



River Systems And Flood Dynamics In Colonial Midnapore: A Historical Analysis

DR. MD AJIM ALI

SACT, Department of History, Raja Narendra Lal Khan women's College (Autonomous), Midnapore,
PaschimMedinipur, West Bengal, 721102, India.

Abstract: Our Bengal is a riverine state. Rivers have been a flowing life for ages. Rivers are a common entity of nature. A river does not belong to any territory; a territory belongs to a river. Geographically, in terms of the history of land evolution, this Bengal is ruled by the river system. And a terrible natural disaster is flood. Almost every year, the people of the state are victims of this terrible flood. As a result, in addition to causing damage, life, resources and the environment are being destroyed. Since Midnapore district is located near the Bay of Bengal, the number of rivers here is quite significant. Several rivers like Hooghly, Kansai or Kangsabati, Kaliaghari, Shilai, Dwarkeswar, Subarnarekha flow through Midnapore district. The rivers and reservoirs flowing from the surrounding hilly areas were particularly responsible for the floods in this district. Floods are natural disasters that cannot be prevented, but with timely preparation and the use of science, information technology, and public awareness, it will be possible to reduce the amount of damage. Floods caused by sudden swelling of the river and heavy rainfall are a common occurrence in Midnapore district. Severe floods occurred in Midnapore in 1823, 1831, 1832, 1833, 1848, 1850, 1864, 1866, 1868, 1913, 1920 and 1942, resulting in loss of life and extensive crop damage. Several important embankments were constructed and maintained by the Public Works Department to protect the land from inundation.

Index Terms: Midnapore, River, Flood, Rupnarayan, Kangsavati, Haldi, Sabang.

The rivers of Midnapore district flow east or southeast following the natural slope. In most cases they flow almost parallel to each other. There is no water throughout the year and flash floods occur suddenly during the rainy season. During the flash floods, a huge amount of water flows through the riverbed in two to three hours; at this time the river becomes very dangerous. At the end of the monsoon, the general characteristics of the water in the rivers gradually decrease, and by the beginning of summer, the riverbeds, especially the smaller ones, turn into sandy dry channels. Although the larger rivers do not dry up completely, their water content decreases significantly. In the western part, the rivers flow through hard rocks and between two distinct banks covered with laterite and gravel. But in the eastern part, the rivers bend and flow in alluvial plains, resulting in frequent changes in their course in this part. In the western part, the river beds are narrow and deep, sometimes marked by waterfalls, while in the eastern part, the river beds are relatively wide and shallow. Some of the notable rivers flowing through this part of the Red Bengal are the Rupnarayan, Kumari, Kangsavati, Subarnarekha, etc., formed by the confluence of the Damodar, Dwarkeswar and Shilavati. Among these, except for the Subarnarekha, each of the other rivers is a tributary of the Bhagirathi-Hooghly. Of these, the Rupnarayan basin has the largest area, 10,273 square kilometers. It is followed by the Kangsavati-Haldi, 9,658 square kilometers. The Subarnarekha basin is relatively small, only 3,102 square kilometers. In addition, coastal creeks and small rivers together drain an area of about 2,574 square

kilometres.¹ Apart from the rivers, many small and large canals flow through this district-like veins. Their number is more in the eastern and southern parts. The artificial and natural canals for irrigation and drainage help the agriculture and livelihood of the people of this district.

The Hooghly River does not intersect the district of Midnapore, but flows along the eastern boundary of the district from where it meets the Rupnarayan opposite the Hooghly Point and empties into the Bay of Bengal. A few miles upstream of the mouth of the Rupnarayan, the Damodar River joins the Hooghly, and between the mouths of these two rivers lies the dreaded 'James and Mary' sandbank (a corruption of the Bengali *jal-mari*, meaning 'deadly water'), formed by the silt carried by the Damodar and Hooghly rivers. The cause of the sedimentation at this place is the flood or flash flood of the Rupnarayan, which occurs at the same time as the flood of the Damodar. This flood dams the flow of the Hooghly River and creates a backwater, which creates a favorable environment for the deposition of silt. According to the river map of 1745, this sand was in its very early stages of formation, because at that time the main course of the Damodar was more directly inclined towards the Hooghly River, which helped the flow of the Hooghly River to cross the Rupnarayan and to erode the alluvium below it. The Hooghly River does not intersect the district of Midnapore, but flows along the eastern boundary of the district from where it meets the Rupnarayan opposite the Hooghly Point and empties into the Bay of Bengal. A few miles upstream of the mouth of the Rupnarayan, the Damodar River joins the Hooghly, and between the mouths of these two rivers lies the dreaded James and Mary' sandbank (a corruption of the Bengali *jal-mari*, meaning 'deadly water'), formed by the silt carried by the Damodar and Hooghly rivers. The cause of the sedimentation at this place is the flood or flash flood of the Rupnarayan, which occurs at the same time as the flood of the Damodar. This flood dams the flow of the Hooghly River and creates a backwater, which creates a favorable environment for the deposition of silt. According to the river map of 1745, this sand was in its very early stages of formation, because at that time the main course of the Damodar was more directly inclined towards the Hooghly River, which helped the flow of the Hooghly River to cross the Rupnarayan and to erode the alluvium below it.²

Shilavati or Shilai is the main tributary of Dwarkeswar. This river is 69 miles long in West Midnapore district. It originates in Pancha thana of Purulia and flows in a southeasterly direction. It enters Bankura district near Salanpur of Idpur thana and then flows through Taldangra and Simlapal thanas before entering Midnapore district. It flows south and southeast through Midnapore Sadar thana and takes a sudden turn north near Narajol. Finally, it joins the Rupnarayan at a place called Bandar, about 6 kilometers from Ghatal. In its final stage, some parts of the Shilavati are navigable due to the tidal currents throughout the year. The Purandar and Gopa rivers join the Shilavati in Bankura district, and the Chandur and Kubai rivers join the Shilavati in Midnapore district. However, the Buri, which joins near Narajol in Midnapore, is its largest river. The Jayapanda in Bankura district is another notable tributary. The waters of the Shilavati River flooded Keshpur, Narajol and Ghatal. It is said that Brahma Puranda loved Shilavati in the mortal world. The Brahmin used to bathe in the Shilavati every day and carry water in a pitcher. One day Puranda invited Shilavati to meet him. At that moment, Puranda disguised himself as a water pitcher on his head and met Shilavati as his lord.³

The Rupnarayan, known as Dhalkishore and Dwarkeswar in the upper reaches of its course, enters the district a few miles north-east of Ghatal and flows south-east towards Tamluk. Here it turns eastwards and finally falls into the Hooghly River at Geokhali opposite Hooghly Point. Towards the mouth it widens considerably, its width at some places reaching nearly 3 miles.⁴ The water of the Shilavati and its tributaries flow together in a south-easterly direction and flows eastwards near Tamluk before joining the Hooghly River at the Genyokhali. Near Tamluk, the river bends and divides the district, creating chars (Shoal) and islands from time to time. Ghatal, Kolaghat and Tamluk are notable towns on the banks of this river. The river silt is used for agriculture, tile making and various household purposes. Abundant fish are found in the river. The hilsa fish of Rupnarayan is delicious. The river is crossed by the Bengal-Nagpur Railway line at Kolaghat. The name of the Rupnarayan River is mentioned in Rennell's map drawn in the 18th century; but before that, the river was known by different names. This river is mentioned as Ganga in Gastaldi's map of 1561 AD and in De Barrow's map drawn between 1553 and 1613 AD. Vanden Broek's map, drawn in 1660 AD, does not mention any river west of the Bhagirathi. Subsequently, this river was known as Pathar-Ghata on Valentine's map drawn in 1670 AD, Tamalee on Bowry's map of 1680 AD, and Tumbolle (Hedges), Tumberleen (Master),

Tombole (Bowery), etc. On maps drawn in 1700 AD. Valentin's map shows that at that time one of the two branches of the Damodaran joined the Rupnarayan River south of Tamluk, and the other turned east and joined the Bhagirathi near Kalna. We think that it was because of this connection that foreign sailors at that time believed this river to be a branch of the Bhagirathi, and they called it the Ganges. Mr. Rennell was the first to mention it in his map as Rupnarayan. He also said that ancient sailors mistakenly referred to this river as the *Old Ganges*.⁵

The Subarnarekha River descends gradually through several springs originating from the Ranchi plateau. It takes a bend to the south and marks the western boundary of Purulia district. Here the Subarnarekha is joined by the Donka Gara Nala originating from the Ghoramara hills to the north. From north to south, their names are Sipahi Nala, Salda, Subarnarekha Nala, Khelaramoria Nala, and Karo, Shobha and Sanka Nala. Their small tributaries cut deep gorges and form waterfalls from the Baghmundi hills. Among them, the 82-meter-high Baridhi Falls and the 66-meter-high Baghmundi Falls deserve special mention for their natural beauty. The potential for hydroelectricity generation from these rivers is also very bright. Some parts of the last reaches of the Subarnarekha River are located in Midnapore district. From Dhalbhum, the river enters Midnapore district and flows through Gopiballabhpur police station. South of Dantan, it enters Balasore district of Odisha and finally merges into the Bay of Bengal. ⁶The flood then takes a line eastwards and formerly found an outfall through the low-lying pargana of Sibpur into the Pichabani Khal, as the inland portion of the Sola Mohan estuary is called. This tract of country is now protected by the Jokai embankment, which is some 7 miles long and stretches northwards from the sand ridge near the coast 15 miles from the Subarnarekha.⁷

The Haldi, a tributary of the Hooghly River, is another important river on the right bank of the Rupnarayan. It is formed by the confluence of the Kangsabati (Kansai) and Kalighai rivers near Tangrakhali. Near its mouth, the Haldi river is wide enough and suitable for navigation, but it is difficult to navigate during low tide. It also has many shifting chars (shoals) and is rapidly silting up its bottom. The main reason for this is probably the diversion of a portion of the Kansai River water to the Rupnarayan through the Midnapore High Level Canal, which has resulted in the excess water from the Kasal River being insufficient to acidify the Haldi River bed as efficiently as before. The Haldi River has several small tributaries and branches, especially in the marshy areas near its mouth, where there are many small streams and tidal creeks.

Kangsabati or Kansai is the main tributary of the Haldi River. It originates from the Jabarban peak of the Ghoramara hills on the western edge of Purulia and flows southeastward as the Kansai Nala. After its confluence with Girgiri Nala and Sahar Jhor, it is known as Kansai or Kangsabati. Some distance from the city of Midnapore, the Kangsabati River splits into two branches. Kangsabati (New Kansai 72+42) miles, Old Kansai 33 miles, Kasai is divided into two parts at Debora's Kapastikari)⁸ One branch flows north and joins the Rupnarayan; the other main branch flows southeast and joins the Haldi River in Mahishadal thana. The Kangsabati irrigation project marked the improvement of agriculture in a vast area of the district. It was on the banks of this river that Kas was killed, hence the name Kasabal. The *Daha* (a large reptile) in the mouth of this river, a water creature, was considered a butcher to humans, hence the name *Kansai*. As part of the project, the Khatra Dam, which was 38 metres high and 10,098 metres long, was built on the Karighasavati River in Midnapore in 1872 and was also included in the project activities. ⁹

The Keleghai River (75 mile) originates in Badinigram near Dudhkondi in Shankrail thana of Jhargram and flows into the Kansai River in Tengrakhali of Mahishadal thana, marking the boundaries of Keshiari, Narayangadh, Sabang and Patashpur (Kharapur-Kanthi) subdivisions. According to the Shabar community, the stream near the Balichagar near Lodha Thakur Kalundi in Dudhkundi village, on the Lokhaguli road, two and a half km from Guptamani, is Keleghai. But the Lodha community has named it Keleghai. The combined form of Kansai and Keleghai is Haldi. The second tributary of Haldi is Keleghai, fifty-one and a half miles long. Floods occur in this river because rainwater from the steep slopes of Guptamani and Shankrail police stations drains quickly. Floods occur in this river because rainwater from the steep slopes of Guptamani and Shankrail police stations drains quickly.¹⁰ The only other tributary of the Hooghly River in Midnapore district is the Rasulpur River. It originates in the southwest of the district as the Bagda River and flows east and southeast to join the Hooghly River below the *Koukli* (Geonkhali) lighthouse, just upstream from where it empties into the Bay of Bengal.¹¹

Floods occur almost every year somewhere in West Bengal. When the rainy season arrives, people feel a sense of relief on one hand, but on the other hand, it also reminds them of the days of terrible hardship. The question remains: what is the cause of the flood, how can one get relief from it, and how can one enjoy the rainy season without worries and with a full heart? The river is the only path whose creator is nature, so the flow of the river is entirely dependent on nature. Where the river follows a winding path, its flow is a snail's pace. It is even more difficult to understand its flow. If, for whatever reason, the snail's pace changes rapidly, its characteristic flow can completely change, and this happens almost every year somewhere. And its consequences bring suffering to people. But the natural law was that the river, adapting to time and environment from its upstream part, carried water and sediment and delivered it to the sea. So, the question is, why, how and when were the barriers created in the riverbed. Flood prevention and relief have always been associated with the question of institutional authority or public responsibility in maintaining dams and reservoirs. Floods are a natural phenomenon, but the responsibility for mitigating their impact and possible prevention always lies with either the state or civil society. However, if for any reason the water level rises, the river water flows above the danger level, resulting in flooding. The reasons why waterlogging can occur in rivers are:

- When sediment accumulates in the river, the depth and navigability of the river increase.
- If there is rainfall at the main source of the river.
- Increased snowmelt in Himalayan glaciers.
- Char formation or sediment accumulation that changes the course of rivers.
- Ocean waves create low pressure and cyclones.
- In addition to the construction of culverts, unplanned bridges disrupt the normal flow of water.

The causes of river channel blockages are land degradation due to extensive deforestation, population growth and the accompanying urban or city population growth. Now let's look at the calculations. Every year, 1.3 million hectares of forest area is being destroyed in our country. In 1972-73, it was 46.32 million hectares and in 1980-81, it stood at 35.77 million hectares. In North Bengal, out of 14 percent of the forest area in 1981, 50 percent had been destroyed by 1992, amounting to 14,000 hectares. In Darjeeling district, forest cover was 55 percent in 1911 (60 hectares per capita), in 1971 it decreased to 26 percent (0.19 hectares per capita) and in 1992 it was 0.08 hectares per capita. According to environmental scientists, one-third of the forest area must be covered by forests. Then, on the one hand, the population growth, on the other hand, the increase in the proportion of people in urban areas and the destruction of the vast forests associated with it, and the sand, soil, and stones all mixed together, the poor river will go nowhere, and by which route will it reach the sea. So today it is disoriented, disoriented, it has lost its own address.¹² This district is particularly prone to flooding due to the springs and rivers that flow down from the mountains of neighboring districts. When there is too much rain in these mountains, the rivers overflow their banks and cause extensive property damage. Moreover, the mouths of the rivers are inadequate to drain the excess water, and as a result, many miles of the country remain submerged for weeks after a flood. For many years, the practice of levying an annual tax for the repair of embankments had been prevalent in Medinipur during the land revenue settlement. In 1773, the Company Government continued to levy this tax, as was the practice in other provinces of Bengal, and bore the cost of maintaining the embankments.¹³

In 1786 and 1787, terrible flood caused by heavy storms and rains caused widespread devastation in the Midnapore district. The flood came down from the western side of Midnapore, which is a hilly and low-lying area. In September, the overflowing water swept away houses, cattle, men, women, children and even tigers in parganas such as Kasijora, Shapur, Mainachora, Sabang, Chandar, Amersi, Dattamota, Gagnapur, Narajol and Qutubpur. As a result, the zamindars of the Thirteen Parganas of Midnapore district expressed their grievances to the Collector and petitioned for a cessation of revenue payments. This appeal was made especially for the people of Mainachora, who had lost their houses, cattle and property and were reluctant to return to their village homes. Therefore, the Takavi loan of Rs. 10,000 demanded by the zamindars as an advance for the repairs of the pargana and for the provision of farming implements to the raiyats, seemed to the Collector to be a very fruitful step.¹⁴ Floods caused by sudden swelling of the river and heavy rainfall are a common occurrence in the southern and eastern parts of the district. In the current century, there have been severe floods in 1823, 1831, 1832, 1833, 1848, 1850, 1864, 1866 and 1868, each of which caused serious damage to crops.

There are several important embankments maintained by the Public Works Department to protect the land from inundation.

District records show that in the first half of the 19th century, severe floods frequently swept away vast areas. In May 1823, a flood destroyed an entire row of embankments and the water rose so high that it entered the court of the Collector of Kanthi and swept away the records. Later, seawater entered through the broken dams, causing severe damage to the farmland. A second flood occurred in 1831, when the dams were again breached and the small amount of rice that had grown was almost completely destroyed. Mr. Collector Wyatt conducted a full investigation into the extent of the damage and as a result, the government waived revenue of 85,678 taka. A second major flood occurred in October of the following year, causing extensive damage to ripe crops and overflowing a 15-foot-high embankment. An investigation into the farmers' losses forced the government to waive revenue of up to Rs. 84,691.¹⁵ Another terrible flood occurred in May 1833, which again completely destroyed the dams, and was followed by another flood in September 1834, which washed away more than half the crops; 7,112 people drowned, half the population of the flooded area; and 865 villages were submerged. As a result of a careful and thorough investigation conducted by three European officers of the district, the government granted the victims a revenue remission of £62,878, 18 shillings and 0d. and suspensions to the extent of £49,713, 4s. 0d. Other floods occurred in January 1839 and May 1840. In the latter, although the coastal embankments held up fairly well, the country was damaged by the breach of the inland embankments. However, no concession or suspension of revenue was deemed necessary as a result. Again, in August 1845 the flood caused serious damage to the Kalmijal and Medinipur dams; the revenue divisions of Mainachora, Sabang and Kasijora were completely inundated and the paddy fields were damaged. The native Deputy Collector made an inquiry into the damage, but as a result it was not considered necessary to remit or suspend the revenue.¹⁶

The dams were extensively damaged by floods in October 1848. Crops also suffered and, after an investigation by the Collector, remissions were granted to the extent of Re. 10,818, and suspensions to the extent of Rs. 1,42,797. In April 1850, another inundation overtopped and breached the embankments in the sea-board parganas, and along the banks of the large rivers. Fortunately, no crops were on the ground, except indigo, and no remissions or suspensions of revenue were considered necessary. In April 1850, another flood broke the embankments of the coastal revenue divisions and the banks of the major rivers. Fortunately, there were no other crops on the land except indigo cultivation, and no need was found to remit or suspend the revenue. The violent storm that accompanied the cyclone of October 1864, which caused such widespread destruction and loss of life, will be discussed in a separate account of the cyclone given on the next page. The floods of 1866, after a severe drought the previous year, added to the misery. Another severe flood occurred in 1868; and several partial floods occurred in the following years.¹⁷ The 1888 floods, caused by unusually heavy rainfall, inundated most of the low-lying areas of the district. In the far north, the simultaneous flooding of the Kansai, Silai and Dwarkeswar rivers affected Ghatal subdivision. In the Midnapore subdivision, the flooding of the Keliaghai river submerged almost the entire area, which was the highest flood ever recorded. Parts of the Tamluk subdivision were also severely affected and the central part of the Kanthi subdivision was submerged till the end of December. However, this loss was compensated by a bumper crop of Boro rice, which was cultivated more extensively than usual. Finally, the only relief measure that seemed necessary was the distribution of free food among some of the destitute persons of the Kanthi subdivision, who in normal years depended on the kindness of their neighbours for their livelihood.¹⁸

In 1913 and 1920, terrible floods in Midnapore caused great damage to parts of that district. Many houses were washed away in these floods, the lives of many domestic animals were lost and the sorrow of the people knew no bounds. The tender heart of Birendranath wept at the cries of the countrymen and the immense suffering. He stepped forward to serve the flood-affected people. By collecting money from the countrymen, he formed a team of servants and personally went to the flood-affected areas with them and assigned himself to the service. At this time, Birendranath, the son of a rich man, forgot his nobility and devoted himself to the work of alleviating the suffering of the flood victims by traveling from village to village, sometimes on foot, sometimes by boat. In 1926, a terrible flood hit Midnapore district. The entire Midnapore district was submerged due to heavy rainfall and the breach of the embankments of the Keleghai, Kapaleshwari, Kangsabati, Khirai and Subarnarekha

rivers. In 1933, another flood hit Midnapore district. A meeting was held at the Albert Hall in Kolkata under the chairmanship of Prafulla Chandra Roy. In this meeting, a society called 'Midnapore Flood Society' was formed, and Birendranath Sasmal was appointed as its treasurer and secretary. This time, Birendranath had to work hard and accept financial losses to alleviate the suffering of the flood victims.¹⁹ According to Paul Greenough on August 6, 1943, a terrible flood in the Subarnarekha River completely destroyed the rice fields of Aush, washed away a hundred villages, and left ten thousand people homeless. Various epidemics and diseases like cholera, smallpox, malaria, typhoid etc. emerged as a catalyst for floods and cyclones as well as severe famine. Many people also lost their lives due to snake bites. All these natural disasters have affected not only human life but also the environment and ecosystem equally. In many cases, the riverbed has become shallow due to siltation, which has changed the course of the river. Due to the death of people, cattle, fish etc. during floods and cyclones, other waters besides rivers and ponds have been polluted. During the colonial period, repeated floods in Midnapore embarrassed not only the locals but also the colonial rulers. In fact, the colonial government was so busy with World War II that it could not properly manage the natural disasters and relief work of 1942. Therefore, it can be said that the colonial government was not completely successful in controlling natural disasters and providing food and relief materials. Again, in many cases, the role of the government in disaster management and relief provision was very minimal. Needless to say, there were some mysterious interests of the government behind the intervention in natural disasters.²⁰

Just as a human being needs a certain amount of land for housing, rearing, and meeting various needs, just as a cow needs a certain amount of grazing land, a river also needs a certain drainage area, where it can drain a portion of its silt, which would otherwise accumulate on its bottom and gradually erode it. This is particularly true in the case of deltaic regions, where, due to the relatively low slope and consequently relatively low velocity, the river is generally unable to carry its sediment during floods; and past works that have ignored this basic principle of river conservation have not only degraded the riverbeds and made their maintenance increasingly difficult, but have also exacerbated the problem of protection from flood damage that these works were intended to solve. In regions other than the delta region, although the general elevation of the land is usually higher than the floodplain, nature has allocated a specific watershed for most rivers. And it is the encroachment of humans on this essential boundary of the river that has led to the current acute flood problem. Therefore, dams do not provide a permanent solution to the flood problem. At best, they are only temporary measures and postpone the bad times for future generations when, due to various vested interests and the dams blocking the beneficial flow of flood water from the land, problems arise in the form of drainage, public health and soil productivity that are almost impossible to solve. Leaving flood-preventive dams out of consideration, other control measures considered to combat floods must be applied to the causes of flooding. There is certainly no control over the primary causes of flooding, i.e. rainfall and snowmelt; nor over other natural factors that can increase flood levels, such as the elevation of the floodplain and the consequent reduction in its flood-absorbing capacity. But it should be possible to control the factors artificially created by human activities, such as (1) Excess water flow from reservoir basins and soil erosion caused by widespread, often indiscriminate, deforestation, etc., which is perhaps the most important preventive measure, because it addresses the flood problem at its root; (2) Where possible, improve drainage channels to increase the flow of floodwaters and keep drainage systems in working order to drain water from flooded areas as quickly as possible.²¹ Now let's think about it a little differently, as everyone knows that railways and roads are made by humans. Humans plan and create these routes to start from any place and go to another. But the river is an exception, nature is its creator, to keep the river moving, its course and carrying capacity must be maintained. The damage caused by geographical evolution cannot be stopped. But if the course and carrying capacity of the river decreases due to human evolution, the entire society will have to suffer. And the society, industry and culture of Bengal are rooted in its coastal areas. These rivers are almost dead today; they have reached the end of their life very quickly. Therefore, if we want to revive these rivers, we should try to bring them back to the state they were a few centuries ago.

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