



Government of West Bengal

# MEMORANDUM OF WEST BENGAL FLOOD & LANDSLIDE

JULY-AUGUST 2021



Reported By

Department of Disaster Management & Civil Defence  
Nabanna, 2<sup>nd</sup> Floor, 325 Sarat Chatterjee Road, Howrah-711102





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## Table of Contents

Sl. No.	Contents	Page No.
1.	Overview	1 - 6
2.	Maps – Glimpse of Affected Districts	7 - 8
3.	Weather Forecast	9 - 17
4.	DAM Water Release & Inundation	18 - 19
5.	Rainfall Data	20
6.	Damages and Relief Measures taken	23 - 25
7.	Summary of Sector wise Damage	26
	Annexures (I to XV)	27-36
8.	Status of SDRF	37
9.	Assistance sought - Summary	38 - 39
10.	Appendices - Sector wise	40 - 63
11.	Conclusion	64
12.	Photographs & News Coverage of Rescue, Relief	65 - 70



## Foreword

Being a multi-hazard prone state West Bengal has been facing repeated disaster since last two years. Accordingly Government of West Bengal has significantly upgraded the rescue and relief measures along with long term mitigation measures to reduce the impact of disasters on people's life. Adopting incident command system and establishing unified control rooms and utilizing facilities like district EOCs, the state has been in a better position to manage large scale disasters under the leadership of Honourable Chief Minister and other members of SDMA.

The state has been continuously combating major and recitative event of disaster starting from Cyclone BULBUL in Nov.'19, Super Cyclone AMPHAN in May 2020, Cyclone YAAS in May 2021 and again this Flood & landslide at end of July & 1<sup>st</sup> week of August 2021.

The coordinated effort of all line departments and support agencies and district administration, People's Representatives, civil society organization, private organization and institutions has made significant contribution to manage the devastating situation of flood due to incessant heavy rainfall and excessive water release from DAMs and Barrages especially from Mithon DAM, Panchet DAM and Durgapur barrage made the situation worst.

The rescue, relief and restoration work started immediately as all departments and the district administration and volunteers worked day and night to restore normalcy. The entire arrangements however had to be made keeping COVID 19 norms maintaining social distance and with use of mask and sanitizers.

Special Control Room of State was set up along with existing Emergency Operation Centre for intensive monitoring of field level Disaster situation properly by very high level Senior Official of the State Government and necessary all arrangements of Relief and Rescue work were done accordingly and promptly. District and Block Level Emergency Operation Centre were also activated simultaneously. Unified Control Room was opened at State Police HQ. Control Room were also opened by other Line Department and Offices i.e UD&MA, Power, PHE, Irrigation & Water Ways, Agriculture and KMC etc to keep constant and close monitoring over development of field level situation and taking steps by addressing them.

The efforts put in by all Departments, districts, volunteers and the people of West Bengal are praise worthy and yielded results by way of quick restoration of normal life in affected districts & Kolkata.

Total assessment of huge loss and damage in all Sectors is more than six thousand Crore, though loss and damage in various fields and sectors, particularly in Agriculture, Fishery, Drinking water, Irrigation & Water Ways, Panchayat & Rural Development etc which are more are less linked with employment & livelihood, should be much more, if the extreme hardship and extent of loss for severely affected persons in all these field and sectors for the reason of loss of their employment and livelihood due to damage and dislocation for devastating effect of flood in 10 districts South Bengal where as two district in North Bengal mainly Darjeeling and Kalimpong were badly affected by heavy rainfall and numbers of landslides.

An account of the damage as assessed by different departments, as per information available so far, and as per SDRF norms has been prepared for keeping record of the Flood & Landslide happened at the end of July and 1<sup>st</sup> week of August 2021 and for placement of demand for funds of Rs. 1228.44 Crores.

Dushyant Nariala, IAS  
Principal Secretary, DMCD



# CHAPTER - 1

## Overview

### Flood & Landslide in West Bengal 2021

Monsoons bring continuous rain and increase chances of flood, inundation and landslides in West Bengal. Their exact impact and devastation is difficult to quantify as they disrupt normal life across vast stretches of land.

Incessant rainfall caused by well marked low pressure area over West Bengal from 26<sup>th</sup> July to 1<sup>st</sup> August caused unprecedented inundation in coastal areas due to very heavy rainfall that caused severe water logging in Kolkata, Howrah and districts of Bankura, Purulia, Jhargram, North 24 parganas, Hooghly, Paschim Bardhaman and Purba Bardhaman from 27<sup>th</sup> July to 31<sup>st</sup> July 2021. Thereafter, unprecedented release of water by DVC flooded large number of villages in Hooghly, Howrah, Paschim Medinipur, Birbhum, Paschim Bardhaman & Purba Bardhaman.

#### Preparations for Heavy Rainfall, Floods and Landslides:

- First bulletin was received from Meteorological Department on 24<sup>th</sup> July 2021 and all districts were asked to remain alert for enhanced rainfall. Fishermen were banned from venturing out to sea as per warning of IMD.
- NDRF teams were placed in Kakdwip in South 24 Parganas, Sandeshkhali in North 24 Parganas, Ghatal in Paschim Medinipur, Arambag in Hooghly and in Jalpaiguri districts. Additional NDRF and SDRF teams were rushed to Ghatal, Arambagh and Howrah when information of excessive water release from DVC was received.
- Official Requisition was sent to the Army on 1<sup>st</sup> August, 2021 and help of Airforce helicopters was sought on 1<sup>st</sup> August to Airlift 31 people stranded in Khanakul-II block of Hooghly district. The Indian Airforce carried out the operation on 2<sup>nd</sup> August morning and saved 31 people from heavily inundated building. Navy teams were deployed.
- Unified Multi-Agency Commands emerged under City Police Commissioner(s) and District Magistrates.
- 07 lakh tarpaulins, clothes, relief materials reached districts in advance. All power, telecom, water, drainage, restoration utilities mobilized officials, equipment and executing agencies to respond to the rain and flood and ensure quick restoration.

24×7 Control Rooms were set up from State to Districts, Subdivisions to Blocks/ Municipalities and in utility agencies 10 NDRF teams, 15 SDRF teams, Army, 292 Civil Defence Quick Response Teams (QRT) were mobilized along with hundreds of QRTs of State Agencies. Over 1.29 Lakh people were evacuated. Kolkata, Asansol and many municipalities faced water logging.



Irrigation and other departments maintained round the clock control room to monitor water release from Dams and Barrages. The Districts were informed of water released by Panchet & Maithon DAM and alerts were issued along banks of river Damodar to evacuate people to safer places. The Irrigation department provided daily alerts on rainfall and river water levels and regularly coordinated with Damodar Valley Corporation.



#### **Impact of Heavy Rainfall, Flood and Landslides:**

People affected: More than 10 lakhs

Districts affected: 13 (out of 23 Districts, including Kolkata)

Most Affected districts are Howrah, Hooghly and Paschim Medinipur. Districts of Paschim Bardhaman, Purba Bardhaman, Bankura, Birbhum, Purulia, Darjeeling, Kalimpong, North 24 Parganas, South 24 Parganas and Kolkata were also affected.

- Initially heavy rainfall on 26<sup>th</sup> and 28<sup>th</sup> July 2021 affected Coastal and Sundarbans districts and Kolkata as large areas were flooded, marooned with vast stretches inundated. Then the rainfall activity increased in Western West Bengal district of Purulia, Bankura, Paschim Bardhaman, Birbhum, Purba Bardhaman and North Bengal from 29<sup>th</sup> July to 1<sup>st</sup> August.



- In August as the rainfall decreased the heavy rainfall in Jharkhand catchment areas due to low pressure areas increased water levels in rivers flowing from Jharkhand to West Bengal. The Damodar Valley Corporation system with Panchet and Maithon Dam released huge water including a peak release of 1.6 lakh cusecs of water from 26<sup>th</sup> July to 3<sup>rd</sup> August, 2021. Irrigation department maintained round the clock control room to monitor water release from dams and Barrage. The districts were informed of water released by the Panchet and Maithon Dam and alerts were issued along banks of river Damodar to evacuate people to safer place.



- These unusual releases of water inundated the areas of Ghatal in Paschim Medinipur as Silabati was in spate. The DVC release of water inundated large number of villages in Arambagh Subdivision of Hooghly and Uluberia Subdivision of Howrah.
- More than 56,600 houses are damaged across several districts and more than 4 lakh hectares of agriculture and horticulture ravaged Huge damage has been caused to crops, horticulture, Infrastructure, irrigation, power sector, water supply, drainage, education sector and health sector across several districts.
- The fishing community has been affected along vast stretches of coastal and riverine areas. Major infrastructure damage is reported besides huge losses to public property as shops and markets were inundated across several districts. Irrigation embankments were breached at 328 places and flooded houses and agriculture land.



### **Rescue and relief**

The large evacuation and timely rescue of affected people were actively taken. Affected people were sheltered in 426 camps and provided food, drinking water, baby food, medicines and masks. All arrangements were made as per COVID norms.

### **Restoration and rehabilitation**

House buildings Grants need to be given to more than 56,647 persons. Crop damage compensation needs to be paid. Embankments have to be restored as all breaches to be repaired immediately as next high tide is on 7<sup>th</sup> August.

### **Initial assessment of damages**

Honourable Chief Minister visited affected areas on 4<sup>th</sup> august and held review meetings in the most affected areas of Howrah and Hooghly district. Damages were caused to Agriculture, Fisheries, Horticulture, Animal resources, Embankments, Roads, Drinking Water, Urban Infrastructure & other utilities amounting to Rs. 6242.46 Crores.



**Aerial View of Inundated Area**



### Visit of Inter Ministerial Central Team:

The preliminary report of damage due to incessant rainfall and excessive water release from DAMs was submitted to MHA on 08.09.2021. The Inter Ministerial Central Team headed by Shri Sunil Kumar Barnwal, Joint Secretary visited following parts of our state on 25th & 26th September 2021 to access the damage of the state due the flood during end of July & 1st week of August 2021.



Composition of the IMCT was as follows:

Sl. No.	Name	Designation	Department
1.	Sh. Sunil Kumar Barnwal	JS(B-II & IS-II) & Team Leader, IMCT	Ministry of Home Affairs
2.	Sh. R.B. Kaul	Consultant (FCD)	Department of Expenditure
3.	Sh. Narender Kumar	Director	Department of Agriculture, Cooperation. & Farmers Welfare, DJD
4.	Sh. Sidharth Mitra	Director	Ministry of Jal shakti, CWC, Kolkata
5.	Sh. Praveen kamal	Director	Ministry of Power, CEA, Sewa Bhawan, N. Delhi
6.	Ms. Sanjukta Kanjilal	Assistant Executive Engineer	Ministry of Road Transport & Highways, Kolkata
7.	Sh. B Prasad		Ministry of Rural Development



Two teams were formed and teams visited following places after having a briefing at the Airport Authority of India Operation Centre, Conference Hall 3rd floor at NSCBI Airport, Kolkata:

1. Hooghly District - Arambag
2. Howrah District - Amta - II, Udaynaranpur
3. Paschim Medinipur - Ghatal, Daspur

After visiting flood affected areas the IMCT had a meeting with senior officials of State Government on 26.09.2021.

As per recommendations of the IMCT team the State Government departments have prepared details damage and loss report and the damage amount is Rs. 6242.46 Cr. and the amount sought for assistance under SDRF norms is Rs. 1228.44 Cr.

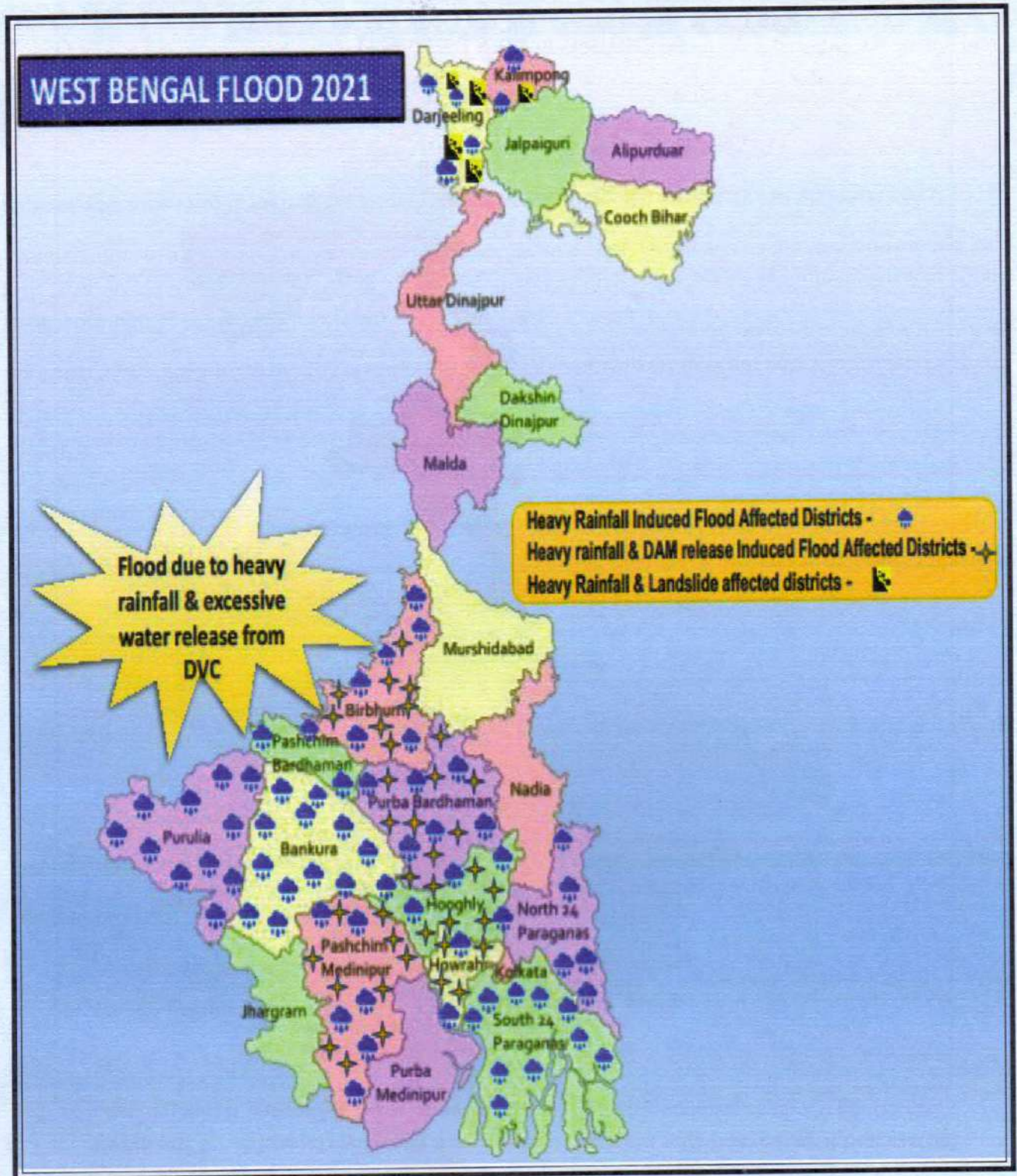




## CHAPTER - 2

### Maps – Glimpse of Affected Districts

Heavy Rainfall, Flood & Landslides affected districts in West Bengal



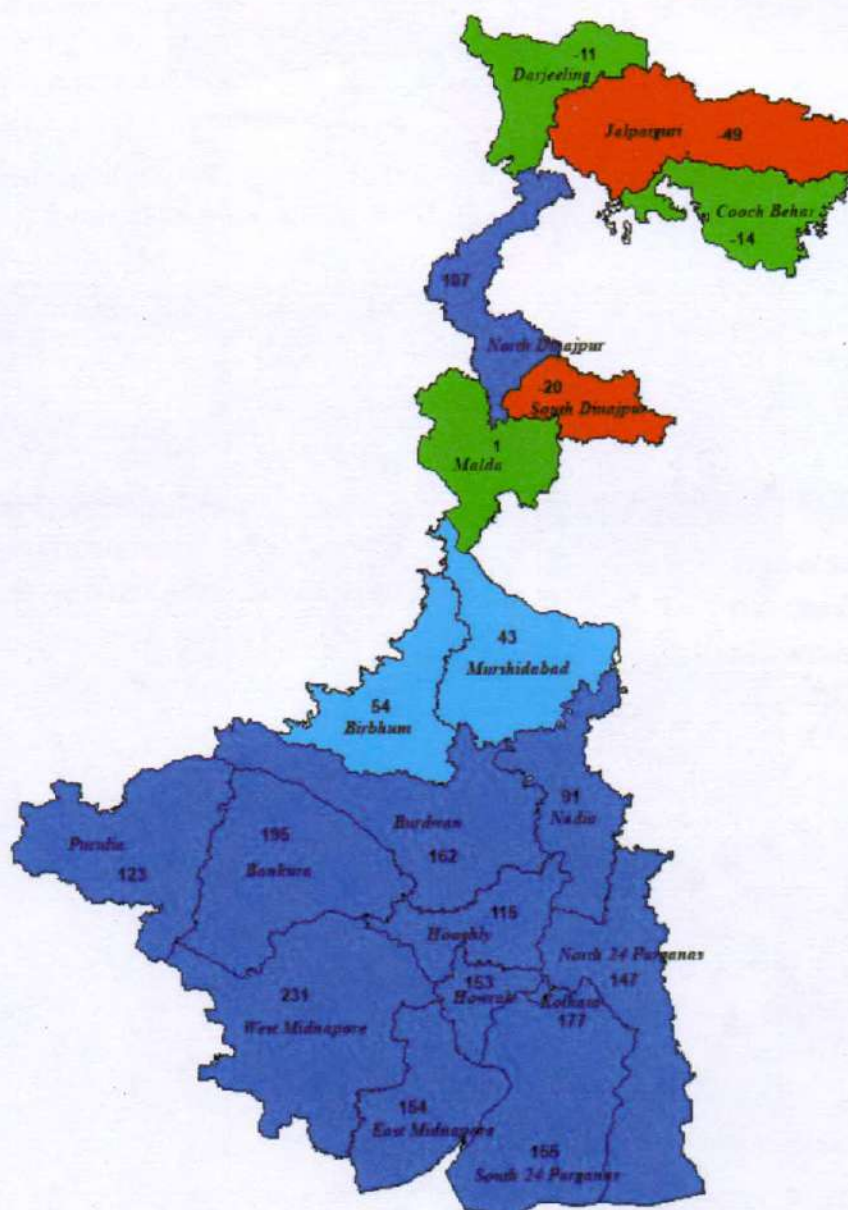


# INDIA METEOROLOGICAL DEPARTMENT

## RMC KOLKATA

### Rainfall % Departures from the Long Period Averages for Districts in WEST BENGAL

WEEK ENDING ON : 04.08.2021



**LEGEND:** ■ L. EXCESS (+60% OR MORE) ■ EXCESS (+20% TO +59%) ■ NORMAL (+19% TO -19%)  
 ■ DEFICIENT (-20% TO -59%) ■ L. DEFICIENT (-60% TO -99%) ■ NO RAIN (-100%) ■ NO DATA



## CHAPTER - 3

### Weather forecast on rainfall issued by IMD & activity undertaken

The incessant rainfall over the past few days starting from 27<sup>th</sup> July owing to the formation of a low-pressure area over Gangetic West Bengal has created a flood-like situation in southern districts of West Bengal.

RMC Kolkata issued a press release on 24<sup>th</sup> July'21 and forecasted enhanced rainfall during 27<sup>th</sup> to 30<sup>th</sup> July, 2021.

**Press Release (No. W – 00102 / IX ; Date: 24.07.2021.)**

**Subject: Enhance rainfall activity over the districts of South Bengal during 27<sup>th</sup> to 30<sup>th</sup> July, 2021.**

In anticipation of formation of low pressure area over North Bay of Bengal and neighbourhood around 28<sup>th</sup> July, 2021. Wide spread rainfall with heavy to very heavy rainfall is very likely over the districts of South Bengal during 27<sup>th</sup> July to 30<sup>th</sup> July, 2021.

**Forecast:** 27.07.2021 to 30.07.2021- Widespread rainfall is very likely to occur over the districts of South Bengal.

**Warning:**

**Heavy rainfall Warning:**

**(YELLOW WARNING)** 27.07.2021: Heavy rain (07-11 cm) likely to occur over North 24 Parganas, South 24 Parganas, East Midnapore, Hooghly, Howrah and East Burdwan districts of South Bengal.

**(ORANGE WARNING)** 28.07.2021 & 29.07.2021: i) Heavy to Very Heavy rain (07-20 cm) very likely to occur over North 24 Parganas, South 24 Parganas and East Midnapore districts. ii) Heavy rain (07-11 cm) likely to occur over Kolkata, Hooghly, Howrah, West Midnapore, Nadia and East Burdwan districts of South Bengal.

**(YELLOW WARNING)** 30.07.2021: Heavy rain (07-11 cm) likely to occur over Purulia, Bankura, West Burdwan and Birbhum districts of South Bengal.

**Possible Impact:**

- (i) Rise in water level in River.
- (ii) Water logging in low lying area.

**Action Taken :** Alerted all District EOCs, District Magistrates were requested to keep sufficient stock of relief articles, keep sewerage system clean & obstacle free and preventive measures to protect weak embankments of river. Additional relief material allotted. All supporting organization like SDRF, NDRF, Coast Guard and QRT of Civil Defence.



**Date: 26.07.2021**

**No. W – 00102 / IX /**

**Date: 26.07.2021.**

### **Special Bulletin-1**

**Subject: Enhance rainfall activity over the districts of South Bengal during 27<sup>th</sup> July to 30<sup>th</sup> July, 2021.**

In anticipation of formation of low pressure area over North Bay of Bengal and neighbourhood around 28<sup>th</sup> July, 2021. Wide spread rainfall with heavy to very heavy rainfall is very likely over the districts of South Bengal during 27<sup>th</sup> July to 30<sup>th</sup> July, 2021.

**Forecast:** 27.07.2021 to 30.07.2021- Light to moderate rainfall is very likely to occur at most places over the districts of South Bengal.

#### **Warning:**

##### **Heavy rainfall Warning:**

**27.07.2021 (YELLOW WARNING):** Heavy rain (07-11 cm) likely to occur over Coastal districts of Gangetic West Bengal (North 24 Parganas, South 24 Parganas, Howrah, East Midnapore, West Midnapore), Nadia and Jhargram districts of South Bengal.

**28.07.2021 & 29.07.2021 (ORANGE WARNING):** Heavy to Very Heavy rain (07-20 cm) very likely to occur over coastal districts (North 24 Parganas, South 24 Parganas, Howrah, Hooghly, West Midnapore, East Midnapore), Nadia and East Burdwan districts of South.

**(YELLOW WARNING):** Heavy rain (07-11 cm) likely to occur over Kolkata, Bankura, Birbhum, Purulia, Murshidabad, Jhargram and West Burdwan districts of South Bengal.

**30.07.2021 (ORANGE WARNING):** Heavy to Very Heavy rain (07-20 cm) very likely to occur over Purulia, Bankura, West Burdwan and West Midnapore districts.

**(YELLOW WARNING)** Heavy rain (07-11 cm) likely to occur over East Burdwan and Jhargram districts of South Bengal.

**Fishermen Warning (RED WARNING):** In anticipation of formation Low Pressure area over North Bay of Bengal and neighbourhood around 28<sup>th</sup> July, 2021, Fishermen are advised not to venture into the sea from 28<sup>th</sup> July Night to 30<sup>th</sup> July, 2021. Those who are in the deep sea are advised to return to the coast by 28<sup>th</sup> July, 2021 Evening.

#### **Possible Impact:**

- (i) Rise in water level in River.
- (ii) Water logging in low lying area.



**Date: 27.07.2021**

A low pressure area has formed over North Bay of Bengal & neighbourhood with associated cyclonic circulation extends upto mid troposphere level. It is very likely to become a Well Marked Low Pressure Area over North Bay of Bengal & adjoining Bangladesh during next 24 hours and slowly move westwards across West Bengal, Jharkhand and Bihar during next 3-4 days. Wide spread rainfall with heavy to very heavy rainfall is very likely over the districts of South Bengal during 27<sup>th</sup> July to 30<sup>th</sup> July, 2021. Details of Bulletin are attached hereunder.

**No. W – 00102 / IX /**

**Date: 27.07.2021.**

### **Special Bulletin-2**

**Subject: Enhance rainfall activity over the districts of South Bengal during 27<sup>th</sup> to 30<sup>th</sup> July, 2021.**

A low pressure area has formed over North Bay of Bengal & neighbourhood with associated cyclonic circulation extends upto mid tropospheric level. It is very likely to become a Well Marked Low Pressure Area over North Bay of Bengal & adjoining Bangladesh during next 24 hours and slowly move westwards across West Bengal, Jharkhand and Bihar during next 3-4 days. Wide spread rainfall with heavy to very heavy rainfall is very likely over the districts of South Bengal during 27<sup>th</sup> July to 30<sup>th</sup> July, 2021.

**Forecast:** 27.07.2021 to 30.07.2021 – Light to moderate rainfall is very likely to occur at most places over the districts of South Bengal.

#### **Warning:**

##### **Heavy rainfall Warning:**

**27.07.2021 (ORANGE WARNING)** Heavy to Very Heavy rain (07-20 cm) very likely to occur over coastal districts (North 24 Parganas, South 24 Parganas, Hooghly), Nadia, Birbhum, West Burdwan and East Burdwan districts.

**(YELLOW WARNING):** Heavy rain (07-11 cm) likely to occur over Coastal districts (Kolkata, Howrah, East Midnapore) and Murshidabad districts of South Bengal.

**28.07.2021 (ORANGE WARNING)** Heavy to Very Heavy rain (07-20 cm) very likely to occur over coastal districts (Howrah, Hooghly, Kolkata), Bankura and Purulia districts with Extremely Heavy rain (> 20 cm) over North 24 Parganas, Nadia, East & West Burdwan and Birbhum districts.

**(YELLOW WARNING):** Heavy rain (07-11 cm) likely to occur over South 24 Parganas, East & West Midnapore, Jhargram, Murshidabad districts of South Bengal.



**29.07.2021 (ORANGE WARNING) :**

Heavy to Very Heavy rain (07-20 cm) very likely to occur over Howrah, Hooghly, West Midnapore, Jhargram, Birbhum and East Burdwan districts with Extremely Heavy rain(> 20 cm) over Purulia, Bankura and West Burdwan districts.

**(YELLOW WARNING) :** Heavy rain (07-11 cm) likely to occur over East Midnapore, North 24 Pargana, South 24 Pargana, Nadia, Kolkata and Murshidabad districts of South Bengal.

**30.07.2021 (YELLOW WARNING) :**

Heavy rain (07-11 cm) likely to occur over West Midnapore, Purulia, Bankura, West Burdwan and Jhargram districts of South Bengal.

**Fishermen Warning (RED WARNING) :**

Due to formation of low pressure area over North Bay of Bengal today 27<sup>th</sup> July and its likely intensification in next 24 hours, fishermen are advised not to venture into the sea during 28-29<sup>th</sup> July, 2021. Those who are in deep sea are advised to return to coast by today the 27<sup>th</sup> July night.

**Possible Impact :**

- (i) Rise in water level in River.
- (ii) Water logging in low lying area.

**Date : 28.07.2021**

Yesterday's low pressure area over North Bay of Bengal & neighbourhood has intensified into a Well Marked Low Pressure Area and now lies over coastal Bangladesh & adjoining West Bengal. Wide spread rainfall with heavy to very heavy rainfall is very likely over the districts of South Bengal during 28th July to 30th July, 2021. Details of bulletin are attached hereunder.

**No. W - 00102 / IX /**

**Date : 28.07.2021.**

**Special Bulletin-3**

**Subject : Enhance rainfall activity over the districts of South Bengal during 28<sup>th</sup> to 30<sup>th</sup> July, 2021.**

Yesterday's low pressure area over North Bay of Bengal & neighbourhood has intensified into a Well Marked Low Pressure Area and now lies over coastal Bangladesh & adjoining West Bengal. Wide spread rainfall with heavy to very heavy rainfall is very likely over the districts of South Bengal during 28<sup>th</sup> July to 30<sup>th</sup> July, 2021.

**Forecast :** 28.07.2021 to 30.07.2021- Light to moderate rainfall is very likely to occur at most places over the districts of South Bengal.

राष्ट्रीय मौसम पूर्वानुमान केंद्र  
भारत मौसम विज्ञान विभाग  
पुणे विज्ञान भवन



National Weather Forecasting Centre  
India Meteorological Department  
Ministry of Earth Sciences

**Table-1**  
**5 Day Rainfall Forecast (MORNING)**  
**27-July-2021**

Met-Sub-Division	27-Jul Today	28-Jul Wed	29-Jul Thu	30-Jul Fri	31-Jul Sat
1. Andaman & Nicobar Islands	FWs	FWs	FWs	SCT	SCT
2. Arunachal Pradesh	FWs	FWs	FWs	FWs	FWs
3. Assam & Meghalaya	FWs	FWs	FWs	FWs	FWs
4. N. M. M. & T.	FWs	FWs	FWs	FWs	FWs
5. S.H. West Bengal & Sikkim	FWs	FWs	FWs	FWs	FWs
6. Gangetic West Bengal	FWs	FWs	FWs	FWs	FWs
7. Odisha	FWs	FWs	FWs	FWs	FWs
8. Jharkhand	FWs	FWs	FWs	FWs	FWs
9. Bihar	FWs	FWs	FWs	FWs	FWs
10. East Uttar Pradesh	FWs	FWs	FWs	FWs	FWs
11. West Uttar Pradesh	FWs	FWs	FWs	FWs	FWs
12. Uttarakhand	FWs	FWs	FWs	FWs	FWs
13. Haryana, Chd & Delhi	FWs	FWs	FWs	FWs	FWs
14. Punjab	FWs	FWs	FWs	FWs	FWs
15. Himachal Pradesh	FWs	FWs	FWs	FWs	FWs
16. J & K and Ladakh	FWs	FWs	FWs	FWs	FWs
17. West Rajasthan	FWs	FWs	FWs	FWs	FWs
18. East Rajasthan	FWs	FWs	FWs	FWs	FWs
19. West Madhya Pradesh	FWs	FWs	FWs	FWs	FWs
20. East Madhya Pradesh	FWs	FWs	FWs	FWs	FWs
21. Gujarat Region	FWs	FWs	FWs	FWs	FWs
22. Saurashtra & Kutch	FWs	FWs	FWs	FWs	FWs
23. Konkan & Goa	FWs	FWs	FWs	FWs	FWs
24. Madhya Maharashtra	FWs	FWs	FWs	FWs	FWs
25. Marathwada	FWs	FWs	FWs	FWs	FWs
26. Vidharbha	FWs	FWs	FWs	FWs	FWs
27. Chhattisgarh	FWs	FWs	FWs	FWs	FWs
28. Coastal A. P. & Yanam	FWs	FWs	FWs	FWs	FWs
29. Telangana	FWs	FWs	FWs	FWs	FWs
30. Rayalaseema	FWs	FWs	FWs	FWs	FWs
31. T.N. Puducherry & Karaikal	FWs	FWs	FWs	FWs	FWs
32. Coastal Karnataka	FWs	FWs	FWs	FWs	FWs
33. North Interior Karnataka	FWs	FWs	FWs	FWs	FWs
34. South Interior Karnataka	FWs	FWs	FWs	FWs	FWs
35. Kerala & Mahe	FWs	FWs	FWs	FWs	FWs
36. Lakshadweep	FWs	FWs	FWs	FWs	FWs

**% Station Reporting Rainfall**

% Stations	Category	% Stations	Category
76-100	Heavy Rainfall (HRS/ Many Places)	26-50	Light to Moderate Rainfall
52-75	Heavy Rainfall (HRS/ Many Places)	1-25	Thunder (TCL)
No Rain	Dry		



## Warning : Heavy rainfall

### Heavy rainfall

**28.07.2021 (ORANGE WARNING) :** Heavy to Very Heavy rain (07-20 cm) with Extremely Heavy rain (> 20 cm) very likely to occur over North 24 Pargana and South 24 Pargana districts and Heavy to Very Heavy rain (07-20 cm) over Howrah, Hooghly, East Burdwan and East Midnapore districts.

**(YELLOW WARNING) :** Heavy rain (07-11 cm) likely to occur over Kolkata, West Midnapore, West Burdwan, Bankura, Purulia, Birbhum, Nadia, Jhargram, Murshidabad districts of South Bengal.

**29.07.2021 (ORANGE WARNING) :** Heavy to Very Heavy rain (07-20 cm) with Extremely Heavy rain (> 20 cm) very likely to occur over Purulia, Bankura, West Midnapore, Jhargram and West Burdwan districts and Heavy to Very Heavy rain (07-20 cm) very likely to occur over Howrah and Hooghly districts.

**(YELLOW WARNING) :** Heavy rain (07-11 cm) likely to occur over Kolkata, East Midnapore, North 24 Pargana, South 24 Pargana, Nadia, Birbhum, East Burdwan and Murshidabad districts of South Bengal.

**30.07.2021 (YELLOW WARNING) :** Heavy rain (07-11 cm) likely to occur over Purulia, Bankura and West



with heavy to very heavy rainfall is very likely over the districts of South Bengal during 29th July to 30th July, 2021. Detail of bulletin is attached.

No. W - 00102 / IX /

Date : 29.07.2021.

### Special Bulletin-4

**Subject : Enhance rainfall activity over the districts of South Bengal during 29<sup>th</sup> to 30<sup>th</sup> July, 2021.**

The Well Marked Low Pressure Area over Bangladesh & adjoining West Bengal persists. The associated cyclonic circulation extends upto upper tropospheric levels. It is likely to move westwards across West Bengal, Jharkhand and Bihar during next 48 hours. Wide spread rainfall with heavy to very heavy rainfall is very likely over the districts of South Bengal during 29<sup>th</sup> July to 30<sup>th</sup> July, 2021.

## Wednesday 28 July 2021



Burdwan districts of South Bengal.

**Fishermen Warning (RED WARNING) :** Under the influence of Well marked low pressure area over coastal Bangladesh & adjoining West Bengal, wind speed is likely to exceed 45 kmph, fishermen are advised not to venture into the sea on 28<sup>th</sup> - 29<sup>th</sup> July, 2021.

### Possible Impact :

- (i) Rise in water level in River.
- (ii) Water logging in low lying area.

**Date : 29.07.2021**

The Well Marked Low Pressure Area over Bangladesh & adjoining West Bengal persists. The associated cyclonic circulation extends upto upper troposphere levels. It is likely to move westwards across West Bengal, Jharkhand and Bihar during next 48 hours. Wide spread rainfall



**Realised Rainfall (in cm) (24 hours rainfall recorded at 0830 hours IST of 29.07.2021) :** Kharagpur (I.I.T)-26; Midnapore, Midnapore (CWC) -23 each; Durgachack -22; Mohanpur -21; Itamogra (E-MDP)-20; Canning, Narajole (W-MDP)-19; Barisha (W-MDP) -15; Indus(BNK), Ghatal (W-MDP)-13; Jhargram, Sabong (W-MDP)-12; Kalaikunda (IAF), Paskuara (E-MDP), Amgachia (E-MDP), Jhargram-11; Contai, Diamond Harbour, D.P. Ghat-9 each; Alipore, Contai-8; AMFU Kakdwip, Lalgarh, Raina (E-BDW), Amlagora (W-MDP), Tamluk (E-MDP), Chowbhaga (S-24Pgs), Uttarbhag (S-24Pgs), Sagar Island-7each

**Forecast : 29.07.2021 to 30.07.2021** - Light to moderate rainfall is very likely to occur at most places over the districts of South Bengal.

**Warning :**

**Heavy rainfall**

**29.07.2021 (RED WARNING) :** Heavy to Very Heavy rain (07-20 cm) with Extremely Heavy rain (> 20 cm) very likely to occur over North & South 24 Parganas, East & West Midnapore, Jhargram and Howrah districts.

**(ORANGE WARNING) :** Heavy to Very Heavy rain (07-20 cm) very likely to occur over Kolkata, Bankura, Purulia, East & West Burdwan and Hooghly districts.

**(YELLOW WARNING) :** Heavy rain (07-11 cm) likely to occur over Murshidabad, Nadia and Birbhum districts of South Bengal.

**30.07.2021 (ORANGE WARNING) :** Heavy to Very Heavy rain (07-20 cm) very likely to occur over Purulia district.

**(YELLOW WARNING) :** Heavy rain (07-11 cm) likely to occur over Bankura, West Burdwan and West Midnapore districts of South Bengal.

**Wind Warning (YELLOW WARNING) :** Wind speed 30-40 kmph likely to prevail over Kolkata, Nadia, North & South 24 Parganas, Howrah, Hooghly, East & West Midnapore districts of South Bengal.

**Fishermen Warning (RED WARNING) :** Under the influence of Well marked low pressure area over Bangladesh & adjoining West Bengal, wind speed is likely to exceed 45 kmph, fishermen are advised not to venture into the sea on 29th & 30th July' 2021.

**Possible Impact :**

- (i) Rise in water level in River.
- (ii) Water logging in low lying area.
- (iii) Damage of kuchha road.
- (iv) Damange of standing vegetable crops.

**Date : 30.07.2021**

The Well Marked Low Pressure Area over Interior parts of Gangetic West Bengal & neighbourhood now lies over Gangetic West Bengal & adjoining Jharkhand with the associated cyclonic circulation extending upto 7.6 km above mean sea level. It is likely to move west-northwestwards across south Bihar and southern parts of Uttar Pradesh during next 2-3 days.

**No. W - 00102 / IX /**

**Date : 30.07.2021.**

**Special Bulletin-5**

**Subject : Enhance rainfall activity over the districts of West Bengal during 30<sup>th</sup> to 31<sup>st</sup> July, 2021.**

Yesterday's Well Marked Low Pressure Area over Interior parts of Gangetic West Bengal & neighbourhood now lies over Gangetic West Bengal & adjoining Jharkhand with the associated cyclonic circulation extending upto 7.6 km above mean sea level. It is likely to move west- northwestwards across south Bihar and southern parts of Uttar Pradesh during next 2-3 days.



### Realised Rainfall (in cm) (24 hours rainfall recorded at 0830 hours IST of 30.07.2021) :

Panskura ORG (E Midnapore) - 25 cm; Uluberia AWS (Howrah) , Diamond Harbour (South 24 Pdns.) - 22 cm each; Ghatal ORG (W Midnapore) - 21 cm; Indus ORG (Bankura)-19 cm; AMFU Kalimpong (Darjeeling) - 18 cm; Sehera Bazar ORG ( E Burdwan) , Amta ORG (Howrah)- 17 cm; Kalimpong (Darjeeling), Domjur ORG (Howrah)- 16 cm ; Kolkata (Alipore), Barrackpore IAF (North 24 Pdns.), Kolkata (Airport) (North 24 Pdns.), Hetampur (Birbhum) - 15 cm each; Midnapore CWC, (West Midnapore), Lohai ORG ( E Burdwan)- 14 cm; Midnapore (West Midnapore), Bankura CWC (Bankura), Harinkhola (Hooghly), Singur ORG (Hooghly), Tamluk ORG (E Midnapore), Bongaon ORG (N 24 Pdns.), Tentulia ORG (N 24 Pdns.) - 13 cm each; Salt Lake (North 24 Pdns.), Gushkara ORG ( E Burdwan), Memari ORG ( E Burdwan) - 12 cm; Bankura (Bankura), Darjeeling (Darjeeling), Arambagh ORG (Hooghly), Itamogra ORG (E Midnapore), Chowbhaga ORG (S 24 Pdns.) - 11 cm each; Debagram (Nadia), Kharagpur IIT (West Midnapore), Durgachak ( East Midnapore), Mohanpur (West Midnapore), Rajnagar (Birbhum), Kangsabati dam (Bankura), Lalgargh ( West Midnapore), Sabang (W Midnapore) -10 cm each.

**Forecast : 30.07.2021 to 31.07.2021-** Light to moderate rainfall is very likely to occur over the districts of West Bengal.

#### Warning :

##### Heavy rainfall Warning :

**30.07.2021 (ORANGE WARNING) :** (i) Heavy to Very Heavy rain (07-20 cm) very likely to occur over Purulia, West Burdwan, Bankura and Birbhum districts of South Bengal.

(ii) Heavy to Very Heavy rain (07-20 cm) very likely to occur over Darjeeling and Kalimpong districts of North Bengal.

**(YELLOW WARNING) :** Heavy rain (07-11 cm) likely to occur over Jalpaiguri, Cooch Behar and Alipurduar districts of North Bengal.

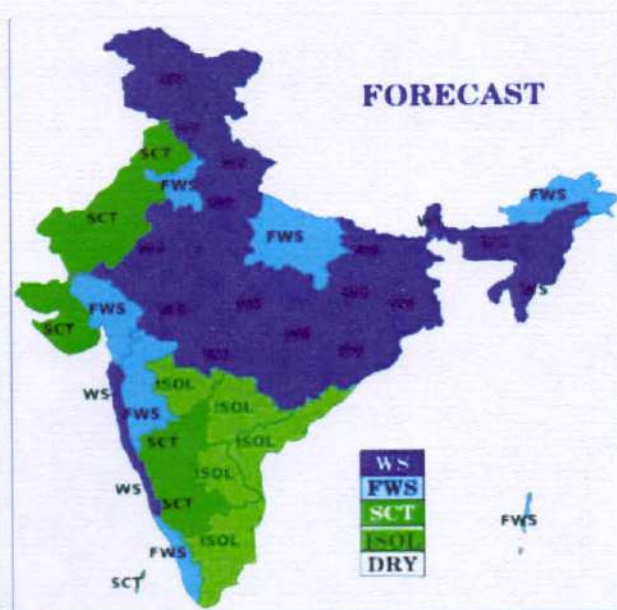
**31.07.2021 (ORANGE WARNING) :** Heavy to Very Heavy rain (07-20 cm) very likely to occur over Darjeeling and Kalimpong districts of North Bengal.

**Fishermen Warning (RED WARNING) :** Due to squally wind over North Bay of Bengal, fishermen are advised not to venture into the sea during next 24 hours.

#### Possible Impact :

- (i) Rise in water level in River.
- (ii) Water logging in low lying area.
- (iii) Damage of Kuchha road.
- (iv) Damage of standing vegetable crops.
- (v) Landslide is likely in Darjeeling and Kalimpong districts.

## Friday 30 July 2021







## Significant Rainfall occurred during 8.30 hrs IST of 29-07-2021 to 8.30 hrs IST of 30-07-2021

### Extremely Heavy Rain :

Panskura (E MDP) – 25 cm;  
Uluberia (HWH), Diamond Harbour (S 24 PGS) –22 cm each;  
Ghatal (W MDP) – 21 cm;  
Debogram (BRB) – 20 cm;

### Very Heavy Rain:

Indus (BNK) – 19 cm;  
AMFU Kalimpong (Darjeeling) – 18 cm;  
Sehera Bazar ( E BWN) , Amta (HWH)– 17 cm;  
Kalimpong (Darjeeling) , Domjur (HWH)– 16 cm ;  
Kolkata (Alipore), Barrackpore IAF (N 24 PGS.),  
Kolkata Airport(N 24 PGS.), Hetampur (BRB) – 15 cm each;  
Midnapore CWC (W MDP) , Lohai (E BWN) – 14 cm;  
Midnapore (W MDP), Bankura CWC (BNK), Harinkhola  
(HGLY), Singur ORG (HGLY), Tamluk ORG (E MDP),  
Bongaon ORG (N 24 PGS), Tentulia ORG (N 24 PGS)–13cm each;  
Salt Lake (N 24 PGS.), Gushkara ORG ( E BWN),  
Memari ORG ( E BWN)– 12 cm;

**Regional Meteorological Centre Kolkata**





## **Significant Rainfall occurred during 8.30 hrs IST of 29-07-2021 to 8.30 hrs IST of 30-07-2021**

### **Heavy Rain:**

Bankura (BNK), Darjeeling (Darjeeling), Arambagh (HGLY),  
Itamogra (E MDP), Chowbhaga (S 24 PGS.) – 11 cm each;

Debagram (Nadia), Kharagpur IIT (W MDP),  
Durgachak (E MDP), Mohanpur (W MDP),  
Rajnagar (BRB), Kangsabati dam (BNK), Lalgah (WMDP),  
Sabang (W MDP) – 10 cm each;

Luchipur, Manteswar, Mankar (BWN), Kalaikunda IAF  
(WMDP), Canning (S 24 Pgs.), Labpur (BRB), Shyambati  
(BRB), Jamalpur (E BWN), Barisha (W MDP), Uttarbhag  
(S 24 Pgs) – 9 cm;

Sriniketan (BRB), Jhargram (W MDP), Durgapur (BWN),  
Krishnanagar (NAD), Burdwan (BWN), Simulia (PRL),  
Mangalkote (BWN), Bagati (HGLY), Kanainatsal (E BWN)  
Amlagora (W MDP), Jhargram (JRGM) – 8 cm each;

Asansol CWC, Asansol FMO, Burnpur (BWN), Tusuma (PRL)  
, Suri CWC (BRB), Purulia (PRL), Katwa (E BWN),  
Sonamukhi ORG (BNK) – 7 cm each;

**Regional Meteorological Centre Kolkata**



## CHAPTER - 4

### DAM Water Release :

**Release of water from the DVC dams at Panchet, Maithon, Tilpara and Tenughat and Durgapur barrage since 27<sup>th</sup> July and unprecedented water release from 31<sup>st</sup> July caused flash flood in Birbhum, Purba Bardhaman, Hooghly, Paschim Medinipur and Howrah districts.**

In addition to the regular water release from dams, additional water has been released from 27<sup>th</sup> July and that reached to a peak on 31<sup>st</sup> July and again the same continued till 4<sup>th</sup> August. The combined dam released and discharge from Durgapur Barrage (28<sup>th</sup> July to 4<sup>th</sup> August 2021) showed continuous heavy release from Tilpara, Maithon, Panchet and Tenughat.

Date wise water release from Durgapur Barrage - Barakar (Tilpara To Maithon), Damodar upto Tenughat to Panchet & lower Durgapur Barrage given below:

Date	Combined release from DAMs (in cusec)	Time	Discharge at Durgapur Barrage (in cusec)	Remarks
27.07.2021	22000		30750	
28.07.2021	34000	0600 1200 1800 2300	40400 35000 36000 33450	
29.07.2021	Effect of 34000 received	0600 0900 1200 1500 1800 2300	34500 36500 42900 45400 47050 47600	
30.07.2021		0600 0900 1200 1500 1800 2100 2300 2400	47600 51800 54725 56675 61625 75525 85400 90575	Peak discharge of 47000 cusec of 29 <sup>th</sup> July passed through Udaynarayanpur at around 24:00 hrs. on 30 <sup>th</sup> July (after 40 hrs.)
31.07.2021	At 1100 hrs. - 49000  At 1500 hrs. - 100000  At 2330 hrs. - 114000	0100 0200 0400 0600 0900 1200 1500 1700 2000 2400	96875 103175 117775 123575 130875 122775 119775 103425 96700 91250	Peak discharge of 90575 cusec of 30 <sup>th</sup> July passed through Udaynarayanpur at around 04:00 hrs. on 1 <sup>st</sup> August (after 40 hrs.)

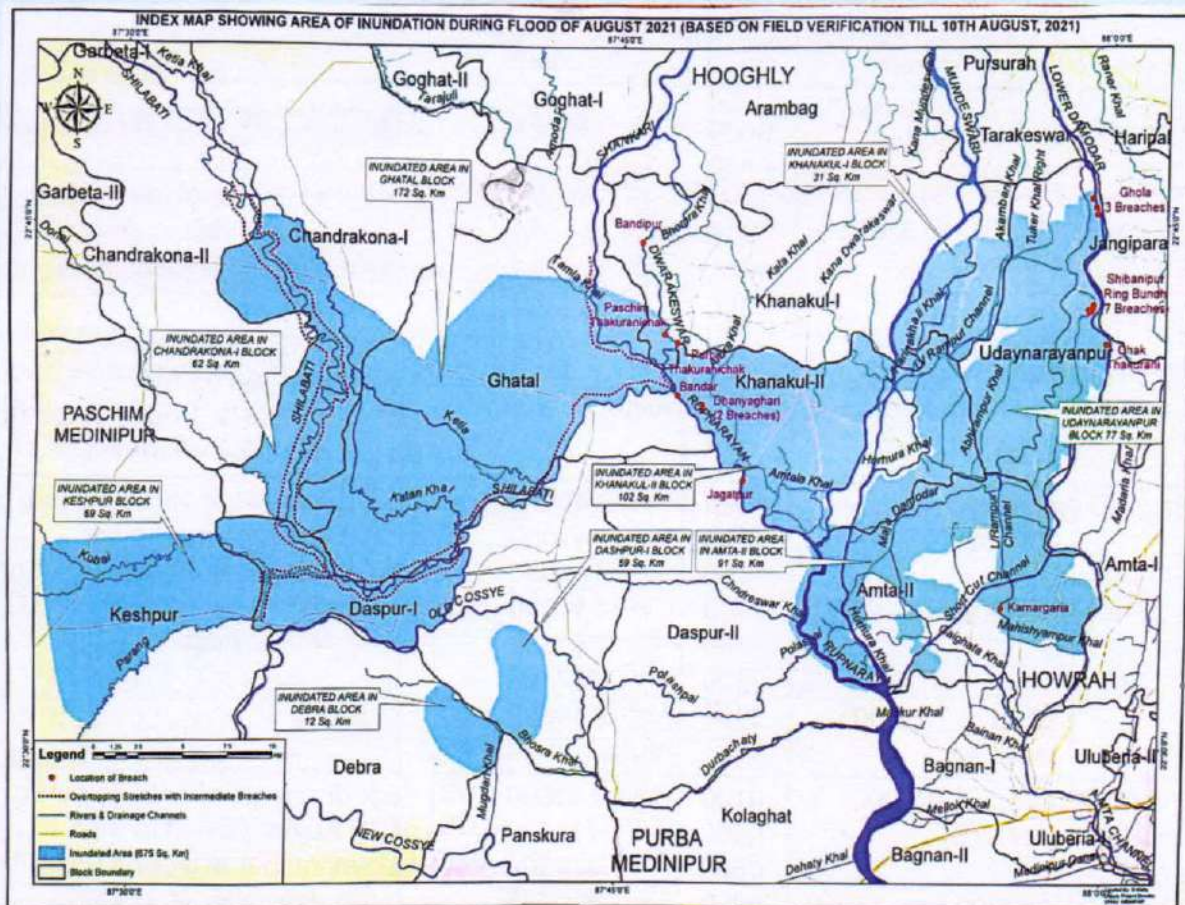


Date	Combined release from DAMs (in cusec)	Time	Discharge at Durgapur Barrage (in cusec)	Remarks
01.08.2021	Effect of 100000 received	0600 0800 1100 1200 1300 1800 2300 2400	137725 146875 146875 146875 155575 151350 146175 146175	Discharge over 137000 cusec passed for 41:00 hrs. peak discharge in the current spell measuring 155575 cusec passed for 4 hrs down Durgapur barrage. Peak  discharge of 130875 cusec of 31 <sup>st</sup> July, passed though Udaynaranpur at around 13:00 hrs. on this day (after 40 hrs.)
02.08.2021	At 1100 hrs. - 100000  At 1900 hrs. - 80000  Effect of 100000 received	0100 0200 1100 1900 2200 2300 2400	146175 141000 141000 141000 141000 137500 134000	Peak discharge of 155575 cusec of 1 <sup>st</sup> August passed though Udaynaranpur at around 17:00 hrs. on this day. (after 40 hrs.)
03.08.2021	Effect of 100000 received  At 0900 hrs - 55000  At 1530 hrs. - 45000  Effect of 55000 received	0100 0500 0600 0900 1200 1600 1800 2100 2300 2400	132600 132600 118500 100925 106375 106375 103650 92825 79700 74700	Peak discharge of 146175 cusec of 2 <sup>nd</sup> August passed though Udaynaranpur at around 05:00 hrs. on this day. (after 40 hrs.)
04.08.2021	Effect of 45000 received  At 1200 hrs - 55000  At 1400 hrs. - 40000	0100 0400 0700 0900 1200 1400	74700 65000 60875 62875 62875 62875	Peak discharge of 132600 cusec of 3 <sup>rd</sup> August passed though Udaynaranpur at around 05:00 hrs. on this day. (after 40 hrs.)  At 1500 hrs. on 4 <sup>th</sup> August the effect of 100925 cusec observed. Present discharge down the barrage of 62000 cusec will pass Udaynaranpur at around 1200 hrs. on 5th August 2021.

Amta + Mundeswari  
= 108000



## Inundation map:



2<sup>nd</sup> spell of enhanced rainfall warning issued by IMD again on 04.08.2021

**Subject :** Enhance rainfall activity over the districts of West Bengal during 4<sup>th</sup> to 6<sup>th</sup> August, 2021

Due to presence of Cyclonic Circulation over North Bay of Bengal and adjoining area and passing of eastern part of monsoon trough from Sriniketan, Diamond Harbour thence to Northeast Bay of Bengal wide spread rainfall activity is likely to occur over the districts of Gangetic West Bengal during 4<sup>th</sup> to 6<sup>th</sup> August, 2021. Detail bulleting is attached

No. W – 00102 / IX /

Date : 04.08.2021

### Special Bulletin No-1

**Subject :** Enhance rainfall activity over the districts of West Bengal during 4<sup>th</sup> to 6<sup>th</sup> August, 2021.

Due to presence of Cyclonic Circulation over North Bay of Bengal and adjoining area and passing of eastern part of monsoon trough from Sriniketan, Diamond Harbour thence to Northeast Bay of Bengal wide spread rainfall activity is likely to occur over the districts of Gangetic West Bengal during 4<sup>th</sup> to 6<sup>th</sup> August, 2021.

**Forecast :** Thunderstorm with lighting alongwith light to moderate rain very likely to occur at most places over the districts of Gangetic West Bengal during 4<sup>th</sup> to 6<sup>th</sup> August, 2021.

**Warning :**

**A) Heavy Rainfall Warning :**



**04.08.21**

**(ORANGE WARNING):** Heavy to very heavy (07-20 cm) rainfall likely to occur at one or two places over North & South 24 Pargana, East & West Midnapore, East & West Burdwan, Howrah and Hooghly districts.

**(YELLOW WARNING):** Heavy rain (07-11 cms) likely to occur at one or two places over Kolkata, Bankura, Purulia, Birbhum and Jhargram districts.

**05.08.21**

**(YELLOW WARNING):** Heavy rain (07-11 cms) likely to occur at one or two places over East & west Midnapore and South 24 Pargana districts.

**06.08.21**

**(YELLOW WARNING):** Heavy rain (07-11 cms) likely to occur at one or two places over West Midnapore, Jhargram, Bankura and Purulia districts.

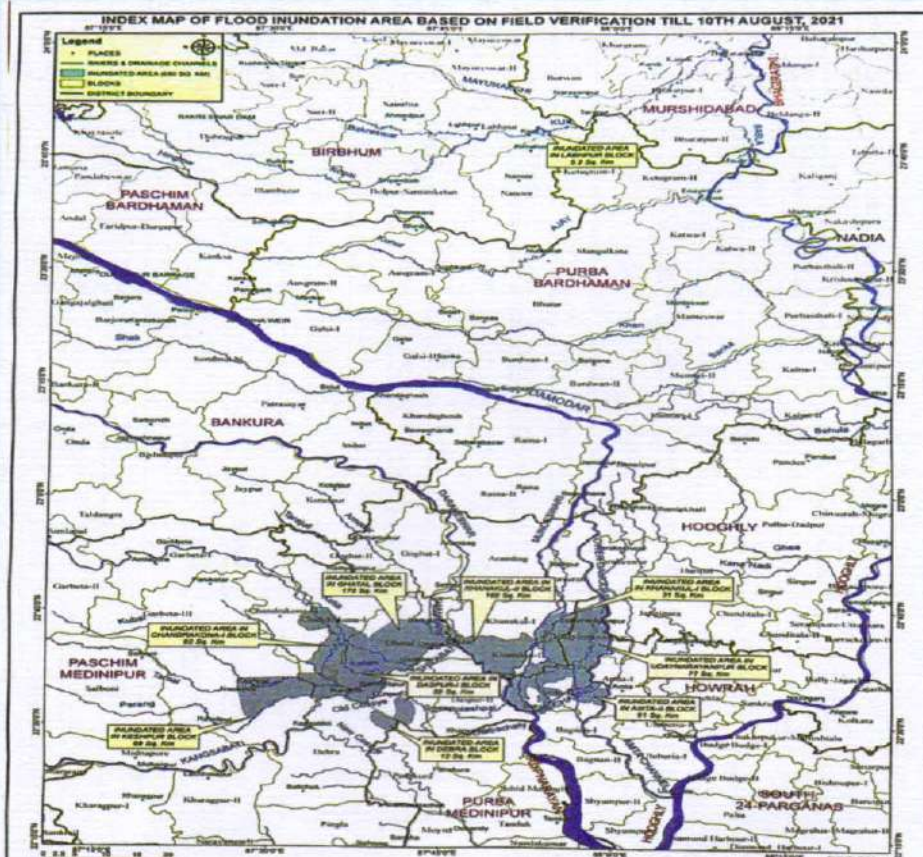
#### Possible Impact

1. Rise in water level in river
2. Water logging in low lying area
3. Traffic congestion due to water logging and intense spell of rainfall
4. Damage to standing vegetable crops in the field

#### Action suggested by IMD:

During lightning activity peoples are advised to stay indoor and take shelter in pucca structure.

#### Inundation area :





# CHAPTER - 5

RAINFALL (mm) REPORT IN THE DISTRICTS OF WEST BENGAL FROM 01.06.2021 TO 02.08.2021																
Sl No	District	June-21			July-21			August-21 (From 01.08.2021 to 02.08.2021)			Seasonal (From 01.06.2021 to 02.08.2021)		Actual Rainfall on 31.07.2021	Actual Rainfall on 01.08.2021	Actual Rainfall on 02.08.2021	
		Actual	Normal	% Dep	Actual	Normal	% Dep	Actual	Normal	% Dep	Actual	Normal				% Dep
1	Darjeeling	623.5	585.0	7	889.0	805.0	10	62.2	34.3	81	1575	1424.3	11	28.5	22.5	39.7
2	Jalpaiguri	602.0	676.0	-11	691.3	896.4	-23	31.8	43.3	-27	1325	1615.7	-18	4.2	11.1	20.7
3	Alipurduar	704.4	705.5	0	656.5	969.0	-32	18.3	45.3	-60	1379	1719.8	-20	4.6	2.5	15.8
4	Coochbehar	422.8	580.3	-27	735.7	792.9	-7	51.9	33.2	56	1210	1406.4	-14	4.7	10.9	41
5	Uttar Dinajpur	218.8	346.5	-37	292.2	530.8	-45	46.3	20.1	130	557	897.4	-38	1.8	21	25.3
6	Dakshin Dinajpur	395.2	288.9	37	129.0	400.1	-68	56.9	27.0	111	581	716.0	-19	0.1	37.7	19.1
7	Malda	232.8	229.4	1	202.9	353.1	-43	18.3	29.6	-38	454	612.1	-26	25.1	15.3	2.9
8	Murshidabad	290.3	236.5	23	246.4	309.3	-20	4.7	13.2	-64	541	559.0	-3	13.6	3.1	1.7
9	Nadia	248.7	245.9	1	264.0	307.8	-14	4.4	11.8	-63	517	565.5	-9	1.1	0.6	3.8
10	Birbhum	310.7	234.2	33	320.2	324.5	-1	1.6	16.2	-90	633	574.9	10	29.4	1.6	0
11	Bankura	419.9	241.4	74	480.5	299.8	60	1.0	20.7	-95	901	561.9	60	25.6	0.6	0.4
12	Purulia	369.0	252.9	46	433.2	298.5	45	0.7	24.3	-97	803	575.7	39	100.3	0.7	0
13	Burdwan	355.6	229.3	55	333.0	289.1	15	5.8	16.9	-66	694	535.3	30	8.9	0.9	5
14	Hooghly	334.3	248.5	35	371.3	312.9	19	2.8	18.4	-85	708	579.8	22	2.4	0.1	2.6
15	Midnapur (E)	368.8	273.1	35	349.9	312.1	12	0.0	23.8	-100	719	609.0	18	0.3	0	0
16	Midnapur (W)	324.5	260.1	25	424.5	322.0	32	7.2	22.8	-68	756	604.9	25	3.8	1.4	5.8
17	Howrah	343.1	249.3	38	533.6	315.6	69	0.0	26.7	-100	877	591.6	48	0.0	0	0
18	N.24-Parganas	397.4	287.8	38	451.2	333.7	35	0.0	19.0	-100	849	640.5	32	3.4	0	0
19	S.24-Parganas	522.6	309.7	69	632.3	386.9	63	0.0	29.2	-100	1155	725.8	59	0.0	0	0
Sub-Himalayan WB		457.1	487.4	-6	513.8	678.2	-24	40.8	33.3	23	1011.7	1198.8	-16	13.6	6.8	9.7
Gangetic WB		357.1	255.7	40	403.3	317.7	27	2.4	20.3	-88	762.8	593.7	28	15.7	0.8	1.6
State as a whole		393.9	341.1	15	444.0	450.5	-1	16.5	25.0	-34	854.5	816.6	5	14.9	3.0	4.6
N.B. Excess = 20% or More, Normal = $\pm$ 19%, Deficient = -20% to -59%, Scanty = - 60% to - 99%, No Rain = -100% , % Dep = % Departure from Normal																
* Sl. No. 1 to 7 is under Sub-Himalayan WB													Sd/- Dr. M. Biswas			
* Sl. No. 8 to 19 is under Gangetic WB													Agricultural Meteorologist, West Bengal			



## CHAPTER - 6

### Damages and Relief Measures taken

**Incident :** Flooding due to Extremely Heavy rainfall from 28<sup>th</sup> July to 1<sup>st</sup> August 2021 and release of water by DVC/ Dams.

**Total Number of Districts Affected : 13**

(Bankura, Birbhum, Darjeeling, Hooghly, Howrah, Kalimpong, North 24 Parganas, Paschim Bardhaman, Paschim Medinipur, Purba Bardhaman, Purulia, South 24 Parganas).

Kolkata is also waterlogged due to heavy rainfall.

Population Affected: 10.76 lakhs

No. of Houses Damaged: 56,647

**Mitigation Measures taken :**

- Massive evacuation operation undertaken, over 1,38,394 people evacuated
- SDRF Team Deployed - 15 Teams (Howrah, Hooghly, Paschim Medinipur, Birbhum, Purba Medinipur, Kalimpong)
- NDRF Teams Deployed - 10 Teams (Howrah, Hooghly, Paschim Medinipur, Jalpaiguri, North 24 Parganas, South 24 Parganas)
- Relief Camp Opened - 426
- People at Relief Camp - 52,757
- Tarpaulin Distributed - 2,10,440
- No. of Water pouches distributed: 7.73 Lakhs



**District wise Block & Municipality Affected, People affected (KMC also water logged)**

Sl. No.	District	No of Blocks Affected	No. of Municipality affected
1	Bankura	22	3
2	Birbhum	11	2
3	Darjeeling	8	3
4	Hooghly	14	3
5	Howrah	14	2
6	Kalimpong	3	1
7	North 24 Parganas	13	6
8	Paschim Bardhaman	5	1
9	Paschim Medinipur	21	7
10	Purba Bardhaman	12	4
11	Purulia	14	1
12	South 24 Parganas	12	3
	<b>Total -</b>	<b>149</b>	<b>36</b>



**Relief Materials already available in affected districts :**

Tarpaulins available in affected districts: 9.28 lakhs

Clothing/Garments available in affected districts: 15.72 lakhs

Special GR (Rice): 1300 MT

**Additional allotment of Relief articles & Relief contingency :**

Item	Quantity
Tarpaulin	3.15 Lakh
Clothing	1.10 Lakh
Relief Contingency	Rs. 4.00 Crore
DM Kit	5000
Special GR (Rice)	1800 MT

**Report of Deaths:**

Sl. No.	District	Death
1	Bankura	11
2	Birbhum	11
3	Darjeeling	0
3	Hooghly	2
4	Howrah	2
5	Kalimpong	3
6	North 24 Parganas	1
7	Paschim Bardhaman	5
8	Paschim Medinipur	14
9	Purba Bardhaman	7
10	Purulia	7
11	South 24 Parganas	2
	<b>Total -</b>	<b>65</b> (Lightning- 33, Wall Collapse- 9, Drowning- 18, Landslide- 3, Electrocution- 2)

**Loss to Agriculture :**

Agriculture affected by inundation: 4.69 lakh hectares

Money value loss: Rs. 2580.22 Crore

Crops affected: Paddy, Jute, Groundnut, Maize, Betel-vine, Fruits and Vegetables

**Damage to Drinking Water :**

No. of Tube well affected: 14656

No. of Piped Water Supply Schemes Damaged: 51

No. of Water pouches distributed: 7.73 Lakhs

Total estimated Damage: 410 Crore

**Damage to Roads and Culverts/Bridges :**

Road Damaged (PWD maintained): 1679.29 Km

No. of Damaged Bridges / Culvert: 121

Length of Damaged Rural Road: 2649.23 Km

Total Approximate cost and damage: 540.75 crore







## CHAPTER - 7

### Summary of Sector wise Primary Damage Report

Sl. No.	Sector	Extent of assessed damage so far	Quantum of Damages (INR Crores)
1	Dwelling Houses	a. Approximately 56,647 house are damaged b. Worst affected districts: Bankura, Birbhum, Darjeeling, Kalimpong, Hooghly, Howrah, North 24 Parganas, Paschim Bardhaman, Paschim Medinipur, Purba Bardhaman, Purulia, South 24 Parganas c. Loss of essential house hold items	923.34
2	Agriculture & Horticulture	a. Physical loss: Inundation: 4.68 lakh hectares b. Nature of damage: Inundation	2580.22
3	Fisheries	a. Water area affected -2799.10 Ha	2.99
4	Roads including rural roads, culverts	a. Road Damaged (PWD maintained)- 1679.29 Km (92.13 Cr.) b. No. of Damaged Bridges / Culvert - 121 (55 + 66) c. Length of Damaged Rural Road - 2649.23 Kms. (Rs. 448.62)	540.75
5	Irrigation canals/Ponds	a. Physical damage-Total 247.094 km embankment length in 328 locations b. Damaged structures, including sluices, inlets, regulators & bridges - 84 c. Damaged inspection paths /roads -162.41 Km	1584.62
6	Drinking water	a. Tube well affected -14656 b. Piped Water Supply Schemes Damaged - 51	410.00
7	Animal Resource	a. No. of animals and birds affected -402422 b. No. of animals and birds died-1218	0.04
8	Health Sector	a. Damage to PHC/BPHCs - 32 b. Damage to SCs - 23; Damage to DH/SDH/SGH-6	4.67
9	Sundarbans	a. Primary damage assessed	9.82
10	Damage to Urban sector	a. Road damaged due to water logging - 216.15 Km b. Damage to Underground sewerage system - 8.10 Km	80.72
11	Damage to Micro Irrigation schemes	a. Damage to schemes under WRI&D	18.68
12	Damage to Power Sector	a. Damage to power sector - Damage to 597 Elec. poles	5.75
13	Damage to Tourism sector	a. Damage to Infrastructure	0.72
14	Damage to Education Sector	a. Damage to Schools - 541	8.11
15	Evacuation & Relief cost etc.	a. Cost of evacuation, relief operation etc. b. Cost to combat flood situation	72.03
		<b>TOTAL LOSSES (Rs. in Crore) -</b>	<b>6242.46</b>



# ANNEXURES







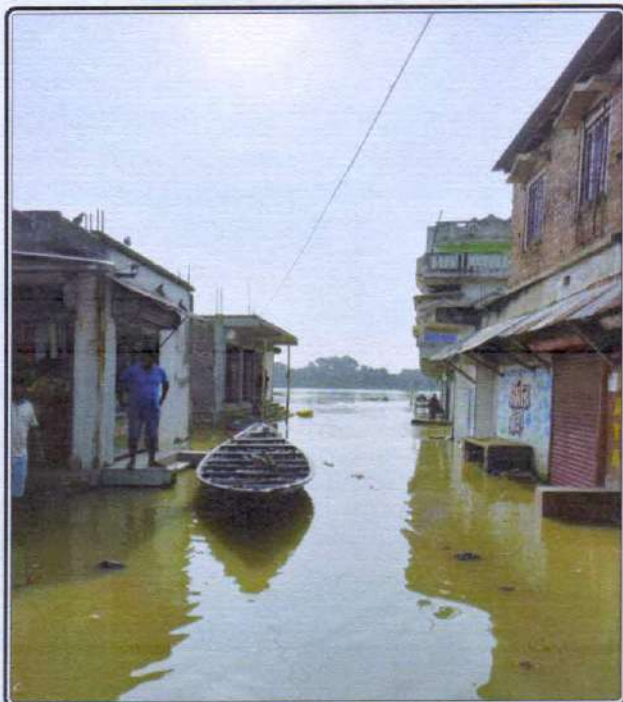
**Annexure-I**  
**Damage to Dwelling Houses**

**Damage to dwelling houses due to flood in following districts:**

- |                      |                       |
|----------------------|-----------------------|
| 1. Bankura           | 8. North 24 Parganas  |
| 2. Birbhum           | 9. Paschim Medinipur  |
| 3. Darjeeling        | 10. Purba Bardhaman   |
| 4. Kalimpong         | 11. Purulia           |
| 5. Hooghly           | 12. Paschim Bardhaman |
| 6. Howrah            |                       |
| 7. South 24 Parganas |                       |

**House damaged reported so far : Approximately 56,647**

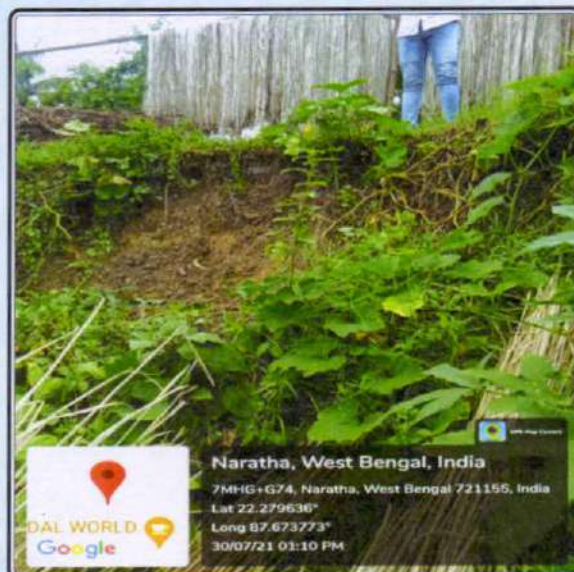
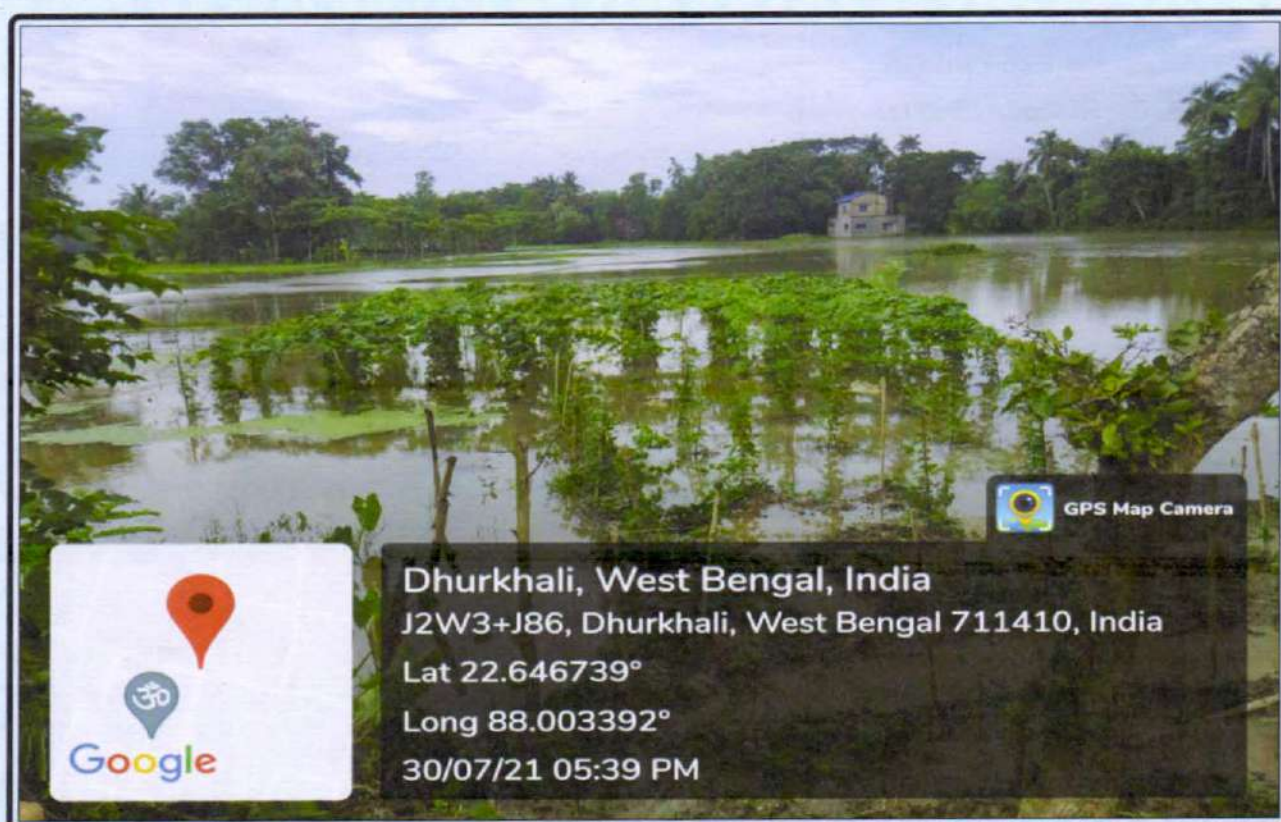
**Estimated Cost : Rs. 923.34 Crores**





Annexure-II  
Agricultural & Horticultural Sector

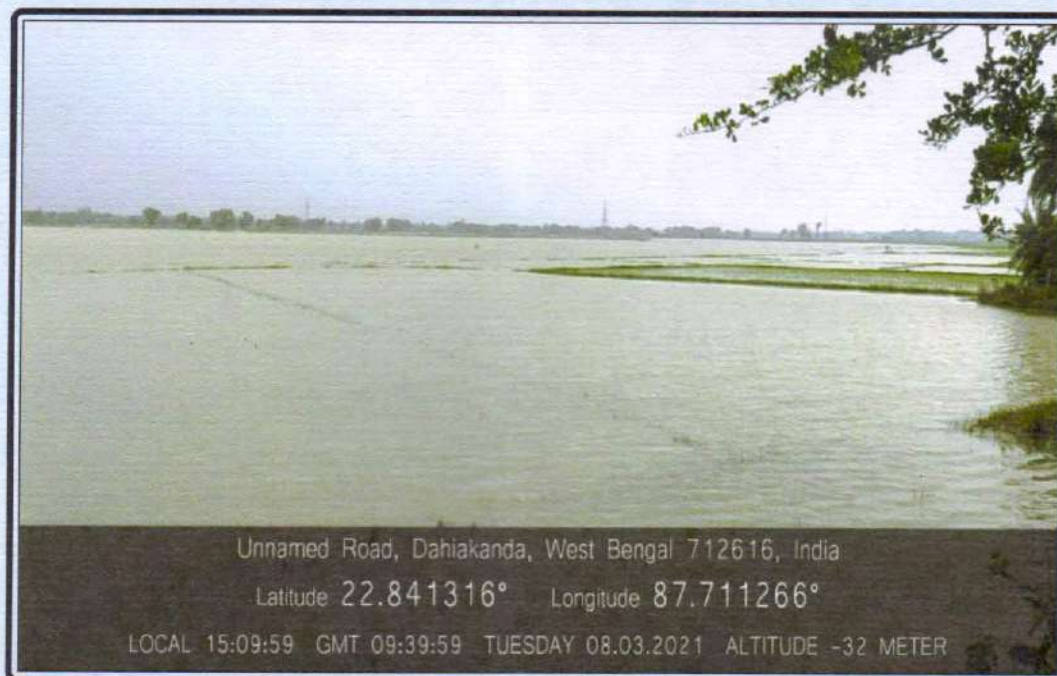
Crops Damaged	Paddy, Jute, Groundnut, Maize, Betel vine, Fruits & Vegetables	
Damage due to Inundation		2.43 lakh Ha
Money Value Loss(Rupees in Crore)		2580.22 Cr.





**Annexure-III**  
**Damage to Fisheries**

Nature of Damage	Loss in freshwater fisheries huts damaged, prawn hatchery & fish farm damaged.	
Water area affected		2799.10 Ha
Approx. Loss (Rs. In Crore)		2.99 Cr





#### Annexure-IV

#### Damage to Roads including Rural Roads & Culverts / Bridges

Road Damaged (PWD maintained, in Km)	1679.29
No. of Damaged Bridges / Culvert	121
Length of Damaged Rural Road (Km)	2649.23
Total Approximate cost of damage (Rs. in Crore)	540.75

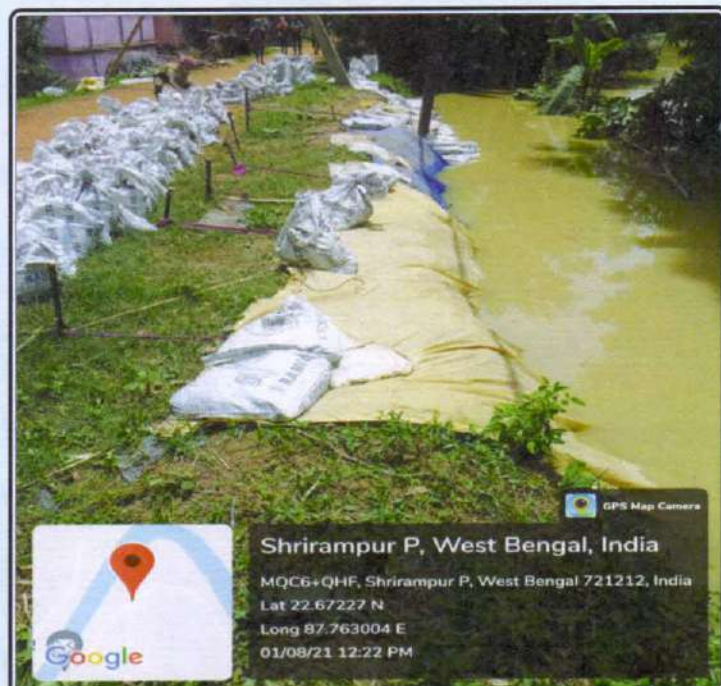
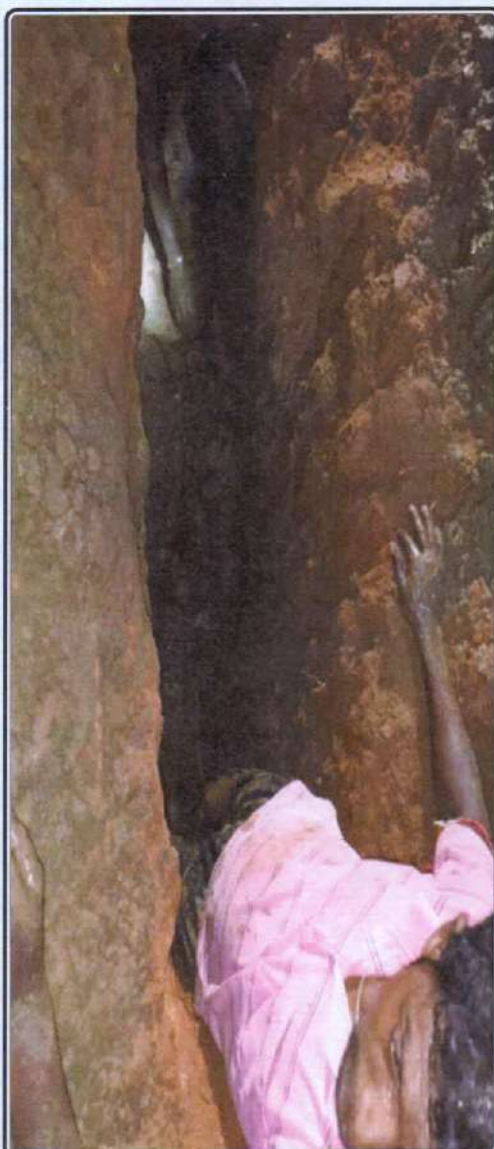




### Annexure-V

### Damage to Irrigation Canals/Embankments

Embankments damaged across 328 locations, erosion in many locations	
Length of damaged embankments river banks due to slips, subsidence, Ghog formation & overtopping (km)	1182.48
Total of damaged structures, including sluices, inlets, regulators & bridges	121
Length of damaged inspection paths / roads (Km)	162.411
Total Assessed cost of damage on the basis of primary survey (Rs. In Crore)	1584.62





Annexure-VI  
Damage to Drinking Water

Tube well affected	14656
Piped Water Supply Schemes Damaged	51
Total Estimated Damage (in Crore)	410.00 Cr





**Annexure-VII**  
**Damage to Animal Resources**

No. of animals and birds affected	402422
No. of animals and birds died	1218
No. of animal rescue camp / shelter opened	227
No. of animal Sheltered at Camp	26314
Total Loss (Rs. In Crore)	0.04

**Annexure-VIII**  
**Damage to Health Infrastructure**

No. PHC, BPHC/RH damaged	32
No. of Sub-Centres damaged	23
No. of District Hospital, SDH/SGH affected	6
Total Loss (Rs. In Crore)	4.67





**Annexure - IX**  
**Damage to Sundarbans**

Damaged Road including Concrete, Bituminous & Bricked Paved Road	1033.5
Damaged structures, including sluices, inlets, regulators & bridges	4
Total Loss (Rs. In Crore)	9.82

**Annexure - X**  
**Damage to Urban Sector**

Damaged Road	216.15
Damaged street light	1325
Sewerage System (In Km)	14.97
Total Loss (Rs. In Crore)	80.72

**Annexure - XI**  
**Damage to Micro-Irrigation (WRI&DD)**

Damage to Own & Operated Schemes Under WRI&DD	1182.48
Total Assessed cost of damage (Rs. In Crore)	18.68

**Annexure - XII**  
**Damage to Power Sector**

DTR Structure Damaged (Nos.)	472
Conductor Damaged (in Km)	158.108
Electric Pole Damaged	597
Total Restoration Cost (Rs. In Crore)	5.75

**Annexure - XIII**  
**Damage to Tourism Sector**

Damaged to Infrastructure to the inundated guest houses and furniture damaged	
Total Restoration Cost (Rs. In Crore)	0.72

**Annexure - XIV**  
**Damage to Education Sector**

School Damaged	541
Total Estimated Damage (in Crore)	8.11

**Annexure - XV**  
**Cost of Relief, Evacuation etc.**

Description	Rs. in Crore
Operation of relief Camp	31.64
Cost of Evacuation	5.62
Combat Flood & Landslide	6.36
Relief Materials Distributed	28.41
Total Restoration Cost (Rs. In Crore)	72.03



## CHAPTER - 8

### State Disaster Response Fund

**Status of Expenditure from State Disaster Response Fund (SDRF) Account**  
**(As on 10.08.2021)**  
**Financial Year 2021-22**  
**State- West Bengal**

Sl. No.	Item	Amount in Cr.
	<b>(I) Receipts</b>	
1	Opening balance in SDRF / NDRF as on 01.04.2021	1735.47
	(a) SDRF	1735.47
	(b) NDRF	0.00
	<b>(c) Total</b>	<b>1735.47</b>
2	SDRF Release made during instant Financial Year (Centra & State Share)	
	(a) First Instalment	539.20
	(b) Second Instalment	0.00
	<b>(c) Total</b>	<b>539.20</b>
3	NDRF releases during the instant financial year if any	300.00
4	Interest received on investments made as per the CRF Scheme	0.00
5	<b>Total fund available in the SDRF account (1 + 2 + 3 + 4)</b>	<b>2574.67</b>
	<b>(II) Expenditure</b>	
6	Expenditure incurred as per norms on approved natural calamities as per the Scheme of SDRF/NDRF (indicate calamity-wise expenditure)	
	(a) Cyclone (instant calamity)	64.45
	(b) Flood	52.00
	(c) Fire	0.00
	(d) Other Expenditure	515.13
	<b>(e) Total</b>	<b>631.58</b>
7	Expenditure incurred on training to specialized Teams of the State personnel	0.11
8	Expenditure incurred on procurement of search and rescue equipment etc.	7.01
9	Total expenditure incurred / reserved (6 + 7 + 8)	638.70
10	Total investment was made as on 21-06-2021	200.00
11	Balance available in the SDRF/NDRF account of the instant financial year	
	(a) SDRF	1735.97
	(b) NDRF	0.00
	<b>(c) Total</b>	<b>1735.97</b>



## CHAPTER - 9

### Assistance Sought for Relief, Restoration of Services, Reconstruction & Rehabilitation ABSTRACT OF DAMAGE ASSESSED IN TERMS OF SDRF/NDRF ASSISTANCE NORMS

Sl. No.	Item	Assistance sought as per SDRF Norms (Rs. In Crores)	Corresponding Appendix
1	Assistance sought for House Building Assistance	145.73	II
2	Assistance sought for Crop damage / Agriculture input subsidy-SMF	230.53	III
3	Assistance to fisherman & Input subsidy-Fish seed farm	2.89	VII
4	Assistance sought for Repair of Roads & Bridges (PWD)	119.64	VIII
5	Assistance sought to repair Rural Roads & Bridges (P&RD)	2.12	IX
6	Assistance sought to repair damaged to Irrigation embankment / infrastructure	198.06	X
7	Restoration of Drinking water & Water Supply System	410.00	XI
8	Replacement of animals & birds etc.& provision of fodder and cattle care	0.78	XII
9	Assistance sought for repair & reconstruction of health infrastructure	2.51	XIII
10	Assistance sought to Repair, Restoration of forest road, bridge at Sundarbans	9.82	XIV
11	Assistance Sought for Urban facilities restoration	17.51	XV
12	Assistance sought for Repair and restoration of Micro Irrigation Schemes	2.96	XVI
13	Restoration of Power supply	5.75	XVII
14	Assistance sought for School Education	8.11	XVIII
15	Cost of Evacuation, Search & Rescue, Relief measures, camps & relief materials etc.	72.03	XIX A - XIX D
	<b>TOTAL-</b>	<b>1228.44</b>	



**Assistance Sought for Relief, Restoration of Services, Reconstruction & Rehabilitation  
ABSTRACT OF DAMAGE ASSESSED IN TERMS OF SDRF/NDRF ASSISTANCE NORMS**

Sl. No.	Item	Damage Assessed by State Govt. Deptts.	Assistance sought as per SDRF Norms (Rs. In Crores)
1	Assistance sought for House Building Assistance	923.34	145.73
2	Assistance sought for Crop damage / Agriculture input subsidy-SMF	2580.22	230.53
3	Assistance to fisherman & Input subsidy-fish seed farm	2.99	2.89
4	Assistance sought for Repair of Roads & Bridges (PWD)	92.13	119.64
5	Assistance sought to repair Rural Roads & Bridges (P&RD)	448.62	2.12
6	Assistance sought to repair damaged to Irrigation embankment / infrastructure	1584.62	198.06
7	Restoration of Drinking water & Water Supply System	410.00	410.00
8	Replacement of animals & birds etc. & provision of fodder and cattle care	0.04	0.78
9	Assistance sought for repair & reconstruction of health infrastructure	4.67	2.51
10	Assistance sought to Repair, Restoration of forest road, bridge at Sundarbans	9.82	9.82
11	Assistance Sought for Urban facilities restoration	80.72	17.51
12	Assistance sought for Repair and restoration of Micro Irrigation Schemes	18.68	2.96
13	Restoration of Power supply	5.75	5.75
14	Assistance sought for School Education	8.11	8.11
15	Cost of Evacuation, Search & Rescue, Relief Camps, Relief measures, & relief materials etc.	72.03	72.03
16	Damage to Tourism sector	0.72	0
	<b>TOTAL -</b>	<b>6242.46</b>	<b>1228.44</b>



## CHAPTER - 10

# APPENDICES



# Details of Damage, Assistance Sought as per SDRF/NDRF norms & related Appendices

## APPENDIX - I

### District Wise Rainfall Data

Sl No.	Name of affected districts	Date	Rainfall during the calamity (in mm) from 28.07.2021 to 30.07.2021				Rainfall during the corresponding period in the last three years (from 2018 to 2020)											
							Last Year			Year before last year			2019			2018		
							A	N	D(%)	A	N	D(%)	A	N	D(%)	A	N	D(%)
1	South 24 Parganas	28th July to 30th July 2021	365.3	41.2	787	23.9	41.2	42	32.4	41.2	21	42.8	41.2	4	36.8	41.2	4	4
2	Howrah		305.3	36.8	730	43.5	36.8	18	21.0	36.8	-43	43.3	36.8	18	36.8	36.8	18	18
3	Hooghly		136.8	37.2	268	38.8	37.2	4	31.0	37.2	-17	46.4	37.2	25	37.2	37.2	25	25
4	Paschim Medinipur (including Jhargram)		244.0	28.3	762	12.2	28.3	-57	32.2	28.3	14	15.7	28.3	-45	28.3	28.3	-45	-45
5	Bardhaman ( Purba + Paschim )		114.2	30.2	278	34.7	30.2	15	24.4	30.2	-19	52.3	30.2	73	30.2	30.2	73	73
6	Murshidabad		68.9	36.0	91	14.2	36.0	-61	14.8	36.0	-59	42.2	36.0	17	36.0	36.0	17	17
7	North 24 Parganas		190.9	40.7	369	63.3	40.7	56	43.4	40.7	7	61.7	40.7	52	40.7	40.7	52	52

NB: A = Actual, N = Normal, D- Departure(+/-)

N B. Excess = 20% or More, Normal = J-1 9%, Oeficient = -20% to -59%, Scanty = -60% to -99%, No Rain = -100%

Agricultural Meteorologist  
West Bengal



House Damaged and Assistance sought as per SDRF/NDRF assistance sought

42



# APPENDIX - III

## Calculation of Assistance for Agricultural Input Subsidy (West Bengal)

Due to heavy rainfall and released of water from DVC on /from 28.07.2021 to 30.07.2021

Sl No.	Districts	Total agricultural area affected (in ha)	Total agricultural area where crop loss is > 33% (in ha)	Out of (4) area belonging to SMF (in ha)			Assistance sought for different categories of crops (Rs. In lakh)			Total Assistance sought (Rs. In lakh)
				Rainfed	Irrigated	Perennial	Rainfed (Rs. 6800/- X Col. 5A)	Irrigated (Rs. 13500/- X Col. 5B)	Perennial (Rs. 18000/- X Col. 5C)	
1	2	3	4	5A	5B	5C	6A	6B	6C	7 (6A + 6B + 6C)
1	South 24 Parganas	116020	116020	73371	34528	0	4989.23	4661.22	0.00	9650.45
2	Howrah	35593	35593	11048	23477	0	751.27	3169.41	0.00	3920.68
3	Hooghly	28508	28508	2566	23091	0	174.47	3117.35	0.00	3291.82
4	Paschim Medinipur	44235	44235	14567	24803	0	990.53	3348.35	0.00	4338.87
5	Purba Bardhaman	13403	13403	1120	9066	0	76.19	1223.88	0.00	1300.07
6	Murshidabad	1335	1335	163	999	0	11.06	134.84	0.00	145.90
7	North 24 Parganas	3785	3785	975	2507	0	66.30	338.47	0.00	404.77
	<b>Total</b>	<b>242879</b>	<b>242879</b>	<b>103810</b>	<b>118471</b>	<b>0</b>	<b>7059</b>	<b>15993.53</b>	<b>0.00</b>	<b>23052.57</b>
NB: Assistance calculated as per SDRF Norms										



## APPENDIX - IV

## Agricultural input subsidy – farmers other than SMF

Due to heavy rainfall and released of water from DVC on /from 28.07.2021 to 30.07.2021

Sl. No.	Name of Affected Districts	Total agri-cultural area where crop loss is > 33% (in ha)	Out of (3) area belonging to farmers other than SMF			No. of farmers other than SMF affected by the instant calamity (Only)			No. of farmers other than SMF affected by successive calamities			Assistant sought for different Categories of crops (Rupees in Lakh)					Total Assistant sought (Rs. In lakh)	
			Rain-fed	Irrigated	Pere-nnial	Rain-fed	Irrigated	Pere-nnial	Rain-fed	Irrigated	Pere-nnial	Affected first time			Affected for successive calamity			
												Rainfed (Rs. 6800/- X 2Col. 5A)	Irrigated (Rs. 13500/- X 2Col. 5B)	Pere-nnial	Rain-fed	Irrigated		Pere-nnial
1	2	3	4A	4B	4C	5A	5B	5C	6A	6B	6C	7A	7B	7C	8A	8B	8C	9 [7(A+B+C) + 8(A+B+C)]
1	South 24 Parganas	116020	5522.55	2598.85	0	1840.85	866.28	0	0	0	0	125.18	116.95	0	0	0	0	242.13
2	Howrah	35593	341.69	726.10	0	113.90	242.03	0	0	0	0	7.75	32.67	0	0	0	0	40.42
3	Hooghly	28508	285.08	2565.72	0	95.03	855.24	0	0	0	0	6.46	115.46	0	0	0	0	121.92
4	Paschim Medinipur	44235	1800.36	3065.49	0	600.12	1021.83	0	0	0	0	40.81	137.95	0	0	0	0	178.76
5	Purba Bardhaman	13403	353.84	2862.88	0	117.95	954.29	0	0	0	0	8.02	128.83	0	0	0	0	136.85
6	Murshidabad	1335	24.30	149.25	0	8.10	49.75	0	0	0	0	0.55	6.72	0	0	0	0	7.27
7	North 24 Parganas	3785	84.78	218.02	0	28.26	72.67	0	0	0	0	1.92	9.81	0	0	0	0	11.73
	Total	242879	8412.61	12186.301	0	2804	4062	0	0	0	0	190.69	548.38	0.00	0.00	0.00	0.00	739.07



# APPENDIX - V

Assistance for provision of temporary accommodation, food, clothing, medical are etc. of people affected / evacuated (Operation of relief camps)

Sl. No.	Name of Affected Districts	Average No. (in a day) of relief camps	Average duration of operation of relief camps	Average No. of people accommodated per day in relief camps	Expenditure incurred on				Other essential items (to be specified)
					Temporary accommodation	Food	Clothing	Medical Care	
1	2	3	4	5	6	7	8	9	10
Total (in No.)									

Per day per person expenditure incurred Rs. \_\_\_\_\_

Director of Agriculture & Ex-officio Secretary  
West Bengal



# APPENDIX - VI

## Final Crop damage report due to heavy rainfall from 28.07.2021 to 30.07.2021 and release of water from reservoirs in different districts of West Bengal

Sl. No.	Districts	No. of Block affected	No. of Mouza affected	Cropped area damage in ha						Total area damage (ha)	Estimated Money value Loss (Rupees in lakh)	No. of farmers affected
				Paddy Seed Bed	Transplanting Paddy	Jute	Ground-nut	Vegetables & Horticultural Crops				
1	South 24 Parganas	30	1809	14487	91604	0	0	9929		116020	126562.93	478659
2	Howrah	14	766	2367	28597	567	0	4062		35593	43352.63	132500
3	Hooghly	13	447	2381	25129	0	48	950		28508	25653.91	114892
4	Paschim Medinipur	9	1438	3541	36759	390	90	3455		44235	47548.86	259771
5	Purba Bardhaman	12	345	0	13403	0	0	0		13403	10578.04	75760
6	Murshidabad	3	9	0	1335	0	0	0		1335	1053.62	8398
7	North 24 Parganas	3	88	1888	1728	0	0	169		3785	3272.29	62612
	<b>Total</b>	<b>84</b>	<b>4902</b>	<b>24664</b>	<b>198555</b>	<b>957</b>	<b>138</b>	<b>18565</b>		<b>242879</b>	<b>258022.28</b>	<b>1132592</b>



# APPENDIX - VII

## Damaged caused to Fisheries Sector and Assistance sought as per SDRF Norms

Sl. No.	Districts	Loss of net (in no.)	Loss & Assistance as per SDRF Norms in Rs. (@2600.00)	Loss of Boat (in no.)	Loss in Rs. @5000.00	Assistance as per SDRF Norms Rs. (@Rs.4100/-)	Loss of Hundi (in no.)	Loss in Rs. (@300/-)	Total Water Area affected (in hectare)	Loss / Assistance as per SDRF Norms in Rs. (@8200.00 per hectare)	Total Loss (in Rs.)	Total Assistance sought under SDRF Norms (Rs. In lakh)
1	Bankura	0	0	0	0	0	0	0	88	721600	721600	7.216
2	Purba Medinipur	0	0	0	0	0	0	0	490	4018000	4018000	40.18
3	Paschim Medinipur	1400	3640000	0	0	0	2500	750000	829	6797800	11187800	104.378
4	Hoogly	0	0	0	0	0	0	0	33	270600	270600	2.706
5	Howrah	490	1274000	27	135000	110700	0	0	37	303400	1712400	16.881
6	North 24 Pgs	0	0	0	0	0	0	0	218	1787600	1787600	17.876
7	South 24 Pgs	300	780000	0	0	0	650	195000	1013.1	8307420	9282420	90.8742
8	Purba Bardhaman	0	0	0	0	0	0	0	42	344400	344400	3.444
9	Paschim Bardhaman	72	187200	0	0	0	0	0	49	401800	589000	5.89
	<b>Total</b>	<b>2262</b>	<b>5881200</b>	<b>27</b>	<b>135000</b>	<b>110700</b>	<b>3150</b>	<b>945000</b>	<b>2799.1</b>	<b>22952620</b>	<b>29913820</b>	<b>289.4452</b>



# APPENDIX - VIII

## PUBLIC WORKS DEPARTMENT

Information about damage caused due to Flood & Landslide during 26th July to 2nd August and assistance sought as per SDRF/NDRF assistance norms for 13 districts, as per SDRF/ NDRF Norms

Sl. No.	Districts	Water over-topped length (km)				Breach Length (km)	Nos. of Damaged Culvert	Nos. of Damaged Bridge	Damaged length (km)				Cost for repairing of Bridges & Culverts (As per SDRF/NDRF Norms)	Cost as per notified rate for Ordinary Repair (OR) of roads (SH / MDR / VR) [15.35*Col. 10 + 12.16*col. 11 + 8.33*col. 12]	Cost as per notified rate for Periodical Repair (PR) of roads (SH / MDR / VR) [52.18*Col. 10 + 36.60*col. 11 + 25.30*col. 12]	As per SDRF/NDRF Norms (Rs. in Lakh)		
		SH	MDR	RR	Total				SH	MDR	RR	Total				Factor for normal and Urban areas	Total restoration cost to repair damaged roads [i.e. 15% of (OR + PR)] [0.15* (col.15 + col.16)]	Total cost (col. 14 + col. 18)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1	Bankura	1.64	3.17	2.75	7.56	0.00	6	14	71.42	85.00	63.83	220.25	30.00	2661.60	8452.59	15%	1667.13	1697.13
2	Birbhum	0.20	0.00	0.00	0.20	0.20	0	0	21.67	74.80	17.14	113.61	0.00	1384.98	4302.06	15%	853.06	853.06
3	Hooghly	0.00	14.50	1.84	16.34	0.00	0	2	35.40	81.69	63.36	180.45	3.00	2064.53	6440.03	15%	1275.68	1278.68
4	Howrah	0.70	32.68	12.75	46.13	0.00	5	0	7.02	33.88	15.19	56.09	7.50	646.27	1990.62	15%	395.53	403.03
5	Darjeeling	0.00	0.00	0.00	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15%	0.00	0.00
6	Kalimpong	0.00	0.00	0.00	0.00	0.00	2	1	0.00	12.06	0.00	12.06	4.50	146.65	441.40	15%	88.21	92.71
7	Kolkata	0.00	0.00	0.00	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15%	0.00	0.00
8	North 24 Parganas	18.88	33.67	14.63	67.18	0.00	1	0	73.90	147.21	31.28	252.39	1.50	3185.00	10035.37	15%	1983.06	1984.56
9	Paschim Bardhaman	0.00	0.00	0.00	0.00	0.00	0	0	7.00	35.19	1.50	43.69	0.00	547.86	1691.16	15%	335.85	335.85
10	Paschim Medinipur	17.28	47.60	7.50	72.38	0.08	3	1	42.98	82.50	10.00	135.48	6.00	1746.24	5515.20	15%	1089.22	1095.22



Sl. No.	Districts	Water over-topped length (km)				Breached Length (km)	Nos. of Damaged Culvert	Nos. of Damaged Bridge	Damaged length (km)				Cost for repairing of Bridges & Culverts (As per SDRF/NDRF Norms)	Cost as per notified rate for Ordinary Repair (OR) of roads (SH / MDR / VR) [15.35*Col. 10 + 12.16*col. 11 + 8.33*col. 12]	Cost as per notified rate for Periodical Repair (PR) of roads (SH / MDR / VR) [52.18*Col. 10 + 36.60*col. 11 + 25.30*col. 12]	As per SDRF/NDRF Norms (Rs. in Lakh)		
		SH	MDR	RR	Total				SH	MDR	RR	Total				Factor for normal and Urban areas	Total restoration cost to repair damaged roads [i.e. 15% of (OR + PR)]	Total cost (col. 14 + col. 18)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
11	Purba Bardhaman	0.25	1.45	0.00	1.70	0.00	0	0	75.98	146.50	32.95	255.43	0.00	3222.21	10160.17	15%	2007.36	2007.36
12	Purulia	2.25	0.70	2.85	5.80	0.05	1	0	66.50	11.00	41.75	119.25	1.50	1502.31	4928.85	15%	964.67	966.17
13	South 24 Parganas	3.50	10.12	13.34	26.96	1.77	1	0	30.00	103.55	37.14	170.69	1.50	2029.04	6294.97	15%	1248.60	1250.10
	TOTAL -	44.70	143.89	55.66	244.25	2.10	19	18	431.87	813.38	314.14	1559.39	55.50	19136.69	60252.43		11908.37	11963.87

#### Nature of Damage:

- Due to over flowing of high velocity water big potholes & depressions on the carriageway of the road have been formed,
- Road embankment has been eroded at several locations.
- Due to high water current, some stretches of few roads have been breached.
- Due to sudden increase of water flow few culverts have been damaged.

#### REMARKS:

- As per item number (a) of serial number 4 of Ministry of Home Affairs, Government of India's circular number 32-7/2014-NDM-I dated 08/04/2015 cost involvement for clearance of debris in Public areas has been recorded in the column number 3 of the report.
- As there is no notified schedule of rates for cost involvement to repair the bridges & Culverts in the State of West Bengal, therefore as per serial number 10 of Ministry of Home Affairs Government of India's circular number 32-7/2014-NDM-I dated 08/04/2015 the repair cost of bridges & Culverts has been considered @ Rs. 1.50 lakh per damaged scheme.
- There are notified rate for Ordinary Repair (OR) and Periodical Repair (PR) of different categories of roads in the State of West Bengal. The Notification number is 132A / SPW / 2015 dt. 11.05.2015 of Public Works Department and the rates are as follow:  
 (a) State Highways (SH) : Rs. 15.35 lakh/ km for ordinary repair & Rs. 52.18 lakh / Km for periodical renewal;  
 (b) Major District Roads (MDR) : Rs. 12.16 lakh/ km for ordinary repair & Rs. 36.60 lakh / Km for periodical renewal;  
 (c) Rural Roads (i.e. ODR & VR) : Rs. 8.33 lakh/ km for ordinary repair & Rs. 25.30 lakh / Km for periodical renewal;

Therefore as per serial number 10 of Ministry of Home Affairs, Government of India's circular number 32-7/2014-NDM-I dated 08/04/2015 cost for repairing the roads has been derived on the basis of notification number 132A / SPW / 2015 dated 11.05.2015 of Public Works Department.



# APPENDIX - IX

## Connectivity Damage Report as caused by recent Flood Rural Area under Panchayats and Rural Development Department, Govt. of West Bengal

Sl. No.	District	BGSY Roads				RIDF Roads				Other Roads				Total			
		No. of Road Damaged	No. of Bridges / Culverts Damaged	Damaged Length of Road (KM)	Approximate cost for Damage restoration work (Rs. In Lac)	No. of Road Damaged	No. of Bridges / Culverts Damaged	Damaged Length of Road (KM)	Approximate cost for Damage restoration work (Rs. In Lac)	No. of Road Damaged	No. of Bridges / Culverts Damaged	Damaged Length of Road (KM)	Approximate cost for Damage restoration work (Rs. In Lac)	No. of Road Damaged	No. of Bridges / Culverts Damaged	Damaged Length of Road (KM)	Approximate cost for Damage restoration work (Rs. In Lac)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	Bankura	11	1	30.06	445.00	5	0	20	220.00	40	0	97.5	1175.00	56	1	147.56	1840.00
2	Darjeeling*	47	1	10	2139.00	7	0	20	397.00	0	0	0	0.00	54	1	30	2536.00
3	Hooghly	66	6	212.08	3202.68	16	4	56	1080.00	192	4	464.9	7136.00	274	14	732.98	11418.68
4	Howrah	48	7	70.2	1435.00	3	1	4.20	90.00	220	6	299.2	5185.14	271	14	373.6	6710.14
5	Jhargram	20	6	51.3	913.90	2	1	12	240.00	15	2	57	112.00	37	9	120.3	1265.90
6	Paschim Medinipur	90	19	72.85	3753.78	5	1	22	410.00	360	0	986.40	14796.00	455	20	1081.247	18959.78
7	Purba Burdwan	10	13	10.276	208.19	3	0	12	233.00	80	1	230.4	3442.17	93	14	252.676	3883.36
8	Purulia	1	2	0.070	25.50	2	0	15	260.00	12	1	22	355.00	15	3	37.07	640.50
9	Coochbehar	3	4	4.000	150.00	0	0	0	0.00	0	1	0	25.00	3	5	4	175.00
10	Nadia	2	0	3.200	20.70	0	0	0	0.00	0	0	0	0.00	2	0	3.2	20.70
11	Malda	3	0	5.900	26.00	0	0	0	0.00	5	0	12	120.00	8	0	17.9	146.00
12	Alipurduar	2	3	0.13	384.00	0	0	0	0.00	6	4	5.85	294.00	8	7	5.98	678.00
13	Purba Medinipur	46	17	210.00	2630.00	20	16	119.15	1590.00	256	30	384	17580.00	322	63	713.15	21800.00
	<b>Total</b>	<b>349</b>	<b>79</b>	<b>680.06</b>	<b>15333.75</b>	<b>63</b>	<b>23</b>	<b>280.35</b>	<b>4520.00</b>	<b>1186</b>	<b>49</b>	<b>2559</b>	<b>50220</b>	<b>1598</b>	<b>151</b>	<b>3519.66</b>	<b>70074.06</b>
																	<b>2111.7978</b>

\*Due to landslide & slips. As such stretch are small.



# APPENDIX - X

Assistance sought for restoration of infrastructure under Irrigation & Waterways Department due to dam caused to embankments / structures including sluices / regulators etc. on rivers, drainage channels, irrigation canals (from 25.05.21 to 09.08.21)

Department : Irrigation & Waterways, Government of West Bengal

Sl No.	District	Nos. of Breaches			Length in km of damaged			No. of Damaged Structures	Restoration cost (INR Crore)	
		Embankment	Canals & Sea Fronts / Ex-Zamindary	Total	Embankments	Canals & Sea Fronts/Ex - Zamindary	Total		Assessed	Admissible as per SDRF norms
1	Malda	1		1	2.43		2.43	0	4.90	Rates are taken from schedule of rates of I&W Deptt. GoWB (as mandated vide item no. 10 in the guideline of DMD, MHA, Gol
2	Purba Burdwan	0		0	721.11		721.11	0	12.88	communicated vide no. 32-7/2014 - NDM-1 of dt. 8th April 2015
3	Paschim Medinipur	320		320	350.292		350.292	43	86.99	
4	Bankura	0		0	1.28		1.28	0	1.93	
5	Purba Medinipur	0		0	45.113		45.113	21	11.52	
6	Dakhin Dinajpur	0		0	1.117		1.117	0	0.23	
7	Paschim Burdwan	0		0	3.09058		3.09058	0	1.70	
8	Jhargram	0		0	0.935		0.935	0	0.52	
9	Hooghly	7		7	57.119		57.119	2	77.3835	
	Total	328		328	1182.48658		1182.48658	Total	198.0584	



# APPENDIX - XI

## Damage caused by flood and Assistance Sought for restoring Drinking Water facilities

Sl. No.	Description	Howrah (Rs Crore)	Hooghly (Rs Crore)	S-24 Pgs (Rs Crore)	N-24 Pgs (Rs Crore)	Purba Medinipur (Rs Crore)	Paschim Medinipur (Rs Crore)	Paschim Burdwan (Rs Crore)	Purba Burdwan (Rs Crore)	Total (Rs Crore)
1)	Damage to piped water supply scheme	31.90	14.06	49.19	10.76	16.98	15.99	30.43	11.71	181.02
2)	Damage to stand-alone water supply systems	1.46	0.65	2.26	0.49	0.78	0.73	1.40	0.54	8.30
3)	Damage to Spot Sources and Hand Pump Tubewells	30.33	13.36	46.75	10.23	16.14	15.20	28.92	11.13	172.06
4)	Distribution of Drinking water pouches/tubewells	1.39	0.61	2.15	0.47	0.74	0.70	1.33	0.51	7.90
5)	Drinking water supply through water tankers/ truck mounted tankers	2.11	0.93	3.26	0.71	1.12	1.06	2.01	0.78	11.98
6)	Deployment of DG set	4.97	2.19	7.66	1.68	2.65	2.49	4.74	1.83	28.20
7)	Provision of bleaching powder	0.10	0.04	0.15	0.03	0.05	0.05	0.09	0.04	0.54
	Total -	72.26	31.84	111.41	24.38	38.45	36.22	68.91	26.53	410.00



# APPENDIX - XII

## ANIMAL RESOURCES DEVELOPMENT DEPARTMENT

Assessment of Loss as per SDRF/NDRF norm as per report on 04.08.21

District Name	Cattle Loss (No.)	Sheep & Goat Loss (No)	Poultry Loss (No.)	No. of animals and			Assessment of Loss as per SDRF/NDRF Norm birds affected	Grand Total (Rs. in Lakh)					
				Animal	Bird	Total			No. of Animal Sheltered at Camp	Cost of Cattle Loss (Lakh)	Cost of Sheep & Goat Loss (Lakh)	Cost of Poultry Loss (Lakh)	Total Loss due to Animal and Bird Death (Lakh)
Paschim Medinipur	3	0	1200	69313	71018	140331	6885	0.85	0	0.25	1.1	19.278	20.38
Howrah	0	0	0	60735	82946	143681	574	0	0	0	0	1.6072	1.61
Hooghly	13	2	0	81200	37210	118410	18855	3.3	0.06	0	3.36	52.794	56.15
Total-	16	2	1200	211248	191174	402422	26314	4.15	0.06	0.25	4.46	73.6792	78.14



# APPENDIX - XIII

## Health & Family Welfare Department

### Cost of Damage and Assistance Sought as per SDRF/NDRF Assistance Norms

Sl. No.	Name of District	No. of SC Damaged	No. of PHC/BPHC Damaged	No. of SDH/DH damaged	Cost of Damage (Rs. In lakh)	Assistance sought as per SDRF Norms (Rs. In Lakh)
1	Howrah	16	14	4	137.38	51
2	Paschim Bardhaman	8	3	2	208	19.5
3	South 24 Parganas	95	23	0	120.36	177
4	Hooghly	0	2	0	1.33	3
	<b>Total -</b>	<b>119</b>	<b>42</b>	<b>6</b>	<b>467.07</b>	<b>250.5</b>



# APPENDIX - XIV

## Sundarbans Affairs

### SUMMARY SHEET OF ASSISTANCE SOUGHT FOR DAMAGES CAUSED DUE TO HEAVY DOWNPOUR IN THE LAST OF JULY & FIRST WEEK OF AUGUST, 2021

Sl. No.	Item	Units	North 24 Parganas		South 24 Parganas		Total Damage in Lakhs
			Damage	Amount (In Lakhs)	Damage	Amount (In Lakhs)	
Infrastructure							
1	Road						
i	Concrete	KM	58.0	109.52	52.9	232.50	342.02
ii	Bituminous	KM	0	0	0	0	0.00
iii	Bricked Paved	KM	97.1	186.48	82.95	425.00	691.48
3	Jetty including slope protection	Nos.	0	0	0	0	0.0
4	Sluice	No.s			1	3.50	3.50
5	Bridge/Culvert & Others	No.s			3	25.00	25.00
6	Bungalow/Office Building/ Rest Shed						0.00
7	Eco Camp						0.00
TOTAL (in Lakhs)				296.00		686.00	982.00



# APPENDIX - XV

## Damaged caused to Urban Sector by Heavy Rain, Floods and Landslides from 27th July to 1st August, 2021

### Assistance sought as per SDRF / NDRF Norms

District	Roads (In KM)	Amount to be claimed for Road @ Rs. 1lakh / Km) (Rs. In Crore)	Street Lighting (in number)	Amount to be claimed for Street Lights (@ Rs.4000 per pole) (Rs. In Crore)	Under- ground Sewerage System (In Km)	Under- ground Sewerage System (Rs. In Crore)	Storm Water Drainage (Rs. In Crore)	Water Supply Schemes (Rs. In Crore)	Others (Rs.in Crore)	Total (Rs.in Crore)
Howrah	11	0.11	54	0.02	0.00	0.00	0.88	0.46	0.01	1.48
Hooghly	47.50	0.48	378	0.15	3	0.60	2.36	0.80	0.00	4.38
Paschim Bardhaman	14.40	0.14	0	0.00	5.10	0.51	1.05	0.00	0.00	1.70
Paschim Medinipur	143.25	1.43	893	0.36	0	0.00	2.58	5.57	0.00	9.94
<b>Total -</b>	<b>216.15</b>	<b>2.16</b>	<b>1325</b>	<b>0.53</b>	<b>8.10</b>	<b>1.11</b>	<b>6.87</b>	<b>6.83</b>	<b>0.01</b>	<b>17.51</b>



# APPENDIX - XVI

## SYNOPSIS OF FLOOD DAMAGE FOR OWN & OPERATED SCHEMES UNDER WRI&D DEPARTMENT

### Assistance sought for repair and restore Micro irrigation schemes

Sl. No.	Division (AM) / (AI)	District	Type of Deptt. Own & Operated Schemes / Structures damaged/ affected	No. of Schemes Affected	Type of damage in brief	Approximate Cost required for Repairing / revival (Rs. In Lakhs)	Assistance sought as per SDRF Norms (Rs. In Lakh)	Remarks
1	Chinsurah (AM)	Hooghly	Major RLI Scheme	29	Damage of Pump House/ Electrical	398.28	43.50	
2	Howrah (AM)	Howrah	Major RLI Scheme	54	Accessories/ Electrical Wiring/ Pump Sets/ Kisk Box/	1188	81.00	
3	Howrah (AI)	Howrah	DTW/ HDTW/ MDTW	32	Water Transmission Arrangements/	79.75	48.00	
4	Midnapore (AM)	Paschim Medinipur	Major RLI Scheme	44	Sputs Chambers/ Suction Hose, Sand intrusion in Tube Well etc.	127.04	66.00	
5	Burdwan (AM)	Purba Burdwan	Major RLI Scheme	32		56	48.00	
6	Purulia (AM)	Purulia	Major RLI Scheme	6		18.46	9.00	
<b>Grand-Total:</b>						<b>1867.53</b>	<b>295.5</b>	



# APPENDIX - XVII

## Damage on Electrical Installations of WBSEDCL during recent Flood occurred during end of July & 1st week of August'2021 (Power Department)

Sl. No.	Name of District	No. of Damaged Electric Poles	Rate of assistance @ Rs. 4000/ poles	Quantity of damaged conductor (KM)	Rate of assistance @ Rs 0.50 lakh per km of damaged conductor	No. of Damaged DTRs	Rate of assistance @ Rs. 1.00 lakh per damaged distribution transformer	No. of Damaged Isolators	Total assistance sought as per SDRF/ NDRF norms (Rs. In Lakh)
1	Birbhum	71	284000	5.681	284050	50	5000000	1	55.6805
2	Paschim-Medinipur	234	936000	99.481	4974050	114	11400000	7	173.1005
3	Hooghly	233	932000	24.582	1229100	164	16400000	37	185.611
4	Howrah	10	40000	0.345	17250	0	0	2	0.5725
5	Paschim-Burdwan	32	128000	26.38	1319000	32	3200000	68	46.47
6	Purba-Burdwan	17	68000	1.639	81950	112	11200000	2	113.4995
	<b>TOTAL</b>	<b>597</b>	<b>2388000</b>	<b>158.108</b>	<b>7905400</b>	<b>472</b>	<b>47200000</b>	<b>117</b>	<b>574.934</b>



# APPENDIX - XVIII

## Damage assessed and Assistance required for Education Sector

Sl. No.	District	Primary School (No.)	Secondary School (No.)	Cost of Damage (Rs. in Lakh)	Assistance sought as per SDRF (Rs. in Lakh)
1	Hooghly	90	10	322.02	150.00
2	Paschim Bardhaman	27	4	120.46	46.50
3	North 24 Parganas	55	0	88.22	82.50
4	Paschim Medinipur	197	0	340.67	295.50
5	South 24 Parganas	143	15	435.28	237.00
	<b>Total -</b>	<b>512</b>	<b>29</b>	<b>1306.65</b>	<b>811.50</b>



**Operation of Relief Camps: Cost of assistance for provision of temporary accommodation, food, clothing, medical care etc. of people affected / evacuated**

Name of affected district	Average No. (in a day) of relief camps	Average duration of operation of relief camps (Day)	Average No. of people accommodated per day in the relief camps	Temporary accommodation					Total Expenditure (Rs. In lakh)
				Temporary accommodation	Food	Clothing	Medical care + Bleaching Powder	Other essential items. (Mask, Sanitizer, repair / maintenance cost, fuel charges etc.)	
South 24 Parganas	72	7	15700	128.70	2065.00	21.50	54.00	76.75	2345.95
North 24 Parganas	3	3	1779	0.00	10.67	0.00	0.25	0.10	11.02
Hooghly	84	8	12251	17.5	105	0	16.5	30	169.00
Psachim Medinipur	12	10	2106	20	200	-	10	100	330.00
Howrah	143	1	220	6.5	75.5	0.65	3.587	5.8	92.04
Kalimpong	1	19	37	0	0.4	0.3	0.1	0.4	1.20
Purba Bardhaman	275	10	2750	0	16.5	0	0.9	3.14	20.54
Darjeeling	8	124	121	0	0	0	0.025	0.0585	0.08
Kolkata	10	4	4822	0	45.23	0	20.47	110.00	175.70
Bankura	10	2	450	2	7.5	0	0.25	0.61	10.36
Birbhum	13	13	2817	1.82	5.1	0	0.125	1.328	8.373
<b>Total-</b>				<b>176.52</b>	<b>2530.90</b>	<b>22.45</b>	<b>106.21</b>	<b>328.19</b>	<b>3164.27</b>



# APPENDIX - XIX B

## Cost for Evacuation (Deptt. of Disaster Management & Civil Defence) (INR Lakh):

Sl. No.	Name of the Districts	No. of people evacuated	Cost of Transportation for evacuation	Cost of food	Cost of drinking water.	Cost of miking, awareness generation for evacuation & others	Cost of generators in camps.	Total Amount (in lakh)
1	South 24 Parganas	22149	31.75	29.25	5.25	4.5	13.75	84.5
2	North 24 Parganas	1799	0.35	10.674	0.29	0.35	0.20	11.864
3	Hooghly	12251	48.59	105	7.3	5.6	15.75	182.24
4	Psachim Medinipur	64770	30	20	40	5	10	105
5	Howrah	31473	6	42.94	1.2	4	5.36	59.5
6	Kalimpong	271	0.4	1.76	0.57	0.8	0	3.53
7	Purba Bardhaman	2750	1.1	16.5	1.11	5.0	2.0	25.71
8	Darjeeling	55	0	0.35	0	0	0	0.35
9	Kolkata	70,631	25.00	25.00	30.00	2.50	2.50	85
10	Bankura	721	0.5	1.5	0	0.1	0	2.1
11	Birbhum	2817	0.425	1.125	0.16	0.405	0.11	2.225
	<b>Total -</b>		<b>144.115</b>	<b>254.099</b>	<b>85.88</b>	<b>28.255</b>	<b>49.67</b>	<b>562.019</b>



# APPENDIX - XIX C

## Cost Incurred to Combat Flood & Landslide 2021. (Deptt. of Disaster Management & Civil Defence) (INR Lakh) :

Sl. No.	Name of the Districts	Hiring of boats for carrying immediate relief and saving lives	Cost of clearing of debris / drain waters.	Cost of disinfecting ponds / water sources	Cost of Disposal of dead bodies / Carcases	Cost of veterinary camps.	Transportation cost of cattle, if any.	Any other costs incurred in Flood / Landslide	Total Cost (INR Lakh)
1	South 24 Parganas	7.85	91.25	36.50	3.50	8.15	6.75	142.00	296.00
2	North 24 Parganas	0.00	15.00	4.00	0.00	0.00	0.00	0.00	19.00
3	Hooghly	4.45	17.80	12.50	0.00	6.45	0.00	37.00	78.20
4	Psachim Medinipur	3.50	10.00	10.00	2.00	17.00	5.00	5.00	52.50
5	Howrah	25.04	15.22	0	0	6.45	0	4.75	51.46
6	Kalimpong	0.00	3.87	0.00	0.00	0.00	0.00	0.90	4.77
7	Purba Bardhaman	0.00	1.50	0.00	0.00	0.00	0.00	0.50	2.00
8	Kolkata	0.00	50.00	32.00	0.00	0.00	0.00	50.00	132.00
9	Bankura	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.25
10	Birbhum	0.126	0.00	0.00	0.00	0.00	0.00	0.00	0.126
	<b>Total -</b>	<b>41.22</b>	<b>204.64</b>	<b>95.00</b>	<b>5.50</b>	<b>38.05</b>	<b>11.75</b>	<b>240.15</b>	<b>636.31</b>



# APPENDIX - XIX D

## Relief Materials Distribution:

Sl.	Name of the Districts	Tarpaulin	Special GR Rice MT	Baby Food (MT)	Chira (MT)	Gur (MT)	No. of families received DM kits in packets	Spl. GR Rice received by No. of Adult members	No. of families received Clothings / Garments
1	South 24 Parganas	41847	351.25	0.45	2.5	0.625	0	29270	5525
2	North 24 Parganas	9900	50	0.15	4	0.3	0	300	1247
3	Hooghly	43710	500	190	250	100	0	27830	4500
4	Psachim Medinipur	36384	170.1	345	362	12.1	1234	14175	19431
5	Howrah	40758	28.152	0.3	65	13	0	1246	7868
6	Kalimpong	9784	77.19	0	0	0	250	2774	944
7	Purba Bardhaman	4074	40.27	0.003	0.04	0.015	0	1252	62
8	Darjeeling	228	0.96	0.04	0	0	1	80	4
9	Kolkata	11250	6	0	0	0	0	500	0
10	Bankura	10150	25	0	0	0	10	455	0
11	Birbhum	1762	4.2	0	0	0	18	350	137
12	Purulia	2145	8.172	0	0	0	0	681	968
<b>Total -</b>		<b>211992</b>	<b>1261.294</b>	<b>535.943</b>	<b>683.54</b>	<b>126.04</b>	<b>1513</b>	<b>78833</b>	<b>40686</b>

## Cost of Relief Articles

Item	Unit	Unit Cost	Total Amount (INR)
Tarpaulin	3,15,000	722.16	227480400
DM Kit	5000	1443.49	7217450
Spl GR (MT)	1800	27500	49500000
<b>Total -</b>			<b>28,41,97,850</b>



## CHAPTER - 11

### CONCLUSION

While people of costal Bengal has been trying to reconstruct their damaged houses, starting their livelihood activities and most importantly started sowing or planting paddy, incessant heavy rainfall for more than a week and excessive water release form DAMs made havoc and life of people miserable. Stagnation of more than knee deep water for more than 15 days made the life a nightmare

for the affected community people especially people of those areas comes under the Damodar river basin in West Bengal. During the visit of IMCT it was also observed by the team as those areas were again inundated due to 2<sup>nd</sup> spell of flood in Bengal. On the other hand, in the District of Darjeeling and Kalimpong several landslides occurred and hampered the life of those two districts.



The State Government has undertaken extensive evacuation and relief and rescue operation maintaining COVID restrictions and continued to provide shelter and food to the affected people for more than 15 days in some places. The team effort of all line departments, district administrations, SDRF, NDRF, Police administration, QRT of Civil Defence, People's Representatives, Civil Society Organizations played significant role to manage and counter the threat of flood & Landslide.



A preliminary damage report was submitted to MHA assessing loss at Rs. 9546.39 Crores as per rough estimae. Detailed assessment reduced damage to agriculture, similarly the final products of MSMEs were also made marketable after necessary treatment, moreover the second catastrophe of flood and landslide in September and October significantly hampered the assessment. The damage assessed by different departments of the State Government has now been modified to the amount of Rs. 6242.46 Cr. and assistance sought as per SDRF/NDRF norms is Rs. 1228.44 Cr.

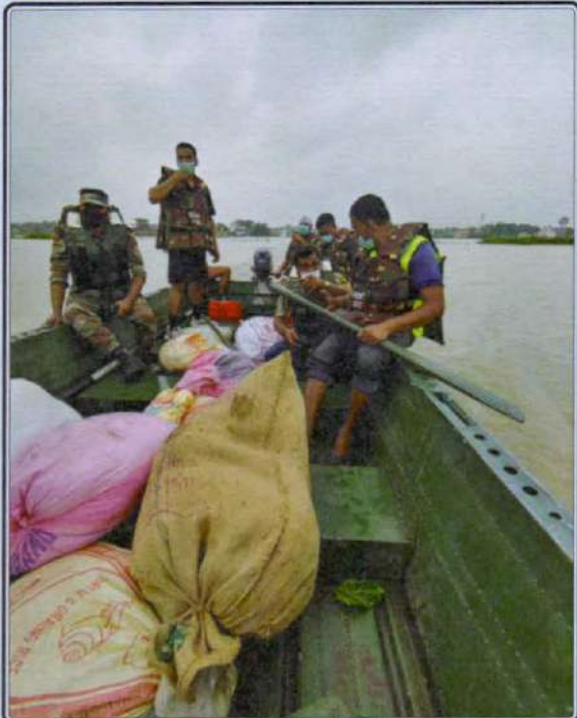


## CHAPTER - 12

Photograph and News Coverage of Rescue, Relief

### Rescue Operation by Indian Army

Indian army has been requisitioned and performing relief & rescue operation in flood affected districts.





## Rescue through Air-lifting by Indian Air-force

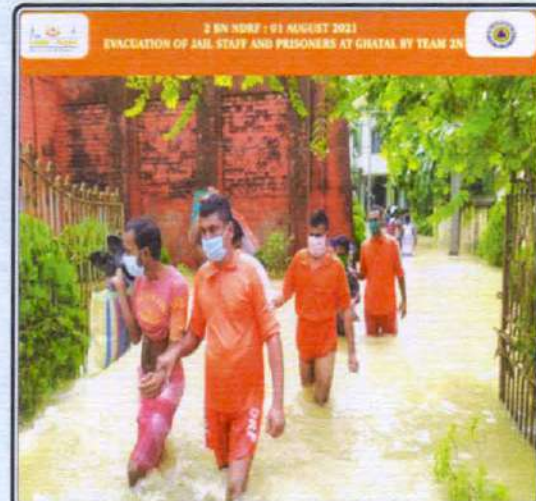
Air force was requisitioned and conducted air-rescue in Hooghly district on 02.08.2021 at 7 am. Total 31 people were air-rescued from Jela Para near Dhanyaghor, Khanakul-II Block. (Male - 9, Female -16 & Children - 6)





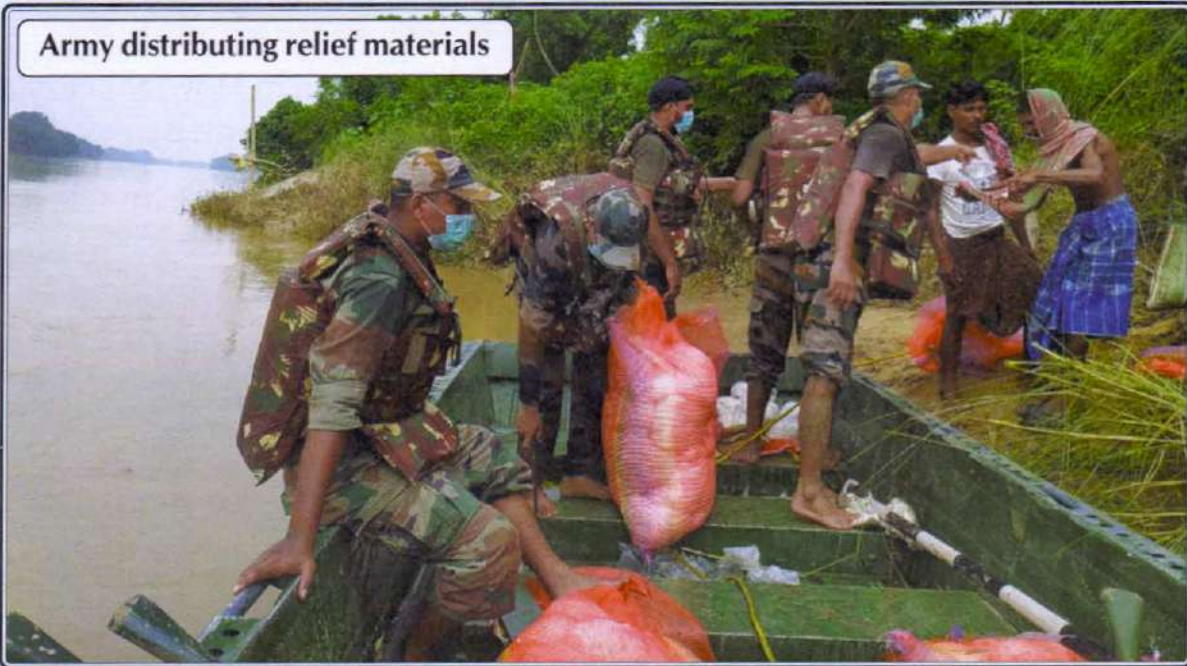
## Rescue & Relief application by NDRF

NDRF has conducted extensive relief & rescue operation in Howrah, Hooghly, Paschim Medinipur, North24 Parganas, South 24 Parganas & North Bengal districts of West Bengal.





Army distributing relief materials



Air-lifting of flood victims By AIF



People paddle their boats as they try to move to safer places along a flooded street in West Midnapore district of West Bengal.

(Reuters File Photo)



## Pregnant woman sends SOS, rescued from flood-hit Ghatal

Sejoy Khanna

West Midnapore/Howrah/Hooghly/Murshidabad: Utpal Majhi of Mansukha village made a distress call to sub-division officer (SDO) Suman Biswas at 4 am on Sunday as he and his pregnant wife, Balshakhi, got trapped in their home in flood-hit Ghatal. Biswas immediately coordinated with NDRF to rescue the woman and arranged for her admission to hospital.

NDRF Inspector Jyotirmoy Das, who led the operation, said: "We reached the village after receiving the message from the SDO and rescued the woman and her husband." "Later, a 72-year-old lady, who was suffering from unbearable pain because a tumour in her abdomen, was also rescued by an NDRF team led by commander Inspector Kanishka Pangti," he added.

The two successful rescue operations have spread good will about the seamless coordination between the district administration and the central rescue team on the eve of



NDRF personnel ferry Balshakhi to a hospital on Sunday

CM Mamata Banerjee's visit on Tuesday. She will go to some of the worst-hit areas in Ghatal by boat.

The flood situation in Howrah, Hooghly and East Burdwan has slowly started improving. In Howrah, people have started returning home from shelters. A part of Udaynarayanpur, however, still remains flooded.

In Hooghly district, the situation is improving in block I of Khanakul but four villages of Khanakul block II are

still under water. The Hooghly district administration said 8,000 people are staying at 60 shelters.

Incessant rain from Saturday afternoon to Sunday morning led to a significant rise in the Gandheswari and Dwarkaswar rivers in Bankura. In Murshidabad, the swelling river started causing erosion at Sridharpur village under Sekendra gram panchayat.

(With inputs from Rupak Banerjee, Palguni Banerjee & Sukumar Mahato)

## Fresh threat to localities after barrage scales up discharge

STATESMAN NEWS SERVICE  
BURDWAN, 1 AUGUST

The flood level increased substantially in the lower Damodar region causing problems to several localities in Burdwan East, Bankura, parts of Hooghly and Howrah today after the Durgapur barrage had to lift its sluice gates further following inflated flow gushing in from the upper catchment areas and the upper dams at Maithon, Panchet and Tiliya in Jharkhand.

The Durgapur barrage started discharging 1.55 lakh cusecs of water at 1 p.m. today, which impacted the downstream blocks further causing fresh inundation in Galsi-1, 2, Raina-2, Jamalpur and Khandagosh blocks.

"The sluice gate of the barrage had to scale up because the reservoir was unable to accommodate the huge inflow of water," said Sanjay Singh, an executive engineer with the Damodar headworks of the state irrigation department.

He added: "The Tiliya dam released 1 lakh cusecs that was added to the Panchet pond level last night. So, Panchet had to discharge additional water that accordingly



## Flooded crematoriums closed

STATESMAN NEWS SERVICE  
HOOGHLY, 1 AUGUST

The Arambagh sub-division is badly hit by floods as the rivers are in spate and have inundated vast stretches of Khanakul and Goghat, including the two crematoriums.

Local sources said the crematoriums at Khanakul and Goghat are completely water logged. The crematoriums have gone out of order. Notices have been put up stating that the crematoriums will remain closed until the stagnant water drains out and the electric components of crematoriums are restored in working order.

had hit the barrage after six hours in the wee hours today."

The district administration has shifted nearly a thousand residents from the flood-affected areas to the flood centres. "No casualty was reported in the last 24 hours. But we have received reports of dam-

age of more houses since yesterday," said Shampa Dhara, Sahadulpati, Burdwan East Zilla Parishad. She added: "We are apprehensive about more damage in the Damodar downstream as the barrage discharge has increased further."

## Heavy showers swamp parts of Bengal, disrupt trains

Many areas in Kolkata, New Town & Howrah city were waterlogged with rainwater entering homes

ANI & PTI  
KOLKATA, 1 AUGUST

Threatening downpour of over 200 mm in four districts and more than 100 mm in Kolkata till 8.30 am in the last 24 hours, inundated large parts of the city and suburbs, submerging roads and yards at several places which resulted in the disruption of rail and road transport services.

In Eastern Railway, all coaching yards including Rajahmundry, 2nd and 3rd coaching yards along with car sheds were submerged. All the trucks and vans were stuck in the flood and in the flood-affected areas, the rail and road transport services were disrupted.

The heavy downpour in the city and suburbs, however, brought greater difficulties in the South Eastern Railway.

Around 14 long-distance trains had to be cancelled by the South Eastern Railway. Several long-distance trains had to be cancelled by the South Eastern Railway.

The waterlogging was reported in a large gathering of thousands of commuters at



A bus almost submerged at Rajahmundry after torrential rains in Kolkata on Friday.

through heavy downpour during the day.

With Para and Subahar rivers overflowing, parts of Kharagpur and Chaudhara in West Midnapore lay inundated, cutting off remote areas from the rest of the district.

Similarly, large tracts in Burdwan were submerged owing to the overflowing of the Damodar river.

Heavy waterlogging also happened everywhere at Tiliya in East Midnapore, Ghatal in West Midnapore, Sripur in Birbhum and India in Bankura.

Traffic came to a halt on many flooded state highways in Bankura, Burdwan and West Midnapore as water took time to recede after nightfall downpour.

Protest over stagnant water

STATESMAN NEWS SERVICE  
KOLKATA, 1 AUGUST

Stagnation of knee-deep water for the last four days triggered protests and road blockades.

The railway station personnel and employees of Burdwan, Kanpur and Secunderabad are still flooded and distressed amidst the rain.

Water has penetrated into the ground floors as people waded through the water to reach workplaces. Many residents, blocked drains and sewerage pits have overflowed. Residents of ward number 20 of Kanpur municipality today filed a petition with the local body.

They demanded a senior leader of the ruling party monitor the flood and take necessary steps to rectify the drainage and sewerage systems and "stop" construction of buildings.

ing and killing, and heavy rain in Burdwan, Kanpur and Secunderabad.

Protest in East Midnapore recorded the highest rainfall in the state in 24 hours, till 8.30 am on Friday, at 250 mm.

Other places that recorded heavy rainfall are Chhatrapati (220 mm), Diamond Har

ing and killing, and heavy rain in Burdwan, Kanpur and Secunderabad.

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## High alert in Burdwan East and Bankura

STATESMAN NEWS SERVICE  
BURDWAN, BANKURA, 11 JULY

After houses being washed out due to over flowing of river at labour in Birbhum on Saturday



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## NDRF team continues rescue work at Arambagh, Hooghly

STATESMAN NEWS SERVICE  
HOOGHLY, 11 JULY

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OTHER RELEVANT PHOTOGRAPHS RELATED TO FLOOD AND LANDSLIDES

