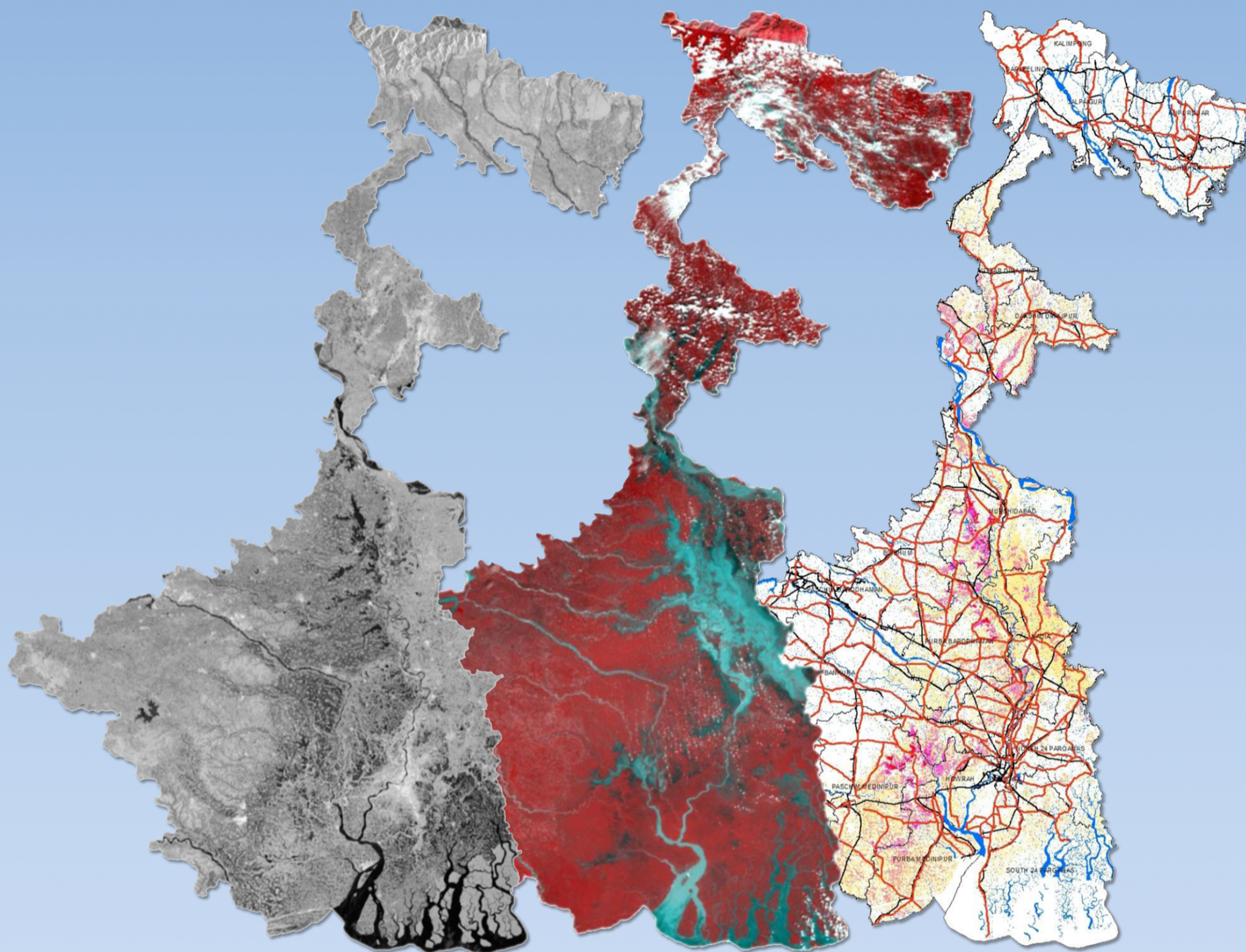


# Flood Hazard Atlas of West Bengal

- A Geospatial Approach



*Prepared by*

**National Remote Sensing Centre  
Indian Space Research Organisation  
Dept. of Space, Govt. of India**



*In Association with*

**National Disaster Management Authority  
Ministry of Home Affairs, Govt. of India**



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**Department of Disaster Management & Civil Defence  
Govt. of West Bengal**



Version 1.0

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सत्यमेव जयते

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**डॉ. कै. शिवन**  
**Dr. K. Sivan**



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व  
सचिव, अन्तरिक्ष विभाग  
Chairman, Space Commission  
&  
Secretary, Department of Space



## FOREWORD

West Bengal is prone to major natural disasters such as floods and cyclones, resulting in loss of property, infrastructure and agriculture every year. Identification of flood-prone areas and associated risk are necessary to plan and execute area-specific mitigation measures. Satellite Remote Sensing is helpful for flood inundation mapping and delineation of flood hazard zones.

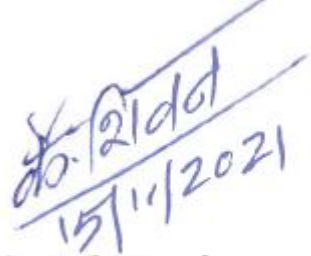
National Remote Sensing Centre (NRSC), ISRO has been generating near real-time flood inundation maps using satellite data for major flood and cyclonic events in the country for more than two decades, under the Disaster Management Support Programme (DMSP). Concurrently, these maps are disseminated to MHA, NDMA, and to the State Disaster Management Departments.

NRSC, ISRO has been supporting West Bengal Disaster Management & Civil Defence Department by providing space based inputs and building geo-spatial database to support its disaster management activities. The Flood Hazard Atlas of West Bengal is prepared using the satellite based observations of 21 years (2000 to 2020), jointly with National Disaster Management Authority (NDMA). Ground validation was carried out by West Bengal Disaster Management & Civil Defence Department.

I compliment the project team at NRSC, ISRO, West Bengal Disaster Management & Civil Defence Department, Govt. of West Bengal, and NDMA for bringing out this informative Flood Hazard Atlas for the benefit of the State.

I am sure that the information provided in the atlas will be useful in flood preparedness, flood risk assessment, as well as for planning and implementing long-term mitigation measures towards minimizing the damage due to floods & cyclone disasters in the state of West Bengal.

Date : November 15, 2021

  
(कै. शिवन / K. Sivan)

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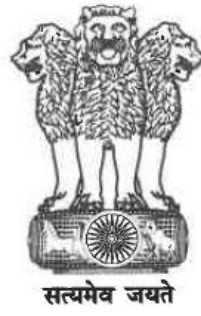
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## PREFACE


Floods and cyclones are among the deadliest disasters both in terms of deaths and economic losses. India is among the countries most susceptible to these calamities. In India, the recent trend has been rather giving concern that the floods have been increasing in intensity and frequency. In an era where non-structural methods are considered as viable options for flood damage mitigation, flood hazard zonation is one of the best non-structural methods for flood damage mitigation.

Indian Space Research Organisation (ISRO), Department of Space (DOS), has instigated a major Disaster Management Support Programme (DMSP) with National Remote Sensing Centre (NRSC) as the single window delivery mechanism for providing near-real time products and services using satellite remote sensing and aerial data to support various phases of disasters. For about three decades, NRSC has been preparing flood inundation maps and performing damage assessments due to flood and cyclone events. These near-real time operational activities has enabled the creation of reliable and long term database on flood hazards and associated risks.

National Remote Sensing Centre (NRSC), ISRO has prepared the flood hazard maps for West Bengal State using Indian Remote Sensing (IRS) Satellites and foreign satellite datasets covering riverine and cyclonic floods spanning over 21 years (2000 to 2020). Spatial extent of flood inundation and the frequency of flooding in a given area are derived from the historical satellite datasets. As per the flood hazard classification schema proposed by Expert Committee on Flood Hazard Zonation constituted by National Disaster Management Authority, the hazard zones are categorized into four classes in the West Bengal State.

In order to ensure effective utilization of the information, the hazard maps prepared using satellite remote sensing data has been corroborated with ground truth by the respective district administration of Government of West Bengal and by West Bengal Disaster Management & Civil Defence Department. All stakeholders assessing flood and cyclonic flood vulnerability for an effective management and decision making will be thoroughly benefited from this. The WB State Flood Hazard Atlas may serve the planning agencies, the state and district administrations and the communities at panchayat levels in raising awareness about the vulnerability of identified areas and the need for disaster preparedness and mitigation on a scientific and practical basis.

I am sure that information on flood hazard derived from space datasets will be useful to Government of West Bengal for various disaster risk management planning, preparedness and mitigation activities.

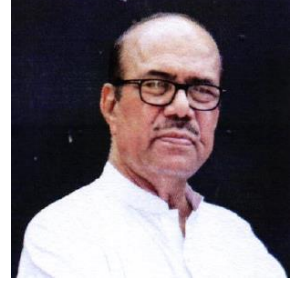
  
(RAJ KUMAR)







**Javed Ahmed Khan**  
**Minister-in-Charge,**  
**Department of Disaster Management & Civil Defence**  
**Government of West Bengal**



## MESSAGE

West Bengal with mountain in north and sea in south is one of the multi-hazard prone and affected States in India from natural hazards. The vulnerability has been enhanced by both long term and immediate climate changes which predominantly include flood hazard along with cyclone and thunderstorms, the latter being associated event leading to flooding. The threat of flooding especially closer to river and sea banks has been increased by sea level rise in coastal area in West Bengal due to global warming and impact of climate changes. Floods have emerged as the most frequent hazards & area of concern for the people of the State. With this evident impact of climate variability in the state, associated with natural hazard of flood in the State, a scientific approach to understanding flood and designing necessary measure to minimize losses is much essential.

I am happy to learn that the National Remote Sensing Centre (NRSC), Indian Space Research Organization (ISRO), Hyderabad, in association with Government of West Bengal has prepared the West Bengal Flood Hazard Atlas:2000-2020.

The Atlas is a much needed document for Disaster Risk Management and other departments to take suitable decision and effective management plan accordingly for minimising the impact of floods and risk of disaster for the people of State.

I take this opportunity to congratulate the team of NRSC and officials of Department of Disaster Management & Civil Defence who have significantly contributed to prepare this Atlas.

**Javed Ahmed Khan**

Place : Nabanna, Howrah  
Date : 22-06-2021





कमल किशोर  
सदस्य  
**Kamal Kishore**  
Member Secretary I/C



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## MESSAGE

The Action Point No.5 of Prime Minister's ten point Agenda for disaster risk reduction requires leveraging technology to enhance the efficiency of disaster risk management efforts. The goal is to create a safe and disaster resilient India through an integrated dynamic and technology-driven approach for disaster risk management. The National Disaster Management Authority has started/initiated various programmes that leverage technology to enhance the efficiency of disaster risk reduction efforts. One such important initiative is to develop upgraded hazard profiles of various natural hazards (for their subsequent use in vulnerability and risk assessment work) by using state-of-art technology.

Flood is one of the most frequent disasters that causes heavy loss of lives and adversely affects economy. Flood hazard profile at basin level is not available for planning & flood mitigation by the State Governments concerned. The initiatives of National Remote Sensing Centre, Indian Space Research Organization (ISRO) to utilize Space technology for disaster risk reduction in the country are exemplary. The Working Committee of Experts formed by the National Disaster Management Authority (NDMA) decided to prepare the flood hazard map for the State of West Bengal on priority, utilizing the scientific inputs from the various stakeholders and the satellite-based observations on flood inundated areas collected over the past 21 years by the National Remote Sensing Centre (NRSC).

I am sure that the Flood Hazard Atlas prepared by NRSC, ISRO using space-based data could deliver the much needed information for the efficient management of flood hazards in the State of West Bengal.

  
(Kamal Kishore)

Place : New Delhi  
Date : 26 November, 2021





**Dushyant Nariala, IAS**  
**Principal Secretary & Relief Commissioner**  
**Department of Disaster Management & Civil Defence**  
**Government of West Bengal**



## MESSAGE

West Bengal is blessed with very rich natural resources of forests, mountains, rivers and sea. However, due to location in the gangetic delta, it is exposed to many natural calamities like cyclone, flood, land slide, lightning and thunder storm. Being in the delta, most water from the upper reaches flows down to the state and there are incidents of flood and flash floods. West Bengal receives very heavy rainfall to extremely heavy rainfall due to depression and cyclonic weather from Bay of Bengal. These factors lead to very severe floods in West Bengal.

There is lot of data available and proper research work with scientific approach will help a better understanding of flood and facilitate taking better preventive measures. It is nice to learn National Remote Sensing Centre (NRSC) and ISRO Hyderabad in association with Government of West Bengal have completed Flood Hazard atlas for west Bengal.

The Atlas will fill gap in the data and provide ready information for use by the planners with other stake holders. I appreciate the leadership of NRSC in the exercise for making this Atlas and appreciate the role of officials of Disaster Management & Civil Defence Department.Govt. of West Bengal for enabling production of the Atlas.

**Dushyant Nariala**

Place: Nabanna, Howrah  
Date: 21-12-2021



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The project team expresses deep sense of gratitude to Dr. Raj Kumar, Director, NRSC for his constant encouragement, keen interest and for providing necessary support in bringing out this atlas.

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The project teams sincerely thank Dr. John Mathew, AD, EDPO, ISRO for support and cooperation, in preparing this atlas. Consistent support provided by Joint Secretary, Mitigation and concerned officers of National Disaster Management Authority, New Delhi is sincerely acknowledged. The project team sincerely thanks the concerned officers of Central Water Commission and Indian Meteorological Department for providing inputs in preparing the flood hazard atlas.

Finally, the project team is indebted to all the scientists of DMSG, NRSC who contributed in generating the flood maps in near real time. The team thanks everyone who contributed directly or indirectly in preparing the atlas.





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## GOVT OF WEST BENGAL

Concerned Officers of Govt. of West Bengal and officers of Department of Disaster Management & Civil Defence, Government of West Bengal who contributed in ground validation of the flood hazard maps prepared by NRSC, ISRO



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## Executive Summary

Flood hazard maps are one of the very important non-structural methods of flood damage mitigation. These maps are useful in planning developmental activities, construction of relief, rescue, and health centers and in planning flood tolerant crops in floodplains. Satellites provide synoptic observations of the natural disasters at regular intervals that help in disaster risk reduction in the country. Over a period of time, National Remote Sensing Centre (NRSC), ISRO has created a repository of large data pertaining to the floods & cyclones in different areas of the Country. These historical flood maps, generated by NRSC, ISRO, are useful for identification of flood hazard areas. On behest of National Disaster Management Authority, NRSC, ISRO has prepared the State level and District wise Flood Hazard Zonation Atlas for West Bengal State using the available historical satellite datasets spanning over 21 years (2000 to 2020). About 60 Indian Remote Sensing (IRS) satellite and foreign satellite datasets (optical and microwave) during this period were acquired covering different flood magnitudes in West Bengal State and used in generating the flood hazard maps. The flood hazard zones are categorized into four classes ranging from very low hazard zone to high hazard zone based on the hazard classification schema finalized by the expert committee constituted by NDMA. Flood inundation and frequency of occurrence are provided along with the list of villages falling in various hazard categories in the Atlas. The flood hazard maps have been validated in ground by the Department of Disaster Management and Civil Defence, Government of West Bengal, through its district administration. Suggestions given by them are incorporated in this report. In West Bengal, it is estimated that about 19.89 lakh hectares of land is affected by floods during the last 21 years and 20 districts come under various flood hazard category as per satellite data acquired and used. Inundation may be due to riverine floods, cyclonic storm induced floods or coastal floods. It is believed the Atlas would serve as a useful resource of information for policy makers, planners and civil society groups and find its value towards flood risk evaluation, sustainable development and flood mitigation efforts in the West Bengal State.



## 1.0 INTRODUCTION

### 1.1 FLOOD AND ITS SEVERITY

Flood is one of the most severe disasters affecting people across the globe. India, on account of its geographical position, climate and geological setting, is the worst affected center of disaster in the South-Asian region, making it vulnerable to many natural hazards, particularly to floods. India is the worst flood-affected country in the world after Bangladesh and accounts for 20% of the global death count due to floods. Nearly 75 percent of the total Indian rainfall is concentrated over a short monsoon season of four months (June-September). As a result, the rivers witness a heavy discharge during these months, leading to widespread floods. About 50 million hectares of land in the country is liable to floods according to 12<sup>th</sup> Plan working group on flood and management, and an average of 18.6 million hectares of land is affected annually. The annual average cropped area affected is approximately 3.9 million hectares. The most flood-prone areas in the country are the Brahmaputra, Ganga and Meghna River basins in the North and North-east India. These rivers carry 60 per cent of the nation's total river flow. The other flood prone areas are the west flowing rivers such as the Narmada and Tapti in the north-west region; east flowing rivers like Mahanadi, Godavari, Krishna and Cauvery in the Central India and the Deccan region. Table-1 shows the extent of flood damages incurred during 1953-2016 in India.

#### Factors causing Floods

Inadequate capacity of the rivers to contain the high flows brought down from the upper catchment due to heavy rainfall, leads to flooding. Area having poor drainage characteristic gets flooded by accumulation of water from heavy rainfall. Excess irrigation water applied to command area and increase in ground water level due to seepage from canals and irrigated field accentuate the problem of water logging. Flooding is accentuated by erosion and silting of the riverbeds resulting in reduction of carrying capacity of river channel, leading to changes in river courses & obstructions to flow due to landslides, synchronization of floods in the main and tributary rivers and retardation due to tidal effects. With the increase in population and developmental activity, there has been a tendency to occupy the flood plains, which has resulted in more serious nature of damage over the years. Because of the varying rainfall distribution, many a times, areas which are not traditionally prone to floods also experience severe inundation. Thus flood is the single most frequent disaster faced by the country. Floods have different dimensions, inundation due to spills over the banks, drainage congestion due to poor drainage characteristics, and erosion due to change in river course. Fig 1 shows flood situation in West Bengal during 2017.



Figure 1 Flood Situation in West Bengal

(Source: News/Media)

Table 1 The Extent of Damage Due To Floods/Heavy Rains During 1953 To 2016 In India

| STATEMENT SHOWING DAMAGE DUE TO FLOODS/HEAVY RAINS DURING 1953 TO 2016 |      |               |                                |                 |                    |                  |                    |             |                  |   |   |
|--|------|---------------|--------------------------------|-----------------|--------------------|------------------|--------------------|-------------|------------------|---|---|
| 1  | 2    | 3             | 4                              | 5               | 6                  | 7                | 8                  | 9           | 10               | 11                                      | 12  |
| SI No  | Year | Area in m.ha. | Population affected in million | Damage to Crops |                    | Damage to Houses |                    | Cattle lost | Human lives lost | Damage to Public Utilities in Rs. crore | Total damages                                   |
|  |      |               |                                | Area in m.ha.   | Value in Rs. Crore | Nos.             | Value in Rs. Crore | Nos.        | Nos.             |   | Crops, Houses and Public Utilities in Rs. crore |
| 1  | 1953 | 2.29          | 24.28                          | 0.93            | 42.08              | 264924           | 7.42               | 47034       | 37               | 2.9                                     | 52.4  |
| 2  | 1954 | 7.49          | 12.92                          | 2.61            | 40.52              | 199984           | 6.561              | 22552       | 279              | 10.15                                   | 57.231  |
| 3  | 1955 | 9.44          | 25.27                          | 5.31            | 77.8               | 1666789          | 20.945             | 72010       | 865              | 3.98                                    | 102.725   |
| 4  | 1956 | 9.24          | 14.57                          | 1.11            | 44.44              | 725776           | 8.047              | 16108       | 462              | 1.14                                    | 53.627  |
| 5  | 1957 | 4.86          | 6.76                           | 0.45            | 14.12              | 318149           | 4.979              | 7433        | 352              | 4.27                                    | 23.369  |
| 6  | 1958 | 6.26          | 10.98                          | 1.4             | 38.28              | 382251           | 3.896              | 18439       | 389              | 1.79                                    | 43.966  |
| 7  | 1959 | 5.77          | 14.52                          | 1.54            | 56.76              | 648821           | 9.418              | 72691       | 619              | 20.02                                   | 86.198  |
| 8  | 1960 | 7.53          | 8.35                           | 2.27            | 42.55              | 609884           | 14.309             | 13908       | 510              | 6.31                                    | 63.169  |
| 9  | 1961 | 6.56          | 9.26                           | 1.97            | 24.04              | 533465           | 0.889              | 15916       | 1374             | 6.44                                    | 31.369  |
| 10   | 1962 | 6.12          | 15.46                          | 3.39            | 83.18              | 513785           | 10.655             | 37633       | 348              | 1.05                                    | 94.885  |
| 11   | 1963 | 3.49          | 10.93                          | 2.05            | 30.17              | 420554           | 3.701              | 4572        | 432              | 2.74                                    | 36.611  |
| 12   | 1964 | 4.9           | 13.78                          | 2.49            | 56.87              | 255558           | 4.588              | 4956        | 690              | 5.149                                   | 66.607  |
| 13   | 1965 | 1.46          | 3.61                           | 0.27            | 5.87               | 112957           | 0.195              | 7286        | 79               | 1.07                                    | 7.135   |
| 14   | 1966 | 4.74          | 14.4                           | 2.16            | 80.15              | 217269           | 2.544              | 9071        | 180              | 5.736                                   | 88.43   |
| 15   | 1967 | 7.12          | 20.46                          | 3.27            | 133.31             | 567995           | 14.264             | 5827        | 355              | 7.857                                   | 155.431   |
| 16   | 1968 | 7.15          | 21.17                          | 2.62            | 144.61             | 682704           | 41.112             | 130305      | 3497             | 25.373                                  | 211.095   |
| 17   | 1969 | 6.2           | 33.22                          | 2.91            | 281.9              | 1268660          | 54.423             | 270328      | 1408             | 68.112                                  | 404.435   |
| 18   | 1970 | 8.46          | 31.83                          | 4.91            | 162.78             | 1434030          | 48.606             | 19198       | 1076             | 76.441                                  | 287.827   |
| 19   | 1971 | 13.25         | 59.74                          | 6.24            | 423.13             | 2428031          | 80.241             | 12866       | 994              | 129.11                                  | 632.484   |
| 20   | 1972 | 4.1           | 26.69                          | 2.45            | 98.56              | 897301           | 12.46              | 58231       | 544              | 47.174                                  | 158.194   |
| 21   | 1973 | 11.79         | 64.08                          | 3.73            | 428.03             | 869797           | 52.482             | 261016      | 1349             | 88.489                                  | 569.001   |
| 22   | 1974 | 6.7           | 29.45                          | 3.33            | 411.64             | 746709           | 72.434             | 16846       | 387              | 84.942                                  | 569.016   |
| 23   | 1975 | 6.17          | 31.36                          | 3.85            | 271.49             | 803705           | 34.097             | 17345       | 686              | 166.05                                  | 471.637   |
| 24   | 1976 | 11.91         | 50.46                          | 6.04            | 595.03             | 1745501          | 92.16              | 80062       | 1373             | 201.5                                   | 888.685   |
| 25   | 1977 | 11.46         | 49.43                          | 6.84            | 720.61             | 1661625          | 152.29             | 556326      | 11316            | 328.95                                  | 1201.848  |
| 26   | 1978 | 17.5          | 70.45                          | 9.96            | 911.09             | 3507542          | 167.574            | 239174      | 3396             | 376.1                                   | 1454.764  |
| 27   | 1979 | 3.99          | 19.52                          | 2.17            | 169.97             | 1328712          | 210.606            | 618248      | 3637             | 233.63                                  | 614.203   |
| 28   | 1980 | 11.46         | 54.12                          | 5.55            | 366.37             | 2533142          | 170.851            | 59173       | 1913             | 303.28                                  | 840.504   |
| 29   | 1981 | 6.12          | 32.49                          | 3.27            | 524.56             | 912557           | 159.63             | 82248       | 1376             | 512.31                                  | 1196.504  |
| 30   | 1982 | 8.87          | 56.01                          | 5               | 589.4              | 2397365          | 383.869            | 246750      | 1573             | 671.61                                  | 1644.876  |
| 31   | 1983 | 9.02          | 61.03                          | 3.29            | 1285.85            | 2393722          | 332.327            | 153095      | 2378             | 873.43                                  | 2491.606  |
| 32   | 1984 | 10.71         | 54.55                          | 5.19            | 906.09             | 1763603          | 181.308            | 141314      | 1661             | 818.16                                  | 1905.562  |
| 33   | 1985 | 8.38          | 59.59                          | 4.65            | 1425.37            | 2449878          | 583.855            | 43008       | 1804             | 2050                                    | 4059.268  |
| 34   | 1986 | 8.81          | 55.5                           | 4.58            | 1231.58            | 2049277          | 534.41             | 60450       | 1200             | 1982.5                                  | 3748.525  |
| 35   | 1987 | 8.89          | 48.34                          | 4.94            | 1154.64            | 2919380          | 464.49             | 128638      | 1835             | 950.59                                  | 2569.72   |
| 36   | 1988 | 16.29         | 59.55                          | 10.15           | 2510.9             | 2276533          | 741.6              | 150996      | 4252             | 1377.8                                  | 4630.3  |
| 37   | 1989 | 8.06          | 34.15                          | 3.01            | 956.74             | 782340           | 149.82             | 75176       | 1718             | 1298.8                                  | 2405.33   |
| 38   | 1990 | 9.303         | 40.259                         | 3.179           | 695.61             | 1019930          | 213.733            | 134154      | 1855             | 455.27                                  | 1708.92   |
| 39   | 1991 | 6.357         | 33.889                         | 2.698           | 579.015            | 1134410          | 180.421            | 41090       | 1187             | 728.89                                  | 1488.329  |
| 40   | 1992 | 2.645         | 19.256                         | 1.748           | 1027.58            | 687489           | 306.284            | 78669       | 1533             | 2010.7                                  | 3344.532  |
| 41   | 1993 | 11.439        | 30.409                         | 3.206           | 1308.63            | 1926049          | 528.324            | 211193      | 2864             | 1445.5                                  | 3282.485  |
| 42   | 1994 | 4.805         | 27.548                         | 3.963           | 888.622            | 914664           | 165.206            | 52315       | 2078             | 740.76                                  | 1794.59   |
| 43   | 1995 | 5.245         | 35.932                         | 3.245           | 1714.79            | 2001898          | 1307.894           | 62438       | 1814             | 679.63                                  | 3702.308  |
| 44   | 1996 | 8.049         | 44.729                         | 3.827           | 1124.49            | 726799           | 176.589            | 73208       | 1803             | 861.39                                  | 3005.743  |
| 45   | 1997 | 4.569         | 29.663                         | 2.258           | 692.743            | 505128           | 152.504            | 27754       | 1402             | 1985.9                                  | 2831.181  |
| 46   | 1998 | 10.845        | 47.435                         | 7.495           | 2594.17            | 1932874          | 1108.783           | 107098      | 2889             | 5157.8                                  | 8860.721  |
| 47   | 1999 | 7.765         | 27.993                         | 1.753           | 1850.87            | 1613260          | 1299.057           | 91289       | 745              | 462.83                                  | 3612.76   |

|    |               |               |                |                |               |                 |                  |                 |               |               |                 |
|----|---------------|---------------|----------------|----------------|---------------|-----------------|------------------|-----------------|---------------|---------------|-----------------|
| 48 | 2000          | 5.382         | 45.013         | 3.58           | 4246.62       | 2628855         | 680.943          | 123252          | 2606          | 3937          | 8864.544        |
| 49 | 2001          | 6.175         | 26.463         | 3.964          | 688.481       | 716187          | 816.474          | 32704           | 1444          | 5604.5        | 7109.416        |
| 50 | 2002          | 7.09          | 26.323         | 2.194          | 913.092       | 762492          | 599.368          | 21533           | 1001          | 1062.1        | 2574.543        |
| 51 | 2003          | 6.12          | 43.201         | 4.268          | 7307.23       | 775379          | 756.481          | 15161           | 2166          | 3262.2        | 11325.866       |
| 52 | 2004          | 5.314         | 43.725         | 2.888          | 778.694       | 1664388         | 879.601          | 134106          | 1813          | 1656.1        | 3314.385        |
| 53 | 2005          | 12.562        | 22.925         | 12.299         | 2370.92       | 715749          | 380.531          | 119674          | 1455          | 4688.2        | 7439.672        |
| 54 | 2006          | 1.096         | 25.224         | 1.822          | 2850.67       | 1497428         | 3636.848         | 266945          | 1431          | 13304         | 19790.922       |
| 55 | 2007          | 7.145         | 41.402         | 8.795          | 3121.53       | 3280233         | 2113.108         | 89337           | 3389          | 8049          | 13283.677       |
| 56 | 2008          | 3.427         | 29.91          | 3.186          | 3401.56       | 1566809         | 1141.891         | 101780          | 2876          | 5046.5        | 9589.935        |
| 57 | 2009          | 3.844         | 29.537         | 3.592          | 4232.61       | 1235628         | 10809.795        | 63383           | 1513          | 17509         | 32551.758       |
| 58 | 2010          | 2.624         | 18.297         | 4.994          | 5887.38       | 293830          | 875.952          | 39706           | 1582          | 12757         | 19520.586       |
| 59 | 2011          | 1.895         | 15.973         | 2.718          | 1393.85       | 1152518         | 410.475          | 35982           | 1761          | 6053.6        | 7857.892        |
| 60 | 2012          | 2.141         | 14.689         | 1.95           | 1534.11       | 174526          | 240.572          | 31558           | 933           | 9170          | 10944.648       |
| 61 | 2013          | 7.546         | 25.927         | 7.484          | 6378.08       | 699525          | 2032.83          | 163958          | 2180          | 38938         | 47348.751       |
| 62 | 2014          | 12.775        | 26.505         | 8.007          | 7255.15       | 311325          | 581.978          | 60196           | 1968          | 7710.9        | 15548.077       |
| 63 | 2015          | 4.478         | 33.203         | 3.374          | 17043.9       | 3959191         | 8046.969         | 45597           | 1420          | 32200         | 57291.098       |
| 64 | 2016          | 7.065         | 26.555         | 6.658          | 4052.72       | 278240          | 114.676          | 22367           | 1420          | 1507.9        | 5675.325        |
|    | <b>TOTAL</b>  | <b>460.26</b> | <b>2040.27</b> | <b>251.047</b> | <b>102274</b> | <b>79465079</b> | <b>44390.344</b> | <b>6.00E+06</b> | <b>105472</b> | <b>199730</b> | <b>347581.2</b> |
|    | <b>AVG</b>    | 7.192         | 31.879         | 3.923          | 1598.03       | 1241642         | 693.599          | 94104           | 1648          | 3120.8        | 5430.956        |
|    | <b>MAX</b>    | 17.5          | 70.45          | 12.299         | 17043.9       | 3959191         | 10809.795        | 618248          | 11316         | 38938         | 57291.098       |
|    | <b>(YEAR)</b> | 1978          | 1978           | 2005           | 2015          | 2015            | 2009             | 1979            | 1977          | 2013          | 2015            |

(Source: <https://nidm.gov.in/PDF/guidelines/floods.pdf>)

## 1.2 MANAGING FLOODS

In order to mitigate the impact of floods appropriate flood management measures have to be implemented. These measures can be classified into:

1. Structural measures
2. Non-structural measures

### Structural Measures

In this approach physical structures are envisaged to prevent the flood waters from reaching potential damage centers. The main structural measures undertaken so far in India are as follows.

1. Embankments, Floodwalls, Flood levees
2. Dams and Reservoirs
3. Natural Detention Basin
4. Channel Improvement
5. Drainage Improvement
6. Diversion of flood water
7. Catchment area treatment/ afforestation
8. Anti-erosion works

In India, systematic planning for flood management commenced with the Five Year Plans, particularly with the launching of the National Program of Flood Management in 1954. During the last 48 years, different methods of flood protection structural as well as non-structural have been adopted in different states depending upon the nature of the problem and local conditions. Structural measures include storage reservoirs, flood embankments, drainage channels, anti-erosion works, channel improvement works, detention basins, etc. and non-structural measures largely include flood forecasting, flood plain zoning, flood proofing, etc. The various flood management measures undertaken through the successive five year plans are summarized in table-2.

Table 2 Flood Management Measures Undertaken During Various Five Year Plans

| SI No | Name of States/UT    | Area benefitted | Length of Embankments | Length of Drainage Channels | Village Raised/Protected | Town/Village Protection Works | Raised Platforms |
|-------|----------------------|-----------------|-----------------------|-----------------------------|--------------------------|-------------------------------|------------------|
|       |                      | M.ha            | km                    | km                          | Nos                      | Nos                           | Nos              |
| 1     | 2                    | 3               | 4                     | 5                           | 6                        | 7                             |                  |
| 1     | Andhra Pradesh       | 1.311           | 2230                  | 13569                       | 23                       | 72                            |                  |
| 2     | Arunachal Pradesh    | 0.055           | 6.324                 | 4.447                       | 17                       | 0                             |                  |
| 3     | Assam                | 1.642           | 4464.18               | 850.69                      | 0                        | 694                           |                  |
| 4     | Bihar                | 2.949           | 3430                  | 365                         | 0                        | 47                            | 58               |
| 5     | Chhattisgarh         | 0               | 0                     | 0                           | 0                        | 0                             |                  |
| 6     | Delhi                | 0.078           | 83                    | 453                         | 0                        | 0                             |                  |
| 7     | Goa                  | 0.003           | 23.19                 | 32.77                       | 0                        | 2                             |                  |
| 8     | Gujarat              | 0.483           | 104.12                | 271                         | 30                       | 805                           |                  |
| 9     | Haryana              | 2               | 1144                  | 4385                        | 98                       | 448                           |                  |
| 10    | Himachal Pradesh     | 0.012           | 58                    | 11                          | 0                        | 0                             |                  |
| 11    | Jammu & Kashmir      | 0.217           | 230                   | 14                          | 5                        | 12                            |                  |
| 12    | Jharkhand            | 0.001           | 14                    | 0                           | 5                        | 2                             |                  |
| 13    | Karnataka            | 0.005           | 73.515                | 10                          | 0                        | 30                            |                  |
| 14    | Kerala               | 0.346           | 205.744               | 31.1                        | 6                        | 4                             |                  |
| 15    | Madhya Pradesh       | 0.004           | 26                    | 0                           | 0                        | 37                            |                  |
| 16    | Maharashtra          | 0.001           | 44.5                  | 110                         | 0                        | 0                             |                  |
| 17    | Manipur              | 0.132           | 577                   | 166                         | 1                        | 38                            |                  |
| 18    | Meghalaya            | 0.001           | 112                   | 0                           | 2                        | 8                             |                  |
| 19    | Mizoram              | 0               | 0                     | 0                           | 0                        | 0                             |                  |
| 20    | Nagaland             | 0.632           | 10.519                | 0                           | 0                        | 8                             |                  |
| 21    | Orissa               | 0.63            | 6541                  | 131                         | 14                       | 29                            |                  |
| 22    | Punjab               | 3.19            | 1370                  | 6622                        | 0                        | 3                             |                  |
| 23    | Rajasthan            | 0.082           | 145                   | 197                         | 0                        | 25                            |                  |
| 24    | Sikkim               | 0.017           | 101.81                | 64.86                       | 0                        | 18                            |                  |
| 25    | Tamil Nadu           | 0.122           | 87                    | 19                          | 4                        | 46                            |                  |
| 26    | Tripura              | 0.033           | 141.74                | 95.23                       | 0                        | 11                            |                  |
| 27    | Uttar Pradesh        | 1.703           | 2097                  | 3995                        | 4511                     | 65                            |                  |
| 28    | Uttaranchal          | 0.002           | 9                     | 0                           | 0                        | 6                             |                  |
| 29    | West Bengal          | 2.568           | 10539                 | 7392.76                     | 0                        | 48                            |                  |
| 30    | A & N Islands        | 0               | 0                     | 0                           | 0                        | 0                             |                  |
| 31    | Chandigarh           | 0               | 0                     | 0                           | 0                        | 0                             |                  |
| 32    | Dadra & Nagar Haveli | 0               | 0                     | 0                           | 0                        | 0                             |                  |
| 33    | Daman & Diu          | 0               | 0                     | 0                           | 0                        | 0                             |                  |
| 34    | Lakshadweep          | 0               | 0                     | 0                           | 0                        | 0                             |                  |
| 35    | Pondicherry          | 0.004           | 61                    | 20                          | 0                        | 0                             |                  |
|       | <b>Total</b>         | <b>18.222</b>   | <b>33928.642</b>      | <b>38809.857</b>            | <b>4716</b>              | <b>2458</b>                   | <b>58</b>        |

(Source: Ministry of Water Resources; <http://mowr.gov.in/writereaddata/linkimages/state9743650818.pdf>)

Reservoirs constructed with exclusive flood control storage include Maithon, Panchet, Tilaiya and Konar in Damodar Valley; Chandil dam on Subarnarekha river, Hirakud dam on Mahanadi river and Rengali dam on Brahmani river. In addition, a live storage of 177 billion cubic meters created so far in the various reservoirs for irrigation, hydropower generation, drinking water etc. also help in reducing flood intensity by storing part of the flood waters in them. The flood management measures undertaken so far have provided reasonable degree of protection to an area of 15.81 million hectares throughout the country. Table 3 shows the flood control works in the country.

Table 3 Flood Control Works and Extent

| S No | Type of Flood Control Works | Extent       |
|------|-----------------------------|--------------|
| 1    | Flood Embankments           | 33928.642 km |
| 2    | Drainage Channels           | 38809.857 km |
| 3    | Town protection works       | 4716 Nos.    |
| 4    | Villages raised             | 2458 Nos.    |
| 5    | Raised Platforms            | 58 Nos.      |

(Source: Ministry of Water Resources: <http://mowr.gov.in/index3.asp?sslid=356&subsublinkid=360&langid=1>)

### Non-Structural Measures

Non-structural measures strive to keep the people away from floodwater. It contemplates use of flood plains judiciously. This technique allows the use of flood plains by reducing the disaster dimension, while retaining its beneficial needs. Following are the main non-structural measures adopted to reduce the damage:

1. Flood plain Zoning
2. Basin level disaster management plans
3. Flood forecasting and warning
4. Regulation of reservoirs

Central Water Commission (CWC) has established flood forecasting system comprising 175 stations on all major rivers and is implementing the scheme for its modernization and expansion. The Ministry of Water Resources (MoWR) and CWC had circulated the draft bill for floodplain zoning regulations to the state governments for enactment and enforcement. However, the response is not satisfactory.

Hence, there is a need for generating flood hazard zone maps in the country.



### 1.3 FLOOD HAZARD ZONATION

Flood hazard zonation (FHZ) is one of the most important non-structural measures, which facilitates appropriate regulation, and development of floodplains thereby reducing the flood impact. The recurrent flood events at frequent intervals demand the need for identification of flood hazard prone areas for prioritizing appropriate flood control measures.

Hazard indicates the probability of occurrence of a disaster within a specific period of time and within a given area of potential damage, such as floods.

In recent past, various methods and techniques have been proposed to analyze the causative factors of floods and produce maps portraying the probability of occurrence of similar phenomena in future. Broadly these methods can be classified as direct and indirect methods.

The direct method consists of flood hazard mapping wherein, the past and present flood trends are identified and assumptions are made on the factors leading them, following which, zonation is made of those sites where floods are most likely to occur. The indirect methods include two different approaches namely the heuristic (knowledge driven) and statistical (data driven) techniques. In the heuristic approach, factors influencing floods such as narrowness of the valleys, very high rainfall, and the heavy encroachment of the flood plains and the increasing pressure of population etc. are ranked and weighted according to their assumed or expected importance. This is normally based on a priori knowledge available to the experts on various causes of floods in the particular area of investigation.

Conventional flood hazard mapping techniques use historical flood data to map floodplains. In addition to a record of peak flows over a period of years, a detailed survey (cross sections, slopes and close contour maps), maps such as soils, physiography, land use, vegetation, population density, infrastructure, and settlements along with hydraulic roughness estimates is required before the extent of flooding for an expected recurrence interval can be determined. Some of the data required for hazard mapping is difficult to obtain from ground measurements and time consuming. FHZ map requires mainly flow information and fine resolution Digital Elevation Model (DEM) to model. However, fine resolution DEM is not available for most of the floodplains. With these constraints it is difficult to prepare FHZ maps conventionally. In this context, the Earth Observation Satellites provide the extent of flooding for major flood events at regular intervals, which helps in identifying frequency of the inundated areas.

### 1.4 INITIATIVES OF DEPARTMENT OF SPACE (DoS)

Keeping in view of the demonstrated potential of earth observation and communication satellites, the Department of Space (DoS) has launched Disaster Management Support Programme (DMSP) for providing aerial and space-based information for disaster management to the country.

#### **Disaster Management Support Programme**

In order to provide vital inputs and support in the event of a disaster, Department of Space (DOS), Government of India, has been developing techniques and methodology by integrating space based systems and services for disaster management. DOS had executed a Disaster Management Support Programme (DMSP) for integrating operationally the space technology inputs and services on a reliable and timely basis for strengthening India's resolve towards disaster management. DMS Programme addresses five issues mainly (i) creation of digital databases at appropriate scales for facilitating hazard zonation, damage assessment, etc., in perennially disaster prone areas, (ii) development of appropriate Remote Sensing & Geographical Information System (GIS) based decision support tools and techniques and demonstrations catering to the information needs at different levels, (iii) acquisition of close contour information for priority areas, (iv) strengthening the communications backbone for addressing the real time / near real time information transfer needs and (v) networking of scientific institutions for exchange of data, information and knowledge.

Towards enabling the operational services, a Decision Support Centre (DSC) is established at National Remote Sensing Centre, (NRSC), Hyderabad, as a single window provider, interfacing with the National / State disaster management agencies. The important components of the DSC include satellite/ aerial data acquisition strategy, user required information and formats, output generation, dissemination of information generated to the users through networking, support functions such as digital database, query shells, hazard zonation, etc.

## Remote Sensing of Floods

Remote sensing makes observation of an object from a distance without being into actual contact. Remote sensing techniques can gather data much faster than ground-based observation and can cover large areas at a time to give synoptic view. Remote sensing comprises of aerial remote sensing which is the process of recording information, such as photographs and images from sensors on aircrafts and satellite remote sensing which consists of several satellite remote sensing systems.

Satellite remote sensing technology has made substantial contributions in every aspect of flood disaster management such as preparedness, prevention and relief. Space systems from their vantage position have unambiguously demonstrated their capability in providing vital information and services for flood management (U R Rao, 1994). Satellite remote sensors cover wide area, periodicity and spectral characteristics and especially in the easiness to compare the data before and after flood disaster. The Earth Observation satellites provide comprehensive, synoptic and multi temporal coverage of large areas in real time and at frequent intervals and thus have become valuable for continuous monitoring of atmospheric as well as surface parameters related to natural disasters. Geo-stationary satellites provide continuous and synoptic observations over large areas of weather including cyclone monitoring. Polar orbiting satellites have the advantage of providing much higher resolution imageries, even though at low temporal frequency, which could be used for detailed monitoring, damage assessment and long-term relief management. Remote sensing also allows monitoring of flood event during the time of occurrence while floods are at peak. Presence of clouds can hamper optical satellite observations of floods during monsoon season. Microwaves, which have got all weather capability helps under these circumstances. Synthetic Aperture Radar (SAR) a microwave sensor aboard ERS and Radarsat satellites can achieve regular observation of the earth's surface, even in the presence of cloud cover. SAR images are also particularly good at identifying open water - which looks black in most images. When combined with optical and infra-red photography from other satellites, an extremely accurate and detailed digital map can be created. Fig 2 highlights IRS based observation of flood scenario in West Bengal during as on 28 Sep 2000.

During last two decades satellite remote sensing has been operationally used for flood disaster management in India. The potential use of remote sensing technology for flood disaster management can be as follows:

- Flood inundation mapping and monitoring
- Rapid and scientific based Damage Assessment
- Monitoring and mapping of flood control works and changes in the river course
- Identification of river bank erosion
- Identification of chronic flood prone areas
- Improvement in flood forecasting & warning models

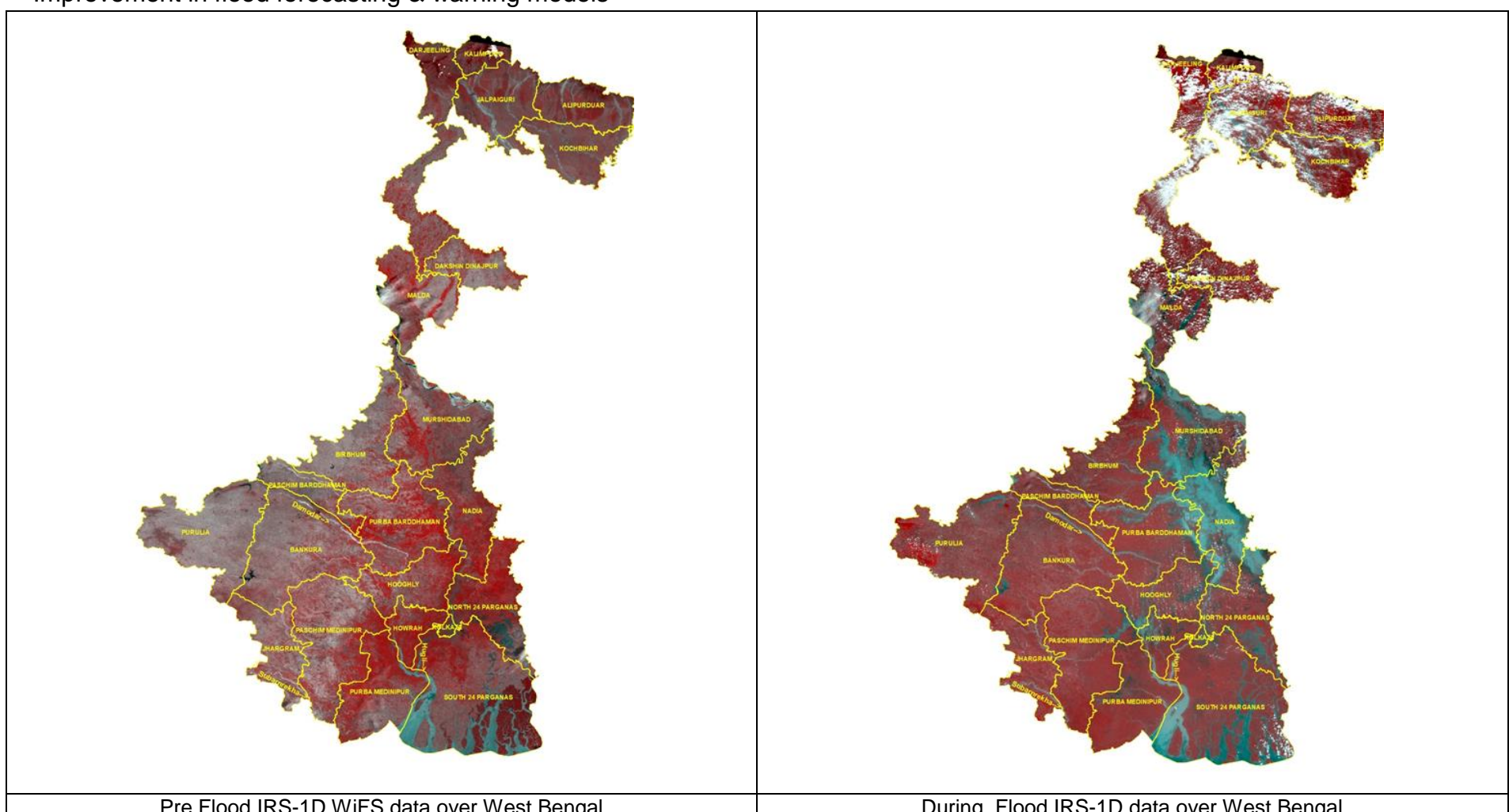


Figure 2 IRS Satellite Based Observation Of Flood Scenario In West Bengal During 2000 Floods As On 28 Sep 2000

High-resolution sensor technology has provided immense scope to the earth resource scientists world-wide for mapping and analysis of earth surface feature details using Remote Sensing and Geographic Information System (RS & GIS). The Table-4 provides list of frequently used satellites and sensors for flood management in India.

Table 4 Frequently Used Satellites and Sensors for Flood Management in India

| SNo | Satellite   | Sensor    | Spatial    |
|-----|---|-----------|------------|
| 1   | IRS-1C & 1D   | WiFS      | 188 m      |
|     |   | LISS-III  | 23.5 m     |
|     |   | PAN       | 5.8 m      |
| 2   | RESOURCESAT-1,<br>RESOURCESAT-2 &<br>RESOURCESAT-2A | AWiFS     | 56 m       |
|     |   | LISS-III  | 23.5 m     |
|     |   | PAN/L4-MX | 5.8 m      |
| 3   | RISAT 1   | SAR       | 25m, 50 m  |
| 4   | IRS-P5 CARTOSAT-1                                   | PAN       | 2.5 m      |
| 5   | CARTOSAT-2  | PAN       | 1m         |
| 4   | RADARSAT-1 &<br>RADARSAT-2                          | SAR       | 100m, 50 m |
| 6   | SENTINEL 1A &<br>SENTINEL 1B                        | SAR       | 10m        |
| 7   | TERRASAR-X  | SAR       | 16m        |
| 8   | NOVASAR   | SAR       | 20m        |
| 9   | ALOS-2 PALSAR                                       | SAR       | 6m         |
| 10  | KOMPSAT-5   | SAR       | 1m         |

(Source: National Remote Sensing Centre, ISRO)

Satellite remote sensing from their vantage position has unambiguously demonstrated their capability in providing important information and services for flood disaster management (Rao, 2000). Satellites provide synoptic and frequent coverage of flood inundated areas and thus become valuable for monitoring floods. Thus satellite data can be directly used for deriving the flood inundation extents. With remote sensing methods, the extent of floodplains and flood-prone areas can be approximated over entire river basins. Flood inundation and floodplain maps have been prepared from satellite data by hydrologists all over the world. This technique is capable of yielding useful information for flood hazard assessment. If satellite data sets during flood times are available over a period of time for a floodplain, they can be conveniently used for hazard zone mapping. In addition, latest landuse/land cover, infrastructure, settlements, etc. can also be generated from satellite data.

## 2.0 FLOOD HAZARD ZONATION FOR WEST BENGAL

### 2.1 ABOUT THE STATE

West Bengal, the fourth most populous state in India, is located in Eastern India on the Bay of Bengal. It lies between 85° 50' and 89° 50' East longitude, and 21° 25' and 27° 13' North latitude stretching from the Himalayas in the north to the Bay of Bengal in the south. The state has diverse landforms which include the Darjeeling Himalayan hill region, the Terai region, the North Bengal plains, the Rarh region, the coastal plains, the Sundarbans delta, the Western plateau and the Ganges delta. West Bengal shares international boundaries with Bangladesh in the east, Bhutan and Nepal in the north. It is bordered by Sikkim in the north, Bihar and Jharkhand in the west and Orissa in the south. The Ganges, Hooghly, Rupnarayan and Damodar are the major rivers in West Bengal, which has an area of 88,752 square kilometres (34,267 square miles). The major base of its economy is agriculture while industry and mining also have significant contributions towards the same.

West Bengal may be broadly divided into two natural geographic divisions—the Gangetic Plain in the south and the sub-Himalayan and Himalayan area in the north. The Gangetic Plain is rich in fertile alluvial soil deposited by the Ganga River along with its tributaries and distributaries. It also has many marshes and shallow lakes formed out of dead river courses. Hugli (Hooghly) River is one of the western distributaries of Ganges and it contributes to the majority of water from the Ganga that flows into the sea. The state capital, Kolkata, is situated on the Hugli in the southern portion of West Bengal. The Damodar is another important river in the state and it joins the Hugli southwest of Kolkata. The elevation of the plain increases slowly toward the west; the rise is most prominent near the Chota Nagpur plateau. The sub-Himalayan tract, known as the West Bengal Duars, or Western Duars, is a part of the Tarai lowland belt between the Himalayas and the plain. Some of the finest tea plantations of India are situated there. North of the Duars, the Himalayan mountain ranges rise abruptly along the northern boundary of the state. Mount Kanchenjunga, actually located in adjacent Sikkim, dominates the landscape of the area, particularly in Darjeeling.

More than 10 % of the total area of West Bengal is occupied by forests. The region has a rich and varied flora. The delta of the Hugli constitutes the western end of the dense coastal mangrove forest called the Sundarbans. A large portion of this area is preserved as a National Park and also as a UNESCO World Heritage site. These forests are inhabited by animals like tigers, leopards, elephants, gaurs (wild cattle), and rhinoceroses among other animals, birds and reptiles of the Indian plain. Jaldapara Wildlife Sanctuary and Buxa tiger reserve are the other prominent protected natural areas in the state.

### 2.1.1 Administrative Setup

West Bengal is divided into 23 administrative districts. Table-5 shows the districts and their headquarters.

Table 5 Districts In West Bengal State and Theirs Details

| S. No. | Name of District               | Headquarters  |
|--------|--------------------------------|---------------|
| 1      | North 24 Parganas              | Barasat       |
| 2      | South 24 Parganas              | Alipore       |
| 3      | Purba Bardhaman <sup>1</sup>   | Bardhaman     |
| 4      | Paschim Bardhaman <sup>1</sup> | Asansol       |
| 5      | Murshidabad                    | Baharampur    |
| 6      | Paschim Medinipur              | Medinipur     |
| 7      | Hooghly                        | Chinsurah     |
| 8      | Nadia                          | Krishnanagar  |
| 9      | Purba Medinipur                | Tamluk        |
| 10     | Howrah                         | Howrah        |
| 11     | Kolkata                        | Kolkata       |
| 12     | Malda                          | English Bazar |
| 13     | Jalpaiguri                     | Jalpaiguri    |
| 14     | Alipurduar <sup>2</sup>        | Alipurduar    |
| 15     | Bankura                        | Bankura       |
| 16     | Birbhum                        | Suri          |
| 17     | Uttar Dinajpur                 | Raiganj       |
| 18     | Purulia                        | Purulia       |
| 19     | Cooch Behar                    | Cooch Behar   |
| 20     | Darjeeling                     | Darjeeling    |
| 21     | Dakshin Dinajpur               | Balurghat     |
| 22     | Kalimpong <sup>2</sup>         | Kalimpong     |
| 23     | Jhargram <sup>2</sup>          | Jhargram      |

<sup>1</sup>: Bardhaman was bifurcated into Purba Bardhaman and Paschim Bardhaman in 2017

<sup>2</sup>: New districts created after 2011 census

(Source: Census of India, 2011)

### 2.1.2 Demography

As per the Census of India 2011, the population of West Bengal was 91,276,115. The highest population densities were recorded in the districts of Kolkata, Haora, North Twenty Four Paraganas, Hugli, Murshidabad and Nadia. The urban population of the state is 29,134,060 which are 31.92 % of the total population. Between 2001 and 2011, the urbanization rate of the state was 3.86 %. According to the Census of India 2001, total population of West Bengal was 80,176,197 making the population increase 13.84 % in 10 years. Table 6 shows the district-wise demographic profile of West Bengal. Figure 3, 4 and 5 depicts district-wise sex ratio, major demography characteristics and population density in West Bengal respectively according to Census of India, 2011.

The literacy rate of West Bengal is 77.08 % which is higher than the national rate of 74.04 % (male literacy rate is 81.69 % and female literacy rate is 70.54 %). The sex ratio of the state is 947 females per 1000 males. It is the fourth most populous state and the second most densely populated state in India. West Bengal achieved 100% electrification in September, 2017.

Table 6 District-Wise Demographic Profile of West Bengal, 2011 (P)

| S.No. | District                   | Population | Increase | Rural Population | Urban Population | Sex Ratio (females per 1000 males) | Literacy | Density (per sq. km) |
|-------|----------------------------|------------|----------|------------------|------------------|------------------------------------|----------|----------------------|
| 1     | North Twenty Four Parganas | 10,009,781 | 12.04%   | 4275724          | 5807128          | 955                                | 84.06%   | 2445                 |
| 2     | South Twenty Four Parganas | 8,161,961  | 18.17%   | 6065179          | 2087997          | 956                                | 77.51%   | 819                  |
| 3     | Bardhaman                  | 7,717,563  | 11.92%   | 4644079          | 3079584          | 945                                | 76.21%   | 1099                 |
| 4     | Murshidabad                | 7,103,807  | 21.09%   | 5697224          | 1405206          | 958                                | 66.59%   | 1334                 |
| 5     | Paschim Medinipur          | 5,913,457  | 13.86%   | 5228308          | 714992           | 966                                | 78.00%   | 631                  |
| 6     | Hooghly                    | 5,519,145  | 9.46%    | 3388395          | 2131994          | 961                                | 81.80%   | 1753                 |
| 7     | Nadia                      | 5,167,600  | 12.22%   | 3730897          | 1437591          | 947                                | 74.97%   | 1316                 |
| 8     | Purba Medinipur            | 5,095,875  | 15.36%   | 4500770          | 593468           | 938                                | 87.02%   | 1081                 |
| 9     | Howrah                     | 4,850,029  | 13.50%   | 1776970          | 3064668          | 939                                | 83.31%   | 3306                 |
| 10    | Kolkata                    | 4,496,694  | -1.67%   | 0                | 4486679          | 908                                | 86.31%   | 24306                |
| 11    | Malda                      | 3,988,845  | 21.22%   | 3446056          | 551914           | 944                                | 61.73%   | 1069                 |
| 12    | Jalpaiguri                 | 3,872,846  | 13.87%   | 2825001          | 1044674          | 953                                | 73.25%   | 622                  |
| 13    | Bankura                    | 3,596,674  | 12.65%   | 3295613          | 300679           | 957                                | 70.26%   | 523                  |
| 14    | Birbhum                    | 3,502,404  | 16.15%   | 3054019          | 448368           | 956                                | 70.68%   | 771                  |
| 15    | Uttar Dinajpur             | 3,007,134  | 23.15%   | 2638662          | 362187           | 939                                | 59.07%   | 958                  |
| 16    | Puruliya                   | 2,930,115  | 15.52%   | 2554584          | 373381           | 957                                | 64.48%   | 468                  |
| 17    | Cooch Behar                | 2,819,086  | 13.71%   | 2533480          | 289300           | 942                                | 74.78%   | 832                  |
| 18    | Darjeeling                 | 1,846,823  | 14.77%   | 1123859          | 718175           | 970                                | 79.56%   | 586                  |
| 19    | Dakshin Dinajpur           | 1,676,276  | 11.52%   | 1434856          | 236075           | 956                                | 72.82%   | 755                  |

P – Provisional, (Source: Census of India, 2011)

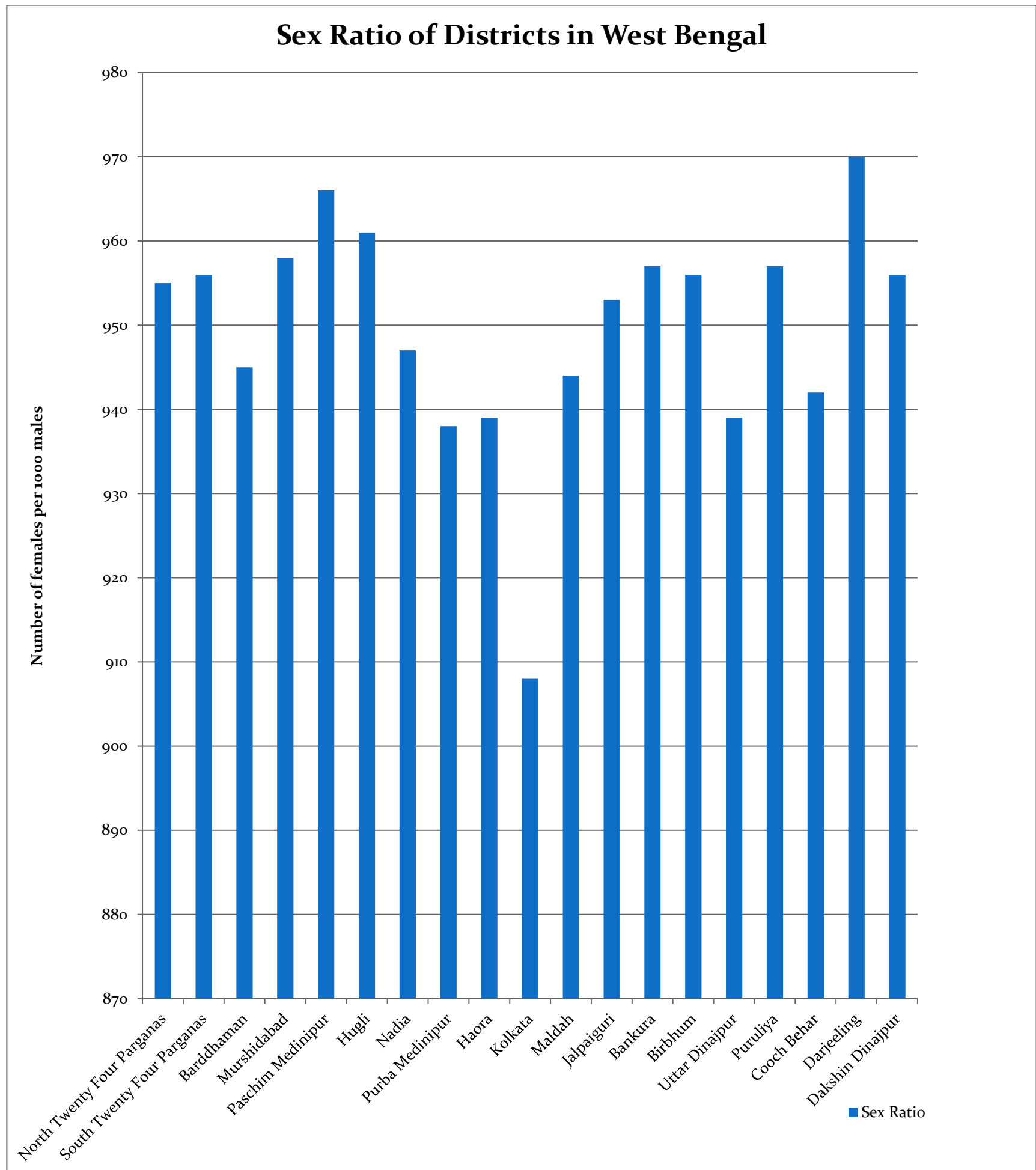


Figure 3 District-Wise Sex-Ratio, 2011 in West Bengal

(Source: Census of India, 2011)

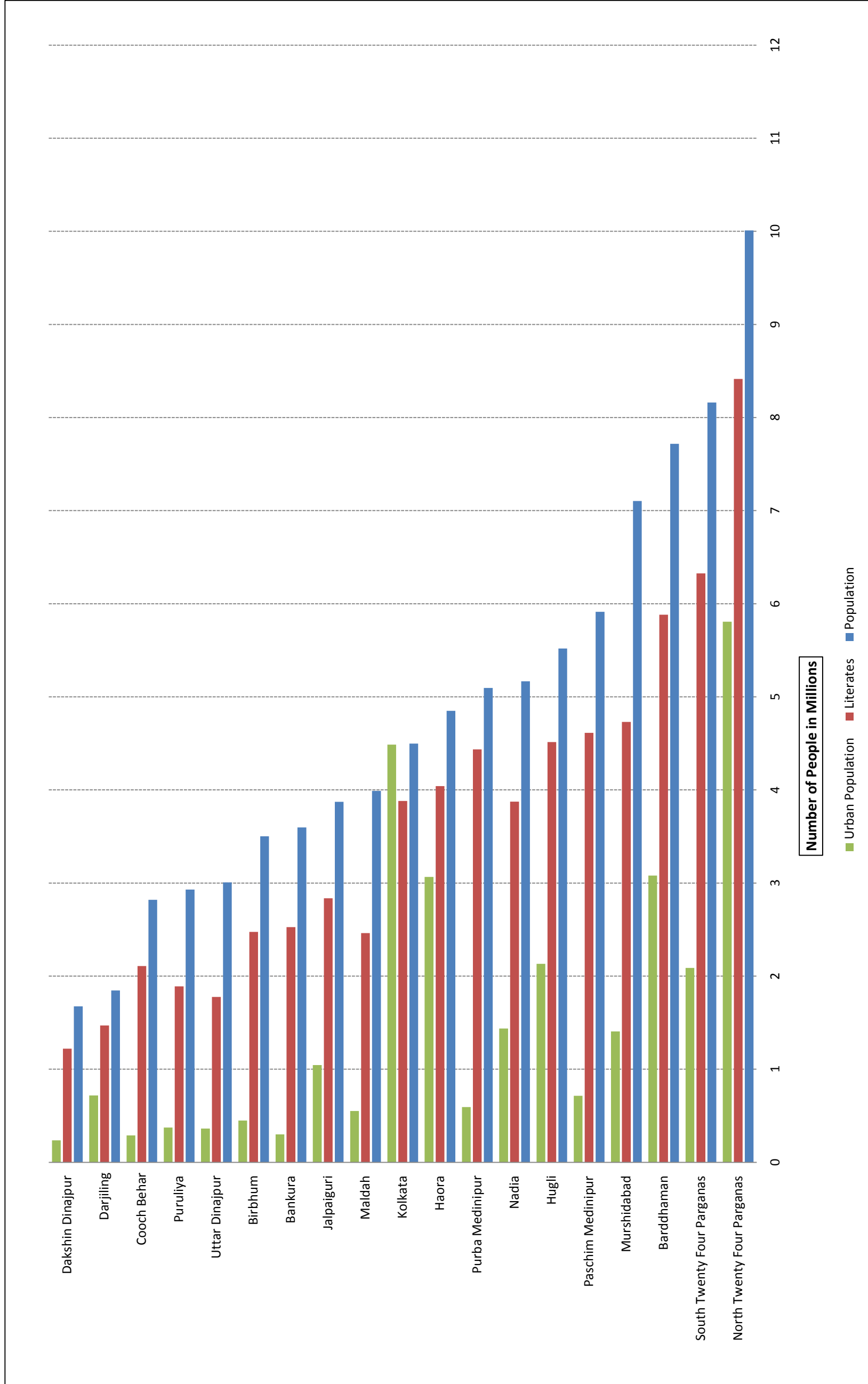


Figure 4 District-Wise Major Demography Characteristics, 2011 In West Bengal

(Source: Census of India, 2011)



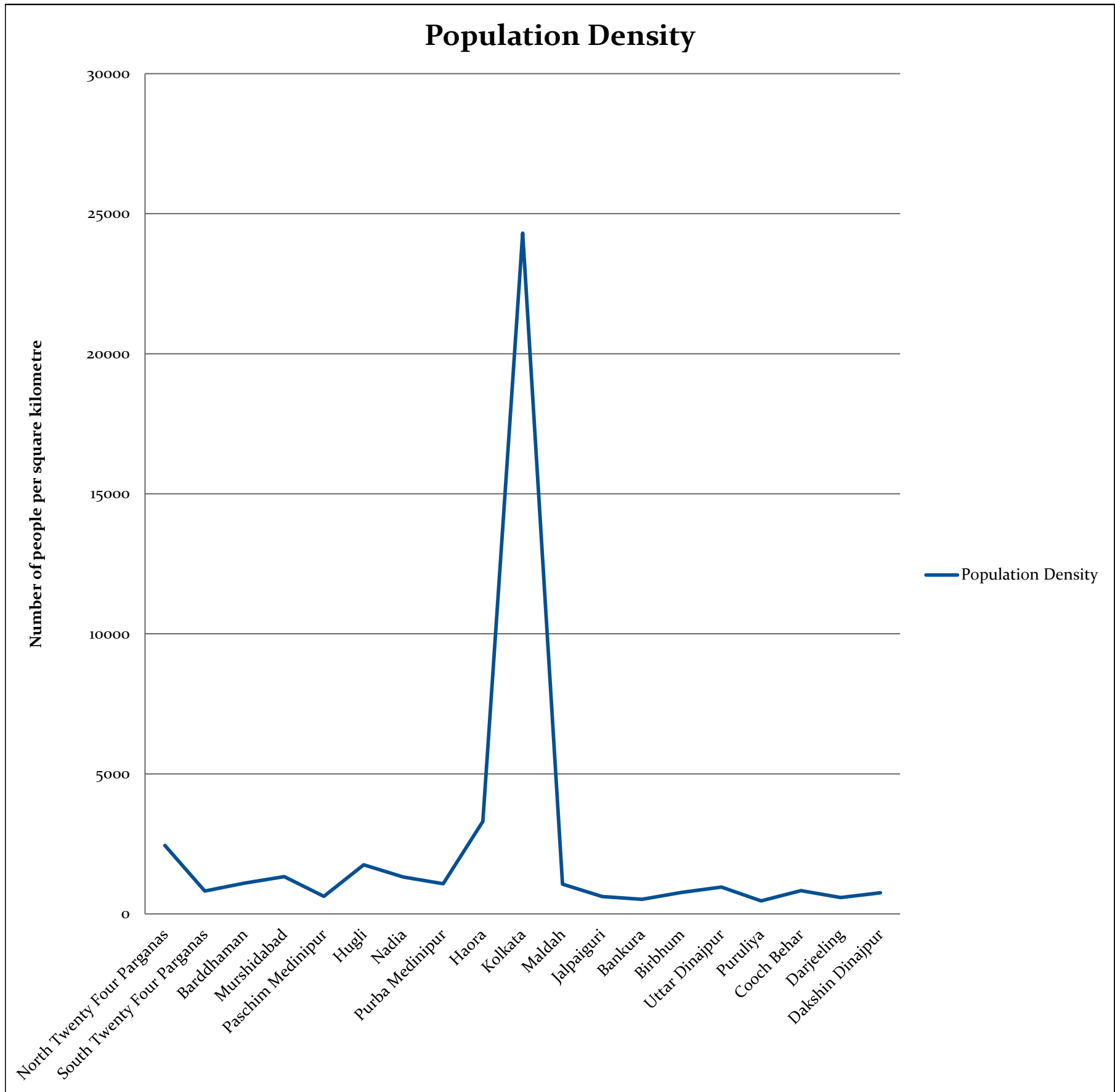


Figure 5 District-Wise Population Density, 2011 in West Bengal

(Source: Census of India, 2011)

### 2.1.3 Physiography of West Bengal

Physiographically, the State can be divided into the following zones:

- The Denudational-structural mountainous region in the north covering major parts of Darjeeling and Kalimpong districts
- Piedmont zone along the foothills in parts of Darjeeling, Kalimpong, Jalpaiguri, Alipurduar and Cooch Behar districts
- Central Gangetic Alluvial Plain comprising of Older and Younger Alluvial Plain of Ganga - Bhagirathi/Hooghly river system in parts of Malda, Murshidabad, Uttar and Dakshin Dinajpur, Nadia, Birbhum, Bardhaman, Hugli, Howrah and North and South 24 Parganas, Puruliya, Bankura, Paschim and Purba Medinipur districts
- Western Uplands in parts of Puruliya, Bankura, Paschim Medinipur, Bardhaman and Birbhum districts
- Coastal zone - Hooghly estuary and Medinipur coastal plain, east and west of Hooghly river respectively covering parts of Purba and Paschim Medinipur and North and South 24 Parganas districts

#### 2.1.3.1 Mountainous Belt

The Himalayas have been dominated by increasing uplift with low angle thrust tectonics below the mountain during Quaternary period. The most important structural elements in the Himalayan foothill zone as revealed from the studies of the Geological Survey of India are:

- E-W trending faults parallel to the Himalayan trend
- Transverse faults trending approximately in N-S/NW-SE/NE-SW direction running across the Himalayan trend

A number of E-W, N-S, NE-SW and NW-SE trending lineaments have specific importance in terms of slope failure (landslides), alignment of the rivers or deflection of the channels. These lineaments contribute to the instability of the region reflecting the constantly changing direction of the river channels.

The eastern Himalaya (i.e. Nepal - Darjeeling - Sikkim Himalaya) and the northeast Himalaya are the most intense seismic zones and are prone to earthquakes and events mostly located between Main Boundary Thrust (MBT) and Main Central Thrust (MCT).

However, the occurrence of the landslides in the Darjeeling - Sikkim Himalaya is not always related with the earthquake or seismic activity. Landslides are mainly associated with the rainfall, rock types, geomorphology (slope characteristics etc.) and anthropogenic activities - may be classified as mass movement in soil masses/highly weathered rocks due to reactivation of unstable slopes by water.

The most unstable zone for landslides exists in Kurseong sub-division (e.g. Chunabhati, Tindharia, Mahanadi, Pankhabari, Ambootia etc.) due to high rainfall and the presence of softer rocks. Almost all the rocks in this region are highly joint and weathered. Kurseong receives the highest rainfall in Darjeeling district. For this reason, highly fractured softer rocks become increasingly wet and accelerate the dynamics of laminar and linear slope processes including diffuse wash and mass movements i.e. soil creep, slides/slumps/mud flows/debris flows etc.

#### 2.1.3.2 Piedmont Zone

Existing literature reveal that the foothill region of the Himalaya in the northern part of West Bengal is characterized by the presence of coalescing alluvial fan of Mahananda - Tista - Jaldhaka - Torsa river systems and the main water flow keeps on shifting from one channel to another as a common characteristic of a submontane fan. In this area, the Tista - the principal river, has conformed to this pattern with changing course from Ganga to Brahmaputra system due to some geological incident - tectonic activities coupled with landslides.

The piedmont zone can be subdivided into three distinct fan surfaces i.e. Proximal fan, Intermediate fan and Distal fan with recent flood plain deposits on the basis of altitude, break-in-slope between the adjacent landform units, land use pattern along with the existing Quaternary geological and geomorphological studies of GSI. The proximal fan surface (mainly Samsing - Thaljhora formation) is present in small pockets along the southern fringe of the Himalayas between 280m and 600m altitude. The intermediate fan surface (Chalsa - Matiali formation) between 80m and 280m altitude are characterised by the presence of fan-cut

terraces and emergence or regeneration of numerous incipient streams at the break-in-slope. Whereas, the distal fan surface (Baikunthapur - Saugaon formation) between 180m and 30m altitude is characterised by sloping surface and alluvial plain morphology i.e. presence of flood plain, cut-off meanders, ox-bow lakes and meander scrolls.

The fan deposits of the foredeep region terminate at places at Alluvial Upland - the 'Barind formation' in Malda and Uttar Dinajpur districts and borders the Ganga / Padma river in Bangladesh (Barind area). The 'Barind formation' is characterized by the presence of a hard red clay capping and down to depth the litho-members consist of sand, silt, clay and gravel with occasional thin bands of 'kankar'.

### 2.1.3.3 Central Gangetic Alluvial Plain

The area constitutes part of the Bengal Plain of Indo-Gangetic Alluvial tract. More precisely, in this stretch the Ganga or Ganga/Padma river borders the Himalayan Foredeep Zone in the north and the Shelf Zone and Mid Basinal Zone, west and east of Bhagirathi/Hooghly river respectively in the south.

The Mid Basinal Zone east of the Bhagirathi/Hooghly river is a low lying alluvial plain. The Shelf Zone west of the Bhagirathi/Hooghly river is an Alluvial Upland with laterite and 'caliche' bearing horizons (Sijua surface).

The Ganga river has shifted its course considerably through history and possibly during 1700 A.D., the Ganga has shifted towards its present course. This particular change in the Ganga course may have some interrelationship with the change in course of the Tista river in 1787 and the Brahmaputra river in later part of the 18<sup>th</sup> century - possibly due to tectonic reasons. It may be mentioned that the satellite imagery provides synoptic coverage of the play field of the Ganga / Padma River exhibiting various geomorphological features like abandoned channels, left-out meander scrolls, ox-bow lakes, remnants of spill channels and older flood plains. Whatever changes occurred in the course of the Ganga/Padma river, at least during last century, are well within the earlier floodplain/alluvial plain of the river system.

Bhagirathi/Hooghly River is the western most major distributary channel of the Ganga delta. In general, the Bhagirathi/Hooghly River is taken as the western limit of the Ganga delta. However, palaeogeographic development of the Ganga delta indicates that the Bhagirathi/Hooghly River has shifted towards east through space and time with the development of the deltas of the peninsular rivers (viz. Mayurakshi, Ajay, and Damodar) coupled with neotectonic activities.

### 2.1.3.4 Western Uplands

Regionally, the area constitutes the eastern fringe of the Chota Nagpur plateau with stable cratonic mass and Lateritic Upland which gradually merge with the depositional fluvial terraces (i.e. Alluvial Plain) of the rivers flowing into the Bhagirathi / Hooghly River in the east.

The country rock of the region is mainly granite gneiss belonging to Chota Nagpur Granite Gneiss Complex (CGC) with enclaves of meta-sedimentaries and metabasics. The Ajay - Damodar - Barakar river basins comprise of coal bearing Gondwana rocks. The basaltic flows of the Rajmahal Traps occupy the western part of Birbhum district. The area under consideration is marked by denudational landforms giving rise to a pedimental landscape with structural / denudational hills, intermontane valleys and pediplains etc. Further east, the Dissected Lateritic Upland (i.e. Lalgah formation) grades into Older Alluvium of 'shelf zone' (west of Bhagirathi / Hooghly river) with younger depositional terrain of the major river systems like Mayurakshi, Ajay, Damodar, Dwarkeswar, Kangsabati and Rupnarayan which join the Bhagirathi / Hooghly river with 'inland delta/fan'. Subarnarekha river in Paschim Medinipur district may be considered as a discrete one since it directly debouches in the Bay of Bengal, flowing through West Bengal.

The drainage pattern in the pedimental landscape is characteristically dendritic, exemplifying the denudational landform features of eastern fringe of Chhota Nagpur plateau. In the Lateritic Upland, sub-dendritic to sub-parallel drainage patterns are prevailing. However, a diverging drainage network is present in the Older and Younger Alluvial Plains which signify the fanning out of the rivers viz. Kasai, Damodar, Ajay and Mayurakshi.

### 2.1.3.5 Coastal Zone

The Bengal basin, in its southern extremity, is characterized by the presence of an extensive marine- coastal tract, bordered by the Bay of Bengal. Physiographically, the coastal belt of West Bengal, comprises the Hooghly estuary in the east and the Medinipur Coastal Plain (part of the Balasore- Contai Coastal Plain) in the west with the Hooghly river in between. The Medinipur Coastal Plain extends from Digha (Udaypur / Talsari) in the west to Junput in the east with a linear stretch of 46km and is segmented into four sectors viz. Digha, Shankarpur / Chandpur, Dadanpatrabar and Junput sectors by major tidal creeks viz. Ramnagar khal, Jaldha creek and Pichabani khal respectively.

The macrotidal Hooghly estuary forms the western part of the Ganga-Brahmaputra delta, the largest tide-dominated delta of the world. The estuarine part of the Hooghly River is dominated by riverine-tidal-marine forces. The bell or funnel shaped Hooghly river mouth is characterized by a group of islands set in a labyrinth of tidal creeks marking their outlines. This macrotidal domain with bidirectional tidal currents is marked by the presence of 'sickle-shaped' near offshore configuration with partially or totally emerged linear tidal shoals (aligned perpendicular to the shoreline) separated by intervening swales e.g. Jambudwip and Chuksardwip. The coastal low land is characterized by an almost flat terrain with very gentle slope from north to south.

In the western part of the Hooghly estuary i.e. in the adjoining Medinipur (Digha-Junput) Coastal Plain, the Ancient Dune Complex is present as a continuous ridge extending from west of Subarnarekha river (in the west) to the Hooghly river in the east, at a distance of about 10 to 15 km north of the present day shore line. The continuity of this dune ridge is absent in the eastern part of Hooghly river but presence of a morpho-structural lineament in the same alignment of the said dune ridge can be mapped which passes just north of Sagar island, through Kakdwip, in a northeasterly direction and separates the lower deltaic plain of Ganga-Brahmaputra in two sectors :

- The areas to the south of this line are characterized by the presence of islands (draped with mangroves) separated by an 'embroidery' of active tidal creeks
- The areas to the north of this line are almost free from such 'embroidery' of tidal creeks and islands

### 2.1.4 Climate

West Bengal has five main seasons: spring, summer, monsoon, autumn and winter. Also, the climate of the state varies according to the location. It varies from moist-tropical in the south-east to dry tropical in the south west and from subtropical to temperate in the mountains of north. The climate is cooler in the northern mountains than in the southern plains. In some parts of the state, especially towards north, a short spring is expected. The summer season is from March to June. During summer, the temperature range is from well below freezing point in the hills during the winter to about 45°C in southern parts. The monsoon season lasts from June to September and brings heavy rain due to the south-west monsoons picking up moisture from the Bay of Bengal and blowing all over the state. More than 70 % of the annual rainfall occurs during this period. The monsoon brings respite to the parched plains and means a bountiful harvest but they often cause floods and landslides. From October to mid-November, autumn season is experienced by the state during which the temperature starts decreasing gradually. The winter months are from mid-November to February. They are generally pleasant in the southern part of the state. Snowfall is limited to the Himalayan regions.

### 2.1.5 Major Rivers

West Bengal state which is spread over an area of 88,752 sq. km, can be demarcated into three distinct drainage basins namely Ganga, Brahmaputra and basins. Ganga basin has been further divided into two parts namely Bhagirathi lower & others and Damodar. These three main river basins can in turn be divided into sub-basins having individual catchments of their own. The catchment area of these basins in West Bengal is given in Table 7. Figure 6 shows the percentage distribution of drainage areas in West Bengal state.

Table 7 Area of Drainage Basins in West Bengal State

| River Basin              | Area Drained In West Bengal (Sq. Km) |
|--------------------------|--------------------------------------|
| Brahmaputra              | 10584                                |
| Ganga-Damodar            | 26568                                |
| Ganga-Bhagirathi         | 48007                                |
| Subarnarekha             | 3593                                 |
| <b>Total Area (SqKm)</b> | <b>88752</b>                         |

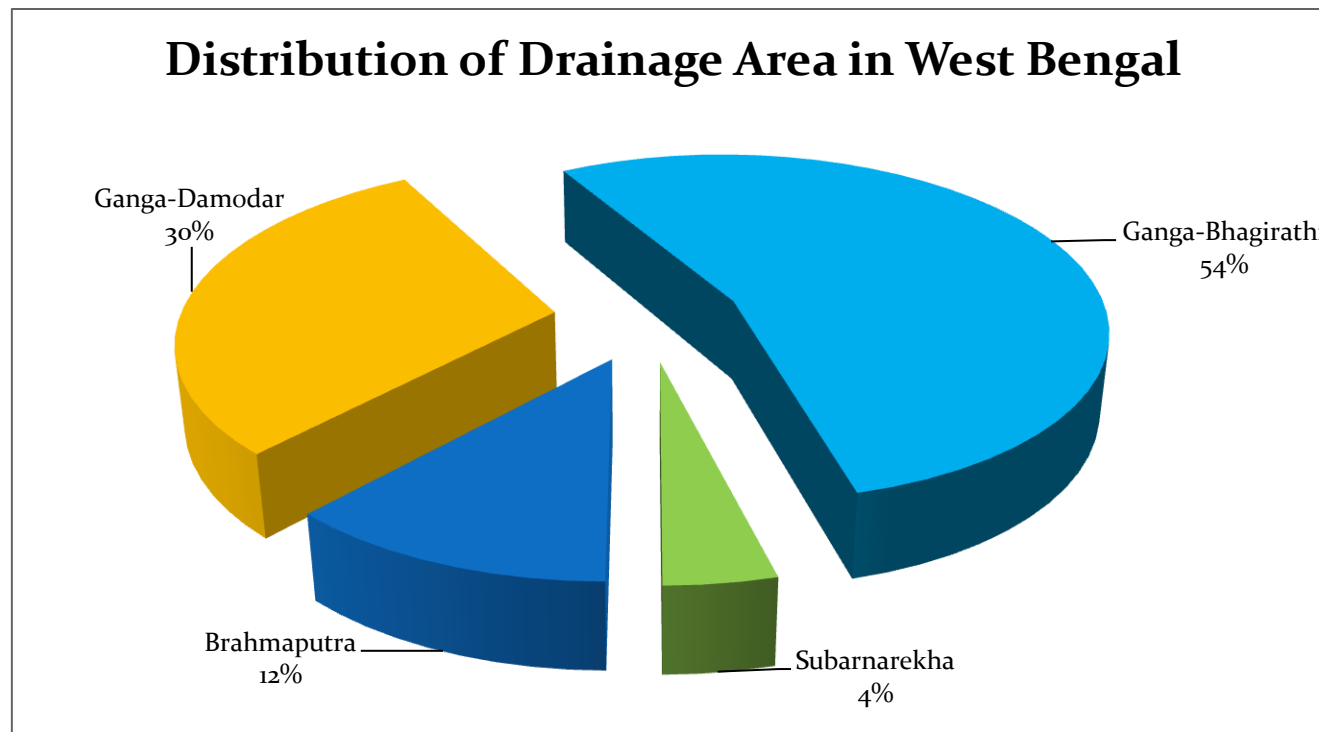


Figure 6 Distribution of Drainage Area in West Bengal

**2.1.5.1 Ganga**

The two holy rivers - Bhagirathi and Alakananda originating from the glaciers of the Himalayas at an altitude of 7,000 m join at Devprayag and the combined stream is known as the Ganga. It emerges into the plains at Rishikesh in Uttarakhand. After flowing exclusively through Uttarakhand and Uttar Pradesh it receives the flow of Yamuna, one of its major tributaries near Allahabad. The other major tributaries of Ganga are Ton, Gomti, Gharghara, Son, Gandak, Kosi and Fulhar. The Ganga forms the boundary between Uttar Pradesh and Bihar for a length of about 110 km and the river then enters Bihar and flows more or less through the middle of the state. After its confluence with the Kosi, the Ganga continues its eastward flows in Bihar for about 40 km.

At Bhagalpur of Bihar, the river begins to flow south-southeast and as it enters West Bengal, the river swings round the Rajmahal hill range and it begins its attrition with the branching away of its first distributary, the Bhagirathi-Hooghly, which goes on to become the Hooghly River after meeting with Jalangi near Nabadwip and ultimately outfalls into the Bay of Bengal near Sagar Island. Just before the border with Bangladesh the Farakka Barrage controls the flow of the Ganges, diverting some of the water into a feeder canal linked to the Hooghly for the purpose of keeping it relatively silt-free.

The North-Central, South-Central, Western, South-Western and Southern parts of West Bengal constitute the Ganga Basin. This basin is largely divided into two major sub-basins namely Bhagirathi lower and Damodar. The total length of the river Ganga from its point of origin to the point where it falls into sea is about 2, 575 km (measured along Bhagirathi and the Hooghly) of which 1,450 km lies in Uttaranchal and Uttar Pradesh, 110 km along Uttar Pradesh and Bihar border, 445 km in Bihar and 570 km in West Bengal. The Ganga system comprises a total area of 74,575 sq. km within the state of West Bengal.

Bhagirathi and Damodar sub-basins of Ganga are shown in figures 7 and 8 respectively.

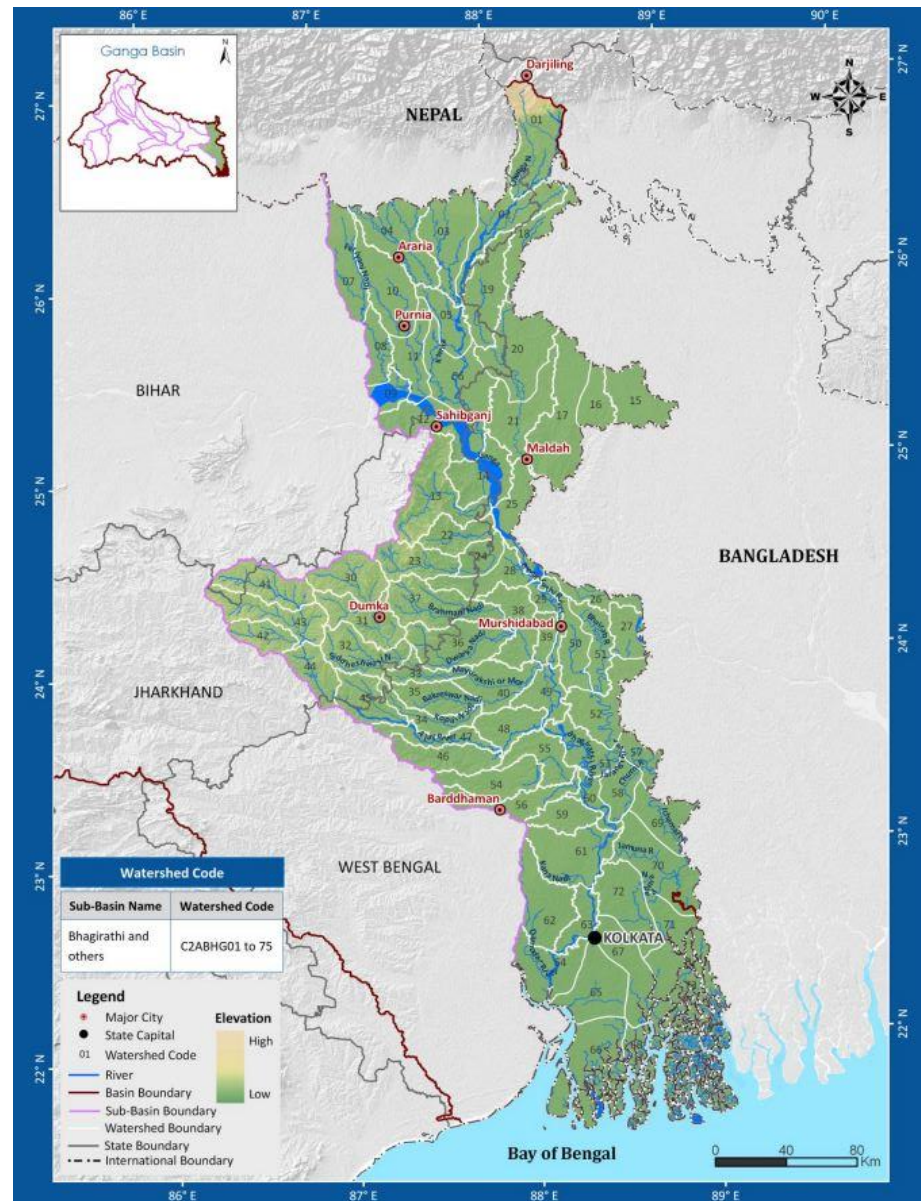


Figure 7 Bhagirathi Sub-Basin of Ganga River  
(Source: Ministry of Water Resources, Government of India)

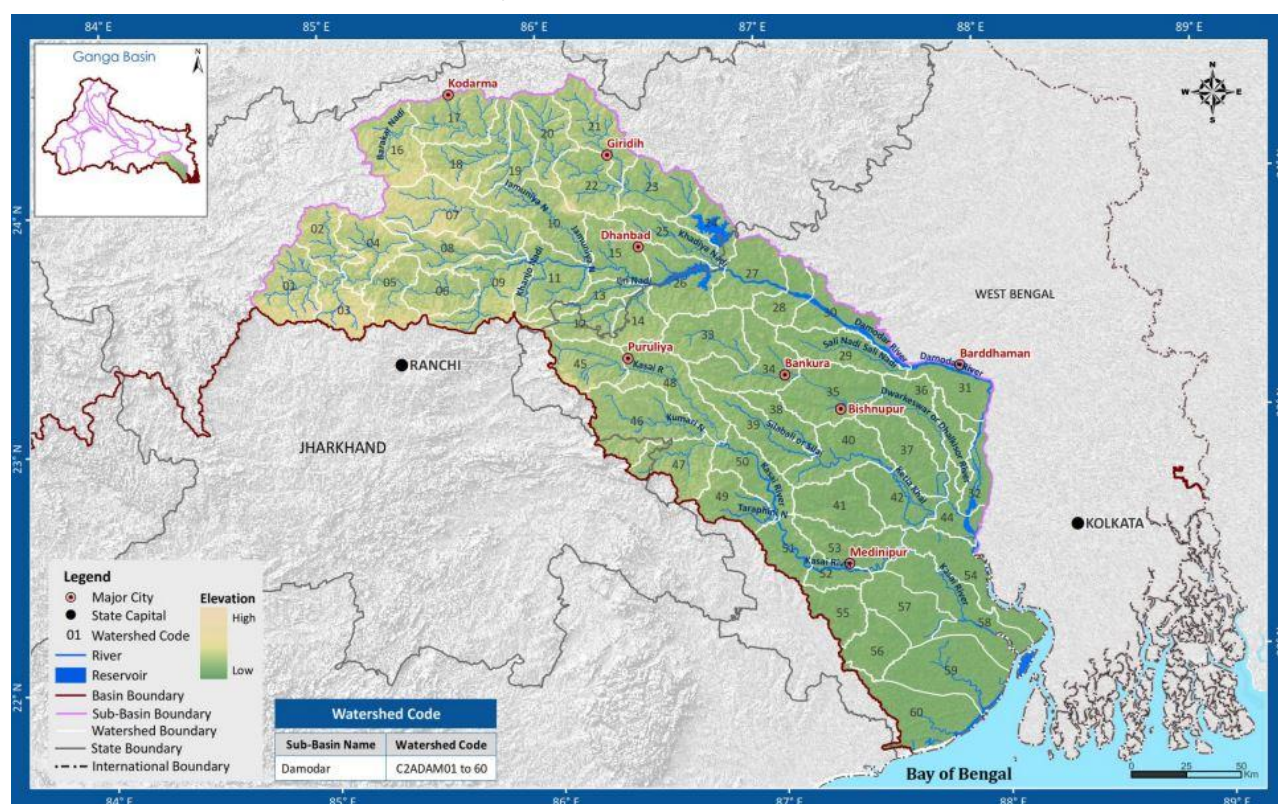


Figure 8 Damodar Sub-Basin of Ganga River  
(Source: Ministry of Water Resources, Government of India)

### 2.1.5.2 Brahmaputra

The rainfall in the northern region of the state is generally high. The ground slope is steep, particularly in the Sub-Himalayan regions of the northern districts. Most of these northern districts belong to Brahmaputra basin. This system consists of a total area of 10,584 sq.km nearly 12% of the geographical area of the state. This basin area is interspersed with a large number of drainage channels which join the main drainage arteries of the regions like the rivers Teesta, Torsa, Raidak, Jaldhaka etc. All these rivers originate from the Himalayas in Bhutan / Sikkim / Tibet and flow across the Terai region and reach the plains of West Bengal and then flow to Bangladesh joining ultimately the Brahmaputra in Bangladesh.

Figure 9 shows the Brahmaputra basin.

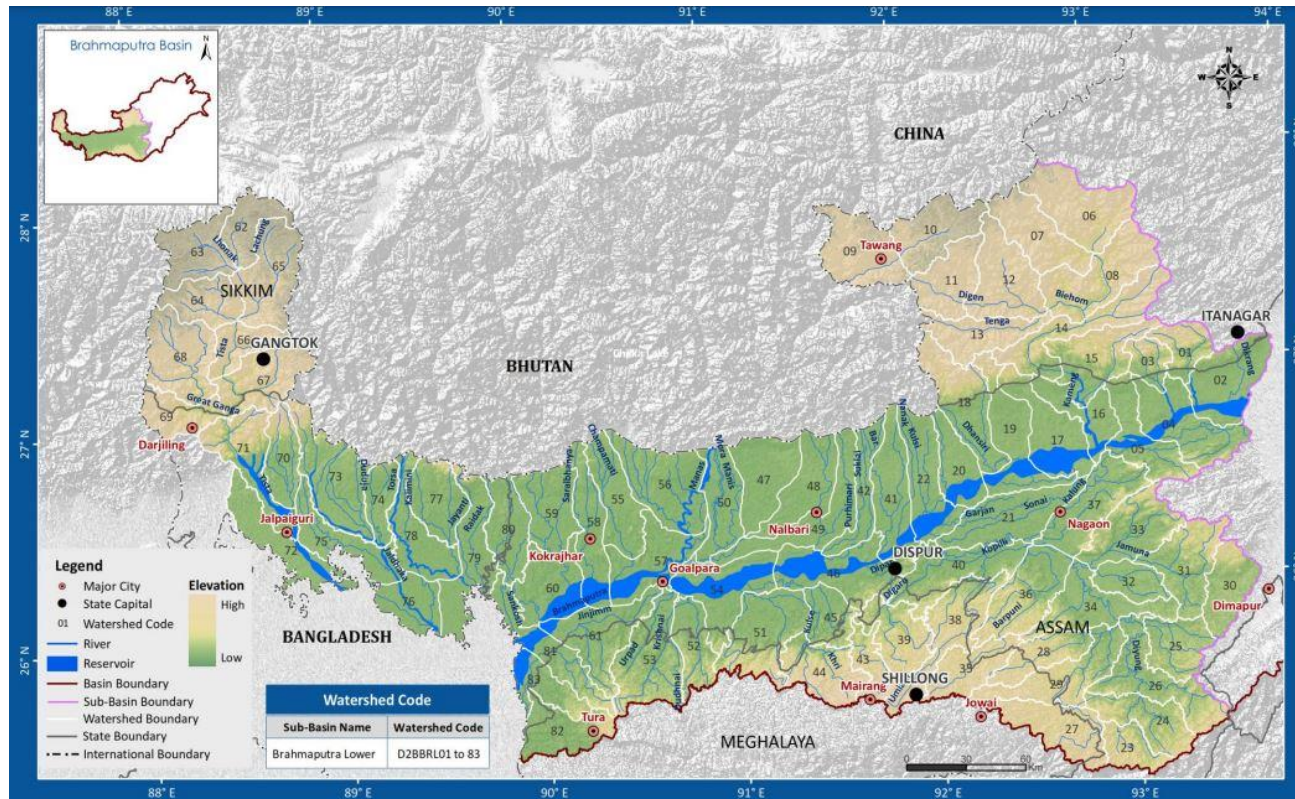


Figure 9 Brahmaputra Basin

(Source: Ministry of Water Resources, Government of India)

### 2.1.5.3 Subarnarekha

The river Subarnarekha (also called Swarnarekha) though it has small catchment within this state, has got separate entity as it directly falls into the Bay of Bengal. Originating in the Chhota Nagpur Range at an elevation of 609 m near Ranchi, it traverses through three states viz. Jharkhand, West Bengal and Orissa. It drains out rain water from a total area of 19,684 sq. km out of which only 3,593 sq. km falls within Purulia and Paschim Medinipur districts of West Bengal.

One major dam at Chandil and one barrage at Galudi have been constructed across Subarnarekha in Jharkhand. The important tributaries on the right bank of this river are Kanchi and Karkari which meet Subarnarekha above Chandil dam and another right bank main tributary named as Kharkai meets this river near Jamshedpur upstream of Galudi barrage. Dulung is the main tributary which joins Subarnarekha from its left in the Paschim Medinipur district of West Bengal. The total length of this river is 395 km out of which 83 km falls within West Bengal. Figure 10 shows the Subarnarekha basin.

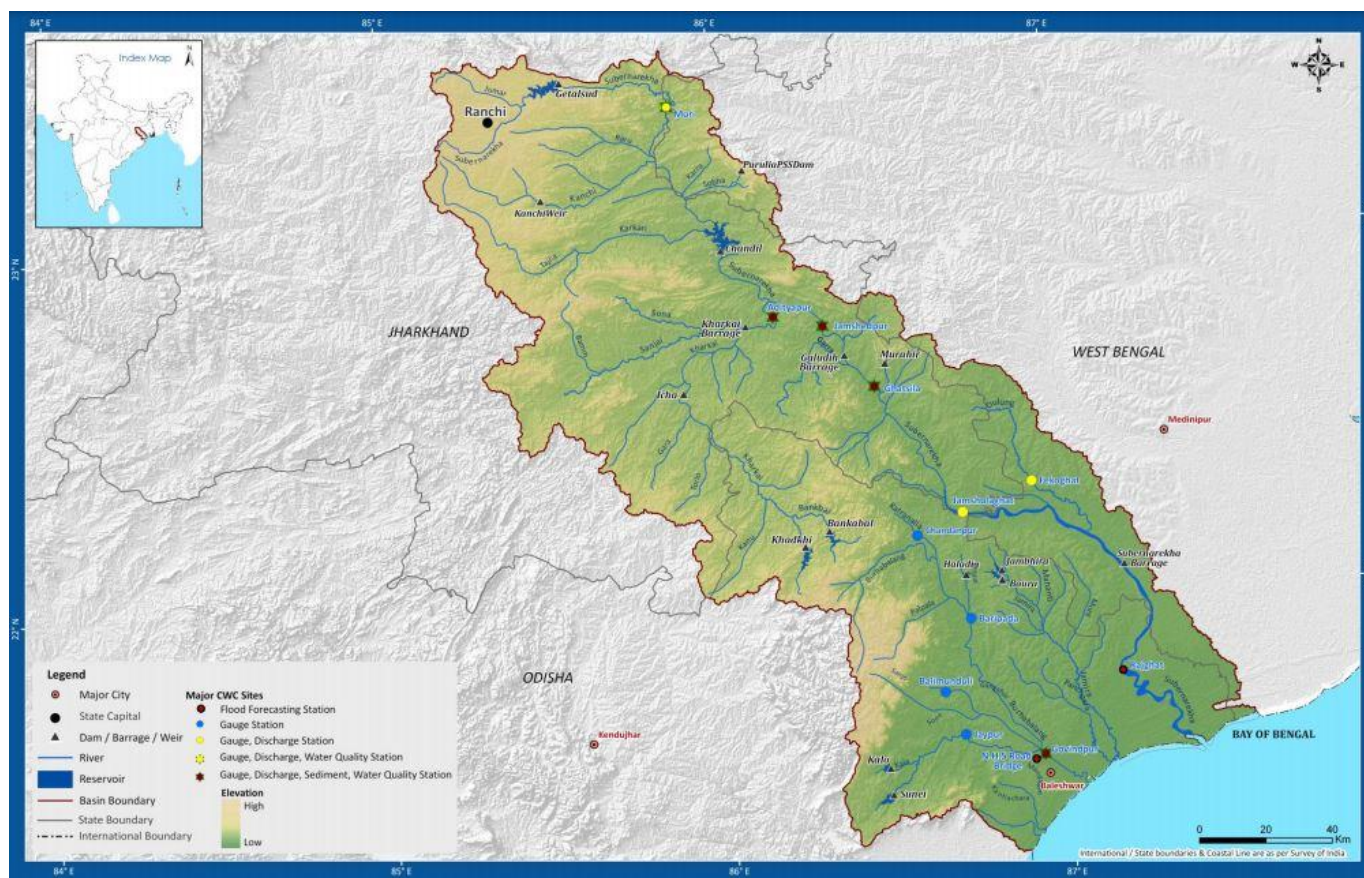


Figure 10 Subarnarekha Basin

(Source: Ministry of Water Resources, Government of India)

## 2.2 FLOOD CONTROL MEASURES

Since floodplains can be mapped, the boundary of the different return period flood is used in floodplain mitigation programs to identify areas where the risk of flooding is significant. Flood hazard maps are used to delineate areas of land which are at risk from flooding up to some extreme limit. Hazard maps show a flood boundary based on different magnitudes of flood with various specific return periods. These maps can be used to regulate developmental activities within the floodplain, so that damages can be minimized. Conventional flood hazard mapping techniques use historical flood data to map floodplains. In addition to a record of peak flows over a period of years, a detailed survey (cross sections, slopes and close contour maps), maps such as soils, physiography, land use, vegetation, population density, infrastructure, and settlements along with hydraulic parameters are required for determining the extent of flooding for an expected recurrence interval. Some of the data required for hazard mapping is difficult to obtain from ground measurements and time consuming; in such cases remote sensing plays an important role. Satellite remote sensing from their vantage position has unambiguously demonstrated their capability in providing important information and services for flood disaster management. Satellites provide synoptic and frequent coverage of flood affected areas and thus become valuable for monitoring flood disasters. Satellite data can be directly used for deriving the flood inundation limits. If satellite data sets during flood times are available over a period of time for a floodplain, they can be conveniently used for hazard zone mapping. In addition, information on latest land use/land cover, infrastructure, etc. can also be generated from satellite data.

## 2.3 ROLE OF IMD IN FLOOD MONITORING IN WEST BENGAL

### 2.3.1 Analysis of Rainfall over West Bengal

#### 2.3.1.1 Raingauge Network

The Raingauge stations (51) which are shown in Fig 11 are used for analysis of rainfall for the state.

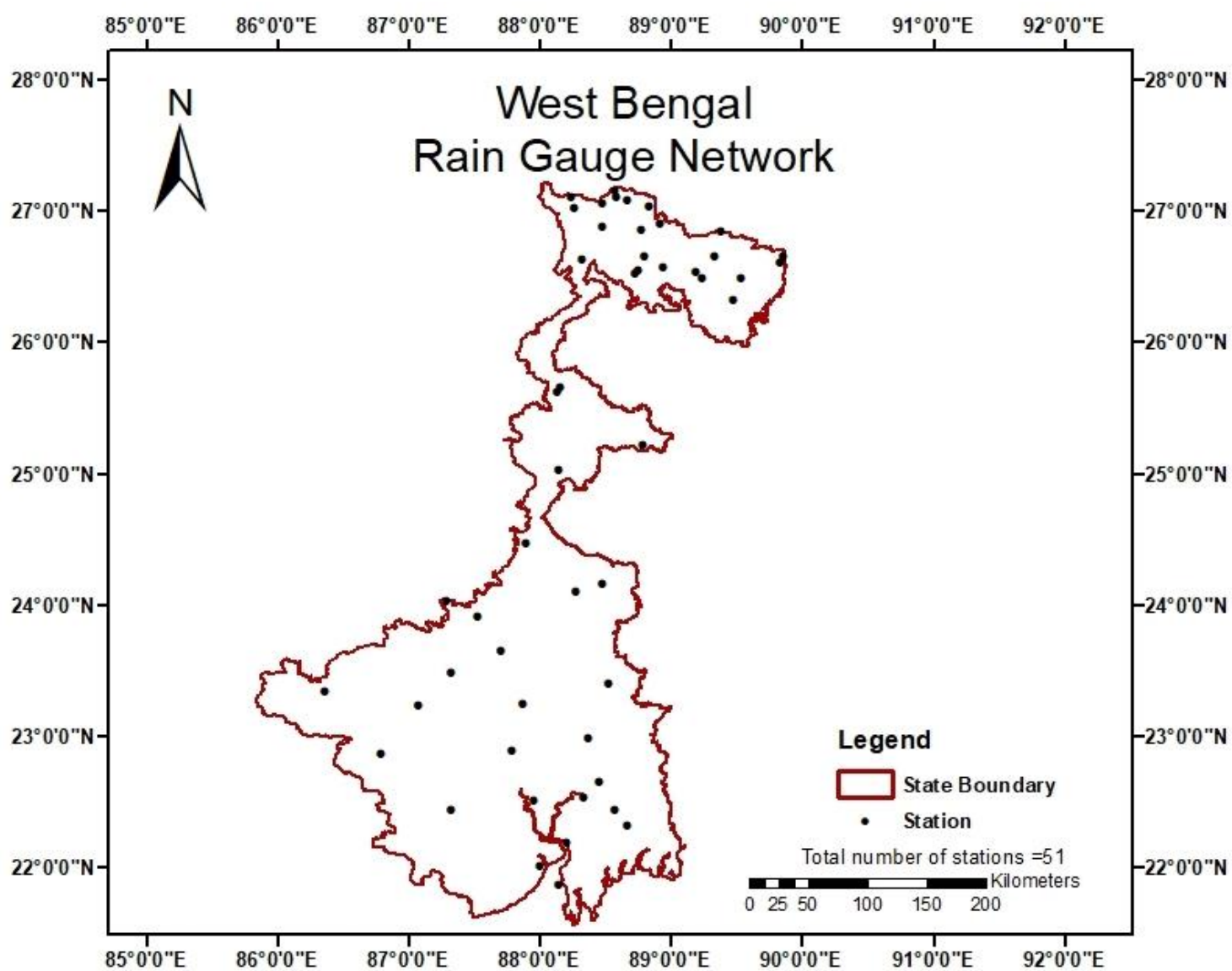


Figure 11 Raingauge Stations Used For The Analysis



## 2.3.1.2 Seasonal and annual normal rainfall

Table 8 Seasonal And Annual Normal Rainfall

| Season            | Month               | Normal Rainfall (mm) |
|-------------------|---------------------|----------------------|
| Winter            | January to February | 31.2                 |
| Pre-monsoon       | March to May        | 235.8                |
| Southwest monsoon | June to September   | 1405.0               |
| Northeast monsoon | October to December | 159.1                |
| Annual            | January to December | 1831.1               |

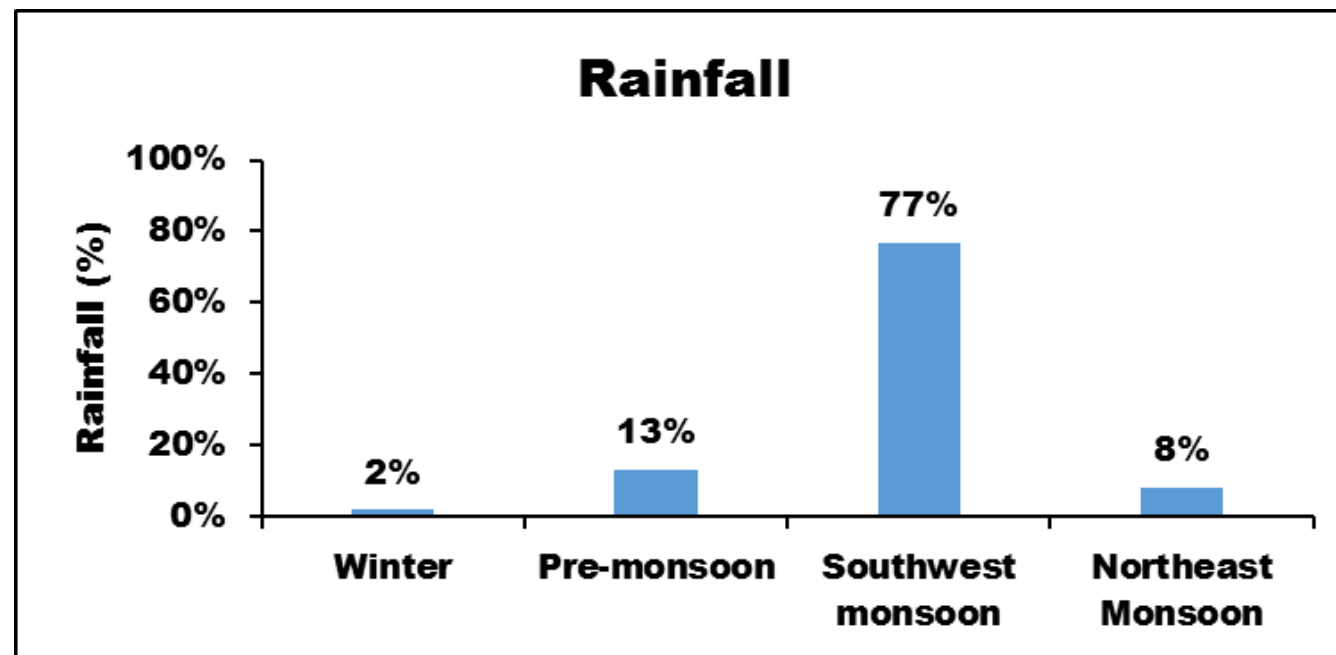


Figure 12 Seasonal Rainfalls (% Of Annual Rainfall)

Southwest monsoon season is the principal rainy season in this state. More than 77% of rainfall occurs during the southwest monsoon season. However, a good amount of rainfall occurred during the northeast monsoon season which is 8% of annual rainfall. Table 8 shows seasonal and annual normal rainfall in the state. Winter and pre-monsoon seasons rainfall are 2%, 13% of annual rainfall respectively (fig 12). The mean monthly rainfall is maximum during the month of July and is minimum in the month of December. The spatial normal rainfall distribution during southwest monsoon, northeast monsoon and annual are shown in figs. 13-14 respectively.

Normally south west monsoon covers the state of West Bengal in the 1st half of June and can be quite severe in some parts of the state during the season. The rainy season is fairly humid but it gets hot when there is a let up in the rains for days together. The southwest Monsoon withdraws from the state normally in the middle of October.

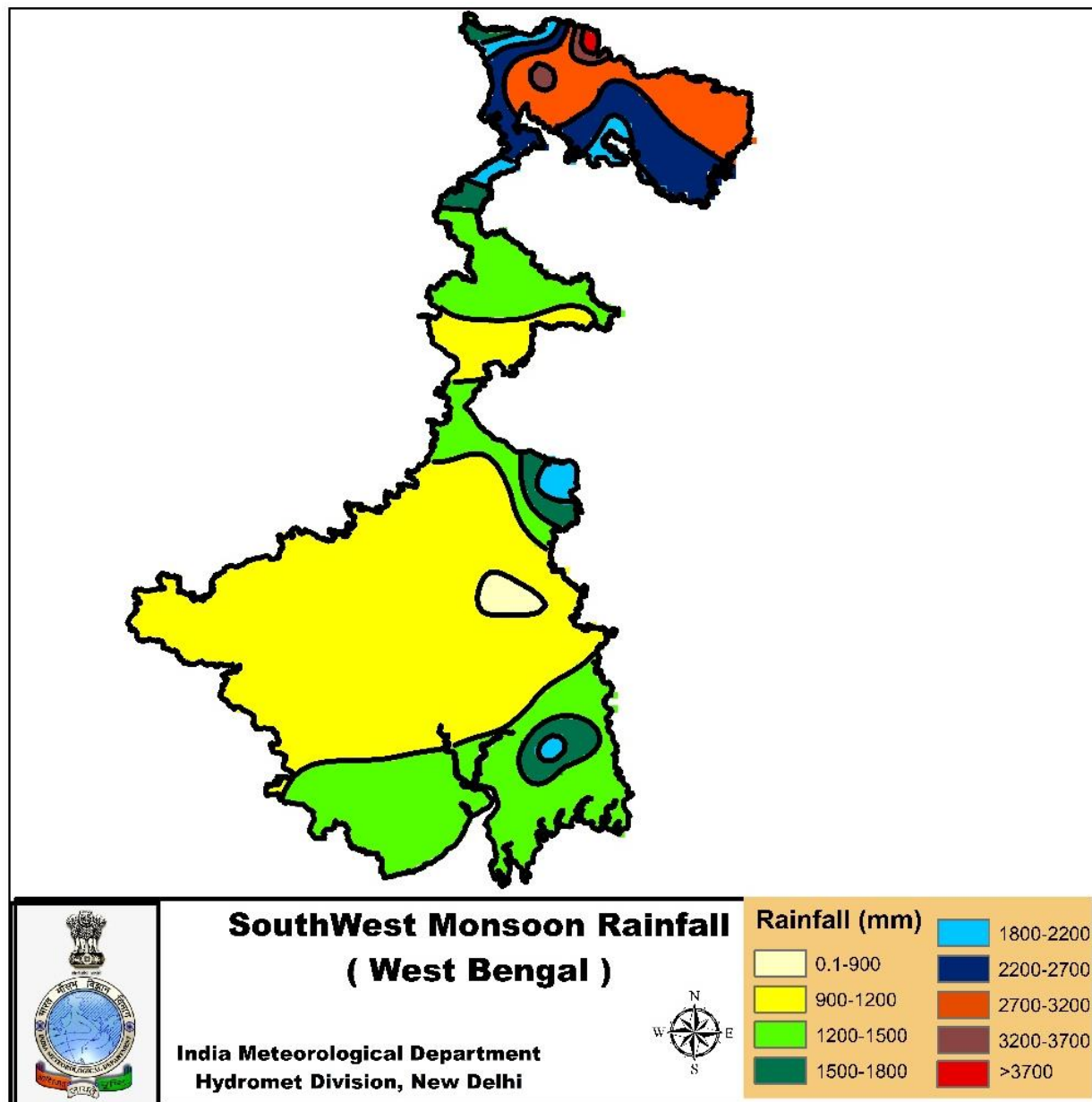


Figure 13 Normal SouthWest Monsoon Rainfall Distributions

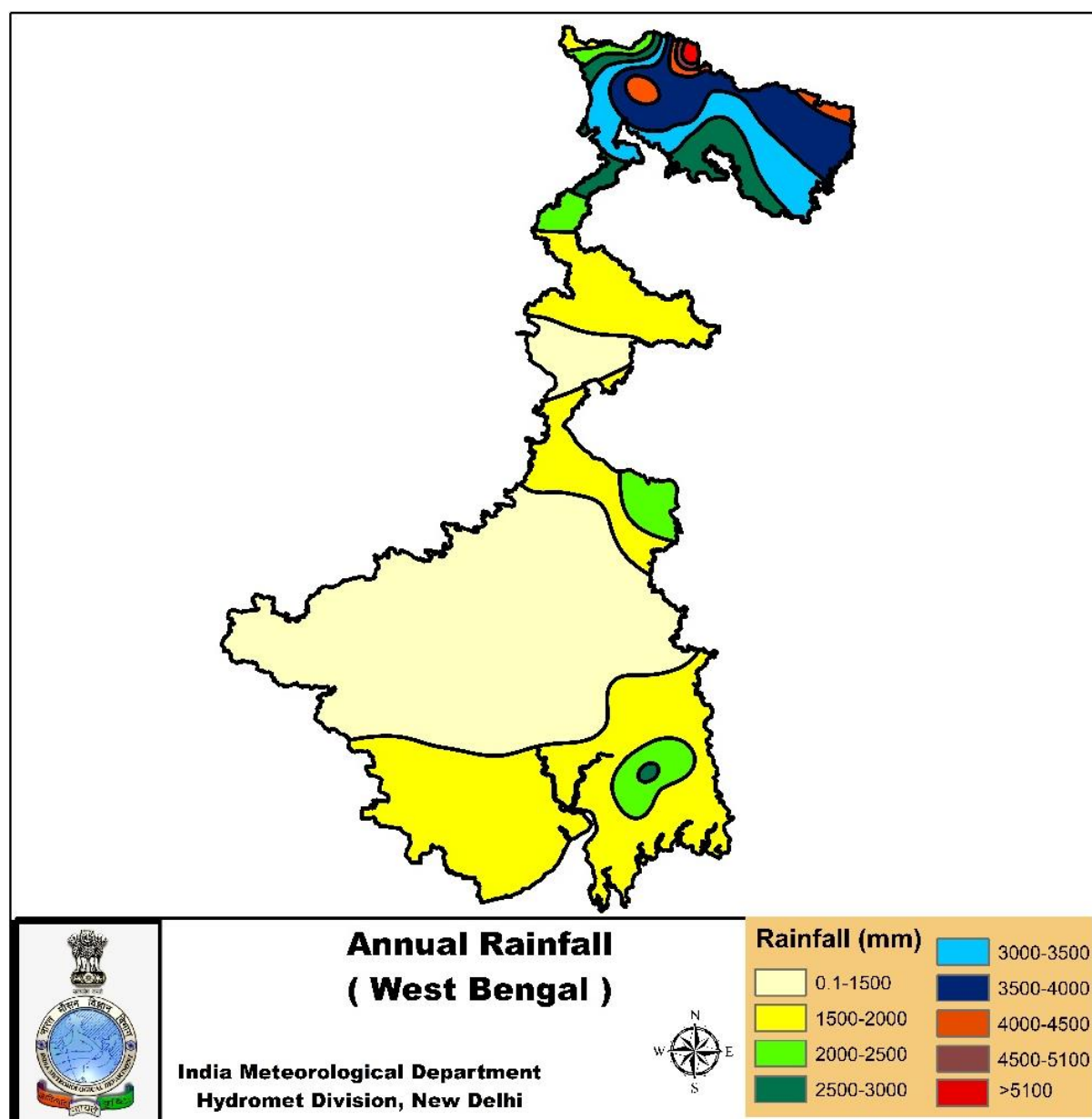


Figure 14 Annual Normal Rainfall Distributions

**2.3.1.3 Main Synoptic features for Rainfall**

Main synoptic features responsible for rainfall over West Bengal are as follows:

(i) Low Pressure System (LPS) (Low/ Depression) over Bay of Bengal: Formation of Low Pressure System is the main synoptic feature of southwest monsoon in India (Fig 15). Generally, Lows/Depressions form over Head Bay of Bengal, near Gangetic West Bengal/ Odisha coasts, move inland taking a west northwesterly course and affect the weather over GWB. Passing of monsoon depression over GWB and adjoining areas cause intense rainfall over the state leading to flooding in GWB.

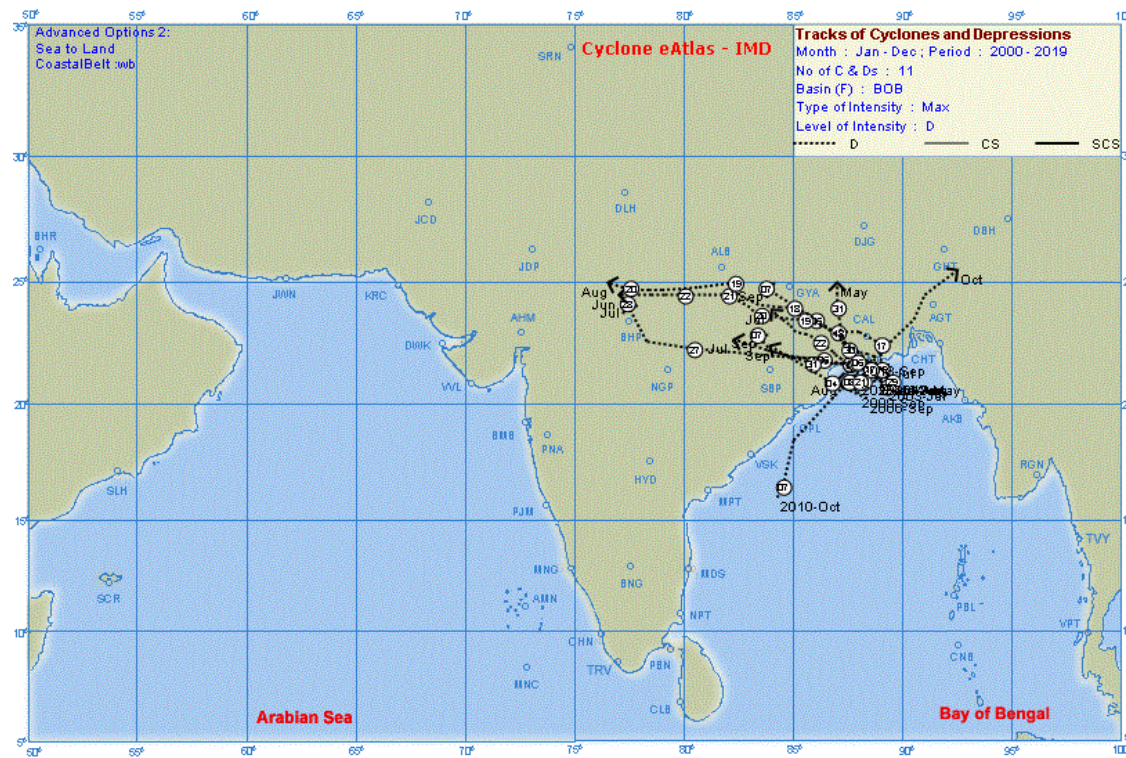


Figure 15 Formation Of Monsoon Depression Over Bay Of Bengal

(ii) The monsoon trough along foothills of the Himalayas: When the monsoon trough is oriented East-West along the foothills of the Himalayas (called break/weak monsoon condition) (Fig 16), North Bengal received heavy to very heavy rainfall along with extremely heavy rainfall in association with orography of eastern Himalayas and strong moisture incursion from Bay of Bengal.

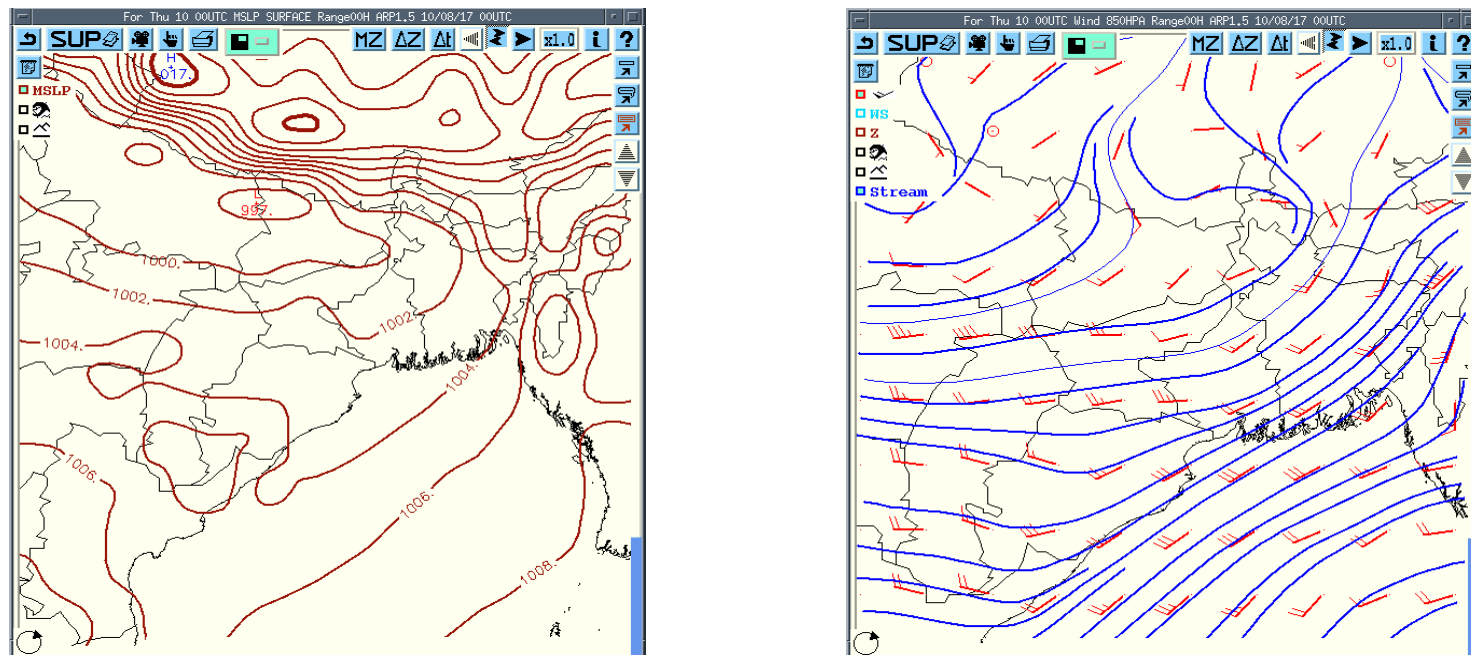


Figure 16 Break Monsoons Synoptic Conditions

(iii) Tropical Cyclone over Bay of Bengal: West Bengal is very prone to tropical cyclones over Bay of Bengal during pre-monsoon and post-monsoon season (Fig 17). Super cyclone AMPHAN has made a lot of damage in GWB in 2020. Tropical cyclone formed over Deep Sea (Andaman Sea and southeast Bay of Bengal) has a tendency to move in northwesterly direction and crossed Odisha/West Bengal coast causing heavy to very heavy rainfall with extremely heavy rainfall over GWB area or recurred towards Bangladesh affecting the east of GWB.

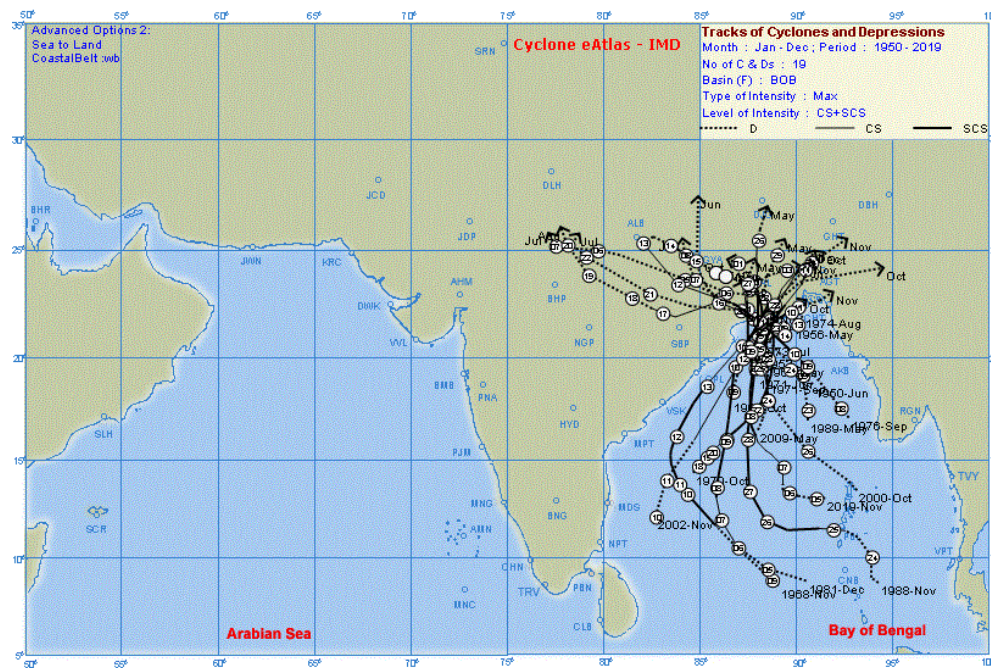


Figure 17 Formations And Movement Of Tropical Cyclone Over Bay Of Bengal

2.3.1.4 Seasonal Rainfall Variation

The actual and normal rainfall for winter, pre-monsoon, southwest monsoon, northeast monsoon seasons and annual are shown figs. 18-22 respectively. It is seen from figures that actual winter, pre-monsoon, southwest monsoon, northeast monsoon season and Annual rainfall in the period 1995 to 2019 is on the higher side of normal rainfall.

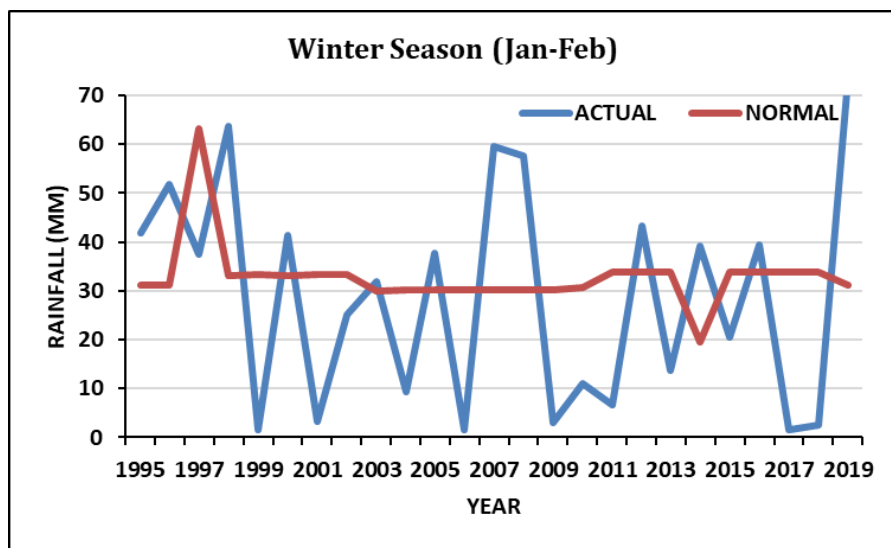


Figure 18 Actual and Normal Rainfall during Winter Season

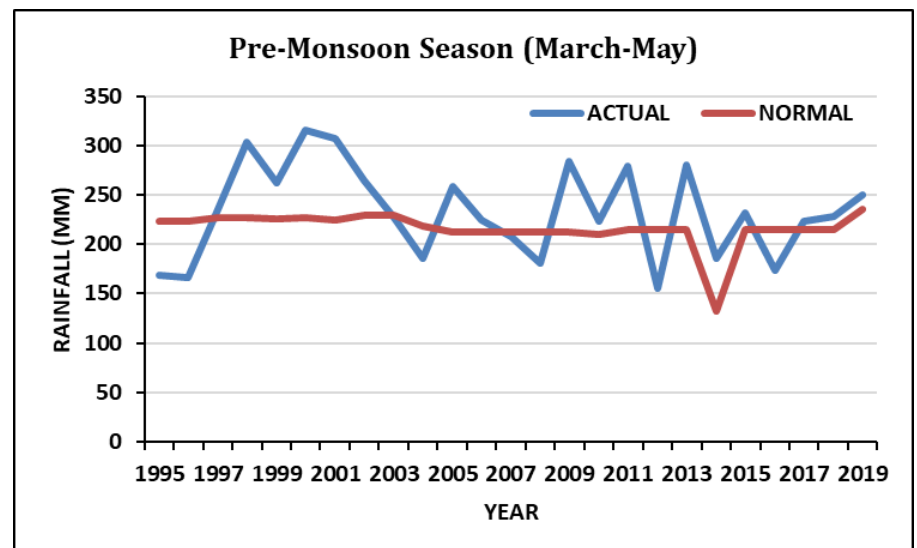


Figure 19 Actual And Normal Rainfall during Pre-Monsoon Season

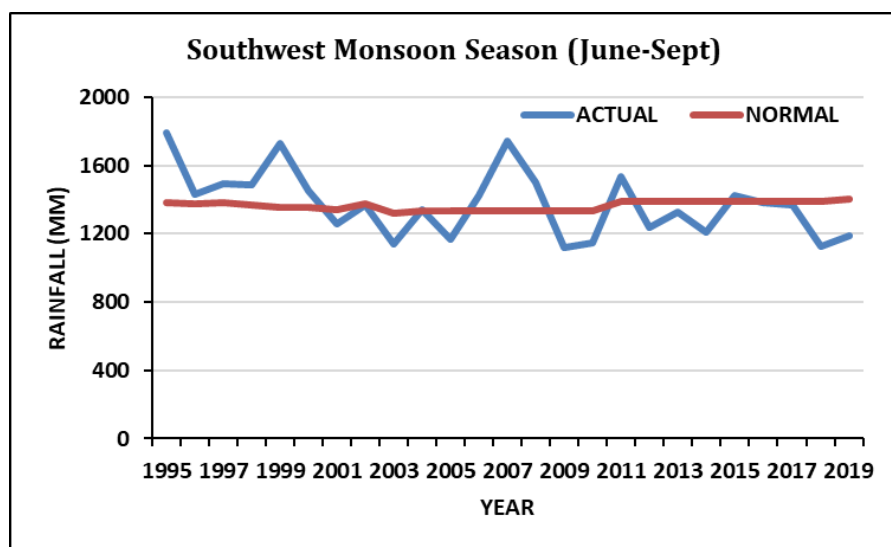


Figure 20 Actual & Normal Rainfall during Southwest Monsoon

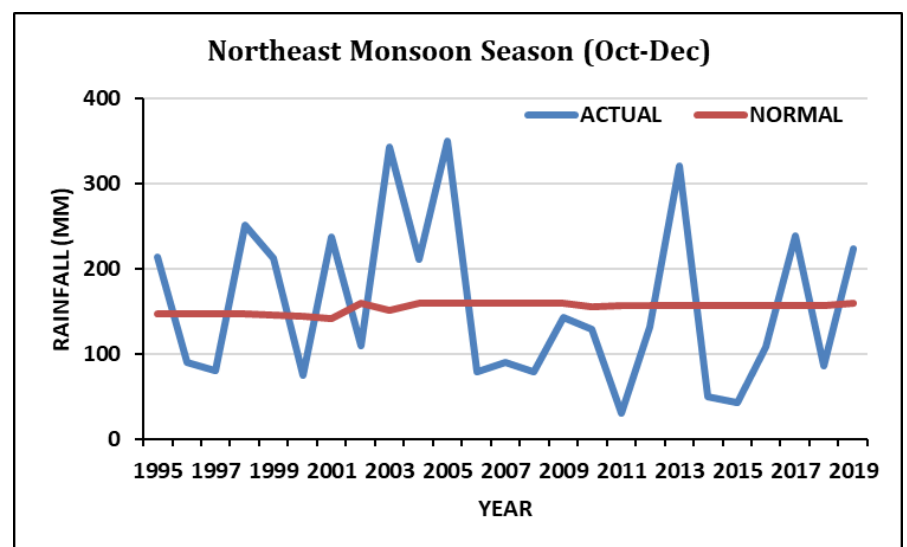


Figure 21 Actual & Normal Rainfall during Northeast Monsoon

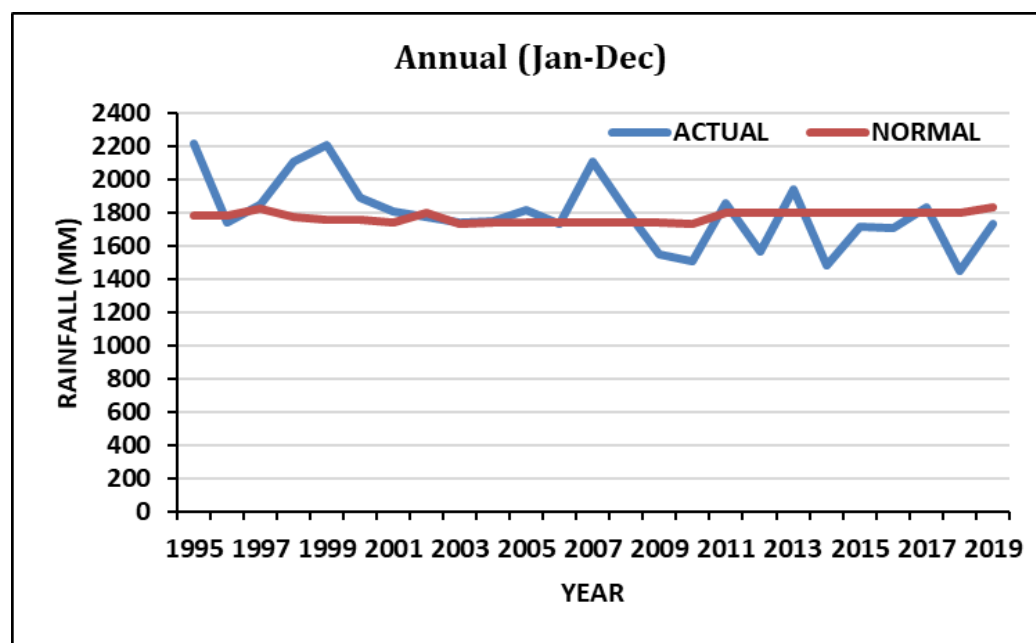


Figure 22 Actual and Normal Rainfalls For Annual

**2.3.1.5 SW monsoon Rainfall Departure**

The percentage departure of rainfall (departure from long period average) for the state is shown in fig. 23 for recent years. It is found that some of the years in 1995-2019 are showing positive percentage departure whereas some are showing negative percentage departure. Recent two decades mostly showing negative departure except for the year 2006, 2007, 2008, 2011 and 2015.

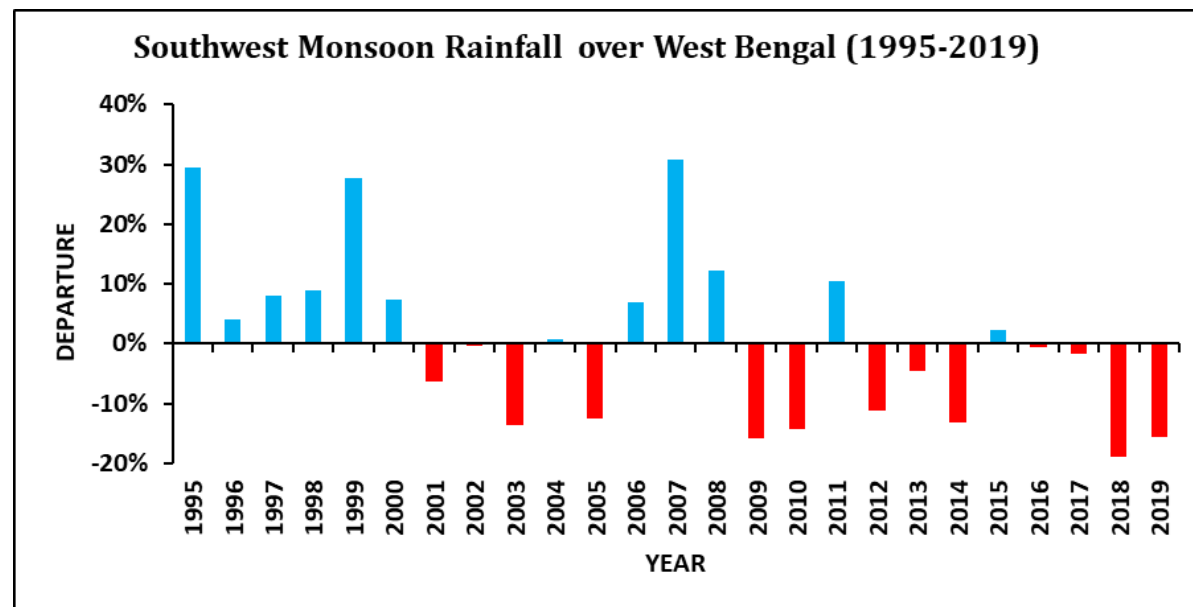


Figure 23 Southwest Monsoon Rainfall Pattern Over West Bengal

**2.3.1.6 Analysis of recent events of heavy rainfall**

**(i) Synoptic Situation associated with massive flood in GWB during 21-31 July 2017**

Major synoptic situation associated with the massive flood in GWB during 21-31 July 2017 is depicted in Figure 24 (a & b). Figure 24(a) shows the Mean Sea Level Pressure (MSLP) pattern of 25 July 2017 whereas figure 24(b) shows the associated Cyclonic Circulation (CYCIR) of 25th July 2017. This flood was associated with the formation of a low pressure area (LOW) over GWB on 23rd July 2017. This LOW was first observed as an upper air cyclonic circulation over South Bangladesh and adjoining areas of GWB & North Bay of Bengal with vertical extension up to 7.6km above mean sea level (amsl) on 22nd July. Subsequently, the system moved over GWB & neighborhood on 23rd July and intensified as a low pressure area over GWB & adjoining Jharkhand on 23rd July evening. The system further became a well-marked low pressure area (WML) and lay centered at the same region with associated upper air circulation extended up to 9.5km amsl on 24th – 25th July. It further intensified into a depression on 26th morning over NW Jharkhand and neighborhood and weakened into WML on 27th and moved westward to eastern Uttar Pradesh. AV associated with the system was very strong over the region of GWB and Jharkhand. The slow movement of the system and rapid intensification over GWB/Jharkhand region leads too heavy to very heavy rainfall along with extremely heavy rainfall over GWB and Jharkhand region leading to massive flooding in districts of GWB during 23-31 July 2017.

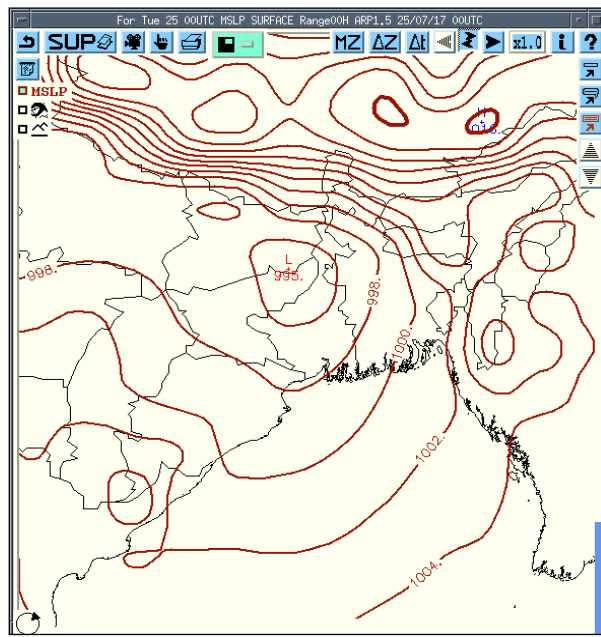


Figure 24(a) MSLP Of 25th July 2017

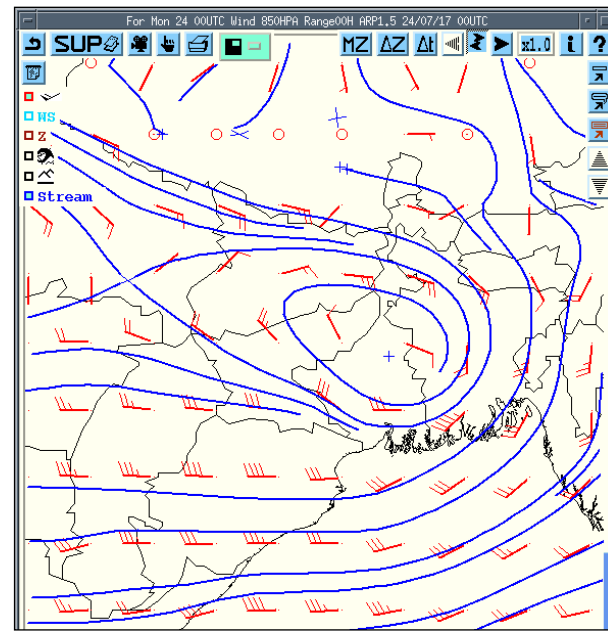


Figure 24(b) Lower Level Wind Of 25th July 2017

**(ii) Rainfall associated with LPS**

The rainfall associated with the low pressure (LPS) is shown in Fig 25 and heavy rainfall (more than 7 cm) is shown in Table 9. From the analysis it has been observed that GWB and eastern part of Jharkhand received heavy to very heavy rainfall along with extremely heavy rainfall during 23-25 July. Eastern parts of Jharkhand received heavy to very heavy along with extremely heavy rainfall during 23-25 July and very heavy rain occurred over the entire Jharkhand on 26th July. Due to physiographic location and orientation of river basins, most of the rainfall over Jharkhand is ultimately run off to GWB. As a result massive floods were observed over districts of Bankura, Birbhum, East and West Burdwan, Hooghly, Howrah, Murshidabad, Nadia, South-24 Parganas and East & West Midnapore. The presence of Damodar Valley Corporation (DVC) over Jharkhand and GWB and release of water from their dam during this period also contribute significantly to the massive flood over these districts of GWB leading to a lot of loss of life and property.

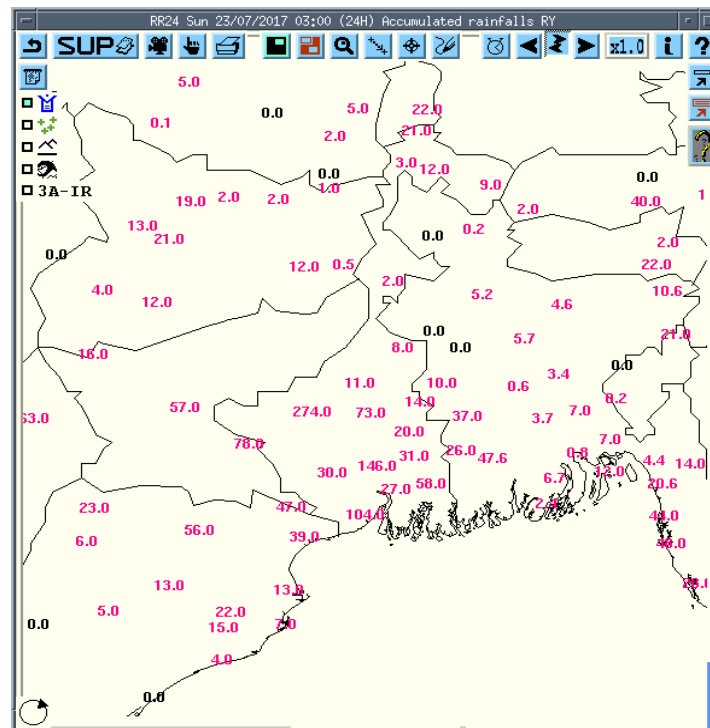


Figure 25 Rainfall Distribution Of 25th July 2017

Table 9 Realized Heavy Rainfall (7 cm Or More)

| Date    | Stations with rainfall(in cm) over GWB and JHARKHAND  |
|---------|---|
| 21.7.17 | Tantloi -16, Suri – 15, Rajnagar -14, Mohanpur – 13, Narayanpur, Rampurhat – 12, Messenjore – 11, Giridi – 10, Labpur – 9, Tilpara, Gheropara, Sriniketan, Dumka – 8, Rampurhat – 7   |
| 22.7.17 | Haldia – 24, Diamondharbour – 13, Ramgarh – 10, Bankura – 8, Mankar – 7.  |
| 23.7.17 | Bankura – 27, Uluberia – 15, Contai – 14, Digha, Simulia – 10, Panagarh, Barrackpore, Putki – 9, Jamshedpur, D. P. Ghat – 8, Burdwan, Maithon, Lalgarrh, Mohanpur, Midnapur – 7   |
| 24.7.17 | Jamshedpur – 23, Lalgarrh – 17, Purihansa – 13. D. P. Ghat – 12, Bankura – 11, Canning, Uluberia – 10, Basirhat, Kalaikunda, Barrackpur, Ramgarh, Tilaiya – 9, Dum Dum, Harinkhola – 8, Alipur, Midnapur, Kalyani – 7   |
| 25.7.17 | Bankura – 23, Lalgarrh, Panchet – 19, Ramgarh – 15, Purihansa – 14, Pupunki – 13, Asansol, D. P. Ghat – 12, Jamshedpur, Hindgirh – 11, Purulia, Ranchi, Simulia, Putki, Konar, Durgapur – 10, Sriniketan, Ramgarh, Phulberia - 8, Panagarh, Jormundi, Rajnagar, Kansabati Dam, Mankar, Amtala – 7 |
| 26.7.17 | Ranchi, Hindgarh – 21, Daltonganj, Ramgarh – 13, Bankura – 12, Asansol, Pupunki, Konar – 10, Kandi, Putki – 9, Panagarh, Purulia, Maithon, Panchet – 8, Jangipur, Narayanpur, Nandadih – 7  |
| 27.7.17 | Daltonganj – 10, Ramgarh – 9  |

**2.3.1.7 Flood over North Bengal**

**(i) Synoptic Situation associated with flood in North Bengal during 24-29 June 2020**

Major synoptic situation associated with moderate flooding in north Bengal during 24-29 June 2020 is depicted in figure 26(a-b). Figure 26(a) shows the mean sea level pressure (MSLP) pattern during the period whereas figure 26(b) is associated with lower level wind. Analysis of the above figures revealed that during 24-29 June, the trough at MSLP passes through Rajasthan to northeast Assam with strong lower level southwesterly wind leading to strong moisture incursion from Bay of Bengal resulting in heavy to very heavy rainfall and extremely heavy rainfall over the districts of Cooch Behar, Jalpaiguri, Alipurduar and parts of Sikkim.

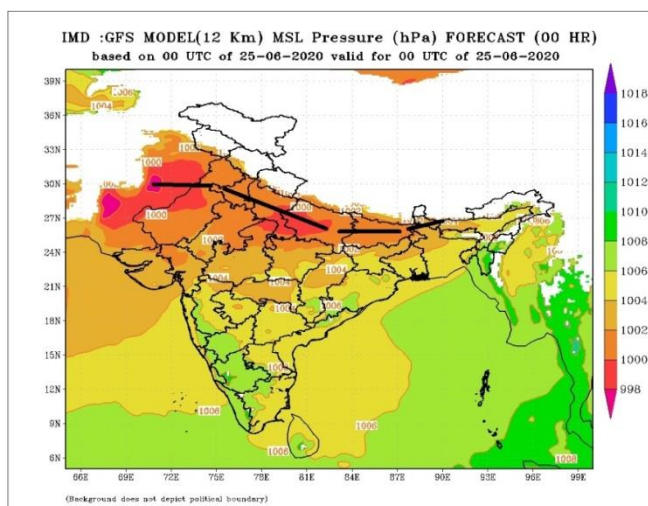


Figure 26(a) MSLP Dated 25.06.2020

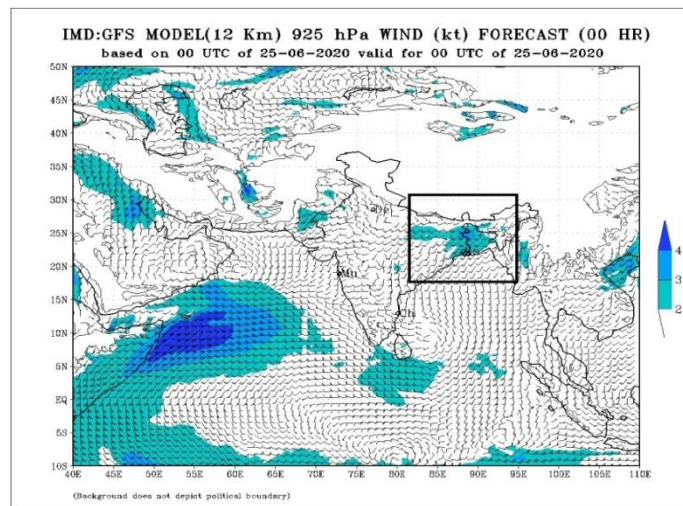


Figure 26(b) Low Level Wind Dated 25.06.2020

**(ii) Rainfall associated during 24-29 June 2020**

Heavy rainfall (more than or equal to 7 cm) associated with the trough along the foothills of the Himalayas is shown in Table 10. During the period 24-29 June 2020 it is observed that Cooch Behar reported 428.5 mm rainfall against normal of 129.5 mm (departure of 231%), Jalpaiguri reported a positive departure of 158% and North Sikkim reported positive departure of 384% leading to major rain flow over both lower and upper part of Teesta Basin. Table depicted cases of rainfall of 7 cm or more over the region. The number of stations reporting heavy rainfall or more ranging from 8 to 20 during the period. As a result of this continuous heavy to very heavy rainfall with isolated extremely heavy rainfall major floods occurred over Teesta Basin and most of the district in this basin during 22-29 June leading to a lot of loss of life and property.

Table 10 Heavy R/F During 24th June To 29th June 2020 Over The Districts Of SHWB &amp; Sikkim (Units in mm)

|           |  |
|-----------|--|
| 24th June | Darjeeling<br>Sevoke-73,<br>Coochbehar<br>AMFU Pundibari – 138.6,<br>Jalpaiguri<br>Gajoldoba – 95.2, Alipurduar(cwc)-65.4, Neora- 66.5, Hasimara – 76.2, Alipurduar (S)-<br>76.5, Alipurduar (pto)-65.4.   |
| 25th June | Darjeeling<br>Sevoke – 53.0, Garubathan – 142.2,<br>Coochbehar<br>Coochbehar – 262.0,AMFU Pundibari – 185.8, Mathabhanga-166.8, Haldibari – 125.6,<br>, , Dinhata – 83.8<br>Jalpaiguri<br>Alipurduar (s)-295.2, Alipurduar (pto)- 290.6, , Alipurduar (cwc)-290.6,Barobhisa –<br>255.0,Chepan – 110.0, Kumargram- 73.6, Falakata – 120.4,, Hasimara – 75.4, ,<br>North Dinajpur<br>Karandighi – 75.3,<br>North Sikkim<br>Mangan -92, Sankalan – 90, Shipgyer – 74.2, Singhik – 91.8. |
| 26th June | Coochbehar<br>Dinhata-77.2, Mathabhanga-135.0, Haldibari –152.5, Coochbehar- 98.2, AMFU<br>Pundibari-77.0.<br>Jalpaiguri<br>Chepan – 74.0, Falakata-70.2, Barobhisa-107.0, Mohitnagar-77.2, Alipurduar (cwc)-<br>105.4, NH31-84.4, Alipurduar (s)-112.8, Alipurduar (pto)-105.4,<br>Malda<br>Chanchal-77.3.<br>North Sikkim<br>Mangan-147.2, Sankalan-166.6, Chungthang-84.6, Singhik-102.8.   |
| 27th June | Darjeeling<br>Bagdogra-78.6.<br>Coochbehar<br>Mathabhanga-65.8, Coochbehar-75.9.<br>Jalpaiguri<br>Alipurduar (pto) – 205.0,Chepan-132.4, Falakata-92.4, Domohani – 141.8, Buxaduar –<br>158.0, Barobhisa-172.6, Mohitnagar-115.6, NH31-171.8, Hasimara-165.4, Alipurduar<br>(s)-144.8, Jalpaiguri- 145.8,.<br>North Sikkim<br>Mangan – 246.3, Sankalan-227.4, Shipgyer-78.0, Singhik – 209.8.  |
| 28th June | Darjeeling<br>Darjeeling-69.0, Garubathan-98.4, Haldibari-102.5.<br>Coochbehar<br>Chepan-104.0, Gajoldoba-87.4, Barobhisa-76.2, Alipurduar (s)-66.2, Alipurduar (pto)-<br>73.4.<br>North Sikkim<br>Mangan-125.0, Sankalan-102.4, Singhik-78.8, Gyalsing-108.2,   |
| 29th June | North Sikkim<br>Chepan-153.6, Buxaduar-67.8, Barobhisa-114.0, Alipurduar (s)-91.4,   |

### 2.3.1.8 Inundation of coastal West Bengal during May 2020

#### (i) Synoptic Situation associated with inundation of coastal West Bengal during 20-23 June 2020

The Super Cyclonic Storm (SuCS) “AMPHAN” (Fig-27) originated over south Andaman Sea and adjoining southeast Bay of Bengal (BoB) around 13th May 2020. Under favourable environmental conditions, it concentrated into a depression (D) over southeast BoB in the early morning (0000 UTC) of 16th May and further intensified into a deep depression (DD) in the same afternoon (0900 UTC). It moved north- northwestwards and intensified into Cyclonic Storm “AMPHAN” (pronounced as UM-PUN) over southeast BoB in the evening (1200 UTC) of 16th May, 2020. Moving nearly northwards, it further intensified into a Severe Cyclonic Storm (SCS) over southeast BoB in the morning (0300 UTC) of 17th May. It underwent rapid intensification during subsequent 24 hours and accordingly intensified into a Very Severe Cyclonic Storm (VSCS) by the afternoon (0900 UTC) of 17th, Extremely Severe Cyclonic Storm (ESCS) in the early hours of 18th (2100 UTC of 17th May) and into a Super Cyclonic Storm (SuCS) around noon (0600 UTC) of 18th May, 2020.

Thereafter, it weakened slightly and crossed West Bengal – Bangladesh coasts as a VSCS, across Sundarbans, near latitude 21.65°N and longitude 88.3°E during 1530- 1730 hrs. IST (1000-1200 UTC) of 20th May, with maximum sustained wind speed of 155 – 165 kmph gusting to 185 kmph. It lay over West Bengal as a VSCS, gradually moving north-northeastwards during late evening to night (1200 – 1500 UTC) of 20th May. It moved very close to Kolkata during this period.



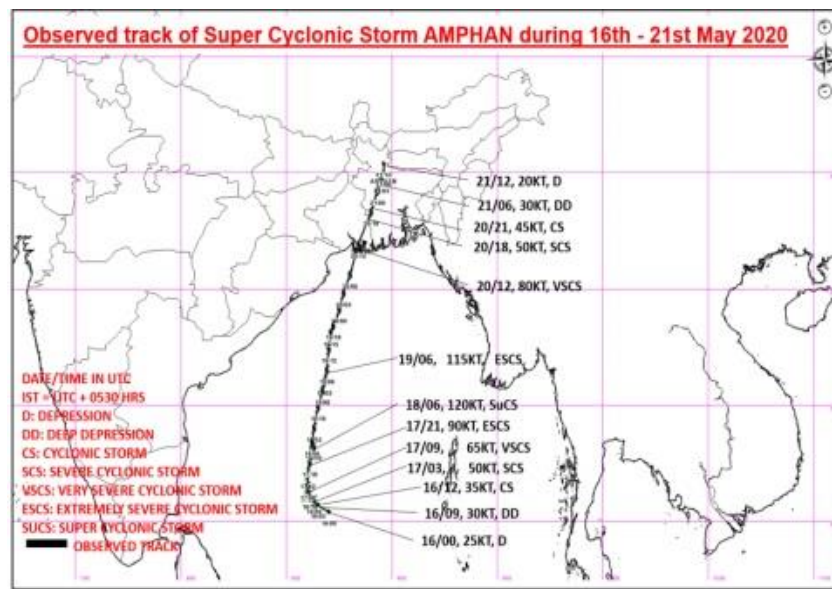


Figure 27(a) Track Of SuCS AMPHAN

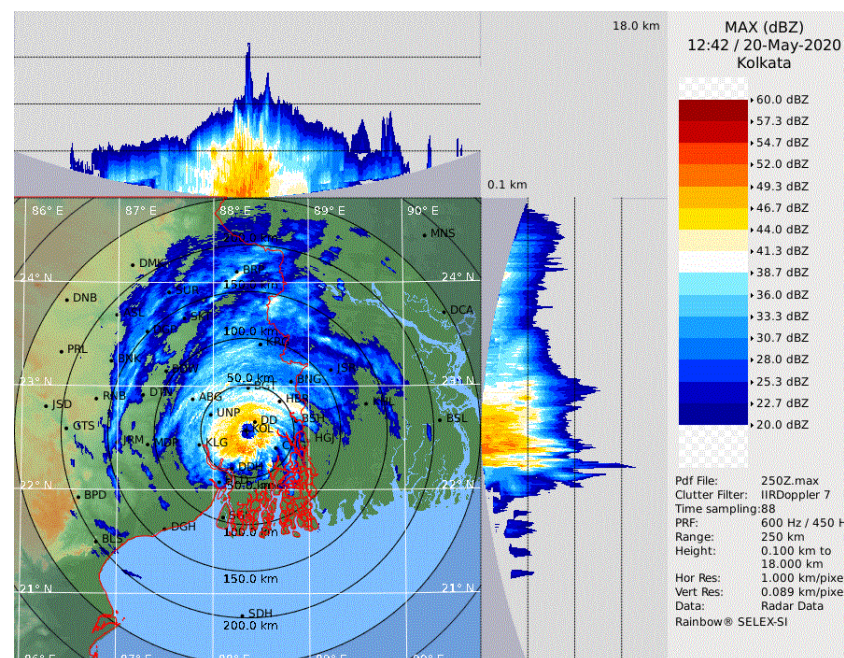


Figure 27(b) Radar Picture SuCS AMPHAN

**(ii) Rainfall associated with Super Cyclone AMPHAN**

Heavy rainfall (more than or equal to 7 cm) associated with SuCS AMPHAN is shown in Table 11. Heavy to very heavy rainfall along with extremely heavy rainfall with gail wind of 130 kmph occurred over coastal districts of West Bengal during 19-20 May 2020 leading to major disaster causing loss of life and property.

Table 11 Heavy R/F During 20th May-21st May 2020 Over GWB (Units in mm)

|               |  |
|---------------|--|
| 20th May 2020 | Sagar -84, Contai-106, Digha and Contai state-86   |
| 21st May 2020 | Joka-470, Ratan Babughat-398, Behal-314, Ultadanga-261, New Market-247, Alipore-240, EE-1 Minor-235, Palmer Bridge-217, Dumdum-200, Harinkhola-130, Debagram-130, Bardhaman-100, Digha-90, Manteswar-90, Kharagpur-70, Suri-70, Bankura-70, Midnapore-70 |

**2.3.1.9 Conclusion**

**(i)** SW monsoon is the principal rainy season of West Bengal with 77% of annual rainfall followed by pre-monsoon (12%) and post monsoon (9%) seasons.

**(ii)** GWB receives maximum rainfall due to formation of monsoon low pressure system over North Bay of Bengal and its movement towards West Bengal-Odisha coast

**(iii)** SHWB receives maximum rainfall during break monsoon condition when monsoon trough passes through foothills of the Himalayas.

**(iv)** Trends of monsoon rainfall (1990-2019) showing decreasing trends over GWB and SHWB. The main reason for the decreasing trends in GWB may be associated with decreasing frequency of monsoon depression over Bay of Bengal.

### 2.3.2 Hydrometeorological support for Flood Forecast

India Meteorological Department (IMD) is the nodal agency for issuing Quantitative Precipitation Forecast (QPF) and Central Water Commission (CWC) is the nodal agency for issuing Flood Forecast. 14 Flood Meteorological Offices (FMOs) (Fig 28) of IMD located at different flood prone areas of the country provide support to Flood Forecasting Divisions (FFDs) of CWC to help them for issuing "Flood warnings/Flood alerts". FMOs, Asansol, Jalpaiguri located in the state provide this service for the major river basins lying the state viz., Ajoy, Mayuraksi, Kangasbati, Damodar, Barakar, Teesta, Torsa and Jaldhaka. These field offices of IMD provide Hydrometeorological support in the flood season in terms of 'Quantitative Precipitation Forecast (QPF)' through QPF and Hydromet Bulletins.

Input comprises in terms of Hydromet Bulletin which contains the following;

- Prevailing Synoptic situations over the river sub basin areas,
- Spatial and temporal distribution of rainfall,
- Sub-basin wise categorical QPF (0, 0.1-10, 11-25, 26-50, 51-100 and > 100mm) for day-1, day-2 and day-3 and Probabilistic QPF for each category of QPF for the next three days
- Outlook for the subsequent four days
- Station wise recorded significant rainfall
- Heavy rainfall warnings
- Sub-basin wise past 24 hr realized rainfall.

QPF bulletin is issued at 0930hrs IST and Hydromet Bulletin at 1230 hrs IST with further update, if required during the flood season. Forecast for a lead time of 7-days (forecast for 3 days and outlook for subsequent 4 days) are issued daily during the season.

**\*This chapter is contributed by IMD, New Delhi.**

## 2.4 ROLE OF CWC IN FLOOD MONITORING

Different measures have been adopted to reduce the flood losses and provide reasonable protection against floods. Depending upon the nature of work, flood protection and flood management measures are broadly classified as under:

- (a) Engineering / Structural Measures
- (b) Administrative / Non-Structural Measures

Structural measures include construction of dams, embankments, drainage improvement etc. These structural measures are planned & executed by the State Government in a prioritised manner.

Non-structural measures include early flood warning and flood forecasting, flood plain zoning etc. Fig 28 shows the flood meteorological offices in India.

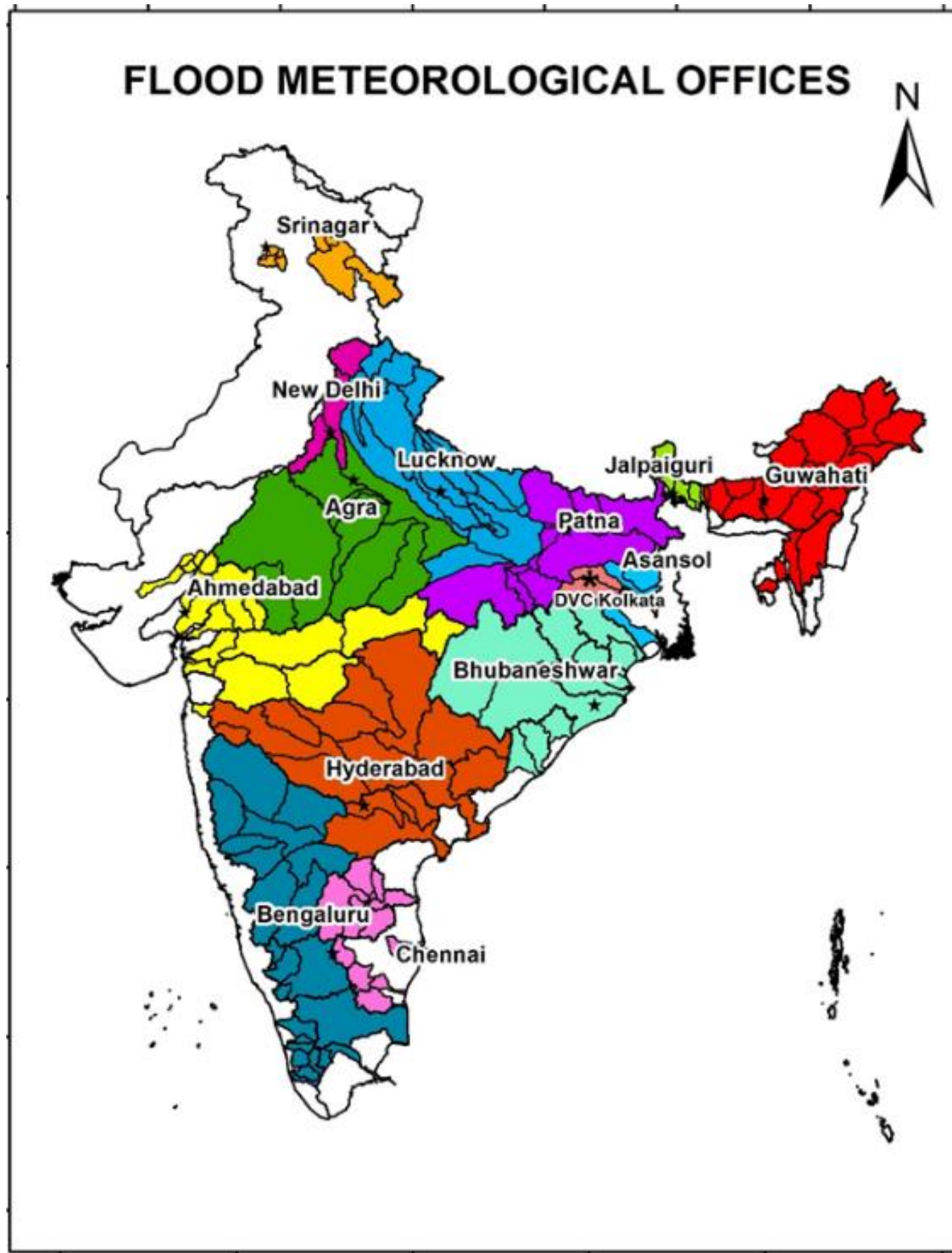


Figure 28 Flood Meteorological Offices

#### 2.4.1 Flood Forecasting in West Bengal

Central Water Commission (CWC) is maintaining 16 (12 Level and 4 Inflow) Forecast Stations in West Bengal in basins of Brahmaputra and Ganga. Almost all rivers are prone to floods in West Bengal as the State gets rainfall during pre-monsoon as well as South-West Monsoon season. The period of flood season extends from 1st May to 31st October in Northern parts of West Bengal near the Himalayan foothills and from 1st June to 31st October in the Gangetic West Bengal.

CWC is maintaining Hydrological Observation (HO) Stations in almost all the rivers and tributaries within West Bengal and uses hydrological data of the Bhutan Catchment by having bilateral arrangement with the Government of Bhutan for real-time data transmission in Torsa, Raidak and Jaldhaka sub-basin of Brahmaputra Basin. During the designated flood season, hourly water level observations are taken from the HO Stations maintained by CWC and these are used for formulation of Level Forecast using Statistical correlation techniques.

Central Water Commission (CWC) is providing flood forecast with lead time varying from 6 hours to 30 hours using Statistical models. Statistical models use correlation diagram which are developed using historical data between upstream (Base Station) and downstream (Forecast Station). The various parameters such as varying travel time, rising and falling limb variations, contribution

from tributaries and intervening catchment area rainfall are taken in various quadrants of graph sheet and a comprehensive correlation diagram is drawn. This will be used by the concerned Flood Forecasting centre for real-time flood forecasting.

Inflow Forecasts are formulated by using upstream Stations, Stage vs. Discharge relations and correlating with the inflows coming into the reservoir. Effect of rainfall is added by developing a unit hydrograph (UG) for the intervening catchment rainfall contribution using point rainfall and converting them into areal rainfall as well as area of the intervening catchment to get the ordinates of the UG. The inflow forecasts are used for regulation of water from dams for conservational purposes as well as for storage in times of flood as per rule levels developed for the various projects in their Operational manuals. Table 12 lists the level forecast stations in West Bengal maintained by CWC.

Table 12 List Of CWC Maintained Level Forecast Stations In West Bengal

| S.No.         | River      | Station          | District    |
|---------------|------------|------------------|-------------|
| <b>Level</b>  |            |                  |             |
| 1             | Ganga      | Farakka          | Murshidabad |
| 2             | Mayurakshi | Narayanpur       | Murshidabad |
| 3             | Ajoy       | Gheropara        | Birbhum     |
| 4             | Mundeswari | Harinkhola       | Hooghly     |
| 5             | Kangsabati | Mohanpur         | Medhnipur   |
| 6             | Raidak-I   | Tufanganj        | Coochbehar  |
| 7             | Torsa      | Hasimara         | Coochbehar  |
| 8             | Torsa      | Ghugumari        | Coochbehar  |
| 9             | Jaldhaka   | NH-31            | Jalpaiguri  |
| 10            | Jaldhaka   | Mathabanga       | Coochbehar  |
| 11            | Tista      | Domohani         | Jalpaiguri  |
| 12            | Tista      | Mekhliganj       | Coochbehar  |
| <b>Inflow</b> |            |                  |             |
| 13            | Mayurakshi | Tilpara Barrage  | Birbhum     |
| 14            | Damodar    | Durgapur Barrage | Burdwan     |
| 15            | Kangsabati | Kangsabati Dam   | Bankura     |
| 16            | Kangsabati | Hinglow Dam      | Bankura     |

\*This chapter is contributed by CWC, New Delhi.

### 3.0 FLOOD HAZARD ZONATION USING SATELLITE REMOTE SENSING

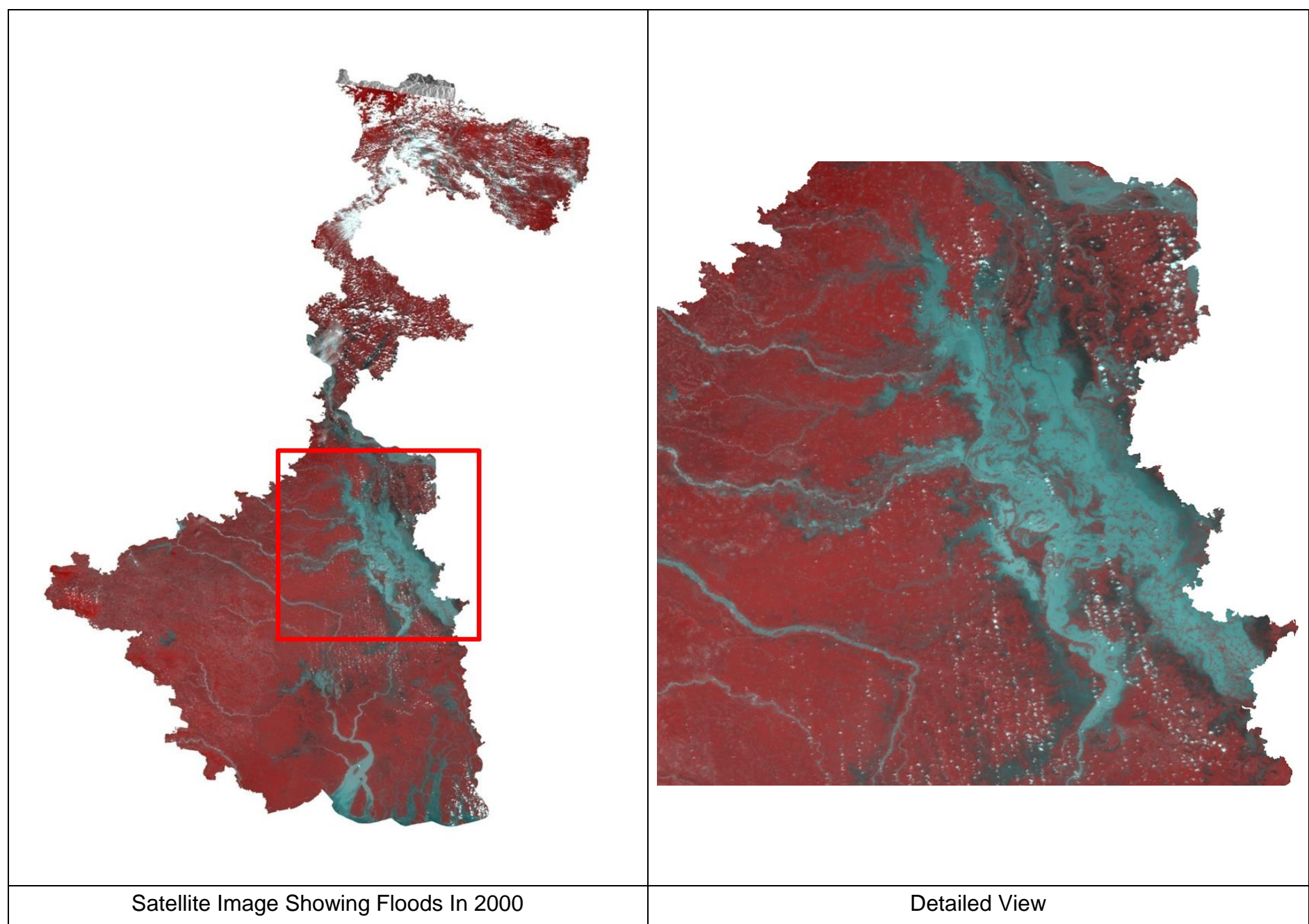
Since floodplains can be mapped, the boundary of the different return period flood is used in floodplain mitigation programs to identify areas where the risk of flooding is significant. Flood hazard maps are used to delineate areas of land which are at risk of flooding up to some extreme limit. Hazard maps show a flood boundary based on different magnitudes of floods with various specific return periods. These maps can be used to regulate developmental activities within the floodplain so that damages can be minimized.

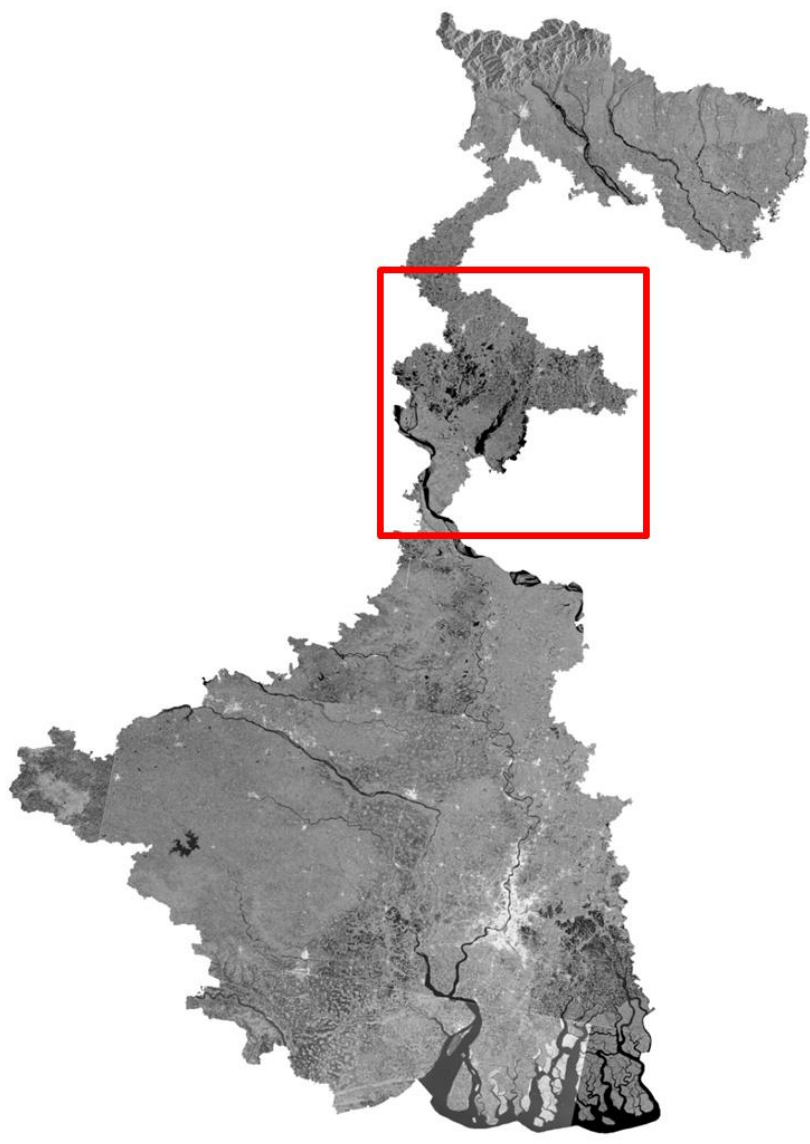
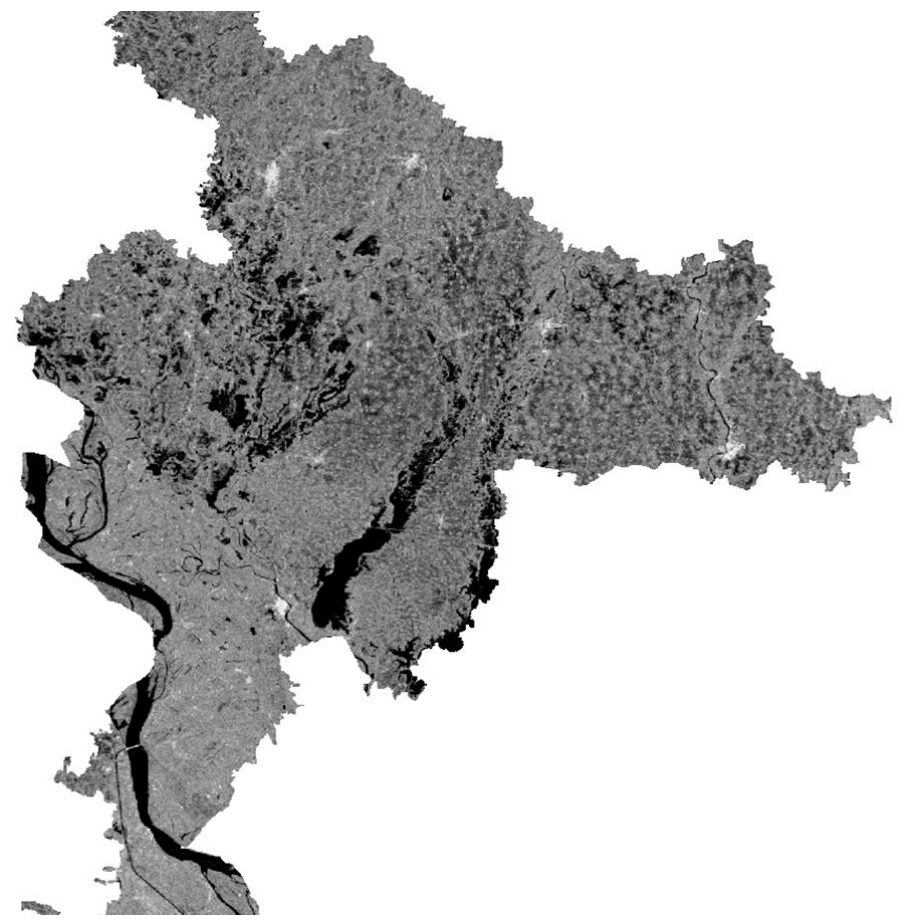
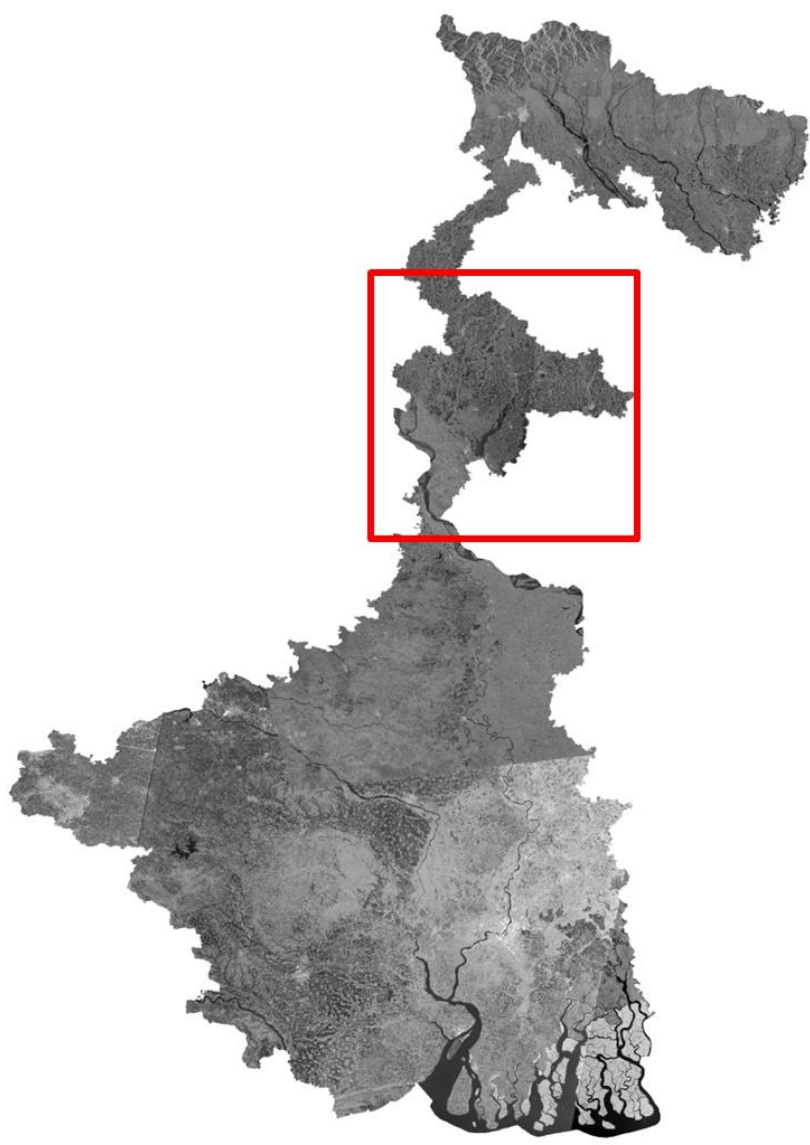
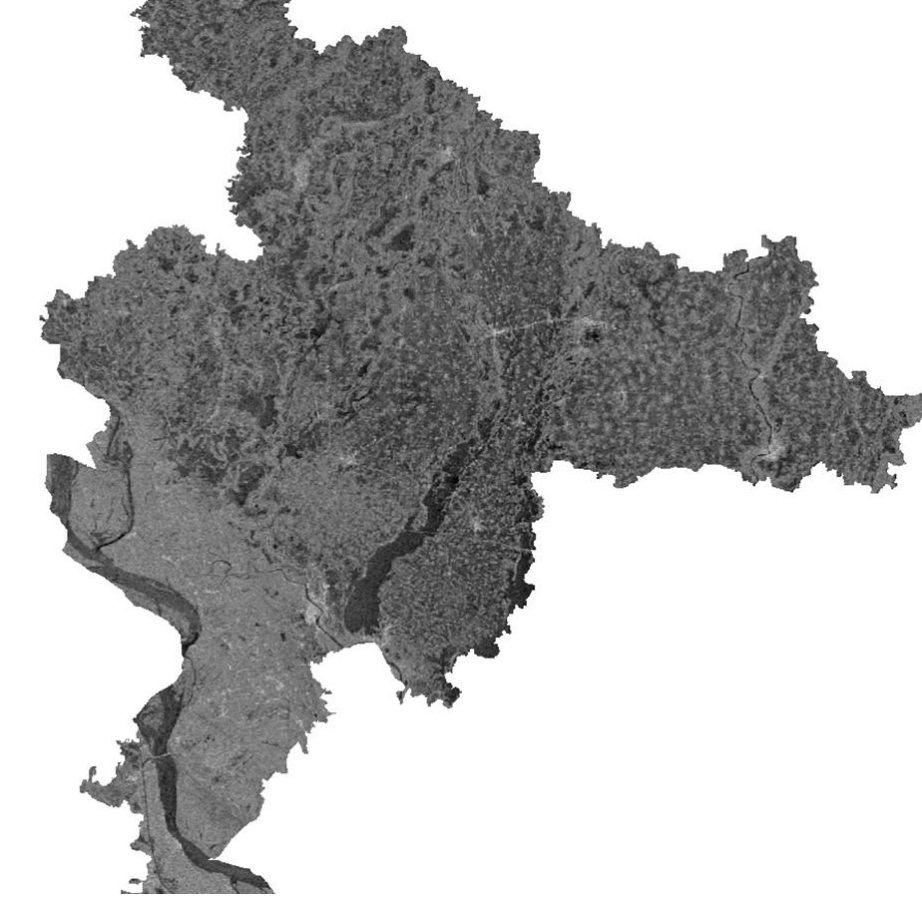
Satellite remote sensing from their vantage position has unambiguously demonstrated their capability in providing important information and services for flood disaster management. Satellites provide synoptic and frequent coverage of flood-affected areas and thus become valuable for monitoring flood disasters. Thus, satellite data can be directly used for deriving the flood inundation extent. If satellite data sets during flood times are available over a period of time for a floodplain, they can be conveniently used for hazard zone mapping. In addition, the latest land use/land cover, infrastructure, settlements, etc. can also be generated from satellite data.

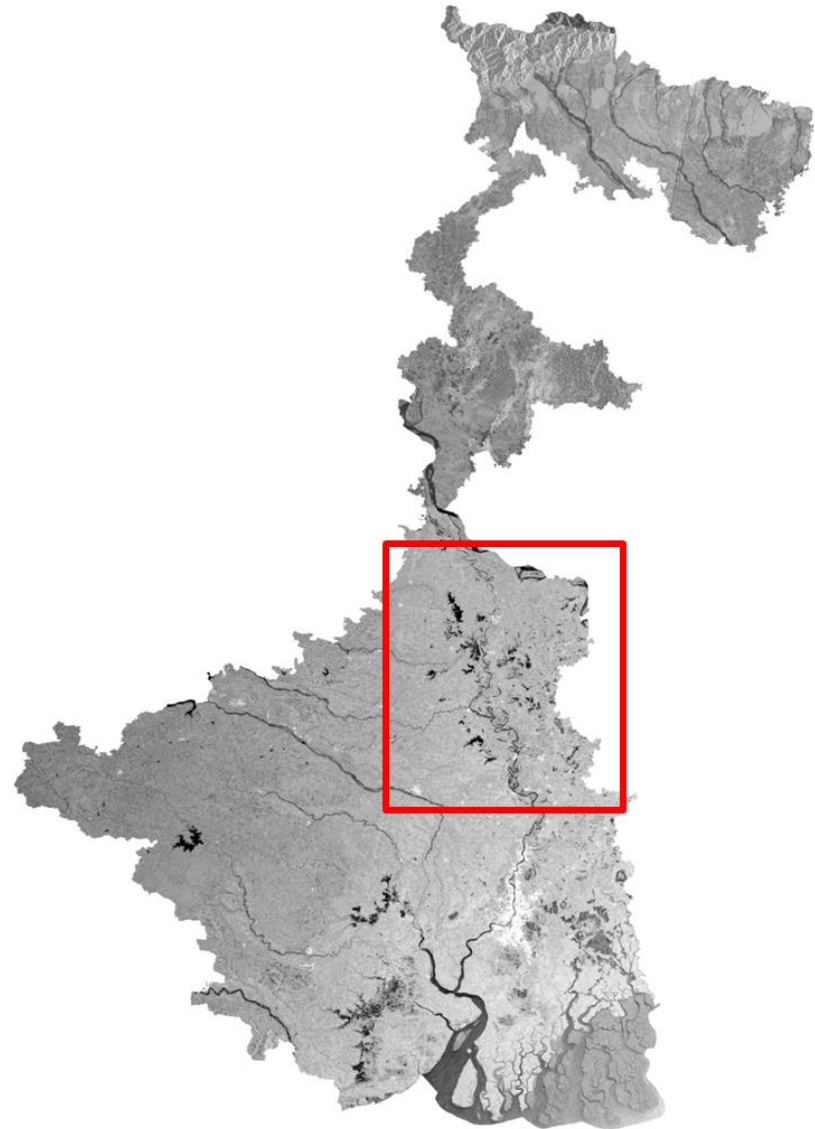
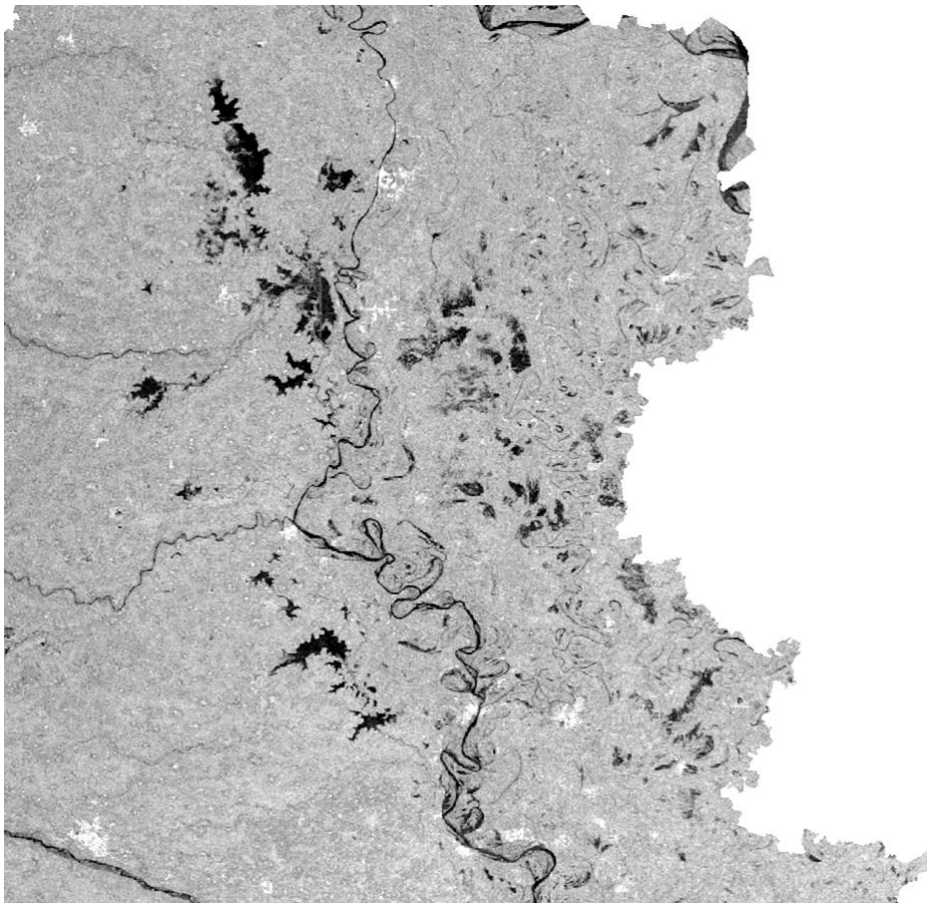
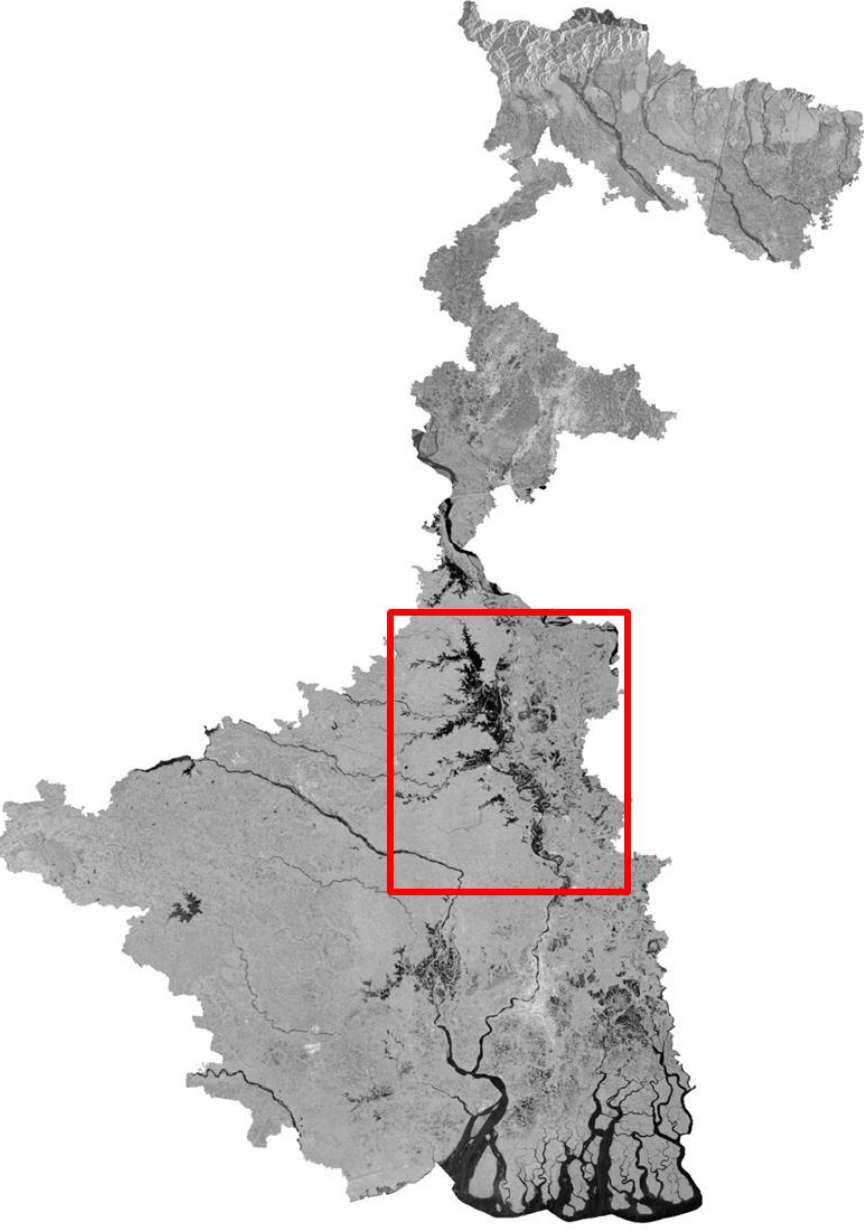
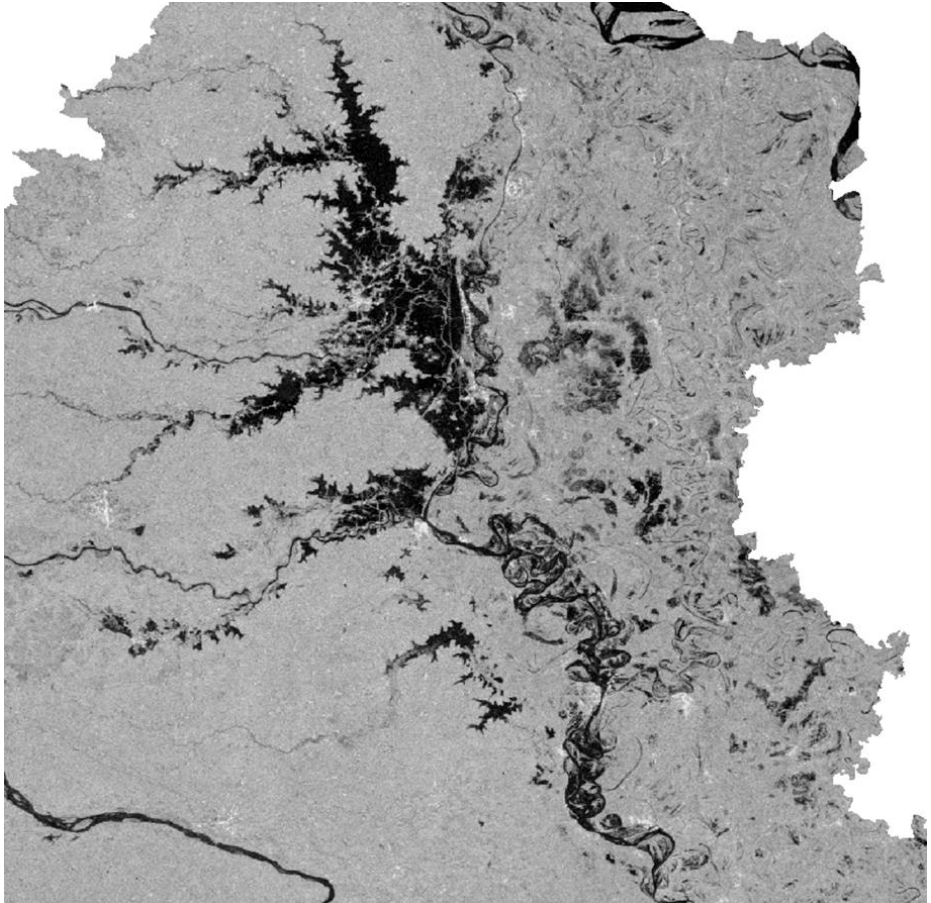
#### 3.1 SATELLITE DATA USED

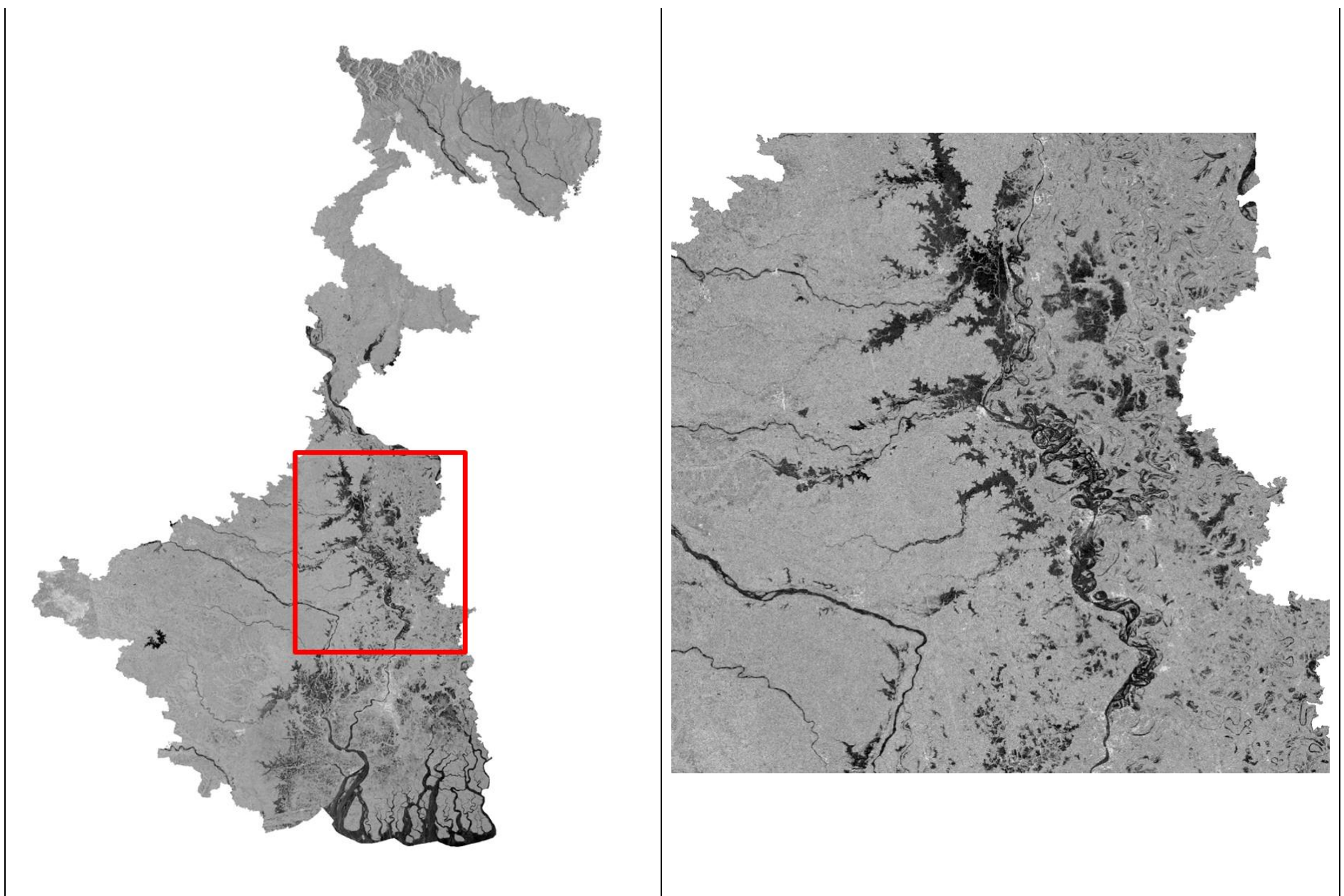
Satellite datasets were acquired from different satellites during floods over West Bengal State year after year. 60 satellite data sets are selected for flood hazard zoning spanning a period of 21 years, from 2000 to 2020. Some of the datasets cover entire West Bengal and some cover part of the state. IRS, as well as Radarsat and Sentinel data is mostly used for this study. Figure 29 shows the satellite data used for the years 2000-2020 and the detailed view of the flood.

Figure 29 Satellite Data Showing Flood Inundation In West Bengal State From 2000-2020

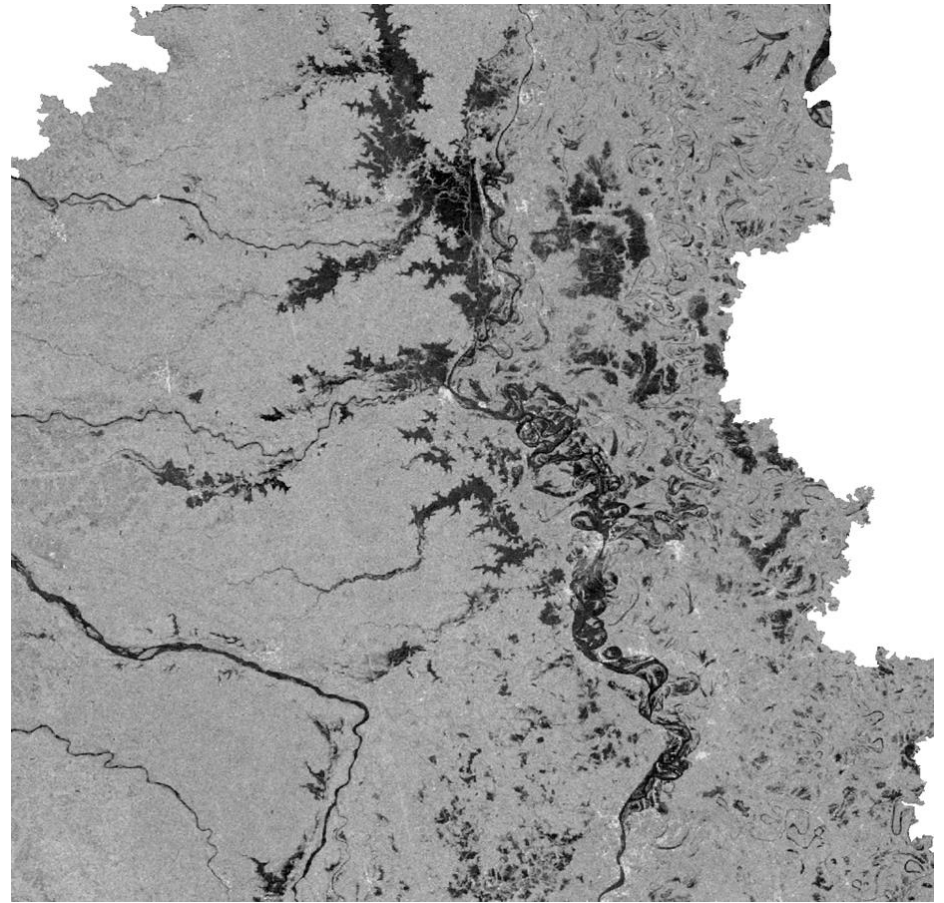


|   |   |
|---|---|
|   |   |
| <p>Satellite Image Showing Floods In 2003</p>                                       | <p>Detailed View</p>  |
|  |  |
| <p>Satellite Image Showing Floods In 2004</p>                                       | <p>Detailed View</p>  |

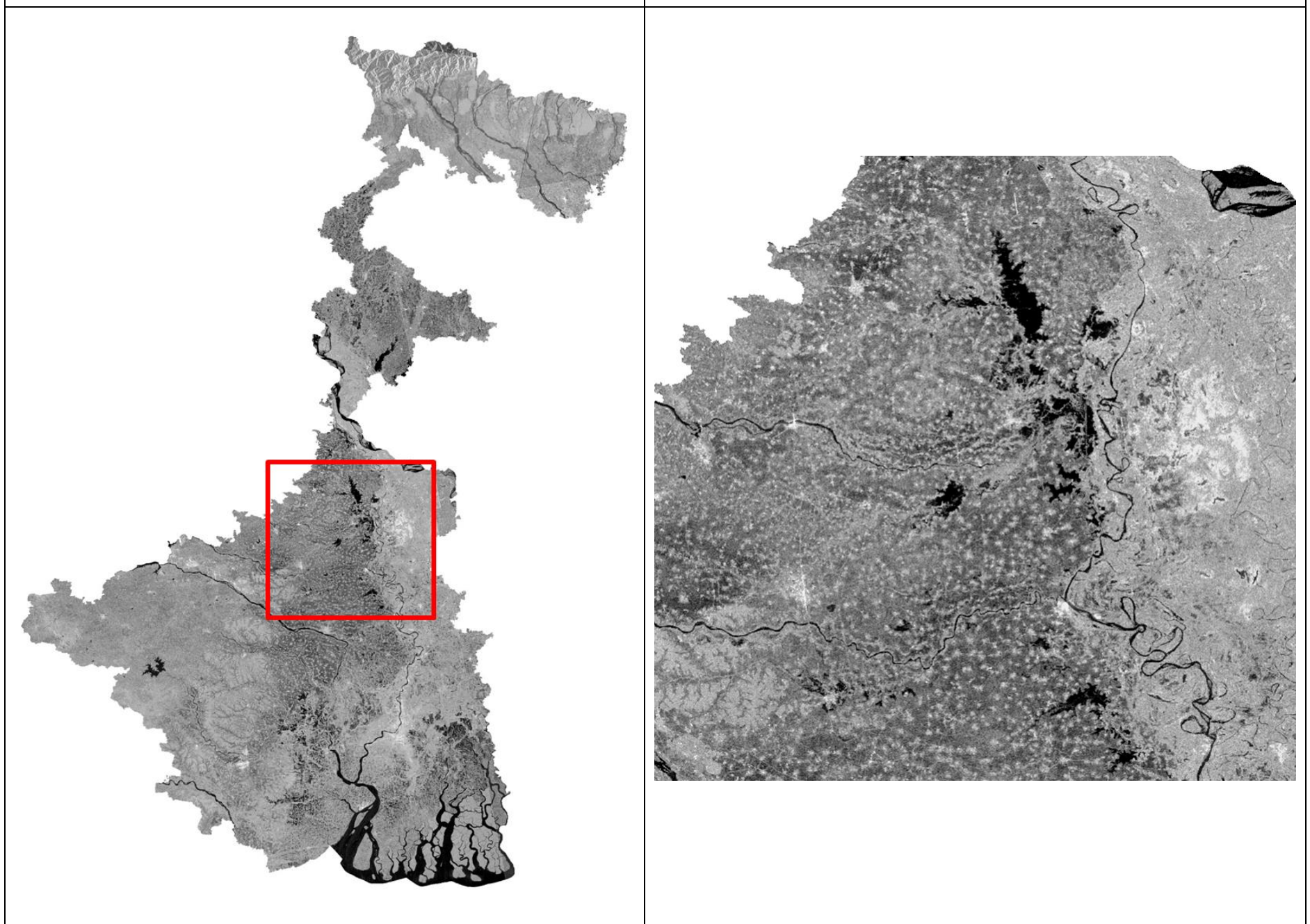
|  |   |
|--|---|
|    |   |
| <p>Satellite Image Showing Floods In 2005</p>  | <p>Detailed View</p>  |
|  |  |
| <p>Satellite Image Showing Floods In 2006</p>  | <p>Detailed View</p>  |



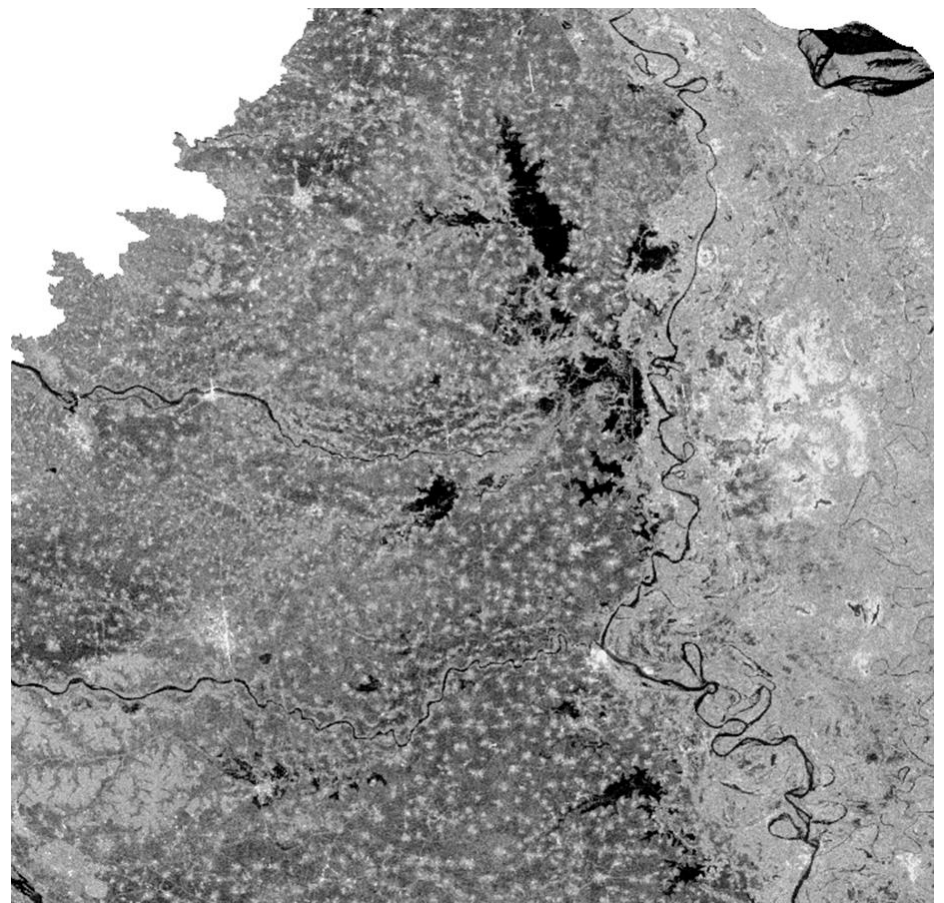
Satellite Image Showing Floods In 2007



Detailed View

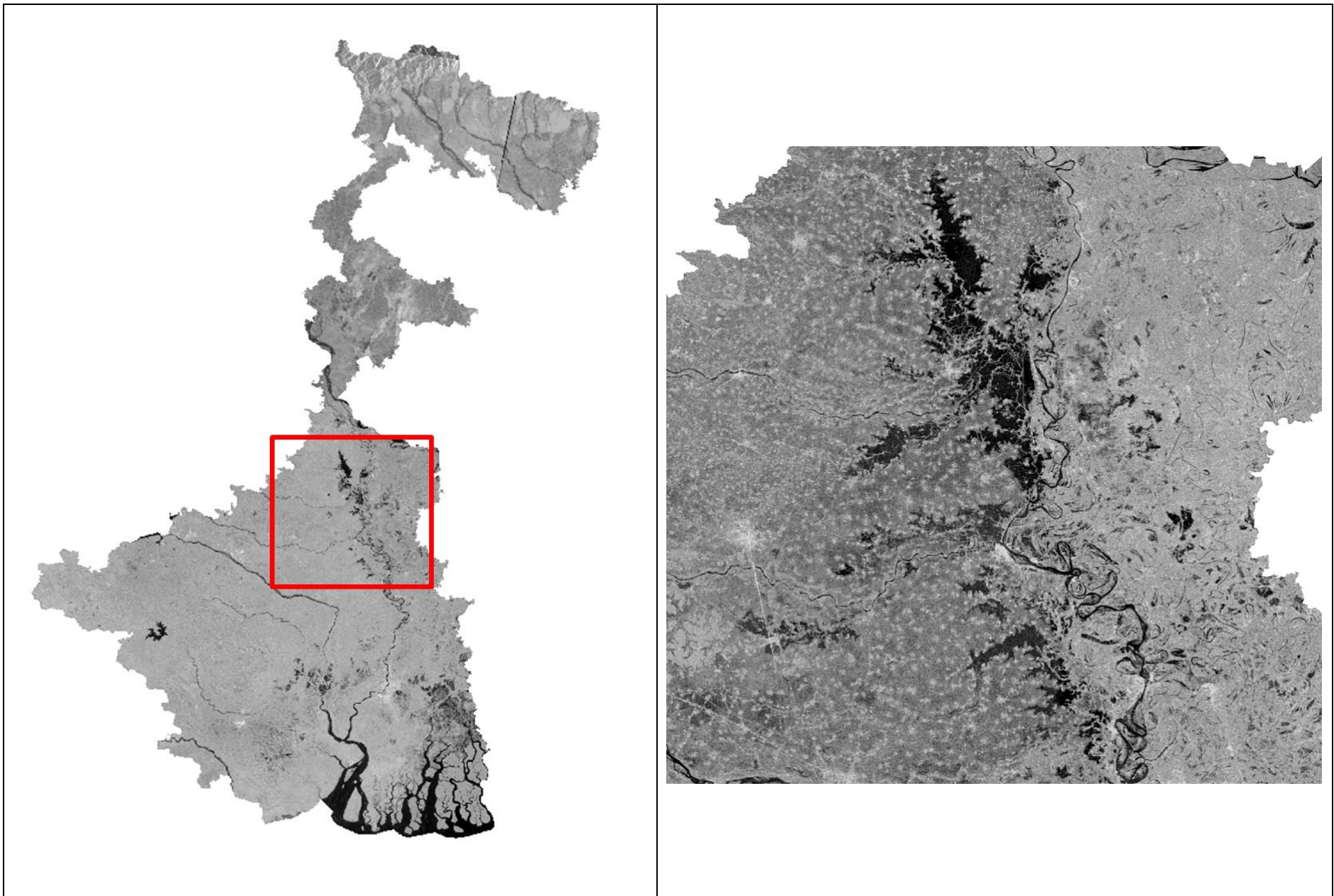


Satellite Image Showing Floods In 2008

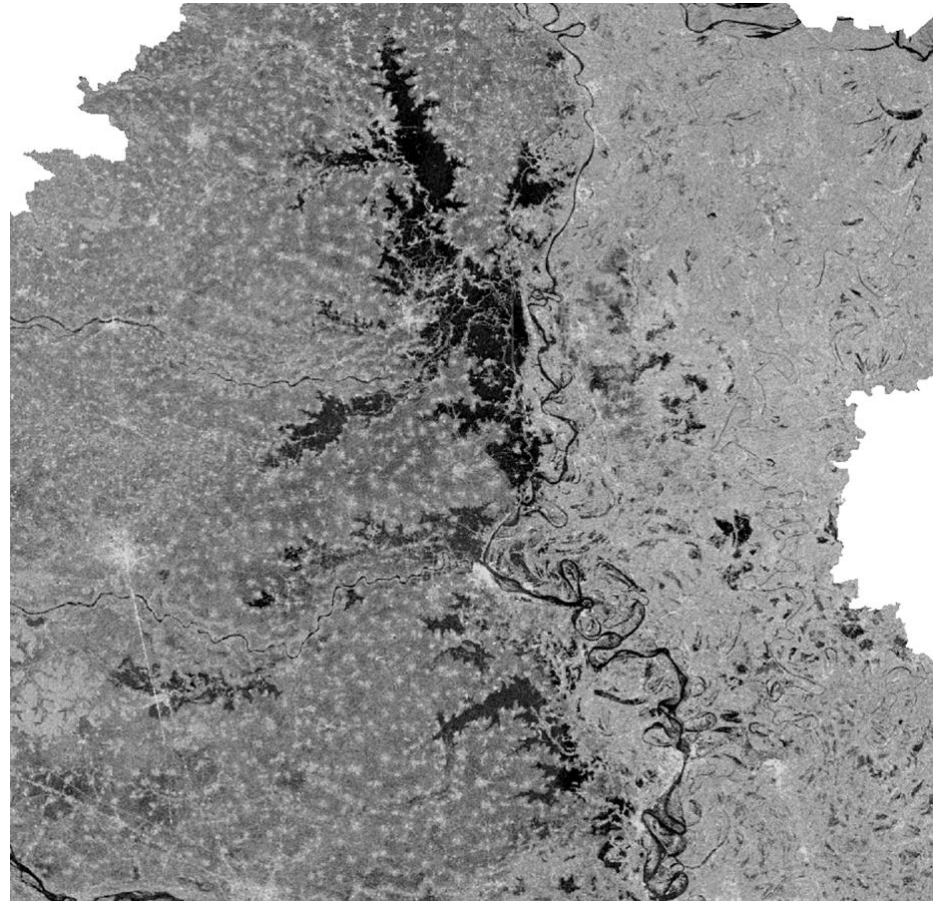


Detailed View

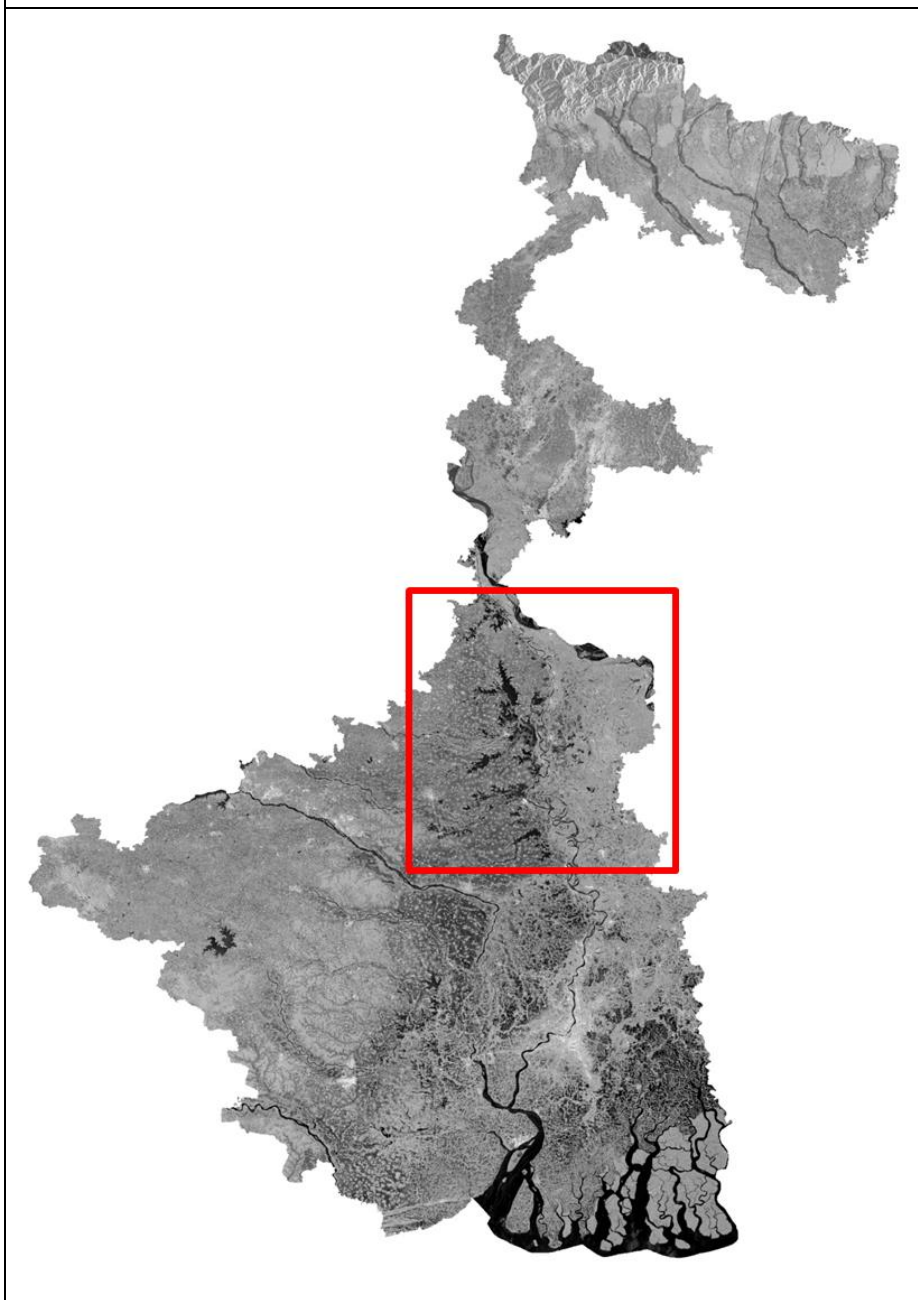




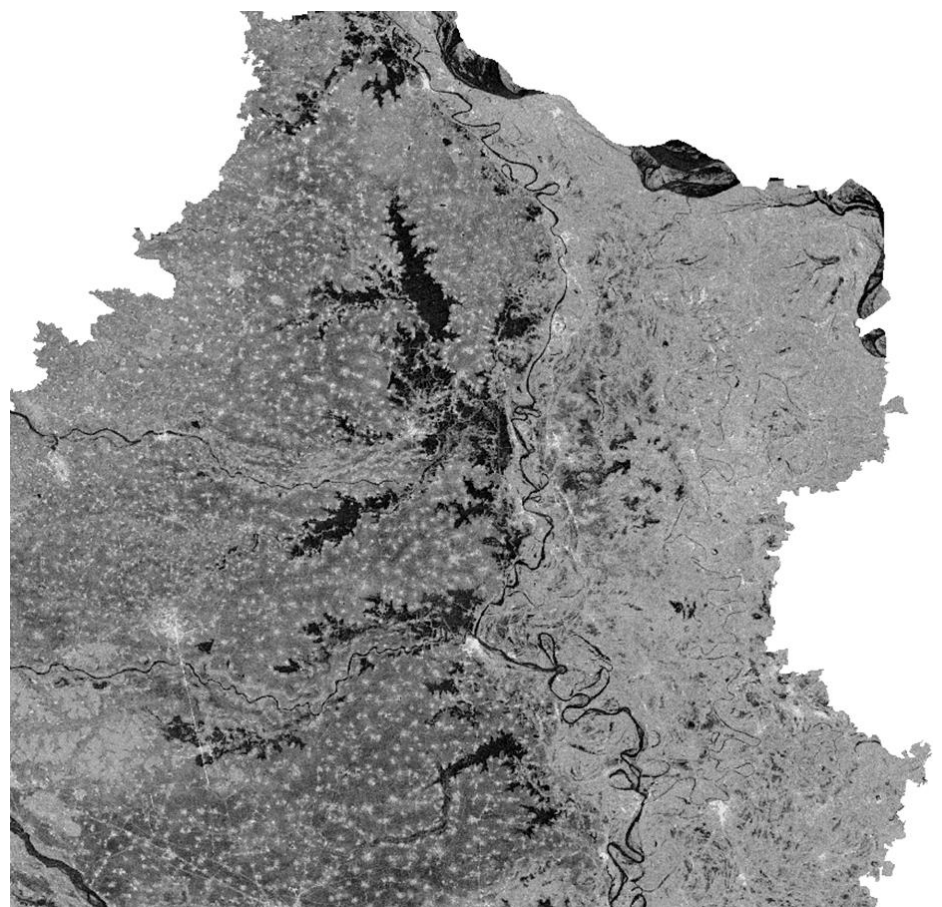
Satellite Image Showing Floods In 2009



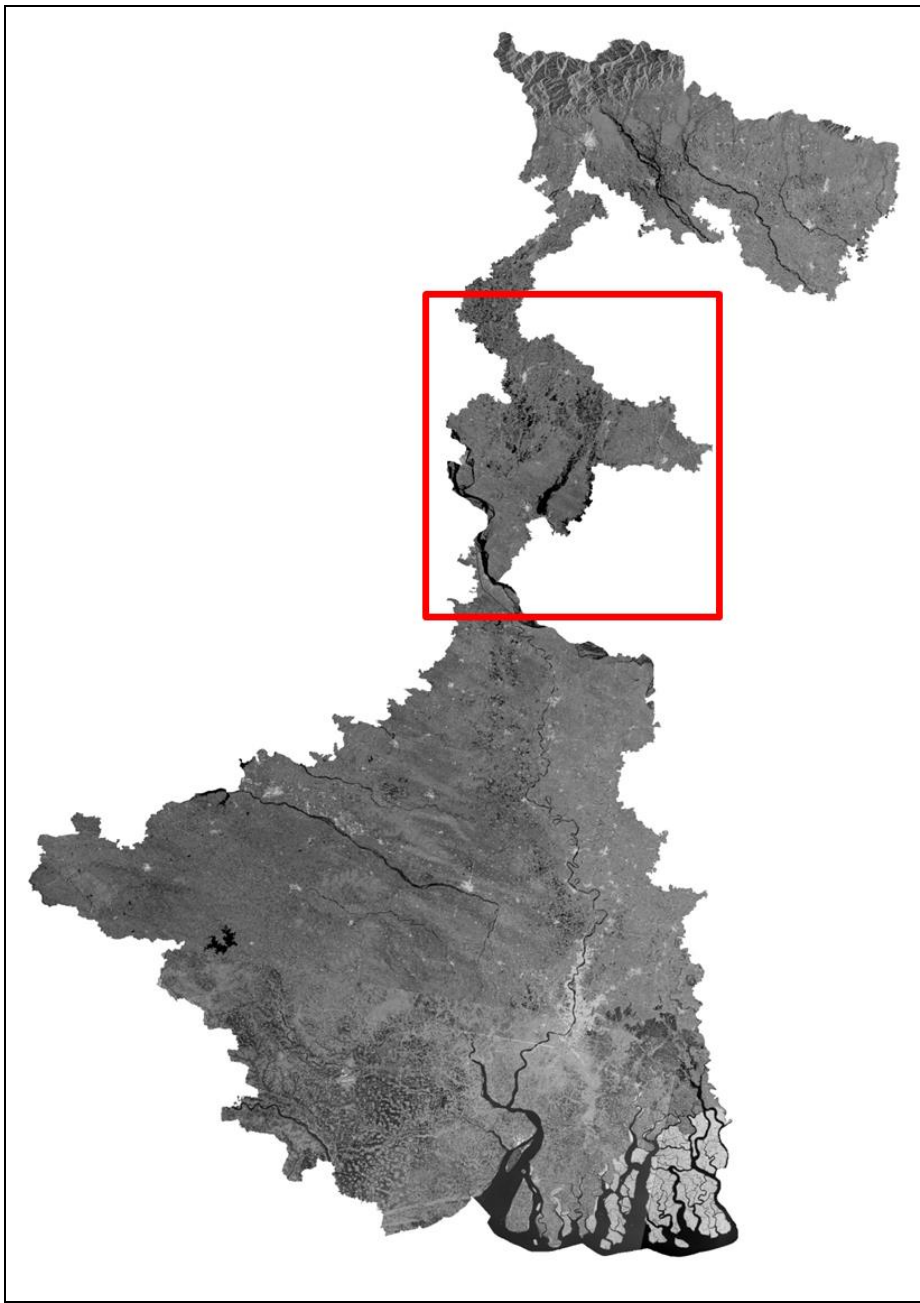
Detailed View



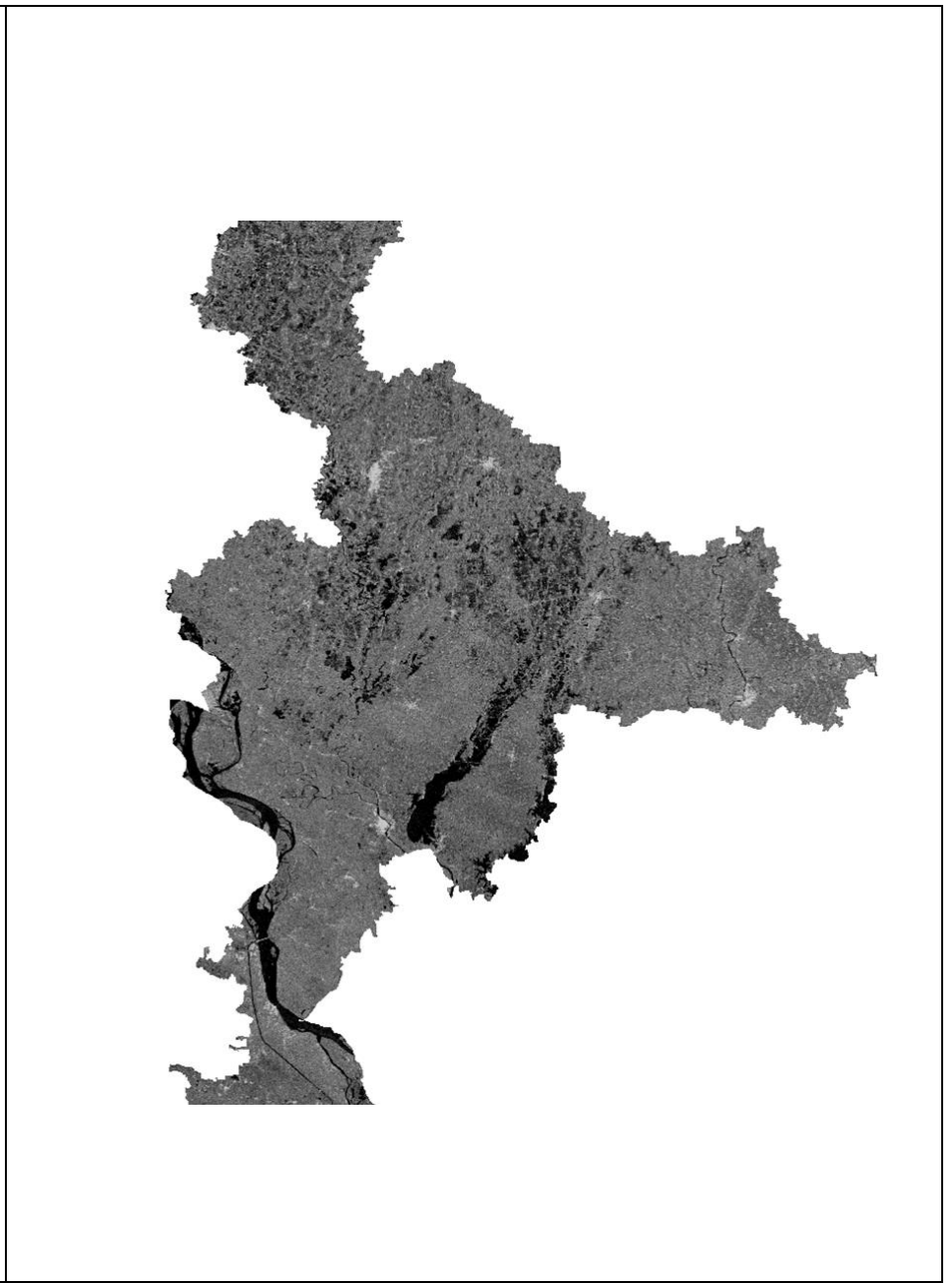
Satellite Image Showing Floods In 2011



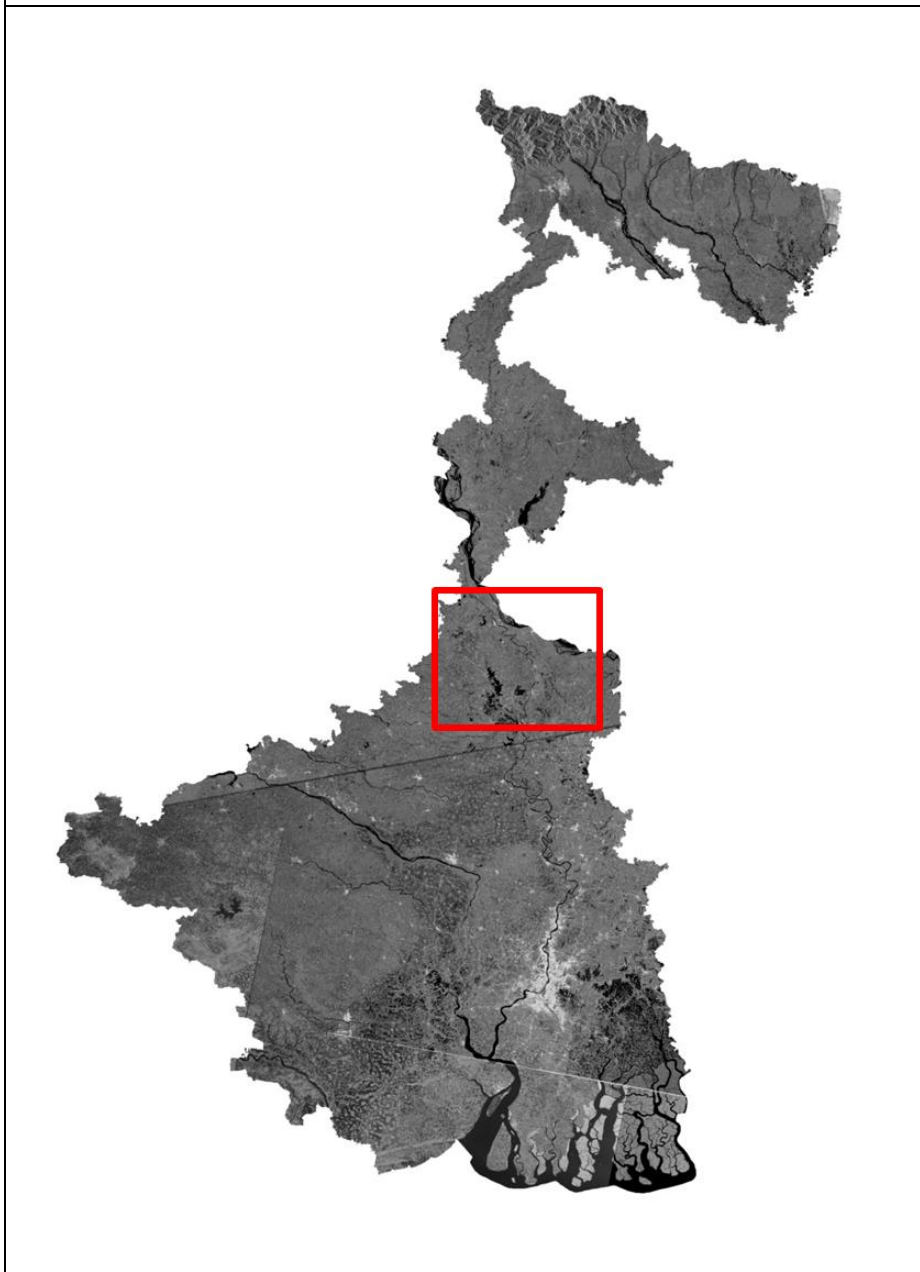
Detailed View



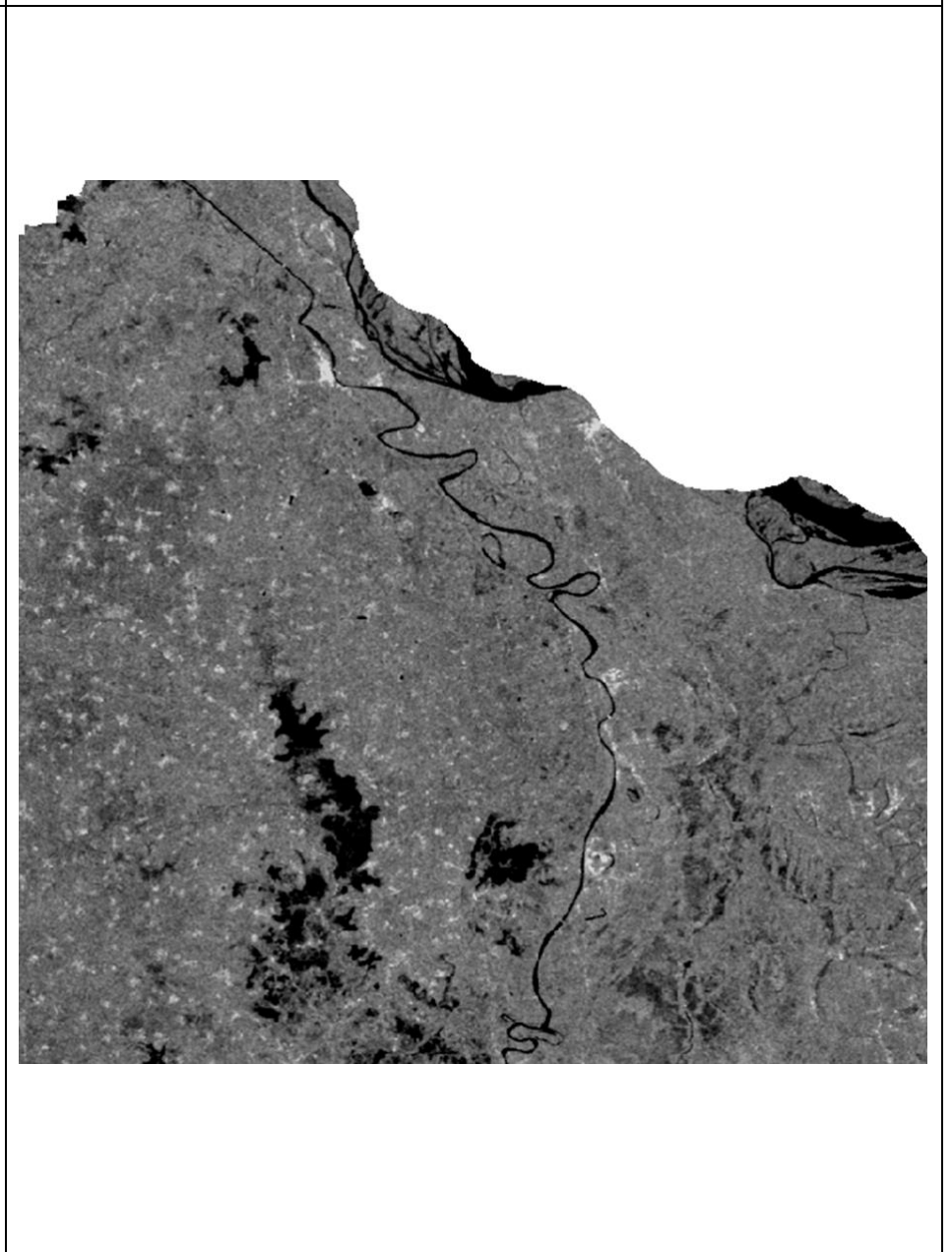
Satellite Image Showing Floods In 2013



Detailed View



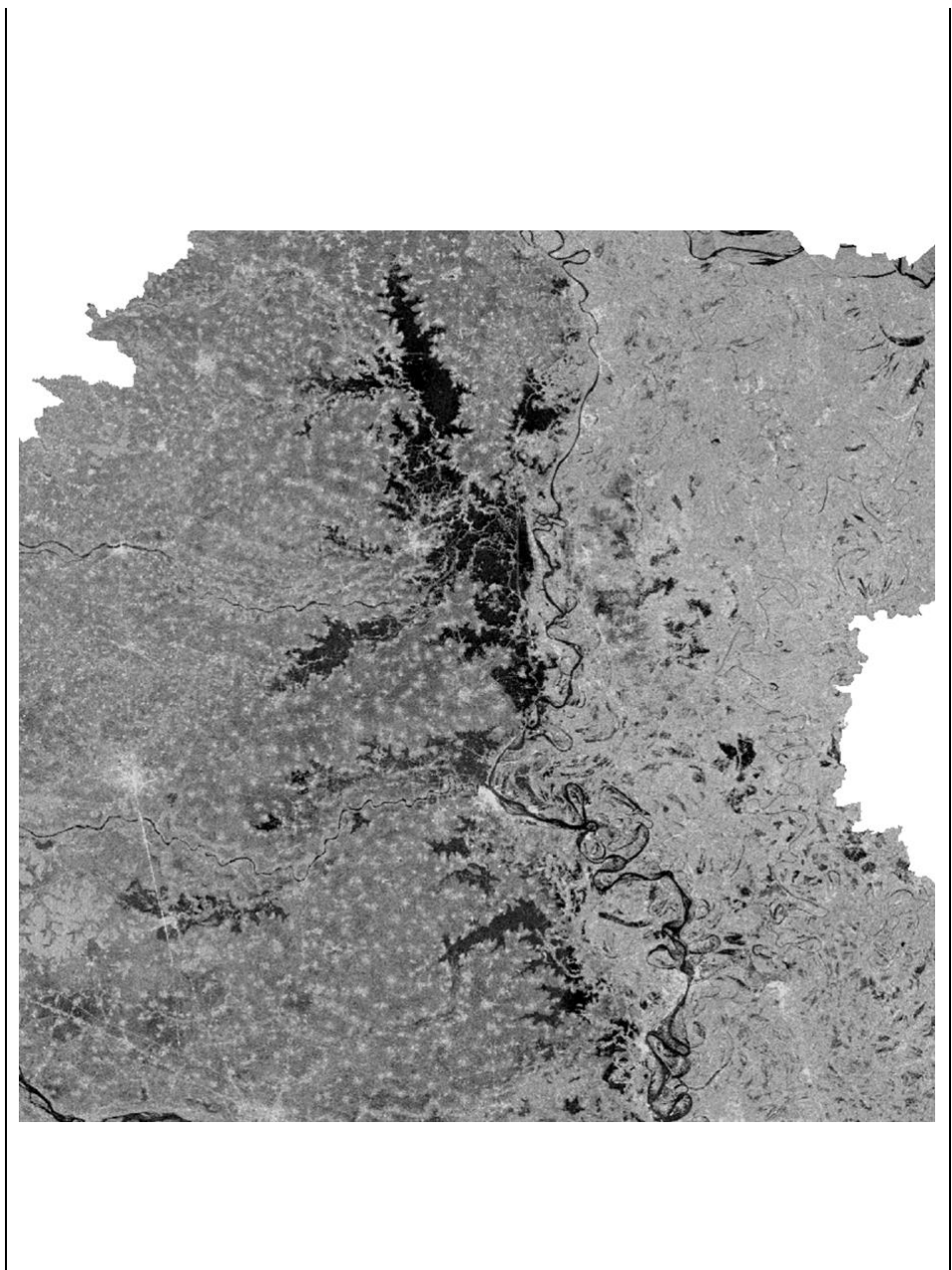
Satellite Image Showing Floods In 2014



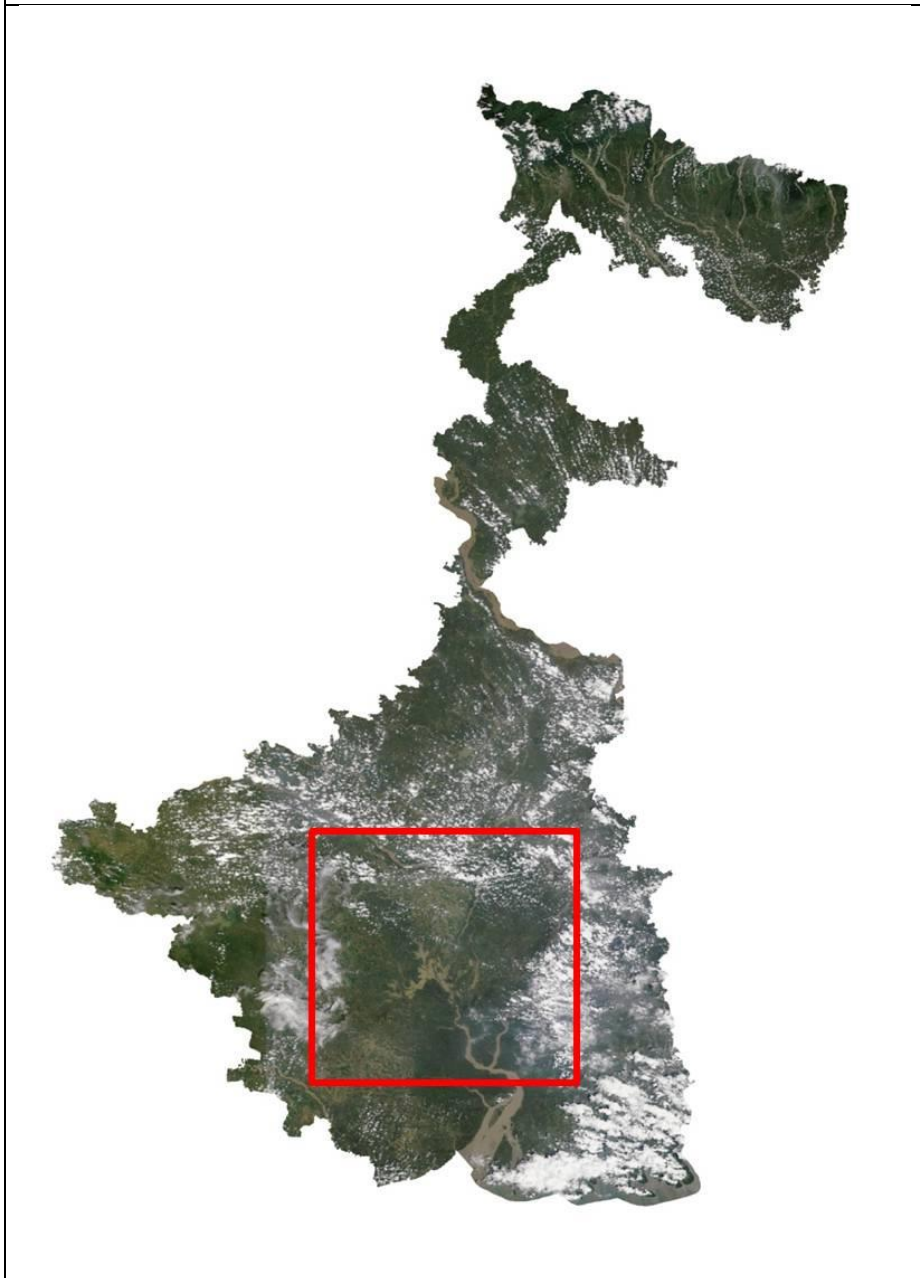
Detailed View



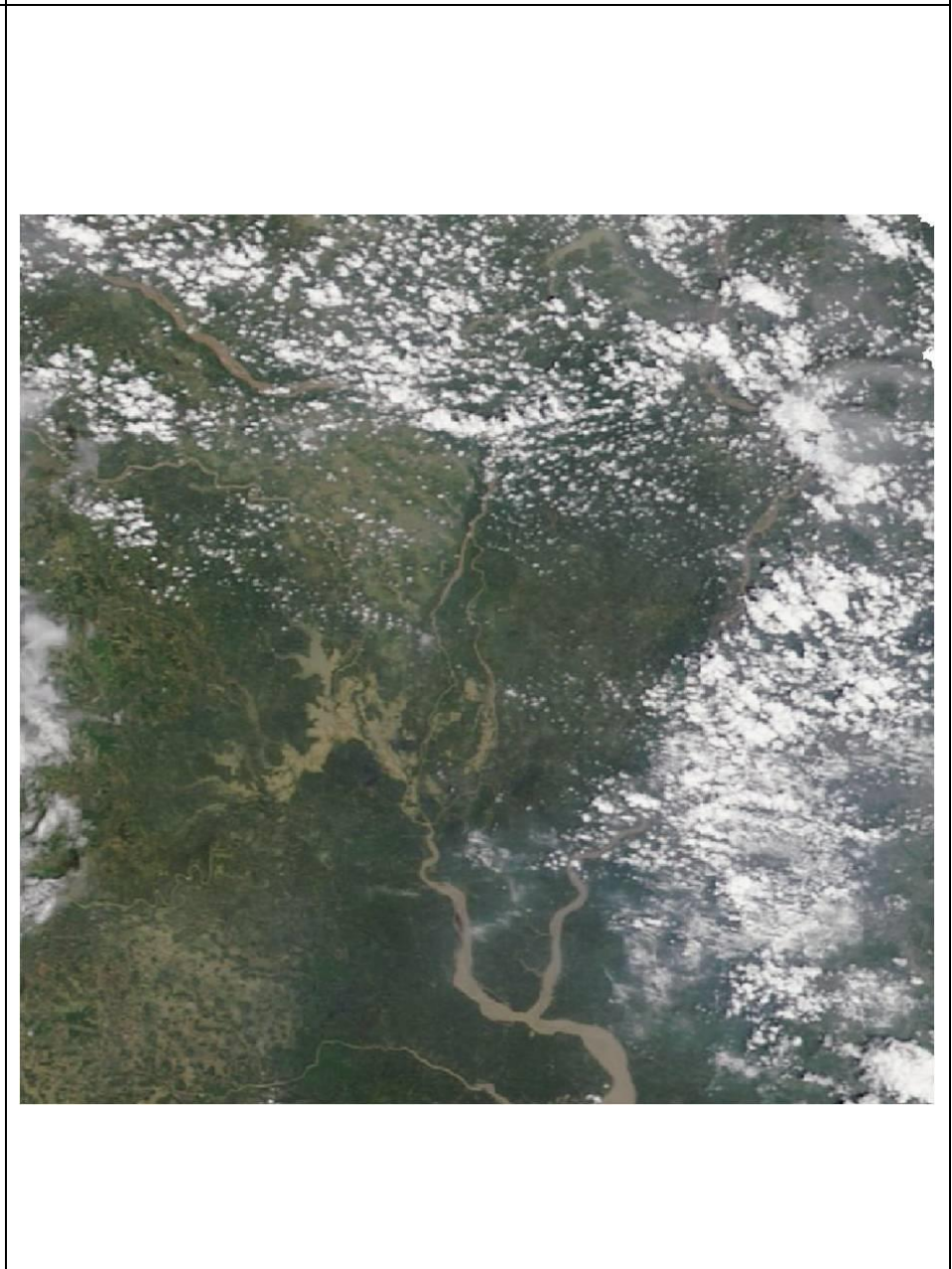
Satellite Image Showing Floods In 2015



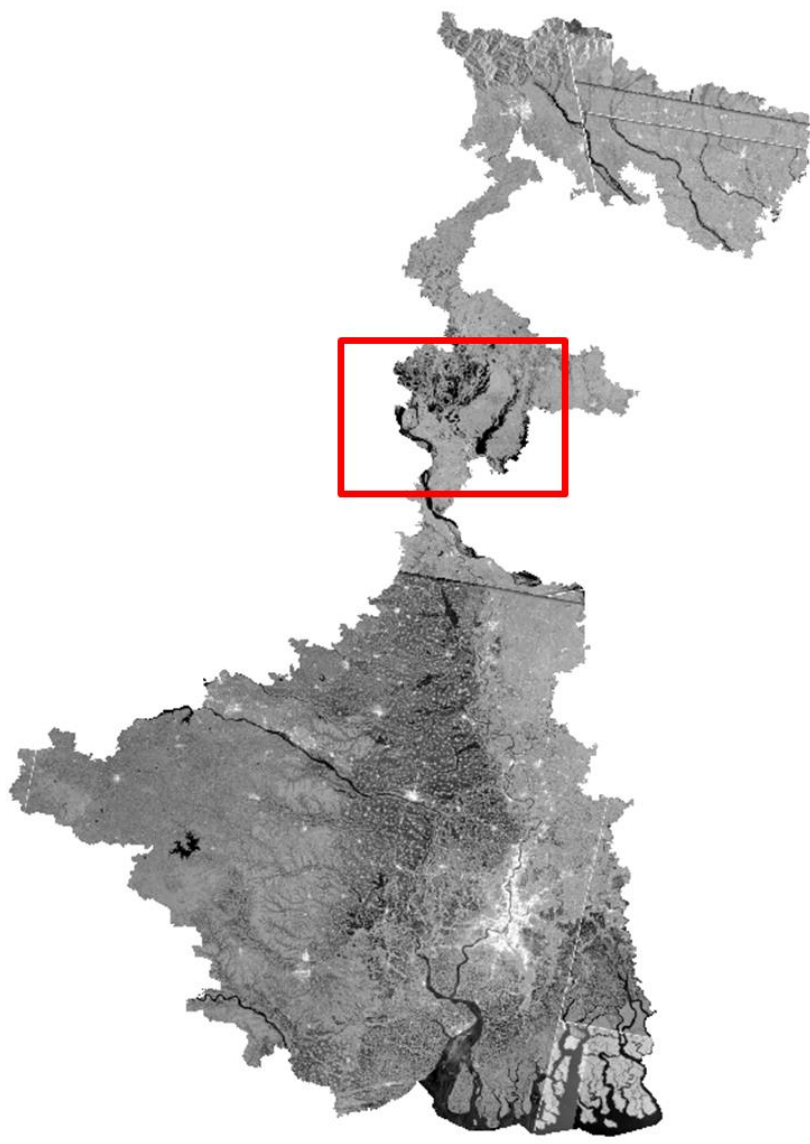
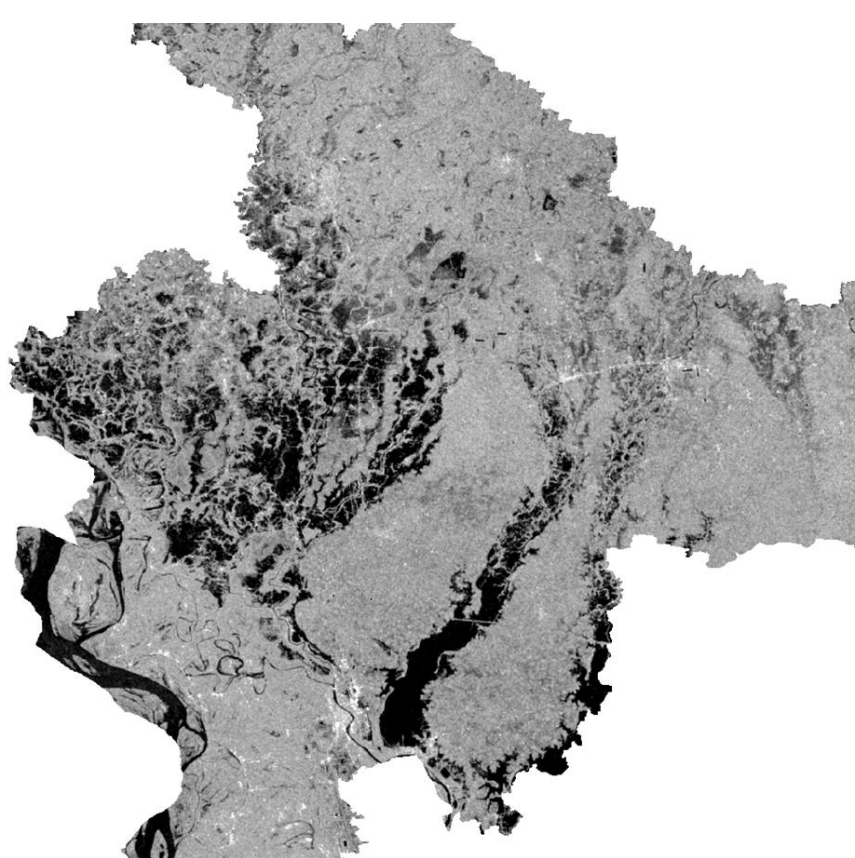
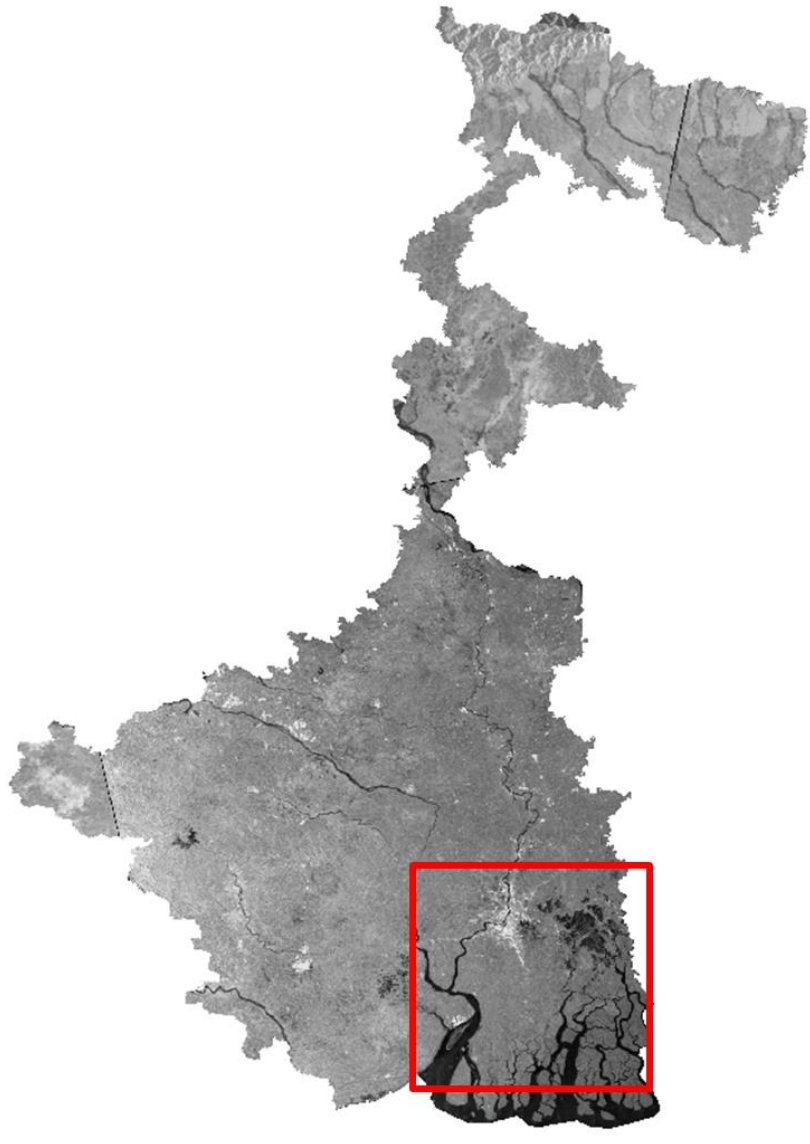
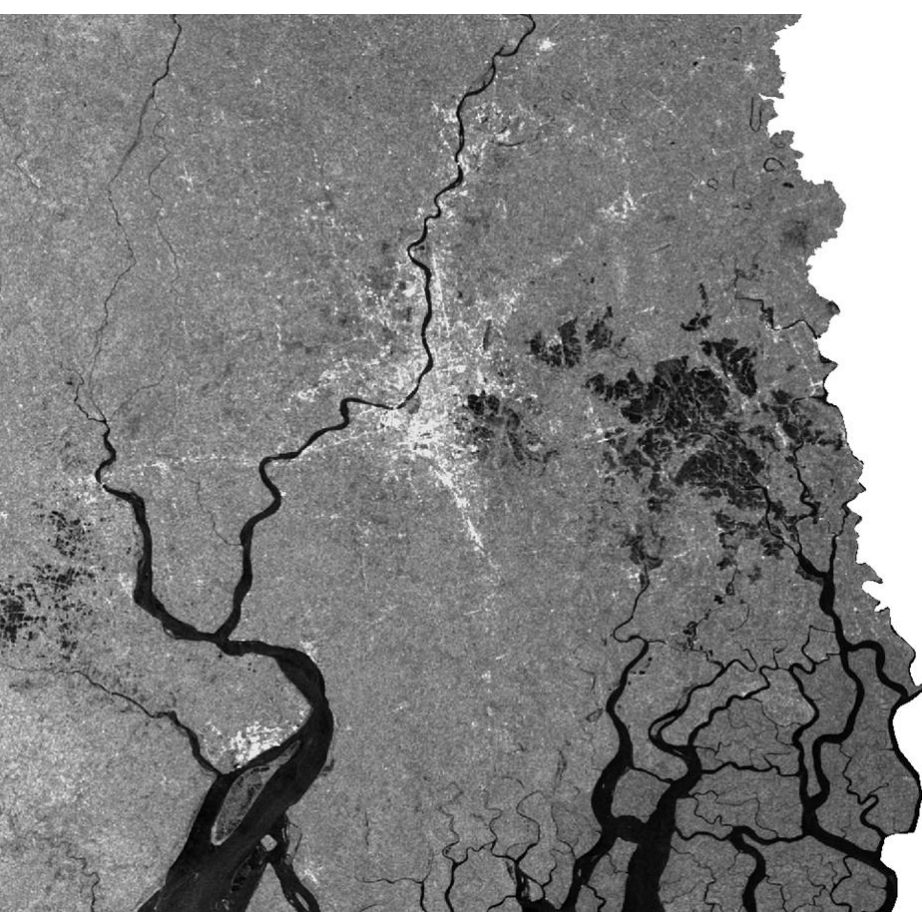
Detailed View

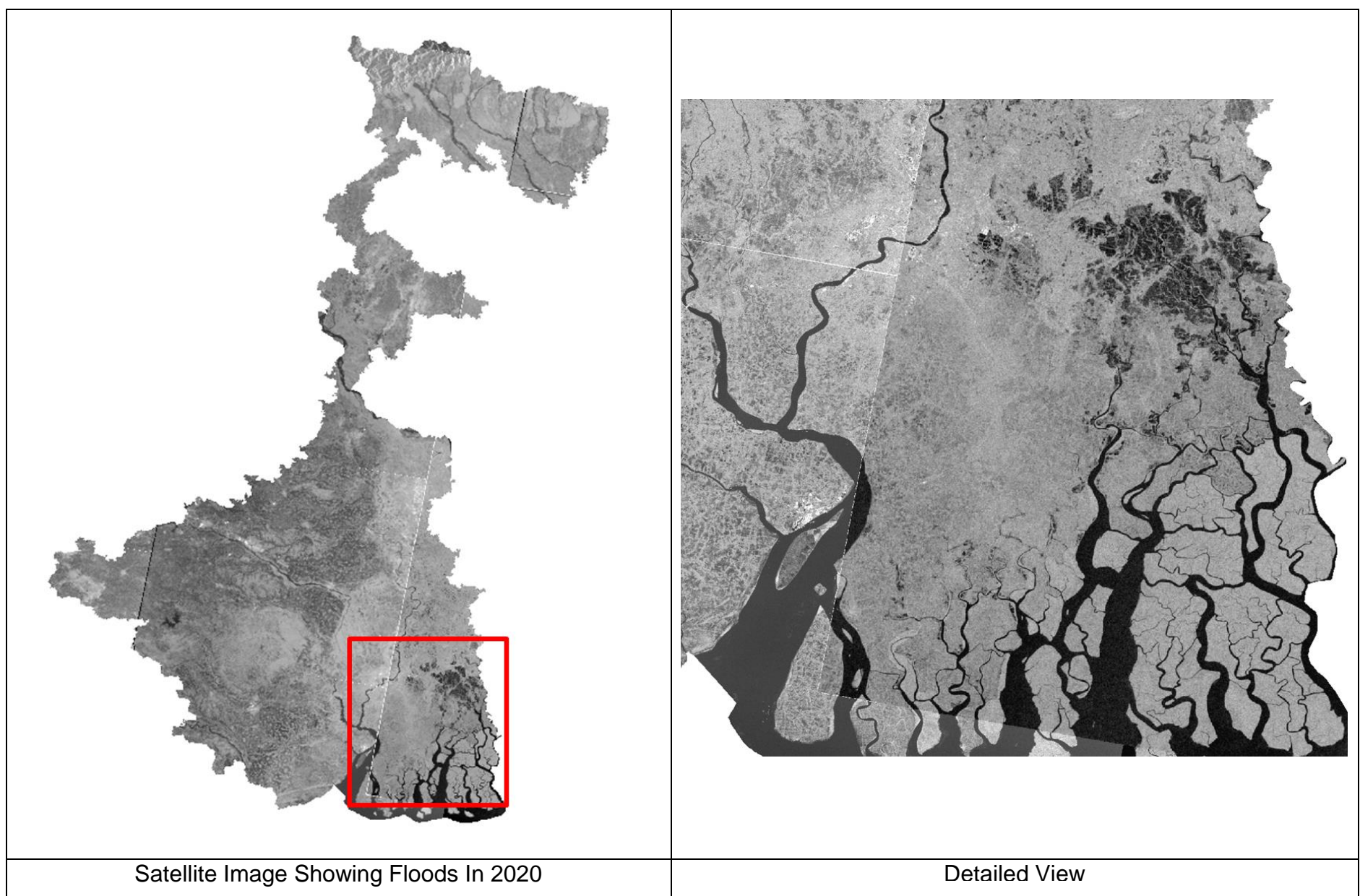


Satellite Image Showing Floods In 2016



Detailed View

|   |   |
|---|---|
|   |   |
| <p>Satellite Image Showing Floods In 2017</p>                                       | <p>Detailed View</p>  |
|  |  |
| <p>Satellite Image Showing Floods In 2019</p>                                       | <p>Detailed View</p>  |



### 3.2 APPROACH

In this attempt, a large number of satellite images covering the West Bengal region during all the flood events that occurred during last 21 years (2000-2020) were used. All satellite data sets were analyzed and flood layers were extracted. All the flood layers corresponding to a year are combined as one inundation layer so that this layer represents the maximum flooded area in a year. All such combined flood layers for 21 years were integrated into flood hazard layer representing the observed flood inundated areas with different frequencies. This layer was integrated with digital database layers of West Bengal. The flood inundation represented in different colours indicates varying frequencies as observed during 2000 to 2020. The road and railway lines are shown to indicate the probable frequency of flooding they are subjected to. The normal river course and water bodies are also shown in the map. Similarly, the layer was also integrated with digital database layers of different districts; these layers include road, rail, village, etc. The details of each of the elements subjected to flooding were given district-wise in the following units. Generation of the Flood hazard zones was done based on the analysis of multi-temporal satellite data acquired during the floods of 2000-2020. Following are the major steps involved in preparation of flood hazard zonation maps

- **Satellite Data Acquisition:** Satellite data from Indian Remote Sensing Satellites (IRS) and foreign satellite data (Optical & Microwave) was acquired during the floods in West Bengal since 2000. The water levels observed at different gauge stations were closely monitored during floods and attempts were made to program the satellite data during near peak situations. Satellite data was also programmed and procured during progression and recession of the flood wave for studying the impact of the flood.
- **Rectification:** The acquired satellite datasets were rectified to a defined projection system for integration with database layers.
- **Flood Inundation Layer:** Using image processing classification algorithms, water layer was extracted from the satellite data and integrated with the pre-flood river and water bodies layer to derive flood inundation layer.
- **Annual Flood Layer:** The flood inundation layers generated for different flood waves in a calendar year were integrated to generate the maximum flood inundation extent observed in that year.

- **Hazard layer:** The maximum flood inundation layers corresponding to various years (2000-2020) were integrated for assessing the frequency of inundation and subsequent generation of hazard layer. Fig 30 shows the methodology for generation of flood hazard layer.
- **Database Integration:** The hazard layer was further integrated with the database consisting of administrative boundaries, landuse/landcover, infrastructure, etc. for impact assessment and statistics generation.
- **Map Composition:** Flood hazard maps were composed at State, District and Detailed levels comprising of base details and hazard layer.

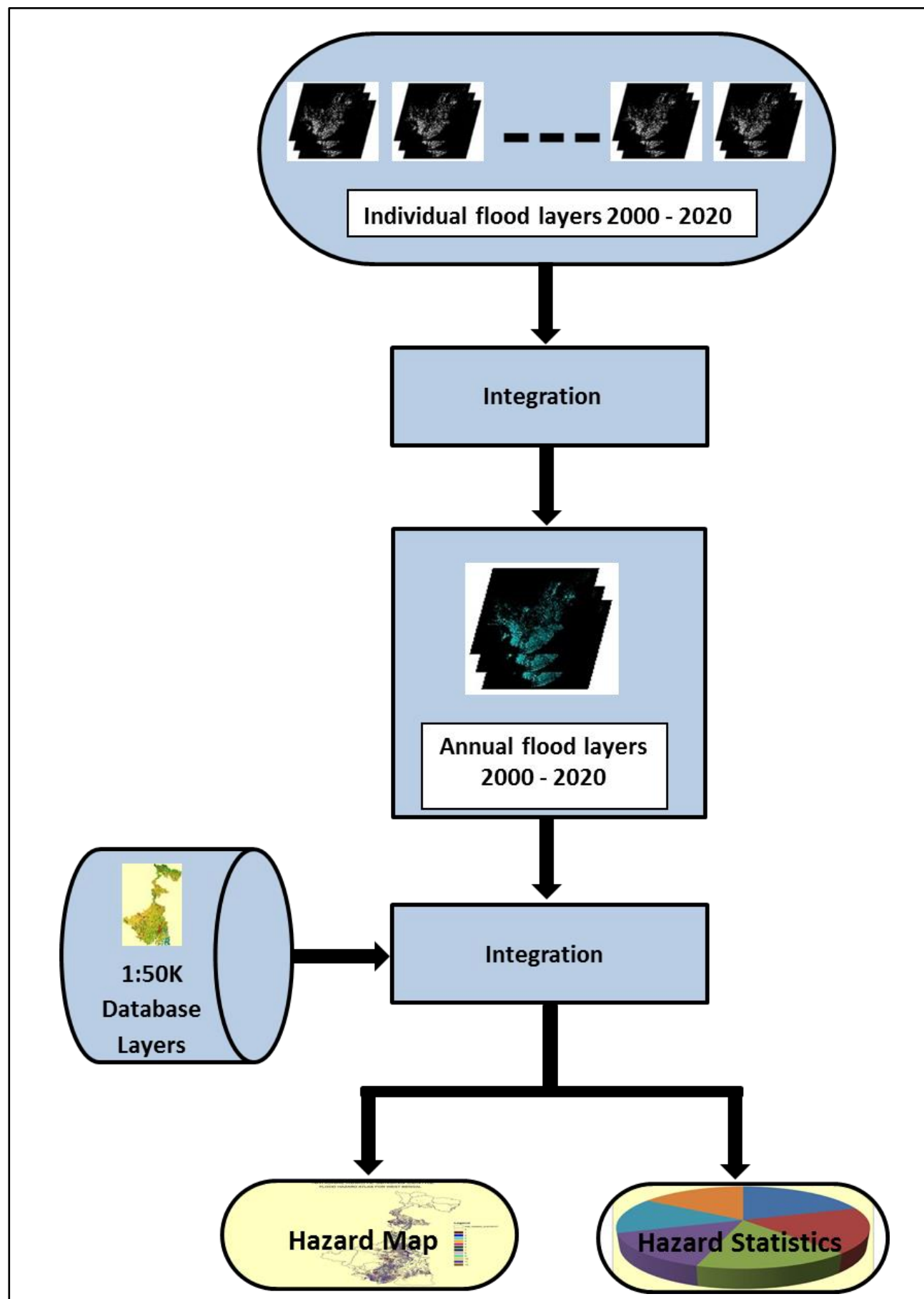


Figure 30 Extraction Of Flood Inundation Layer And Generation Of Flood Hazard Layer From Satellite Data

### 3.3 SATELLITE DATA USED & FLOOD HAZARD ZONATION SCHEMA

Multimission multi sensor Satellite datasets were acquired for a period of twenty one years, from 2000 to 2020. While some of the satellite data acquired over the state covered the full extent of flooding, some have captured the partial extent of flooding in the state. The annual flood layers have been combined together to derive the frequency with which an area has been affected with floods.

To normalize Flood Hazard classes at the national level, National Disaster Management Authority (NDMA) convened a meeting in 2019, based on the discussion following schema is classified. Twenty-two years of satellite data were used for deriving the flood hazard layer. The hazard layer demarcates areas in terms of the number of flood events that occurred in that area during the last 21 years. The flood hazard has been classified into multiple categories based on the frequency of inundation. Very Low category indicates the areas, which are inundated once or twice during the 21-year period. Similarly, Low indicates three to five times, Moderate indicates six to ten times. To facilitate better visualization, colour coding scheme has been adopted for different hazard zones (Table-14).

Twenty-one years (2000-2020) of satellite data was used for deriving the flood hazard layer for West Bengal state. The hazard layer demarcates areas in terms of number of flooding events occurred in that area during last 21 years, such as 10-times flooded, 9-times flooded, etc. The flood hazard has been classified into 4 categories based on frequency of inundation. Very Low category indicates the areas, which are inundated once or twice during the 10-year period. Similarly, Low indicates three to five times while Moderate indicates six to nine times. High indicates ten to thirteen times. Table 13 shows the list of satellite datasets used for flood mapping while Table 14 shows the flood hazard zonation schema.

Table 13 List Of Satellite Datasets Used For Flood Mapping

| 2000   |           |                  | 2008   |           |                  |
|--------|-----------|------------------|--------|-----------|------------------|
| S. No. | Date      | Satellite/Sensor | S. No. | Date      | Satellite/Sensor |
| 1      | 28-Sep-00 | IRS-1D WiFS      | 16     | 20-Jun-08 | RADARSAT-1       |
| 2003   |           |                  | 17     | 21-Jun-08 | RADARSAT-1       |
| S. No. | Date      | Satellite/Sensor | 18     | 28-Jun-08 | RADARSAT-1       |
| 2      | 17-Jul-03 | RADARSAT-1       | 19     | 30-Jun-08 | RADARSAT-2       |
| 3      | 23-Jul-03 | RADARSAT-1       | 20     | 22-Jul-08 | RADARSAT-1       |
| 2004   |           |                  | 21     | 24-Jul-08 | RADARSAT-1       |
| S. No. | Date      | Satellite/Sensor | 2009   |           |                  |
| 4      | 16-Jul-04 | RADARSAT-1       | S. No. | Date      | Satellite/Sensor |
| 2005   |           |                  | 22     | 8-Sep-09  | RADARSAT-2       |
| S. No. | Date      | Satellite/Sensor | 23     | 15-Sep-09 | RADARSAT-2       |
| 5      | 27-Oct-05 | RADARSAT-1       | 2010   |           |                  |
| 2006   |           |                  | S. No. | Date      | Satellite/Sensor |
| S. No. | Date      | Satellite/Sensor | 24     | 29-Aug-10 | RADARSAT-1       |
| 6      | 18-Jul-06 | IRS-P6 AWIFS     | 2011   |           |                  |
| 7      | 23-Jul-06 | RADARSAT-1       | S. No. | Date      | Satellite/Sensor |
| 8      | 26-Sep-06 | RADARSAT-1       | 25     | 22-Jun-11 | RADARSAT-1       |
| 9      | 3-Oct-06  | RADARSAT-1       | 26     | 2-Jul-11  | RADARSAT-2       |
| 2007   |           |                  | 27     | 12-Aug-11 | RADARSAT-2       |
| S. No. | Date      | Satellite/Sensor | 28     | 16-Aug-11 | RADARSAT-1       |
| 10     | 4-Jul-07  | RADARSAT-1       | 29     | 24-Aug-11 | RADARSAT-1       |
| 11     | 8-Jul-07  | IRS-P6 LISS-3    | 2013   |           |                  |
| 12     | 21-Aug-07 | RADARSAT-1       | S. No. | Date      | Satellite/Sensor |
| 13     | 28-Aug-07 | RADARSAT-1       | 30     | 15-Jul-13 | RADARSAT-2       |
| 14     | 28-Sep-07 | RADARSAT-1       | 31     | 17-Jul-13 | RADARSAT-2       |
| 15     | 8-Oct-07  | RADARSAT-1       | 32     | 28-Oct-13 | RADARSAT-2       |

| 2014   |           |                  | 2019   |           |                  |
|--------|-----------|------------------|--------|-----------|------------------|
| S. No. | Date      | Satellite/Sensor | S. No. | Date      | Satellite/Sensor |
| 33     | 27-Aug-14 | RADARSAT-2       | 45     | 28-Aug-17 | RADARSAT-2       |
| 2015   |           |                  | 2020   |           |                  |
| S. No. | Date      | Satellite/Sensor | S. No. | Date      | Satellite/Sensor |
| 34     | 30-Jul-15 | RISAT-1          | 47     | 14-Jul-19 | RADARSAT-2       |
| 35     | 5-Aug-15  | RADARSAT-2       | 48     | 21-May-20 | RADARSAT-2       |
| 36     | 7-Aug-15  | RADARSAT-2       | 49     | 21-May-20 | ALOS-2 PALSAR    |
| 37     | 1-Sep-15  | RISAT-1          | 50     | 22-May-20 | Sentinel-1A      |
| 2016   |           |                  | 51     | 22-May-20 | NOVASAR          |
| S. No. | Date      | Satellite/Sensor | 52     | 24-May-20 | RADARSAT-2       |
| 38     | 29-Jul-16 | RISAT-1          | 53     | 24-May-20 | TERRASAR-X       |
| 39     | 25-Aug-16 | RADARSAT-2/MODIS | 54     | 24-May-20 | OTHER SOURCE SAR |
| 2017   |           |                  | 55     | 25-May-20 | RADARSAT-2       |
| S. No. | Date      | Satellite/Sensor | 56     | 27-May-20 | COSI             |
| 40     | 25-Jul-17 | Sentinel-1A      | 57     | 26-Aug-20 | Sentinel-1A      |
| 41     | 27-Jul-17 | RADARSAT-2       | 58     | 28-Aug-20 | Sentinel-1A      |
| 42     | 13-Aug-17 | RADARSAT-2       | 59     | 29-Aug-20 | RADARSAT-2       |
| 43     | 21-Aug-17 | RADARSAT-2       | 60     | 22-Oct-20 | Sentinel-1A      |
| 44     | 27-Aug-17 | RADARSAT-2       |        |           |                  |

Table 14 Flood Hazard Zonation Schema

| SI No | Flood Hazard Classification | Colour coding scheme | Number of times per year, the area was subject to flood inundation during 2000-2020 |
|-------|-----------------------------|----------------------|---|
| 1     | Very Low                    | Yellow               | 1-2 times   |
| 2     | Low                         | Pink                 | 3-5 times   |
| 3     | Moderate                    | Purple               | 6-9 times   |
| 4     | High                        | Red                  | 10-13 times   |



## 4.0 OBSERVATIONS

### 4.1 FLOOD HAZARD ZONES

Based on the analysis of 60 satellite datasets, acquired during the floods of 2000-2020, the flood hazard layer was derived. Figure 31 shows the flood hazard map prepared for West Bengal. Table 13 shows the flood hazard area computed under various categories.

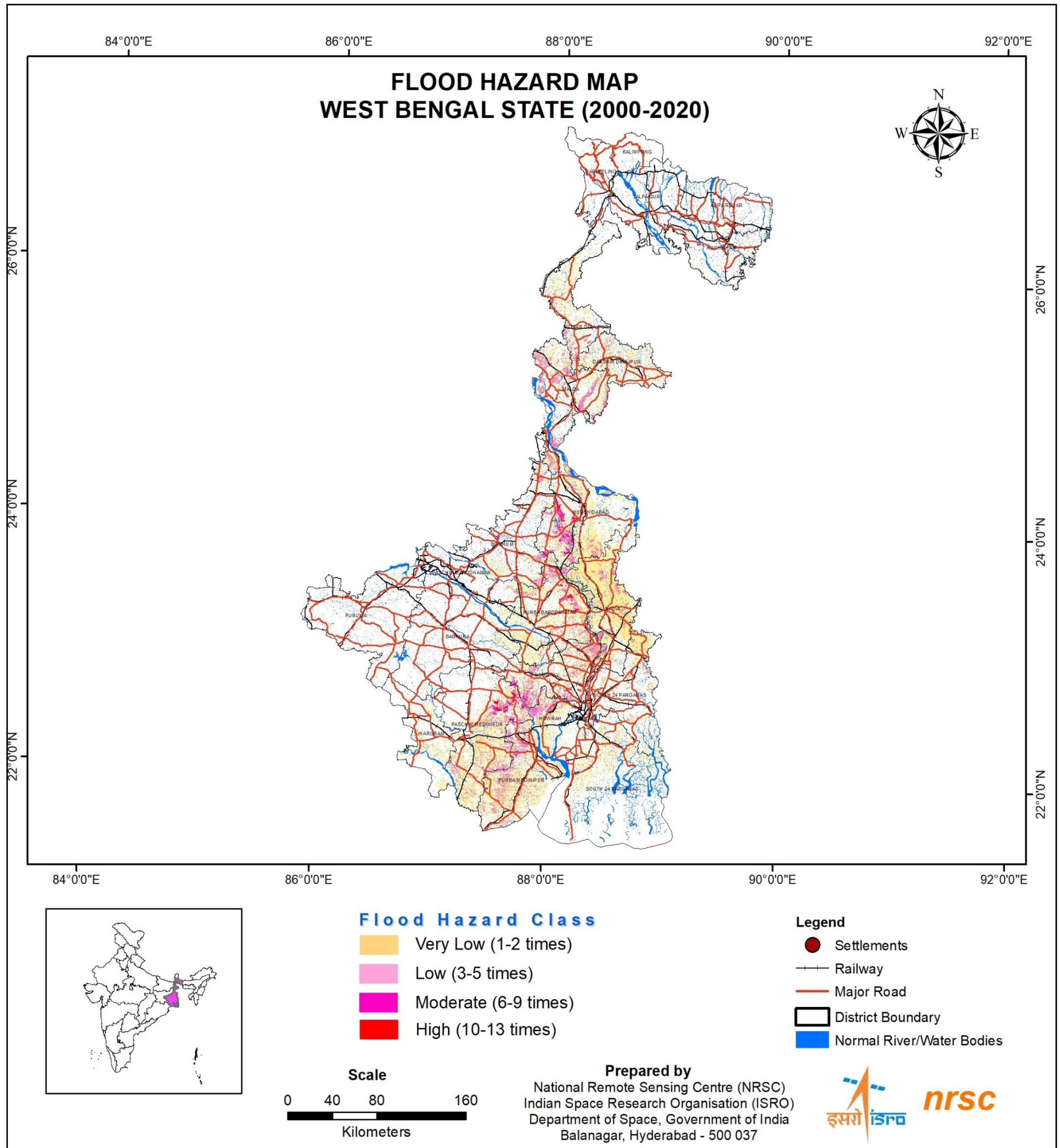


Figure 31 Flood Hazard Layer of West Bengal (2000-2020)

The observations made from the flood hazard analysis are given below:

It is observed that about 22.4% (19.89 lakh hectares) of land in West Bengal state is affected by flood during 2000-2020 out of the total state geographical area 88.75 lakh hectares (Table 15).

Out of total 19.89 lakh hectares of flood affected area, about 14.73 lakh hectares of land falls under very low (inundated 1 or 2 times), 4.23 lakh hectares under low (inundated 3-5 times), about 73,832 hectares under moderate (inundated 6-9 times) and 18,107 hectares under high (inundated 10-13 times) flood hazard categories. Figure 32 shows the percentage distribution of the flood hazard area under different categories with respect to the total flood hazard area.

Table 15 Flood Hazard Area Under Various Categories

| Sl. No | Hazard Severity | Flood Hazard Area (ha) | % Flood Hazard (wrt State Geographic Area) | % Flood Hazard (wrt Total Flood Hazard Area) |
|--------|-----------------|------------------------|--|--|
| 1      | Very Low        | 1473775                | 16.60                                      | 74.07  |
| 2      | Low             | 423926                 | 4.77                                       | 21.31  |
| 3      | Moderate        | 73832                  | 0.83                                       | 3.71   |
| 4      | High            | 18107                  | 0.20                                       | 0.91   |
|        | <b>Total</b>    | <b>1989640</b>         | <b>22.4</b>                                | <b>100</b>                                   |

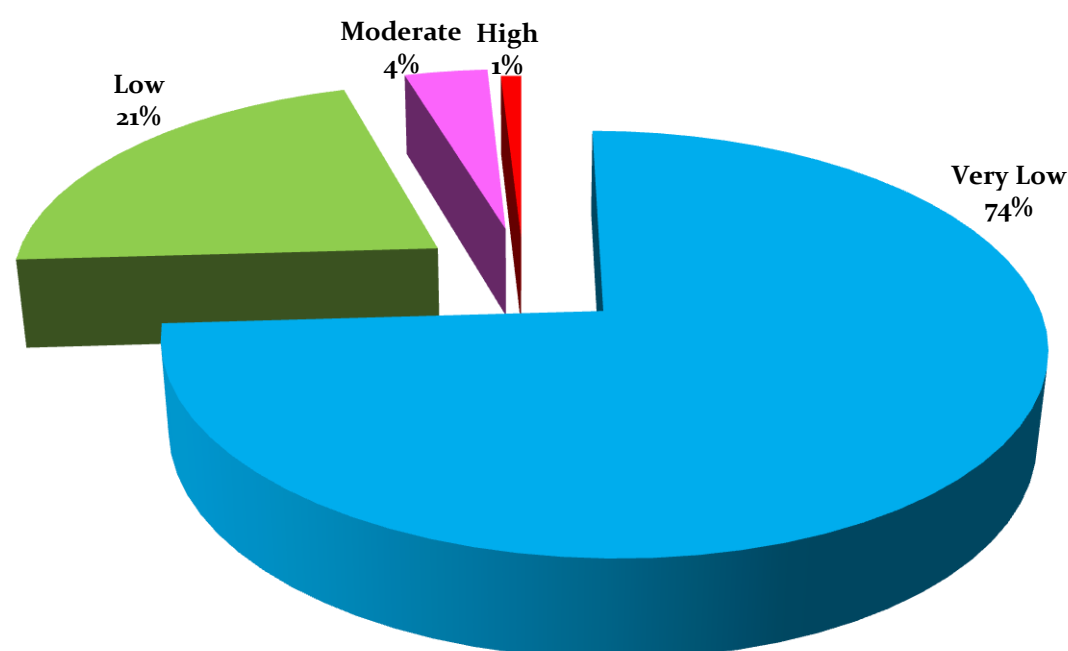


Figure 32 Percentages of Various Hazard Categories With Respect To Total Flood Hazard Area of the State

Annexure-1 shows district wise flood hazard maps and statistics for West Bengal.

#### 4.2 CROPPED AREA INUNDATED BY FLOODING

The cropped area (consisting of kharif, double/triple crop categories) was extracted from the landuse/land cover information (generated under ISRO-NRC project using 2018-19 satellite data) and integrated with the various flood hazard categories. District-wise crop area under each flood hazard category has been computed. From the district-wise cropped area in different flood hazard zones it can be observed that about 16.17 lakh hectares of cropped area is under various categories of flood hazard. Out of which about 11.80 lakh hectares of land falls under very low, 3.66 lakh hectares under low, 60,401 hectares under the moderate and 10,819 hectares under high flood hazard category. District-wise details of cropped area in different flood hazard zone are given in Table 16. Paschim Medinipur, Nadia, Purba Bardhaman and Murshidabad districts have maximum cropped area affected by flood in the years 2000-2020.

Table 16 District-Wise Cropped Area (In Hectares) In Different Flood Hazard Zones

| District                           | Very Low       | Low           | Moderate     | High         | Total          |
|------------------------------------|----------------|---------------|--------------|--------------|----------------|
| ALIPURDUAR                         | 762            | 676           | 0            | 0            | 1438           |
| BANKURA                            | 18744          | 1045          | 0            | 0            | 19789          |
| BIRBHUM                            | 40069          | 11700         | 2004         | 70           | 53843          |
| DAKSHIN DINAJPUR                   | 49871          | 11792         | 24           | 0            | 61687          |
| HOOGHLY                            | 66888          | 44611         | 8068         | 819          | 120387         |
| HOWRAH                             | 29869          | 16246         | 3796         | 0            | 49911          |
| JALPAIGURI                         | 1699           | 0             | 0            | 0            | 1699           |
| JHARGRAM                           | 34927          | 3003          | 2            | 0            | 37933          |
| COOCH BEHAR                        | 7972           | 2             | 0            | 0            | 7974           |
| KOLKATA                            | 70             | 0             | 0            | 0            | 70             |
| MALDA                              | 50409          | 46662         | 3611         | 0            | 100682         |
| MURSHIDABAD                        | 129631         | 36059         | 15196        | 4959         | 185845         |
| NADIA                              | 182091         | 24504         | 1627         | 24           | 208245         |
| NORTH 24 PARGANAS                  | 49043          | 6271          | 144          | 0            | 55457          |
| PASCHIM BARDDHAMAN                 | 6267           | 64            | 0            | 0            | 6331           |
| PASCHIM MEDINIPUR                  | 141638         | 56538         | 11806        | 3638         | 213620         |
| PURBA BARDDHAMAN                   | 152250         | 36380         | 8564         | 1298         | 198491         |
| PURBA MEDINIPUR                    | 102706         | 51400         | 4264         | 11           | 158381         |
| SOUTH 24 PARGANAS                  | 59901          | 5174          | 11           | 0            | 65086          |
| UTTAR DINAJPUR                     | 54776          | 13906         | 1285         | 0            | 69967          |
| <b>Total Cropped Area Affected</b> | <b>1179584</b> | <b>366032</b> | <b>60401</b> | <b>10819</b> | <b>1616837</b> |

### 4.3 GROUND VALIDATION

Ground Validation is a vital process before the product is used by the end user. The flood hazard map, District, Block and villages under different flood hazard categories were provided to Department of Disaster Management and Civil Defence, Government of West Bengal for ground validation of flood hazard atlas prepared using historical satellite data.

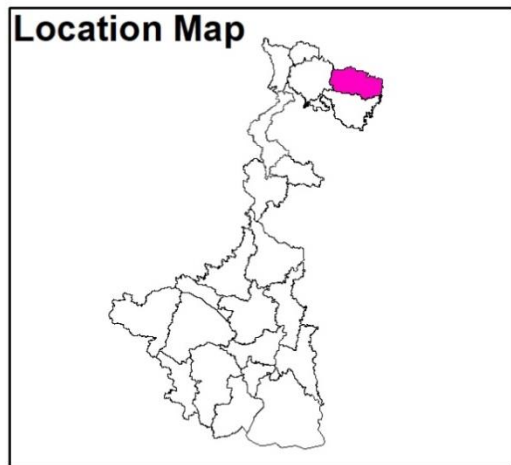
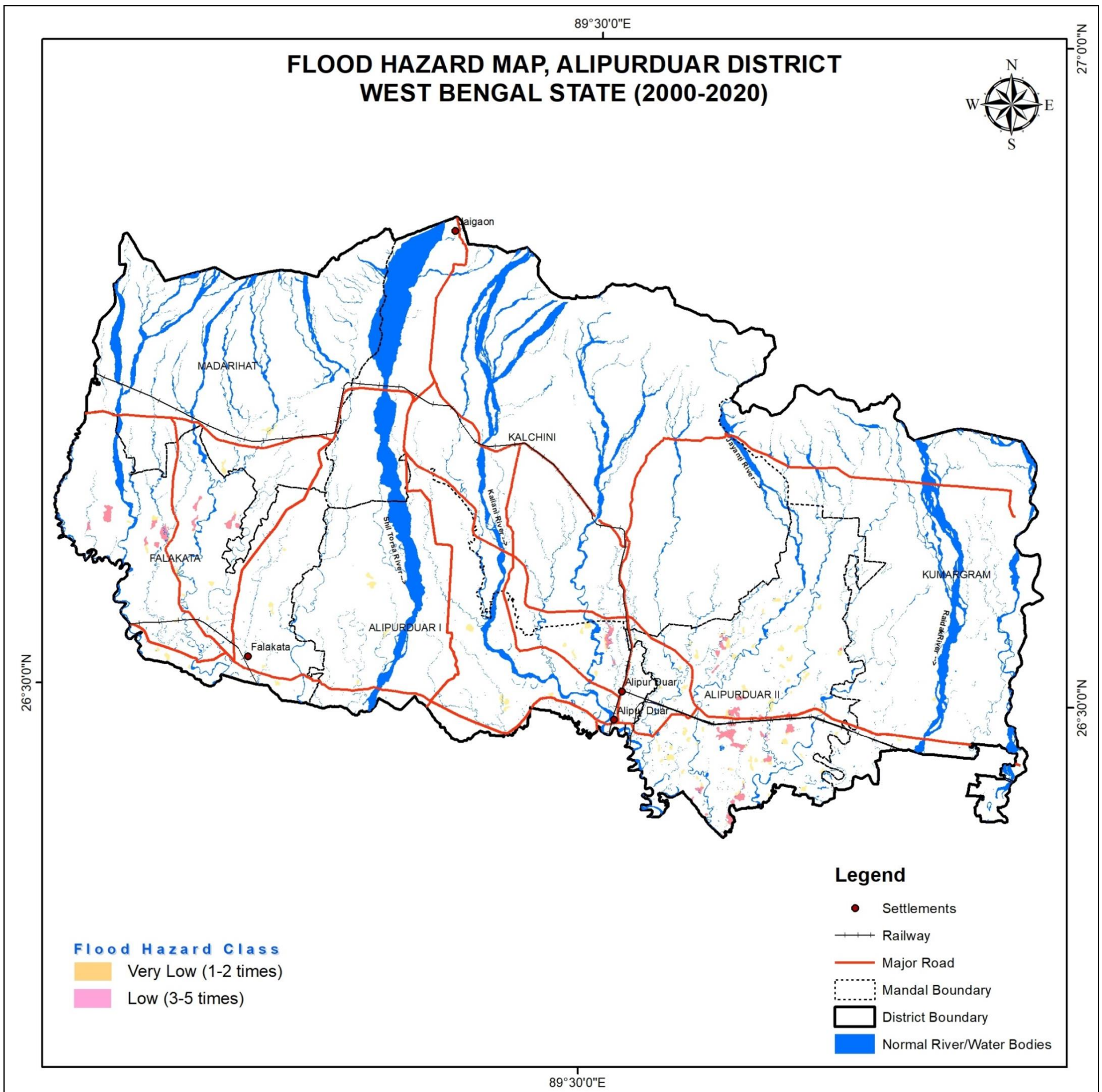
Department of Disaster Management and Civil Defence, Government of West Bengal further distributed maps, statistics and atlas to the district officials, revenue officers and village level officers. The report has been validated by using various records, field observations and from local authorities. Minor suggestions/modifications provided by Department of Disaster Management and Civil Defence officials based on ground report is incorporated in the flood hazard atlas and accordingly in the district level maps.

### 4.4 LIMITATIONS

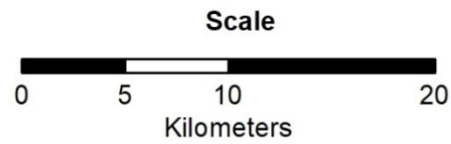
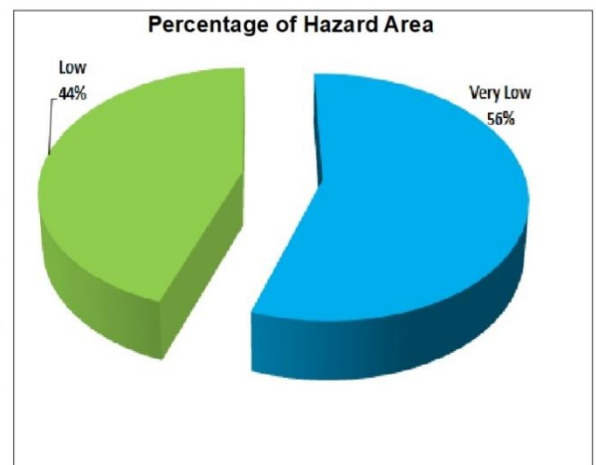
The flood hazard zonation was carried out with available satellite data at NRSC. Flood layers derived for preparation of flood hazard atlas is dependent of the satellite coverage and pass; hence it may not correspond to peak flooding in all cases. Localized flood and flash floods may not have been captured at times. Observed flood inundation may include flooding due to cyclonic rainfall and also due to rainwater accumulation in coastal areas and low-lying areas. Crop area affected by flooding is derived using LULC of 2018-19, since the annual dynamics of LULC have not been considered hence the area affected may be considered an approximation

**Annexure-1:**  
**District Wise Flood Hazard Maps and**  
**Statistics for West Bengal**



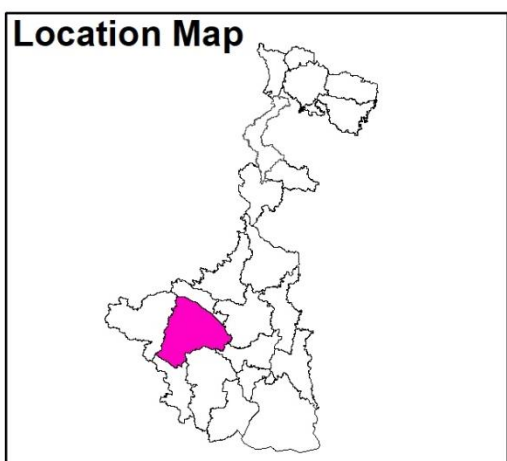
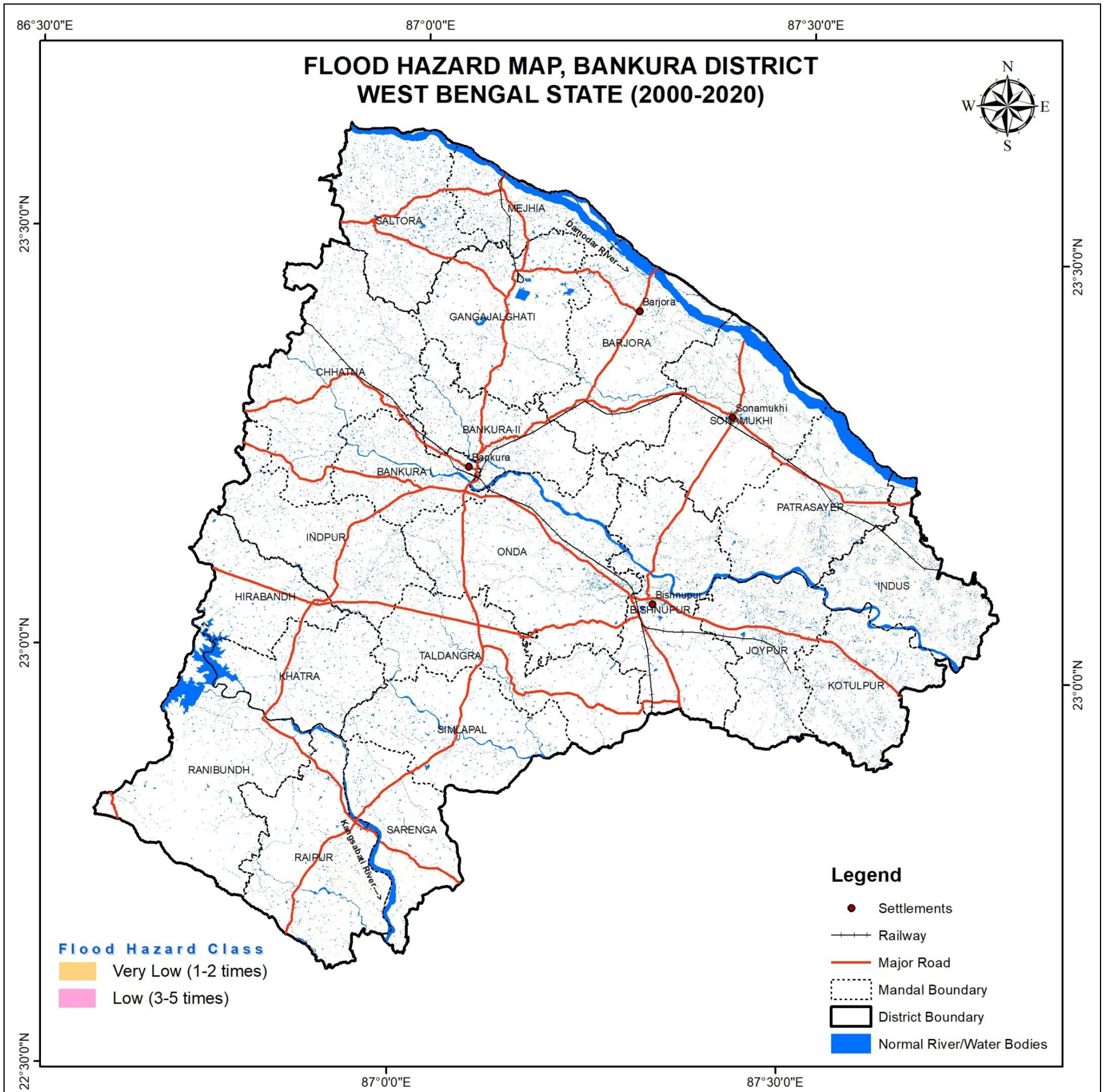


| S. No.                 | Hazard Severity | Flood Hazard Area (Ha) |
|------------------------|-----------------|------------------------|
| 1                      | Very Low        | 1280                   |
| 2                      | Low             | 1020                   |
| 3                      | Moderate        | 0                      |
| 4                      | High            | 0                      |
| <b>Total Area (Ha)</b> |                 | <b>2300</b>            |

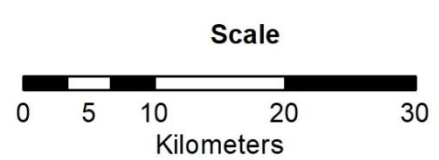
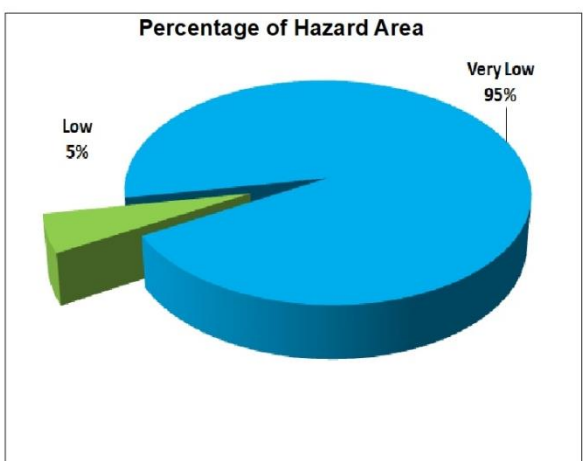


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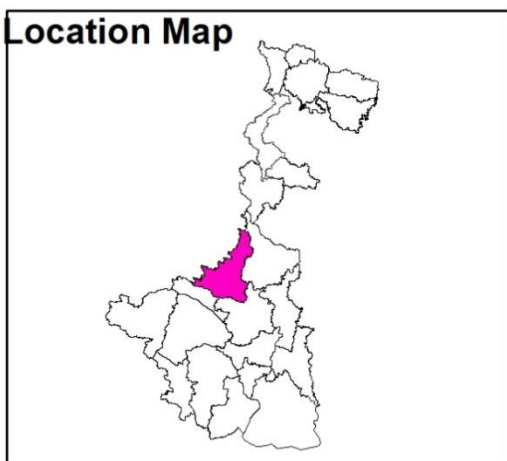
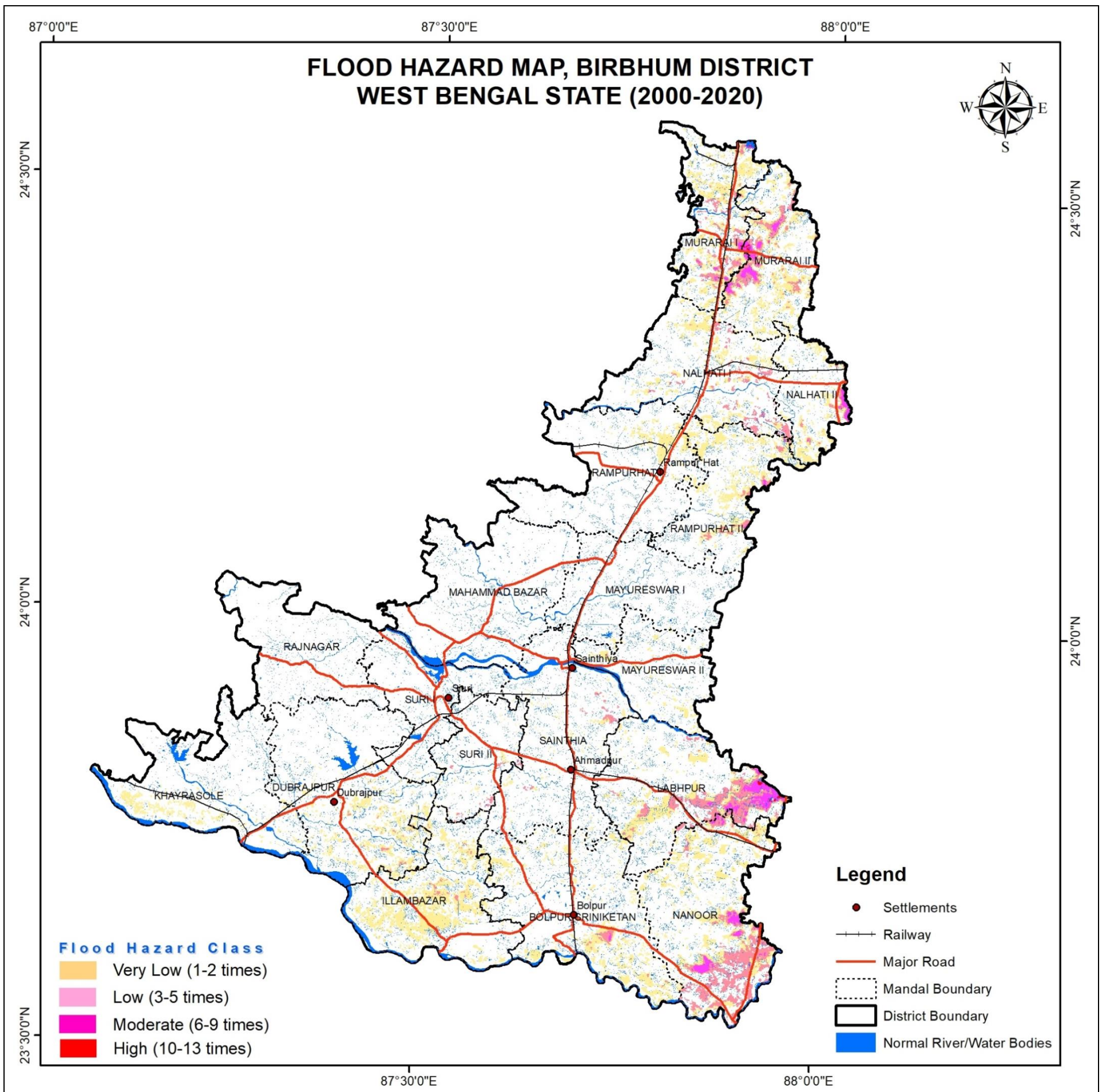


| S. No.                 | Hazard Severity | Flood Hazard Area (Ha) |
|------------------------|-----------------|------------------------|
| 1                      | Very Low        | 19376                  |
| 2                      | Low             | 1099                   |
| 3                      | Moderate        | 0                      |
| 4                      | High            | 0                      |
| <b>Total Area (Ha)</b> |                 | <b>20475</b>           |

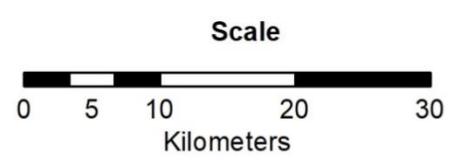
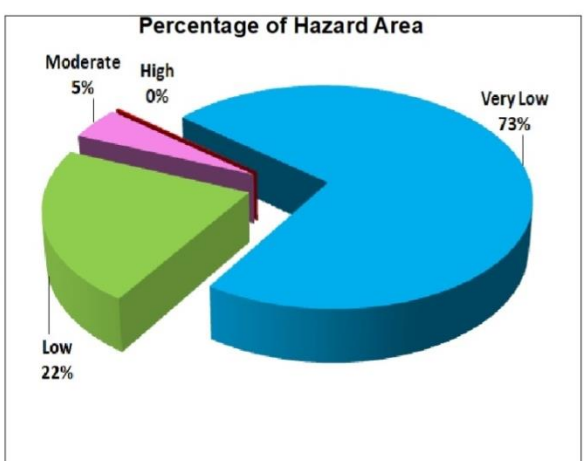


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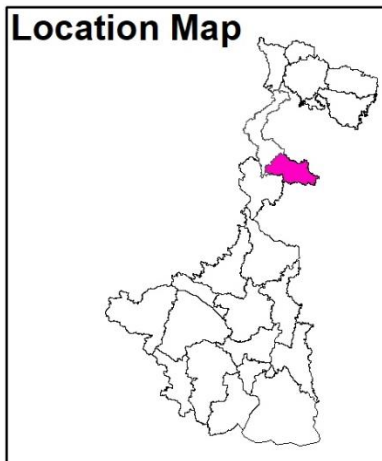
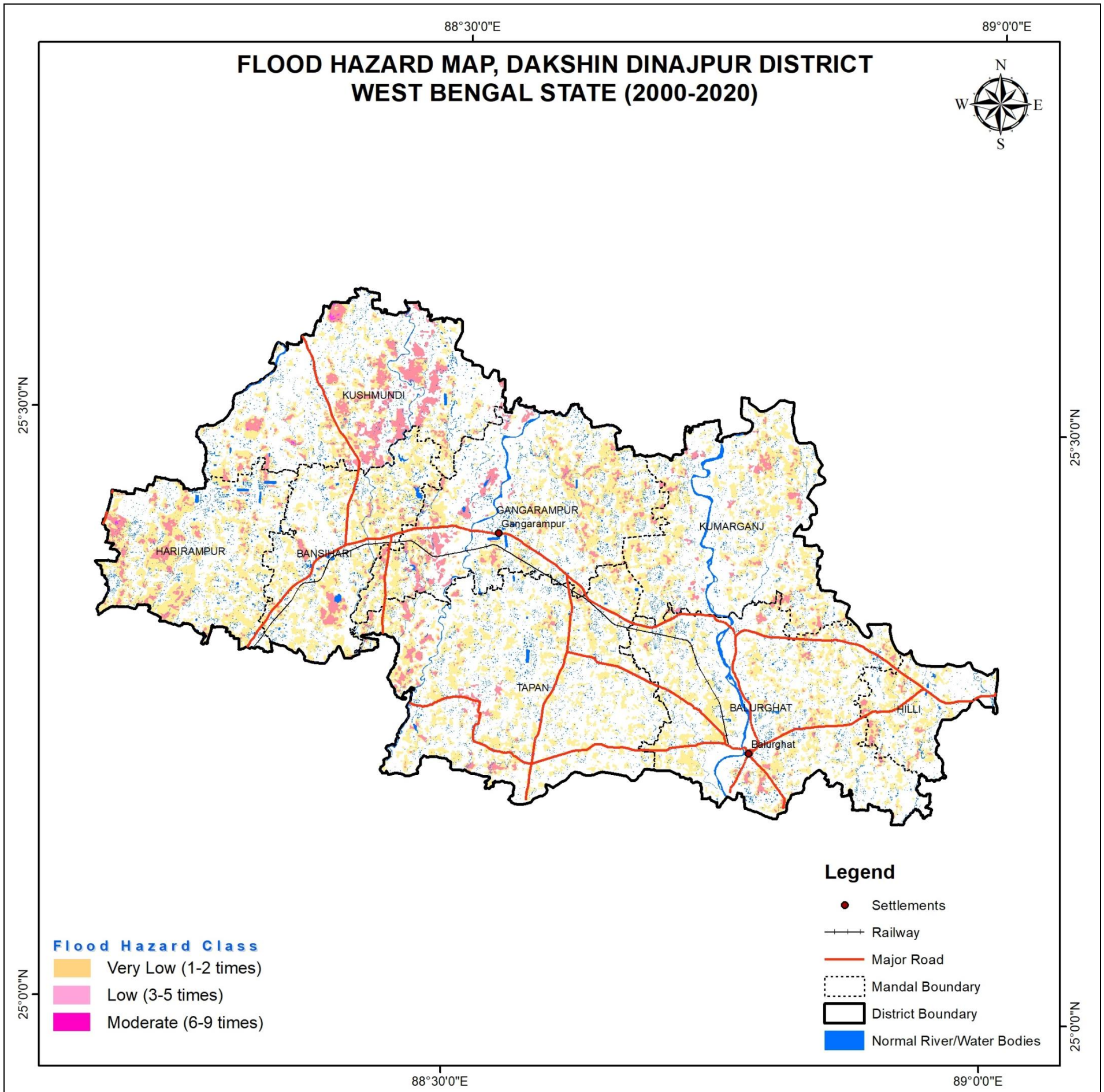
| S. No.                 | Hazard Severity | Flood Hazard Area (Ha) |
|------------------------|-----------------|------------------------|
| 1                      | Very Low        | 45999                  |
| 2                      | Low             | 13224                  |
| 3                      | Moderate        | 2824                   |
| 4                      | High            | 126                    |
| <b>Total Area (Ha)</b> |                 | <b>62173</b>           |



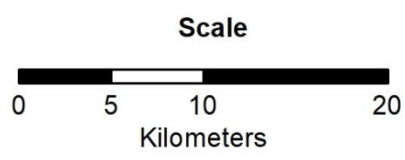
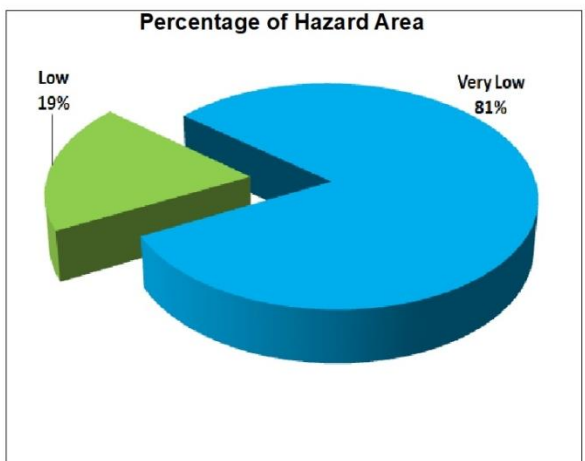
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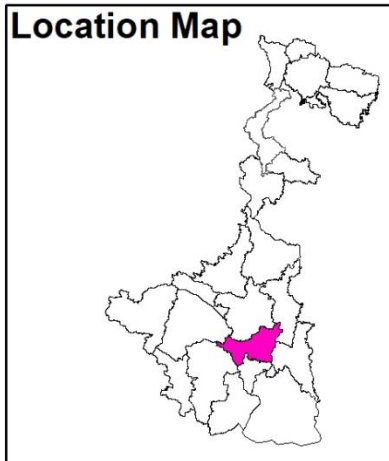
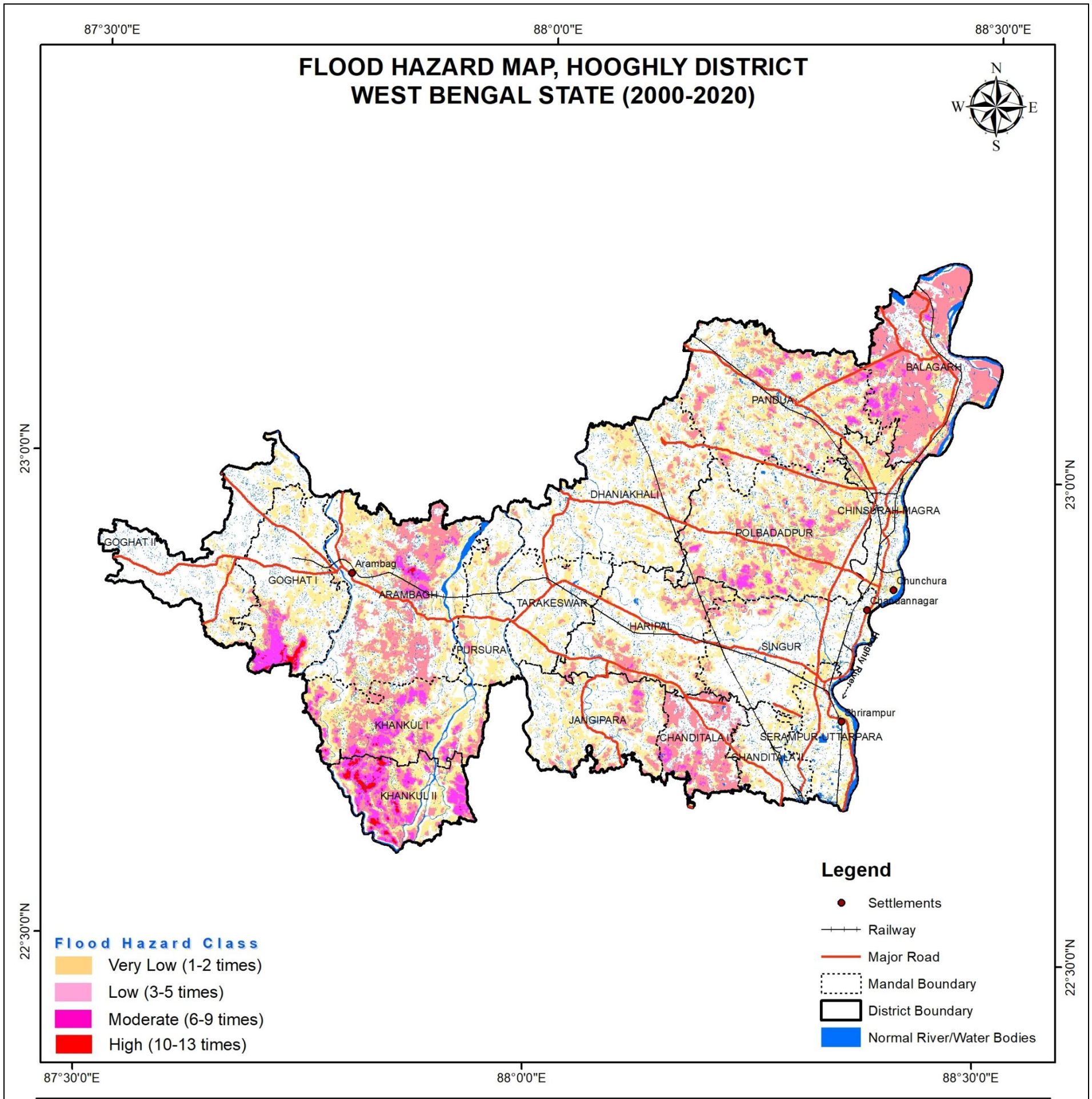


| S. No.                 | Hazard Severity | Flood Hazard Area (Ha) |
|------------------------|-----------------|------------------------|
| 1                      | Very Low        | 56504                  |
| 2                      | Low             | 13039                  |
| 3                      | Moderate        | 46                     |
| 4                      | High            | 0                      |
| <b>Total Area (Ha)</b> |                 | <b>69589</b>           |

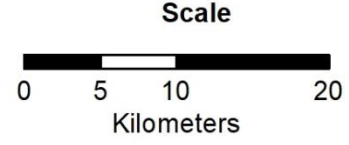
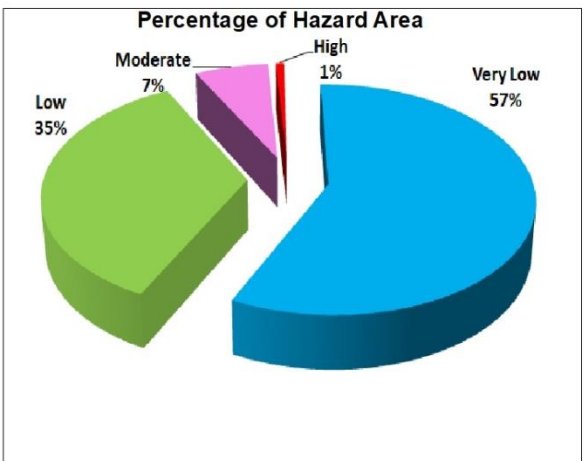


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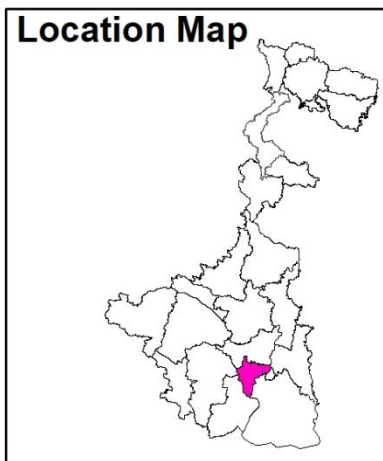
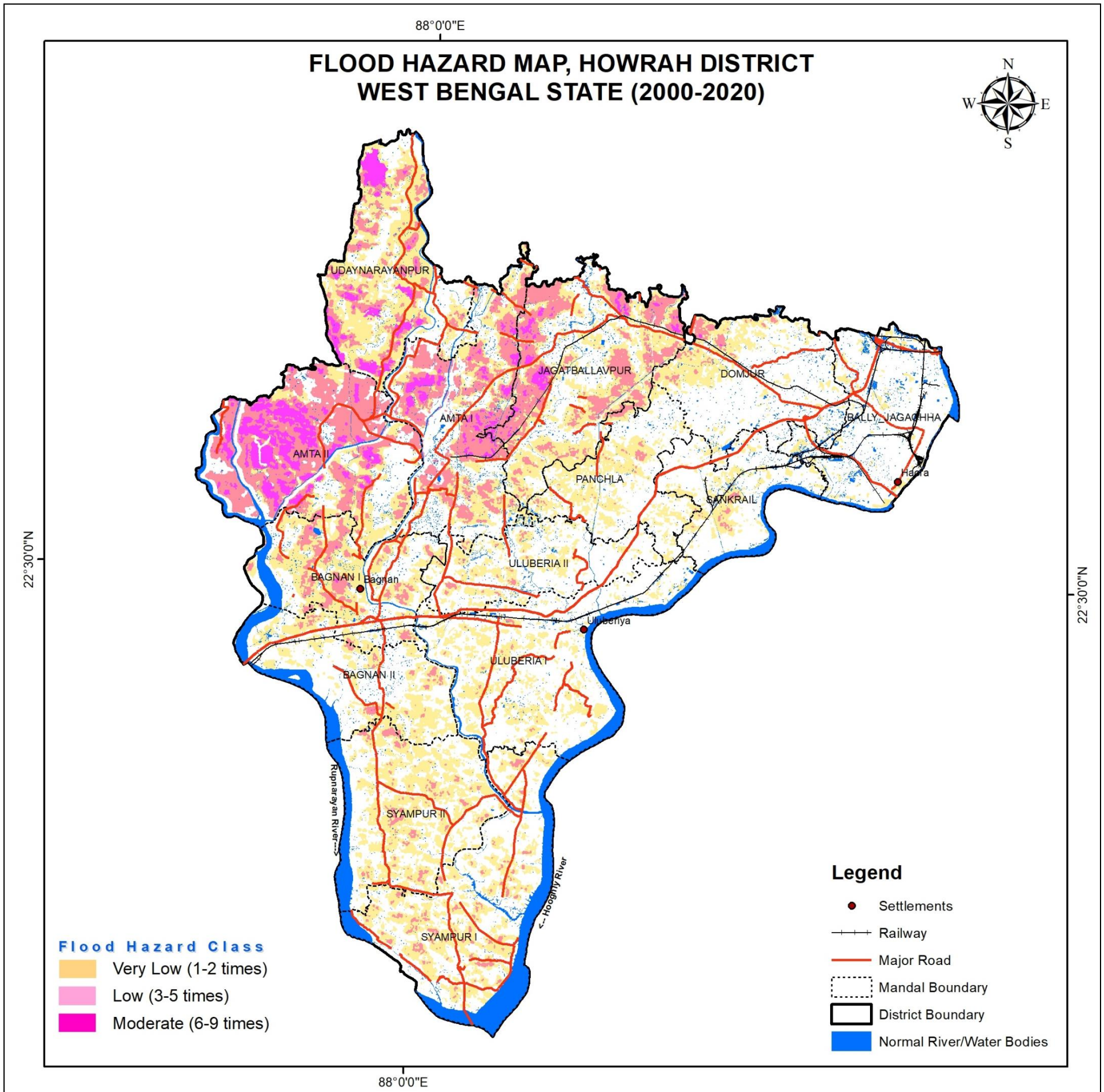


| S. No.                 | Hazard Severity | Flood Hazard Area (Ha) |
|------------------------|-----------------|------------------------|
| 1                      | Very Low        | 81915                  |
| 2                      | Low             | 50075                  |
| 3                      | Moderate        | 9499                   |
| 4                      | High            | 1015                   |
| <b>Total Area (Ha)</b> |                 | <b>142504</b>          |

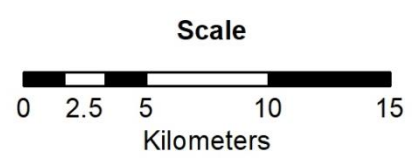
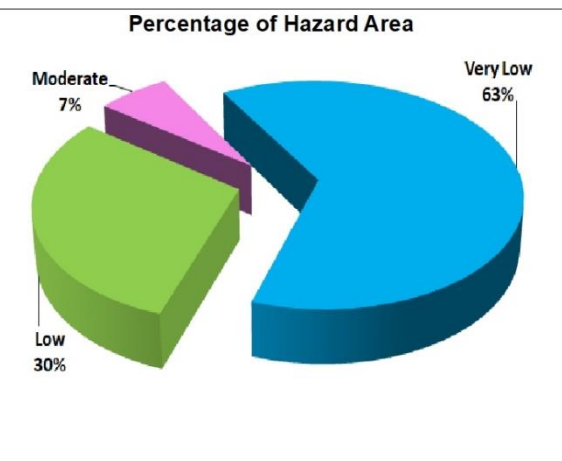


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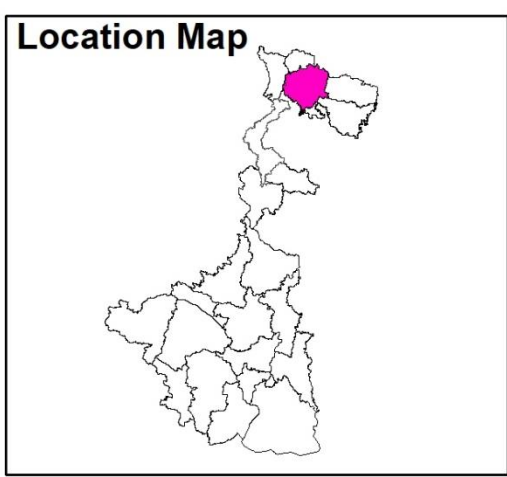
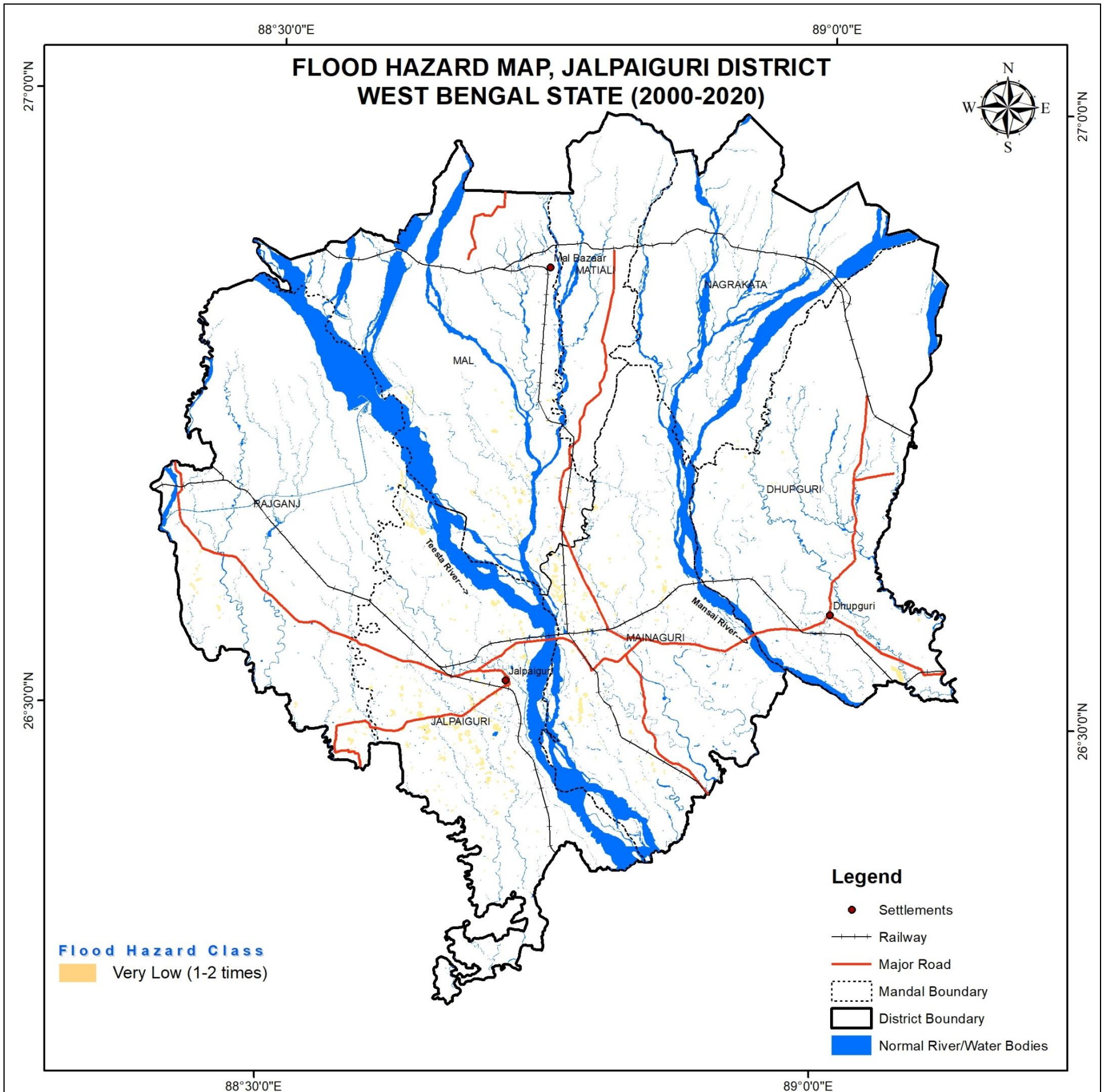


| S. No.                 | Hazard Severity | Flood Hazard Area (Ha) |
|------------------------|-----------------|------------------------|
| 1                      | Very Low        | 40145                  |
| 2                      | Low             | 19001                  |
| 3                      | Moderate        | 4146                   |
| 4                      | High            | 0                      |
| <b>Total Area (Ha)</b> |                 | <b>63292</b>           |

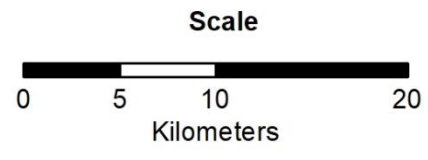
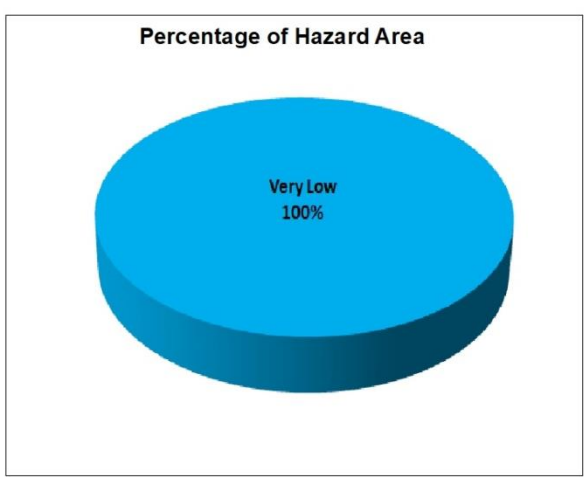


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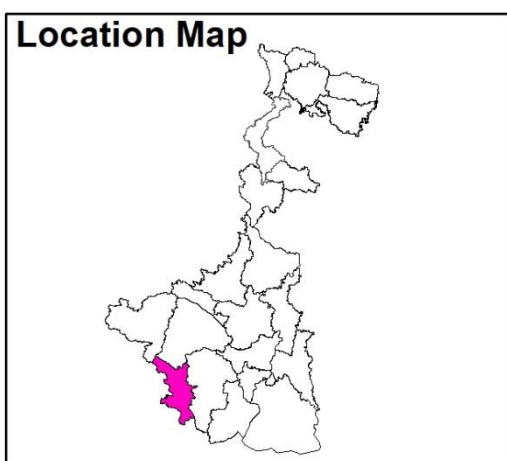
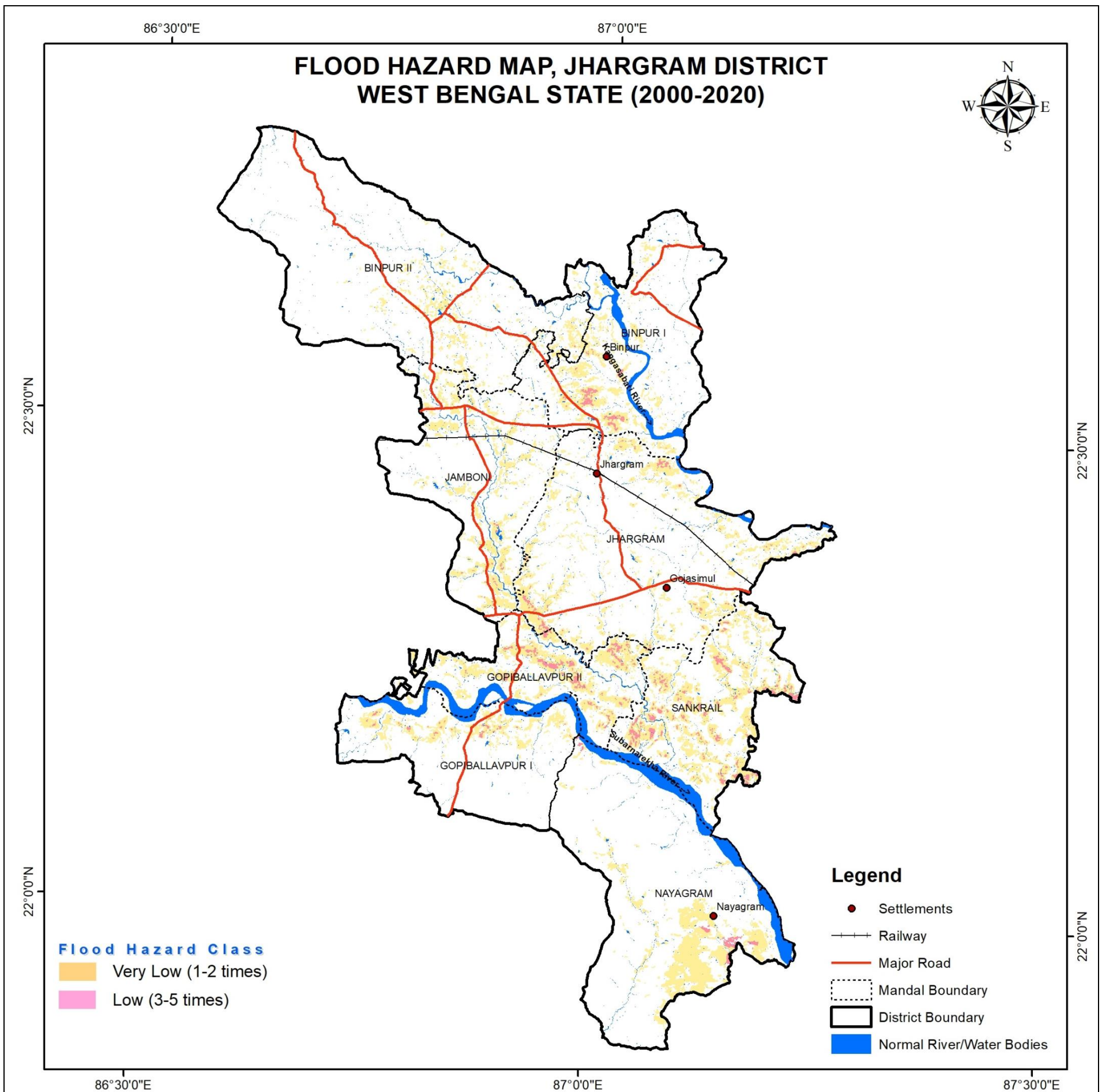


| S. No.                 | Hazard Severity | Flood Hazard Area (Ha) |
|------------------------|-----------------|------------------------|
| 1                      | Very Low        | 2281                   |
| 2                      | Low             | 0                      |
| 3                      | Moderate        | 0                      |
| 4                      | High            | 0                      |
| <b>Total Area (Ha)</b> |                 | <b>2281</b>            |

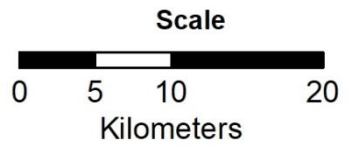
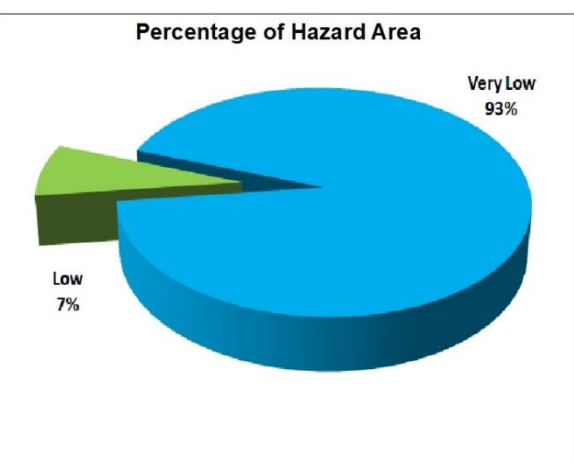


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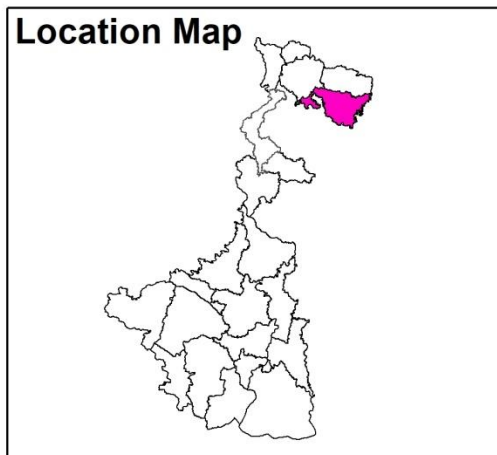
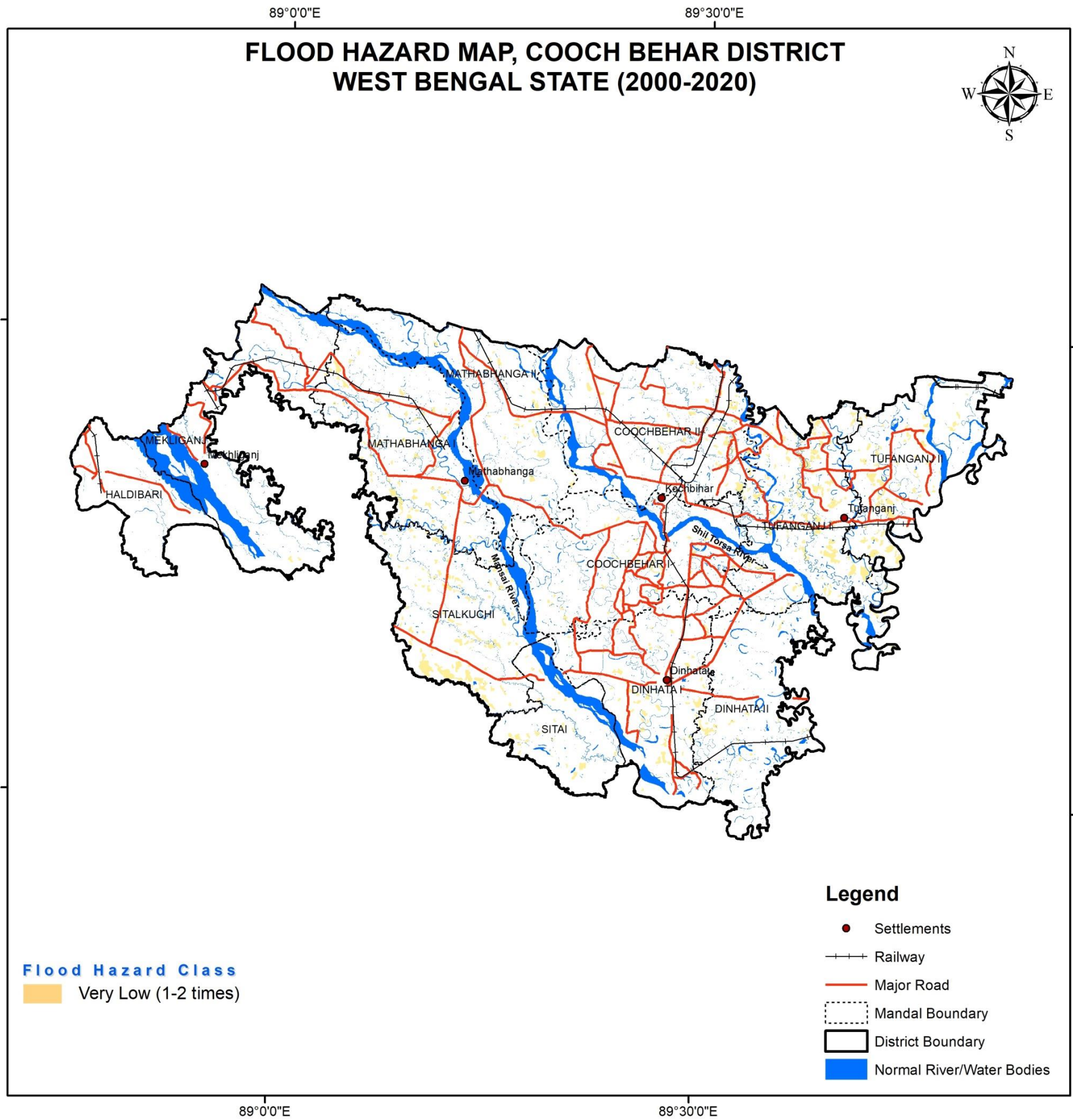


| S. No.                 | Hazard Severity | Flood Hazard Area (Ha) |
|------------------------|-----------------|------------------------|
| 1                      | Very Low        | 40585                  |
| 2                      | Low             | 3271                   |
| 3                      | Moderate        | 0                      |
| 4                      | High            | 0                      |
| <b>Total Area (Ha)</b> |                 | <b>43856</b>           |

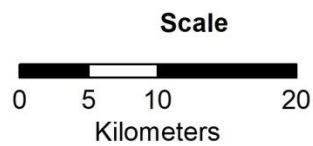
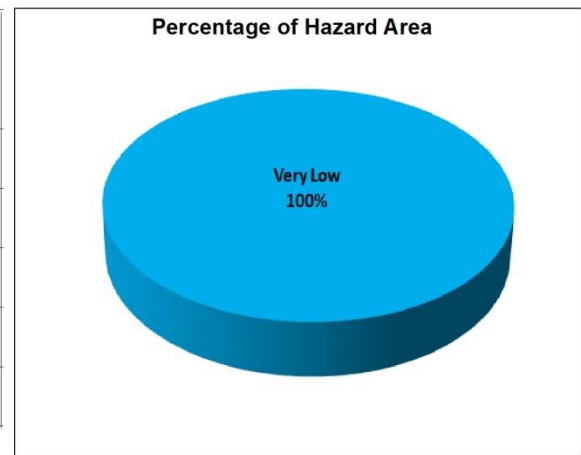


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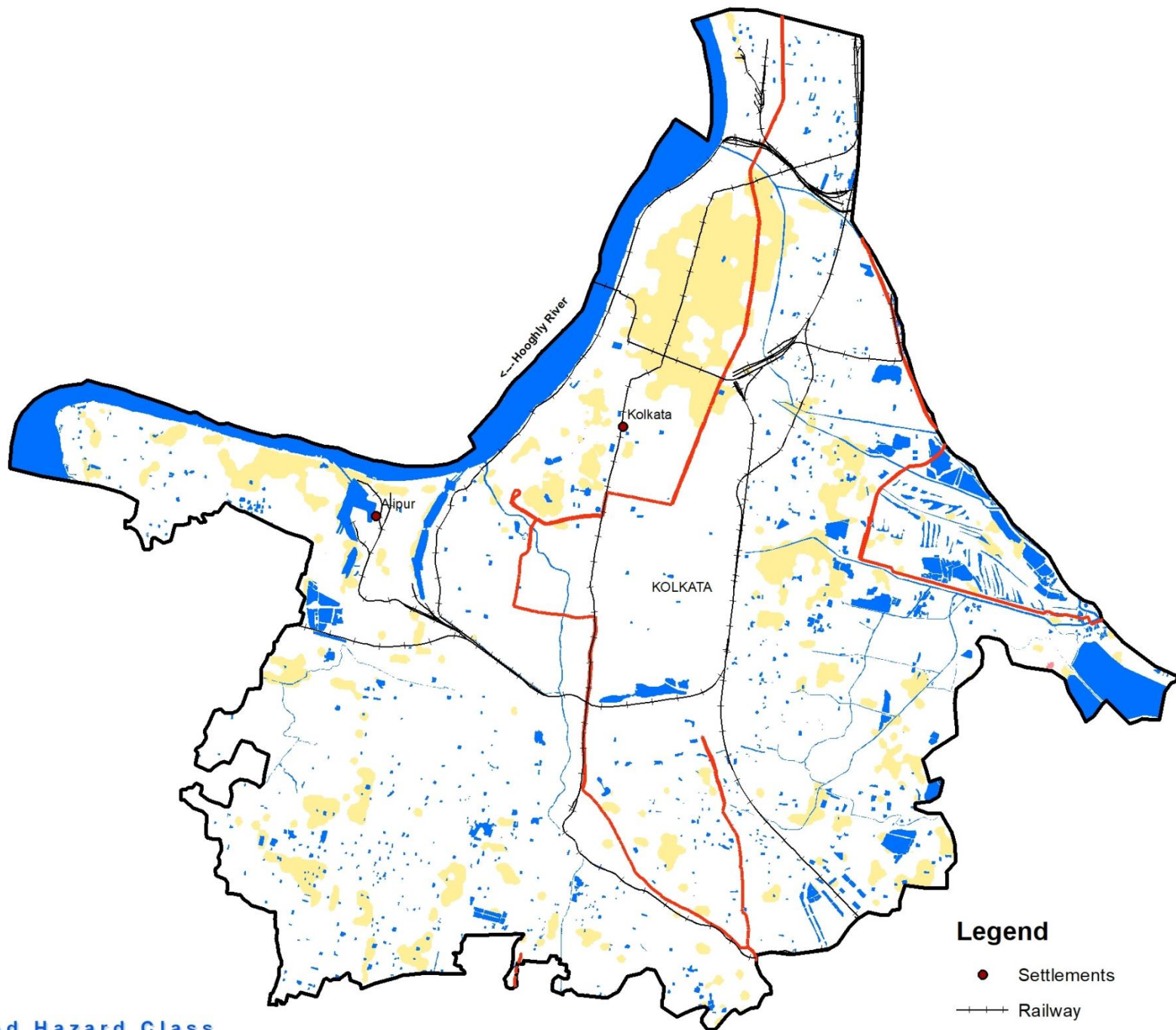
| S. No.                 | Hazard Severity | Flood Hazard Area (Ha) |
|------------------------|-----------------|------------------------|
| 1                      | Very Low        | 10355                  |
| 2                      | Low             | 0                      |
| 3                      | Moderate        | 0                      |
| 4                      | High            | 0                      |
| <b>Total Area (Ha)</b> |                 | <b>10355</b>           |



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### FLOOD HAZARD MAP, KOLKATA DISTRICT WEST BENGAL STATE (2000-2020)



**Flood Hazard Class**  
 Very Low (1-2 times)

**Legend**

- Settlements
- Railway
- Major Road
- Mandal Boundary
- District Boundary
- Normal River/Water Bodies

22°30'0"N

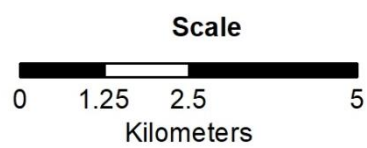
22°30'0"N

**Location Map**



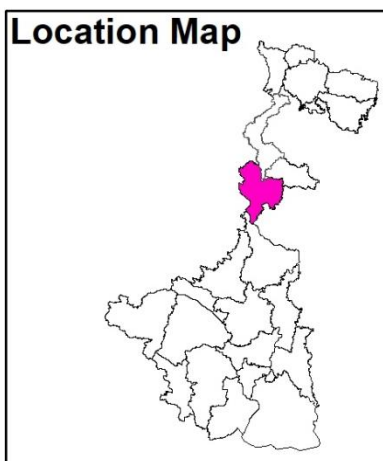
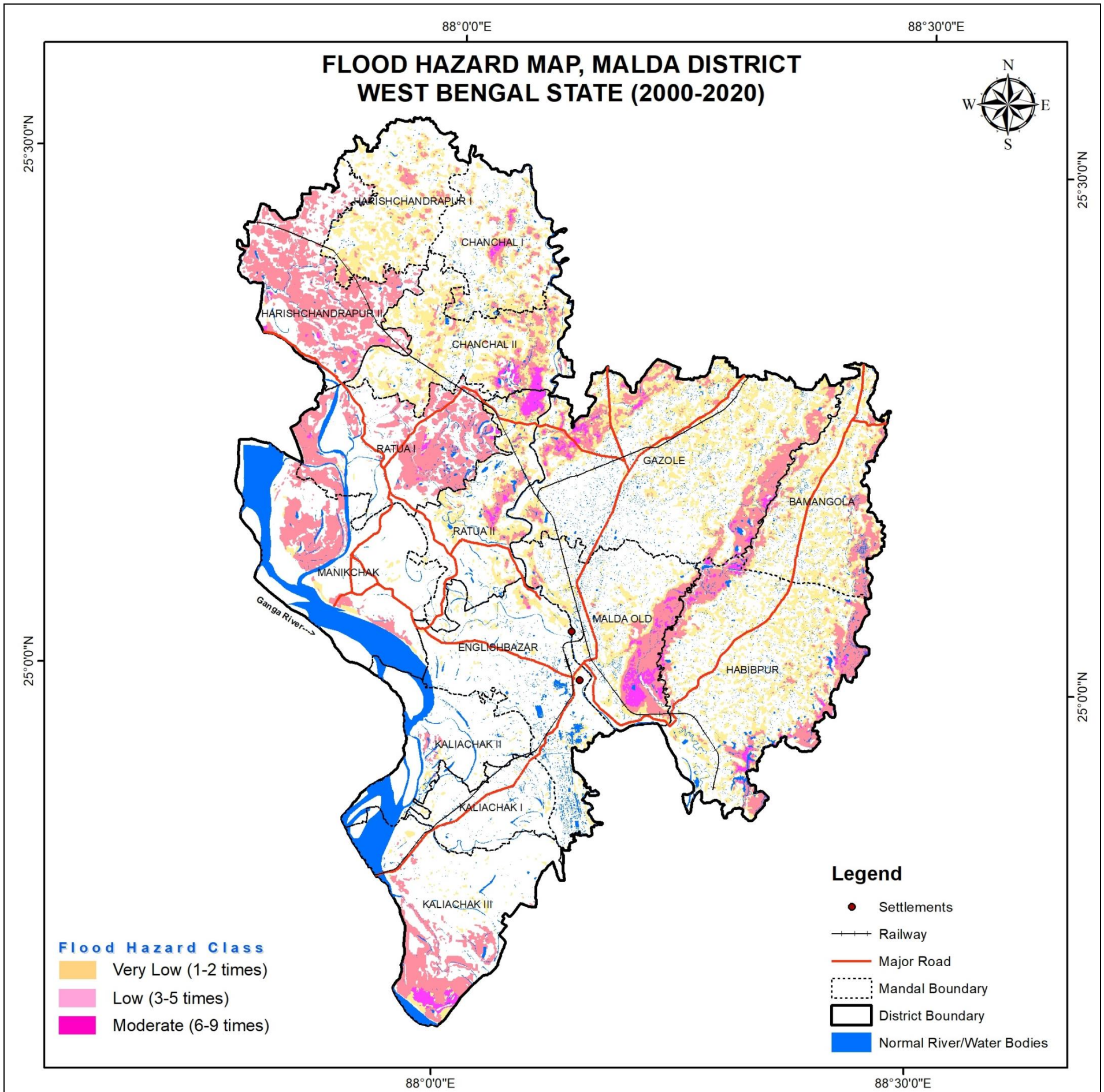
| S. No.                 | Hazard Severity | Flood Hazard Area (Ha) |
|------------------------|-----------------|------------------------|
| 1                      | Very Low        | 2294                   |
| 2                      | Low             | 0                      |
| 3                      | Moderate        | 0                      |
| 4                      | High            | 0                      |
| <b>Total Area (Ha)</b> |                 | <b>2294</b>            |

**Percentage of Hazard Area**

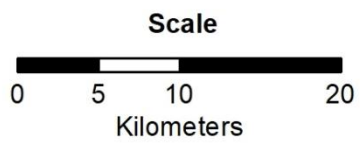
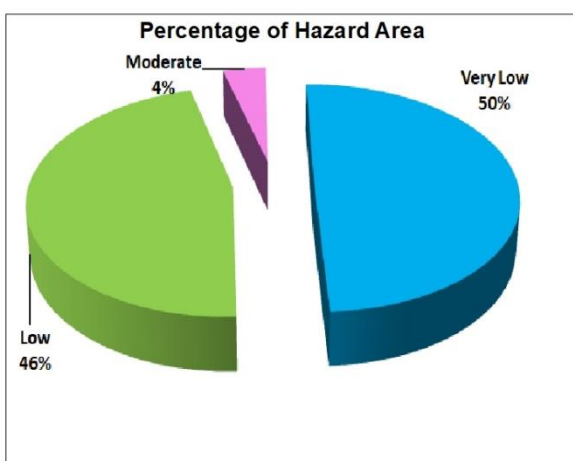


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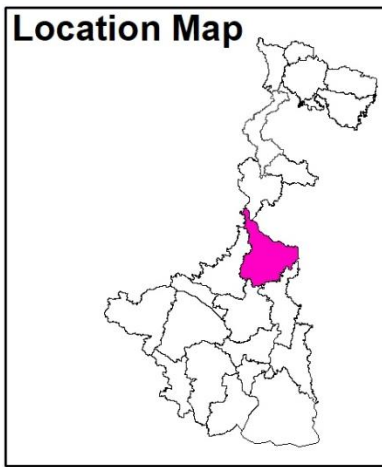
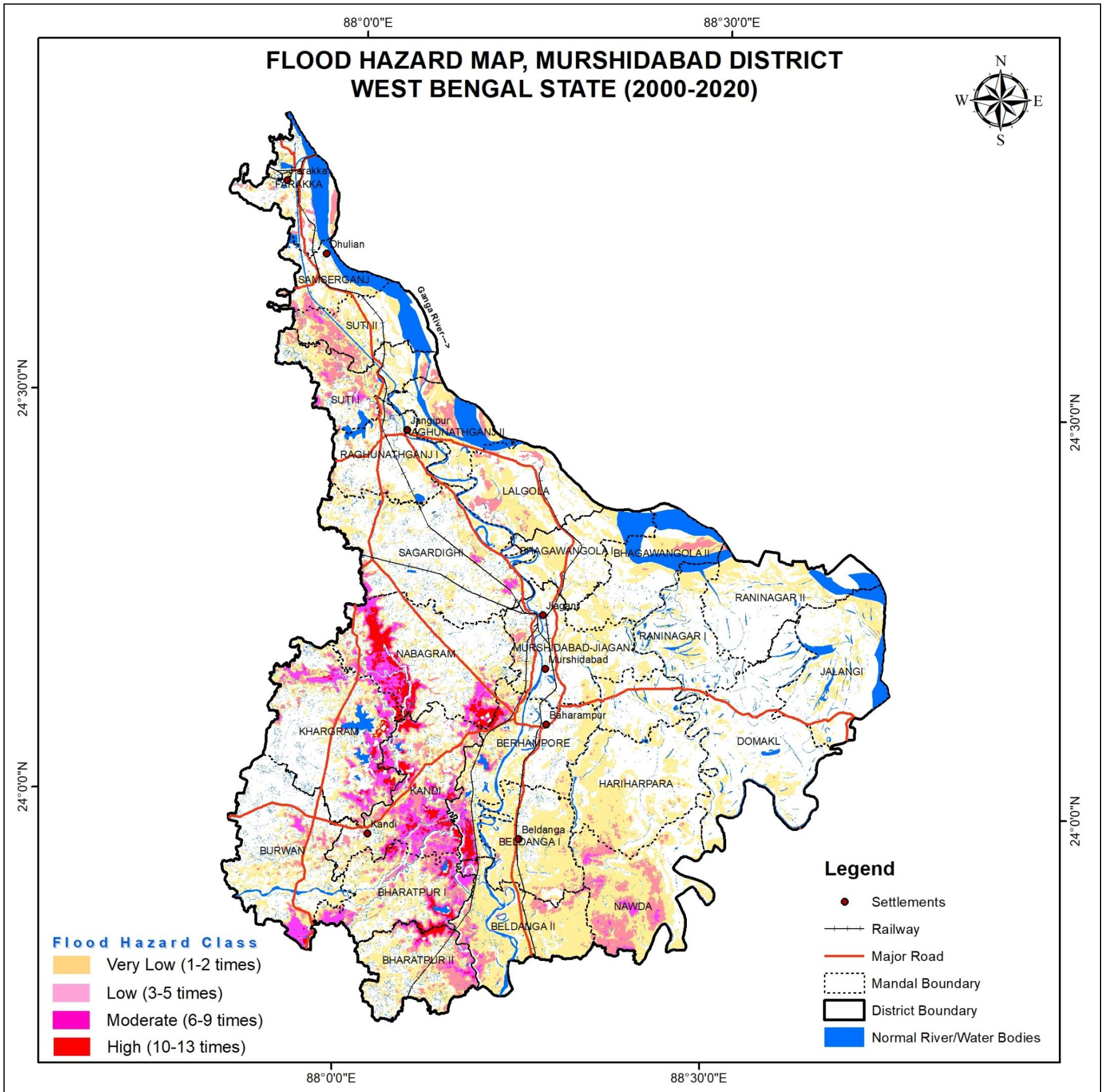
| S. No.                 | Hazard Severity | Flood Hazard Area (Ha) |
|------------------------|-----------------|------------------------|
| 1                      | Very Low        | 58487                  |
| 2                      | Low             | 54833                  |
| 3                      | Moderate        | 4572                   |
| 4                      | High            | 0                      |
| <b>Total Area (Ha)</b> |                 | <b>117892</b>          |



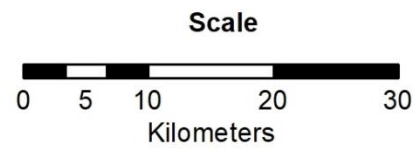
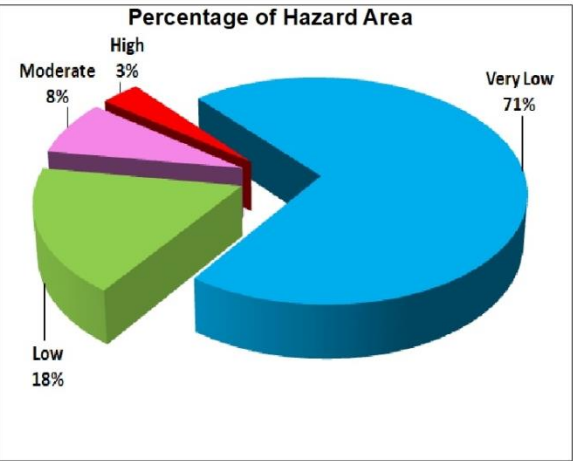
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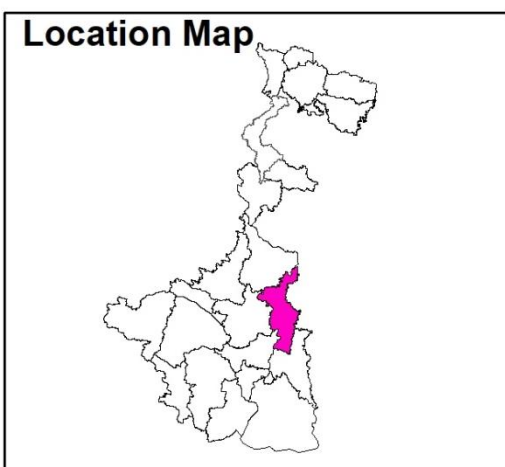
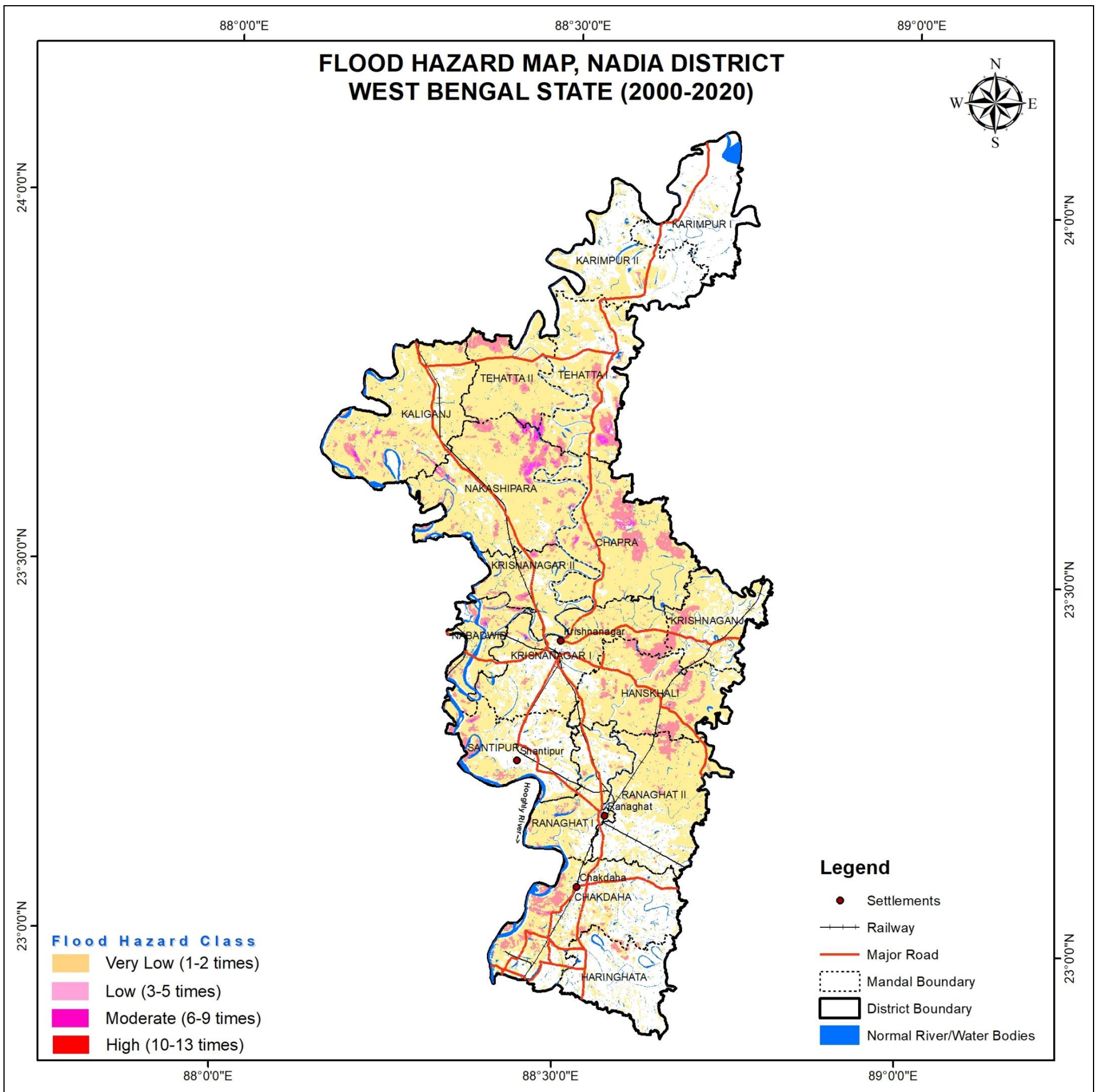


| S. No.                 | Hazard Severity | Flood Hazard Area (Ha) |
|------------------------|-----------------|------------------------|
| 1                      | Very Low        | 160418                 |
| 2                      | Low             | 40179                  |
| 3                      | Moderate        | 17711                  |
| 4                      | High            | 8034                   |
| <b>Total Area (Ha)</b> |                 | <b>226342</b>          |

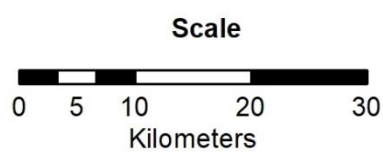
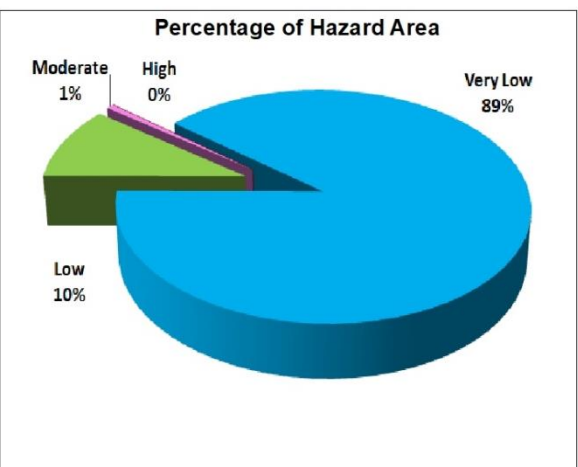


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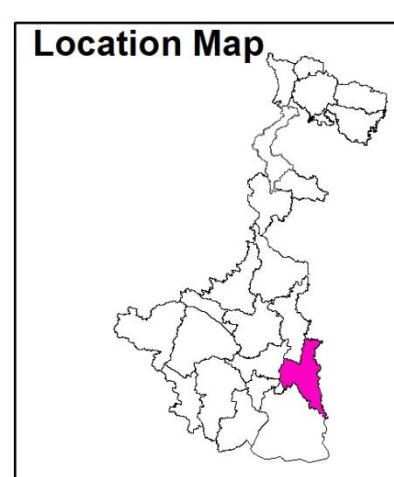
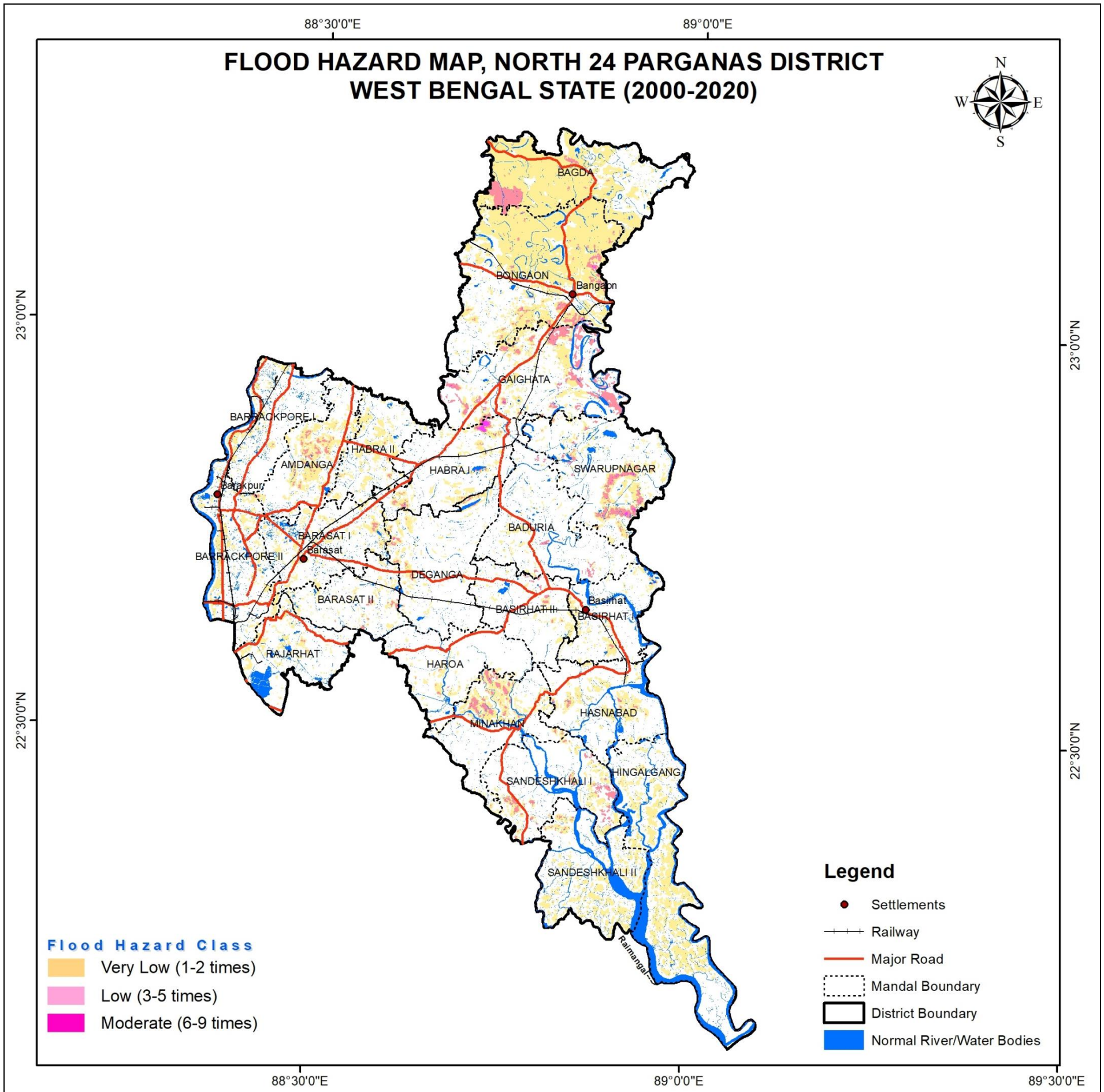


| S. No.                 | Hazard Severity | Flood Hazard Area (Ha) |
|------------------------|-----------------|------------------------|
| 1                      | Very Low        | 227746                 |
| 2                      | Low             | 26516                  |
| 3                      | Moderate        | 1726                   |
| 4                      | High            | 26                     |
| <b>Total Area (Ha)</b> |                 | <b>256014</b>          |

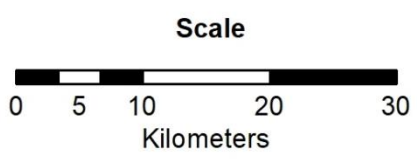
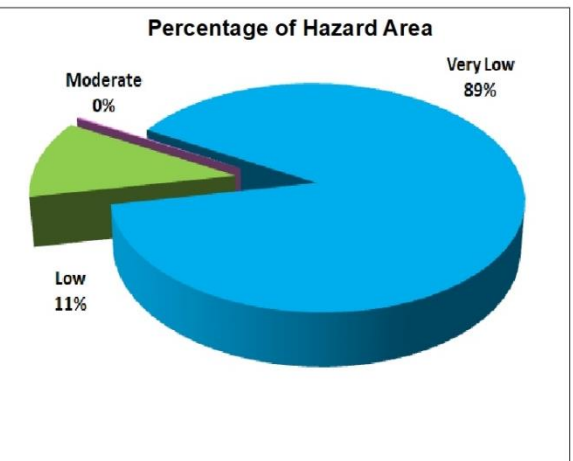


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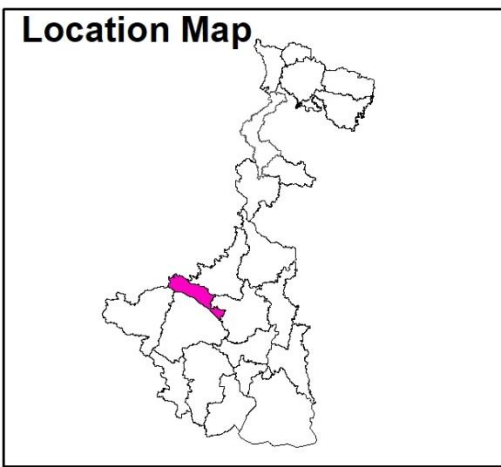
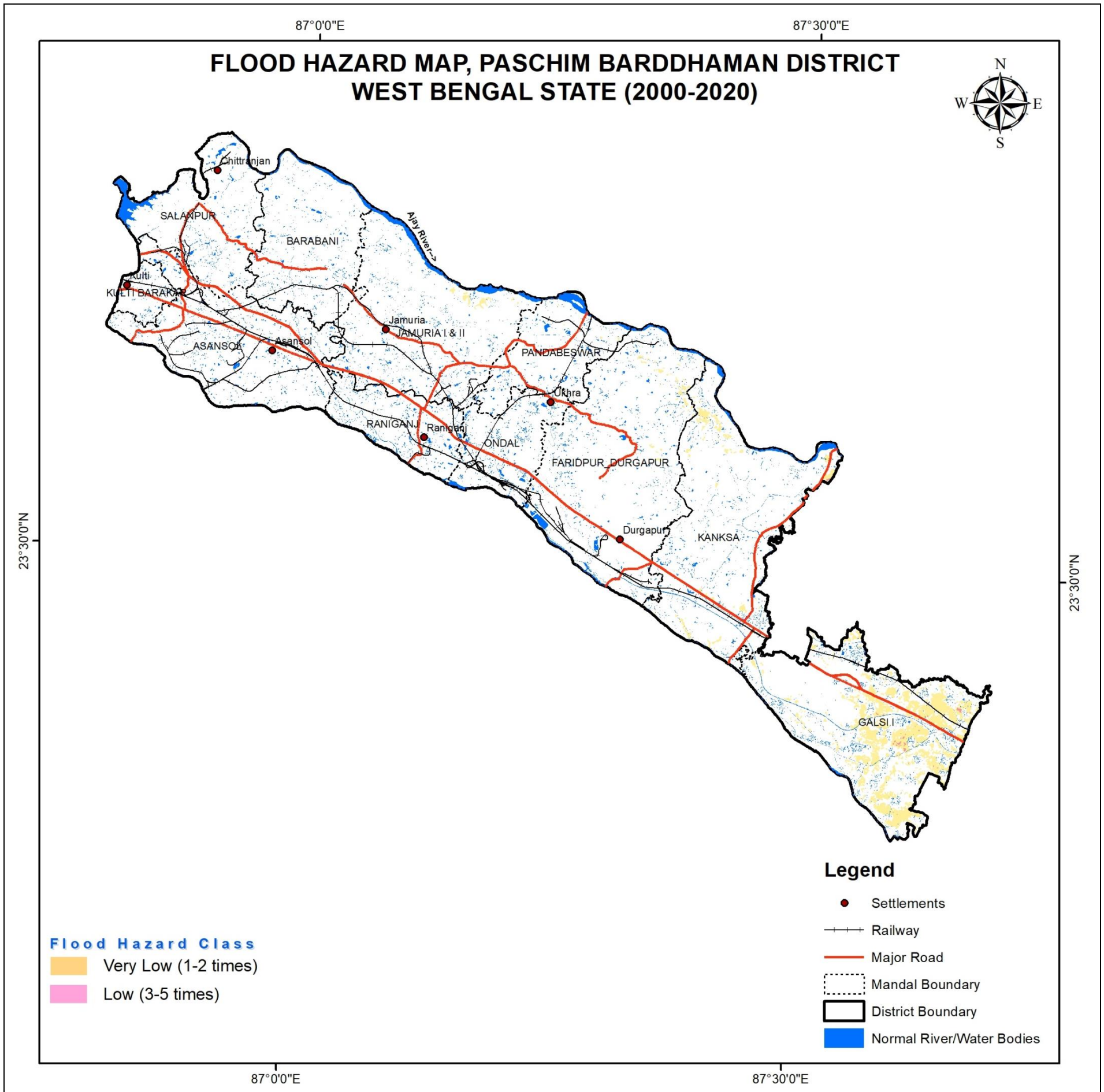


| S. No.                 | Hazard Severity | Flood Hazard Area (Ha) |
|------------------------|-----------------|------------------------|
| 1                      | Very Low        | 81823                  |
| 2                      | Low             | 10258                  |
| 3                      | Moderate        | 205                    |
| 4                      | High            | 0                      |
| <b>Total Area (Ha)</b> |                 | <b>92286</b>           |

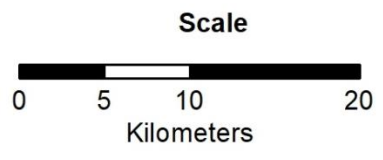
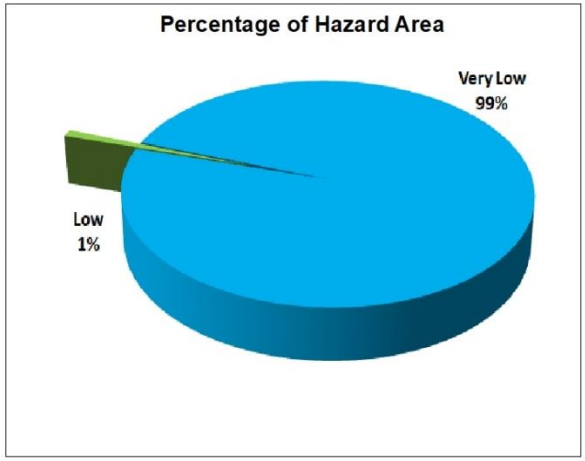


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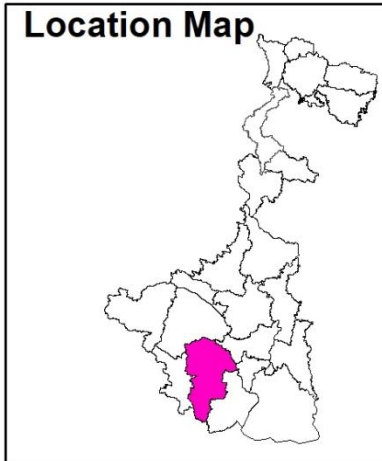
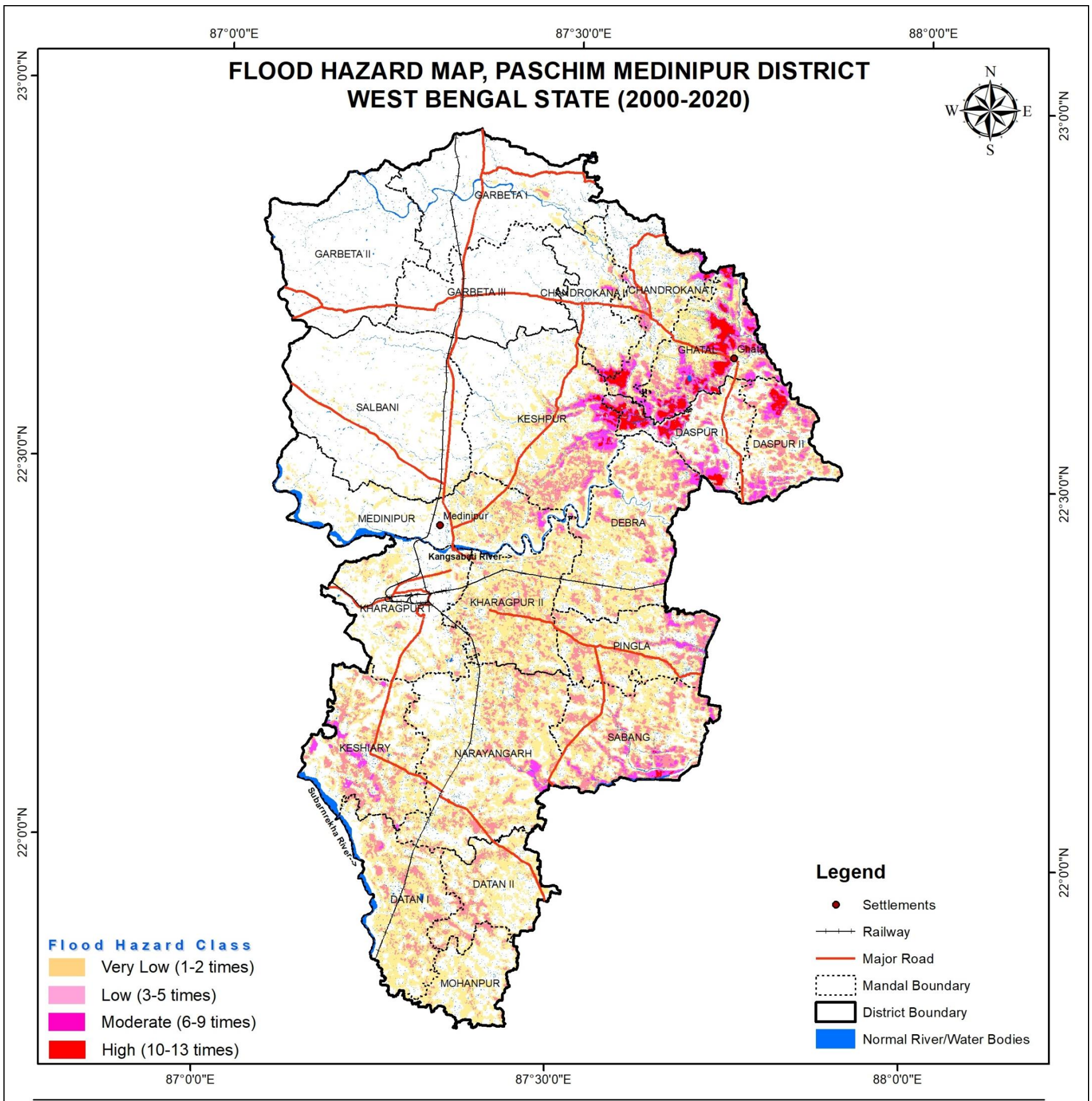


| S. No.                 | Hazard Severity | Flood Hazard Area (Ha) |
|------------------------|-----------------|------------------------|
| 1                      | Very Low        | 6618                   |
| 2                      | Low             | 65                     |
| 3                      | Moderate        | 0                      |
| 4                      | High            | 0                      |
| <b>Total Area (Ha)</b> |                 | <b>6683</b>            |

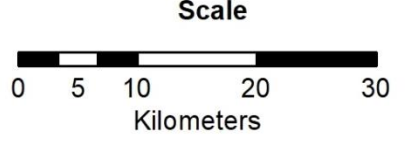
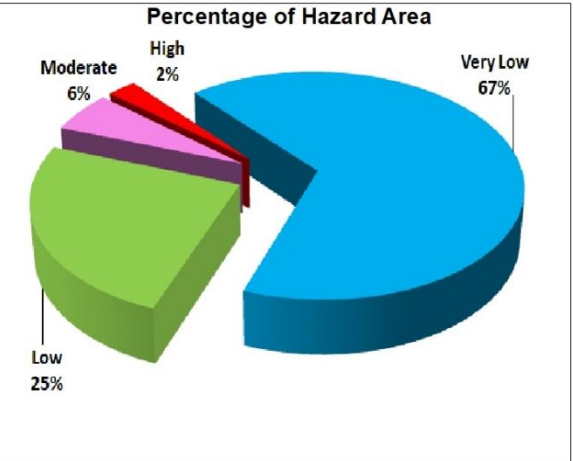


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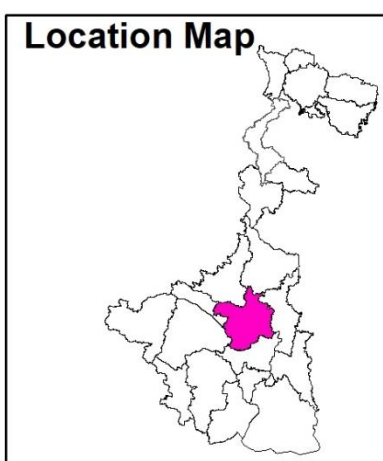
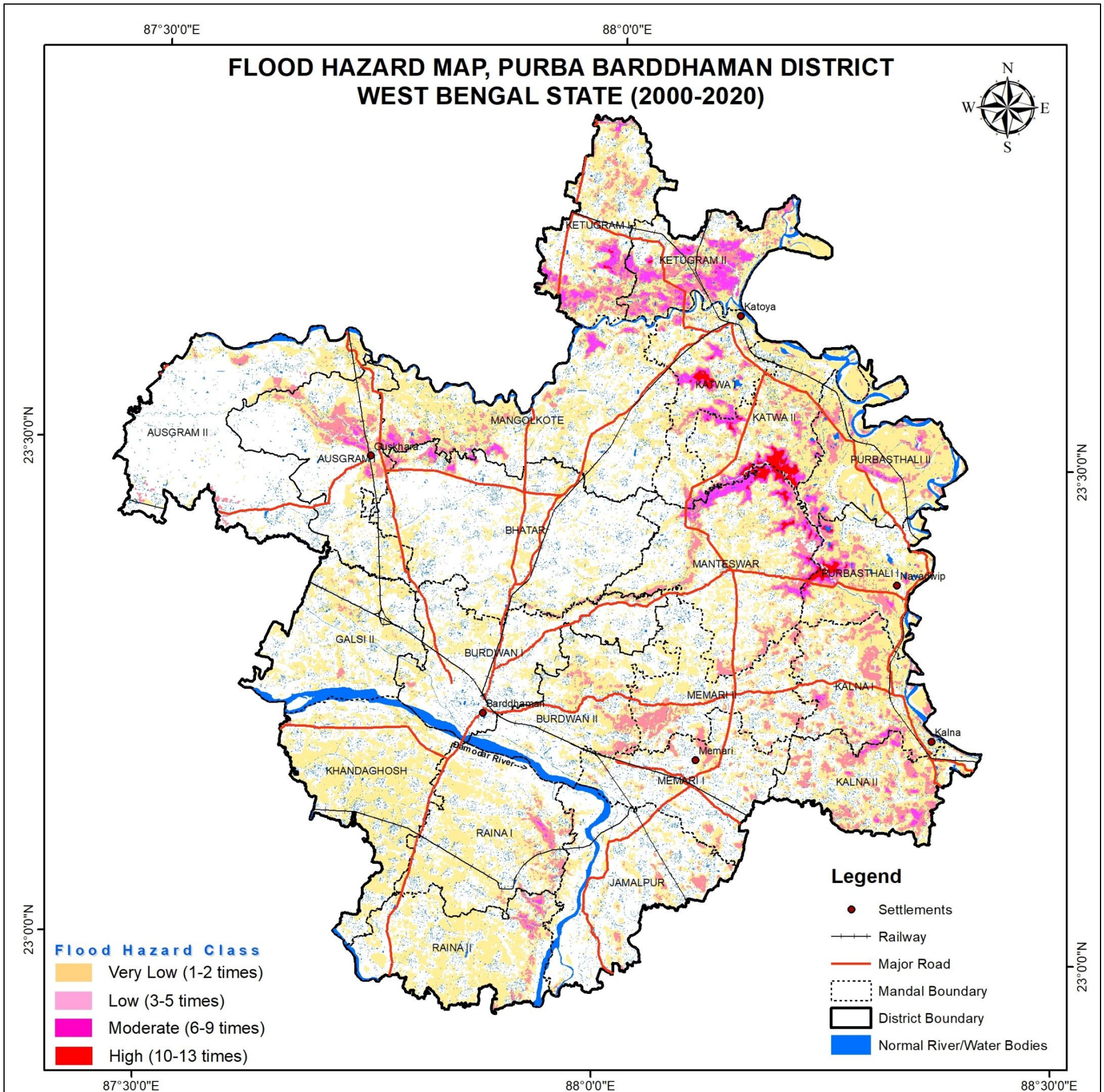


| S. No.                 | Hazard Severity | Flood Hazard Area (Ha) |
|------------------------|-----------------|------------------------|
| 1                      | Very Low        | 169330                 |
| 2                      | Low             | 63177                  |
| 3                      | Moderate        | 14712                  |
| 4                      | High            | 6634                   |
| <b>Total Area (Ha)</b> |                 | <b>253853</b>          |

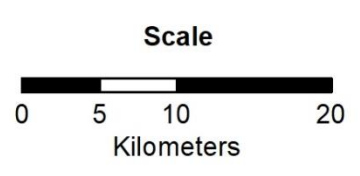
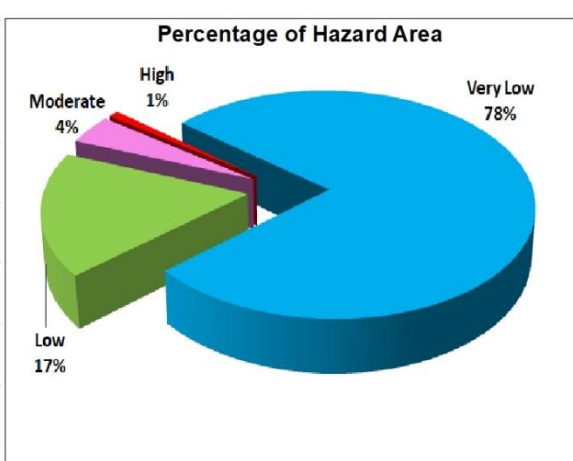


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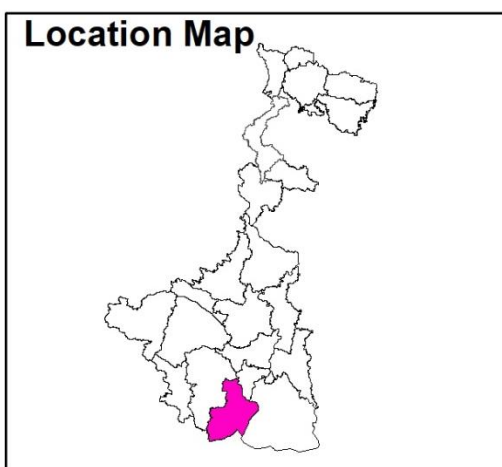
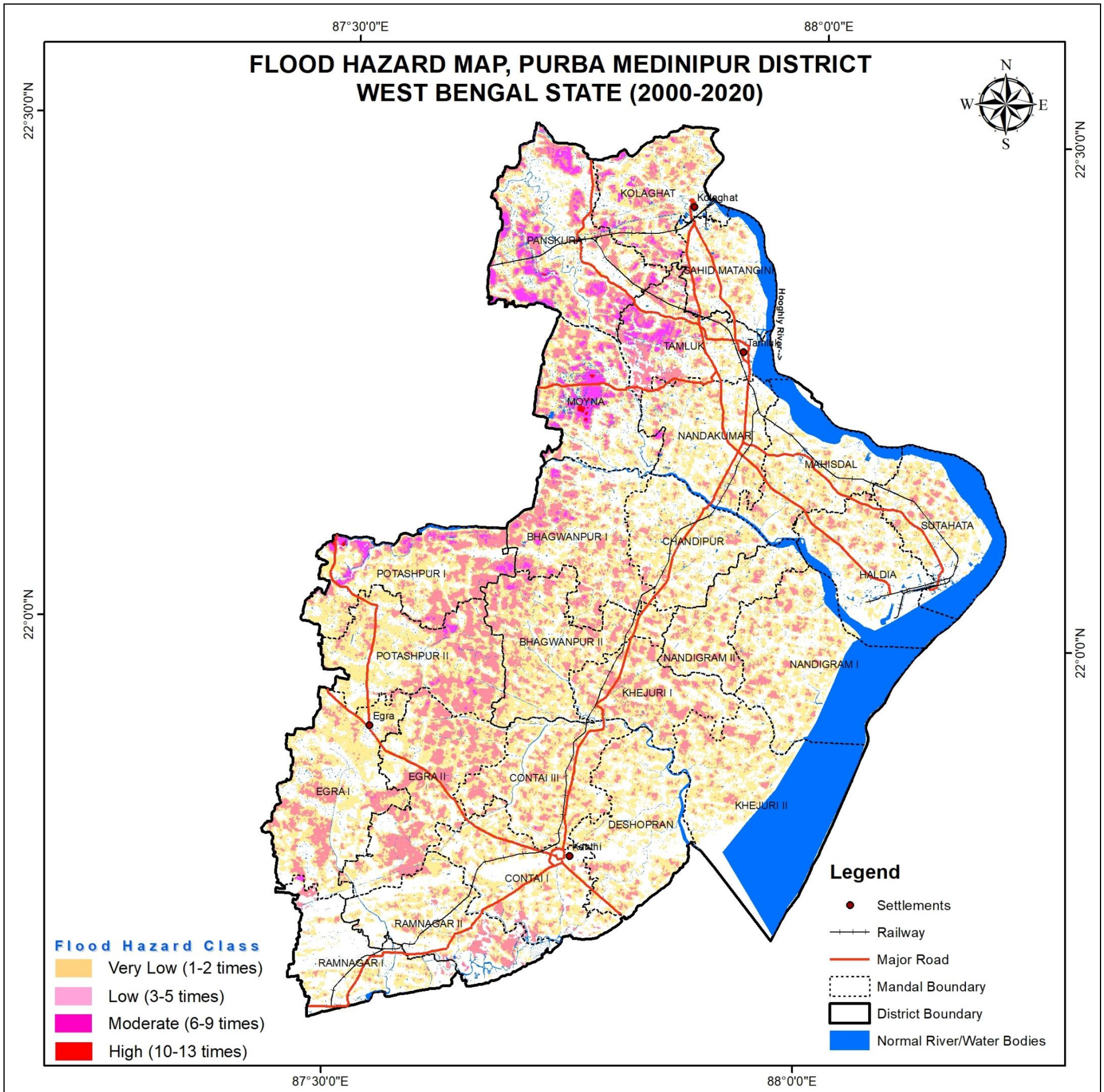


| S. No.                 | Hazard Severity | Flood Hazard Area (Ha) |
|------------------------|-----------------|------------------------|
| 1                      | Very Low        | 170613                 |
| 2                      | Low             | 38363                  |
| 3                      | Moderate        | 9265                   |
| 4                      | High            | 2098                   |
| <b>Total Area (Ha)</b> |                 | <b>220339</b>          |

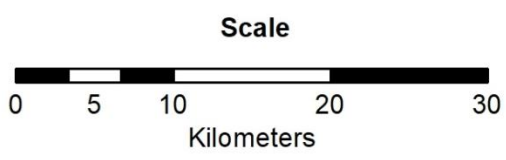
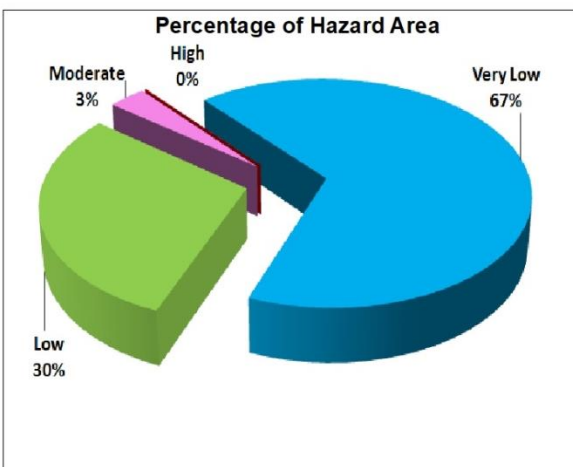


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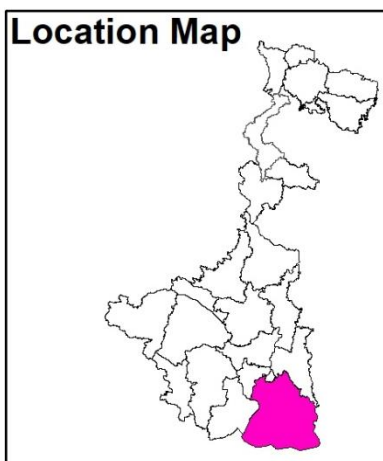
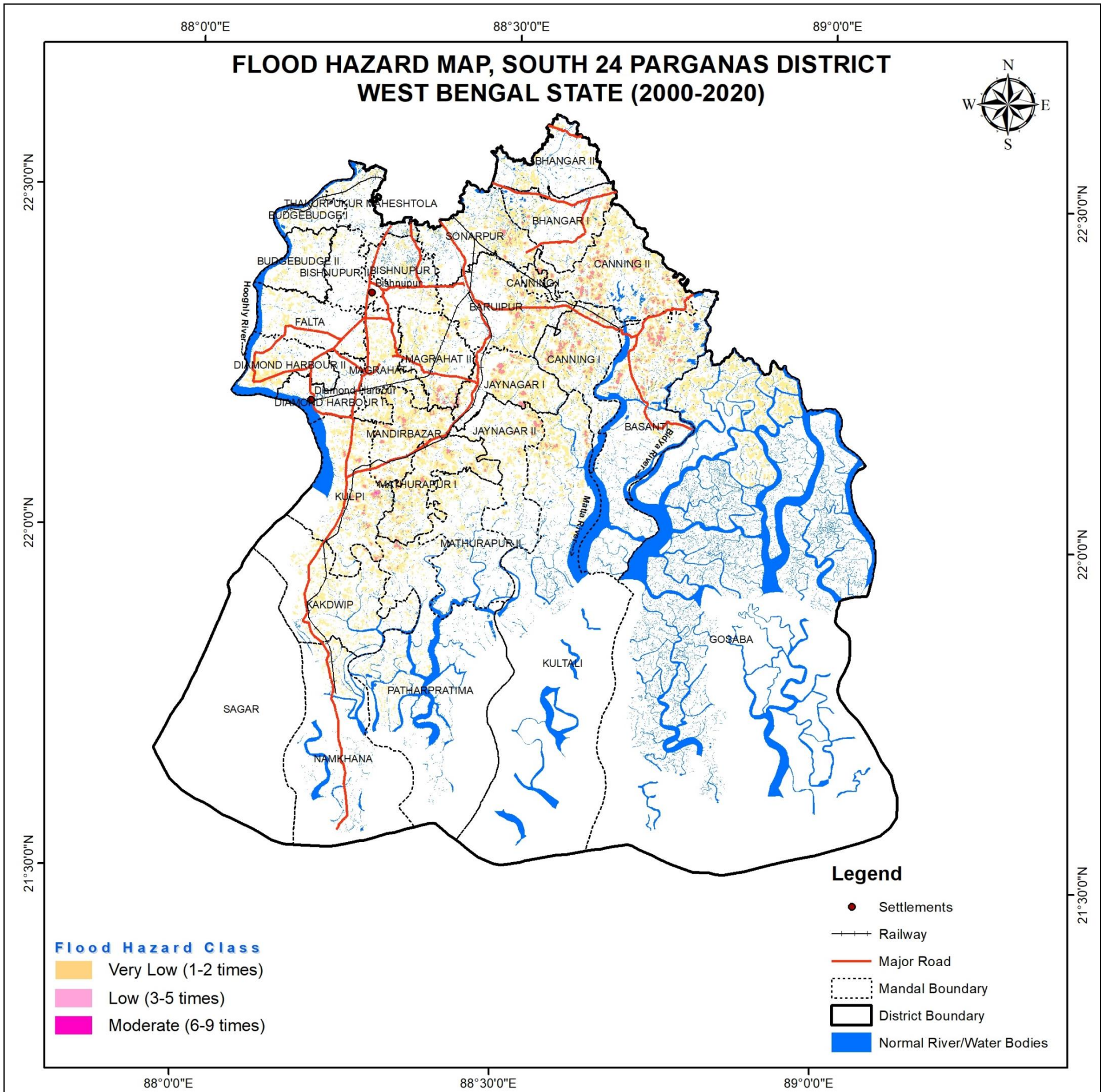


| S. No.                 | Hazard Severity | Flood Hazard Area (Ha) |
|------------------------|-----------------|------------------------|
| 1                      | Very Low        | 147602                 |
| 2                      | Low             | 65156                  |
| 3                      | Moderate        | 7370                   |
| 4                      | High            | 161                    |
| <b>Total Area (Ha)</b> |                 | <b>220289</b>          |

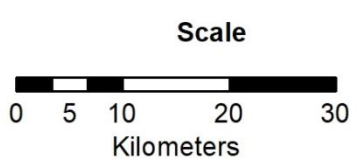
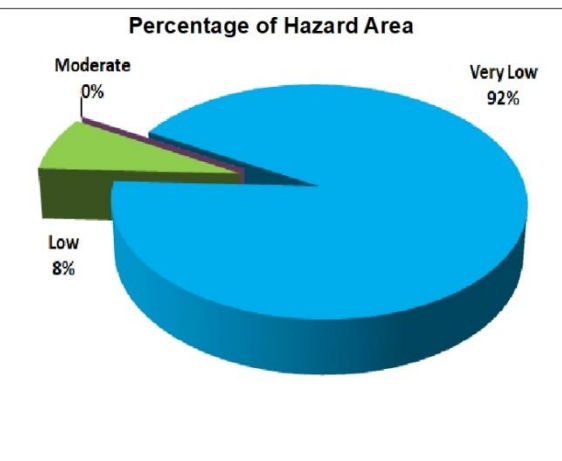


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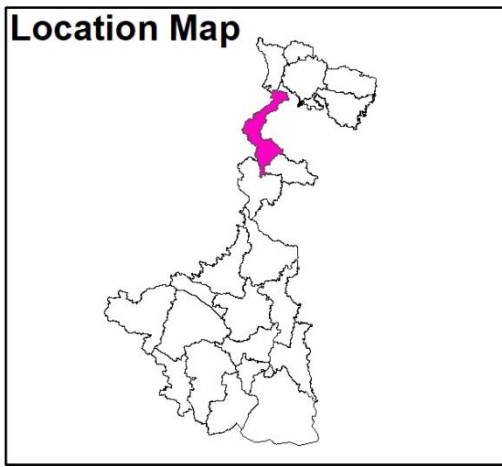
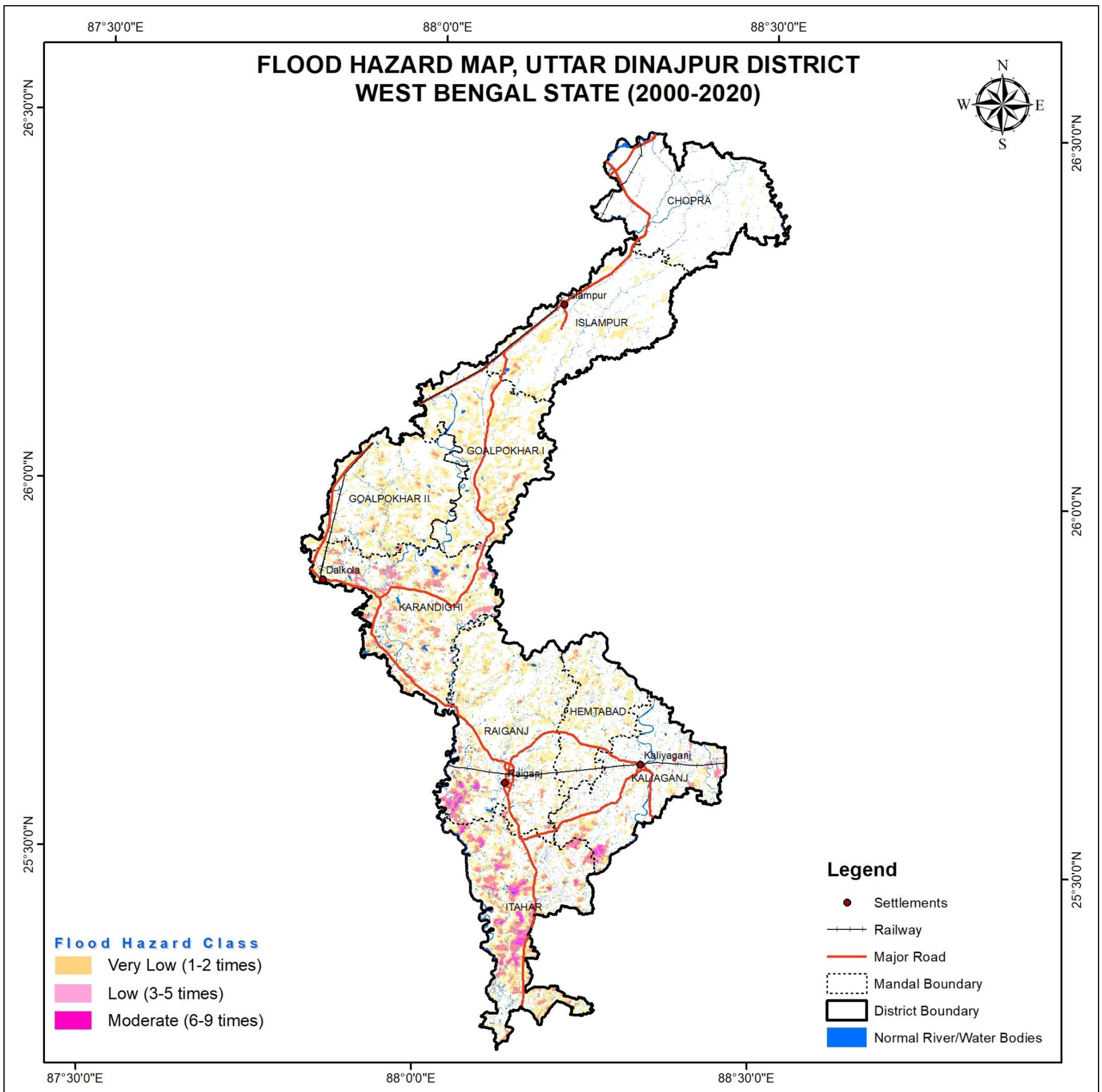
| S. No.                 | Hazard Severity | Flood Hazard Area (Ha) |
|------------------------|-----------------|------------------------|
| 1                      | Very Low        | 82248                  |
| 2                      | Low             | 6747                   |
| 3                      | Moderate        | 28                     |
| 4                      | High            | 0                      |
| <b>Total Area (Ha)</b> |                 | <b>89023</b>           |



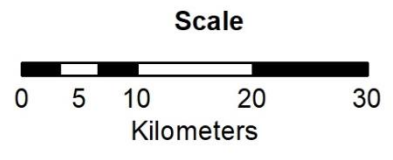
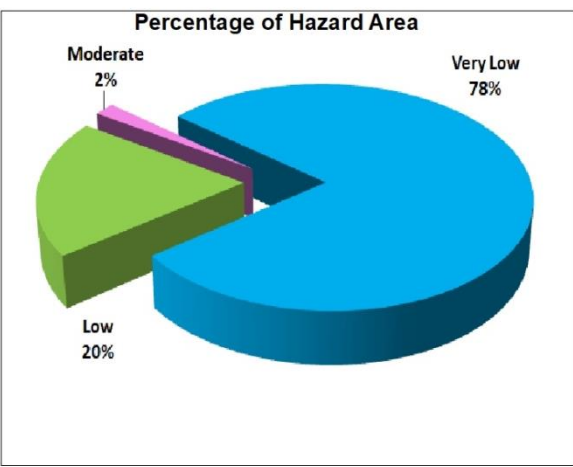
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| S. No.                 | Hazard Severity | Flood Hazard Area (Ha) |
|------------------------|-----------------|------------------------|
| 1                      | Very Low        | 61622                  |
| 2                      | Low             | 15383                  |
| 3                      | Moderate        | 1468                   |
| 4                      | High            | 0                      |
| <b>Total Area (Ha)</b> |                 | <b>78473</b>           |



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| S. No. | DISTRICT   | BLOCK         | VILLAGE                        | HAZARD CATEGORY |
|--------|------------|---------------|--------------------------------|-----------------|
| 1      | ALIPURDUAR | ALIPURDUAR I  | Paschim Jitpur (CT)            | Low             |
| 2      |            | ALIPURDUAR I  | Paschim Majherdabri Tea Garden | Low             |
| 3      |            | ALIPURDUAR II | Dakshin Majid Khana            | Low             |
| 4      |            | ALIPURDUAR II | Dakshin Shibkata               | Low             |
| 5      |            | ALIPURDUAR II | Kumarijan                      | Low             |
| 6      |            | ALIPURDUAR II | Paschim Khalishamari           | Low             |
| 7      |            | ALIPURDUAR II | Purba Barachouki               | Low             |
| 8      |            | ALIPURDUAR II | Purba Chepani                  | Low             |
| 9      |            | ALIPURDUAR II | Saudpara                       | Low             |
| 10     |            | ALIPURDUAR II | Uttar Bhatibari                | Low             |
| 11     |            | ALIPURDUAR II | Uttar Chakirbas                | Low             |
| 12     |            | ALIPURDUAR II | Uttar Majid Khana              | Low             |
| 13     |            | FALAKATA      | Alinagar                       | Low             |
| 14     |            | FALAKATA      | Dakshin Deogaon                | Low             |
| 15     |            | FALAKATA      | Dhulagaon                      | Low             |
| 16     |            | FALAKATA      | Khagenhat                      | Low             |
| 17     | BANKURA    | BARJORA       | Gopalpur                       | Low             |
| 18     |            | BARJORA       | Radhakantapur                  | Low             |
| 19     |            | BARJORA       | Tajpur                         | Low             |
| 20     |            | INDUS         | Bangal Chak                    | Low             |
| 21     |            | INDUS         | Behar                          | Low             |
| 22     |            | INDUS         | Betanal                        | Low             |
| 23     |            | INDUS         | Keneti                         | Low             |
| 24     |            | INDUS         | Naga Tentul                    | Low             |
| 25     |            | INDUS         | Palash Danga                   | Low             |
| 26     |            | INDUS         | Paschim Srirampur              | Low             |
| 27     |            | PATRASAYER    | Asanbani                       | Low             |
| 28     |            | PATRASAYER    | Nahala                         | Low             |
| 29     |            | SONAMUKHI     | Baharpur                       | Low             |
| 30     |            | SONAMUKHI     | Baruibera                      | Low             |
| 31     |            | SONAMUKHI     | Palashdanga                    | Low             |
| 32     |            | SONAMUKHI     | Palshare                       | Low             |
| 33     |            | SONAMUKHI     | Rautara                        | Low             |
| 34     |            | SONAMUKHI     | Saheb Ganj                     | Low             |
| 35     | BIRBHUM    | LABHPUR       | Bagha                          | Low             |
| 36     |            | LABHPUR       | Bagsina                        | Low             |
| 37     |            | LABHPUR       | Bagtor                         | Moderate        |
| 38     |            | LABHPUR       | Belbuni                        | Low             |
| 39     |            | LABHPUR       | Bhagabanpur                    | Moderate        |
| 40     |            | LABHPUR       | Bhatra                         | Low             |
| 41     |            | LABHPUR       | Bilnangalhata                  | Moderate        |
| 42     |            | LABHPUR       | Brahmanigram                   | Moderate        |
| 43     |            | LABHPUR       | Brahmanpara                    | Low             |
| 44     |            | LABHPUR       | Chandpur                       | Low             |
| 45     |            | LABHPUR       | Dhrubabati                     | Low             |
| 46     |            | LABHPUR       | Donaipur                       | Low             |
| 47     |            | LABHPUR       | Dula Sahapur                   | Low             |
| 48     |            | LABHPUR       | Dwaranda                       | Low             |
| 49     |            | LABHPUR       | Eguria                         | Low             |
| 50     |            | LABHPUR       | Fingtor                        | Low             |
| 51     |            | LABHPUR       | Galaichandi                    | Low             |
| 52     |            | LABHPUR       | Ganutia                        | Low             |
| 53     |            | LABHPUR       | Gokulbati                      | Low             |
| 54     |            | LABHPUR       | Gopinathpur                    | Low             |
| 55     |            | LABHPUR       | Haranandapur                   | Low             |
| 56     |            | LABHPUR       | Hatkaluha                      | Low             |
| 57     |            | LABHPUR       | Jamna                          | Low             |
| 58     |            | LABHPUR       | Jaychandrapur                  | Low             |
| 59     |            | LABHPUR       | Kaichara                       | Moderate        |
| 60     |            | LABHPUR       | Kaigarya                       | Moderate        |
| 61     |            | LABHPUR       | Kalyanpur                      | Low             |
| 62     |            | LABHPUR       | Kandarkula                     | Low             |
| 63     |            | LABHPUR       | Kanrarpara                     | Moderate        |

| S. No. | DISTRICT   | BLOCK               | VILLAGE        | HAZARD CATEGORY |
|--------|------------|---------------------|----------------|-----------------|
| 64     | BIRBHUM    | LABHPUR             | Kazipara       | Moderate        |
| 65     |            | LABHPUR             | Kempur         | Low             |
| 66     |            | LABHPUR             | Khanpur        | Low             |
| 67     |            | LABHPUR             | Kotul Ghosha   | Low             |
| 68     |            | LABHPUR             | Kustor         | Low             |
| 69     |            | LABHPUR             | Laltakuri      | Moderate        |
| 70     |            | LABHPUR             | Lohadda        | Low             |
| 71     |            | LABHPUR             | Mahammadpur    | Low             |
| 72     |            | LABHPUR             | Mirity         | Low             |
| 73     |            | LABHPUR             | Nandanpur      | Low             |
| 74     |            | LABHPUR             | Nangalhata     | Low             |
| 75     |            | LABHPUR             | Pancha Ganga   | Low             |
| 76     |            | LABHPUR             | Par Abad       | Low             |
| 77     |            | LABHPUR             | Patharghata    | Low             |
| 78     |            | LABHPUR             | Purbba Haripur | Moderate        |
| 79     |            | LABHPUR             | Purbba Sahapur | Low             |
| 80     |            | LABHPUR             | Shikarpur      | Moderate        |
| 81     |            | LABHPUR             | Sitalgram      | Low             |
| 82     |            | LABHPUR             | Thiba          | Low             |
| 83     |            | MAYURESWAR II       | Bandaha        | Low             |
| 84     |            | MURARAI I           | Abdullapur     | Low             |
| 85     |            | MURARAI I           | Duria          | Low             |
| 86     |            | MURARAI I           | Kamdebnala     | Low             |
| 87     |            | MURARAI I           | Kestara        | Low             |
| 88     |            | MURARAI I           | Paniara        | Low             |
| 89     |            | MURARAI I           | Ramchandrapur  | Low             |
| 90     | MURARAI I  | Ratanpur            | Low            |                 |
| 91     | MURARAI I  | Sanfua              | Low            |                 |
| 92     | MURARAI I  | Tapna               | Low            |                 |
| 93     | MURARAI II | Chak Panchahar      | Low            |                 |
| 94     | MURARAI II | Fazilpur            | Low            |                 |
| 95     | MURARAI II | Goalmal             | Low            |                 |
| 96     | MURARAI II | Gobindapur          | Low            |                 |
| 97     | MURARAI II | Kalikapur           | Low            |                 |
| 98     | MURARAI II | Kamarkhul           | Low            |                 |
| 99     | MURARAI II | Khutkhali           | Low            |                 |
| 100    | MURARAI II | Kulara              | Low            |                 |
| 101    | MURARAI II | Makhliapur          | Low            |                 |
| 102    | MURARAI II | Purba Simlapara     | Low            |                 |
| 103    | MURARAI II | Shripur             | Low            |                 |
| 104    | MURARAI II | Uttar Ramchandrapur | Low            |                 |
| 105    | NALHATI I  | Barla               | Low            |                 |
| 106    | NALHATI I  | Bujunga             | Low            |                 |
| 107    | NALHATI I  | Erangi              | Low            |                 |
| 108    | NALHATI I  | Gunua               | Low            |                 |
| 109    | NALHATI I  | Kalitha             | Low            |                 |
| 110    | NALHATI I  | Kanior              | Low            |                 |
| 111    | NALHATI I  | Kanisail            | Low            |                 |
| 112    | NALHATI I  | Kanupur             | Low            |                 |
| 113    | NALHATI I  | Kaytha              | Low            |                 |
| 114    | NALHATI I  | Kelai               | Low            |                 |
| 115    | NALHATI I  | Khidirpur           | Low            |                 |
| 116    | NALHATI I  | Laskarpur           | Low            |                 |
| 117    | NALHATI I  | Majhkalitha         | Low            |                 |
| 118    | NALHATI I  | Makarampur          | Low            |                 |
| 119    | NALHATI I  | Radipur             | Low            |                 |
| 120    | NALHATI I  | Raghunathpur        | Low            |                 |
| 121    | NALHATI I  | Rameshwarpur        | Low            |                 |
| 122    | NALHATI I  | Raninagar           | Low            |                 |
| 123    | NALHATI I  | Saora               | Low            |                 |
| 124    | NALHATI I  | Sarddha             | Low            |                 |
| 125    | NALHATI II | Ashuria             | Moderate       |                 |
| 126    | NALHATI II | Gokulpur            | Moderate       |                 |

| S. No. | DISTRICT | BLOCK            | VILLAGE        | HAZARD CATEGORY |     |
|--------|----------|------------------|----------------|-----------------|-----|
| 127    | BIRBHUM  | NALHATI II       | Khalilpur      | Moderate        |     |
| 128    |          | NALHATI II       | Nakpur         | Low             |     |
| 129    |          | NALHATI II       | Nidhia         | Moderate        |     |
| 130    |          | NANOOR           | Angora         | Moderate        |     |
| 131    |          | NANOOR           | Atgram         | Low             |     |
| 132    |          | NANOOR           | Atkula         | Low             |     |
| 133    |          | NANOOR           | Baitara        | Low             |     |
| 134    |          | NANOOR           | Balaipur       | Low             |     |
| 135    |          | NANOOR           | Bamunia        | Low             |     |
| 136    |          | NANOOR           | Bhepur         | Low             |     |
| 137    |          | NANOOR           | Brahmankhanda  | Low             |     |
| 138    |          | NANOOR           | Chak Muitin    | Moderate        |     |
| 139    |          | NANOOR           | Chhatingram    | Low             |     |
| 140    |          | NANOOR           | Gandhpur       | Low             |     |
| 141    |          | NANOOR           | Gangnara       | Low             |     |
| 142    |          | NANOOR           | Garpara        | Low             |     |
| 143    |          | NANOOR           | Harmur         | Low             |     |
| 144    |          | NANOOR           | Husenpur       | Low             |     |
| 145    |          | NANOOR           | Jugipur        | Low             |     |
| 146    |          | NANOOR           | Kadda          | Low             |     |
| 147    |          | NANOOR           | Kaferpur       | Low             |     |
| 148    |          | NANOOR           | Khujutipara    | Low             |     |
| 149    |          | NANOOR           | Nabasta        | Low             |     |
| 150    |          | NANOOR           | Nawada Palandi | Moderate        |     |
| 151    |          | NANOOR           | Nawanagar      | Low             |     |
| 152    |          | NANOOR           | Nimra          | Low             |     |
| 153    |          | NANOOR           | Nurpur         | Low             |     |
| 154    |          | NANOOR           | Palitpur       | Low             |     |
| 155    |          | NANOOR           | Panpara (P)    | Low             |     |
| 156    |          | NANOOR           | Parota         | Low             |     |
| 157    |          | NANOOR           | Patisara       | Low             |     |
| 158    |          | NANOOR           | Pratappur Chak | Low             |     |
| 159    |          | NANOOR           | Pundara        | Low             |     |
| 160    |          | NANOOR           | Purnia         | Moderate        |     |
| 161    |          | NANOOR           | Ramkrishnapur  | Low             |     |
| 162    |          | NANOOR           | Rautara        | Low             |     |
| 163    |          | NANOOR           | Sajnor         | Low             |     |
| 164    |          | NANOOR           | Sakadda        | Low             |     |
| 165    |          | NANOOR           | Santra         | Low             |     |
| 166    |          | NANOOR           | Sarisha        | Low             |     |
| 167    |          | NANOOR           | Sehala         | Low             |     |
| 168    |          | NANOOR           | Sidhai         | Low             |     |
| 169    |          | NANOOR           | Srikrishnapur  | Low             |     |
| 170    |          | NANOOR           | Thupsara       | Low             |     |
| 171    |          | NANOOR           | Tikuri         | Low             |     |
| 172    |          | NANOOR           | RAMPURHAT II   | Kamra           | Low |
| 173    |          | NANOOR           | RAMPURHAT II   | Madhupur        | Low |
| 174    |          | NANOOR           | SAINTHIA       | Ikra            | Low |
| 175    |          | NANOOR           | SAINTHIA       | Indira          | Low |
| 176    |          | NANOOR           | SAINTHIA       | Jiui            | Low |
| 177    |          | NANOOR           | SAINTHIA       | Kanturi         | Low |
| 178    |          | NANOOR           | SAINTHIA       | Markola         | Low |
| 179    |          | NANOOR           | SAINTHIA       | Shimulia        | Low |
| 180    |          | NANOOR           | SURI I         | Raipur          | Low |
| 181    |          | NANOOR           | SURI II        | Badilpur        | Low |
| 182    |          | NANOOR           | SURI II        | Beharia         | Low |
| 183    |          | NANOOR           | SURI II        | Kanshpai        | Low |
| 184    |          | NANOOR           | SURI II        | Kubirpur        | Low |
| 185    |          | NANOOR           | SURI II        | Nijuri          | Low |
| 186    |          | NANOOR           | SURI II        | Palashi         | Low |
| 187    |          | NANOOR           | SURI II        | Talibpur        | Low |
| 188    |          | DAKSHIN DINAJPUR | BALURGHAT      | Chak Bhikan     | Low |
| 189    |          |                  | BALURGHAT      | Jhapursi        | Low |

| S. No. | DISTRICT         | BLOCK       | VILLAGE           | HAZARD CATEGORY |
|--------|------------------|-------------|-------------------|-----------------|
| 190    | DAKSHIN DINAJPUR | BALURGHAT   | Rampur Kismat     | Low             |
| 191    |                  | BANSIHARI   | Bilbarail         | Low             |
| 192    |                  | BANSIHARI   | Deuria            | Low             |
| 193    |                  | BANSIHARI   | Ghasipur          | Low             |
| 194    |                  | BANSIHARI   | Subarna Sarai     | Low             |
| 195    |                  | GANGARAMPUR | Hiranyabati       | Low             |
| 196    |                  | GANGARAMPUR | Jadab Bati        | Low             |
| 197    |                  | GANGARAMPUR | Jaypur            | Low             |
| 198    |                  | GANGARAMPUR | Kantaban          | Low             |
| 199    |                  | GANGARAMPUR | Kashipur          | Low             |
| 200    |                  | GANGARAMPUR | Katatair          | Low             |
| 201    |                  | GANGARAMPUR | Mahasura          | Low             |
| 202    |                  | GANGARAMPUR | Mahurkismat       | Low             |
| 203    |                  | GANGARAMPUR | Mallikpur         | Low             |
| 204    |                  | GANGARAMPUR | Naodapara         | Low             |
| 205    |                  | GANGARAMPUR | Narayanpur (P)    | Low             |
| 206    |                  | GANGARAMPUR | Singfarka         | Low             |
| 207    |                  | KUMARGANJ   | Amulia            | Low             |
| 208    |                  | KUMARGANJ   | Azadpur           | Low             |
| 209    |                  | KUMARGANJ   | Badangina         | Low             |
| 210    |                  | KUMARGANJ   | Chak Bhabani      | Low             |
| 211    |                  | KUMARGANJ   | Chakrasail        | Low             |
| 212    |                  | KUMARGANJ   | Chhatintair       | Low             |
| 213    |                  | KUMARGANJ   | Darajpur          | Low             |
| 214    |                  | KUMARGANJ   | Gaurangapur       | Low             |
| 215    |                  | KUMARGANJ   | Jhaubari          | Low             |
| 216    |                  | KUMARGANJ   | Keshurail         | Low             |
| 217    |                  | KUMARGANJ   | Krishnapur        | Low             |
| 218    |                  | KUMARGANJ   | Mahadebpur        | Low             |
| 219    |                  | KUMARGANJ   | Majhian           | Low             |
| 220    |                  | KUMARGANJ   | Menapur           | Low             |
| 221    |                  | KUMARGANJ   | Mirzapur          | Low             |
| 222    |                  | KUMARGANJ   | Porajhar          | Low             |
| 223    |                  | KUSHMUNDI   | Amlahar           | Low             |
| 224    |                  | KUSHMUNDI   | Angaripara        | Low             |
| 225    |                  | KUSHMUNDI   | Arazi Kasba       | Low             |
| 226    |                  | KUSHMUNDI   | Ayera             | Low             |
| 227    |                  | KUSHMUNDI   | Balarampur        | Low             |
| 228    |                  | KUSHMUNDI   | Bara Damodarpur   | Low             |
| 229    |                  | KUSHMUNDI   | Bara Krishnapur   | Low             |
| 230    |                  | KUSHMUNDI   | Baragachhi        | Low             |
| 231    |                  | KUSHMUNDI   | Basudebpur        | Low             |
| 232    |                  | KUSHMUNDI   | Chandpur          | Low             |
| 233    |                  | KUSHMUNDI   | Chausa            | Low             |
| 234    |                  | KUSHMUNDI   | Chhota Damodarpur | Low             |
| 235    |                  | KUSHMUNDI   | Debipur           | Low             |
| 236    |                  | KUSHMUNDI   | Deulbari          | Low             |
| 237    |                  | KUSHMUNDI   | Dhakdhol          | Low             |
| 238    |                  | KUSHMUNDI   | Dopitha           | Low             |
| 239    |                  | KUSHMUNDI   | Gobrabail         | Low             |
| 240    |                  | KUSHMUNDI   | Hansrail          | Low             |
| 241    |                  | KUSHMUNDI   | Harishchandrapur  | Low             |
| 242    |                  | KUSHMUNDI   | Jafarpur          | Low             |
| 243    |                  | KUSHMUNDI   | Jagannathpur      | Low             |
| 244    |                  | KUSHMUNDI   | Joypur            | Low             |
| 245    |                  | KUSHMUNDI   | Kalikamora        | Low             |
| 246    |                  | KUSHMUNDI   | Kandaha           | Low             |
| 247    |                  | KUSHMUNDI   | Kanthail          | Low             |
| 248    |                  | KUSHMUNDI   | Khanpur           | Low             |
| 249    |                  | KUSHMUNDI   | Lakshmijal        | Low             |
| 250    |                  | KUSHMUNDI   | Mahishakuri       | Low             |
| 251    |                  | KUSHMUNDI   | Mangalpur         | Low             |
| 252    |                  | KUSHMUNDI   | Maulai            | Low             |

| S. No. | DISTRICT         | BLOCK     | VILLAGE            | HAZARD CATEGORY |     |
|--------|------------------|-----------|--------------------|-----------------|-----|
| 253    | DAKSHIN DINAJPUR | KUSHMUNDI | Milanhat           | Low             |     |
| 254    |                  | KUSHMUNDI | Minapara           | Low             |     |
| 255    |                  | KUSHMUNDI | Nabhor             | Low             |     |
| 256    |                  | KUSHMUNDI | Nambhail           | Low             |     |
| 257    |                  | KUSHMUNDI | Narayanpur         | Low             |     |
| 258    |                  | KUSHMUNDI | Padamkuri          | Low             |     |
| 259    |                  | KUSHMUNDI | Palasbari          | Low             |     |
| 260    |                  | KUSHMUNDI | Paschim Para       | Low             |     |
| 261    |                  | KUSHMUNDI | Puinala            | Low             |     |
| 262    |                  | KUSHMUNDI | Pukurpar Raypur    | Low             |     |
| 263    |                  | KUSHMUNDI | Punat              | Low             |     |
| 264    |                  | KUSHMUNDI | Rasulpur           | Low             |     |
| 265    |                  | KUSHMUNDI | Salekkuri          | Low             |     |
| 266    |                  | KUSHMUNDI | Sekendarpur        | Low             |     |
| 267    |                  | KUSHMUNDI | Serpur             | Low             |     |
| 268    |                  | KUSHMUNDI | Shalkhair          | Low             |     |
| 269    |                  | KUSHMUNDI | Shikrishnapur      | Low             |     |
| 270    |                  | KUSHMUNDI | Sibrampur          | Low             |     |
| 271    |                  | KUSHMUNDI | Udaypur            | Low             |     |
| 272    |                  | KUSHMUNDI | Ujil               | Low             |     |
| 273    |                  | KUSHMUNDI | Uttarpara          | Low             |     |
| 274    |                  | TAPAN     | Goranda            | Low             |     |
| 275    |                  | TAPAN     | Khosalpur          | Low             |     |
| 276    |                  | TAPAN     | Nazirpur           | Low             |     |
| 277    |                  | TAPAN     | Ramchandrapur      | Low             |     |
| 278    |                  | HOOGHLY   | ARAMBAGH           | Ajaypur         | Low |
| 279    |                  |           | ARAMBAGH           | Arakul          | Low |
| 280    | ARAMBAGH         |           | Arandi             | Low             |     |
| 281    | ARAMBAGH         |           | Ashanpur           | Low             |     |
| 282    | ARAMBAGH         |           | Balai Chak         | Low             |     |
| 283    | ARAMBAGH         |           | Balarampur         | Low             |     |
| 284    | ARAMBAGH         |           | Basuli Chak        | Low             |     |
| 285    | ARAMBAGH         |           | Batanal            | Low             |     |
| 286    | ARAMBAGH         |           | Behala             | Low             |     |
| 287    | ARAMBAGH         |           | Benga              | Low             |     |
| 288    | ARAMBAGH         |           | Beurgram           | Low             |     |
| 289    | ARAMBAGH         |           | Bhabanipur         | Low             |     |
| 290    | ARAMBAGH         |           | Bhalia             | Low             |     |
| 291    | ARAMBAGH         |           | Bhandarhati        | Low             |     |
| 292    | ARAMBAGH         |           | Chak Amad          | Low             |     |
| 293    | ARAMBAGH         |           | Chak Behala        | Low             |     |
| 294    | ARAMBAGH         |           | Chak Hazi          | Low             |     |
| 295    | ARAMBAGH         |           | Chak Jalal         | Low             |     |
| 296    | ARAMBAGH         |           | Chak Madan         | Low             |     |
| 297    | ARAMBAGH         |           | Chakanar           | Low             |     |
| 298    | ARAMBAGH         |           | Chunait            | Low             |     |
| 299    | ARAMBAGH         |           | Dharmapota         | Low             |     |
| 300    | ARAMBAGH         |           | Dihi Bagnan        | Low             |     |
| 301    | ARAMBAGH         |           | Eloma              | Low             |     |
| 302    | ARAMBAGH         |           | Fate Chak          | Low             |     |
| 303    | ARAMBAGH         |           | Gauri              | Low             |     |
| 304    | ARAMBAGH         |           | Hat Basantapur     | Low             |     |
| 305    | ARAMBAGH         |           | Jasapur            | Low             |     |
| 306    | ARAMBAGH         |           | Jayrampur          | Low             |     |
| 307    | ARAMBAGH         |           | Jot Ram            | Low             |     |
| 308    | ARAMBAGH         |           | Karui              | Low             |     |
| 309    | ARAMBAGH         |           | Kashigare          | Low             |     |
| 310    | ARAMBAGH         |           | Katabani           | Low             |     |
| 311    | ARAMBAGH         |           | Krishna Ballabhpur | Low             |     |
| 312    | ARAMBAGH         |           | Lalur Chak         | Low             |     |
| 313    | ARAMBAGH         |           | Madhabpur          | Low             |     |
| 314    | ARAMBAGH         |           | Malaypur           | Low             |     |
| 315    | ARAMBAGH         |           | Mandaran           | Low             |     |

| S. No. | DISTRICT | BLOCK                   | VILLAGE          | HAZARD CATEGORY |
|--------|----------|-------------------------|------------------|-----------------|
| 316    | HOOGHLY  | ARAMBAGH                | Manikpat         | Low             |
| 317    |          | ARAMBAGH                | Mayapur          | Low             |
| 318    |          | ARAMBAGH                | Mobarakpur       | Low             |
| 319    |          | ARAMBAGH                | Mohanpur         | Low             |
| 320    |          | ARAMBAGH                | Pandugram        | Low             |
| 321    |          | ARAMBAGH                | Para Bagnan      | Low             |
| 322    |          | ARAMBAGH                | Pratapnagar      | Low             |
| 323    |          | ARAMBAGH                | Puisara          | Low             |
| 324    |          | ARAMBAGH                | Ramnagar         | Low             |
| 325    |          | ARAMBAGH                | Ranhat           | Low             |
| 326    |          | ARAMBAGH                | Ratanpur         | Low             |
| 327    |          | ARAMBAGH                | Ruitchak         | Low             |
| 328    |          | ARAMBAGH                | Salepur          | Low             |
| 329    |          | ARAMBAGH                | Samta            | Low             |
| 330    |          | ARAMBAGH                | Sastipur         | Low             |
| 331    |          | ARAMBAGH                | Satmasa          | Low             |
| 332    |          | ARAMBAGH                | Satpur           | Low             |
| 333    |          | ARAMBAGH                | Shitalpur        | Low             |
| 334    |          | ARAMBAGH                | Siara            | Low             |
| 335    |          | ARAMBAGH                | Takshal          | Low             |
| 336    |          | ARAMBAGH                | Tala             | Low             |
| 337    |          | ARAMBAGH                | Telua            | Low             |
| 338    |          | ARAMBAGH                | Uttar Narayanpur | Low             |
| 339    |          | ARAMBAGH                | Uttar Rasulpur   | Low             |
| 340    |          | ARAMBAGH                | Uttar Sekhpur    | Low             |
| 341    |          | BALAGARH                | Abdulpur         | Low             |
| 342    |          | BALAGARH                | Aida Kismat      | Low             |
| 343    |          | BALAGARH                | Alisa Garia      | Low             |
| 344    |          | BALAGARH                | Arazi Aschitpur  | Low             |
| 345    |          | BALAGARH                | Arazi Bhabanipur | Low             |
| 346    |          | BALAGARH                | Arazi Guptipara  | Low             |
| 347    |          | BALAGARH                | Babla            | Low             |
| 348    |          | BALAGARH                | Badhagachhi (CT) | Low             |
| 349    |          | BALAGARH                | Baga             | Low             |
| 350    |          | BALAGARH                | Bakulia          | Low             |
| 351    |          | BALAGARH                | Bara Nekua       | Low             |
| 352    |          | BALAGARH                | Baruipara        | Low             |
| 353    |          | BALAGARH                | Basna            | Low             |
| 354    | BALAGARH | Basuki                  | Low              |                 |
| 355    | BALAGARH | Batna                   | Low              |                 |
| 356    | BALAGARH | Beleswar                | Low              |                 |
| 357    | BALAGARH | Belgachhi               | Low              |                 |
| 358    | BALAGARH | Bhabanipur              | Low              |                 |
| 359    | BALAGARH | Bhabanipur Char         | Low              |                 |
| 360    | BALAGARH | Bhalki                  | Moderate         |                 |
| 361    | BALAGARH | Chandi Gachha           | Low              |                 |
| 362    | BALAGARH | Chandra                 | Low              |                 |
| 363    | BALAGARH | Char Noapara            | Low              |                 |
| 364    | BALAGARH | Char Rampur             | Low              |                 |
| 365    | BALAGARH | Char Sultanpur          | Low              |                 |
| 366    | BALAGARH | Char Sundalpur          | Low              |                 |
| 367    | BALAGARH | Chhera Char Krishnabati | Low              |                 |
| 368    | BALAGARH | Chhota Nekua            | Low              |                 |
| 369    | BALAGARH | Dahartiornai            | Low              |                 |
| 370    | BALAGARH | Dahia                   | Low              |                 |
| 371    | BALAGARH | Dakshin Gopalpur        | Low              |                 |
| 372    | BALAGARH | Debipur                 | Low              |                 |
| 373    | BALAGARH | Demar Gachha            | Low              |                 |
| 374    | BALAGARH | Dhak Chhara             | Low              |                 |
| 375    | BALAGARH | Dhopapara               | Low              |                 |
| 376    | BALAGARH | Durllabhpur             | Low              |                 |
| 377    | BALAGARH | Dwarpara                | Low              |                 |
| 378    | BALAGARH | Ektarpur                | Low              |                 |

| S. No. | DISTRICT | BLOCK                  | VILLAGE        | HAZARD CATEGORY |
|--------|----------|------------------------|----------------|-----------------|
| 379    | HOOGHLY  | BALAGARH               | Fatepur        | Low             |
| 380    |          | BALAGARH               | Gaipara        | Low             |
| 381    |          | BALAGARH               | Gangadharpur   | Low             |
| 382    |          | BALAGARH               | Gournai        | Low             |
| 383    |          | BALAGARH               | Gopalbati      | Low             |
| 384    |          | BALAGARH               | Gournagar      | Low             |
| 385    |          | BALAGARH               | Guptipara      | Low             |
| 386    |          | BALAGARH               | Guptipara Char | Low             |
| 387    |          | BALAGARH               | Hamjampur      | Low             |
| 388    |          | BALAGARH               | Hatikanda      | Low             |
| 389    |          | BALAGARH               | Ichhapura      | Low             |
| 390    |          | BALAGARH               | Ilampur        | Low             |
| 391    |          | BALAGARH               | Inchhura       | Low             |
| 392    |          | BALAGARH               | Itagar         | Low             |
| 393    |          | BALAGARH               | Jagulia        | Low             |
| 394    |          | BALAGARH               | Jasra          | Low             |
| 395    |          | BALAGARH               | Jirat          | Low             |
| 396    |          | BALAGARH               | Jot Narayan    | Low             |
| 397    |          | BALAGARH               | Kabura         | Low             |
| 398    |          | BALAGARH               | Kaliagar       | Low             |
| 399    |          | BALAGARH               | Kalyanshri     | Low             |
| 400    |          | BALAGARH               | Kamalpur       | Low             |
| 401    |          | BALAGARH               | Kamar Danga    | Low             |
| 402    |          | BALAGARH               | Kamarpara      | Low             |
| 403    |          | BALAGARH               | Kanpara        | Low             |
| 404    |          | BALAGARH               | Karinya        | Low             |
| 405    |          | BALAGARH               | Kolara         | Low             |
| 406    |          | BALAGARH               | Krishnabati    | Low             |
| 407    |          | BALAGARH               | Kulgachhi      | Low             |
| 408    |          | BALAGARH               | Kuliapara      | Low             |
| 409    |          | BALAGARH               | Mahipalpur     | Moderate        |
| 410    |          | BALAGARH               | Maijdia        | Low             |
| 411    |          | BALAGARH               | Malancha       | Low             |
| 412    |          | BALAGARH               | Mamudpur       | Low             |
| 413    |          | BALAGARH               | Masara         | Low             |
| 414    |          | BALAGARH               | Matukpur       | Low             |
| 415    |          | BALAGARH               | Mirdhanga      | Low             |
| 416    |          | BALAGARH               | Moktarpur      | Low             |
| 417    |          | BALAGARH               | Mundukhola     | Low             |
| 418    |          | BALAGARH               | Mura Gachha    | Low             |
| 419    |          | BALAGARH               | Muragari       | Low             |
| 420    |          | BALAGARH               | Musuria        | Moderate        |
| 421    |          | BALAGARH               | Naopara        | Low             |
| 422    |          | BALAGARH               | Naosarai       | Low             |
| 423    | BALAGARH | Naricha                | Low            |                 |
| 424    | BALAGARH | Nutan Char Krishnabati | Low            |                 |
| 425    | BALAGARH | Pratappur              | Low            |                 |
| 426    | BALAGARH | Ramnagar               | Low            |                 |
| 427    | BALAGARH | Rampur                 | Low            |                 |
| 428    | BALAGARH | Sabek Char Krishnabati | Low            |                 |
| 429    | BALAGARH | Sadhu Bangali          | Low            |                 |
| 430    | BALAGARH | Saira                  | Low            |                 |
| 431    | BALAGARH | Salarpur               | Low            |                 |
| 432    | BALAGARH | Sarenda                | Low            |                 |
| 433    | BALAGARH | Sargaria               | Low            |                 |
| 434    | BALAGARH | Serpur                 | Low            |                 |
| 435    | BALAGARH | Simulia                | Low            |                 |
| 436    | BALAGARH | Somra                  | Low            |                 |
| 437    | BALAGARH | Sripur                 | Low            |                 |
| 438    | BALAGARH | Sukharia               | Low            |                 |
| 439    | BALAGARH | Suksagar               | Low            |                 |
| 440    | BALAGARH | Suksagar               | Low            |                 |
| 441    | BALAGARH | Sultanpur              | Low            |                 |



| S. No. | DISTRICT     | BLOCK           | VILLAGE         | HAZARD CATEGORY |
|--------|--------------|-----------------|-----------------|-----------------|
| 442    | HOOGHLY      | BALAGARH        | Telini Para     | Low             |
| 443    |              | BALAGARH        | Tildanga        | Low             |
| 444    |              | BALAGARH        | Tiornai         | Low             |
| 445    |              | BALAGARH        | Uttar Gopalpur  | Low             |
| 446    |              | CHANDITALA I    | Akuni           | Low             |
| 447    |              | CHANDITALA I    | Alipur          | Low             |
| 448    |              | CHANDITALA I    | Anantarampur    | Low             |
| 449    |              | CHANDITALA I    | Aniya           | Low             |
| 450    |              | CHANDITALA I    | Aushbati        | Low             |
| 451    |              | CHANDITALA I    | Azabnagar       | Low             |
| 452    |              | CHANDITALA I    | Bade Sola       | Low             |
| 453    |              | CHANDITALA I    | Baghati         | Low             |
| 454    |              | CHANDITALA I    | Ban Panchbere   | Low             |
| 455    |              | CHANDITALA I    | Banamalipur     | Low             |
| 456    |              | CHANDITALA I    | Bandpur         | Low             |
| 457    |              | CHANDITALA I    | Banipur         | Low             |
| 458    |              | CHANDITALA I    | Bankrishnapur   | Low             |
| 459    |              | CHANDITALA I    | Bara Choughara  | Low             |
| 460    |              | CHANDITALA I    | Bhadua          | Low             |
| 461    |              | CHANDITALA I    | Bhagabatipur    | Low             |
| 462    |              | CHANDITALA I    | Chak Bangla     | Low             |
| 463    |              | CHANDITALA I    | Chak Tajpur     | Low             |
| 464    |              | CHANDITALA I    | Chhunche        | Low             |
| 465    |              | CHANDITALA I    | Chota Choughara | Low             |
| 466    |              | CHANDITALA I    | Dudhkalmi       | Low             |
| 467    |              | CHANDITALA I    | Dudhkanra       | Low             |
| 468    |              | CHANDITALA I    | Dudhkomra       | Low             |
| 469    |              | CHANDITALA I    | Ganeshpur       | Low             |
| 470    |              | CHANDITALA I    | Gangadharpur    | Low             |
| 471    |              | CHANDITALA I    | Gopalpur        | Low             |
| 472    |              | CHANDITALA I    | Haripur         | Low             |
| 473    |              | CHANDITALA I    | Ichhapasar      | Low             |
| 474    |              | CHANDITALA I    | Jagmohanpur     | Low             |
| 475    |              | CHANDITALA I    | Jalamadul       | Low             |
| 476    |              | CHANDITALA I    | Jangalpara      | Low             |
| 477    |              | CHANDITALA I    | Jiara           | Low             |
| 478    |              | CHANDITALA I    | Kalyanbati      | Low             |
| 479    |              | CHANDITALA I    | Kanaidanga      | Low             |
| 480    |              | CHANDITALA I    | Krishnanagar    | Low             |
| 481    |              | CHANDITALA I    | Krishnarampur   | Low             |
| 482    |              | CHANDITALA I    | Kumirmora       | Low             |
| 483    |              | CHANDITALA I    | Madhupur        | Low             |
| 484    |              | CHANDITALA I    | Malipukur       | Low             |
| 485    |              | CHANDITALA I    | Mamudpur        | Low             |
| 486    |              | CHANDITALA I    | Manirampur      | Low             |
| 487    |              | CHANDITALA I    | Masat           | Low             |
| 488    |              | CHANDITALA I    | Metekhal        | Low             |
| 489    |              | CHANDITALA I    | Mukundapur      | Low             |
| 490    |              | CHANDITALA I    | Nababpur        | Low             |
| 491    |              | CHANDITALA I    | Pakur           | Low             |
| 492    | CHANDITALA I | Paschim Tajpur  | Low             |                 |
| 493    | CHANDITALA I | Patul           | Low             |                 |
| 494    | CHANDITALA I | Radhaballabhpur | Low             |                 |
| 495    | CHANDITALA I | Raghunathpur    | Low             |                 |
| 496    | CHANDITALA I | Ramanathpur     | Low             |                 |
| 497    | CHANDITALA I | Sadpur          | Low             |                 |
| 498    | CHANDITALA I | Sandhipur       | Low             |                 |
| 499    | CHANDITALA I | Sehakhala       | Low             |                 |
| 500    | CHANDITALA I | Shyamsundarpur  | Low             |                 |
| 501    | CHANDITALA I | Singjor         | Low             |                 |
| 502    | DHANIAKHALI  | Kanta Garia     | Low             |                 |
| 503    | DHANIAKHALI  | Masuria         | Low             |                 |
| 504    | DHANIAKHALI  | Nakira Para     | Low             |                 |

| S. No. | DISTRICT  | BLOCK                  | VILLAGE               | HAZARD CATEGORY |
|--------|-----------|------------------------|-----------------------|-----------------|
| 505    | HOOGHLY   | GOGHAT I               | Belekusum             | Moderate        |
| 506    |           | GOGHAT I               | Dakshin B             | Low             |
| 507    |           | GOGHAT I               | Damodarpur            | Moderate        |
| 508    |           | GOGHAT I               | Dewan Cha             | Moderate        |
| 509    |           | GOGHAT I               | Dumurpara             | Low             |
| 510    |           | GOGHAT I               | Goalpara              | Moderate        |
| 511    |           | GOGHAT I               | Jot Mahab             | Low             |
| 512    |           | GOGHAT I               | Kota                  | Moderate        |
| 513    |           | GOGHAT I               | Kulia                 | Moderate        |
| 514    |           | GOGHAT I               | Kurmana               | Low             |
| 515    |           | GOGHAT I               | Muktarpur             | High            |
| 516    |           | GOGHAT I               | Nakunda               | Low             |
| 517    |           | GOGHAT I               | Penchera              | High            |
| 518    |           | HARIPAL                | Bade Digaria          | Low             |
| 519    |           | HARIPAL                | Baje Ichhlampur       | Low             |
| 520    |           | HARIPAL                | Bhupatipur            | Low             |
| 521    |           | HARIPAL                | Bhurisit Khejuria     | Low             |
| 522    |           | HARIPAL                | Chapsara              | Low             |
| 523    |           | HARIPAL                | Dignagar              | Low             |
| 524    |           | HARIPAL                | Faridpur              | Low             |
| 525    |           | HARIPAL                | Gabati                | Low             |
| 526    |           | HARIPAL                | Khanakhanpur          | Low             |
| 527    |           | HARIPAL                | Khejuria              | Low             |
| 528    |           | HARIPAL                | Kulubati Bhagabatipur | Low             |
| 529    |           | HARIPAL                | Madanmohonpur         | Low             |
| 530    |           | HARIPAL                | Panchgachhia          | Low             |
| 531    |           | HARIPAL                | Paschim Mallikpur     | Low             |
| 532    |           | HARIPAL                | Prasadpur             | Low             |
| 533    |           | HARIPAL                | Radha Krisnapur       | Low             |
| 534    |           | HARIPAL                | Raghunathpur          | Low             |
| 535    |           | HARIPAL                | Sahara                | Low             |
| 536    |           | JANGIPARA              | Amarpur               | Low             |
| 537    |           | JANGIPARA              | Basantapur            | Low             |
| 538    |           | JANGIPARA              | Bhimpur               | Low             |
| 539    |           | JANGIPARA              | Chak Barada           | Low             |
| 540    |           | JANGIPARA              | Chaurpur              | Moderate        |
| 541    |           | JANGIPARA              | Furfura               | Low             |
| 542    |           | JANGIPARA              | Kodalipoa             | Low             |
| 543    |           | JANGIPARA              | Kotalpur              | Low             |
| 544    |           | JANGIPARA              | Lohagachhi            | Low             |
| 545    |           | JANGIPARA              | Mahestikuri           | Low             |
| 546    |           | JANGIPARA              | Nilarpur              | Low             |
| 547    |           | JANGIPARA              | Panchberia            | Low             |
| 548    |           | JANGIPARA              | Santoshpur            | Low             |
| 549    |           | JANGIPARA              | Shrihatta             | Low             |
| 550    |           | JANGIPARA              | Sonamaguri            | Low             |
| 551    |           | KHANKUL I              | Bamankhana            | Moderate        |
| 552    |           | KHANKUL I              | Bandhaipur            | Low             |
| 553    |           | KHANKUL I              | Birlok                | Low             |
| 554    |           | KHANKUL I              | Chak Bhedua           | Low             |
| 555    |           | KHANKUL I              | Dhara Shimul          | Low             |
| 556    |           | KHANKUL I              | Dharmmapur            | Low             |
| 557    |           | KHANKUL I              | Ganesh Bazar          | Low             |
| 558    |           | KHANKUL I              | Garbere               | Low             |
| 559    |           | KHANKUL I              | Gauran                | Low             |
| 560    |           | KHANKUL I              | Gauran Mandaran       | Moderate        |
| 561    | KHANKUL I | Gaurangapur            | Low                   |                 |
| 562    | KHANKUL I | Gopalnagar             | Low                   |                 |
| 563    | KHANKUL I | Jayananda Golanandapur | Low                   |                 |
| 564    | KHANKUL I | Jayram Chak            | Low                   |                 |
| 565    | KHANKUL I | Kabilpur               | Low                   |                 |
| 566    | KHANKUL I | Kalimba                | Moderate              |                 |
| 567    | KHANKUL I | Kamdebpur              | Moderate              |                 |

| S. No. | DISTRICT    | BLOCK           | VILLAGE         | HAZARD CATEGORY |
|--------|-------------|-----------------|-----------------|-----------------|
| 568    | HOOGHLY     | KHANKUL I       | Kanchra         | Low             |
| 569    |             | KHANKUL I       | Khamargor       | Low             |
| 570    |             | KHANKUL I       | Krishnanagar    | Low             |
| 571    |             | KHANKUL I       | Lausar          | Low             |
| 572    |             | KHANKUL I       | Madhabkundu     | Low             |
| 573    |             | KHANKUL I       | Mainan          | Low             |
| 574    |             | KHANKUL I       | Nabasan         | Moderate        |
| 575    |             | KHANKUL I       | Niranjanbati    | Low             |
| 576    |             | KHANKUL I       | Noda Narayanpur | Low             |
| 577    |             | KHANKUL I       | Par Chabbishpur | Low             |
| 578    |             | KHANKUL I       | Pol             | Low             |
| 579    |             | KHANKUL I       | Radhaballabhpur | Low             |
| 580    |             | KHANKUL I       | Ramnagar        | Moderate        |
| 581    |             | KHANKUL I       | Sankarpur       | Low             |
| 582    |             | KHANKUL I       | Shulut          | Moderate        |
| 583    |             | KHANKUL I       | Sola Asta       | Low             |
| 584    |             | KHANKUL I       | Sonatikri       | Low             |
| 585    |             | KHANKUL II      | Banhijli        | Low             |
| 586    |             | KHANKUL II      | Bar Nanda       | Moderate        |
| 587    |             | KHANKUL II      | Chak Magr       | Moderate        |
| 588    |             | KHANKUL II      | Chand Kun       | Low             |
| 589    |             | KHANKUL II      | Dakshin S       | Moderate        |
| 590    |             | KHANKUL II      | Dhaldanga       | Moderate        |
| 591    |             | KHANKUL II      | Ghoradaha       | Moderate        |
| 592    |             | KHANKUL II      | Hanua           | Low             |
| 593    |             | KHANKUL II      | Hirapur         | Low             |
| 594    |             | KHANKUL II      | Jagatpur        | Moderate        |
| 595    |             | KHANKUL II      | Joariacha       | Low             |
| 596    |             | KHANKUL II      | Kaknan          | Moderate        |
| 597    |             | KHANKUL II      | Kamdeb Ch       | Low             |
| 598    |             | KHANKUL II      | Katashia        | Low             |
| 599    |             | KHANKUL II      | Ketedal         | Low             |
| 600    |             | KHANKUL II      | Khantara        | Moderate        |
| 601    |             | KHANKUL II      | Kumarhat        | Moderate        |
| 602    |             | KHANKUL II      | Kushali         | Moderate        |
| 603    |             | KHANKUL II      | Madhyaran       | Low             |
| 604    |             | KHANKUL II      | Manikdwip       | Low             |
| 605    |             | KHANKUL II      | Marakhana       | Low             |
| 606    |             | KHANKUL II      | Mostafapu       | Moderate        |
| 607    |             | KHANKUL II      | Nandanpur       | Low             |
| 608    |             | KHANKUL II      | Radhakris       | Moderate        |
| 609    |             | KHANKUL II      | Ramchandr       | Moderate        |
| 610    |             | PANDUA          | Balarampu       | Low             |
| 611    |             | PANDUA          | Bhotgram        | Low             |
| 612    |             | PANDUA          | Chaklai         | Moderate        |
| 613    |             | PANDUA          | Danpur          | Low             |
| 614    |             | PANDUA          | Depara          | Low             |
| 615    |             | PANDUA          | Digha           | Low             |
| 616    |             | PANDUA          | Gutra           | Low             |
| 617    |             | PANDUA          | Haral           | Low             |
| 618    |             | PANDUA          | Kulipukur       | Low             |
| 619    |             | PANDUA          | Muktikri        | Low             |
| 620    |             | PANDUA          | Napara          | Low             |
| 621    | PANDUA      | Nesraguri       | Low             |                 |
| 622    | PANDUA      | Paikpara        | Low             |                 |
| 623    | PANDUA      | Paira           | Low             |                 |
| 624    | PANDUA      | Panch Gar       | Low             |                 |
| 625    | PANDUA      | Radhanaga       | Low             |                 |
| 626    | PANDUA      | Ranagari        | Low             |                 |
| 627    | PANDUA      | Sandua          | Low             |                 |
| 628    | PANDUA      | Sibpur          | Low             |                 |
| 629    | POLBADADPUR | Araji Jotchandi | Low             |                 |
| 630    | POLBADADPUR | Badinan         | Low             |                 |

| S. No. | DISTRICT | BLOCK                      | VILLAGE               | HAZARD CATEGORY |     |
|--------|----------|----------------------------|-----------------------|-----------------|-----|
| 631    | HOOGHLY  | POLBADADPUR                | Belgare               | Low             |     |
| 632    |          | POLBADADPUR                | Dakshin Babnan        | Low             |     |
| 633    |          | POLBADADPUR                | Gotu                  | Low             |     |
| 634    |          | POLBADADPUR                | Ichhpur               | Low             |     |
| 635    |          | POLBADADPUR                | Ishta                 | Low             |     |
| 636    |          | POLBADADPUR                | Jatarpur              | Low             |     |
| 637    |          | POLBADADPUR                | Jhauband              | Low             |     |
| 638    |          | POLBADADPUR                | Mirkhila              | Low             |     |
| 639    |          | POLBADADPUR                | Nabasan               | Low             |     |
| 640    |          | POLBADADPUR                | Nonadanga             | Moderate        |     |
| 641    |          | POLBADADPUR                | Paschim Narayanpara   | Low             |     |
| 642    |          | POLBADADPUR                | Payan                 | Moderate        |     |
| 643    |          | POLBADADPUR                | Popai                 | Low             |     |
| 644    |          | POLBADADPUR                | Shibrampur            | Low             |     |
| 645    |          | POLBADADPUR                | Soa                   | Low             |     |
| 646    |          | PURSURA                    | Bhunyera              | Low             |     |
| 647    |          | PURSURA                    | Deulpara              | Low             |     |
| 648    |          | SINGUR                     | Bhartar Chak          | Low             |     |
| 649    |          | SINGUR                     | Chak.Kalikabari       | Low             |     |
| 650    |          | SINGUR                     | Jagatnagar            | Low             |     |
| 651    |          | SINGUR                     | Jampukur              | Low             |     |
| 652    |          | SINGUR                     | Rasulpur              | Low             |     |
| 653    |          | SINGUR                     | Talabhomra            | Low             |     |
| 654    |          | HOWRAH                     | AMTA I                | Amta            | Low |
| 655    |          |                            | AMTA I                | Anule           | Low |
| 656    | AMTA I   |                            | Balichak              | Low             |     |
| 657    | AMTA I   |                            | Banuchak              | Low             |     |
| 658    | AMTA I   |                            | Bara Mahara           | Low             |     |
| 659    | AMTA I   |                            | Barue                 | Low             |     |
| 660    | AMTA I   |                            | Basantapur            | Low             |     |
| 661    | AMTA I   |                            | Bhandar Gachha        | Low             |     |
| 662    | AMTA I   |                            | Bhetkepara            | Low             |     |
| 663    | AMTA I   |                            | Chakpota              | Low             |     |
| 664    | AMTA I   |                            | Chaksadar             | Low             |     |
| 665    | AMTA I   |                            | Chaltakhali           | Low             |     |
| 666    | AMTA I   |                            | Chhota Mahara         | Low             |     |
| 667    | AMTA I   |                            | Dadpur                | Low             |     |
| 668    | AMTA I   |                            | Dakshin Harishpur     | Low             |     |
| 669    | AMTA I   |                            | Dakshin Ramchandrapur | Low             |     |
| 670    | AMTA I   |                            | Damodar Nadirchar     | Low             |     |
| 671    | AMTA I   |                            | Darapur               | Low             |     |
| 672    | AMTA I   |                            | Deora                 | Low             |     |
| 673    | AMTA I   |                            | Dhurkhali             | Low             |     |
| 674    | AMTA I   |                            | Ghoradaha             | Low             |     |
| 675    | AMTA I   |                            | Guzarpur              | Low             |     |
| 676    | AMTA I   |                            | Habla                 | Low             |     |
| 677    | AMTA I   |                            | Jotkalyan             | Low             |     |
| 678    | AMTA I   |                            | Kadua                 | Low             |     |
| 679    | AMTA I   |                            | Kalikata              | Low             |     |
| 680    | AMTA I   |                            | Kasra                 | Low             |     |
| 681    | AMTA I   |                            | Kazir Chak            | Low             |     |
| 682    | AMTA I   |                            | Khaira                | Moderate        |     |
| 683    | AMTA I   |                            | Khosalpur             | Low             |     |
| 684    | AMTA I   |                            | Kotalpara             | Low             |     |
| 685    | AMTA I   |                            | Kumaria               | Low             |     |
| 686    | AMTA I   |                            | Kurit                 | Low             |     |
| 687    | AMTA I   |                            | Mallagram             | Low             |     |
| 688    | AMTA I   |                            | Pearapur              | Low             |     |
| 689    | AMTA I   | Putkhali                   | Low                   |                 |     |
| 690    | AMTA I   | Ramchandrapur Dwityakhanda | Low                   |                 |     |
| 691    | AMTA I   | Ranapara                   | Low                   |                 |     |
| 692    | AMTA I   | Raspur                     | Low                   |                 |     |
| 693    | AMTA I   | Ratanpota                  | Low                   |                 |     |

| S. No. | DISTRICT       | BLOCK          | VILLAGE             | HAZARD CATEGORY |
|--------|----------------|----------------|---------------------|-----------------|
| 694    | HOWRAH         | AMTA I         | Sameshwar           | Low             |
| 695    |                | AMTA I         | Sarpai              | Low             |
| 696    |                | AMTA I         | Sarpota             | Low             |
| 697    |                | AMTA I         | Uttar Ramchandrapur | Low             |
| 698    |                | AMTA II        | Ajangachhi          | Moderate        |
| 699    |                | AMTA II        | Amragari            | Low             |
| 700    |                | AMTA II        | Bargazipur          | Low             |
| 701    |                | AMTA II        | Beral               | Low             |
| 702    |                | AMTA II        | Bhateghari          | Low             |
| 703    |                | AMTA II        | Binalakrishnabati   | Low             |
| 704    |                | AMTA II        | Boalia              | Low             |
| 705    |                | AMTA II        | Chak Janardan       | Low             |
| 706    |                | AMTA II        | Chak Kundalia       | Low             |
| 707    |                | AMTA II        | Chingrajola         | Low             |
| 708    |                | AMTA II        | Chitnan             | Low             |
| 709    |                | AMTA II        | Dakshin Bhatora     | Low             |
| 710    |                | AMTA II        | Dakshin Jaypur      | Low             |
| 711    |                | AMTA II        | Dhaipur             | Low             |
| 712    |                | AMTA II        | Dhanyaghari         | Low             |
| 713    |                | AMTA II        | Fatik Beria         | Moderate        |
| 714    |                | AMTA II        | Ghanashyam Chak     | Low             |
| 715    |                | AMTA II        | Ghardubra           | Low             |
| 716    |                | AMTA II        | Ghoraberia          | Low             |
| 717    |                | AMTA II        | Hanidaha            | Low             |
| 718    |                | AMTA II        | Hatgachha           | Low             |
| 719    |                | AMTA II        | Hio                 | Low             |
| 720    |                | AMTA II        | Jaypur              | Low             |
| 721    |                | AMTA II        | Jhamtia             | Low             |
| 722    |                | AMTA II        | Jhikhira            | Low             |
| 723    |                | AMTA II        | Kakrol              | Moderate        |
| 724    |                | AMTA II        | Kalasdihi           | Moderate        |
| 725    |                | AMTA II        | Kamar Khola         | Moderate        |
| 726    |                | AMTA II        | Kasmali             | Moderate        |
| 727    |                | AMTA II        | Khajur Daha         | Low             |
| 728    |                | AMTA II        | Khari Geria         | Low             |
| 729    |                | AMTA II        | Khariop             | Low             |
| 730    |                | AMTA II        | Kulia               | Low             |
| 731    |                | AMTA II        | Madhya Jaypur       | Moderate        |
| 732    |                | AMTA II        | Marayachak          | Low             |
| 733    |                | AMTA II        | Mirgram             | Low             |
| 734    |                | AMTA II        | Nignan              | Low             |
| 735    |                | AMTA II        | Nischintapur        | Low             |
| 736    |                | AMTA II        | Paschim Gazipur     | Moderate        |
| 737    |                | AMTA II        | Paschim Jaypur      | Moderate        |
| 738    |                | AMTA II        | Pashchim Khalna     | Low             |
| 739    |                | AMTA II        | Purbba Khalan       | Low             |
| 740    |                | AMTA II        | Ranjoybar           | Low             |
| 741    |                | AMTA II        | Rautara             | Low             |
| 742    |                | AMTA II        | Saoraberia          | Low             |
| 743    |                | AMTA II        | Sehagari            | Low             |
| 744    |                | AMTA II        | Shibgachhia         | Moderate        |
| 745    |                | AMTA II        | Sirol               | Low             |
| 746    |                | AMTA II        | Solbaga             | Low             |
| 747    |                | AMTA II        | Takipara            | Low             |
| 748    |                | AMTA II        | Thalia              | Low             |
| 749    |                | AMTA II        | Uttar Bhatora       | Low             |
| 750    | AMTA II        | Uttar Khalna   | Low                 |                 |
| 751    | DOMJUR         | Chak Hari      | Low                 |                 |
| 752    | DOMJUR         | Chak Mahishjol | Low                 |                 |
| 753    | DOMJUR         | Mahishgote     | Low                 |                 |
| 754    | JAGATBALLAVPUR | Bamunpara      | Low                 |                 |
| 755    | JAGATBALLAVPUR | Bhupatipur     | Low                 |                 |
| 756    | JAGATBALLAVPUR | Chak Bishnupur | Low                 |                 |

| S. No. | DISTRICT       | BLOCK          | VILLAGE           | HAZARD CATEGORY |
|--------|----------------|----------------|-------------------|-----------------|
| 757    | HOWRAH         | JAGATBALLAVPUR | Chak Patmura      | Low             |
| 758    |                | JAGATBALLAVPUR | Chak Sadat        | Low             |
| 759    |                | JAGATBALLAVPUR | Dakshin Maju      | Low             |
| 760    |                | JAGATBALLAVPUR | Dwipa             | Low             |
| 761    |                | JAGATBALLAVPUR | Gumadangi         | Low             |
| 762    |                | JAGATBALLAVPUR | Ichhanagari       | Low             |
| 763    |                | JAGATBALLAVPUR | Jadabbati         | Low             |
| 764    |                | JAGATBALLAVPUR | Jagannathpur      | Low             |
| 765    |                | JAGATBALLAVPUR | Jalalsi           | Low             |
| 766    |                | JAGATBALLAVPUR | Kumarpur          | Low             |
| 767    |                | JAGATBALLAVPUR | Madhya Maju       | Low             |
| 768    |                | JAGATBALLAVPUR | Madhya Santoshpur | Low             |
| 769    |                | JAGATBALLAVPUR | Narendrapur       | Low             |
| 770    |                | JAGATBALLAVPUR | Pulgusti          | Low             |
| 771    |                | JAGATBALLAVPUR | Rampur            | Low             |
| 772    |                | JAGATBALLAVPUR | Sadatpur          | Low             |
| 773    |                | JAGATBALLAVPUR | Sadipara          | Low             |
| 774    |                | JAGATBALLAVPUR | Shyampur          | Low             |
| 775    |                | JAGATBALLAVPUR | Sial Danga        | Low             |
| 776    |                | JAGATBALLAVPUR | Uttar Maju        | Low             |
| 777    |                | JAGATBALLAVPUR | Uttar Santoshpur  | Low             |
| 778    |                | SYAMPUR II     | Mosha             | Low             |
| 779    |                | UDAYNARAYANPUR | Dakshin Rampur    | Moderate        |
| 780    |                | UDAYNARAYANPUR | Debipur           | Moderate        |
| 781    |                | UDAYNARAYANPUR | Gumgar            | Moderate        |
| 782    |                | UDAYNARAYANPUR | Kumar Chak        | Moderate        |
| 783    |                | UDAYNARAYANPUR | Pratapnaryanpur   | Moderate        |
| 784    |                | UDAYNARAYANPUR | Purpat            | Moderate        |
| 785    |                | UDAYNARAYANPUR | Raghunathpur      | Moderate        |
| 786    |                | UDAYNARAYANPUR | Rampur            | Moderate        |
| 787    | UDAYNARAYANPUR | Ray Chak       | Low               |                 |
| 788    | UDAYNARAYANPUR | Uttar Manasri  | Low               |                 |
| 789    | JHARGRAM       | BINPUR I       | Bankata           | Low             |
| 790    |                | BINPUR I       | Bankati           | Low             |
| 791    |                | BINPUR I       | Haripathari       | Low             |
| 792    |                | BINPUR I       | Khayerbani        | Low             |
| 793    |                | BINPUR I       | Mathakati         | Low             |
| 794    |                | BINPUR I       | Raipur            | Low             |
| 795    |                | BINPUR I       | Shashageria       | Low             |
| 796    |                | JHARGRAM       | Chhota Basudebpur | Low             |
| 797    |                | JHARGRAM       | Kendulia          | Low             |
| 798    |                | JHARGRAM       | Shirish Bani      | Low             |
| 799    |                | NAYAGRAM       | Bera Jal          | Low             |
| 800    |                | NAYAGRAM       | Chhechan Mari     | Low             |
| 801    |                | NAYAGRAM       | Chun Khulia       | Low             |
| 802    |                | NAYAGRAM       | Damodarpur        | Low             |
| 803    |                | NAYAGRAM       | Jhara Bani        | Low             |
| 804    |                | NAYAGRAM       | Kanda Ghasha      | Low             |
| 805    |                | NAYAGRAM       | Narasingh Pur     | Low             |
| 806    |                | NAYAGRAM       | Rajpahari         | Low             |
| 807    |                | SANKRAIL       | Bahara Danri      | Low             |
| 808    |                | SANKRAIL       | Charar            | Low             |
| 809    |                | SANKRAIL       | Gourberya         | Low             |
| 810    |                | SANKRAIL       | Salbani           | Low             |
| 811    | SANKRAIL       | Shimulia       | Low               |                 |
| 812    | MALDA          | BAMANGOLA      | Adata             | Low             |
| 813    |                | BAMANGOLA      | Bamangram         | Low             |
| 814    |                | BAMANGOLA      | Barinda           | Low             |
| 815    |                | BAMANGOLA      | Harinandanbati    | Low             |
| 816    |                | BAMANGOLA      | Khutadaha         | Low             |
| 817    |                | BAMANGOLA      | Manuli            | Low             |
| 818    |                | BAMANGOLA      | Muzaffarpur       | Low             |
| 819    |                | BAMANGOLA      | Nandinadaha       | Low             |

| S. No. | DISTRICT | BLOCK       | VILLAGE              | HAZARD CATEGORY |
|--------|----------|-------------|----------------------|-----------------|
| 820    | MALDA    | BAMANGOLA   | Pathar Simla         | Low             |
| 821    |          | BAMANGOLA   | Sikail               | Low             |
| 822    |          | CHANCHAL I  | Basilhat             | Low             |
| 823    |          | CHANCHAL I  | Bhagabatipur         | Low             |
| 824    |          | CHANCHAL I  | Bibijhuti            | Low             |
| 825    |          | CHANCHAL I  | Khanpur Hulaspur     | Low             |
| 826    |          | CHANCHAL I  | Naikanda             | Low             |
| 827    |          | CHANCHAL I  | Sahabajpur           | Low             |
| 828    |          | CHANCHAL II | Gopalpur             | Low             |
| 829    |          | CHANCHAL II | Jalalpur             | Low             |
| 830    |          | CHANCHAL II | Janipur              | Low             |
| 831    |          | CHANCHAL II | Khanpur              | Moderate        |
| 832    |          | GAZOLE      | Akalpur              | Low             |
| 833    |          | GAZOLE      | Altor                | Low             |
| 834    |          | GAZOLE      | Baira Dangi          | Low             |
| 835    |          | GAZOLE      | Bildahadar           | Low             |
| 836    |          | GAZOLE      | Bilhatia             | Low             |
| 837    |          | GAZOLE      | Chakdaha             | Low             |
| 838    |          | GAZOLE      | Emamnagar            | Low             |
| 839    |          | GAZOLE      | Hatnagar             | Low             |
| 840    |          | GAZOLE      | Kagasura             | Moderate        |
| 841    |          | GAZOLE      | Mahishal             | Low             |
| 842    |          | GAZOLE      | Matail               | Low             |
| 843    |          | GAZOLE      | Mudafat Habinagar    | Low             |
| 844    |          | GAZOLE      | Musidhap             | Low             |
| 845    |          | GAZOLE      | Paladanga            | Low             |
| 846    |          | GAZOLE      | Paschim Bilahora     | Low             |
| 847    |          | GAZOLE      | Purba Bilahora       | Low             |
| 848    |          | GAZOLE      | Rasikpur             | Low             |
| 849    |          | GAZOLE      | Raykhandighi         | Low             |
| 850    |          | GAZOLE      | Saluka               | Low             |
| 851    |          | GAZOLE      | Sonadanga            | Low             |
| 852    |          | GAZOLE      | Updel                | Low             |
| 853    |          | GAZOLE      | Uttar Maldanga       | Low             |
| 854    |          | HABIBPUR    | Aliarpur             | Low             |
| 855    |          | HABIBPUR    | Ananda Pathar        | Low             |
| 856    |          | HABIBPUR    | Angarpota            | Low             |
| 857    |          | HABIBPUR    | Aragachhi            | Low             |
| 858    |          | HABIBPUR    | Bali Simla           | Low             |
| 859    |          | HABIBPUR    | Bharila              | Low             |
| 860    |          | HABIBPUR    | Bhola Baona          | Low             |
| 861    |          | HABIBPUR    | Bilpani Bhenda       | Low             |
| 862    |          | HABIBPUR    | Chakli               | Low             |
| 863    |          | HABIBPUR    | Dabur                | Low             |
| 864    |          | HABIBPUR    | Dakshin Kharikadanga | Moderate        |
| 865    |          | HABIBPUR    | Dhaka Pathar         | Low             |
| 866    |          | HABIBPUR    | Dighal Kandi         | Low             |
| 867    |          | HABIBPUR    | Dolachhola           | Low             |
| 868    |          | HABIBPUR    | Dolmari Dighali      | Low             |
| 869    |          | HABIBPUR    | Haito                | Low             |
| 870    |          | HABIBPUR    | Jot Kandarpapur      | Low             |
| 871    |          | HABIBPUR    | Jotjitan             | Low             |
| 872    |          | HABIBPUR    | Kadaripara           | Low             |
| 873    |          | HABIBPUR    | Kaichana             | Low             |
| 874    |          | HABIBPUR    | Kanchana             | Low             |
| 875    |          | HABIBPUR    | Khatiakana           | Low             |
| 876    |          | HABIBPUR    | Kuchiamor            | Low             |
| 877    |          | HABIBPUR    | Madasi Danga         | Low             |
| 878    |          | HABIBPUR    | Mashai Chak          | Low             |
| 879    |          | HABIBPUR    | Mohanpur Inlis       | Low             |
| 880    |          | HABIBPUR    | Nayandob             | Low             |
| 881    |          | HABIBPUR    | Nunchora             | Low             |
| 882    | HABIBPUR | Pasuli      | Low                  |                 |

| S. No. | DISTRICT            | BLOCK               | VILLAGE                 | HAZARD CATEGORY |
|--------|---------------------|---------------------|-------------------------|-----------------|
| 883    | MALDA               | HABIBPUR            | Pathar Amarpur          | Low             |
| 884    |                     | HABIBPUR            | Pathar Banpur           | Low             |
| 885    |                     | HABIBPUR            | Pathar Basuli           | Low             |
| 886    |                     | HABIBPUR            | Pathar Bhabsa           | Low             |
| 887    |                     | HABIBPUR            | Pathar Bhikan           | Moderate        |
| 888    |                     | HABIBPUR            | Pathar Chapri           | Low             |
| 889    |                     | HABIBPUR            | Pathar Dighali          | Low             |
| 890    |                     | HABIBPUR            | Pathar Dojat            | Low             |
| 891    |                     | HABIBPUR            | Pathar Domaichand       | Low             |
| 892    |                     | HABIBPUR            | Pathar Haito            | Low             |
| 893    |                     | HABIBPUR            | Pathar Harishchandrapur | Moderate        |
| 894    |                     | HABIBPUR            | Pathar Islampur         | Low             |
| 895    |                     | HABIBPUR            | Pathar Jugi             | Low             |
| 896    |                     | HABIBPUR            | Pathar Kandi            | Low             |
| 897    |                     | HABIBPUR            | Pathar Kashinathpur     | Low             |
| 898    |                     | HABIBPUR            | Pathar Khayran          | Low             |
| 899    |                     | HABIBPUR            | Pathar Laibari          | Low             |
| 900    |                     | HABIBPUR            | Pathar Mandala          | Low             |
| 901    |                     | HABIBPUR            | Pathar Mirzabad         | Low             |
| 902    |                     | HABIBPUR            | Pathar Nandagar         | Low             |
| 903    |                     | HABIBPUR            | Pathar Parlia           | Low             |
| 904    |                     | HABIBPUR            | Pathar Phulbana         | Low             |
| 905    |                     | HABIBPUR            | Pathar Sasuli           | Low             |
| 906    |                     | HABIBPUR            | Pathar Sibram           | Low             |
| 907    |                     | HABIBPUR            | Pathar Tilasan          | Low             |
| 908    |                     | HABIBPUR            | Pathar Shishudanga      | Low             |
| 909    |                     | HABIBPUR            | Poali                   | Low             |
| 910    |                     | HABIBPUR            | Purba Basudebpur        | Low             |
| 911    |                     | HABIBPUR            | Ranahat                 | Low             |
| 912    |                     | HABIBPUR            | Sahapur                 | Low             |
| 913    |                     | HABIBPUR            | Saidpur                 | Low             |
| 914    |                     | HABIBPUR            | Sarbadikpur             | Low             |
| 915    |                     | HABIBPUR            | Sasinda                 | Low             |
| 916    |                     | HABIBPUR            | Sisdanga                | Low             |
| 917    |                     | HABIBPUR            | Sital Kursi             | Low             |
| 918    |                     | HABIBPUR            | Soladang                | Low             |
| 919    |                     | HABIBPUR            | Telnai                  | Low             |
| 920    |                     | HARISHCHANDRAPUR I  | Chandipur               | Low             |
| 921    |                     | HARISHCHANDRAPUR I  | Gohila                  | Low             |
| 922    |                     | HARISHCHANDRAPUR I  | Saldaha                 | Low             |
| 923    |                     | HARISHCHANDRAPUR II | Arjuna                  | Low             |
| 924    |                     | HARISHCHANDRAPUR II | Bansdol                 | Low             |
| 925    |                     | HARISHCHANDRAPUR II | Bashat Dhanipara        | Low             |
| 926    |                     | HARISHCHANDRAPUR II | Basudebpur              | Low             |
| 927    |                     | HARISHCHANDRAPUR II | Bejpura                 | Low             |
| 928    | HARISHCHANDRAPUR II | Belshur             | Low                     |                 |
| 929    | HARISHCHANDRAPUR II | Betahal             | Low                     |                 |
| 930    | HARISHCHANDRAPUR II | Bhairabpur          | Low                     |                 |
| 931    | HARISHCHANDRAPUR II | Bhaluka             | Low                     |                 |
| 932    | HARISHCHANDRAPUR II | Bhuna               | Low                     |                 |
| 933    | HARISHCHANDRAPUR II | Chhatrak            | Low                     |                 |
| 934    | HARISHCHANDRAPUR II | Chithalia           | Low                     |                 |
| 935    | HARISHCHANDRAPUR II | Chonch Para         | Low                     |                 |
| 936    | HARISHCHANDRAPUR II | Dahara              | Low                     |                 |
| 937    | HARISHCHANDRAPUR II | Dakshin Bhakuria    | Low                     |                 |
| 938    | HARISHCHANDRAPUR II | Dakshin Gouripur    | Low                     |                 |
| 939    | HARISHCHANDRAPUR II | Dakshin Kumedpur    | Low                     |                 |
| 940    | HARISHCHANDRAPUR II | Dakshin Mukundapur  | Low                     |                 |
| 941    | HARISHCHANDRAPUR II | Darol               | Low                     |                 |
| 942    | HARISHCHANDRAPUR II | Datian              | Low                     |                 |
| 943    | HARISHCHANDRAPUR II | Daulat Nagar        | Low                     |                 |
| 944    | HARISHCHANDRAPUR II | Daulatpur           | Low                     |                 |
| 945    | HARISHCHANDRAPUR II | Degun               | Low                     |                 |



| S. No. | DISTRICT | BLOCK               | VILLAGE               | HAZARD CATEGORY |
|--------|----------|---------------------|-----------------------|-----------------|
| 946    | MALDA    | HARISHCHANDRAPUR II | Digri Inlis           | Low             |
| 947    |          | HARISHCHANDRAPUR II | Dubol                 | Low             |
| 948    |          | HARISHCHANDRAPUR II | Fatepur               | Low             |
| 949    |          | HARISHCHANDRAPUR II | Gaushpur              | Low             |
| 950    |          | HARISHCHANDRAPUR II | Hardam Nagar          | Low             |
| 951    |          | HARISHCHANDRAPUR II | Hariharpur            | Low             |
| 952    |          | HARISHCHANDRAPUR II | Hulaspur              | Low             |
| 953    |          | HARISHCHANDRAPUR II | Ilam                  | Low             |
| 954    |          | HARISHCHANDRAPUR II | Ilam Milik            | Low             |
| 955    |          | HARISHCHANDRAPUR II | Jagannathpur          | Low             |
| 956    |          | HARISHCHANDRAPUR II | Jalalpur              | Low             |
| 957    |          | HARISHCHANDRAPUR II | Kankania              | Low             |
| 958    |          | HARISHCHANDRAPUR II | Kariali               | Low             |
| 959    |          | HARISHCHANDRAPUR II | Khanta                | Low             |
| 960    |          | HARISHCHANDRAPUR II | Khopakati             | Low             |
| 961    |          | HARISHCHANDRAPUR II | Kushol                | Low             |
| 962    |          | HARISHCHANDRAPUR II | Latasi                | Low             |
| 963    |          | HARISHCHANDRAPUR II | Maharapara            | Low             |
| 964    |          | HARISHCHANDRAPUR II | Mali Pakar            | Low             |
| 965    |          | HARISHCHANDRAPUR II | Malior                | Low             |
| 966    |          | HARISHCHANDRAPUR II | Manoharpur            | Low             |
| 967    |          | HARISHCHANDRAPUR II | Mashaldaha            | Low             |
| 968    |          | HARISHCHANDRAPUR II | Maslandapur           | Low             |
| 969    |          | HARISHCHANDRAPUR II | Mihaghat              | Low             |
| 970    |          | HARISHCHANDRAPUR II | Mohanpur              | Low             |
| 971    |          | HARISHCHANDRAPUR II | Nawapara              | Low             |
| 972    |          | HARISHCHANDRAPUR II | Putia                 | Low             |
| 973    |          | HARISHCHANDRAPUR II | Sadlichak             | Low             |
| 974    |          | HARISHCHANDRAPUR II | Sahapur               | Low             |
| 975    |          | HARISHCHANDRAPUR II | Sahara Bahara         | Low             |
| 976    |          | HARISHCHANDRAPUR II | Samukha               | Low             |
| 977    |          | HARISHCHANDRAPUR II | Sayra                 | Low             |
| 978    |          | HARISHCHANDRAPUR II | Sikatani              | Low             |
| 979    |          | HARISHCHANDRAPUR II | Sikatani Inlis        | Low             |
| 980    |          | HARISHCHANDRAPUR II | Sultan Nagar          | Low             |
| 981    |          | HARISHCHANDRAPUR II | Surjyapura Tengurpura | Low             |
| 982    |          | HARISHCHANDRAPUR II | Talashur              | Low             |
| 983    |          | HARISHCHANDRAPUR II | Talbangrua            | Low             |
| 984    |          | HARISHCHANDRAPUR II | Talbha Kuria          | Low             |
| 985    |          | HARISHCHANDRAPUR II | Talgachhi             | Low             |
| 986    |          | HARISHCHANDRAPUR II | Talgram               | Low             |
| 987    |          | HARISHCHANDRAPUR II | Tetia                 | Low             |
| 988    |          | HARISHCHANDRAPUR II | Uttar Bejpura         | Low             |
| 989    |          | HARISHCHANDRAPUR II | Uttar Kumedpur        | Low             |
| 990    |          | KALIACHAK II        | Panchanandapur        | Low             |
| 991    |          | KALIACHAK II        | Shripur               | Low             |
| 992    |          | KALIACHAK III       | Arazi Dharmapur       | Moderate        |
| 993    |          | KALIACHAK III       | Babupur               | Low             |
| 994    |          | KALIACHAK III       | Bakhrabad             | Low             |
| 995    |          | KALIACHAK III       | Balarampur            | Low             |
| 996    |          | KALIACHAK III       | Chain Para            | Low             |
| 997    |          | KALIACHAK III       | Chak Bahadurpur       | Low             |
| 998    |          | KALIACHAK III       | Chak Seherdi          | Low             |
| 999    |          | KALIACHAK III       | Chandpur              | Low             |
| 1000   |          | KALIACHAK III       | Debidaspur            | Low             |
| 1001   |          | KALIACHAK III       | Deonapur              | Low             |
| 1002   |          | KALIACHAK III       | Dharmapur             | Low             |
| 1003   |          | KALIACHAK III       | Hadinagar             | Low             |
| 1004   |          | KALIACHAK III       | Jiolmari              | Low             |
| 1005   |          | KALIACHAK III       | Jote Kashi            | Low             |
| 1006   |          | KALIACHAK III       | Kumbhira              | Low             |
| 1007   |          | KALIACHAK III       | Lakshmipur            | Low             |
| 1008   |          | KALIACHAK III       | Mohanpur              | Low             |

| S. No. | DISTRICT | BLOCK         | VILLAGE                   | HAZARD CATEGORY |
|--------|----------|---------------|---------------------------|-----------------|
| 1009   | MALDA    | KALIACHAK III | Mohanpur Khas             | Low             |
| 1010   |          | KALIACHAK III | Niyogi Nagar              | Low             |
| 1011   |          | KALIACHAK III | Nurnagar                  | Low             |
| 1012   |          | KALIACHAK III | Par Anantapur             | Moderate        |
| 1013   |          | KALIACHAK III | Par Anupnagar             | Low             |
| 1014   |          | KALIACHAK III | Par Dakshin Baidyanathpur | Moderate        |
| 1015   |          | KALIACHAK III | Par Deonapur              | Low             |
| 1016   |          | KALIACHAK III | Par Lalpur                | Low             |
| 1017   |          | KALIACHAK III | Par Paranpara             | Low             |
| 1018   |          | KALIACHAK III | Par Shibpur               | Low             |
| 1019   |          | KALIACHAK III | Sabdulpur                 | Low             |
| 1020   |          | KALIACHAK III | Shashani                  | Low             |
| 1021   |          | KALIACHAK III | Shukdebpur                | Low             |
| 1022   |          | KALIACHAK III | Shukpara                  | Low             |
| 1023   |          | KALIACHAK III | Sobhapur                  | Moderate        |
| 1024   |          | KALIACHAK III | Suzapur Mandai            | Low             |
| 1025   |          | MALDA OLD     | Goalchaita                | Low             |
| 1026   |          | MALDA OLD     | Halna                     | Low             |
| 1027   |          | MALDA OLD     | Jalakar Bithan            | Low             |
| 1028   |          | MALDA OLD     | Jatradanga                | Low             |
| 1029   |          | MALDA OLD     | Kaluari                   | Low             |
| 1030   |          | MALDA OLD     | Koar                      | Low             |
| 1031   |          | MALDA OLD     | Kuchinda                  | Low             |
| 1032   |          | MALDA OLD     | Mabarakpur                | Low             |
| 1033   |          | MALDA OLD     | Madhaipur                 | Low             |
| 1034   |          | MALDA OLD     | Meherpur                  | Low             |
| 1035   |          | MALDA OLD     | Pathar Uzrang             | Low             |
| 1036   |          | MALDA OLD     | Sadhail                   | Moderate        |
| 1037   |          | MANIKCHAK     | Bahadurpur                | Low             |
| 1038   |          | MANIKCHAK     | Chandipur                 | Low             |
| 1039   |          | MANIKCHAK     | Chandipurm                | Low             |
| 1040   |          | MANIKCHAK     | Dharampur                 | Low             |
| 1041   |          | MANIKCHAK     | Jitmanpur                 | Low             |
| 1042   |          | MANIKCHAK     | Jot Bhabani               | Low             |
| 1043   |          | MANIKCHAK     | Kesarpur                  | Low             |
| 1044   |          | MANIKCHAK     | Khanpur                   | Low             |
| 1045   |          | MANIKCHAK     | Mahabbatpur               | Low             |
| 1046   |          | MANIKCHAK     | Naobarar Jaigir           | Low             |
| 1047   |          | MANIKCHAK     | Narayanpur                | Low             |
| 1048   |          | MANIKCHAK     | Nazirpur                  | Low             |
| 1049   |          | MANIKCHAK     | Paschim Chandipur         | Low             |
| 1050   |          | MANIKCHAK     | Syamsundari               | Low             |
| 1051   |          | MANIKCHAK     | Talim Nagar               | Low             |
| 1052   |          | MANIKCHAK     | Ugritola                  | Low             |
| 1053   |          | MANIKCHAK     | Uttar Chandipur           | Low             |
| 1054   |          | RATUA I       | Amar Singhi               | Low             |
| 1055   |          | RATUA I       | Andhirampara              | Low             |
| 1056   |          | RATUA I       | Arazi Balarampur          | Low             |
| 1057   |          | RATUA I       | Bahirkap                  | Low             |
| 1058   |          | RATUA I       | Bajitpur                  | Low             |
| 1059   |          | RATUA I       | Balarampur                | Low             |
| 1060   |          | RATUA I       | Balia Binodpur            | Low             |
| 1061   |          | RATUA I       | Balupur                   | Low             |
| 1062   |          | RATUA I       | Bampal Charkhi            | Low             |
| 1063   |          | RATUA I       | Bangshipur                | Low             |
| 1064   |          | RATUA I       | Bhado                     | Low             |
| 1065   |          | RATUA I       | Bhaluara                  | Low             |
| 1066   |          | RATUA I       | Bihari                    | Low             |
| 1067   |          | RATUA I       | Bijrabhita                | Low             |
| 1068   |          | RATUA I       | Bishal Gokulpur           | Low             |
| 1069   |          | RATUA I       | Chandi Prasad             | Low             |
| 1070   | RATUA I  | Chandipur     | Moderate                  |                 |
| 1071   | RATUA I  | Chhabilpara   | Low                       |                 |

| S. No. | DISTRICT    | BLOCK             | VILLAGE               | HAZARD CATEGORY |
|--------|-------------|-------------------|-----------------------|-----------------|
| 1072   | MALDA       | RATUA I           | Dakshin Durgapur      | Low             |
| 1073   |             | RATUA I           | Darbasini             | Low             |
| 1074   |             | RATUA I           | Daudpur               | Low             |
| 1075   |             | RATUA I           | Debipur               | Low             |
| 1076   |             | RATUA I           | Dotal                 | Low             |
| 1077   |             | RATUA I           | Durgapur              | Low             |
| 1078   |             | RATUA I           | Gadai Maharajpur      | Low             |
| 1079   |             | RATUA I           | Gangarampara          | Low             |
| 1080   |             | RATUA I           | Gopalpur              | Low             |
| 1081   |             | RATUA I           | Gouripur              | Low             |
| 1082   |             | RATUA I           | Harekrishnapur        | Low             |
| 1083   |             | RATUA I           | Harinkol              | Low             |
| 1084   |             | RATUA I           | Ishwarpar             | Moderate        |
| 1085   |             | RATUA I           | Jagannathpur          | Low             |
| 1086   |             | RATUA I           | Joydeb Nagar          | Low             |
| 1087   |             | RATUA I           | Kamalpur              | Low             |
| 1088   |             | RATUA I           | Kankot                | Low             |
| 1089   |             | RATUA I           | Karbana               | Low             |
| 1090   |             | RATUA I           | Kasichak              | Low             |
| 1091   |             | RATUA I           | Khanpur               | Low             |
| 1092   |             | RATUA I           | Kshidirganj           | Low             |
| 1093   |             | RATUA I           | Lakshmipur            | Low             |
| 1094   |             | RATUA I           | Mahammadpur           | Moderate        |
| 1095   |             | RATUA I           | Maniknagar            | Low             |
| 1096   |             | RATUA I           | Matiganj              | Low             |
| 1097   |             | RATUA I           | Naokaram              | Low             |
| 1098   |             | RATUA I           | Narottampur           | Low             |
| 1099   |             | RATUA I           | Nijgaon Faridpur      | Low             |
| 1100   |             | RATUA I           | Okhra Chandpara       | Low             |
| 1101   |             | RATUA I           | Parakaram             | Low             |
| 1102   |             | RATUA I           | Paschim Ratanpur      | Low             |
| 1103   |             | RATUA I           | Raghunathpur Kalekhan | Low             |
| 1104   |             | RATUA I           | Ramchak               | Low             |
| 1105   |             | RATUA I           | Ramnagar              | Low             |
| 1106   |             | RATUA I           | Rampur                | Low             |
| 1107   |             | RATUA I           | Ratanpur              | Low             |
| 1108   |             | RATUA I           | Saha Nagar            | Low             |
| 1109   |             | RATUA I           | Salabatpur            | Low             |
| 1110   |             | RATUA I           | Sambalpur             | Low             |
| 1111   |             | RATUA I           | Samshi                | Low             |
| 1112   |             | RATUA I           | Santapur              | Low             |
| 1113   |             | RATUA I           | Shibpur               | Low             |
| 1114   | RATUA I     | Shibrampur        | Low                   |                 |
| 1115   | RATUA I     | Talparanpur       | Low                   |                 |
| 1116   | RATUA I     | Udaypur           | Low                   |                 |
| 1117   | RATUA II    | Gobindapur        | Moderate              |                 |
| 1118   | RATUA II    | Harirampur        | Moderate              |                 |
| 1119   | RATUA II    | Magurakhod        | Moderate              |                 |
| 1120   | RATUA II    | Maharajpur        | Low                   |                 |
| 1121   | RATUA II    | Purbba Balarampur | Low                   |                 |
| 1122   | RATUA II    | Rajapur           | Low                   |                 |
| 1123   | MURSHIDABAD | BELDANGA II       | Baidyapur             | Low             |
| 1124   |             | BELDANGA II       | Jagamohanpur          | Low             |
| 1125   |             | BELDANGA II       | Kamnagar              | Moderate        |
| 1126   |             | BELDANGA II       | Mahatpur              | Low             |
| 1127   |             | BERHAMPORE        | Arazi Chhiruti        | Low             |
| 1128   |             | BERHAMPORE        | Bara Satui            | High            |
| 1129   |             | BERHAMPORE        | Basabari              | Moderate        |
| 1130   |             | BERHAMPORE        | Bhagabanbati          | High            |
| 1131   |             | BERHAMPORE        | Bilchauti             | Moderate        |
| 1132   |             | BERHAMPORE        | Chhota Satui          | High            |
| 1133   |             | BERHAMPORE        | Chumarigacha          | High            |
| 1134   |             | BERHAMPORE        | Dakshin Hijal         | Low             |

| S. No. | DISTRICT     | BLOCK           | VILLAGE            | HAZARD CATEGORY |
|--------|--------------|-----------------|--------------------|-----------------|
| 1135   | MURSHIDABAD  | BERHAMPORE      | Gangadharpur       | Moderate        |
| 1136   |              | BERHAMPORE      | Katalia            | Moderate        |
| 1137   |              | BERHAMPORE      | Lakshmi Narayanpur | Moderate        |
| 1138   |              | BERHAMPORE      | Uttar Hijal        | Low             |
| 1139   |              | BHAGAWANGOLA II | Kasia Danga        | Low             |
| 1140   |              | BHAGAWANGOLA II | Kuthi Bari         | Low             |
| 1141   |              | BHAGAWANGOLA II | Munsarpur          | Low             |
| 1142   |              | BHARATPUR I     | Amlai              | Low             |
| 1143   |              | BHARATPUR I     | Araji Bhabanipur   | Low             |
| 1144   |              | BHARATPUR I     | Araji Chuator      | Moderate        |
| 1145   |              | BHARATPUR I     | Araji Jagadishbati | Low             |
| 1146   |              | BHARATPUR I     | Balichuna          | Moderate        |
| 1147   |              | BHARATPUR I     | Berbari            | Low             |
| 1148   |              | BHARATPUR I     | Bilkurul           | High            |
| 1149   |              | BHARATPUR I     | Brithi Gangedda    | Low             |
| 1150   |              | BHARATPUR I     | Bulchandpur        | Low             |
| 1151   |              | BHARATPUR I     | Chak Ballabhpur    | Moderate        |
| 1152   |              | BHARATPUR I     | Chanchhoa          | Low             |
| 1153   |              | BHARATPUR I     | Ekdala             | Low             |
| 1154   |              | BHARATPUR I     | Gangedda           | Low             |
| 1155   |              | BHARATPUR I     | Gobindapur         | Low             |
| 1156   |              | BHARATPUR I     | Haranandapur       | Moderate        |
| 1157   |              | BHARATPUR I     | Ibrahimpur         | Low             |
| 1158   |              | BHARATPUR I     | Kamalakantapur     | Low             |
| 1159   |              | BHARATPUR I     | Kasipur            | Moderate        |
| 1160   |              | BHARATPUR I     | Kataikona          | Low             |
| 1161   |              | BHARATPUR I     | Khaira             | Low             |
| 1162   |              | BHARATPUR I     | Lohadaha           | Moderate        |
| 1163   |              | BHARATPUR I     | Munsurpur          | High            |
| 1164   |              | BHARATPUR I     | Narayanpur         | Low             |
| 1165   |              | BHARATPUR I     | Rajarampur         | Moderate        |
| 1166   |              | BHARATPUR I     | Sank Palisa        | Low             |
| 1167   |              | BHARATPUR I     | Sankarmarui        | Low             |
| 1168   |              | BHARATPUR I     | Sehalai            | Low             |
| 1169   |              | BHARATPUR I     | Simulgachhi        | Moderate        |
| 1170   |              | BHARATPUR I     | Sinhari            | Low             |
| 1171   |              | BHARATPUR I     | Sripatipur         | Moderate        |
| 1172   |              | BHARATPUR I     | Syampur            | Moderate        |
| 1173   |              | BHARATPUR I     | Uttar Sahapur      | Low             |
| 1174   |              | BHARATPUR II    | Bara Baidyapur     | Low             |
| 1175   |              | BHARATPUR II    | Dhandanga          | Low             |
| 1176   |              | BHARATPUR II    | Ghoshpara          | High            |
| 1177   |              | BHARATPUR II    | Nawapara           | High            |
| 1178   |              | BHARATPUR II    | Raigram            | Low             |
| 1179   |              | BHARATPUR II    | Ramnabarakhari     | Low             |
| 1180   |              | BHARATPUR II    | Sarmastapur        | Moderate        |
| 1181   |              | BHARATPUR II    | Talibpur           | Low             |
| 1182   | BHARATPUR II | Tenya           | Low                |                 |
| 1183   | BURWAN       | Bharwan         | Low                |                 |
| 1184   | BURWAN       | Billangal Hata  | Moderate           |                 |
| 1185   | BURWAN       | Jaohari         | Moderate           |                 |
| 1186   | BURWAN       | Kalla           | Low                |                 |
| 1187   | BURWAN       | Kuli            | Low                |                 |
| 1188   | BURWAN       | Majlishpur      | Moderate           |                 |
| 1189   | BURWAN       | Mamudpur        | Moderate           |                 |
| 1190   | BURWAN       | Rameswarpur     | Low                |                 |
| 1191   | BURWAN       | Ramrampur       | Moderate           |                 |
| 1192   | FARAKKA      | Bhabanipur      | Low                |                 |
| 1193   | FARAKKA      | Chandore        | Low                |                 |
| 1194   | FARAKKA      | Hosenpur        | Low                |                 |
| 1195   | FARAKKA      | Kuli            | Low                |                 |
| 1196   | FARAKKA      | Lakshmipur      | Low                |                 |
| 1197   | FARAKKA      | Mamrejpur       | Low                |                 |

| S. No. | DISTRICT    | BLOCK               | VILLAGE                   | HAZARD CATEGORY |
|--------|-------------|---------------------|---------------------------|-----------------|
| 1198   | MURSHIDABAD | FARAKKA             | Nagri                     | Low             |
| 1199   |             | KANDI               | Andulia                   | Moderate        |
| 1200   |             | KANDI               | Arazi Chandpara           | Low             |
| 1201   |             | KANDI               | Arazi Gokarna             | High            |
| 1202   |             | KANDI               | Bahadurpur                | High            |
| 1203   |             | KANDI               | Baze Gopalnagar           | Low             |
| 1204   |             | KANDI               | Belun                     | Low             |
| 1205   |             | KANDI               | Benipur                   | Moderate        |
| 1206   |             | KANDI               | Bhabanandapur             | Moderate        |
| 1207   |             | KANDI               | Bijay Nagar               | Low             |
| 1208   |             | KANDI               | Bil Begampur              | Moderate        |
| 1209   |             | KANDI               | Bil Madgarya              | High            |
| 1210   |             | KANDI               | Bilamalbandha             | High            |
| 1211   |             | KANDI               | Boltali                   | Low             |
| 1212   |             | KANDI               | Chandanagar               | Moderate        |
| 1213   |             | KANDI               | Dakshin Lakshminarayanpur | Moderate        |
| 1214   |             | KANDI               | Durgapur                  | Low             |
| 1215   |             | KANDI               | Durgapur                  | Low             |
| 1216   |             | KANDI               | Durlabhpur                | Low             |
| 1217   |             | KANDI               | Gobarhati                 | Moderate        |
| 1218   |             | KANDI               | Gobindapur                | Moderate        |
| 1219   |             | KANDI               | Gopalnagar                | Low             |
| 1220   |             | KANDI               | Harinagar                 | Moderate        |
| 1221   |             | KANDI               | Hijal                     | Moderate        |
| 1222   |             | KANDI               | Hizole Thakurani Chak     | Moderate        |
| 1223   |             | KANDI               | Indrahata                 | Low             |
| 1224   |             | KANDI               | Jamna                     | Moderate        |
| 1225   |             | KANDI               | Jayrampur                 | Low             |
| 1226   |             | KANDI               | Jitpur                    | Low             |
| 1227   |             | KANDI               | Khordda Narayanpur        | High            |
| 1228   |             | KANDI               | Lakshmikantapur           | Moderate        |
| 1229   |             | KANDI               | Madarhati                 | High            |
| 1230   |             | KANDI               | Manoharpur                | Low             |
| 1231   |             | KANDI               | Munigram                  | Low             |
| 1232   |             | KANDI               | Noapara                   | Moderate        |
| 1233   |             | KANDI               | Parbbatipur               | Low             |
| 1234   |             | KANDI               | Raghupur                  | Low             |
| 1235   |             | KANDI               | Rajarampur                | Low             |
| 1236   |             | KANDI               | Ranagram                  | Moderate        |
| 1237   |             | KANDI               | Ranipur                   | Low             |
| 1238   |             | KANDI               | Rayabati                  | Low             |
| 1239   |             | KANDI               | Sadpur (P)                | Low             |
| 1240   |             | KANDI               | Santoshpur                | Low             |
| 1241   |             | KANDI               | Sashpara                  | Low             |
| 1242   |             | KANDI               | Srikantapur               | Low             |
| 1243   |             | KANDI               | Udaychandpur              | Low             |
| 1244   |             | KANDI               | Ugura                     | Low             |
| 1245   |             | KANDI               | Uttar Lakshmi Narayanpur  | Moderate        |
| 1246   | KHARGRAM    | Anandanagar         | Moderate                  |                 |
| 1247   | KHARGRAM    | Bajitpur            | Moderate                  |                 |
| 1248   | KHARGRAM    | Banpur              | Low                       |                 |
| 1249   | KHARGRAM    | Barar               | Moderate                  |                 |
| 1250   | KHARGRAM    | Basantapur          | Moderate                  |                 |
| 1251   | KHARGRAM    | Bele                | Moderate                  |                 |
| 1252   | KHARGRAM    | Bhatkanda           | Moderate                  |                 |
| 1253   | KHARGRAM    | Bibinagar           | Moderate                  |                 |
| 1254   | KHARGRAM    | Bil Debeswar        | Low                       |                 |
| 1255   | KHARGRAM    | Borai               | Moderate                  |                 |
| 1256   | KHARGRAM    | Chakbhatina         | Moderate                  |                 |
| 1257   | KHARGRAM    | Chandsingbati       | Low                       |                 |
| 1258   | KHARGRAM    | Dakshin Gangarampur | Moderate                  |                 |
| 1259   | KHARGRAM    | Dakshin Raypur      | Low                       |                 |
| 1260   | KHARGRAM    | Dakshin Sibpur      | Moderate                  |                 |

| S. No. | DISTRICT    | BLOCK               | VILLAGE           | HAZARD CATEGORY |
|--------|-------------|---------------------|-------------------|-----------------|
| 1261   | MURSHIDABAD | KHARGRAM            | Dangapara         | Low             |
| 1262   |             | KHARGRAM            | Dhanigram         | Low             |
| 1263   |             | KHARGRAM            | Giridharipur      | Low             |
| 1264   |             | KHARGRAM            | Haladharpur       | Moderate        |
| 1265   |             | KHARGRAM            | Jalkarbil Narua   | Moderate        |
| 1266   |             | KHARGRAM            | Jhajhra           | Moderate        |
| 1267   |             | KHARGRAM            | Kalidaspur        | Moderate        |
| 1268   |             | KHARGRAM            | Kesabpur          | Moderate        |
| 1269   |             | KHARGRAM            | Khesar            | Moderate        |
| 1270   |             | KHARGRAM            | Margram Arazi     | Moderate        |
| 1271   |             | KHARGRAM            | Masadanga         | Moderate        |
| 1272   |             | KHARGRAM            | Mirhati           | Moderate        |
| 1273   |             | KHARGRAM            | Naldipi           | Moderate        |
| 1274   |             | KHARGRAM            | Nrasinghapur      | Moderate        |
| 1275   |             | KHARGRAM            | Rahigram          | Moderate        |
| 1276   |             | KHARGRAM            | Rameswarpur       | High            |
| 1277   |             | KHARGRAM            | Sadal             | Moderate        |
| 1278   |             | KHARGRAM            | Sanigram          | Moderate        |
| 1279   |             | KHARGRAM            | Surkhali          | Moderate        |
| 1280   |             | KHARGRAM            | Uttar Gangarampur | Moderate        |
| 1281   |             | LALGOLA             | Gouridaspur       | Low             |
| 1282   |             | LALGOLA             | Lalgola           | Low             |
| 1283   |             | LALGOLA             | Maia              | Low             |
| 1284   |             | LALGOLA             | Malatipur         | Low             |
| 1285   |             | LALGOLA             | Nasipur           | Low             |
| 1286   |             | LALGOLA             | Rajarampur        | Low             |
| 1287   |             | LALGOLA             | Rampal            | Low             |
| 1288   |             | LALGOLA             | Sites Nagar       | Low             |
| 1289   |             | LALGOLA             | Syampur           | Low             |
| 1290   |             | LALGOLA             | Tejraypur         | Low             |
| 1291   |             | MURSHIDABAD-JIAGANJ | Bilchandpur       | Low             |
| 1292   |             | MURSHIDABAD-JIAGANJ | Darura            | Low             |
| 1293   |             | NABAGRAM            | Arazi Saiyadpur   | Moderate        |
| 1294   |             | NABAGRAM            | Bilbagaur         | Moderate        |
| 1295   |             | NABAGRAM            | Bilbasia          | High            |
| 1296   |             | NABAGRAM            | Bilol             | High            |
| 1297   |             | NABAGRAM            | Biltelkar         | High            |
| 1298   |             | NABAGRAM            | Dafarpur          | Moderate        |
| 1299   |             | NABAGRAM            | Daspara           | High            |
| 1300   |             | NABAGRAM            | Fakirpur          | Moderate        |
| 1301   |             | NABAGRAM            | Faphar            | High            |
| 1302   |             | NABAGRAM            | Gura              | High            |
| 1303   |             | NABAGRAM            | Hosenabad         | High            |
| 1304   | NABAGRAM    | Isannagar           | Low               |                 |
| 1305   | NABAGRAM    | Isanpur             | High              |                 |
| 1306   | NABAGRAM    | Jhulanpur           | Moderate          |                 |
| 1307   | NABAGRAM    | Jurankandi          | Moderate          |                 |
| 1308   | NABAGRAM    | Kisorpur            | High              |                 |
| 1309   | NABAGRAM    | Korgram             | High              |                 |
| 1310   | NABAGRAM    | Madhunia            | High              |                 |
| 1311   | NABAGRAM    | Mahespur            | High              |                 |
| 1312   | NABAGRAM    | Mahurul             | High              |                 |
| 1313   | NABAGRAM    | Mururia             | Moderate          |                 |
| 1314   | NABAGRAM    | Nandigram           | Moderate          |                 |
| 1315   | NABAGRAM    | Pasla               | High              |                 |
| 1316   | NABAGRAM    | Pundi               | Moderate          |                 |
| 1317   | NABAGRAM    | Radhanagar          | Moderate          |                 |
| 1318   | NABAGRAM    | Rajkhanda           | High              |                 |
| 1319   | NABAGRAM    | Saheb Nagar         | Low               |                 |
| 1320   | NABAGRAM    | Saidpur             | Low               |                 |
| 1321   | NABAGRAM    | Singar              | Moderate          |                 |
| 1322   | NABAGRAM    | Targram             | Moderate          |                 |
| 1323   | NABAGRAM    | Tentulia            | Moderate          |                 |

| S. No. | DISTRICT    | BLOCK            | VILLAGE            | HAZARD CATEGORY |
|--------|-------------|------------------|--------------------|-----------------|
| 1324   | MURSHIDABAD | NABAGRAM         | Uste               | High            |
| 1325   |             | NAWDA            | Dakatiapota        | Low             |
| 1326   |             | NAWDA            | Kedarchandpur      | Low             |
| 1327   |             | NAWDA            | Patikabari         | Low             |
| 1328   |             | NAWDA            | Sakua              | Low             |
| 1329   |             | RAGHUNATHGANJ II | Binod Dighi        | Low             |
| 1330   |             | RAGHUNATHGANJ II | Dariapur           | Low             |
| 1331   |             | RAGHUNATHGANJ II | Dayarampur         | Low             |
| 1332   |             | RAGHUNATHGANJ II | Dubra              | Low             |
| 1333   |             | RAGHUNATHGANJ II | Gosainpur          | Low             |
| 1334   |             | RAGHUNATHGANJ II | Habipur            | Low             |
| 1335   |             | RAGHUNATHGANJ II | Hirkati            | Low             |
| 1336   |             | RAGHUNATHGANJ II | Hudrapur           | Low             |
| 1337   |             | RAGHUNATHGANJ II | Jal Sukha          | Low             |
| 1338   |             | RAGHUNATHGANJ II | Kutubpur           | Low             |
| 1339   |             | RAGHUNATHGANJ II | Narkol             | Low             |
| 1340   |             | RAGHUNATHGANJ II | Narukhaki          | Low             |
| 1341   |             | RAGHUNATHGANJ II | Nasipur            | Low             |
| 1342   |             | RAGHUNATHGANJ II | Piarapur           | Low             |
| 1343   |             | RAGHUNATHGANJ II | Ramdastuli         | Low             |
| 1344   |             | RAGHUNATHGANJ II | Sadpur             | Low             |
| 1345   |             | RAGHUNATHGANJ II | Sidhaigachhi       | Low             |
| 1346   |             | RANINAGAR I      | Binodpur           | Low             |
| 1347   |             | RANINAGAR I      | Jotbalram          | Low             |
| 1348   |             | RANINAGAR I      | Kanaipur           | Low             |
| 1349   |             | SAGARDIGHI       | Arazi Jadabpur     | Moderate        |
| 1350   |             | SAGARDIGHI       | Chak Sihara        | Moderate        |
| 1351   |             | SAGARDIGHI       | Dakshin Ramna      | Moderate        |
| 1352   |             | SAGARDIGHI       | Dohali Dangapara   | Moderate        |
| 1353   |             | SAGARDIGHI       | Jogpur             | Low             |
| 1354   |             | SAGARDIGHI       | Mansinghpur        | Moderate        |
| 1355   |             | SAGARDIGHI       | Telangal           | Low             |
| 1356   |             | SAMSERGANJ       | Adwaita Nagar      | Low             |
| 1357   |             | SAMSERGANJ       | Arazi Napara       | Low             |
| 1358   |             | SAMSERGANJ       | Dogachhi           | Low             |
| 1359   |             | SAMSERGANJ       | Sitarampur         | Low             |
| 1360   |             | SUTI I           | Akamba             | Low             |
| 1361   |             | SUTI I           | Bangasbati         | Low             |
| 1362   |             | SUTI I           | Dahina             | Low             |
| 1363   |             | SUTI I           | Gambhira           | Low             |
| 1364   |             | SUTI I           | Loharapara         | Low             |
| 1365   |             | SUTI I           | Mohammadpur        | Low             |
| 1366   | SUTI I      | Panchigachhi     | Low                |                 |
| 1367   | SUTI I      | Paschimnarpur    | Low                |                 |
| 1368   | SUTI I      | Sujaganpur       | Low                |                 |
| 1369   | SUTI II     | Amadaul          | Low                |                 |
| 1370   | SUTI II     | Bahagalpur       | Low                |                 |
| 1371   | SUTI II     | Basantapur       | Low                |                 |
| 1372   | SUTI II     | Bauripuni        | Low                |                 |
| 1373   | SUTI II     | Hazipur          | Low                |                 |
| 1374   | SUTI II     | Lokaipur         | Low                |                 |
| 1375   | NADIA       | CHAKDAHA         | Birpara (P)        | Low             |
| 1376   |             | CHAKDAHA         | Chak Mirjapur      | Low             |
| 1377   |             | CHAKDAHA         | Charjirat          | Low             |
| 1378   |             | CHAKDAHA         | Durllabhpur        | Low             |
| 1379   |             | CHAKDAHA         | Kadamgachhi        | Low             |
| 1380   |             | CHAKDAHA         | Malichaghar        | Low             |
| 1381   |             | CHAKDAHA         | Naosari Char       | Low             |
| 1382   |             | CHAKDAHA         | Raninagar          | Low             |
| 1383   |             | CHAKDAHA         | Raninagar Char     | Low             |
| 1384   |             | CHAKDAHA         | Srikrishnapur Char | Low             |
| 1385   |             | CHAPRA           | Goaldanga          | Low             |
| 1386   |             | CHAPRA           | Mahakala           | Low             |

| S. No. | DISTRICT          | BLOCK         | VILLAGE               | HAZARD CATEGORY |
|--------|-------------------|---------------|-----------------------|-----------------|
| 1387   | NADIA             | CHAPRA        | Pathuria              | Low             |
| 1388   |                   | HANSKHALI     | Bayardengi            | Low             |
| 1389   |                   | HANSKHALI     | Bhairab Chandrapur    | Low             |
| 1390   |                   | HANSKHALI     | Bil Bayesa            | Low             |
| 1391   |                   | HANSKHALI     | Huda Chapra           | Low             |
| 1392   |                   | HANSKHALI     | Kalipara              | Low             |
| 1393   |                   | HANSKHALI     | Tarinipur             | Low             |
| 1394   |                   | HARINGHATA    | Panpur                | Low             |
| 1395   |                   | KALIGANJ      | Char Sitahati         | Low             |
| 1396   |                   | KRISHNAGANJ   | Chak Shyamnaar        | Low             |
| 1397   |                   | KRISHNAGANJ   | Chau Gachha           | Low             |
| 1398   |                   | KRISNANAGAR I | Nidhirpota            | Low             |
| 1399   |                   | NAKASHIPARA   | Bara Simulia          | Low             |
| 1400   |                   | NAKASHIPARA   | Dhalaria              | Low             |
| 1401   |                   | RANAGHAT I    | Aram Danga            | Low             |
| 1402   |                   | RANAGHAT I    | Jhau Mahal            | Low             |
| 1403   |                   | RANAGHAT II   | Andipur Chak          | Low             |
| 1404   |                   | RANAGHAT II   | Shibchandrapur        | Low             |
| 1405   |                   | RANAGHAT II   | Uttar Bishnupur       | Low             |
| 1406   |                   | SANTIPUR      | Champaklata           | Low             |
| 1407   |                   | SANTIPUR      | Char Malatipura       | Low             |
| 1408   |                   | SANTIPUR      | Ranadi                | Low             |
| 1409   |                   | TEHATTA I     | Chak Haulia           | Low             |
| 1410   |                   | TEHATTA I     | Chak Khas Taranipur   | Low             |
| 1411   |                   | TEHATTA I     | Kamalapur             | Low             |
| 1412   |                   | TEHATTA I     | Purbba Chak Jaliapara | Low             |
| 1413   |                   | TEHATTA I     | Salua                 | Low             |
| 1414   |                   | TEHATTA II    | Biljiala              | Low             |
| 1415   |                   | TEHATTA II    | Sahebnagar            | Low             |
| 1416   |                   | TEHATTA II    | Uzirpur               | Low             |
| 1417   | NORTH 24 PARGANAS | BADURIA       | Bajitpur              | Low             |
| 1418   |                   | BADURIA       | Gandharbbapur         | Low             |
| 1419   |                   | BADURIA       | Jagannathpur          | Low             |
| 1420   |                   | BADURIA       | Kankrasuti            | Low             |
| 1421   |                   | BADURIA       | Kotalber              | Low             |
| 1422   |                   | BADURIA       | Salua                 | Low             |
| 1423   |                   | BAGDA         | Goalbagi              | Low             |
| 1424   |                   | BAGDA         | Kujarbagi             | Low             |
| 1425   |                   | BAGDA         | Makra                 | Low             |
| 1426   |                   | BAGDA         | Natabaria             | Low             |
| 1427   |                   | BAGDA         | Uttar Panchpota       | Low             |
| 1428   |                   | BASIRHAT II   | Chak Khamarpara       | Low             |
| 1429   |                   | BASIRHAT II   | Maynali               | Low             |
| 1430   |                   | BASIRHAT II   | Raharhati             | Low             |
| 1431   |                   | BASIRHAT II   | Rajalipur             | Low             |
| 1432   |                   | BASIRHAT II   | Rajnagar              | Low             |
| 1433   |                   | BASIRHAT II   | Sangbaria             | Low             |
| 1434   |                   | BASIRHAT II   | Srikrishnapur         | Low             |
| 1435   |                   | BONGAON       | Khalitpur Chak        | Low             |
| 1436   |                   | GAIGHATA      | Amankandia            | Low             |
| 1437   |                   | GAIGHATA      | Angrail               | Low             |
| 1438   |                   | GAIGHATA      | Barasehana            | Low             |
| 1439   |                   | GAIGHATA      | Barnagaria            | Low             |
| 1440   |                   | GAIGHATA      | Bhaduria              | Low             |
| 1441   |                   | GAIGHATA      | Bharadanga            | Low             |
| 1442   |                   | GAIGHATA      | Byasati               | Low             |
| 1443   |                   | GAIGHATA      | Gadadharpur           | Low             |
| 1444   |                   | GAIGHATA      | Garjala               | Low             |
| 1445   |                   | GAIGHATA      | Gazna                 | Low             |
| 1446   |                   | GAIGHATA      | Goal Bathan           | Low             |
| 1447   |                   | GAIGHATA      | Gopalpur              | Low             |
| 1448   |                   | GAIGHATA      | Jaytara               | Low             |
| 1449   |                   | GAIGHATA      | Kahankia              | Low             |



| S. No. | DISTRICT          | BLOCK            | VILLAGE             | HAZARD CATEGORY |
|--------|-------------------|------------------|---------------------|-----------------|
| 1450   | NORTH 24 PARGANAS | GAIGHATA         | Kalanchi            | Low             |
| 1451   |                   | GAIGHATA         | Kulghuti            | Low             |
| 1452   |                   | GAIGHATA         | Maraldanga          | Low             |
| 1453   |                   | GAIGHATA         | Mayna               | Low             |
| 1454   |                   | GAIGHATA         | Pipli               | Low             |
| 1455   |                   | GAIGHATA         | Purandarpur         | Low             |
| 1456   |                   | GAIGHATA         | Raghunandanpur      | Low             |
| 1457   |                   | GAIGHATA         | Shashadanga         | Low             |
| 1458   |                   | GAIGHATA         | Shripur             | Low             |
| 1459   |                   | GAIGHATA         | Tentulbaria         | Low             |
| 1460   |                   | GAIGHATA         | Tili                | Low             |
| 1461   |                   | HABRA I          | Metiagachi          | Moderate        |
| 1462   |                   | SANDESHKHALI I   | Nityabaria          | Low             |
| 1463   |                   | SANDESHKHALI I   | Putimari            | Low             |
| 1464   |                   | SANDESHKHALI I   | Radhanagar          | Low             |
| 1465   |                   | SANDESHKHALI I   | Raypur              | Low             |
| 1466   |                   | SWARUPNAGAR      | Saguna              | Low             |
| 1467   |                   | SWARUPNAGAR      | Shrirampur          | Low             |
| 1468   | SWARUPNAGAR       | Tipi             | Low                 |                 |
| 1469   | PASCHIM MEDINIPUR | CHANDROKANA I    | Agra                | Moderate        |
| 1470   |                   | CHANDROKANA I    | Bara                | Low             |
| 1471   |                   | CHANDROKANA I    | Doyan               | High            |
| 1472   |                   | CHANDROKANA I    | Gamaria             | Low             |
| 1473   |                   | CHANDROKANA I    | Gangcha             | Moderate        |
| 1474   |                   | CHANDROKANA I    | Gopalpur            | Moderate        |
| 1475   |                   | CHANDROKANA I    | Hematpur            | Low             |
| 1476   |                   | CHANDROKANA I    | Kamargere           | Low             |
| 1477   |                   | CHANDROKANA I    | Kashiganja (P)      | Low             |
| 1478   |                   | CHANDROKANA I    | Khanpur             | Low             |
| 1479   |                   | CHANDROKANA I    | Kharakpur           | Low             |
| 1480   |                   | CHANDROKANA I    | Kuldaha             | High            |
| 1481   |                   | CHANDROKANA I    | Nischintapur        | Moderate        |
| 1482   |                   | CHANDROKANA I    | Paikpara            | Moderate        |
| 1483   |                   | CHANDROKANA I    | Satitetul           | Low             |
| 1484   |                   | CHANDROKANA I    | Sitarampur          | Moderate        |
| 1485   |                   | CHANDROKANA II   | Bagpota             | Low             |
| 1486   |                   | CHANDROKANA II   | Bandipur            | Low             |
| 1487   |                   | CHANDROKANA II   | Bhotakhali          | Moderate        |
| 1488   |                   | CHANDROKANA II   | Brahmankala         | Low             |
| 1489   |                   | CHANDROKANA II   | Dhanyagachhi        | High            |
| 1490   |                   | CHANDROKANA II   | Kaigere             | Moderate        |
| 1491   |                   | CHANDROKANA II   | Radhanagar          | Low             |
| 1492   |                   | CHANDROKANA II   | Shripur             | Low             |
| 1493   |                   | DASPUR I         | Anantapur           | Low             |
| 1494   |                   | DASPUR I         | Bachhra Kundu       | High            |
| 1495   |                   | DASPUR I         | Bajrur Baikunthapur | Moderate        |
| 1496   |                   | DASPUR I         | Balakraut           | Moderate        |
| 1497   |                   | DASPUR I         | Bali Pata           | Low             |
| 1498   |                   | DASPUR I         | Balitora            | Low             |
| 1499   |                   | DASPUR I         | Balluri             | Low             |
| 1500   |                   | DASPUR I         | Bar Kashimpur       | Low             |
| 1501   |                   | DASPUR I         | Bara Mara           | Low             |
| 1502   |                   | DASPUR I         | Basantapur          | Low             |
| 1503   | DASPUR I          | Behari Chak      | High                |                 |
| 1504   | DASPUR I          | Beharichak       | High                |                 |
| 1505   | DASPUR I          | Bharatpur        | Low                 |                 |
| 1506   | DASPUR I          | Brahman Basan    | Low                 |                 |
| 1507   | DASPUR I          | Chak Bualia      | Low                 |                 |
| 1508   | DASPUR I          | Chak Prasad      | Moderate            |                 |
| 1509   | DASPUR I          | Chak Sundar      | High                |                 |
| 1510   | DASPUR I          | Chandipur        | Low                 |                 |
| 1511   | DASPUR I          | Dakshin Dhankhal | Low                 |                 |
| 1512   | DASPUR I          | Dakshin Jharria  | High                |                 |

| S. No. | DISTRICT          | BLOCK          | VILLAGE             | HAZARD CATEGORY |
|--------|-------------------|----------------|---------------------|-----------------|
| 1513   | PASCHIM MEDINIPUR | DASPUR I       | Danikola            | High            |
| 1514   |                   | DASPUR I       | Dharmma             | Low             |
| 1515   |                   | DASPUR I       | Dharmmasagar        | Low             |
| 1516   |                   | DASPUR I       | Dihi Baliharpur     | Low             |
| 1517   |                   | DASPUR I       | Dhipalsa            | Low             |
| 1518   |                   | DASPUR I       | Gadaipur            | Low             |
| 1519   |                   | DASPUR I       | Gangaprasad         | Moderate        |
| 1520   |                   | DASPUR I       | Gobra Kundu         | High            |
| 1521   |                   | DASPUR I       | Gurli               | Low             |
| 1522   |                   | DASPUR I       | Haja Kundu          | Low             |
| 1523   |                   | DASPUR I       | Harirajpur          | High            |
| 1524   |                   | DASPUR I       | Hosenpur            | Low             |
| 1525   |                   | DASPUR I       | Jaykrishnapur       | Low             |
| 1526   |                   | DASPUR I       | Jhumjhumi           | Low             |
| 1527   |                   | DASPUR I       | Jyotisab            | Low             |
| 1528   |                   | DASPUR I       | Kadirpur Fakirbazar | Low             |
| 1529   |                   | DASPUR I       | Kalyanpur           | Low             |
| 1530   |                   | DASPUR I       | Kantadarja          | High            |
| 1531   |                   | DASPUR I       | Kismat Narajol      | High            |
| 1532   |                   | DASPUR I       | Kotalpur            | Low             |
| 1533   |                   | DASPUR I       | Krishnanagar        | Low             |
| 1534   |                   | DASPUR I       | Laoda               | Low             |
| 1535   |                   | DASPUR I       | Majilishpur         | Low             |
| 1536   |                   | DASPUR I       | Makarampur          | Low             |
| 1537   |                   | DASPUR I       | Manikpur            | Moderate        |
| 1538   |                   | DASPUR I       | Metyasora           | High            |
| 1539   |                   | DASPUR I       | Nandanpur           | Low             |
| 1540   |                   | DASPUR I       | Nij Narajol         | Low             |
| 1541   |                   | DASPUR I       | Nijampur            | Moderate        |
| 1542   |                   | DASPUR I       | Paikanbalia         | High            |
| 1543   |                   | DASPUR I       | Paikhanlakshmi      | Moderate        |
| 1544   |                   | DASPUR I       | Patla               | Moderate        |
| 1545   |                   | DASPUR I       | Poshtanka           | Low             |
| 1546   |                   | DASPUR I       | Rabidaspur          | Low             |
| 1547   |                   | DASPUR I       | Radha Krishnapur    | Low             |
| 1548   |                   | DASPUR I       | Raikundu            | High            |
| 1549   |                   | DASPUR I       | Rajnagar            | High            |
| 1550   |                   | DASPUR I       | Rambati             | Low             |
| 1551   |                   | DASPUR I       | Ramchandrapur       | Low             |
| 1552   |                   | DASPUR I       | Ramdas Pur          | Low             |
| 1553   |                   | DASPUR I       | Ramdebpur           | High            |
| 1554   |                   | DASPUR I       | Ratnapur            | Low             |
| 1555   |                   | DASPUR I       | Saiyadkarim         | Low             |
| 1556   |                   | DASPUR I       | Salampur            | Low             |
| 1557   |                   | DASPUR I       | Samat               | High            |
| 1558   | DASPUR I          | Sarberya       | Low                 |                 |
| 1559   | DASPUR I          | Sekendari      | Moderate            |                 |
| 1560   | DASPUR I          | Simana         | Low                 |                 |
| 1561   | DASPUR I          | Singaghai      | High                |                 |
| 1562   | DASPUR I          | Supapursuri    | Low                 |                 |
| 1563   | DASPUR I          | Suratpur       | Low                 |                 |
| 1564   | DASPUR I          | Uttar Dhankhal | Low                 |                 |
| 1565   | DASPUR I          | Uttar Jharia   | High                |                 |
| 1566   | DASPUR II         | Adampur        | Low                 |                 |
| 1567   | DASPUR II         | Alipur         | Low                 |                 |
| 1568   | DASPUR II         | Arit           | Low                 |                 |
| 1569   | DASPUR II         | Benai          | Low                 |                 |
| 1570   | DASPUR II         | Bhagabatipur   | High                |                 |
| 1571   | DASPUR II         | Bhuta          | Low                 |                 |
| 1572   | DASPUR II         | Bishnupur      | Low                 |                 |
| 1573   | DASPUR II         | Chak Dogachhia | Low                 |                 |
| 1574   | DASPUR II         | Chak Madaria   | Low                 |                 |
| 1575   | DASPUR II         | Dakshin Bar    | Low                 |                 |

| S. No. | DISTRICT          | BLOCK            | VILLAGE              | HAZARD CATEGORY |
|--------|-------------------|------------------|----------------------|-----------------|
| 1576   | PASCHIM MEDINIPUR | DASPUR II        | Dari Ajodhya         | High            |
| 1577   |                   | DASPUR II        | Faridpur             | Low             |
| 1578   |                   | DASPUR II        | Gomakpota            | Low             |
| 1579   |                   | DASPUR II        | Gopalpur             | Low             |
| 1580   |                   | DASPUR II        | Hajraberya           | Low             |
| 1581   |                   | DASPUR II        | Isabpur              | Low             |
| 1582   |                   | DASPUR II        | Jajpur               | Low             |
| 1583   |                   | DASPUR II        | Jayram Chak          | Low             |
| 1584   |                   | DASPUR II        | Jot Kanusamgar       | Moderate        |
| 1585   |                   | DASPUR II        | Jotmaniram           | Low             |
| 1586   |                   | DASPUR II        | Kaigerya             | Low             |
| 1587   |                   | DASPUR II        | Kaijuri              | Low             |
| 1588   |                   | DASPUR II        | Kashinathpur         | Low             |
| 1589   |                   | DASPUR II        | Kelegoda             | Low             |
| 1590   |                   | DASPUR II        | Khash Chak           | Moderate        |
| 1591   |                   | DASPUR II        | Kucha Mari           | Moderate        |
| 1592   |                   | DASPUR II        | Lakshman Chak        | Low             |
| 1593   |                   | DASPUR II        | Lakshya Kundu        | Low             |
| 1594   |                   | DASPUR II        | Manikdipa            | Low             |
| 1595   |                   | DASPUR II        | Nabin Manua          | Low             |
| 1596   |                   | DASPUR II        | Narayan Chak         | Low             |
| 1597   |                   | DASPUR II        | Nischintapur         | Low             |
| 1598   |                   | DASPUR II        | Palashpai            | Low             |
| 1599   |                   | DASPUR II        | Panch Gechia Part- I | Low             |
| 1600   |                   | DASPUR II        | Radha Ballabh Chak   | Low             |
| 1601   |                   | DASPUR II        | Ramkrishnapur        | Moderate        |
| 1602   |                   | DASPUR II        | Ramnagar             | Low             |
| 1603   |                   | DASPUR II        | Ranichak             | Low             |
| 1604   |                   | DASPUR II        | Shripur              | Low             |
| 1605   |                   | DASPUR II        | Shyam Chak           | Low             |
| 1606   |                   | DASPUR II        | Sitapur              | Low             |
| 1607   |                   | DASPUR II        | Udaychak             | Low             |
| 1608   |                   | DATAN I          | Baulkandi            | Low             |
| 1609   |                   | DATAN I          | Bindha               | Low             |
| 1610   |                   | DATAN I          | Chak Jal Palnia      | Low             |
| 1611   |                   | DATAN I          | Chuna Ganja          | Low             |
| 1612   |                   | DATAN I          | Dahuka               | Low             |
| 1613   |                   | DATAN I          | Dobisa               | Low             |
| 1614   |                   | DATAN I          | Gazipur Patna        | Low             |
| 1615   |                   | DATAN I          | Harichak             | Low             |
| 1616   |                   | DATAN I          | Khanipur             | Low             |
| 1617   |                   | DATAN I          | Kharakhai            | Low             |
| 1618   |                   | DATAN I          | Lal Pur              | Low             |
| 1619   |                   | DATAN I          | Maljamuna            | Low             |
| 1620   |                   | DATAN I          | Mani Kara            | Low             |
| 1621   |                   | DATAN I          | Menakapur            | Low             |
| 1622   |                   | DATAN I          | Palania              | Low             |
| 1623   |                   | DATAN I          | Pundra               | Low             |
| 1624   | DATAN I           | Raypaikbar Uttar | Low                  |                 |
| 1625   | DATAN I           | Srikrishnapur    | Low                  |                 |
| 1626   | DATAN II          | Binjha Geria     | Low                  |                 |
| 1627   | DATAN II          | Daharda          | Low                  |                 |
| 1628   | DATAN II          | Dhukurda         | Low                  |                 |
| 1629   | DATAN II          | Lalu Chak        | Low                  |                 |
| 1630   | DATAN II          | Mirjapur         | Low                  |                 |
| 1631   | DATAN II          | Purusottampur    | Low                  |                 |
| 1632   | DATAN II          | Saipur           | Low                  |                 |
| 1633   | DATAN II          | Santoshpur       | Low                  |                 |
| 1634   | DATAN II          | Shyamsundarpur   | Low                  |                 |
| 1635   | DEBRA             | Akalpaush        | Low                  |                 |
| 1636   | DEBRA             | Amarpur          | Low                  |                 |
| 1637   | DEBRA             | Ayma Habibulla   | Low                  |                 |
| 1638   | DEBRA             | Ayma Kalandar    | Low                  |                 |

| S. No. | DISTRICT          | BLOCK              | VILLAGE            | HAZARD CATEGORY |
|--------|-------------------|--------------------|--------------------|-----------------|
| 1639   | PASCHIM MEDINIPUR | DEBRA              | Baikunthapur       | Low             |
| 1640   |                   | DEBRA              | Bal Banda          | Low             |
| 1641   |                   | DEBRA              | Balabhadrapur      | Low             |
| 1642   |                   | DEBRA              | Ballabhpur         | Low             |
| 1643   |                   | DEBRA              | Banamalipur        | Low             |
| 1644   |                   | DEBRA              | Bar Madhabpur      | Low             |
| 1645   |                   | DEBRA              | Barati             | Low             |
| 1646   |                   | DEBRA              | Baulasini          | Low             |
| 1647   |                   | DEBRA              | Beuchia Farid Chak | Low             |
| 1648   |                   | DEBRA              | Bhagirathpur       | Low             |
| 1649   |                   | DEBRA              | Bhampur            | Low             |
| 1650   |                   | DEBRA              | Bharatpur          | Low             |
| 1651   |                   | DEBRA              | Bihari Chak        | Moderate        |
| 1652   |                   | DEBRA              | Birpur             | Moderate        |
| 1653   |                   | DEBRA              | Bishnupur          | Low             |
| 1654   |                   | DEBRA              | Brahman Shasan     | Low             |
| 1655   |                   | DEBRA              | Brindabanpur       | Low             |
| 1656   |                   | DEBRA              | Chak Arjjuni       | Low             |
| 1657   |                   | DEBRA              | Chak Bahadur       | Low             |
| 1658   |                   | DEBRA              | Chak Bahadur       | Low             |
| 1659   |                   | DEBRA              | Chak Balbanda      | Low             |
| 1660   |                   | DEBRA              | Chak Basu          | Low             |
| 1661   |                   | DEBRA              | Chak Bishnupur     | Low             |
| 1662   |                   | DEBRA              | Chak Darbar        | Low             |
| 1663   |                   | DEBRA              | Chak Gobinda       | Low             |
| 1664   |                   | DEBRA              | Chak Kripan        | Moderate        |
| 1665   |                   | DEBRA              | Chak Mamud         | Low             |
| 1666   |                   | DEBRA              | Chak Palmal        | Low             |
| 1667   |                   | DEBRA              | Chak Prananath     | Moderate        |
| 1668   |                   | DEBRA              | Chak Prayag        | Moderate        |
| 1669   |                   | DEBRA              | Chak Purusottam    | Low             |
| 1670   |                   | DEBRA              | Chak Sarsa         | Low             |
| 1671   |                   | DEBRA              | Chak Tara          | Low             |
| 1672   |                   | DEBRA              | Chak Tatar         | Moderate        |
| 1673   |                   | DEBRA              | Chandanpur         | Low             |
| 1674   |                   | DEBRA              | Damodarpur         | Low             |
| 1675   |                   | DEBRA              | Damodarpur         | Low             |
| 1676   | DEBRA             | Damodarpur         | Low                |                 |
| 1677   | DEBRA             | Daulat Chak        | Low                |                 |
| 1678   | DEBRA             | Dhan Dangra        | Low                |                 |
| 1679   | DEBRA             | Dwarkhola          | Low                |                 |
| 1680   | DEBRA             | Golgram            | Low                |                 |
| 1681   | DEBRA             | Gopalpur           | Low                |                 |
| 1682   | DEBRA             | Gotgerya           | Low                |                 |
| 1683   | DEBRA             | Hadira             | Low                |                 |
| 1684   | DEBRA             | Harina Dangi       | Low                |                 |
| 1685   | DEBRA             | Itai               | Low                |                 |
| 1686   | DEBRA             | Jabagerya          | Low                |                 |
| 1687   | DEBRA             | Jagadishpur        | Low                |                 |
| 1688   | DEBRA             | Jamal Chak         | Low                |                 |
| 1689   | DEBRA             | Jaydebpur          | Low                |                 |
| 1690   | DEBRA             | Jaykrishnapur      | Low                |                 |
| 1691   | DEBRA             | Jot Narayan        | Low                |                 |
| 1692   | DEBRA             | Jotharo            | Low                |                 |
| 1693   | DEBRA             | Joykrishnapur      | Low                |                 |
| 1694   | DEBRA             | Kalapunja          | Low                |                 |
| 1695   | DEBRA             | Kanchanpur         | Low                |                 |
| 1696   | DEBRA             | Kantha Gerya       | Low                |                 |
| 1697   | DEBRA             | Khajuri Chak Kakra | Low                |                 |
| 1698   | DEBRA             | Khari Gerya        | Low                |                 |
| 1699   | DEBRA             | Khas Bar           | Low                |                 |
| 1700   | DEBRA             | Kishmat Dhamtor    | Low                |                 |
| 1701   | DEBRA             | Kishor Chak        | Low                |                 |

| S. No. | DISTRICT          | BLOCK             | VILLAGE                 | HAZARD CATEGORY |
|--------|-------------------|-------------------|-------------------------|-----------------|
| 1702   | PASCHIM MEDINIPUR | DEBRA             | Kismat Papan            | Low             |
| 1703   |                   | DEBRA             | Krishnapur              | Low             |
| 1704   |                   | DEBRA             | Kulya                   | Low             |
| 1705   |                   | DEBRA             | Manglai                 | Low             |
| 1706   |                   | DEBRA             | Manoharpur              | Low             |
| 1707   |                   | DEBRA             | Mukteshwar              | Low             |
| 1708   |                   | DEBRA             | Nandeshwar              | Low             |
| 1709   |                   | DEBRA             | Naraharipur             | Low             |
| 1710   |                   | DEBRA             | Panchberya              | Low             |
| 1711   |                   | DEBRA             | Pandat                  | Low             |
| 1712   |                   | DEBRA             | Paruldihi               | Low             |
| 1713   |                   | DEBRA             | Paschim Baita           | Low             |
| 1714   |                   | DEBRA             | Purbba Baita            | Low             |
| 1715   |                   | DEBRA             | Purushottampur          | Low             |
| 1716   |                   | DEBRA             | Rasulpur                | Low             |
| 1717   |                   | DEBRA             | Sanshara                | Low             |
| 1718   |                   | DEBRA             | Saranja                 | Low             |
| 1719   |                   | DEBRA             | Sekendar Chak           | Low             |
| 1720   |                   | DEBRA             | Serpur                  | Low             |
| 1721   |                   | DEBRA             | Sinua                   | Low             |
| 1722   |                   | DEBRA             | Sriballabhpur           | Low             |
| 1723   |                   | DEBRA             | Srirampur               | Moderate        |
| 1724   |                   | DEBRA             | Tangaishri              | Low             |
| 1725   |                   | DEBRA             | Taradighi 2Nd Part      | Low             |
| 1726   |                   | DEBRA             | Teghari                 | Low             |
| 1727   |                   | GHATAL            | Ajabnagar               | Low             |
| 1728   |                   | GHATAL            | Ajodhyakundu            | High            |
| 1729   |                   | GHATAL            | Anandapur               | Low             |
| 1730   |                   | GHATAL            | Anandapur Sundarpur     | Moderate        |
| 1731   |                   | GHATAL            | Baghanala               | Low             |
| 1732   |                   | GHATAL            | Balidanga               | Low             |
| 1733   |                   | GHATAL            | Banaharisinghapur       | Low             |
| 1734   |                   | GHATAL            | Baranadi                | High            |
| 1735   |                   | GHATAL            | Barnabin                | Low             |
| 1736   |                   | GHATAL            | Belshwar                | Low             |
| 1737   |                   | GHATAL            | Bhagirathpur            | High            |
| 1738   |                   | GHATAL            | Bhangadaha              | Moderate        |
| 1739   |                   | GHATAL            | Bheribalaramkundu       | High            |
| 1740   |                   | GHATAL            | Brindabanchak           | High            |
| 1741   |                   | GHATAL            | Chaksadi                | Low             |
| 1742   |                   | GHATAL            | Chauka                  | High            |
| 1743   |                   | GHATAL            | Chaulisinghapur (P)     | Low             |
| 1744   |                   | GHATAL            | Daulatchak              | Moderate        |
| 1745   |                   | GHATAL            | Dewanchak               | Moderate        |
| 1746   |                   | GHATAL            | Dewanchak               | Moderate        |
| 1747   |                   | GHATAL            | Dharmmapur              | Low             |
| 1748   |                   | GHATAL            | Dubrajkundu             | High            |
| 1749   |                   | GHATAL            | Gangadaspur             | Moderate        |
| 1750   |                   | GHATAL            | Gangaprasad             | Moderate        |
| 1751   |                   | GHATAL            | Ghola                   | Low             |
| 1752   |                   | GHATAL            | Gholshahi               | Low             |
| 1753   |                   | GHATAL            | Gopalnagar              | High            |
| 1754   |                   | GHATAL            | Gopmohal Urf Manoharpur | Moderate        |
| 1755   |                   | GHATAL            | Harishpur               | Low             |
| 1756   | GHATAL            | Hemantapur        | Moderate                |                 |
| 1757   | GHATAL            | Jamira            | Moderate                |                 |
| 1758   | GHATAL            | Jay Krishnapur    | High                    |                 |
| 1759   | GHATAL            | Jaykunda          | Low                     |                 |
| 1760   | GHATAL            | Kalichak          | High                    |                 |
| 1761   | GHATAL            | Katan             | Low                     |                 |
| 1762   | GHATAL            | Kharigeria        | Low                     |                 |
| 1763   | GHATAL            | Konarpur          | Low                     |                 |
| 1764   | GHATAL            | Krishnaballabhpur | Moderate                |                 |

| S. No. | DISTRICT          | BLOCK         | VILLAGE               | HAZARD CATEGORY |
|--------|-------------------|---------------|-----------------------|-----------------|
| 1765   | PASCHIM MEDINIPUR | GHATAL        | Krishnabati           | High            |
| 1766   |                   | GHATAL        | Kshudramonoharpur     | Moderate        |
| 1767   |                   | GHATAL        | Lalkundu              | High            |
| 1768   |                   | GHATAL        | Maharajpur            | Low             |
| 1769   |                   | GHATAL        | Malancha              | Moderate        |
| 1770   |                   | GHATAL        | Mandarpur             | Low             |
| 1771   |                   | GHATAL        | Mansukha              | Moderate        |
| 1772   |                   | GHATAL        | Mohanchak             | Moderate        |
| 1773   |                   | GHATAL        | Narayanpur            | Low             |
| 1774   |                   | GHATAL        | Panna                 | Moderate        |
| 1775   |                   | GHATAL        | Patharchak Gobindapur | Low             |
| 1776   |                   | GHATAL        | Prasadchak            | High            |
| 1777   |                   | GHATAL        | Pratappur             | Low             |
| 1778   |                   | GHATAL        | Radha Ballabhpur      | Moderate        |
| 1779   |                   | GHATAL        | Radhachak             | Moderate        |
| 1780   |                   | GHATAL        | Radhakantapur         | Low             |
| 1781   |                   | GHATAL        | Raghunath Kundupur    | High            |
| 1782   |                   | GHATAL        | Raghunathpur          | Moderate        |
| 1783   |                   | GHATAL        | Rathipur              | High            |
| 1784   |                   | GHATAL        | Ratneshwar Bati       | Low             |
| 1785   |                   | GHATAL        | Shilarajnagar         | Low             |
| 1786   |                   | GHATAL        | Shimulia              | Moderate        |
| 1787   |                   | GHATAL        | Shitalpur             | Low             |
| 1788   |                   | GHATAL        | Shrirampur            | Low             |
| 1789   |                   | GHATAL        | Shrirampur (P)        | Moderate        |
| 1790   |                   | GHATAL        | Shyamchak             | High            |
| 1791   |                   | GHATAL        | Shyampur (P)          | Moderate        |
| 1792   |                   | GHATAL        | Shyamsundarpur        | High            |
| 1793   |                   | GHATAL        | Singhachak            | Low             |
| 1794   |                   | GHATAL        | Sultanpur             | Moderate        |
| 1795   |                   | GHATAL        | Thabapur              | Low             |
| 1796   |                   | GHATAL        | Thakurianichak        | High            |
| 1797   |                   | KESHIARY      | Bangora               | Low             |
| 1798   |                   | KESHIARY      | Barada                | Low             |
| 1799   |                   | KESHIARY      | Bararia               | Low             |
| 1800   |                   | KESHIARY      | Bari                  | Low             |
| 1801   |                   | KESHIARY      | Bari Bandku           | Low             |
| 1802   |                   | KESHIARY      | Behara Shai           | Low             |
| 1803   |                   | KESHIARY      | Beli                  | Low             |
| 1804   |                   | KESHIARY      | Belut                 | Low             |
| 1805   |                   | KESHIARY      | Bhadra                | Low             |
| 1806   |                   | KESHIARY      | Bhelampur             | Low             |
| 1807   |                   | KESHIARY      | Chakbila              | Low             |
| 1808   |                   | KESHIARY      | Chakla                | Low             |
| 1809   |                   | KESHIARY      | Chenga                | Low             |
| 1810   |                   | KESHIARY      | Chhatrar              | Low             |
| 1811   |                   | KESHIARY      | Chhota Bagasthi       | Low             |
| 1812   |                   | KESHIARY      | Dehattachak           | Low             |
| 1813   | KESHIARY          | Dhanian       | Low                   |                 |
| 1814   | KESHIARY          | Gaighata      | Low                   |                 |
| 1815   | KESHIARY          | Ghola         | Low                   |                 |
| 1816   | KESHIARY          | Hasim Pur     | Low                   |                 |
| 1817   | KESHIARY          | Indra         | Low                   |                 |
| 1818   | KESHIARY          | Jagannath Pur | Low                   |                 |
| 1819   | KESHIARY          | Jagannathpara | Moderate              |                 |
| 1820   | KESHIARY          | Kalta         | Moderate              |                 |
| 1821   | KESHIARY          | Kalta         | Moderate              |                 |
| 1822   | KESHIARY          | Kanchanpur    | Moderate              |                 |
| 1823   | KESHIARY          | Kanrarol      | Moderate              |                 |
| 1824   | KESHIARY          | Keshiari      | Moderate              |                 |
| 1825   | KESHIARY          | Khamar Dasani | Moderate              |                 |
| 1826   | KESHIARY          | Kharipara     | Moderate              |                 |
| 1827   | KESHIARY          | Khokra        | Moderate              |                 |

| S. No. | DISTRICT          | BLOCK              | VILLAGE        | HAZARD CATEGORY |
|--------|-------------------|--------------------|----------------|-----------------|
| 1828   | PASCHIM MEDINIPUR | KESHIARY           | Kiar Chandra   | Moderate        |
| 1829   |                   | KESHIARY           | Kusumppur      | Moderate        |
| 1830   |                   | KESHIARY           | Ledium         | Moderate        |
| 1831   |                   | KESHIARY           | Marrui         | Low             |
| 1832   |                   | KESHIARY           | Meghdambur     | Moderate        |
| 1833   |                   | KESHIARY           | Muktapur       | Moderate        |
| 1834   |                   | KESHIARY           | Murabani       | Moderate        |
| 1835   |                   | KESHIARY           | Napo           | Moderate        |
| 1836   |                   | KESHIARY           | Palsita        | Moderate        |
| 1837   |                   | KESHIARY           | Parula         | Moderate        |
| 1838   |                   | KESHIARY           | Pathandiha     | Low             |
| 1839   |                   | KESHIARY           | Sarri Pur      | Low             |
| 1840   |                   | KESHIARY           | Senna          | Low             |
| 1841   |                   | KESHIARY           | Siankul        | Low             |
| 1842   |                   | KESHIARY           | Sukarol        | Low             |
| 1843   |                   | KESHIARY           | Tentulia       | Low             |
| 1844   |                   | KESHPUR            | Akna           | Low             |
| 1845   |                   | KESHPUR            | Akurya         | Low             |
| 1846   |                   | KESHPUR            | Amgerya        | Low             |
| 1847   |                   | KESHPUR            | Amritpur       | Low             |
| 1848   |                   | KESHPUR            | Amurya         | High            |
| 1849   |                   | KESHPUR            | Andi Chak      | Low             |
| 1850   |                   | KESHPUR            | Andulya        | Low             |
| 1851   |                   | KESHPUR            | Ayma Chak      | Low             |
| 1852   |                   | KESHPUR            | Bagha Gerya    | Low             |
| 1853   |                   | KESHPUR            | Bagmari        | Low             |
| 1854   |                   | KESHPUR            | Bahali         | Low             |
| 1855   |                   | KESHPUR            | Bajgerya       | Low             |
| 1856   |                   | KESHPUR            | Bansh Gerya    | Low             |
| 1857   |                   | KESHPUR            | Banshi Bani    | Low             |
| 1858   |                   | KESHPUR            | Bara Pasha     | Low             |
| 1859   |                   | KESHPUR            | Basudebpur     | Low             |
| 1860   |                   | KESHPUR            | Bejara         | Low             |
| 1861   |                   | KESHPUR            | Belerya        | Low             |
| 1862   |                   | KESHPUR            | Belgerya       | Low             |
| 1863   |                   | KESHPUR            | Beucha         | Low             |
| 1864   |                   | KESHPUR            | Bhol Sarapota  | Moderate        |
| 1865   |                   | KESHPUR            | Bhut Gerya     | Low             |
| 1866   |                   | KESHPUR            | Bilasbar       | Low             |
| 1867   |                   | KESHPUR            | Birbira        | Low             |
| 1868   |                   | KESHPUR            | Biripota       | Low             |
| 1869   |                   | KESHPUR            | Bishwanath Pur | Low             |
| 1870   | KESHPUR           | Brahaman Chak      | Low            |                 |
| 1871   | KESHPUR           | Brindaban Chak     | Low            |                 |
| 1872   | KESHPUR           | Chand Khali        | Moderate       |                 |
| 1873   | KESHPUR           | Chatla             | Low            |                 |
| 1874   | KESHPUR           | Chatla             | Low            |                 |
| 1875   | KESHPUR           | Chhota Gopinathpur | Low            |                 |
| 1876   | KESHPUR           | Chota Chandbar     | Low            |                 |
| 1877   | KESHPUR           | Damdama            | Moderate       |                 |
| 1878   | KESHPUR           | Damgerya           | Low            |                 |
| 1879   | KESHPUR           | Dapur              | Low            |                 |
| 1880   | KESHPUR           | Daud Chak          | Low            |                 |
| 1881   | KESHPUR           | Daulat Chak        | Low            |                 |
| 1882   | KESHPUR           | Dharmma Pur        | Low            |                 |
| 1883   | KESHPUR           | Dhoba Gerya        | Low            |                 |
| 1884   | KESHPUR           | Digha              | Low            |                 |
| 1885   | KESHPUR           | Dosatina           | Low            |                 |
| 1886   | KESHPUR           | Dundur Kundu       | Moderate       |                 |
| 1887   | KESHPUR           | Enat Chak          | Low            |                 |
| 1888   | KESHPUR           | Gachh Gerya        | Low            |                 |
| 1889   | KESHPUR           | Gamar Gerya        | Low            |                 |
| 1890   | KESHPUR           | Gamar Hati         | Low            |                 |

| S. No. | DISTRICT          | BLOCK          | VILLAGE             | HAZARD CATEGORY |
|--------|-------------------|----------------|---------------------|-----------------|
| 1891   | PASCHIM MEDINIPUR | KESHPUR        | Geri Kala           | High            |
| 1892   |                   | KESHPUR        | Gholai              | Low             |
| 1893   |                   | KESHPUR        | Ghosh Diha          | Low             |
| 1894   |                   | KESHPUR        | Gopinath Jol        | Low             |
| 1895   |                   | KESHPUR        | Gopinathpur         | Low             |
| 1896   |                   | KESHPUR        | Goraipur            | Low             |
| 1897   |                   | KESHPUR        | Got Gerya           | Low             |
| 1898   |                   | KESHPUR        | Gumir Chak          | Moderate        |
| 1899   |                   | KESHPUR        | Guru Thapal         | Low             |
| 1900   |                   | KESHPUR        | Gurur Gohal         | Low             |
| 1901   |                   | KESHPUR        | Harihar Chak        | Moderate        |
| 1902   |                   | KESHPUR        | Harina              | Low             |
| 1903   |                   | KESHPUR        | Herya               | Low             |
| 1904   |                   | KESHPUR        | Hijli               | Low             |
| 1905   |                   | KESHPUR        | Jamira              | Low             |
| 1906   |                   | KESHPUR        | Jamunaber           | Moderate        |
| 1907   |                   | KESHPUR        | Jhalka              | Moderate        |
| 1908   |                   | KESHPUR        | Jhinuka             | Low             |
| 1909   |                   | KESHPUR        | Jiagerya            | Low             |
| 1910   |                   | KESHPUR        | Kaigerya            | Low             |
| 1911   |                   | KESHPUR        | Kalaberya           | Low             |
| 1912   |                   | KESHPUR        | Kana Khali          | Low             |
| 1913   |                   | KESHPUR        | Kanchan Tala        | Low             |
| 1914   |                   | KESHPUR        | Kanpur              | Moderate        |
| 1915   |                   | KESHPUR        | Kanunya             | Moderate        |
| 1916   |                   | KESHPUR        | Kashipur            | Moderate        |
| 1917   |                   | KESHPUR        | Khamar Pota         | Moderate        |
| 1918   |                   | KESHPUR        | Kia Gerya           | Low             |
| 1919   |                   | KESHPUR        | Konan               | Low             |
| 1920   |                   | KESHPUR        | Krishnanagar Kismat | Low             |
| 1921   |                   | KESHPUR        | Kuralya             | Low             |
| 1922   |                   | KESHPUR        | Kush Gerya          | Low             |
| 1923   |                   | KESHPUR        | Kutbi Chak          | Low             |
| 1924   |                   | KESHPUR        | Madhupur            | Moderate        |
| 1925   |                   | KESHPUR        | Mahisha Dani        | Moderate        |
| 1926   |                   | KESHPUR        | Mani Nageshwar      | Low             |
| 1927   |                   | KESHPUR        | Manush Mari         | Moderate        |
| 1928   |                   | KESHPUR        | Math Magra          | Moderate        |
| 1929   |                   | KESHPUR        | Mishri Chak         | Low             |
| 1930   |                   | KESHPUR        | Mohadi Chak         | Low             |
| 1931   |                   | KESHPUR        | Mollya Chak         | Low             |
| 1932   |                   | KESHPUR        | Nurpur              | Moderate        |
| 1933   |                   | KESHPUR        | Padima Shyam Chak   | Moderate        |
| 1934   |                   | KESHPUR        | Paharchak           | Low             |
| 1935   |                   | KESHPUR        | Paikan Ghoshpur     | Low             |
| 1936   |                   | KESHPUR        | Palangpur           | Moderate        |
| 1937   |                   | KESHPUR        | Pindra Gerya        | Low             |
| 1938   |                   | KESHPUR        | Purbba Thaur        | Moderate        |
| 1939   |                   | KESHPUR        | Radhakantapur       | Moderate        |
| 1940   |                   | KESHPUR        | Raghunathpur        | Moderate        |
| 1941   |                   | KESHPUR        | Raipur              | Low             |
| 1942   |                   | KESHPUR        | Rashun Chak         | Low             |
| 1943   |                   | KESHPUR        | Rasunchak           | Low             |
| 1944   | KESHPUR           | Rauta          | Low                 |                 |
| 1945   | KESHPUR           | Rauta          | Low                 |                 |
| 1946   | KESHPUR           | Sadhak Chak    | Moderate            |                 |
| 1947   | KESHPUR           | Sadi Chak      | Low                 |                 |
| 1948   | KESHPUR           | Sahara         | Low                 |                 |
| 1949   | KESHPUR           | Sapna          | Moderate            |                 |
| 1950   | KESHPUR           | Shrimanta Chak | Low                 |                 |
| 1951   | KESHPUR           | Sirasati       | Low                 |                 |
| 1952   | KESHPUR           | Suratpur       | High                |                 |
| 1953   | KESHPUR           | Taba Gerya     | Moderate            |                 |



| S. No. | DISTRICT          | BLOCK               | VILLAGE          | HAZARD CATEGORY |
|--------|-------------------|---------------------|------------------|-----------------|
| 1954   | PASCHIM MEDINIPUR | KESHPUR             | Tapuria          | Low             |
| 1955   |                   | KESHPUR             | Taruk Gerya      | Low             |
| 1956   |                   | KESHPUR             | Teghari          | Low             |
| 1957   |                   | KESHPUR             | Tentul Muri      | Low             |
| 1958   |                   | KESHPUR             | Thaur            | Moderate        |
| 1959   |                   | KESHPUR             | Tukunia Kundu    | Moderate        |
| 1960   |                   | KESHPUR             | Uttar Gerya      | Low             |
| 1961   |                   | KESHPUR             | Uttar Kenosa     | Low             |
| 1962   |                   | KHARAGPUR I         | Kashijora        | Low             |
| 1963   |                   | KHARAGPUR II        | Kubirchak        | Moderate        |
| 1964   |                   | MEDINIPUR           | Agarpara         | Low             |
| 1965   |                   | MEDINIPUR           | Balaban Dighi    | Low             |
| 1966   |                   | MEDINIPUR           | Bindaghait       | Low             |
| 1967   |                   | MEDINIPUR           | Birpur           | Low             |
| 1968   |                   | MEDINIPUR           | Chak Daulat      | Low             |
| 1969   |                   | MEDINIPUR           | Chhutar Gerya    | Low             |
| 1970   |                   | MEDINIPUR           | Gachhgerya       | Moderate        |
| 1971   |                   | MEDINIPUR           | Gapainathpur     | Moderate        |
| 1972   |                   | MEDINIPUR           | Kalinagar        | Low             |
| 1973   |                   | MEDINIPUR           | Kesui            | Moderate        |
| 1974   |                   | MEDINIPUR           | Pithadangar      | Low             |
| 1975   |                   | MEDINIPUR           | Rataribar        | Low             |
| 1976   |                   | MEDINIPUR           | Shyamsundarpur   | Low             |
| 1977   |                   | MEDINIPUR           | Udaypur          | Low             |
| 1978   |                   | MOHANPUR            | Mathuribar       | Low             |
| 1979   |                   | MOHANPUR            | Mukundapur       | Low             |
| 1980   |                   | NARAYANGARH         | Ahira Chak       | Low             |
| 1981   |                   | NARAYANGARH         | Amarsia          | Low             |
| 1982   |                   | NARAYANGARH         | Ambidhangar      | Low             |
| 1983   |                   | NARAYANGARH         | Amikundi         | Low             |
| 1984   |                   | NARAYANGARH         | Amuria           | Low             |
| 1985   |                   | NARAYANGARH         | Asde             | Low             |
| 1986   |                   | NARAYANGARH         | Banshipur        | Low             |
| 1987   |                   | NARAYANGARH         | Bartarashya      | Low             |
| 1988   |                   | NARAYANGARH         | Baylajaygir      | Low             |
| 1989   |                   | NARAYANGARH         | Bhaobhtna        | Low             |
| 1990   |                   | NARAYANGARH         | Chak Arjjuni     | Low             |
| 1991   |                   | NARAYANGARH         | Chak Barasati    | Low             |
| 1992   |                   | NARAYANGARH         | Chak Chhakupal   | Low             |
| 1993   |                   | NARAYANGARH         | Chak Gobindabera | Low             |
| 1994   |                   | NARAYANGARH         | Chak Jatlya      | Low             |
| 1995   |                   | NARAYANGARH         | Chak Purushottam | Low             |
| 1996   | NARAYANGARH       | Chak Uddhab Rakshit | Low              |                 |
| 1997   | NARAYANGARH       | Chandpur            | Low              |                 |
| 1998   | NARAYANGARH       | Chhatrishbete       | Moderate         |                 |
| 1999   | NARAYANGARH       | Dakshin Lohapur     | Low              |                 |
| 2000   | NARAYANGARH       | Dakshin Palasi      | Moderate         |                 |
| 2001   | NARAYANGARH       | Dalaibar            | Low              |                 |
| 2002   | NARAYANGARH       | Desh Chak           | Low              |                 |
| 2003   | NARAYANGARH       | Duria               | Low              |                 |
| 2004   | NARAYANGARH       | Gobinda Chak        | Low              |                 |
| 2005   | NARAYANGARH       | Gotgerya            | Low              |                 |
| 2006   | NARAYANGARH       | Hirapari            | Low              |                 |
| 2007   | NARAYANGARH       | Husnichak           | Low              |                 |
| 2008   | NARAYANGARH       | Jagannath Chak      | Low              |                 |
| 2009   | NARAYANGARH       | Kamnia Chak         | Low              |                 |
| 2010   | NARAYANGARH       | Kankur Gerya        | Low              |                 |
| 2011   | NARAYANGARH       | Kantaliyabar        | Low              |                 |
| 2012   | NARAYANGARH       | Kurkuchya           | Low              |                 |
| 2013   | NARAYANGARH       | Kush Bashan         | Moderate         |                 |
| 2014   | NARAYANGARH       | Mahammadnagar       | Low              |                 |
| 2015   | NARAYANGARH       | Meidichak           | Low              |                 |
| 2016   | NARAYANGARH       | Mirchak             | Low              |                 |

| S. No. | DISTRICT          | BLOCK       | VILLAGE                 | HAZARD CATEGORY |
|--------|-------------------|-------------|-------------------------|-----------------|
| 2017   | PASCHIM MEDINIPUR | NARAYANGARH | Nandakishorpur          | Low             |
| 2018   |                   | NARAYANGARH | Palasia Chak            | Low             |
| 2019   |                   | NARAYANGARH | Rajpur                  | Moderate        |
| 2020   |                   | NARAYANGARH | Srirampur               | Low             |
| 2021   |                   | NARAYANGARH | Taladiha                | Low             |
| 2022   |                   | PINGLA      | Abdulla                 | Low             |
| 2023   |                   | PINGLA      | Agarara                 | Low             |
| 2024   |                   | PINGLA      | Balarampur              | Low             |
| 2025   |                   | PINGLA      | Barai                   | Low             |
| 2026   |                   | PINGLA      | Beluria                 | Low             |
| 2027   |                   | PINGLA      | Bhatia                  | Low             |
| 2028   |                   | PINGLA      | Chak Chandi             | Low             |
| 2029   |                   | PINGLA      | Chak Chhaunia           | Low             |
| 2030   |                   | PINGLA      | Chak Palania            | Low             |
| 2031   |                   | PINGLA      | Chak Sangar             | Low             |
| 2032   |                   | PINGLA      | Chak Tulsi              | Low             |
| 2033   |                   | PINGLA      | Chandipur               | Low             |
| 2034   |                   | PINGLA      | Damodar Chak            | Low             |
| 2035   |                   | PINGLA      | Dangalsa                | Low             |
| 2036   |                   | PINGLA      | Dani Chak               | Low             |
| 2037   |                   | PINGLA      | Dewanbar                | Low             |
| 2038   |                   | PINGLA      | Dhandashira             | Low             |
| 2039   |                   | PINGLA      | Dhaneshwarpur Bati Taki | Low             |
| 2040   |                   | PINGLA      | Dhaneshwarpur Jamua     | Low             |
| 2041   |                   | PINGLA      | Gobardhanpur            | Low             |
| 2042   |                   | PINGLA      | Hasim Nagar             | Low             |
| 2043   |                   | PINGLA      | Jan Hat                 | Low             |
| 2044   |                   | PINGLA      | Jonkha                  | Low             |
| 2045   |                   | PINGLA      | Kalukhanra              | Low             |
| 2046   |                   | PINGLA      | Lakshmi Pari            | Low             |
| 2047   |                   | PINGLA      | Lechhua                 | Low             |
| 2048   |                   | PINGLA      | Lona Chajuri            | Low             |
| 2049   |                   | PINGLA      | Mangalpur               | Low             |
| 2050   |                   | PINGLA      | Naratha                 | Low             |
| 2051   |                   | PINGLA      | Pindrui                 | Low             |
| 2052   |                   | PINGLA      | Pukuria Chaitanyapur    | Low             |
| 2053   |                   | PINGLA      | Rana Singha Chak        | Low             |
| 2054   |                   | PINGLA      | Samsara                 | Low             |
| 2055   |                   | PINGLA      | Sangar Batitaki         | Low             |
| 2056   |                   | PINGLA      | Sangram Chak            | Low             |
| 2057   |                   | PINGLA      | Saugere                 | Low             |
| 2058   |                   | PINGLA      | Simulia                 | Low             |
| 2059   |                   | PINGLA      | Siti Binda              | Low             |
| 2060   |                   | PINGLA      | Tungur                  | Low             |
| 2061   |                   | PINGLA      | Upalda                  | Low             |
| 2062   |                   | PINGLA      | Uttar Kuchaipur         | Low             |
| 2063   |                   | SABANG      | Amda                    | Low             |
| 2064   |                   | SABANG      | Andulia                 | Low             |
| 2065   |                   | SABANG      | Bagagerya               | Low             |
| 2066   |                   | SABANG      | Baharkundara            | Low             |
| 2067   |                   | SABANG      | Bahir Raghunath Chak    | Moderate        |
| 2068   |                   | SABANG      | Bangaldanri             | Low             |
| 2069   |                   | SABANG      | Bansgerya               | Low             |
| 2070   |                   | SABANG      | Basudebpur              | Low             |
| 2071   |                   | SABANG      | Bhishindipur            | Low             |
| 2072   |                   | SABANG      | Bhua                    | Low             |
| 2073   |                   | SABANG      | Bikalbar                | Low             |
| 2074   |                   | SABANG      | Birbhanupur             | Low             |
| 2075   |                   | SABANG      | Bishnupur               | Low             |
| 2076   |                   | SABANG      | Chak Abdullya           | Low             |
| 2077   |                   | SABANG      | Chak Banga              | Low             |
| 2078   |                   | SABANG      | Chak Dharmma            | Low             |
| 2079   | SABANG            | Chak Madhab | Low                     |                 |

| S. No. | DISTRICT          | BLOCK      | VILLAGE             | HAZARD CATEGORY |
|--------|-------------------|------------|---------------------|-----------------|
| 2080   | PASCHIM MEDINIPUR | SABANG     | Chak Rajib          | Low             |
| 2081   |                   | SABANG     | Chalk Gopinath      | Low             |
| 2082   |                   | SABANG     | Chandagobra         | Low             |
| 2083   |                   | SABANG     | Chaulkuri           | Low             |
| 2084   |                   | SABANG     | Dakshin Banshbani   | Low             |
| 2085   |                   | SABANG     | Dakshinbar          | Low             |
| 2086   |                   | SABANG     | Daspur              | Low             |
| 2087   |                   | SABANG     | Dhamsai             | Low             |
| 2088   |                   | SABANG     | Fate Chak           | Low             |
| 2089   |                   | SABANG     | Ghasichak           | High            |
| 2090   |                   | SABANG     | Ghusinga            | Low             |
| 2091   |                   | SABANG     | Gopal Chak          | Low             |
| 2092   |                   | SABANG     | Guyadangri          | Low             |
| 2093   |                   | SABANG     | Hariharpur          | Low             |
| 2094   |                   | SABANG     | Haripura            | Low             |
| 2095   |                   | SABANG     | Hijaltala Batitaki  | Low             |
| 2096   |                   | SABANG     | Humtikari           | Low             |
| 2097   |                   | SABANG     | Jagannath Chak      | Moderate        |
| 2098   |                   | SABANG     | Jotjan              | Low             |
| 2099   |                   | SABANG     | Keshyabheri         | Low             |
| 2100   |                   | SABANG     | Khan Khanda         | Low             |
| 2101   |                   | SABANG     | Kharika             | Low             |
| 2102   |                   | SABANG     | Kubir Chak          | Low             |
| 2103   |                   | SABANG     | Mahishamura         | Low             |
| 2104   |                   | SABANG     | Malparbatitaki      | Low             |
| 2105   |                   | SABANG     | Mangrajpur          | Moderate        |
| 2106   |                   | SABANG     | Manikara            | Low             |
| 2107   |                   | SABANG     | Mashagrm            | Low             |
| 2108   |                   | SABANG     | Mashumpur           | Moderate        |
| 2109   |                   | SABANG     | Masirya             | Low             |
| 2110   |                   | SABANG     | Nandapura           | Low             |
| 2111   |                   | SABANG     | Naoyagan            | Low             |
| 2112   |                   | SABANG     | Narayanbar          | Low             |
| 2113   |                   | SABANG     | Nilhat              | Low             |
| 2114   |                   | SABANG     | Pakuria Shyamkishor | Moderate        |
| 2115   |                   | SABANG     | Perua               | Low             |
| 2116   |                   | SABANG     | Raghunath Chak      | Moderate        |
| 2117   |                   | SABANG     | Ramchak             | Low             |
| 2118   |                   | SABANG     | Sarisa              | Low             |
| 2119   |                   | SABANG     | Shibchak            | Low             |
| 2120   |                   | SABANG     | Shyamsundarpur      | Low             |
| 2121   |                   | SABANG     | Teghari             | Low             |
| 2122   | SABANG            | Uttar Eral | Low                 |                 |
| 2123   | PURBA BARDDHAMAN  | AUSGRAM I  | Alutia (P)          | Low             |
| 2124   |                   | AUSGRAM I  | Ausgram Chak        | Low             |
| 2125   |                   | AUSGRAM I  | Baburbandh          | Low             |
| 2126   |                   | AUSGRAM I  | Beluti              | Low             |
| 2127   |                   | AUSGRAM I  | Mallikpur           | Low             |
| 2128   |                   | AUSGRAM I  | Parasurampur        | Low             |
| 2129   |                   | AUSGRAM I  | Shibbati            | Low             |
| 2130   |                   | AUSGRAM I  | Soara               | Low             |
| 2131   |                   | AUSGRAM I  | Somaipur            | Low             |
| 2132   |                   | AUSGRAM II | Amrargar            | Low             |
| 2133   |                   | AUSGRAM II | Chhora              | Low             |
| 2134   |                   | AUSGRAM II | Panch Mahali        | Low             |
| 2135   |                   | AUSGRAM II | Panduk              | Low             |
| 2136   |                   | AUSGRAM II | Pondali             | Low             |
| 2137   |                   | AUSGRAM II | Ramnagar (Uttar)    | Low             |
| 2138   |                   | BHATAR     | Kanpur              | Low             |
| 2139   |                   | BHATAR     | Poalkura            | Low             |
| 2140   |                   | BURDWAN II | Karanda             | Low             |
| 2141   |                   | BURDWAN II | Khargram            | Low             |
| 2142   |                   | GALSI II   | Omarpur             | Low             |

| S. No. | DISTRICT         | BLOCK           | VILLAGE            | HAZARD CATEGORY |
|--------|------------------|-----------------|--------------------|-----------------|
| 2143   | PURBA BARDDHAMAN | JAMALPUR        | Abujhati           | Low             |
| 2144   |                  | JAMALPUR        | Gangarambati       | Low             |
| 2145   |                  | JAMALPUR        | Shrimanpur         | Low             |
| 2146   |                  | KALNA I         | Digha              | Low             |
| 2147   |                  | KALNA I         | Harsuna            | Low             |
| 2148   |                  | KALNA I         | Kasimpur           | Low             |
| 2149   |                  | KALNA I         | Krishnapur         | Low             |
| 2150   |                  | KALNA I         | Naopara            | Low             |
| 2151   |                  | KALNA I         | Nawapara           | Low             |
| 2152   |                  | KALNA I         | Rustampur          | Low             |
| 2153   |                  | KALNA I         | Sargaria           | Low             |
| 2154   |                  | KALNA I         | Tamasapur          | Low             |
| 2155   |                  | KALNA I         | Uplati             | Low             |
| 2156   |                  | KALNA II        | Agradaha           | Low             |
| 2157   |                  | KALNA II        | Akalpaush          | Low             |
| 2158   |                  | KALNA II        | Arjuna             | Low             |
| 2159   |                  | KALNA II        | Atkatia            | Low             |
| 2160   |                  | KALNA II        | Balia              | Low             |
| 2161   |                  | KALNA II        | Bara Baharkuli     | Low             |
| 2162   |                  | KALNA II        | Bhurkunda          | Low             |
| 2163   |                  | KALNA II        | Boalia             | Low             |
| 2164   |                  | KALNA II        | Chak Simla         | Low             |
| 2165   |                  | KALNA II        | Gopaldaspur        | Low             |
| 2166   |                  | KALNA II        | Hijli              | Low             |
| 2167   |                  | KALNA II        | Kaigaria           | Moderate        |
| 2168   |                  | KALNA II        | Kelenai            | Low             |
| 2169   |                  | KALNA II        | Masidpur           | Low             |
| 2170   |                  | KALNA II        | Pindira            | Low             |
| 2171   |                  | KALNA II        | Rahatpur           | Low             |
| 2172   |                  | KALNA II        | Rukashpur          | Low             |
| 2173   |                  | KALNA II        | Sadhpukharia       | Low             |
| 2174   |                  | KATWA I         | Alampur            | High            |
| 2175   |                  | KATWA I         | Arangabad          | Low             |
| 2176   |                  | KATWA I         | Chandrapur         | Low             |
| 2177   |                  | KATWA I         | Chaudhak           | Moderate        |
| 2178   |                  | KATWA I         | Kamal              | Low             |
| 2179   |                  | KATWA I         | Karulia            | Low             |
| 2180   |                  | KATWA II        | Ghumuria           | Moderate        |
| 2181   |                  | KATWA II        | Multi Krishnanagar | High            |
| 2182   |                  | KATWA II        | Okidattapur        | High            |
| 2183   |                  | KATWA II        | Simulgachhi        | Low             |
| 2184   |                  | KATWA II        | Ulastikri          | Low             |
| 2185   | KETUGRAM I       | Aiyapur Chak    | Low                |                 |
| 2186   | KETUGRAM I       | Bamundi         | Moderate           |                 |
| 2187   | KETUGRAM I       | Bhandargaria    | Low                |                 |
| 2188   | KETUGRAM I       | Bira            | Low                |                 |
| 2189   | KETUGRAM I       | Chechuri        | Low                |                 |
| 2190   | KETUGRAM I       | Jamalpur Chak   | Low                |                 |
| 2191   | KETUGRAM I       | Khalipur        | Low                |                 |
| 2192   | KETUGRAM I       | Khatundi        | Low                |                 |
| 2193   | KETUGRAM I       | Kulun           | Moderate           |                 |
| 2194   | KETUGRAM I       | Mitratikuri     | Low                |                 |
| 2195   | KETUGRAM I       | Palita          | Low                |                 |
| 2196   | KETUGRAM I       | Pandugram       | Low                |                 |
| 2197   | KETUGRAM II      | Billeswar Rasui | Low                |                 |
| 2198   | KETUGRAM II      | Brahmadanga     | Low                |                 |
| 2199   | KETUGRAM II      | Charkhi         | Low                |                 |
| 2200   | KETUGRAM II      | Dakshindihi     | Moderate           |                 |
| 2201   | KETUGRAM II      | Gangatikuri     | Low                |                 |
| 2202   | KETUGRAM II      | Gurpara         | Moderate           |                 |
| 2203   | KETUGRAM II      | Khenaibanda     | Low                |                 |
| 2204   | KETUGRAM II      | Maliha          | Low                |                 |
| 2205   | KETUGRAM II      | Nabagram        | Moderate           |                 |

| S. No. | DISTRICT         | BLOCK          | VILLAGE           | HAZARD CATEGORY |
|--------|------------------|----------------|-------------------|-----------------|
| 2206   | PURBA BARDDHAMAN | KETUGRAM II    | Paschim Sujapur   | Moderate        |
| 2207   |                  | KETUGRAM II    | Purulia           | Low             |
| 2208   |                  | KETUGRAM II    | Senpara           | Low             |
| 2209   |                  | KETUGRAM II    | Shiblun           | Low             |
| 2210   |                  | KETUGRAM II    | Taipur            | Low             |
| 2211   |                  | KETUGRAM II    | Talari            | Low             |
| 2212   |                  | KETUGRAM II    | Teora             | Low             |
| 2213   |                  | MANGOLKOTE     | Aogram            | Low             |
| 2214   |                  | MANGOLKOTE     | Balidanga         | Low             |
| 2215   |                  | MANGOLKOTE     | Baruipara         | Low             |
| 2216   |                  | MANGOLKOTE     | Chak Parag        | Low             |
| 2217   |                  | MANGOLKOTE     | Maliara           | Moderate        |
| 2218   |                  | MANGOLKOTE     | Sarangapur        | Low             |
| 2219   |                  | MANGOLKOTE     | Sarulia           | Low             |
| 2220   |                  | MANGOLKOTE     | Ujirpur           | Low             |
| 2221   |                  | MANTESWAR      | Baghasan          | Low             |
| 2222   |                  | MANTESWAR      | Bandhupur         | Low             |
| 2223   |                  | MANTESWAR      | Bhojpur           | Low             |
| 2224   |                  | MANTESWAR      | Chak Basupur      | Low             |
| 2225   |                  | MANTESWAR      | Chakdhabari       | Low             |
| 2226   |                  | MANTESWAR      | Dhenua            | Moderate        |
| 2227   |                  | MANTESWAR      | Gabrupur          | Low             |
| 2228   |                  | MANTESWAR      | Ganguria          | Low             |
| 2229   |                  | MANTESWAR      | Garsondanga       | Moderate        |
| 2230   |                  | MANTESWAR      | Golatun           | Moderate        |
| 2231   |                  | MANTESWAR      | Harkadanga        | Moderate        |
| 2232   |                  | MANTESWAR      | Hazrapur          | Moderate        |
| 2233   |                  | MANTESWAR      | Khorad            | Low             |
| 2234   |                  | MANTESWAR      | Laskarpur         | Moderate        |
| 2235   |                  | MANTESWAR      | Lohana            | Low             |
| 2236   |                  | MANTESWAR      | Lohar             | Low             |
| 2237   |                  | MANTESWAR      | Mirgahar          | Low             |
| 2238   |                  | MANTESWAR      | Purbba Khanpur    | High            |
| 2239   |                  | MANTESWAR      | Putsuri Chak      | High            |
| 2240   |                  | MANTESWAR      | Sahazadpur        | Moderate        |
| 2241   |                  | MANTESWAR      | Samaspur          | Low             |
| 2242   |                  | MANTESWAR      | Sutra             | Low             |
| 2243   |                  | MEMARI I       | Barea             | Low             |
| 2244   |                  | MEMARI I       | Bijra             | Low             |
| 2245   |                  | MEMARI I       | Maglampur         | Low             |
| 2246   |                  | MEMARI I       | Sankarpur         | Low             |
| 2247   |                  | MEMARI II      | Akalia            | Low             |
| 2248   |                  | MEMARI II      | Baneswarpur       | Low             |
| 2249   |                  | MEMARI II      | Baragram          | Low             |
| 2250   |                  | MEMARI II      | Chak Balaram      | Low             |
| 2251   |                  | MEMARI II      | Chandipur         | Low             |
| 2252   |                  | MEMARI II      | Gandhapur         | Low             |
| 2253   |                  | MEMARI II      | Kaleswar          | Low             |
| 2254   |                  | MEMARI II      | Mashagarua        | Low             |
| 2255   |                  | MEMARI II      | Paikara           | Low             |
| 2256   |                  | MEMARI II      | Paschim Srirampur | Low             |
| 2257   |                  | MEMARI II      | Rean              | Low             |
| 2258   |                  | MEMARI II      | Shikarpur         | Low             |
| 2259   |                  | PURBASTHALI I  | Dogachhia         | Low             |
| 2260   |                  | PURBASTHALI I  | Gagra             | Low             |
| 2261   |                  | PURBASTHALI I  | Kamalpur          | High            |
| 2262   |                  | PURBASTHALI I  | Karail            | High            |
| 2263   |                  | PURBASTHALI I  | Konrapur          | Low             |
| 2264   |                  | PURBASTHALI I  | Maruidanga        | High            |
| 2265   |                  | PURBASTHALI I  | Naopara           | Low             |
| 2266   |                  | PURBASTHALI I  | Ningra            | Low             |
| 2267   |                  | PURBASTHALI I  | Rahatpur          | Low             |
| 2268   | PURBASTHALI II   | Char Jhaudanga | Low               |                 |

| S. No. | DISTRICT         | BLOCK           | VILLAGE           | HAZARD CATEGORY |
|--------|------------------|-----------------|-------------------|-----------------|
| 2269   | PURBA BARDDHAMAN | PURBASTHALI II  | Ghuni             | Low             |
| 2270   |                  | PURBASTHALI II  | Haripur           | Low             |
| 2271   |                  | PURBASTHALI II  | Hatsiuri          | Low             |
| 2272   |                  | PURBASTHALI II  | Satpota           | Low             |
| 2273   |                  | PURBASTHALI II  | Tegachhi          | Low             |
| 2274   |                  | RAINA I         | Astikur           | Low             |
| 2275   |                  | RAINA I         | Dakshinkul        | Low             |
| 2276   |                  | RAINA I         | Gunar             | Low             |
| 2277   |                  | RAINA I         | Hariharpur        | Low             |
| 2278   |                  | RAINA II        | Chabukpur         | Low             |
| 2279   |                  | RAINA II        | Deno              | Low             |
| 2280   |                  | RAINA II        | Nilut             | Low             |
| 2281   |                  | RAINA II        | Pipuldaha         | Low             |
| 2282   |                  | PURBA MEDINIPUR | BHAGWANPUR I      | Balaram Chak    |
| 2283   | BHAGWANPUR I     |                 | Balishwar Bar     | Low             |
| 2284   | BHAGWANPUR I     |                 | Bar Basudebpur    | Low             |
| 2285   | BHAGWANPUR I     |                 | Bar Kasimpur      | Low             |
| 2286   | BHAGWANPUR I     |                 | Boalia            | Low             |
| 2287   | BHAGWANPUR I     |                 | Brahmattar Bar    | Low             |
| 2288   | BHAGWANPUR I     |                 | Chaitanya Chak    | Low             |
| 2289   | BHAGWANPUR I     |                 | Dwarika Chak      | Low             |
| 2290   | BHAGWANPUR I     |                 | Ghoshpur          | Low             |
| 2291   | BHAGWANPUR I     |                 | Gobindapur        | Low             |
| 2292   | BHAGWANPUR I     |                 | Gopal Chak        | Low             |
| 2293   | BHAGWANPUR I     |                 | Gopal Dasbar      | Low             |
| 2294   | BHAGWANPUR I     |                 | Harma Shani       | Low             |
| 2295   | BHAGWANPUR I     |                 | Ilashpur          | Low             |
| 2296   | BHAGWANPUR I     |                 | Jali Bishnupur    | Low             |
| 2297   | BHAGWANPUR I     |                 | Jali Gopinathpur  | Low             |
| 2298   | BHAGWANPUR I     |                 | Kaptya Bari       | Low             |
| 2299   | BHAGWANPUR I     |                 | Kat Gechhya       | Low             |
| 2300   | BHAGWANPUR I     |                 | Kishorpur         | Low             |
| 2301   | BHAGWANPUR I     |                 | Manoharpur        | Low             |
| 2302   | BHAGWANPUR I     |                 | Nelua             | Low             |
| 2303   | BHAGWANPUR I     |                 | Nilkanta Pur      | Low             |
| 2304   | BHAGWANPUR I     |                 | Nimak Bar         | Low             |
| 2305   | BHAGWANPUR I     |                 | Nona Laskarpur    | Low             |
| 2306   | BHAGWANPUR I     |                 | Paik Bheri        | Low             |
| 2307   | BHAGWANPUR I     |                 | Paschim Masuria   | Low             |
| 2308   | BHAGWANPUR I     |                 | Paschim Tan Guria | Low             |
| 2309   | BHAGWANPUR I     |                 | Purbba Masuria    | Low             |
| 2310   | BHAGWANPUR I     |                 | Ram Chak          | Low             |
| 2311   | BHAGWANPUR I     |                 | Raybar            | Low             |
| 2312   | BHAGWANPUR I     |                 | Sandalpur         | Low             |
| 2313   | BHAGWANPUR I     |                 | Sankarpur         | Low             |
| 2314   | BHAGWANPUR I     |                 | Sarangpur         | Low             |
| 2315   | BHAGWANPUR I     |                 | Shakrullapur      | Low             |
| 2316   | BHAGWANPUR I     |                 | Shyampur          | Low             |
| 2317   | BHAGWANPUR I     |                 | Siulipur          | Low             |
| 2318   | BHAGWANPUR I     |                 | Tajpur            | Low             |
| 2319   | BHAGWANPUR I     |                 | Tiraipur          | Low             |
| 2320   | BHAGWANPUR I     |                 | Tota Nala         | Low             |
| 2321   | BHAGWANPUR I     |                 | Uttarbar          | Moderate        |
| 2322   | BHAGWANPUR II    |                 | Amarshi Chak      | Low             |
| 2323   | BHAGWANPUR II    | Bagdiband       | Low               |                 |
| 2324   | BHAGWANPUR II    | Bargopal        | Low               |                 |
| 2325   | BHAGWANPUR II    | Betal Khatial   | Low               |                 |
| 2326   | BHAGWANPUR II    | Binanda Chak    | Low               |                 |
| 2327   | BHAGWANPUR II    | Chak Bhekutia   | Low               |                 |
| 2328   | BHAGWANPUR II    | Chinadanri      | Low               |                 |
| 2329   | BHAGWANPUR II    | Dhangharibar    | Low               |                 |
| 2330   | BHAGWANPUR II    | Dubai           | Low               |                 |
| 2331   | BHAGWANPUR II    | Garania         | Low               |                 |

| S. No. | DISTRICT        | BLOCK         | VILLAGE                | HAZARD CATEGORY |
|--------|-----------------|---------------|------------------------|-----------------|
| 2332   | PURBA MEDINIPUR | BHAGWANPUR II | Gazipur                | Low             |
| 2333   |                 | BHAGWANPUR II | Hansghara              | Low             |
| 2334   |                 | BHAGWANPUR II | Ita Baria              | Low             |
| 2335   |                 | BHAGWANPUR II | Jashibar               | Low             |
| 2336   |                 | BHAGWANPUR II | Kendua                 | Low             |
| 2337   |                 | BHAGWANPUR II | Khantmari              | Low             |
| 2338   |                 | BHAGWANPUR II | Kismat Khatial         | Low             |
| 2339   |                 | BHAGWANPUR II | Kotmukha               | Low             |
| 2340   |                 | BHAGWANPUR II | Kuchai Dighi           | Low             |
| 2341   |                 | BHAGWANPUR II | Maishali               | Low             |
| 2342   |                 | BHAGWANPUR II | Mirchak                | Low             |
| 2343   |                 | BHAGWANPUR II | Neturia                | Low             |
| 2344   |                 | BHAGWANPUR II | Purbbahari             | Low             |
| 2345   |                 | BHAGWANPUR II | Rasik Nagar            | Low             |
| 2346   |                 | BHAGWANPUR II | Shanka Diha            | Low             |
| 2347   |                 | BHAGWANPUR II | Shibramchak            | Low             |
| 2348   |                 | BHAGWANPUR II | Uttar Khamar           | Low             |
| 2349   |                 | CHANDIPUR     | Sultanpur              | Low             |
| 2350   |                 | CONTAI I      | Baguran Jalpai         | Low             |
| 2351   |                 | CONTAI I      | Baksipur               | Low             |
| 2352   |                 | CONTAI I      | Daudpur                | Low             |
| 2353   |                 | CONTAI I      | Hari Pur               | Low             |
| 2354   |                 | CONTAI I      | Panipia                | Low             |
| 2355   |                 | CONTAI I      | Raghusardar Bar Jalpai | Low             |
| 2356   |                 | CONTAI I      | Sahajadapur            | Low             |
| 2357   |                 | CONTAI I      | Samudrapur             | Low             |
| 2358   |                 | CONTAI I      | Samudrapur Jalpai      | Low             |
| 2359   |                 | CONTAI III    | Chhota Sijua           | Low             |
| 2360   |                 | CONTAI III    | Dantiari               | Low             |
| 2361   |                 | CONTAI III    | Haripur Ist Part       | Low             |
| 2362   |                 | CONTAI III    | Hatira                 | Low             |
| 2363   |                 | CONTAI III    | Nilpura Baman Chak     | Low             |
| 2364   |                 | CONTAI III    | Olmaidar Bar           | Low             |
| 2365   |                 | CONTAI III    | Paschim Fatepur        | Low             |
| 2366   |                 | CONTAI III    | Rampatra Bar           | Low             |
| 2367   |                 | CONTAI III    | Rasulpur               | Low             |
| 2368   |                 | CONTAI III    | Srichandanpur          | Low             |
| 2369   |                 | CONTAI III    | Uttar Ektarpur         | Low             |
| 2370   |                 | CONTAI III    | Uttar Ramchandrapur    | Low             |
| 2371   |                 | DESHOPRAN     | Khagrabani             | Low             |
| 2372   |                 | DESHOPRAN     | Murabania              | Low             |
| 2373   |                 | DESHOPRAN     | Uttar Adaberya         | Low             |
| 2374   |                 | DESHOPRAN     | Uttar Kadua            | Low             |
| 2375   |                 | EGRA I        | Amdai                  | Low             |
| 2376   |                 | EGRA I        | Aruyan                 | Low             |
| 2377   |                 | EGRA I        | Basudebpur             | Low             |
| 2378   |                 | EGRA I        | Baya                   | Low             |
| 2379   |                 | EGRA I        | Bhatsalia              | Low             |
| 2380   |                 | EGRA I        | Chaknath               | Low             |
| 2381   |                 | EGRA I        | Dakshin Gahabi         | Low             |
| 2382   |                 | EGRA I        | Donabinda              | Low             |
| 2383   |                 | EGRA I        | Hatbarpatna            | Low             |
| 2384   |                 | EGRA I        | Jaychandi              | Low             |
| 2385   |                 | EGRA I        | Kalyanpur              | Low             |
| 2386   |                 | EGRA I        | Kasbagola              | Low             |
| 2387   |                 | EGRA I        | Kunarpur               | Low             |
| 2388   |                 | EGRA I        | Maguriachak            | Low             |
| 2389   |                 | EGRA I        | Pandua                 | Low             |
| 2390   |                 | EGRA I        | Ramchandrapur          | Low             |
| 2391   |                 | EGRA I        | Rayda                  | Low             |
| 2392   |                 | EGRA I        | Shikra Chakadei        | Low             |
| 2393   |                 | EGRA I        | Shipur                 | Low             |
| 2394   | EGRA I          | Sindwria      | Low                    |                 |

| S. No. | DISTRICT        | BLOCK               | VILLAGE          | HAZARD CATEGORY |
|--------|-----------------|---------------------|------------------|-----------------|
| 2395   | PURBA MEDINIPUR | EGRA I              | Sipurmath        | Low             |
| 2396   |                 | EGRA I              | Sonapada         | Low             |
| 2397   |                 | EGRA I              | Tamalda          | Low             |
| 2398   |                 | EGRA II             | Ariapota         | Low             |
| 2399   |                 | EGRA II             | Bachhipur        | Low             |
| 2400   |                 | EGRA II             | Bainchebere      | Low             |
| 2401   |                 | EGRA II             | Bar Bhagia       | Low             |
| 2402   |                 | EGRA II             | Bathuari         | Low             |
| 2403   |                 | EGRA II             | Bhandarbere      | Low             |
| 2404   |                 | EGRA II             | Bhatda           | Low             |
| 2405   |                 | EGRA II             | Dubda            | Low             |
| 2406   |                 | EGRA II             | Harkuchia        | Low             |
| 2407   |                 | EGRA II             | Jagannath Karbar | Low             |
| 2408   |                 | EGRA II             | Khagda           | Low             |
| 2409   |                 | EGRA II             | Kotbar           | Low             |
| 2410   |                 | EGRA II             | Kultikri         | Low             |
| 2411   |                 | EGRA II             | Kumbha Dharbar   | Low             |
| 2412   |                 | EGRA II             | Mallikpur        | Low             |
| 2413   |                 | EGRA II             | Nalbar           | Low             |
| 2414   |                 | EGRA II             | Nemakpur         | Low             |
| 2415   |                 | EGRA II             | Piraj Khan Bar   | Low             |
| 2416   |                 | EGRA II             | Rajendra Chak    | Low             |
| 2417   |                 | EGRA II             | Ram Chak         | Low             |
| 2418   |                 | EGRA II             | Sarisha          | Low             |
| 2419   |                 | EGRA II             | Shushunia        | Low             |
| 2420   |                 | EGRA II             | Tajpur           | Low             |
| 2421   |                 | EGRA II             | Takapur          | Low             |
| 2422   |                 | EGRA II             | Torasia          | Low             |
| 2423   |                 | EGRA II             | Ultabad          | Low             |
| 2424   |                 | EGRA II             | Urdhabpur        | Low             |
| 2425   |                 | KHEJURI I           | Aliamjad Chak    | Low             |
| 2426   |                 | KHEJURI I           | Chhatna Bari     | Low             |
| 2427   |                 | KHEJURI I           | Herya Atmarampur | Low             |
| 2428   |                 | KHEJURI I           | Kulta            | Low             |
| 2429   |                 | KHEJURI II          | Abdulla Chak     | Low             |
| 2430   |                 | KHEJURI II          | Jagannath Chak   | Low             |
| 2431   |                 | KHEJURI II          | Maldaha          | Low             |
| 2432   |                 | KOLAGHAT            | Bangalpur        | Low             |
| 2433   |                 | KOLAGHAT            | Benia            | Low             |
| 2434   |                 | KOLAGHAT            | Brindaban Chak   | Low             |
| 2435   |                 | KOLAGHAT            | Chak Gopal       | Low             |
| 2436   |                 | KOLAGHAT            | Chapda           | Low             |
| 2437   |                 | KOLAGHAT            | Dehati           | Low             |
| 2438   |                 | KOLAGHAT            | Derya Chak       | Low             |
| 2439   |                 | KOLAGHAT            | Dhuliara         | Low             |
| 2440   |                 | KOLAGHAT            | Durbachati       | Low             |
| 2441   |                 | KOLAGHAT            | Gajai            | Low             |
| 2442   | KOLAGHAT        | Gobardhanpur        | Low              |                 |
| 2443   | KOLAGHAT        | Krishna Nagar       | Low              |                 |
| 2444   | KOLAGHAT        | Kunarhat            | Low              |                 |
| 2445   | KOLAGHAT        | Nankar Banka Dangar | Low              |                 |
| 2446   | KOLAGHAT        | Parulia             | Low              |                 |
| 2447   | KOLAGHAT        | Payag               | Low              |                 |
| 2448   | KOLAGHAT        | Pyarit              | Low              |                 |
| 2449   | KOLAGHAT        | Sarada Basan        | Low              |                 |
| 2450   | KOLAGHAT        | Uttar Jinanda       | Low              |                 |
| 2451   | KOLAGHAT        | Uttar Markandapur   | Low              |                 |
| 2452   | MOYNA           | Anandapur           | Low              |                 |
| 2453   | MOYNA           | Baital Chak         | High             |                 |
| 2454   | MOYNA           | Balbhadra Chak      | Moderate         |                 |
| 2455   | MOYNA           | Banki               | Moderate         |                 |
| 2456   | MOYNA           | Bishnu Misri Chak   | Low              |                 |
| 2457   | MOYNA           | Charandas Chak      | Moderate         |                 |



| S. No. | DISTRICT        | BLOCK                         | VILLAGE              | HAZARD CATEGORY |
|--------|-----------------|-------------------------------|----------------------|-----------------|
| 2458   | PURBA MEDINIPUR | MOYNA                         | Chongra              | Low             |
| 2459   |                 | MOYNA                         | Dakshin Ankha        | Moderate        |
| 2460   |                 | MOYNA                         | Dakshin Chanra Chak  | Moderate        |
| 2461   |                 | MOYNA                         | Dobandi              | Low             |
| 2462   |                 | MOYNA                         | Gopal Chak           | Moderate        |
| 2463   |                 | MOYNA                         | Hajari Chak          | Low             |
| 2464   |                 | MOYNA                         | Harkuli Bhandar Chak | Moderate        |
| 2465   |                 | MOYNA                         | Janaberya            | Low             |
| 2466   |                 | MOYNA                         | Kalage Chhia         | Moderate        |
| 2467   |                 | MOYNA                         | Kalika Danri         | Low             |
| 2468   |                 | MOYNA                         | Khidirpur            | Low             |
| 2469   |                 | MOYNA                         | Kismat Kumar Chak    | Low             |
| 2470   |                 | MOYNA                         | Kiyarana             | Moderate        |
| 2471   |                 | MOYNA                         | Kriranandapur        | Low             |
| 2472   |                 | MOYNA                         | Kunar Chak           | Low             |
| 2473   |                 | MOYNA                         | Madhab Chak          | Low             |
| 2474   |                 | MOYNA                         | Magra                | Low             |
| 2475   |                 | MOYNA                         | Mathuri Chak         | Low             |
| 2476   |                 | MOYNA                         | Mudibar              | Low             |
| 2477   |                 | MOYNA                         | Panch Pukhuria       | Low             |
| 2478   |                 | MOYNA                         | Ramchandrapur        | Low             |
| 2479   |                 | MOYNA                         | Raychak              | Low             |
| 2480   |                 | MOYNA                         | Shri Brindaban Chak  | Low             |
| 2481   |                 | MOYNA                         | Sridharpur           | Low             |
| 2482   |                 | MOYNA                         | Srikantha            | Low             |
| 2483   |                 | MOYNA                         | Uttampur             | Low             |
| 2484   |                 | MOYNA                         | Uttar Anukha         | Moderate        |
| 2485   |                 | NANDAKUMAR                    | Panch Berya          | Low             |
| 2486   |                 | NANDIGRAM I                   | Anantapur Part-I     | Low             |
| 2487   |                 | NANDIGRAM I                   | Bhimkata             | Low             |
| 2488   |                 | NANDIGRAM I                   | Binandapur           | Low             |
| 2489   |                 | NANDIGRAM I                   | Jhatibani            | Low             |
| 2490   |                 | NANDIGRAM I                   | Mirza Chak           | Low             |
| 2491   |                 | NANDIGRAM I                   | Narasinghapur Tajpur | Low             |
| 2492   |                 | NANDIGRAM I                   | Purushottampur       | Low             |
| 2493   |                 | NANDIGRAM II                  | Dakhin Kiyakhali     | Low             |
| 2494   |                 | PANSKURA                      | Akhuar               | Low             |
| 2495   |                 | PANSKURA                      | Amdan                | Moderate        |
| 2496   |                 | PANSKURA                      | Amdubi               | Low             |
| 2497   |                 | PANSKURA                      | Arangabar            | Low             |
| 2498   |                 | PANSKURA                      | Atang                | Moderate        |
| 2499   |                 | PANSKURA                      | Baharputa            | Low             |
| 2500   |                 | PANSKURA                      | Baidbar              | Low             |
| 2501   |                 | PANSKURA                      | Balarampur           | Low             |
| 2502   |                 | PANSKURA                      | Benagalisa           | Low             |
| 2503   |                 | PANSKURA                      | Beraberia            | Low             |
| 2504   |                 | PANSKURA                      | Bikra Chandangerya   | Low             |
| 2505   | PANSKURA        | Bipulhanda                    | Low                  |                 |
| 2506   | PANSKURA        | Brinchibar Chak Paschimi Itra | Low                  |                 |
| 2507   | PANSKURA        | Chak Gopal                    | Low                  |                 |
| 2508   | PANSKURA        | Chagogras                     | Low                  |                 |
| 2509   | PANSKURA        | Chanupur                      | Low                  |                 |
| 2510   | PANSKURA        | Chaugere                      | Low                  |                 |
| 2511   | PANSKURA        | Dabuapukur                    | Low                  |                 |
| 2512   | PANSKURA        | Dakshin Barhat                | Low                  |                 |
| 2513   | PANSKURA        | Dakshin Katal                 | Low                  |                 |
| 2514   | PANSKURA        | Dakshin Maynadal              | Low                  |                 |
| 2515   | PANSKURA        | Dashang                       | Moderate             |                 |
| 2516   | PANSKURA        | Dayal Chak                    | Low                  |                 |
| 2517   | PANSKURA        | Dayaram Chak                  | Low                  |                 |
| 2518   | PANSKURA        | Debhog                        | Low                  |                 |
| 2519   | PANSKURA        | Dhananjoypur                  | Low                  |                 |
| 2520   | PANSKURA        | Dokanda                       | Low                  |                 |

| S. No. | DISTRICT        | BLOCK            | VILLAGE                | HAZARD CATEGORY |
|--------|-----------------|------------------|------------------------|-----------------|
| 2521   | PURBA MEDINIPUR | PANSKURA         | Dumdan                 | Low             |
| 2522   |                 | PANSKURA         | Erapur                 | Low             |
| 2523   |                 | PANSKURA         | Fate Chak              | Moderate        |
| 2524   |                 | PANSKURA         | Gajna                  | Low             |
| 2525   |                 | PANSKURA         | Gaurangapur            | Moderate        |
| 2526   |                 | PANSKURA         | Gholamdan              | Moderate        |
| 2527   |                 | PANSKURA         | Gobinda Chak           | Low             |
| 2528   |                 | PANSKURA         | Gograskottaluk         | Low             |
| 2529   |                 | PANSKURA         | Gopalhazra             | Low             |
| 2530   |                 | PANSKURA         | Gopinathchak           | Low             |
| 2531   |                 | PANSKURA         | Gotpota                | Low             |
| 2532   |                 | PANSKURA         | Gurya                  | Low             |
| 2533   |                 | PANSKURA         | Hanrijhama             | Low             |
| 2534   |                 | PANSKURA         | Hariharpur             | Low             |
| 2535   |                 | PANSKURA         | Hatisal                | Low             |
| 2536   |                 | PANSKURA         | Haur                   | Low             |
| 2537   |                 | PANSKURA         | Jagannath Chak         | Moderate        |
| 2538   |                 | PANSKURA         | Jashara                | Moderate        |
| 2539   |                 | PANSKURA         | Jayram Chak            | Low             |
| 2540   |                 | PANSKURA         | Kalagechhe             | Low             |
| 2541   |                 | PANSKURA         | Kalai                  | Low             |
| 2542   |                 | PANSKURA         | Kaya                   | Low             |
| 2543   |                 | PANSKURA         | Kedarpur               | Low             |
| 2544   |                 | PANSKURA         | Kenasi Brindaban Chak  | Low             |
| 2545   |                 | PANSKURA         | Kenduara               | Low             |
| 2546   |                 | PANSKURA         | Kenduata               | Moderate        |
| 2547   |                 | PANSKURA         | Keshiari Bhunyabar     | Low             |
| 2548   |                 | PANSKURA         | Khandakhola            | Low             |
| 2549   |                 | PANSKURA         | Kishorpur              | Low             |
| 2550   |                 | PANSKURA         | Kulia                  | Low             |
| 2551   |                 | PANSKURA         | Lal Chak               | Moderate        |
| 2552   |                 | PANSKURA         | Maguri Jagannath Chak  | Low             |
| 2553   |                 | PANSKURA         | Maguri Uttarsai        | Moderate        |
| 2554   |                 | PANSKURA         | Mahadol Rupchak        | Low             |
| 2555   |                 | PANSKURA         | Mahammad Murad         | Low             |
| 2556   |                 | PANSKURA         | Mahatpur               | Low             |
| 2557   |                 | PANSKURA         | Maishora               | Low             |
| 2558   |                 | PANSKURA         | Manglai Shyamballavpur | Low             |
| 2559   |                 | PANSKURA         | Markandapur            | Moderate        |
| 2560   |                 | PANSKURA         | Masimabad              | Low             |
| 2561   |                 | PANSKURA         | Medinipur Ratudya      | Moderate        |
| 2562   |                 | PANSKURA         | Mugdawri               | Low             |
| 2563   |                 | PANSKURA         | Muktaghata             | Low             |
| 2564   |                 | PANSKURA         | Murail                 | Low             |
| 2565   |                 | PANSKURA         | Naruigopinath Chak     | Moderate        |
| 2566   |                 | PANSKURA         | Nawapara               | Low             |
| 2567   |                 | PANSKURA         | Nayabasan              | Low             |
| 2568   |                 | PANSKURA         | Nekra Paschim          | Low             |
| 2569   | PANSKURA        | Nilichhaku Chak  | Low                    |                 |
| 2570   | PANSKURA        | Nilmaniram Chak  | Low                    |                 |
| 2571   | PANSKURA        | Paltaberya       | Low                    |                 |
| 2572   | PANSKURA        | Paramhansapur    | Moderate               |                 |
| 2573   | PANSKURA        | Paschim Arjjunda | Low                    |                 |
| 2574   | PANSKURA        | Pulshita         | Low                    |                 |
| 2575   | PANSKURA        | Purbba Bakulda   | Moderate               |                 |
| 2576   | PANSKURA        | Purbba Chilka    | Low                    |                 |
| 2577   | PANSKURA        | Purbba Gopalpur  | Low                    |                 |
| 2578   | PANSKURA        | Purbba Pitpur    | Low                    |                 |
| 2579   | PANSKURA        | Purushottampur   | Low                    |                 |
| 2580   | PANSKURA        | Radha Krishnapur | Low                    |                 |
| 2581   | PANSKURA        | Radhaballav Chak | Low                    |                 |
| 2582   | PANSKURA        | Radhaballavpur   | Low                    |                 |
| 2583   | PANSKURA        | Ratulia          | Moderate               |                 |

| S. No. | DISTRICT        | BLOCK             | VILLAGE            | HAZARD CATEGORY |
|--------|-----------------|-------------------|--------------------|-----------------|
| 2584   | PURBA MEDINIPUR | PANSKURA          | Ratulia Dalbar     | Moderate        |
| 2585   |                 | PANSKURA          | Raybandh           | Low             |
| 2586   |                 | PANSKURA          | Sadhuapota         | Low             |
| 2587   |                 | PANSKURA          | Sahalajpur         | Low             |
| 2588   |                 | PANSKURA          | Saharda            | Moderate        |
| 2589   |                 | PANSKURA          | Santrabasan        | Low             |
| 2590   |                 | PANSKURA          | Saraighata         | Moderate        |
| 2591   |                 | PANSKURA          | Sarifabad          | Moderate        |
| 2592   |                 | PANSKURA          | Sitarampur         | Moderate        |
| 2593   |                 | PANSKURA          | Teghari            | Low             |
| 2594   |                 | PANSKURA          | Uttar Chanchiara   | Low             |
| 2595   |                 | PANSKURA          | Uttar Mechgram     | Low             |
| 2596   |                 | PANSKURA          | Uttar Panchberya   | Low             |
| 2597   |                 | POTASHPUR I       | Banamali Chak      | Low             |
| 2598   |                 | POTASHPUR I       | Banamalipur        | Low             |
| 2599   |                 | POTASHPUR I       | Bara Bhagia        | Low             |
| 2600   |                 | POTASHPUR I       | Barahat            | Low             |
| 2601   |                 | POTASHPUR I       | Barmu Khal         | Low             |
| 2602   |                 | POTASHPUR I       | Barui Pur          | Low             |
| 2603   |                 | POTASHPUR I       | Bhagabanpur        | Low             |
| 2604   |                 | POTASHPUR I       | Bulakipur          | Low             |
| 2605   |                 | POTASHPUR I       | Chak Majait        | Low             |
| 2606   |                 | POTASHPUR I       | Chak Reja          | Low             |
| 2607   |                 | POTASHPUR I       | Chak Sagar         | Low             |
| 2608   |                 | POTASHPUR I       | Chakdebi           | Low             |
| 2609   |                 | POTASHPUR I       | Chisti Pur Bheri   | Low             |
| 2610   |                 | POTASHPUR I       | Chistipur          | Low             |
| 2611   |                 | POTASHPUR I       | Chistipur Bheri    | Low             |
| 2612   |                 | POTASHPUR I       | Dakshin Jali Bheri | Low             |
| 2613   |                 | POTASHPUR I       | Dhankar            | Low             |
| 2614   |                 | POTASHPUR I       | Dulalpur           | Low             |
| 2615   |                 | POTASHPUR I       | Gabdangar          | Low             |
| 2616   |                 | POTASHPUR I       | Gobardhanpur       | Low             |
| 2617   |                 | POTASHPUR I       | Gokulpur           | Low             |
| 2618   |                 | POTASHPUR I       | Golara Bheri       | Low             |
| 2619   |                 | POTASHPUR I       | Golara Nij         | Low             |
| 2620   |                 | POTASHPUR I       | Gopalband          | Low             |
| 2621   |                 | POTASHPUR I       | Goyalda            | Low             |
| 2622   |                 | POTASHPUR I       | Irda               | Low             |
| 2623   |                 | POTASHPUR I       | Kallubar           | Low             |
| 2624   |                 | POTASHPUR I       | Kanakpur           | Moderate        |
| 2625   |                 | POTASHPUR I       | Kat Ranka          | Low             |
| 2626   |                 | POTASHPUR I       | Madhupur           | Low             |
| 2627   |                 | POTASHPUR I       | Mamudpur           | Low             |
| 2628   |                 | POTASHPUR I       | Mirjapur           | Low             |
| 2629   |                 | POTASHPUR I       | Naipukhuria        | Low             |
| 2630   | POTASHPUR I     | Naki Basan        | Low                |                 |
| 2631   | POTASHPUR I     | Pal Para Bheri    | Low                |                 |
| 2632   | POTASHPUR I     | Palpara           | Low                |                 |
| 2633   | POTASHPUR I     | Purulia           | Low                |                 |
| 2634   | POTASHPUR I     | Raghurampur       | Low                |                 |
| 2635   | POTASHPUR I     | Ram Basan         | Low                |                 |
| 2636   | POTASHPUR I     | Sahapur           | Low                |                 |
| 2637   | POTASHPUR I     | Sahapur (Part-II) | Low                |                 |
| 2638   | POTASHPUR I     | Sahdatpur         | Low                |                 |
| 2639   | POTASHPUR I     | Sarbhun           | Low                |                 |
| 2640   | POTASHPUR I     | Saridaspur        | Low                |                 |
| 2641   | POTASHPUR I     | Selmabad          | Low                |                 |
| 2642   | POTASHPUR I     | Shankar Gerya     | Low                |                 |
| 2643   | POTASHPUR I     | Shoula Bheri      | Low                |                 |
| 2644   | POTASHPUR I     | Tal Chitkini      | Low                |                 |
| 2645   | POTASHPUR I     | Taladiha          | Low                |                 |
| 2646   | POTASHPUR I     | Tarat             | Low                |                 |

| S. No. | DISTRICT        | BLOCK                 | VILLAGE         | HAZARD CATEGORY |
|--------|-----------------|-----------------------|-----------------|-----------------|
| 2647   | PURBA MEDINIPUR | POTASHPUR I           | Tetul Mari      | Low             |
| 2648   |                 | POTASHPUR I           | Tupchibar       | Low             |
| 2649   |                 | POTASHPUR I           | Uttar Rayband   | Low             |
| 2650   |                 | POTASHPUR II          | Argoal          | Low             |
| 2651   |                 | POTASHPUR II          | Babuidanri      | Low             |
| 2652   |                 | POTASHPUR II          | Balgobindapur   | Low             |
| 2653   |                 | POTASHPUR II          | Baman Bar       | Low             |
| 2654   |                 | POTASHPUR II          | Baraudaypur     | Low             |
| 2655   |                 | POTASHPUR II          | Chak Bhabani    | Low             |
| 2656   |                 | POTASHPUR II          | Chak Bhogi      | Low             |
| 2657   |                 | POTASHPUR II          | Chak Garura     | Low             |
| 2658   |                 | POTASHPUR II          | Chak Kandu      | Low             |
| 2659   |                 | POTASHPUR II          | Chak Mabarak    | Low             |
| 2660   |                 | POTASHPUR II          | Chak Mathuri    | Low             |
| 2661   |                 | POTASHPUR II          | Chak Padu       | Low             |
| 2662   |                 | POTASHPUR II          | Chandan Khali   | Low             |
| 2663   |                 | POTASHPUR II          | Dakshin Burijor | Low             |
| 2664   |                 | POTASHPUR II          | Dakshin Itabere | Low             |
| 2665   |                 | POTASHPUR II          | Dhusurda        | Low             |
| 2666   |                 | POTASHPUR II          | Erabar          | Low             |
| 2667   |                 | POTASHPUR II          | Ghonga          | Low             |
| 2668   |                 | POTASHPUR II          | Ghora Basan     | Low             |
| 2669   |                 | POTASHPUR II          | Gopalpur        | Low             |
| 2670   |                 | POTASHPUR II          | Haji Chak       | Low             |
| 2671   |                 | POTASHPUR II          | Haripur         | Low             |
| 2672   |                 | POTASHPUR II          | Idalpur         | Low             |
| 2673   |                 | POTASHPUR II          | Ismailpur       | Low             |
| 2674   |                 | POTASHPUR II          | Karmalla Chak   | Low             |
| 2675   |                 | POTASHPUR II          | Khatibar        | Low             |
| 2676   |                 | POTASHPUR II          | Kshetrapal      | Low             |
| 2677   |                 | POTASHPUR II          | Lalua           | Low             |
| 2678   |                 | POTASHPUR II          | Laoa            | Low             |
| 2679   |                 | POTASHPUR II          | Madanmohanpur   | Low             |
| 2680   |                 | POTASHPUR II          | Mallikpur       | Low             |
| 2681   |                 | POTASHPUR II          | Mangraj         | Low             |
| 2682   |                 | POTASHPUR II          | Pania           | Low             |
| 2683   |                 | POTASHPUR II          | Phajelpur       | Low             |
| 2684   |                 | POTASHPUR II          | Purbeshwarpur   | Low             |
| 2685   |                 | POTASHPUR II          | Purushottampur  | Low             |
| 2686   |                 | POTASHPUR II          | Rangamatia      | Low             |
| 2687   |                 | POTASHPUR II          | Samashpur       | Low             |
| 2688   |                 | POTASHPUR II          | Sandalpur       | Low             |
| 2689   | POTASHPUR II    | Sukha Khola           | Low             |                 |
| 2690   | POTASHPUR II    | Uttar Itabere         | Low             |                 |
| 2691   | POTASHPUR II    | Uttarchounukh         | Low             |                 |
| 2692   | RAMNAGAR I      | Badhia                | Low             |                 |
| 2693   | RAMNAGAR I      | Bakharpur             | Low             |                 |
| 2694   | RAMNAGAR I      | Junbani               | Low             |                 |
| 2695   | RAMNAGAR I      | Kanda Gram            | Moderate        |                 |
| 2696   | RAMNAGAR II     | Chata Kasimpur        | Low             |                 |
| 2697   | RAMNAGAR II     | Dadanpatra            | Low             |                 |
| 2698   | RAMNAGAR II     | Daudpur               | Low             |                 |
| 2699   | RAMNAGAR II     | Haurburi              | Low             |                 |
| 2700   | RAMNAGAR II     | Kalapunja             | Low             |                 |
| 2701   | RAMNAGAR II     | Kalindi               | Low             |                 |
| 2702   | RAMNAGAR II     | Malancha              | Low             |                 |
| 2703   | RAMNAGAR II     | Paikbar               | Low             |                 |
| 2704   | RAMNAGAR II     | Purbba Bar            | Low             |                 |
| 2705   | RAMNAGAR II     | Purbba Gadharpur      | Low             |                 |
| 2706   | RAMNAGAR II     | Purbba Purushottampur | Low             |                 |
| 2707   | RAMNAGAR II     | Rania                 | Low             |                 |
| 2708   | RAMNAGAR II     | Shonamui              | Low             |                 |
| 2709   | RAMNAGAR II     | Suberia               | Low             |                 |

| S. No. | DISTRICT          | BLOCK              | VILLAGE               | HAZARD CATEGORY |
|--------|-------------------|--------------------|-----------------------|-----------------|
| 2710   | PURBA MEDINIPUR   | RAMNAGAR II        | Teghari               | Low             |
| 2711   |                   | SAHID MATANGINI    | Barkhoskana           | Low             |
| 2712   |                   | SAHID MATANGINI    | Padampur              | Low             |
| 2713   |                   | SAHID MATANGINI    | Ranichak              | Low             |
| 2714   |                   | SAHID MATANGINI    | Udaychak              | Low             |
| 2715   |                   | SAHID MATANGINI    | Uttar Usatpur         | Low             |
| 2716   |                   | SUTAHATA           | Agadoro               | Low             |
| 2717   |                   | SUTAHATA           | Akubpur               | Low             |
| 2718   |                   | SUTAHATA           | Bhupati Nagar         | Low             |
| 2719   |                   | SUTAHATA           | Junate                | Low             |
| 2720   |                   | TAMLUK             | Anantapur             | Low             |
| 2721   |                   | TAMLUK             | Asudapaikbar          | Low             |
| 2722   |                   | TAMLUK             | Barbarya              | Moderate        |
| 2723   |                   | TAMLUK             | Barborya Paikbor      | Moderate        |
| 2724   |                   | TAMLUK             | Bishnubar             | Low             |
| 2725   |                   | TAMLUK             | Chackdurgadas         | Low             |
| 2726   |                   | TAMLUK             | Chak Garupota         | Low             |
| 2727   |                   | TAMLUK             | Chakkasmali           | Low             |
| 2728   |                   | TAMLUK             | Chaksiruradha         | Low             |
| 2729   |                   | TAMLUK             | Dakshin Baguan (CT)   | Low             |
| 2730   |                   | TAMLUK             | Damodarpur            | Low             |
| 2731   |                   | TAMLUK             | Gholchak              | Low             |
| 2732   |                   | TAMLUK             | Gopinath Bhitajala    | Low             |
| 2733   |                   | TAMLUK             | Gopinathpur Baharjala | Low             |
| 2734   |                   | TAMLUK             | Harashankar           | Low             |
| 2735   |                   | TAMLUK             | Harashankar Garkilla  | Low             |
| 2736   |                   | TAMLUK             | Haridaspur            | Low             |
| 2737   |                   | TAMLUK             | Kankurkhana           | Low             |
| 2738   |                   | TAMLUK             | Laichhanpur           | Moderate        |
| 2739   |                   | TAMLUK             | Lalitageria           | Moderate        |
| 2740   |                   | TAMLUK             | Lohanda               | Low             |
| 2741   |                   | TAMLUK             | Madanmohanchak        | Low             |
| 2742   |                   | TAMLUK             | Maishali              | Low             |
| 2743   |                   | TAMLUK             | Mamudpur              | Low             |
| 2744   |                   | TAMLUK             | Melahait              | Low             |
| 2745   |                   | TAMLUK             | Mirikpur              | Low             |
| 2746   |                   | TAMLUK             | Mirjapur              | Low             |
| 2747   |                   | TAMLUK             | Nijjote Garupota      | Moderate        |
| 2748   |                   | TAMLUK             | Purbacharandaschak    | Low             |
| 2749   |                   | TAMLUK             | Purbakola             | Low             |
| 2750   |                   | TAMLUK             | Purbba Nukha          | Low             |
| 2751   |                   | TAMLUK             | Putputya              | Low             |
| 2752   | TAMLUK            | Rajnagar           | Moderate              |                 |
| 2753   | TAMLUK            | Rajnagar Baharjala | Low                   |                 |
| 2754   | TAMLUK            | Ranichak           | Moderate              |                 |
| 2755   | TAMLUK            | Rasikpur           | Low                   |                 |
| 2756   | TAMLUK            | Sadichak           | Low                   |                 |
| 2757   | TAMLUK            | Salikabhupati Chak | Low                   |                 |
| 2758   | TAMLUK            | Salikadamodarpur   | Low                   |                 |
| 2759   | TAMLUK            | Shalikadhanichak   | Low                   |                 |
| 2760   | TAMLUK            | Shalikagarchak     | Moderate              |                 |
| 2761   | TAMLUK            | Srikanthakalaganda | Low                   |                 |
| 2762   | TAMLUK            | Srirampur          | Low                   |                 |
| 2763   | TAMLUK            | Tulia Jadubar      | Low                   |                 |
| 2764   | TAMLUK            | Uttar Bagnan       | Low                   |                 |
| 2765   | SOUTH 24 PARGANAS | BASANTI            | Tetultala             | Low             |
| 2766   |                   | CANNING II         | Chengdona             | Low             |
| 2767   |                   | JAYNAGAR I         | Ramrudrapur           | Low             |
| 2768   |                   | KULPI              | Dakshin Narayanpur    | Low             |
| 2769   |                   | KULPI              | Katulia Krishnarampur | Low             |
| 2770   | UTTAR DINAJPUR    | GOALPOKHAR I       | Dakshine Kathalbari   | Low             |
| 2771   |                   | GOALPOKHAR II      | Kothitola             | Low             |
| 2772   |                   | ITAHAR             | Asrafpur              | Low             |

| S. No. | DISTRICT       | BLOCK            | VILLAGE          | HAZARD CATEGORY |
|--------|----------------|------------------|------------------|-----------------|
| 2773   | UTTAR DINAJPUR | ITAHAR           | Bagduma          | Low             |
| 2774   |                | ITAHAR           | Baidara          | Low             |
| 2775   |                | ITAHAR           | Banagram         | Low             |
| 2776   |                | ITAHAR           | Barhatti         | Low             |
| 2777   |                | ITAHAR           | Barot            | Low             |
| 2778   |                | ITAHAR           | Bhabanipur       | Low             |
| 2779   |                | ITAHAR           | Bhagnail         | Low             |
| 2780   |                | ITAHAR           | Bochkapara       | Low             |
| 2781   |                | ITAHAR           | Chandigram       | Low             |
| 2782   |                | ITAHAR           | Chhoto Bahadol   | Low             |
| 2783   |                | ITAHAR           | Churaman         | Low             |
| 2784   |                | ITAHAR           | Daldalia Chak    | Low             |
| 2785   |                | ITAHAR           | Dhigaldanga      | Low             |
| 2786   |                | ITAHAR           | Gatlu            | Low             |
| 2787   |                | ITAHAR           | Khamrua          | Low             |
| 2788   |                | ITAHAR           | Koarpur          | Low             |
| 2789   |                | ITAHAR           | Kumedpur         | Low             |
| 2790   |                | ITAHAR           | Kunarhat         | Low             |
| 2791   |                | ITAHAR           | Laskarpur        | Low             |
| 2792   |                | ITAHAR           | Mahamadpur       | Low             |
| 2793   |                | ITAHAR           | Mahanandapara    | Low             |
| 2794   |                | ITAHAR           | Paikpara         | Low             |
| 2795   |                | ITAHAR           | Pajol            | Low             |
| 2796   |                | ITAHAR           | Phkhuria         | Low             |
| 2797   |                | ITAHAR           | Rajgram          | Low             |
| 2798   |                | ITAHAR           | Tegaj            | Low             |
| 2799   |                | ITAHAR           | Tiarbati         | Low             |
| 2800   |                | ITAHAR           | Uttar Jamalpur   | Low             |
| 2801   |                | KALIAGANJ        | Arazi Joydebpur  | Low             |
| 2802   |                | KALIAGANJ        | Balabanda        | Low             |
| 2803   |                | KALIAGANJ        | Beurjhari        | Low             |
| 2804   |                | KALIAGANJ        | Chak Lakshmi     | Low             |
| 2805   |                | KALIAGANJ        | Chak Shibananda  | Low             |
| 2806   |                | KALIAGANJ        | Dalimgaon        | Low             |
| 2807   |                | KALIAGANJ        | Dhankail (P)     | Low             |
| 2808   |                | KALIAGANJ        | Gotgaon          | Low             |
| 2809   |                | KALIAGANJ        | Hazratpur        | Low             |
| 2810   |                | KALIAGANJ        | Joydebpur        | Low             |
| 2811   |                | KALIAGANJ        | Kaluhar          | Low             |
| 2812   |                | KALIAGANJ        | Khurkhuria       | Low             |
| 2813   |                | KALIAGANJ        | Kushgram         | Low             |
| 2814   |                | KALIAGANJ        | Maljum           | Low             |
| 2815   |                | KALIAGANJ        | Medinipur        | Low             |
| 2816   |                | KALIAGANJ        | Narayanpur       | Low             |
| 2817   |                | KALIAGANJ        | Paschim Durgapur | Low             |
| 2818   | KALIAGANJ      | Purba Rampur     | Low              |                 |
| 2819   | KALIAGANJ      | Radhikapur       | Low              |                 |
| 2820   | KALIAGANJ      | Ramganj          | Low              |                 |
| 2821   | KALIAGANJ      | Suknandighi      | Low              |                 |
| 2822   | KALIAGANJ      | Uttar Krishnapur | Low              |                 |
| 2823   | KARANDIGHI     | Bagela           | Low              |                 |
| 2824   | KARANDIGHI     | Baliamani        | Low              |                 |
| 2825   | KARANDIGHI     | Bardahi          | Low              |                 |
| 2826   | KARANDIGHI     | Barhans          | Low              |                 |
| 2827   | KARANDIGHI     | Basudebpur       | Low              |                 |
| 2828   | KARANDIGHI     | Belua            | Low              |                 |
| 2829   | KARANDIGHI     | Bhagsur          | Low              |                 |
| 2830   | KARANDIGHI     | Bhopla           | Low              |                 |
| 2831   | KARANDIGHI     | Bhulki           | Low              |                 |
| 2832   | KARANDIGHI     | Bilaspur         | Low              |                 |
| 2833   | KARANDIGHI     | Borra            | Low              |                 |
| 2834   | KARANDIGHI     | Daluakhari       | Low              |                 |
| 2835   | KARANDIGHI     | Dhauta           | Low              |                 |

| S. No. | DISTRICT       | BLOCK      | VILLAGE        | HAZARD CATEGORY |
|--------|----------------|------------|----------------|-----------------|
| 2836   | UTTAR DINAJPUR | KARANDIGHI | Dubelbabhanua  | Low             |
| 2837   |                | KARANDIGHI | Hemenpur       | Low             |
| 2838   |                | KARANDIGHI | Jagadishpur    | Low             |
| 2839   |                | KARANDIGHI | Jalalpur       | Low             |
| 2840   |                | KARANDIGHI | Jalalpur Milik | Low             |
| 2841   |                | KARANDIGHI | Kadernanj      | Low             |
| 2842   |                | KARANDIGHI | Khowaspur      | Low             |
| 2843   |                | KARANDIGHI | Khudar Gachhi  | Low             |
| 2844   |                | KARANDIGHI | Khurka         | Low             |
| 2845   |                | KARANDIGHI | Minapur        | Low             |
| 2846   |                | KARANDIGHI | Pandepur       | Low             |
| 2847   |                | KARANDIGHI | Patanduba      | Low             |
| 2848   |                | KARANDIGHI | Pauti          | Low             |
| 2849   |                | KARANDIGHI | Pichhla        | Low             |
| 2850   |                | KARANDIGHI | Purba Matiari  | Low             |
| 2851   |                | KARANDIGHI | Sadipur        | Low             |
| 2852   |                | KARANDIGHI | Saraunja       | Low             |
| 2853   |                | KARANDIGHI | Sima Anandapur | Low             |
| 2854   |                | KARANDIGHI | Sulatanpur     | Low             |
| 2855   |                | KARANDIGHI | Uttar Jadopur  | Low             |
| 2856   |                | RAIGANJ    | Abdulghata     | Low             |
| 2857   |                | RAIGANJ    | Anantapur      | Low             |
| 2858   |                | RAIGANJ    | Bhiti          | Low             |
| 2859   |                | RAIGANJ    | Bhitihar       | Low             |
| 2860   |                | RAIGANJ    | Birahimkhanda  | Low             |
| 2861   |                | RAIGANJ    | Bishahar       | Low             |
| 2862   |                | RAIGANJ    | Jugiamer       | Low             |
| 2863   |                | RAIGANJ    | Parar Pukhar   | Low             |
| 2864   |                | RAIGANJ    | Rudrakhnda     | Low             |
| 2865   |                | RAIGANJ    | Sankarpur      | Low             |
| 2866   |                | RAIGANJ    | Shialtor       | Low             |
| 2867   |                | RAIGANJ    | Teghara        | Low             |

\*Note : The list of villages falling under the Very Low Hazard Category have been included in the digital version of the ATLAS



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