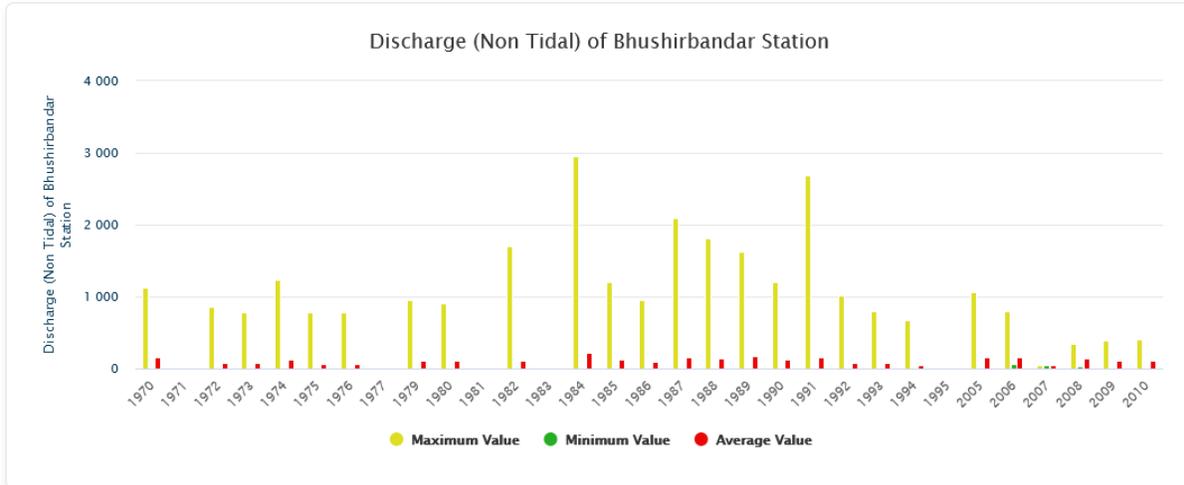


Figure 3.23: Display Hydrological Status in Tabular Format from data Layer Panel

Discharge (Non Tidal) of Bhushirbandar Station					
Station	Year	Maximum Value	Minimum Value	Average Value	Sum
142.1	1970	1120	14.2	148.45714285714286	54038.4
142.1	1971	20.9	12.7	17.420454545454547	766.5
142.1	1972	852	8.91	80.19167272727273	22052.71
142.1	1973	784	6.23	80.6617808219178	29441.55
142.1	1974	1230	8.07	123.03583561643836	44908.08
142.1	1975	787	3.11	70.15435616438356	25606.34
142.1	1976	778	8.72	65.14968208092486	22541.79
142.1	1977	8.01	6.08	6.913636363636364	380.25
142.1	1979	948	3.93	104.21729411764706	26575.41
142.1	1980	908	11.2	107.44518828451884	25679.4
142.1	1981	17.9	8.18	12.790666666666667	1151.16
142.1	1982	1710	10.2	110.45037313432836	29600.7
142.1	1970	1120	14.2	148.45714285714286	54038.4
142.1	1971	20.9	12.7	17.420454545454547	766.5
142.1	1972	852	8.91	80.19167272727273	22052.71
142.1	1973	784	6.23	80.6617808219178	29441.55
142.1	1974	1230	8.07	123.03583561643836	44908.08
142.1	1975	787	3.11	70.15435616438356	25606.34
142.1	1976	778	8.72	65.14968208092486	22541.79
142.1	1977	8.01	6.08	6.913636363636364	380.25
142.1	1979	948	3.93	104.21729411764706	26575.41
142.1	1980	908	11.2	107.44518828451884	25679.4
142.1	1981	17.9	8.18	12.790666666666667	1151.16
142.1	1982	1710	10.2	110.45037313432836	29600.7
142.1	1983	19.3	10.1	14.766666666666667	1329
142.1	1984	2950	9.49	211.8992337164751	55305.7
142.1	1985	1210	12.9	124.32	39160.8
142.1	1986	948	11.6	100.38304498269896	29010.7
142.1	1987	2090	11.2	160.28438356164384	58503.8
142.1	1988	1820	13.1	134.39441340782122	48113.2

Figure 3.24: Display Hydrological Status in Tabular Format from data Layer Panel

1.13 Data Availability of Water Level, Discharge and Rainfall from Data Layer Panel

Data Availability ^

Parameter ▾

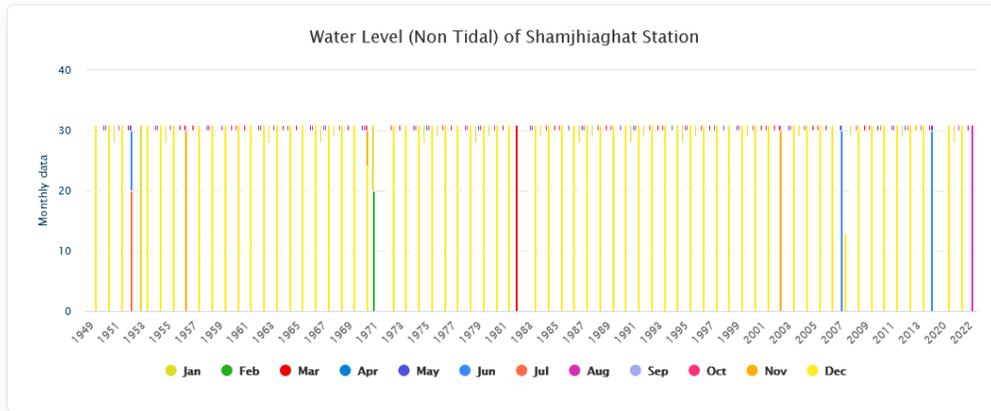
--Select--

Station ▾

Data Availability

Figure 3.25: Selection Panel of Data Availability

After clicking the 'Data Availability' Button, data availability will be displayed



**Figure 3.26: Display the status of data availability in Graph Format**

Water Level (Non Tidal) of Shamjhiaghat Station												
Year	January	February	March	April	May	June	July	August	September	October	November	December
1949	0	0	0	0	0	10	31	31	30	31	30	31
1950	31	28	31	30	31	30	31	31	30	31	30	31
1951	31	28	31	30	31	30	31	31	30	31	30	31
1952	31	29	31	30	31	30	20	0	0	0	0	0
1953	31	0	0	0	0	0	0	31	30	31	30	31
1954	31	0	31	30	31	30	31	31	30	31	30	31
1955	31	28	31	30	31	30	31	31	30	31	30	31
1956	31	29	31	30	31	30	31	31	30	31	30	0
1957	31	28	31	30	31	30	31	31	30	31	30	31
1958	31	28	31	30	31	30	31	31	30	31	30	31
1959	0	0	0	30	31	30	31	31	30	31	30	31
1960	31	29	31	30	31	30	31	31	30	31	30	31
1961	31	28	31	30	31	30	31	31	30	31	30	31
1962	31	28	31	30	31	30	31	31	30	31	30	31
1963	31	28	31	30	31	30	31	31	30	31	30	31
1964	31	29	31	30	31	30	23	21	20	21	20	21
1965	31	0	0	0	0	0	0	31	30	31	30	31
1966	31	0	31	30	31	30	31	31	30	31	30	31
1967	31	28	31	30	31	30	31	31	30	31	30	31
1968	31	29	31	30	31	30	31	31	30	31	30	0
1969	31	28	31	30	31	30	31	31	30	31	30	31
1970	31	28	31	30	31	30	31	31	30	31	30	31
1971	0	0	0	30	31	30	31	31	30	31	30	31
1972	31	29	31	30	31	30	31	31	30	31	30	31
1973	31	28	31	30	31	30	31	31	30	31	30	31
1974	31	28	31	30	31	30	31	31	30	31	30	31
1975	31	28	31	30	31	30	31	31	30	31	30	31
1976	31	28	31	30	31	30	31	31	30	31	30	31
1977	31	28	31	30	31	30	31	31	30	31	30	31
1978	31	28	31	30	31	30	31	31	30	31	30	31
1979	31	28	31	30	31	30	31	31	30	31	30	31
1980	31	28	31	30	31	30	31	31	30	31	30	31
1981	31	28	31	30	31	30	31	31	30	31	30	31
1982	31	28	31	30	31	30	31	31	30	31	30	31
1983	31	28	31	30	31	30	31	31	30	31	30	31
1984	31	28	31	30	31	30	31	31	30	31	30	31
1985	31	28	31	30	31	30	31	31	30	31	30	31
1986	31	28	31	30	31	30	31	31	30	31	30	31
1987	31	28	31	30	31	30	31	31	30	31	30	31
1988	31	28	31	30	31	30	31	31	30	31	30	31
1989	31	28	31	30	31	30	31	31	30	31	30	31
1990	31	28	31	30	31	30	31	31	30	31	30	31
1991	31	28	31	30	31	30	31	31	30	31	30	31
1992	31	28	31	30	31	30	31	31	30	31	30	31
1993	31	28	31	30	31	30	31	31	30	31	30	31
1994	31	28	31	30	31	30	31	31	30	31	30	31
1995	31	28	31	30	31	30	31	31	30	31	30	31
1996	31	28	31	30	31	30	31	31	30	31	30	31
1997	31	28	31	30	31	30	31	31	30	31	30	31
1998	31	28	31	30	31	30	31	31	30	31	30	31
1999	31	28	31	30	31	30	31	31	30	31	30	31
2000	31	28	31	30	31	30	31	31	30	31	30	31
2001	31	28	31	30	31	30	31	31	30	31	30	31
2002	31	28	31	30	31	30	31	31	30	31	30	31
2003	31	28	31	30	31	30	31	31	30	31	30	31
2004	31	28	31	30	31	30	31	31	30	31	30	31
2005	31	28	31	30	31	30	31	31	30	31	30	31
2006	31	28	31	30	31	30	31	31	30	31	30	31
2007	31	28	31	30	31	30	31	31	30	31	30	31
2008	31	28	31	30	31	30	31	31	30	31	30	31
2009	31	28	31	30	31	30	31	31	30	31	30	31
2010	31	28	31	30	31	30	31	31	30	31	30	31
2011	31	28	31	30	31	30	31	31	30	31	30	31
2012	31	28	31	30	31	30	31	31	30	31	30	31
2013	31	28	31	30	31	30	31	31	30	31	30	31
2014	31	28	31	30	31	30	31	31	30	31	30	31
2015	31	28	31	30	31	30	31	31	30	31	30	31
2016	31	28	31	30	31	30	31	31	30	31	30	31
2017	31	28	31	30	31	30	31	31	30	31	30	31
2018	31	28	31	30	31	30	31	31	30	31	30	31
2019	31	28	31	30	31	30	31	31	30	31	30	31
2020	31	28	31	30	31	30	31	31	30	31	30	31
2021	31	28	31	30	31	30	31	31	30	31	30	31
2022	31	28	31	30	31	30	31	31	30	31	30	31

**Figure 3.27: Display the status of data availability in Tabular Format**

### 1.14 Summary Information

Check on catchment, Water Level , Discharge and other parameters to view summary information.

### Data Layer View and Analysis

Hydro - Morpho Info

- Catchment
- Sub-Catchment
- Merged - Catchment
- Source/Offtake
- Outfall
- Tributaries
- Distributaries
- Passing Through Upazilas
- BWDB Projects
- River System
- Transboundary River
- Entry Point of Transboundary River
- Cross Section
- Sediment

Hydro-Meterological Stations

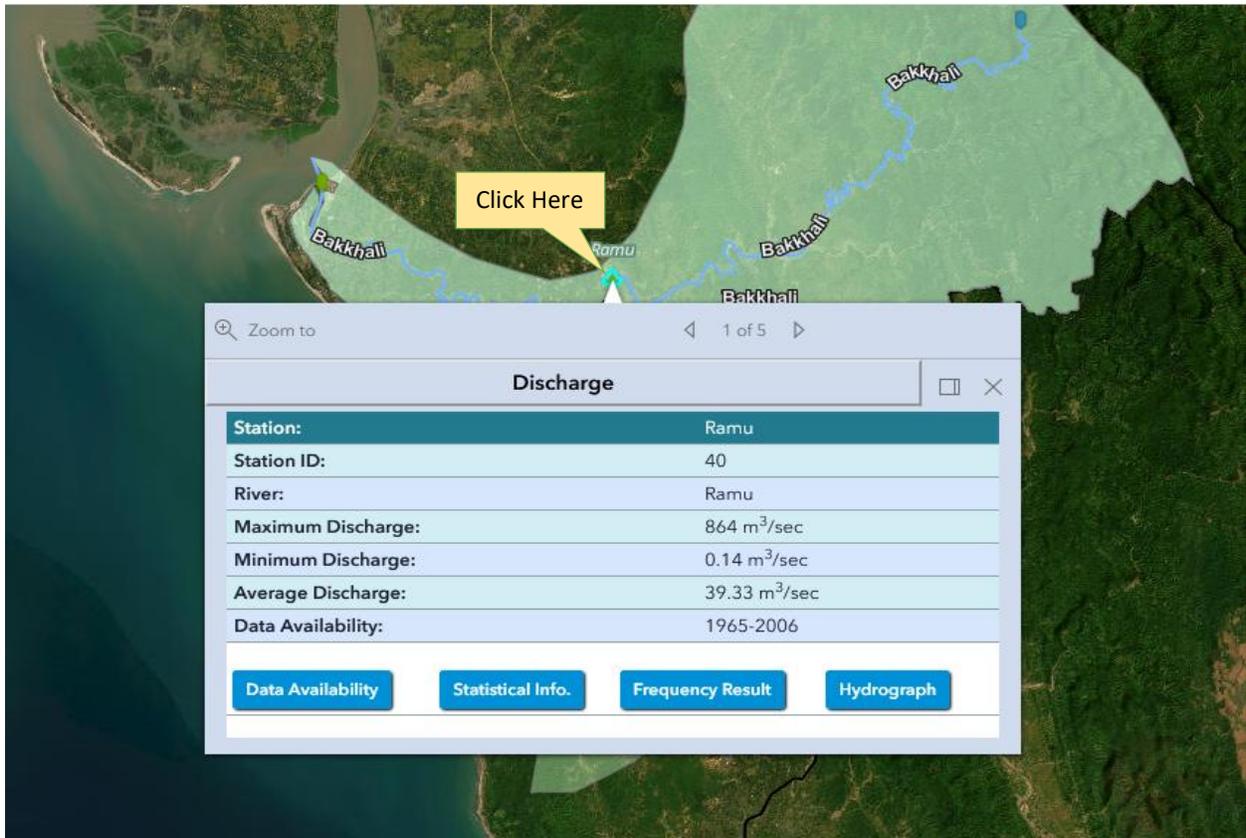
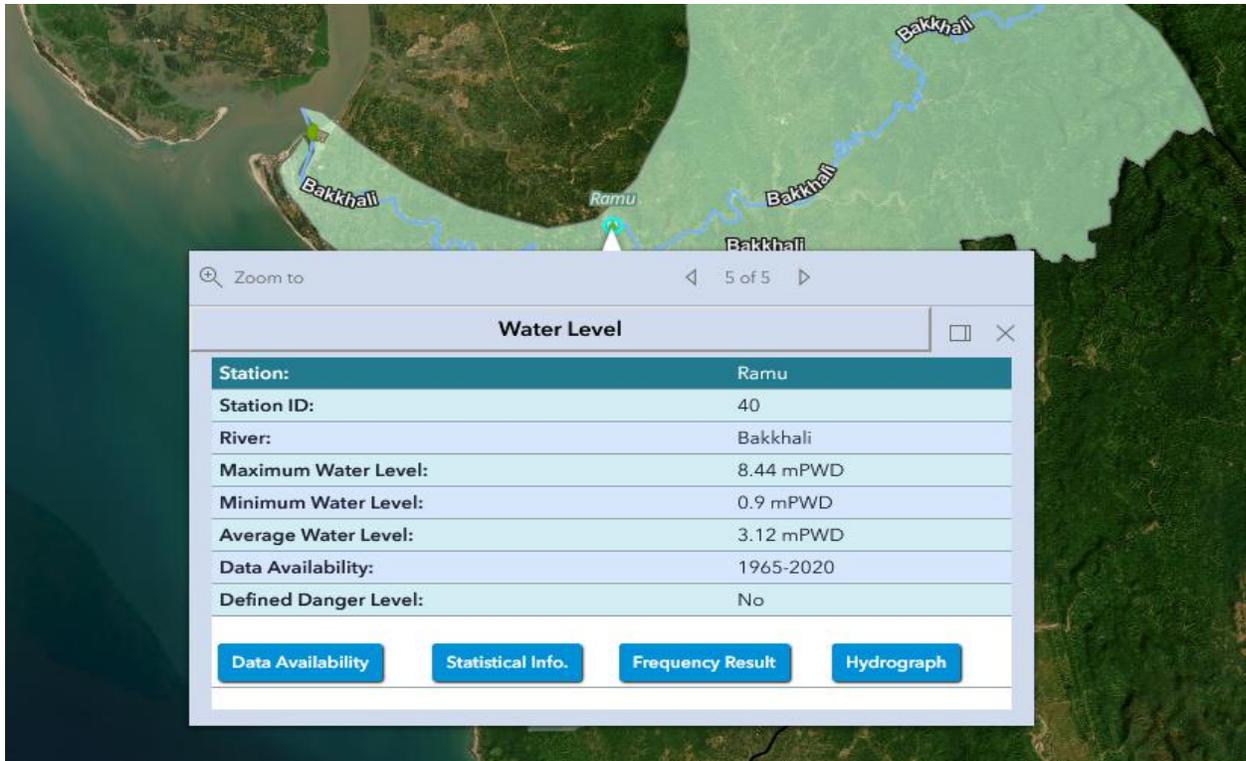
- Water Level
- Discharge
- Rainfall

Bangladesh River Information Management System (BRIMS)

Dashboard | Map Viewer | River Profile | Hydrograph | Others | Login

4 km

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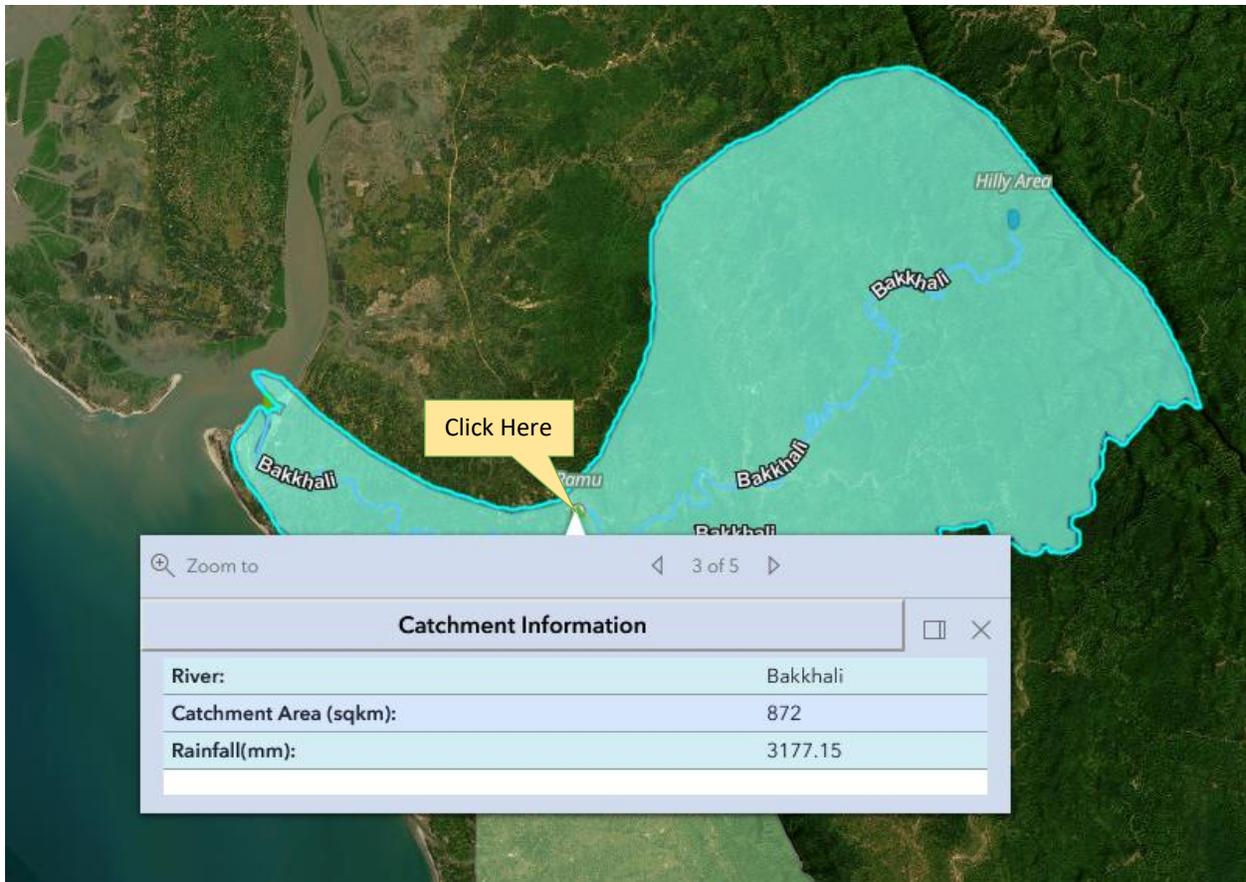


Figure 3.28: Display Summary Information

### 1.15 Backend Layer

Users can be able to change the backend layer in the Map Window.

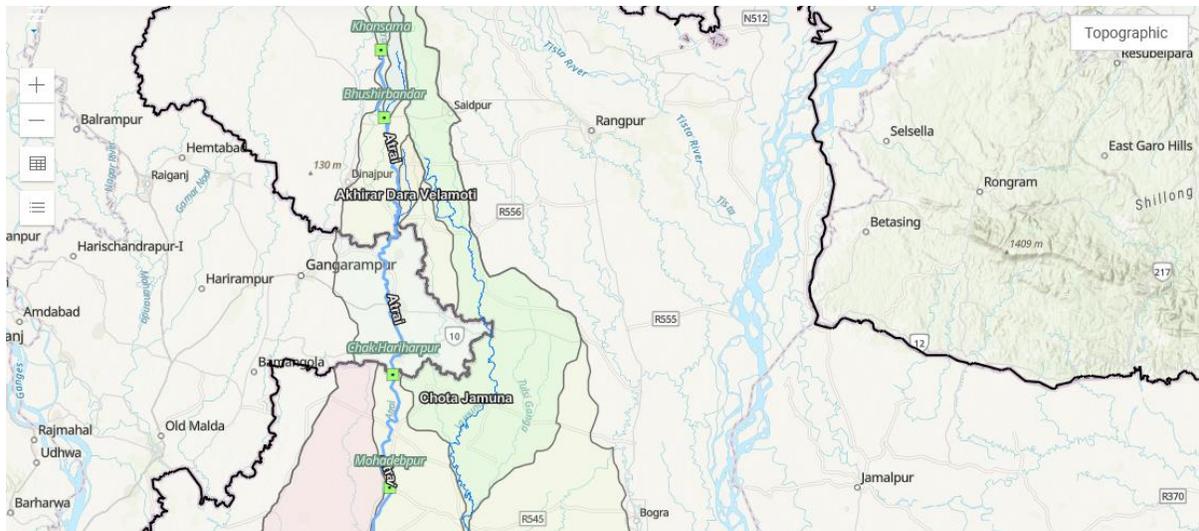


Figure 3.29: Backend Layer

## 2. River Profile

In this module, users can search and view rivers information by Hydrological Region, river name or river ID. User can also Add/Update/Delete River information in this module. To search and view river information, **select** the **River Profile** menu option, it will open the river profile page. (Figure 4.1).

**Bangladesh River Information Management System (BRIMS)**

Dashboard | Map Viewer | **River Profile** | Hydrograph | Others | Access Control

**Hydrological Region**

List of Rivers

Hydrological Region  Admin Boundary

Hydrological Region: -- Select --

River List: Choose one or more River(s)

View River Details (EN) (Based on data availability)

View River Details (BN) (Based on data availability)

View River Details (Full) (Basad on data fields)

**Admin Boundary**

List of Rivers

Hydrological Region  Admin Boundary

Division: Barishal

District: Barguna

River List: x Amtali (SW-173) x Andarmanick (SW-4)

View River Details (Based on data availability)

View River Details (Basad on data fields)

River List

Show 10 entries

SN	River Name	River Id	River Type	Planform	Action
1	Amtali	SW-173	A (In dimension): Small B (In seasonality): Perennial C (Transboundary): No	Meandering	EN BN Full
2	Andarmanick	SW-4	A (In dimension): Medium B (In seasonality): Perennial C (Transboundary): No	Meandering	EN BN Full

Showing 1 to 2 of 2 entries

Previous 1 Next

Figure 4.1: Add/Update Inspection Information

## 2.1 Steps of Searching and selection of rivers

To search and view the river list or individual details, **click** on the Hydrological Region, then **select** a Region. A list of rivers will be loaded to the River list.

Then **select** one or more or all rivers from river list of the selected region (Figure 4.2).

## 2.2 Searching Results or Selected Rivers Information Report

### 2.2.1 Searching Results

A data table will load below as search result with selected River list information. In every row there are two buttons at the right side (Figure 4.3).

- (a) Edit Button
- (b) View Button

**Hydrological Region**

Hydrological Region: Eastern-Hills

River List: × Bakkhali (EH-9) × Bara Bilai (EH-17)

Select one or more or all rivers

View River Details (EN) (Based on data availability)

View River Details (BN) (Based on data availability)

View River Details (Full) (Basad on data fields)

River List

Add New River Show All Rivers

Show 10 entries Search:

SN	River Name	River Id	River Type	Planform	Action
1	Bakkhali	EH-9	A (In dimension): Small B (In seasonality): Seasonal C (Transboundary): No	Meandering	Edit EN BN Full
2	Bara Bilai	EH-17	A (In dimension): Small B (In seasonality): Seasonal C (Transboundary): No	Meandering	Edit EN BN Full

Showing 1 to 2 of 2 entries Previous 1 Next

**English**

**Full View**

**Bangla View**

**Edit**

Figure 4.2: Searching and selection of rivers

### (a) Edit Button

To edit/update river information click on the edit button. A new page will open with the river information in 6 tabs (Figure 4.4).

**Bangladesh River Information Management System (BRIMS)**

Dashboard | Map Viewer | **River Profile** | Hydrograph | Others | Access Control

**Update River Information**  
Home / List of Rivers / Update River Information

[Back to List](#) [Click Here](#)

General Description | Hydrological Information | Morphological Information | Water Uses | Ecological Information | Structural Information | Map **6 Tabs**

**General Information**

**\*\*\*NOTE: Press Ctrl+M to switch to English in the Bangla textboxes. Hit Space, Enter or Tab to transliterate.**

Zone **★** Eastern-Hills | River Name (Bengali) **★** বাকখালী | River Name (English) **★** Bakkhali  
 \*\*\*NOTE: Type Bangla Unicode

River Id (Code) **★** EH-9 | River Local Name (Bengali) | River Local Name (English)  
 \*\*\*NOTE: Type Bangla Unicode

Description (Maximum 330/4000 Bangla Characters) | Description (Maximum 0/4000 English Characters)

বাকখালী বাংলাদেশের পূর্ব-পাহাড়ী অঞ্চলের একটি অভ্যন্তরীণ নদী। নদীটি বান্দরবান জেলার নাইক্ষ্যংছড়ি উপজেলার দোছড়ি ইউনিয়নের পাহাড়ী এলাকা হতে উৎপন্ন হয়ে কক্সবাজার জেলার সদর উপজেলার খুরুশকুল ইউনিয়ন দিয়ে প্রবাহিত হয়ে মহেশখালী চ্যানেলে পতিত হয়েছে। বামহাতির ছড়া রামু উপজেলায় এই নদীর সাথে মিলিত হয়। কক্সবাজার পৌরসভা এই নদীর তীরে অবস্থিত।

\*\*\*NOTE: Type Bangla Unicode

Transboundary (Yes/No) **★** No | Transboundary JRC (Yes/No) **★** No | River Type (In Dimension) Small (ছোট) | River Type (In Seasonality) Seasonal (মৌসুমী)

Planform Meandering | State of River Equilibrium (স্থিতাবস্থা) | Length (2023) 81.00 | Length (2011)

**Figure 4.4: Edit Data**

**(b) View(EN version)**

To view the selected river information click on the View button from the data table. A new page will open with the river information in **view mode** (Figure 4.5)



River Profile

Home / List of Rivers / River Information

Back to List | Print

Select Option

General Information  Hydrology  Morphology  Water Uses  Ecology  Structure  Map

River Name: Abua (Nandia Gang) Id No.: NE-2

1. General Information

1.1	Description	:	
1.2	River Type	:	In terms of dimension: Small In terms of seasonality: Seasonal
1.3	Planform	:	Meandering

1.4 River Source/Entrance/Outfall

	River/Lowland/Mountain/Sea	Mauza	Union	Upazila	District	Division	Latitude	Longitude
Source/Entry Point	Jadukata River	Uttar Daulatpur	Fatehpur	Bishwambharpur	Sunamganj	Sylhet	25.065138	91.269135
Outfall	Baulai (Balua) River	Paindab	Dakkhin Sreepur	Tahirpur	Sunamganj	Sylhet	25.04122753	91.13388982

1.5	Length	:	22 km
1.6	Width	:	Max: 120 m      Avg: 80 m      Min: 45 m

River Profile  
[List of Rivers](#) / [River Information](#)

[Back to List](#)
[Print](#)

General Information
  Hydrology
  Morphology
  Water Uses
  Ecology
  Structure
  Map

River Name: **Abua (Nandia Gang)** Id.No.: NE-2

**1. General Information**

1.1	Description	-
1.2	River Type	- In terms of dimension: Small - In terms of seasonality: Seasonal
1.3	Planform	- Meandering

**1.4 River Source/Entrance/Outfall**

River/Lowland/Mouth/Sea	Source	Union	Upazila	District	Division	Latitude	Longitude	
Source/Entry Point	Jadukata River	Uttar Dadagpur	Fatehpur	Bishwambhargur	Sonamganj	Sylhet	25.065139	91.269135
Outfall	Baulai (Balu) River	Paundab	Dakshin Dweepur	Tahirpur	Sonamganj	Sylhet	25.04123753	91.13388992

1.5	Length	-	22 km
1.6	Width	-	Max: 120 m Avg: 80 m Min: 45 m

**1.7 River Flowing Location**

Upazila	District	Division
Tahirpur, Bishwambhargur, Jamalganj	Sonamganj	Sylhet

1.8	Municipalities/towns/ports at the banks of rivers	-
1.9	Tributary	- No
1.10	Distributary	- No
1.11	Branch River	-
1.12	Connectivity with Khal	-
1.13	Navigation Route Class	- Undefined
1.14	Salinity	- Non-Salinity

**2. Hydrological Information**

2.1	Tidal Effect	-	No
-----	--------------	---	----

2.2	Station	-	No Station Exist
-----	---------	---	------------------

2.3	Water Level	-	No Station Exist
-----	-------------	---	------------------

2.4	Catchment Area	-	43 km <sup>2</sup>
-----	----------------	---	--------------------

2.5	Bank Overlapping During Medium Flood	-	Yes
-----	--------------------------------------	---	-----

**3. Morphological Information**

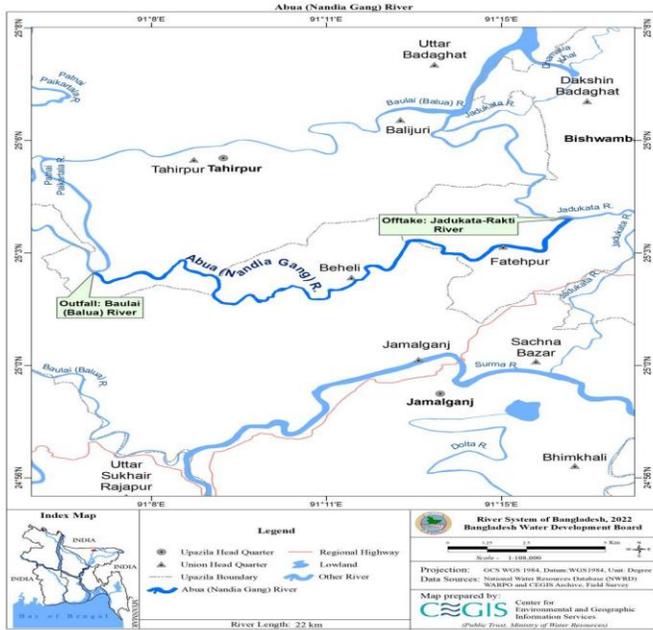
3.1	Physiographic Unit	-	Northern and Eastern Piedmont Plains Sylhet Basin
3.2	Terrain Slope (m/ha)	-	16.4

**4. Water Uses**

4.1	Agriculture/Irrigation Projects	-
4.2	Flood Control Drainage and Irrigation Projects	-

**5. Ecological Information**

5.1	Ecologically Critical Area (ECA)	-	Not included in the list of Department of Environment (DoE)
-----	----------------------------------	---	---



[Back to List](#)
[Print](#)

Figure 4.5: View Data

## 2.2.2 Selected Rivers Information Report

Now, If the user click on the **View Selected River Details** button a new page will load with selected river information as a printable report (Figure 4.6). This report will contain all the selected rivers information one after the another (Figure 4.6).

**Bangladesh River Information Management System (BRIMS)**

Dashboard | Map Viewer | River Profile | Hydrograph | Others | Access Control

**River Profile**  
Home / List of Rivers / River Information

Back to List | **Print** (Print Button)

General Information  Hydrology  Morphology  Water Uses  Ecology  Structure  Map

River Name: Abua (Nandia Gang) | Id No.: NE-2

**1. General Information**

1.1	Description	:	
1.2	River Type	:	In terms of dimension: Small In terms of seasonality: Seasonal
1.3	Planform	:	Meandering

Figure 4.6: River Information

Then click on the Print button to print the report (Figure 4.7).

**নদীর নাম: আবুয়া-মাক্কা** | আইডি নং: NW-1

**1. সাধারণ তথ্যাবলি**

1.1	কন্যা	:	আবুয়া মাক্কা বাংলাদেশের উত্তর পশ্চিমাঞ্চলের একটি আকর্ষণীয় নদী। নদীটি রংপুর জেলার মিঠাপুকুর উপজেলার খোড়াহাট ইউনিয়নের খোয়া ভূমি বিল থেকে উৎপত্তি হয়েছে। নদীটি গতিপথে বিভিন্ন পৌরসভার কাছাকাছি প্রবাহিত করে মিঠাপুকুর জেলার খোড়াহাট উপজেলার খোড়াহাট পৌরসভার (ওয়ার্ড নং-০১) কাছাকাছি (বিলাতাবাদী) স্থানীয় পর্যটকদের আকর্ষণ করে এবং নদীতে কয়েকটি পর্যটন কেন্দ্র রয়েছে। এই নদীর একটি উপনদী। (আবুয়া নদীটি মতি মন্ডলের নিকে প্রাচীর গুলিতে যায়।) কক, মৌসুমি নদীকে বলা হয়। বর্ষা ঋতুতে নদীর সুস্থল উপলব্ধি পানি প্রবাহিত হয়। এই নদীতে সৌ-ভাস্কর্য দেখা যায়।
1.2	নদীর প্রকার	:	আবুয়া নদীর উৎস, স্রোত প্রবাহের বিধিবিধি, বৈশিষ্ট্য
1.3	প্রধানকার্য	:	খাদ্যশস্য
1.4	নদীর বর্তমান অবস্থা	:	স্থির/স্থায়ী

**1.১ নদীর উৎসসমূহ/প্রবেশস্থান/পতিতস্থান**

নদী/নিষ্কাশন /স্রোত/স্রোত	উৎস	ইতিমধ্যে	উপজেলার	জেলা	বিভাগ	অক্ষাংশ	স্থানাঙ্ক
উৎসস্রোত/ প্রবেশস্থান	খোয়া ভূমি বিল	আবুয়া	মিঠাপুকুর	রংপুর	রংপুর	২৫° ০৬' ০.০০"	৮৬° ১০' ০০.০০"
পতিতস্থান	ককরোড (পৌরসভা/নদী)	আবুয়া	মিঠাপুকুর	রংপুর	রংপুর	২৫° ১০' ২৮.০০"	৮৬° ১১' ২০.০০"

**1.২ নদীর তীরে অবস্থিত পৌরসভা/শহর/কলক**

উপজেলা	জেলা	বিভাগ
খোড়াহাট, মিঠাপুকুর	রংপুর	রংপুর
খোড়াহাট	মিঠাপুকুর	রংপুর
মিঠাপুকুর, পীরগঞ্জ	রংপুর	রংপুর

**1.৩ প্রারম্ভিক গতিপথ তালিকা**

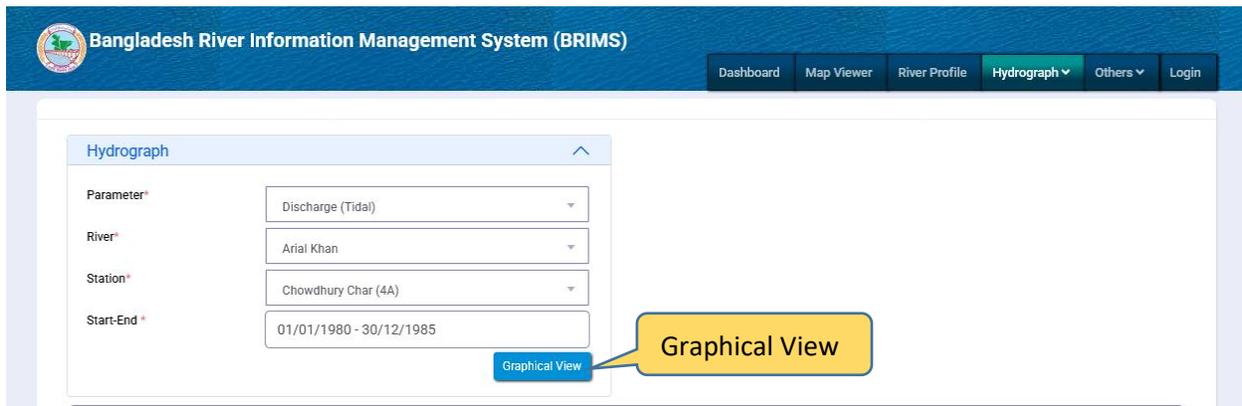
1.৩১	নদীর তীরে অবস্থিত পৌরসভা/শহর/কলক	:	খোড়াহাট পৌরসভা, মিঠাপুকুর, পীরগঞ্জ ও মাদারগাতি
1.৩২	প্রধানকার্য	:	খাদ্য
1.৩৩	নদীর প্রকার	:	খাদ্য
1.৩৪	আবুয়া নদীর	:	খাদ্য
1.৩৫	সংস্করণ	:	খাদ্য
1.৩৬	নদীর প্রকার	:	খাদ্য
1.৩৭	নদীর প্রকার	:	খাদ্য

Print settings: 10 sheets of paper, Destination: Save to PDF, Orientation: Portrait, Pages: All, Color mode: Color, Paper size: A4, Scale: 100%, Margins: Custom (0.70 inches).

Figure 4.7: Print River Information Report

### 3. Hydrograph

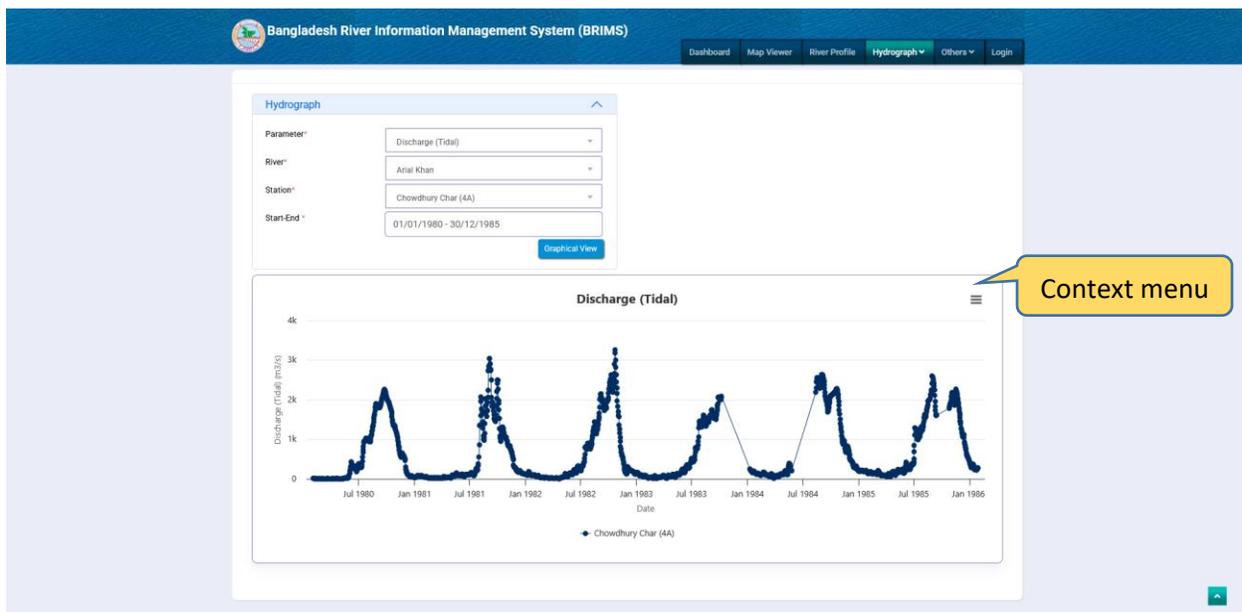
- Click on the **Hydrograph** tab.
- Here is two option **Hydrograph** and **Hydrograph API**
- Enter the required inputs:
  1. **Parameter\***: Select the type of data you want to analyze.
  2. **River\***: Choose the river for which you want to generate the graph.
  3. **Station\***: Select the monitoring station.
  4. **Start-End\***: Specify the date range for the data.
- Click the **Graphical View** button to create the graph based on the input.
- Here also a Context Menu icon for download the graph.



The screenshot shows the BRIMS interface with the 'Hydrograph' tab selected. The input form contains the following fields:

- Parameter\*: Discharge (Tidal)
- River\*: Arial Khan
- Station\*: Chowdhury Char (4A)
- Start-End\*: 01/01/1980 - 30/12/1985

A blue 'Graphical View' button is located below the input fields. A yellow callout box points to this button with the text 'Graphical View'.



The screenshot shows the BRIMS interface with the 'Hydrograph' tab selected. The input form is visible at the top, and a line graph is displayed below it. The graph is titled 'Discharge (Tidal)' and shows the discharge (m<sup>3</sup>/s) over time (Date) from July 1980 to January 1986. The y-axis ranges from 0 to 4k, and the x-axis shows dates from Jul 1980 to Jan 1986. The graph shows a clear seasonal pattern with peaks around 2k-3k m<sup>3</sup>/s and troughs near 0 m<sup>3</sup>/s. A legend at the bottom indicates the data is for 'Chowdhury Char (4A)'. A yellow callout box points to a context menu icon (three horizontal lines) in the top right corner of the graph area with the text 'Context menu'.

## 4. User Manual

To view the user manual **Click** on **User Manual** option from the Menu list at the left panel. The user manual will be open as a pdf file, so that user can read or download it anytime (Figure 5.1).



Figure 5.1: User Manual

## 5. Video Tutorial

A video tutorial has also been uploaded for users to easy understanding. To open the video **click** on the **Video Tutorial** option from the Menu list at the left panel (Figure 6.1).

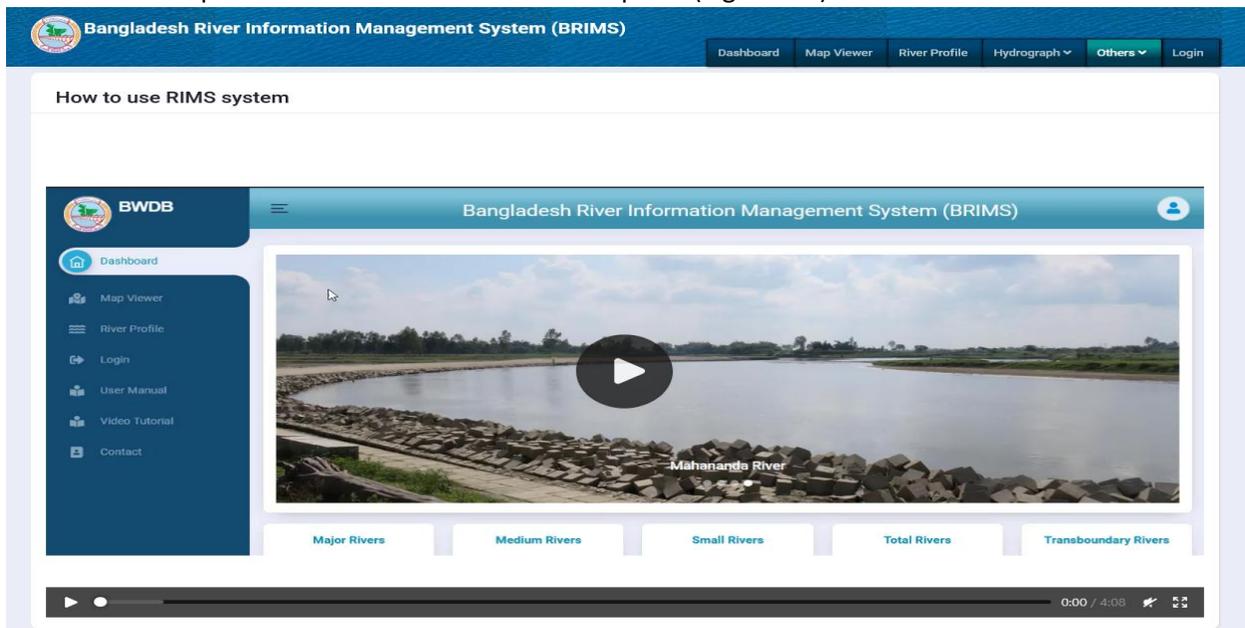


Figure 6.1: Video Tutorial

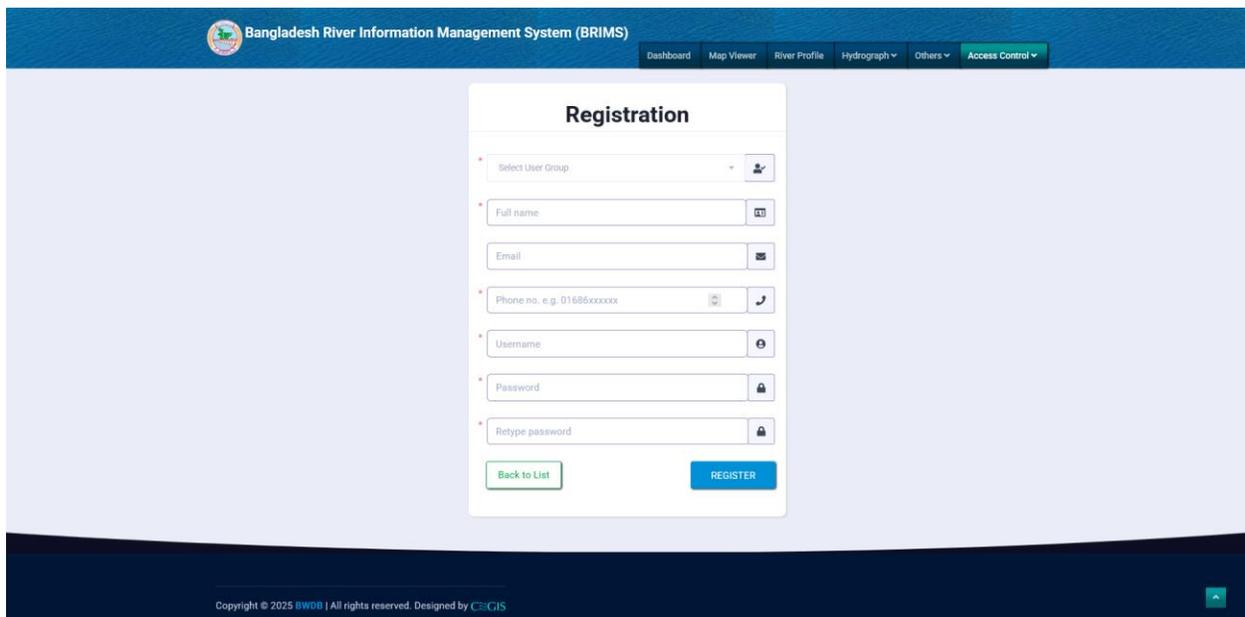
## 6. Access Controls

In this module, an Admin user can access any restricted options such as, deleting some records, any major changes, adding new users, manage users, replying feedbacks and so on. There are five major activities of an Administrator. These are:

- a) User Registration
- b) Manage Users
- c) Change Password

### 6.1 User Registration

The Administrator has the power to create new users whenever required. To open the page, **goto** the **Access Control** menu then **click** on **Register** (Figure 7.1).



The screenshot shows the 'Registration' form within the Bangladesh River Information Management System (BRIMS) interface. The form is titled 'Registration' and is located in the 'Access Control' menu. It contains the following fields and buttons:

- Select User Group:** A dropdown menu with a user icon.
- Full name:** A text input field with a user icon.
- Email:** A text input field with an email icon.
- Phone no. e.g. 01686xxxxxx:** A text input field with a phone icon.
- Username:** A text input field with a user icon.
- Password:** A text input field with a lock icon.
- Retype password:** A text input field with a lock icon.
- Back to List:** A green button.
- REGISTER:** A blue button.

The footer of the page contains the text: 'Copyright © 2025 BWDB | All rights reserved. Designed by C3GIS'.

Figure 7.1: User Registration

## 6.2 Manage Users

Administrator can manage any registered users when required. **Select** an **User ID** from the drop down list. All information will be loaded automatically. Then **update** user **information** such as: changing user level, Designation, Contact Number, Activ Status etc (Figure 7.2).

SL	Full Name	Username	User Group	Ministry	Implementing Agency	Email	Phone No.		
1	A M Mustafa Sorwar	supengmus	BWDB Official	n/a	n/a	supengmus@gmail.com	0100000000		
2	Navid Azam	nza	Data Entry Operator	n/a	n/a	nza@gmail.com	0171111111		
3	Jakia Akter	jaa	Data Entry Operator	n/a	n/a	jaa@gmail.com	0171111111		
4	Md. Rakibul Hasan	ran	Data Entry Operator	n/a	n/a	ran@gmail.com	0171111111		
5	Arif Ikramul Azim	saarif	BWDB Official	n/a	n/a	saarif@gmail.com	0111111111		
6	Muhammad Shahid Shikder	psik	BWDB Official	n/a	n/a	psik@gmail.com			
7	Troyee Ghosh	tgh	Data Entry Operator	n/a	n/a	tgh@gmail.com	0171111111		
8	Erfanur-Bin-Alam	eeaf	Data Entry Operator	n/a	n/a	eeaf@gmail.com	0171111111		
9	Mohammad Soeb	oeb	Data Entry Operator	n/a	n/a	oeb@gmail.com	0171111111		
10	Md Anisur Rahman	arh	Data Entry Operator	n/a	n/a	arh@gmail.com	0111111111		

Figure 7.2: Manage Users

## 6.3 Change Password

Change Password

\*

\*

\*

--- Thank you ---