# GOVERNMENT OF WEST BENGAL
# IRRIGATION & WATERWAYS DIRECTORATE

## ANNUAL FLOOD REPORT – 2003.

**Executive Engineer**
**Chief Engineers' Drawing Office**
**Jalasampad Bhawan, Bidhannagar**
**Kolkata-700 091.**

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**December-2003.**

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## INDEX


| | Particulars | Page |
|---|---|---|
| 1. | Introduction | 2 |
| 1.1 | River Basins | 3 |
| 1.2 | River System | 3 |
| 1.2.1 | Brahmaputra Basin Drainage System | 3 |
| 1.2.2 | Ganga Basin | 5 |
| 1.2.3 | Subarnarekha Basin | 13 |
| 2. | Rainfall | 15 |
| 2.1 | Rainfall Pattern | 15 |
| 2.1.1 | Himalayan & Sub-Himalayan Region | 15 |
| 2.1.2 | Gangetic Plains | 16 |
| 3. | Report on Flood during 2003 of West Bengal | 17 |
| 4. | Conclusion | 18 |


## ANNEXURES


| | | |
|---|---|---|
| Annexure-I | Monthly, Monsoon & Yearly Districtwise Actual and Normal Rainfall alongwith Percentage Departure from Normal for the year 2003. | Sheet 1-15 |
| Annexure-II | Important Reservoir Levels & Outflow Data during the Flood Season of 2003. | Sheet 1-5 |
| Annexure-III | Important Barrage Levels & Discharge Data during the Flood Season of 2003. | Sheet 1-2 |
| Annexure-IV | Gauge Level of Important Rivers during Flood Season of 2003. | Sheet 1-37 |
| Annexure-V | Statement of Rainfall Data of different rivers (Sub-basin wise) within West Bengal during Monsoon period of 2003. | Sheet 1-2 |
| Annexure-VI | Statement of Districtwise damages during Flood Season of 2003. | Sheet 1-5 |
| Annexure-VII | Statement of Districtwise inundated area in the year 2003 due to Flood. | Sheet 1 |


## DRAWINGS


| | | |
|---|---|---|
| 1. | Index Map of West Bengal | One Sheet |
| 2. | Graphs showing the Important Reservoir & Barrage Levels during Flood Season of 2003. | One Sheet |
| 3. | Graphs showing the Gauge Levels of Important Rivers during Flood Season of 2003. | Two Sheets |

# PREFACE

The flood, a water related disaster in the state of West Bengal has been an annual feature. Some parts of the state are victims of onslaughts of flood each year resulting severe loss to standing crops, cattles and human properties. The state has all possible facets of flood, drainage, bank erosion, cyclonic storm ravages and associated problems. It has been noticed that the furies due to flood have increased during the last two decades. A severe inundation took place twice in the fifties i.e. 1956, 1959 once in the sixties namely 1968 twice in the seventies i.e. 1971, 1978 thrice in the eighties namely 1984, 1986, 1987 six times during the nineties i.e. 1991,1993,1995,1997, 1999 and 2000. Flood and allied problems thus being on the rise, due stress is to be meted out to both structural and non-structural measures for proper management of flood.

Due to its physical and geographical position, the state, apart from diverse characteristics like physical, topographical has climatological variations as well. The average rainfall in the state is 1750 mm of which more than75% occurs during the monsoon period while the hilly region at the foot hills receives the heaviest rainfall ranging from 2500 mm to 5000 mm, the southern districts in the plains receive average of 1125 mm to 1875 mm.

Many factors such as intensity and duration of rainfall, sedimentation in river bed, natural or manmade obstruction etc. play a role in the occurance of flood. Study of these factors and evaluation of flood hazards every year for a given basin/sub-basin are indispensible for evolution of various flood management measures. Accordingly Irrigation & Waterways Directorate, at the end of each flood season, prepare annual flood report comprising rainfall pattern in the basin/sub-basin, rainfall in the districts, reservoir condition and major flood events of the year.

WEST BENGAL
LEGEND
1. INTERNATIONAL BOUNDARY
2. NATIONAL BOUNDARY
3. DISTRICT BOUNDARY
4. RIVER
5. RESERVOIR
6. RAILWAY LINE
7. NATIONAL HIGHWAY
SIKKIM
BHUTAN
NEPAL
BIHAR
ORISSA
BANGLADESH
BAY OF BENGAL
DARJILING
JALPAIGURI
KOCHBIHAR
ASSAM
UTTAR DINAJPUR
DAKSHIN DINAJPUR
RANGPUR
RAJSHAHI
MALDAH
BIRBHUM
MURSHIDABAD
KUSTIA
BARDHAMAN
PURULIYA
BANKURA
HUGLI
NORTH 24 PARGANAS
JESSORE
KHULNA
MEDINPUR
HAORA
CALCUTTA
SOUTH 24 PARGANAS
KAKDWIP
MESSANJORE RESERVOIR
KONAR RESERVOIR
MAITHON RESERVOIR
R. GANGA
R. BRAHMAPUTRA
R. DAMODAR
R. HUGLI
R. SUBARNAREKHA
R. BAGHRATI
R. HALDI
R. MATLA
R. BAIDYA
R. BANGAL
R. SAPTAMUKHI
R. BAGHRA
R. BANGAL
R. JAMUNA
R. PADMA
R. MAHANANDA
R. TISTA
R. SANKOSH
R. KULIK
R. BANSLOI
R. KUMOOS
R. DWARKESWAR
R. SILA
R. KANGSABATI
R. BARAKAR
R. GUMANI
R. SIL
R. KANTI
R. BIGHA
R. GANGA SAGAR
R. RUPNARAIN
R. RAIMANGAL
R. BETANI
R. KARSIYANG
R. MECHI
R. MAGAR
R. KARATOYA
R. BARAKAR
R. JUBARRAJ
R. KALI
R. KANSABATI
R. KARPALGARI
R. BAGHRATIKHI
R. BAGHRA
R. BAGHRANGA
R. BAGHRANGAL
R. BAGHRANGA
R. BAGHRANGA
R. BAGHRANGA

## 1. INTRODUCTION.

The state West Bengal crowned by the mighty snow-white Himalayas in the North and frothy sea on the South is a combination of land varying from high regions to the plains. The state is beset with extensive network of rivers, their tributaries, rivulets, jhoras , canals, tanks beels and low lying pockets of water bodies. With the Tropic of Cancer running across it, the state is situated between 21°31' & 27°13'14" North Latitudes and 85°45'20" & 89°53' East Longitudes. The geographical area of the state is about 88,752 sq.km. with a population density of 767 per sq.km. according to 1991 census. River Teesta, Torsa, Raidak, Sankosh, Jaldhaka, Mahananda flow in the North and the river Bhagirathi-Hooghly emerging from the Ganges flows through the central part to the south of the state. The Mayurakshi, Ajoy, Damodar, Dwarakeswar, Rupnarayan, Kangsabati, Kaliaghai and the Subarnarekha are some of the major rivers from the Western part of the state. The river Ganga geographically divides the state into two regions. In the north-the districts are Coochbehar, Jalpaiguri, Darjeeling, Uttar Dinajpur, Dakshin Dinajpur and Malda and in the south – Murshidabad, Nadia, North 24-Parganas, South 24-Parganas, Purulia, Bankura, Birbhum, Burdwan, Hooghly, Howrah, Midnapore. The onset of the monsoon in the state spreads between middle of June to the middle of October.

**Classification of areas.**

| | | |
|---|---|---|
| 1 | Geographical Area | 88,752 sq.km. |
| 2. | Area under Forest | 11,880 sq.km. |
| 3. | Total Flood Prone Area | 37,660 sq.km. |
| 4. | Area already protected | 22,005 sq.km. |

## 1.1 RIVER BASINS.

The state can be demarcated into three distinct drainage basins coming under the Ganga, Brahmaputra and Subarnarekha system respectively. These three main river basins can in turn be divided into Sub-bains having individual catchment of their own. The area-wise distribution of the above main basins in the state are as under –

| | | |
|---|---|---|
| 1. | Brahmaputra Basin | 11,860 sq.km. |
| 2. | Ganga Basin including Sundarban Area | 74,732 sq.km. |
| 3. | Subarnarekha Basin | 2,160 sq.km. |

## 1.2 RIVER SYSTEM

### 1.2.1 Brahmaputra Basin Drainage System.

The rainfall in the northern region of the state is generally high. The ground slope is steep enough particularly in the Sub-Himalayan regions of the northern districts. Except Darjeeling, all the areas belong to Brahmaputra Basin. This system consists of a total area of 11,860 sq.km. nearly 14% of the geographical area of the state. This basin area is interspersed with a large number of drainage channels which join the main drainage arteries of the regions like the rivers Teesta, Torsa, Raidak, Mansai, Jaldhaka etc. All these rivers originate from the Himalayas in Bhutan/Sikkim and flow across the Terai region and reach the plains of West Bengal and then flow to Bangladesh joining ultimately the Brahmaputra in Bangladesh. The rivers feeding the river Brahmaputra have number of tributaries as under –

| Sl.No. | River Basin | Catchment area in sq.km. | Tributaries |
|---|---|---|---|
| 1. | Sankosh | 172 | Chiklajhore |
| 2. | Raidak | 807 | Raidak-I. Raidak-II. Turturi |
| 3. | Torsa | 3419 | Kaljani.Sil-Torsa.Char-Torsa Dolong.Sanjai.Ghargharia.Garam. Diana.Pana.Jainti.Gabur-Basra |
| 4. | Jaldhaka | 3746 | Mujnai.Murti.Diana.Sutanga. Dolong.Dharala.Ghatia.Kumlai. Gilandi.Duduya |
| 5. | Teesta | 3716 | Great Rangeet.Ramam.Rangpoo. Mechi.Leesh.Ghish.Chel.Mal. Neora. Karala. |

## BRIEF DESCRIPTION OF RIVERS UNDER BRAHMAPUTRA BASIN

### (A) SANKOSH

The river Sankosh with its origin in Bhutan is the eastern most river of Brahmaputra river basin. It serves as the boundary between the two states West Bengal and Assam. It joins with Raidak-II and finally falls into Brahmaputra in Bangladesh by name Gangadhar.

### (B) RAIDAK.

It originates in Mt. Akungphu at an altitude of 6400 m. in Bhutan. The river Raidak then bifurcates into two channels namely Raidak-I and Raidak-II at Bhutanghat, close to Indo-Bangladesh border. Raidak-I joins the united stream of Torsa and Kaljani, while Raidak-II is joined by Sankosh and finally outfalls into Brahmaputra in Bangladesh by the name Gangadhar.

### (C) TORSA

The river Torsa originates in Chumbi Valley of southern Tibet at an altitude of 7065 M. It flows through Tibet, Bhutan, West Bengal and Bangladesh. Below Hasimara bridge on NH-31, it bifurcates into two channels viz. Sil-Torsa and Char-Torsa. They reunite at Patla Khowa forest. The river passes by the Coochbehar town and is joined by river Kaljani and Raidak-I. The combined flow outfalls into Brahmaputra near Nageswari at Rangpur in Bangladesh.

### (D) JALDHAKA

The river Jaldhaka has its origin at Bitang Lake in Sikkim at an altitude of 4400 M. It flows through Sikkim, Bhutan, West Bengal and Bangladesh. After the river is joined by a number of streams and tributaries both in mountainous and sub-mountainous regions, it finally flows into river Dharala and the combined system by the name Dharala ultimately outfalls into Brahmaputra in Bangladesh.

**(E) TEESTA**

Teesta – the mighty river of North Bengal originates in the glaciers of North Sikkim at an altitude of 6400 M and is formed by the union of two streams viz. Lachen and Lachung at Chungthung in Sikkim. It enters West Bengal at Rangpoo and upto Mechi, it forms the boundary betwen West Bengal and Sikkim. Two of its tributaries- Great Rangit and Rammam also serve as the natural boundary between the two states. The river finally outfalls into Brahmaputra in Rangpur district of Bangladesh.

**1.2.2 GANGA BASINS**

The two holy rivers – Bhagirathi and Alakananda originating from the glaciers of the Himalayas at an altitude of 7000 M. join at Dev-Prayag lower down and this combined stream is known as the Ganga. It emerges into the plains at Rishikesh in Uttaranchal. After flowing exclusivelly through Uttaranchal and Uttar Pradesh it receives the flow of Yamuna, the largest tributary near Allahabad. The Ganga forms the boundary between Uttar Pradesh and Bihar for a length of about 110 km. and the river then enters Bihar and flows more or less through the middle of the state. After its confluence with the Kosi, the Ganga continues its eastward flows in Bihar for about 40 km. and then it enters West Bengal.

As it enters West Bengal, the river swings round the Rajmahal hill range and then starts flowing almost due south. The river then bifurcates into two arms about 40 km. below Farakka. The left arm called the Padma flows eastwards into Bangladesh while the right arm called Bhagirathi continues to flow south through West Bengal. The stretch of the river after Nabadwip is called Hooghly and ultimately outfalls into the Bay of Bengal near Sagar Island.

The Central, Southern and the South-Western parts of the State of West Bengal constitute the Ganga Basin. The Ganga, only a stretch of which is now flowing through the narrow Central West line of the present shape of the State had been an active Delta builder.

The total length of the river Ganga from its point of origin to the point where it falls into sea is about 2575 km. (measured along Bhagirathi and the Hooghly), of which 1450 km. lies in Uttaranchal and Uttar Pradesh, 110 km. along Uttar Pradesh and Bihar border, 445 km. in Bihar and 570 km. in West Bengal.

The Ganga system comprises a total area of 74,732 sq.km. within the state of West Bengal. The catchment areas of different rivers within this system in the state of West Bengal are as under –

| Sl.No. | Name of River Sub-Basin | Catchment Area in Sq.km. |
|---|---|---|
| 1 | 2 | 3 |
| (a) | Mahananda | 9,640 |
| (b) | Punarbhaba | 730 |
| (c) | Atrai | 910 |
| (d) | Pagla-Bansloi | 730 |
| (e) | Dwaraka-Bhrahmani | 2,500 |
| (f) | Bhagirathi-Hooghly | 1,170 |
| (g) | Jalangi | 5,344 |
| (h) | Mayurakshi | 2,720 |
| (i) | Ajoy | 2,490 |
| (j) | Khari-Gangur-Ghea | 4,460 |
| (k) | Churni | 800 |
| (l) | Damodar | 5,250 |
| (m) | Dwarkeswar | 4,430 |
| (n) | 24-Parganas(South & North) and Kolkata Port Drainage Basin | 4,619 |
| (o) | Kangsabati | 8,369 |
| (p) | Silabati | 3,952 |
| (q) | Rupnarayan | 2,548 |
| (r) | Pichabani | 820 |
| (s) | Rasulpur | 1,130 |
| (t) | Haldi | 980 |
| (u) | Tidal zone (Sundarban Area) | 11,320 |

The different tributaries of these rivers are listed below –

| Sl.No. | Name of River | Tributaries |
|---|---|---|
| 1 | 2 | 3 |
| 1. | Mahananda | Mechi, Balason, Dauk, Nagar, Kulik, Gamari, Chiramati, Tangon, Kalindri |
| 2. | Punarbhaba | Punarbhaba |
| 3. | Atrai | Atrai |
| 4. | Pagla | Pagla, Bansloi, Bagmari |
| 5. | Brahmoni | Brahmoni, Dwarka |
| 6. | Bhagirathi | Bhagirathi, Hooghly |
| 7. | Jalangi | Jalangi, Silamari, Bhairab, Suti |
| 8. | Mayurakshi | Mayurakshi, Babla, Noon Beel, Siddheswari, Kuiya, Kopai, Bakreswar, Sal, Monikornia, Daoki Kana, Mor, Gambhira. |
| 9. | Ajoy | Ajoy, Hinglow, Kunoor, Pathro, Jayanti. |
| 10. | Khari-Gangur-Ghea | Khari, Brahmoni, Banka, Bangour, Ghea, Behula, Kana |
| 11. | Churni | Churni |
| 12. | Damodar | Damodar, Barakar, Sali. |
| 13. | Dwarkeswar | Ganddheswari, Dwarkeswar, Arkasha, Berai. |
| 14. | Rupnarayan | Mundeswari, Dwarkeswar, Berai, Tarjuli, Sankari, Silabati, Joypanda, Kubai, Parag, Kanki, Ganddheswari, Damodar |
| 15. | Haldi | Haldi, Banki, Kangsabati, Kumari, Bhairab, Tarafeni, Kaliaghai, Bagchai, Chandra, Kapaleswari. |
| 16. | Rasulpur | Rasulpur, Pichabani. |
| 17. | Tidal Rivers | Tolly's Nullah, Keorapukur, Ichamati, Raimongal, Kultigong, Jamuna, Kalindi, Haroa, Bhanga, Gosaba, Metia, Piali, Thakuran, Raidighi, Saptamukhi, Buriganga, Matla, Dansa, Kalagachi, Bidyadhari, etc. |

## BRIEF NOTES ON THE SUB-BASINS

### 1. MAHANANDA.

The river Mahananda originates from Paglajhora near Kurseong town in the district of Darjeeling. The Mahananda river system lies between latitude 25°15' N to 26°15' N and longitude 87°45' E to 88°15' E. It is bounded on the north by the Himalayas, in the east by the ridges seperating it from Teesta river system, the river Ganga on the South and the Kosi river system in the east. The river bifurcates into two channels at Barsoi in Bihar. Out of the two branches one flows through Bihar by the name Fulahar and the other flows through West Bengal as Mahananda. The river Mahananda carrying the flow of four tributaries namely, Nagar, Kalindri, Tangon and Punarbhaba, drains into the river Ganga from the North-Western side at Godogarighat just downstream of the point where Ganga leaves the boundary of West Bengal.

### 2. ATRAI-PUNARBHABA

Some rivers like Sahu, Neem, Talma, Chaoai, Panga originating from the high lands in districts of Jalpaiguri, meet together afterwards. This combined stream assumes the name Karotowa. It then enters Bangladesh by the name Atrai. The river Atrai then bifurcates into two channels namely Dheepa and Atrai. The Western Channel – Atrai re-enters West Bengal in South Dinajpur district covering a length of 40 km. in the state. It again enters into Bangladesh and ultimately outfalls into river Brahmaputra.

The Dheepa on the other hand taking a South – Westernly course enters Gangarampur P.S. in South Dinajpur district assuming the name Punarbhaba. Covering a length of about 40 km. in the district it touches the eastern boundary of Maldah district and finally enters Bangladesh. Further down, Punarbhaba meets the river Mahananda in Bangladesh.

## 3. NAGAR-KULICK, GAMARI-CHIRAMATI, TANGON, KALINDRI

All these rivers flow through the districts Maldah and North Dinajpur. In course of their flow, somewhere they form the boundary either between West Bengal and Bihar or between West Bengal and Bangladesh. These rivers ultimately outfall into the river Mahananda.

Nagar, originating in Bangladesh flows along the boundary of West Bengal and taking a Southeasternly course, receives a spill channel of Mahananda and is joined by Kullick, which has also its origin in Bangladesh. Gamari and Chiramati are two small rivers that flow through North-Dinajpur district before they are united. This combined stream finally outfalls into the river Mahananda.

Tangon is a tributary of river Mahananda. It rises in Bangladesh. It flows through the district of North-Dinajpur and Maldah and meets Mahananda on the boundary of Maldah and Bangladesh.

River Kalindri originating in North Bihar flows through the plain of Purnia district. It enters West Bengal in the Maldah district and outfalls into Mahananda.

## 4. PAGLA-BANSLOI-BRAHMANI.

These rivers originate from the Rajmahal hills in the district of Bihar. Flowing easternly across Birbhum district, they entered Murshidabad district as the tributaries of the river Bhagirathi.

## 5. JALANGI-BHAIRAB

The river Jalangi originates from the right bank of the river Padma in Murshidabad district, 165 km. downstream of Farakka. Jalangi is dead for all purposes except during the periods of rain, when it receives water from Padma. The river ends its journey by finally outfalling into the river Hooghly near Nabadwip town in Nadia district in West Bengal.

The river Bhairab starts its journey from the river Ganga in P.S. Lalbag of Murshidabad district. It is now almost a dead channel but during rainy season it receives water from Padma.

## 6. ICHAMATI-CHURNI

The river Mathabhanga originates from the mouth of the Jalangi of Padma. It is not an important river in this stage, as it flows mainly through Bangladesh. It flows only a few kilometers within the district of Nadia. At this stage, the river bifurcates into two streams – the eastern course runs a few kilometres through the districts in a south-east directions to meet Bhagirathi by the name Churni and the other course flows by the name Ichamati. Ichamati gets a little supply from Padma and thrives on wash out by tidal flows.

## 7. BHAGIRATHI-HOOGHLY

The Ganga Brahmaputra Meghna river system constitutes one of the largest river systems of the world in terms of its water resources. The river Ganga originating in the Himalayas in India, drains a vast area. Near its deltaic head at Farakka it divides into two channels, the Bhagirathi-Hooghly and the Padma. The Bhagirathi-Hooghly flows through West Bengal and outfalls in Bay of Bengal and the Padma crosses over into Bangladesh and joins the Brahmaputra at Goalundo.

The river Bhagirathi divides the Murshidabad district into two part. It receives three right bank tributories namely the Bagmari-Pagla, the Mayurakshi and the Ajoy. It receives the Jalangi just upstream of Nabadwip town from the left. After its confluence with the Jalangi, the Bhagirathi is known as the Hooghly.

The Bhagirathi-Hooghly is the main river in the state and is the main drainage artery for the southern districts draining almost the entire area. Before 12th century, the Ganga had its main course down Bhagirathi-Hooghly. Subsequently, the main flow was

pushed to the east through the present course of Padma. The flow of Bhagirathi increases downstream due to the run off and outflows receives from a number of eastern and western tributaries. It also form the boundary between 24-Parganas and Hooghly districts.

## 8. MAYURAKSHI-BABLA

Mayurakshi originates from the high lands of Santhal Parganas. It is the main river of Birbhum district. Several spill channels – the Manikornika, Kana Mor, Gambhira etc. take off from the Mayurakshi in its lower reaches. All these rivers flow into the lower pocket of Hijal Beel in the district of Murshidabad. From the Beel, the river Babla starts its journey finally draining into the river Bhagirathi. The drainage and flood level in the Hijal Beel is considerably influenced by the level rulling in the Bhagirathi.

## 9. AJOY

The river Ajoy originates from the hills near Deoghar in Jharkhand. The Principal tributaries of the river are - Hinghlow, Kunoor, Pathro and Jayanti. The floods of this river are flashy and of short duration. There are some pockets in the Ajoy-Kunoor catchment which suffer from frequent inundation. Large areas of Burdwan and Birbhum districts face inundation whenever floods of the Ajoy synchronize with that of the Mayurakshi, the Pagla, the Bansloi and the Bhagirathi.

## 10. DAMODAR

The river Damodar originating from Palamau hills in Jharkhand, bifurcates into two channels at Beguahana. The main flow passes through Mundeswari channel and discharges into Rupnarayan. The other one Amta channel carries discharge during high flood and outfalls into the Hooghly. The river causes floods in its lower reaches in the districts of Burdwan, Hooghly and Howrah, mainly on the right bank of the river below Beguahana.

## 11. DWARAKESWAR-SILABATI-RUPNARAYAN

Dwarakeswar originates from the high lands of Purulia district. River Ganddheswari rising from Bankura district meets Dwarakeswar near Bankura town receiving water from streams like Arkasha, Berai, enters Hooghly district and meets Silabati to form Rupnarayan.

Silabati also originates in Purulia district. It traverses through the district of Midnapore. The river receives water of Joypanda and meets with Dwarakeswar to form Rupnarayan.

Rupnarayan is a combination of number of streams. The tidal reach below confluence of Dwarakeswar and Silabati is known as Rupnarayan. It outfalls into Hooghly after receiving mainflow of Damodar through Mundeswari and branch of Kangsabati. The river is tidal through out its entire course.

## 12. KANGSABATI-KALIAGHAI-HALDI

The river Kangsabati originating from Purulia district is joined by Kumari in Bankura district. Further down, it is joined by the combined streams of Bhairab Banki and Tarafeni rivers and thereafter it flows through the Midnapore district. After a tortuous course, it bifurcates. The upper branch known as old Cossye or Palaspai Khal outfalls into the Rupnarayan and the other one is known as New Cossye.

The river Kaliaghai trickles out from Jhargram, P.S. in Midnapore district. During the course of its journey, it is fed by the flow of its tributaries namely Kapaleswari, Baghai and Chandia. This combined flow meets the other arm of Kangsabati i.e. New Cossye to form Haldi.

The river Haldi formed by joining of New Cossye and the combined flow of Kaliaghai outfalls into the river Hooghly. The lower portion of the river Haldi is affected by over bank spills and drainage problem during the monsoon.

13. **RASULPUR**

The river Rasulpur is formed by three streams namely Bagda, Sarpai and Madhakhali. It is the main river of Contai Sub-Division of Midnapore district. It acts as the main drainage for Dwarakeswar, Silabati and large portion of the Kangsabati rivers. It causes flooding in two regions namely Dubda and Contai areas. The river ultimately falls into the river Hooghly.

14. **TIDAL RIVERS OF SOUTHERN WEST BENGAL.**

Aapart from the rivers described earlier within the Ganga and the Brahmaputra river systems, there is a group of rivers in Southern part of the State which falls in the deltaic zone. These rivers mostly lie in the deltaic zone to the east of the Hooghly river popularly known as Sundarbans and form an intricate network with a number of criss-cross inter connecting channels, thus dividing the land spill channels of Ganga, then upland supply running dry, during winter months. But gradually their off-takes from Ganga have deteriorated and in some cases being cut-off from the river. Now these rivers drain off whatsoever fresh discharge comes from country sides, thus ultimately draining into Bay of Bengal through one or other of the principal estuaries in the area which are, starting from Hooghly river successively the Bartala of Muriganga or channel creek, Saptamukhi, Matla, Gosaba, Hariabhanga, Raimongal etc.

The Tolly's Nullah or the Adi Ganga, as it is sometises called is a small but important tidal creek draining into the Hooghly from the left in the vicinity of the city of Kolkata.

**1.2.3 SUBARNAREKHA BASIN**

The river Subarnarekha though it has small catchment within this state, has got seperate entity as it directly falls into the Bay of Bengal. Originating in the Chotonagpur Range at an elevation of 609 M it traverses through three states – Bihar, West Bengal and Orissa. It drains a total area of 18,951 sq.km. of which 13,590 sq.km. in Bihar.

2,160 sq.km. in West Bengal and 3201 sq.km. in Orissa. The main tributaries of the river are Kanchi and Khakai above Chandil in Bihar, Kakhai in Bihar and Orissa and Dolong in West Bengal.

The maximum and minimum observed as well as the danger levels and highest flood levels at different gauge sites of various river systems during the flood season of 2003 are given in Annexure-IV(Sheet No. 1/37 to 37/37).

## 2. RAINFALL

The main rainfall season in this state is the South-West monsoon season during which the entire land (excepting the extreme north, the extreme north-east and extreme south) gets 75% of the annual rainfall. The gangetic plains of West Bengal gets 78% of its annual rainfall during the monsoon period. During last seventy five years, the date of onset of monsoon over West Bengal was spread between last week of May to last week of June with its withdrawal between last week of September to second week of October. This year the onset of monsoon over West Bengal spread between early second week of June to early second week of October.

### 2.1 RAINFALL PATTERN

The river Ganga divides the state into two parts, which are by and large homogeneous from the meteorological point of view. The northern half is designated as 'Sub-Himalayan West Bengal' and the southern half as 'Gangetic West Bengal'. Sub-Himalayan West Bengal is more susceptible to heavy rains both in respect of amount as well as in frequency of occurance. Very heavy rain is more frequent in first two months (June and July) than in subsequent, in the Sub-Himalayan West Bengal. In Gangetic West Bengal the frequency is maximum in August followed by June, July and September in that order.

On the basis of rainfall distribution, the state can be divided into two broad zones-
**(i) The Himalayan and Sub-Himalayan Region,**
**(ii) The Gangetic Plains.**

#### 2.1.1 HIMALAYAN AND SUB-HIMALAYAN REGION

The Himalayan and Sub-Himalayan Region comprising the districts – Darjeeling, Jalpaiguri, Coochbehar and Northern part of Islampur Sub-Division of Uttar Dinajpur district of high intensity of rainfall from 2000 mm to over 4000 mm, about 80% of which is found to occur during monsoon season. On the average Darjeeling, Coochbehar and Jalpaiguri get 114, 112 and 110 rainy days respectively in a year. The monsoon generally follows a northernly track to ultimately break up against Eastern Himalaya causing very heavy rainfall and thereafter trough of low pressure under break monsoon conditions. It then shifts northwards to the Himalayan foothills. It has been found that a precipitation to the tune of 200 to 300 mm in two hours is not unusual while in more than forty occasions of rainfall of 250 mm and above have been registered during 1891-1965.

## 2.1.2 GANGETIC PLAINS

The gangetic plains which constitute the major portion of the state. can be further sub-dividied into the following three sectors on the basis of average rainfall –

Sector – I : Comprising districts – Bankura. Birbhum. Murshidabad and Burdwan which receive an average rainfal – between 1140 mm and 1400 mm.

Sector – II : Comprising districts – Nadia. Hooghly. Western portion of North and South Dinajpur. Midnapore and North 24-Parganas having an average annual rainfall between 1400 mm and 1650 mm.

Sector – III : Comprising districts – Howrah. Eastern portion of North and South Dinajpur. South 24 Parganas and Midnapore having an average annual rainfall – between 1650 mm and 1900 mm.

Such regional variations inthe precipitation pattern causes flood conditions from time to time.

This year in the gangetic West Bengal region three districts – viz. Bankura (+9%). South 24-Parganas(+3%). Midnapore (+4%) experienced rainfall above the normal during the monsoon period (June to October) while the districts – Howrah(-16%). Murshidabad(-22%). Nadia(-4%). North 24-Parganas(-3%). Purulia(-8%). Birbhum(-7%). Burdwan(-19%) and Hooghly(-9%) expereinced less rainfall than the normal. The region as a whole had experienced less rainfall than the normal rainfall. In the Sub-Himalayan region the districts Coochbehar (-7%). North Dinajpur(-5%). South Dinajpur(-13%) experienced less rainfall than the normal during the monsoon period and the districts Maldah(+16%). Jalpaiguri(+10%) and Darjeeling(+14%) had an excess rainfall over the normal. The region as a whole experienced (+3%) excess rainfall. The state had experienced slightly less rainfall than the average annual rainfall.

The rainfall data for the districts as collected from Indian Meteorological Department. Alipore. Kolkata is shown in Annexure-I (Sheet-1/15 to 15/15).

During the monsoon period. this year. the Sub-basins within the state of West Bengal experienced an average rainfall ranging from 51% to 117% of annual average rainfall of the Sub-basins.

The rainfall data of different rivers (Sub-basin wise) are shown in Annexure-V (Sheet no. 1/2 to 2/2).

## REPORT ON FLOOD DURING - 2003 OF WEST BENGAL

Flood is a recurring problem and is almost a regular feature in this state. The state has experienced flood almost every year excepting a very few instances. A major part of the state was created through delta building process by its river systems. Over the years vast area was reclaimed prematurely by constructing flood embankments. Those areas were not allowed to be properly built up by not allowing flood to deposit its silt load in those areas. 42.43% geographical area of the state is flood prone. The flood affected areas as presented below from 1960 to 2003 will depict a scenario of recurrance of high flood in the state.

| Flood affected area(sq.km.) | Years of occurance | Total No.of years. |
|---|---|---|
| Below 500 | 1985,89,92,94,97 & 2001 | 6 |
| Between 500-2000 | 1962,63,64,65,66,72,75,96 & 2003 | 9 |
| Between 2000-5000 | 1960,61,67,69,70,74,76,80,81&82 | 10 |
| Between 5000-10,000 | 1973,77,93,95 & 98 | 5 |
| Between 10,000-15,000 | 1968,79,83,90 & 99 | 4 |
| Between 15,000-20,000 | 1971,86,87 & 88 | 4 |
| Above 20,000 | 1978,80,84 & 2000. | 4 |

This year i.e. 2003 may be considered as a year of normal rainfall. There is no much rainfall or adverse less rainfall in the river basin areas with respect to their annual average rainfall. It appears from the available data that till the month of May i.e. during pre-monsoon period the state as a whole experienced normal rainfall. And the rainfall over the state during the year is slightly below the districtwise normal average rainfall.

Most of the rivers of the state were running with flow of normal intensity. Among the North Bengal rivers – Torsa, Kaljani, Jaldhaka, Mansai, Teesta, Mahananda, Sui, Fulahar, Punarbhaba, Atrai, Ganga were running above danger level but the rivers Torsa, Mansai, Teesta, Mahananda, Fulahar, Tangon and Ganga were running above extreme danger level on a few occasion. Among the South Bengal rivers Silabati, Kangsabati, Rupnarayan, Jamuna & Jalangi were also running above danger level but the rivers Dwaraka, Damodar, Kaliaghai were running above extreme danger level on a few occasions.

There were partial damages to the engineering structures, severe erosion of banks in North Bengal.

Districtwise damages, slips etc. are shown in Annexure – VI (Sheet 1/5 to 5/5).

## CONCLUSION

The West Bengal is basically receipent of run-off generated outside the state. The state has a typical basin characteristics. In the north the rainfall is high and the ground slope is steepmainly in the Sub-Himalayan region. The rivers in the Terai region are wide with shallow depth. Due to continuous denundation of forest cover, Dolomite mining in the hills, the river beds are being silted up day by day reducing the carrying capacity of the rivers causing the flood. In the South, heavy rainfalls run-off coming from upper catchment and in some cases associated drainage congestion are the cause of inundation.

Main structural measures of flood control in West Bengal are embankments measuring 10000 km.(approx) spread over different river systems, constructed over the years from a very long past. There are dams across the Kangsabati, the Mayurakshi and the Damodar river system. But only in the Damodar river system the dams modify the peak of flood to some extent. The other structural measures like catchment area treatment and afforestation in upper catchment requires intervention at Government of India level as they are outside the state.

In North Bengal, an elaborate flood warning sytem maintained by the department warns the people about the trend of rise of the rivers and thus alarming them to take necessary safety measures. Besides, the department also tries to maintain contact with Indian Meteorological Department, Kolkata to get information on adverse weather condition during the monsoon period and to take possible measures. Central Water Commission also extends their co-operation in supplying the conditions and trendes of important river conditions in addition to rainfall data at different rain gauge stations.

Besides the department has already opened its own website (www.wbiwd.com) to made available daily rainfall data and river gauge levels with trend at different stations.

The flood management of the state is a vast problem. The problem cannot be tackled by the state government alone. It requires close liaison of different organisations. The flood awareness particularly understanding about the complexity of the causes of flood and vulnerability of West Bengal will require help of NGO's and Panchayet Raj Institutions. The flood is a problem to be admitted by the society and the people of an area are to formulate their own action plan in close liaison with different Government organisations.

# MONTHLY DISTRICTWISE ACTUAL & NORMAL RAINFALL RECEIVED FROM I.M.D. ALIPORE, KOLKATA ALONG WITH PERCENT DEPARTURE FROM NORMAL FOR THE MONTH OF JANUARY-2003.

Period from 01.01.2003 to 31.01.2003.

| Sl.No. | Name of District | Actual (in mm) | Normal (in mm) | Departure (in %) |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

Sub-Division : Gangetic West Bengal

| | | | | |
|---|---|---|---|---|
| 1. | Bankura | 0.0 | 11.0 | -100 |
| 2. | Birbhum | 2.1 | 12.2 | -83 |
| 3. | Burdwan | 1.0 | 12.2 | -92 |
| 4. | Hooghly | 0.0 | 12.0 | -100 |
| 5. | Howrah | 0.0 | 12.7 | -100 |
| 6. | Midnapore | 0.2 | 13.1 | -99 |
| 7. | Murshidabad | 0.0 | 10.6 | -100 |
| 8. | North 24-Parganas | 0.0 | 10.3 | -100 |
| 9. | Nadia | 0.0 | 9.4 | -100 |
| 10. | Purulia | **D.N.A.*** | 11.4 | - |
| 11. | South 24-Parganas | 0.0 | 13.3 | -100 |

| | | | | |
|---|---|---|---|---|
| Total | : | 3.3 | 116.8 | |
| Average | : | 0.33 | 11.7 | (-) 97 |

Sub-Division : Sub-Himalayan West Bengal

| | | | | |
|---|---|---|---|---|
| 12. | Coochbehar | 8.4 | 9.6 | -12 |
| 13. | Darjeeling | 15.4 | 40.1 | -62 |
| 14. | Jalpaiguri | 7.8 | 8.9 | -13 |
| 15. | Malda | 2.2 | 11.8 | -81 |
| 16. | North Dinajpur | **D.N.A.*** | 6.9 | - |
| 17. | South Dinajpur | 0.0 | 6.9 | -100 |

| | | | | |
|---|---|---|---|---|
| Total | : | 33.8 | 77.3 | |
| Average | : | 6.8 | 15.5 | (-) 56 |

* Data not avaible.

# MONTHLY DISTRICTWISE ACTUAL & NORMAL RAINFALL RECEIVED FROM I.M.D. ALIPORE, KOLKATA ALONG WITH PERCENT DEPARTURE FROM NORMAL FOR THE MONTH OF FEBRUARY-2003.

Period from 01.02.2003 to 28.02.2003.

| Sl.No. | Name of District | Actual (in mm) | Normal (in mm) | Departure (in %) |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

Sub-Division : Gangetic West Bengal

| | | | | |
|---|---|---|---|---|
| 1. | Bankura | 22.1 | 16.8 | 32 |
| 2. | Birbhum | 42.2 | 19.6 | 115 |
| 3. | Burdwan | 33.5 | 16.5 | 103 |
| 4. | Hooghly | 0.2 | 14.7 | -99 |
| 5. | Howrah | 4.0 | 20.0 | -80 |
| 6. | Midnapore | 4.1 | 20.9 | -80 |
| 7. | Murshidabad | 47.4 | 13.3 | 256 |
| 8. | North 24-Parganas | 9.0 | 19.8 | -55 |
| 9. | Nadia | 19.5 | 13.9 | 40 |
| 10. | Purulia | **D.N.A.*** | 19.9 | - |
| 11. | South 24-Parganas | 6.1 | 19.3 | -68 |

| | | | | |
|---|---|---|---|---|
| Total | : | 188.1 | 174.8 | |
| Average | : | 18.8 | 17.5 | (+) 7 |

Sub-Division : Sub-Himalayan West Bengal

| | | | | |
|---|---|---|---|---|
| 12. | Coochbehar | 60.9 | 13.2 | 36.1 |
| 13. | Darjeeling | 87.6 | 28.5 | 207 |
| 14. | Jalpaiguri | 69.5 | 11.2 | 520 |
| 15. | Malda | 51.1 | 11.5 | 344 |
| 16. | North Dinajpur | **D.N.A.*** | 15.1 | - |
| 17. | South Dinajpur | 0.0 | 15.1 | -100 |

| | | | | |
|---|---|---|---|---|
| Total | : | 269.1 | 79.5 | |
| Average | : | 53.8 | 15.9 | (+) 238 |

*Data not available

# MONTHLY DISTRICTWISE ACTUAL & NORMAL RAINFALL RECEIVED FROM I.M.D. ALIPORE, KOLKATA ALONG WITH PERCENT DEPARTURE FROM NORMAL FOR THE MONTH OF MARCH-2003.

Period from 01.03.2003 to 31.03.2003.

| Sl.No. | Name of District | Actual (in mm) | Normal (in mm) | Departure (in %) |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

Sub-Division : Gangetic West Bengal

| | | | | |
|---|---|---|---|---|
| 1. | Bankura | 90.8 | 27.9 | 225 |
| 2. | Birbhum | 42.9 | 25.8 | 66 |
| 3. | Burdwan | 54.7 | 20.3 | 169 |
| 4. | Hooghly | 86.9 | 24.0 | 262 |
| 5. | Howrah | 22.9 | 30.2 | -24 |
| 6. | Midnapore | 79.8 | 34.1 | 134 |
| 7. | Murshidabad | 41.1 | 19.3 | 113 |
| 8. | North 24-Parganas | 134.0 | 27.5 | 387 |
| 9. | Nadia | 115.2 | 27.8 | 314 |
| 10. | Purulia | **D.N.A.*** | 23.6 | - |
| 11. | South 24-Parganas | 50.4 | 32.0 | 58 |

| | | | | |
|---|---|---|---|---|
| Total | : | 718.7 | 268.9 | |
| Average | : | 71.9 | 26.9 | (+) 167 |

Sub-Division : Sub-Himalayan West Bengal

| | | | | |
|---|---|---|---|---|
| 12. | Coochbehar | 51.7 | 36.1 | 43 |
| 13. | Darjeeling | 30.4 | 61.2 | -50 |
| 14. | Jalpaiguri | 90.7 | 32.8 | 177 |
| 15. | Malda | 37.7 | 12.6 | 199 |
| 16. | North Dinajpur | **D.N.A.*** | 23.0 | - |
| 17. | South Dinajpur | 0.0 | 23.0 | -100 |

| | | | | |
|---|---|---|---|---|
| Total | : | 210.5 | 165.7 | |
| Average | : | 42.1 | 33.1 | (+) 27 |

*Data not available.

# MONTHLY DISTRICTWISE ACTUAL & NORMAL RAINFALL RECEIVED FROM I.M.D. ALIPORE, KOLKATA ALONG WITH PERCENT DEPARTURE FROM NORMAL FOR THE MONTH OF APRIL-2003.

Period from 01.04.2003 to 30.04.2003.

| Sl.No. | Name of District | Actual (in mm) | Normal (in mm) | Departure (in %) |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

Sub-Division : Gangetic West Bengal

| | | | | |
|---|---|---|---|---|
| 1. | Bankura | 15.2 | 40.0 | -62 |
| 2. | Birbhum | 73.8 | 40.8 | 81 |
| 3. | Burdwan | 53.2 | 38.3 | 39 |
| 4. | Hooghly | 31.9 | 60.5 | -47 |
| 5. | Howrah | 23.8 | 62.0 | -62 |
| 6. | Midnapore | 15.6 | 47.1 | -67 |
| 7. | Murshidabad | 4.0 | 49.2 | -92 |
| 8. | North 24-Parganas | 28.7 | 54.5 | -47 |
| 9. | Nadia | 21.2 | 62.8 | -66 |
| 10. | Purulia | **D.N.A.*** | 34.4 | - |
| 11. | South 24-Parganas | 52.7 | 47.9 | 10 |

| | | | | |
|---|---|---|---|---|
| Total | : | 320.1 | 503.1 | |
| Average | : | 32.0 | 50.3 | (-) 36 |

Sub-Division : Sub-Himalayan West Bengal

| | | | | |
|---|---|---|---|---|
| 12. | Coochbehar | 170.8 | 142.8 | 20 |
| 13. | Darjeeling | 113.5 | 138.8 | -18 |
| 14. | Jalpaiguri | 196.1 | 123.1 | 59 |
| 15. | Malda | 11.8 | 37.1 | -68 |
| 16. | North Dinajpur | **D.N.A.*** | 62.4 | - |
| 17. | South Dinajpur | 0.0 | 62.4 | -100 |

| | | | | |
|---|---|---|---|---|
| Total | : | 492.2 | 504.2 | |
| Average | : | 98.4 | 100.8 | (-) 2 |

*Data not available.

# MONTHLY DISTRICTWISE ACTUAL & NORMAL RAINFALL RECEIVED FROM I.M.D. ALIPORE, KOLKATA ALONG WITH PERCENT DEPARTURE FROM NORMAL FOR THE MONTH OF MAY-2003.

Period from 01.05.2003 to 31.05.2003.

| Sl.No. | Name of District | Actual (in mm) | Normal (in mm) | Departure (in %) |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

Sub-Division : Gangetic West Bengal

| | | | | |
|---|---|---|---|---|
| 1. | Bankura | 64.8 | 71.6 | -10 |
| 2. | Birbhum | 61.4 | 93.6 | -34 |
| 3. | Burdwan | 57.5 | 73.5 | -22 |
| 4. | Hooghly | 109.0 | 84.9 | 28 |
| 5. | Howrah | 54.0 | 120.8 | -55 |
| 6. | Midnapore | 100.1 | 108.0 | -7 |
| 7. | Murshidabad | 11.7 | 111.3 | -89 |
| 8. | North 24-Parganas | 103.4 | 117.7 | -12 |
| 9. | Nadia | 77.9 | 108.6 | -28 |
| 10. | Purulia | D.N.A.* | 54.8 | - |
| 11. | South 24-Parganas | 135.0 | 96.4 | 40 |

| | | | | |
|---|---|---|---|---|
| Total | : | 774.8 | 1041.2 | |
| Average | : | 77.5 | 94.7 | (-) 18 |

Sub-Division : Sub-Himalayan West Bengal

| | | | | |
|---|---|---|---|---|
| 12. | Coochbehar | 246.6 | 408.7 | -40 |
| 13. | Darjeeling | 164.7 | 267.1 | -38 |
| 14. | Jalpaiguri | 293.5 | 303.8 | -3 |
| 15. | Malda | 80.7 | 104.4 | -23 |
| 16. | North Dinajpur | D.N.A.* | 163.8 | - |
| 17. | South Dinajpur | 8.2 | 163.8 | -95 |

| | | | | |
|---|---|---|---|---|
| Total | : | 793.7 | 1247.8 | |
| Average | : | 158.7 | 249.6 | (-) 36 |

*Data not available.

# MONTHLY DISTRICTWISE ACTUAL & NORMAL RAINFALL RECEIVED FROM I.M.D. ALIPORE, KOLKATA ALONG WITH PERCENT DEPARTURE FROM NORMAL FOR THE MONTH OF JUNE-2003.

Period from 01.06.2003 to 30.06.2003.

| Sl.No. | Name of District | Actual (in mm) | Normal (in mm) | Departure (in %) |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

Sub-Division : Gangetic West Bengal

| | | | | |
|---|---|---|---|---|
| 1. | Bankura | 315.6 | 216.8 | 46 |
| 2. | Birbhum | 229.9 | 228.3 | 1 |
| 3. | Burdwan | 218.1 | 229.4 | -5 |
| 4. | Hooghly | 257.7 | 236.8 | 9 |
| 5. | Howrah | 299.3 | 237.7 | 26 |
| 6. | Midnapore | 308.0 | 245.5 | 25 |
| 7. | Murshidabad | 206.5 | 222.7 | -7 |
| 8. | North 24-Parganas | 276.8 | 289.5 | -4 |
| 9. | Nadia | 138.3 | 223.2 | -38 |
| 10. | Purulia | 224.9 | 218.1 | 3 |
| 11. | South 24-Parganas | 344.6 | 270.3 | 27 |

| | | | | |
|---|---|---|---|---|
| Total | : | 2819.7 | 2618.3 | |
| Average | : | 256.3 | 238.0 | (+) 8 |

Sub-Division : Sub-Himalayan West Bengal

| | | | | |
|---|---|---|---|---|
| 12. | Coochbehar | 766.0 | 708.2 | 8 |
| 13. | Darjeeling | 635.8 | 507.5 | 25 |
| 14. | Jalpaiguri | 625.1 | 634.7 | -2 |
| 15. | Malda | 316.4 | 212.8 | 49 |
| 16. | North Dinajpur | 30.6 | 298.4 | -90 |
| 17. | South Dinajpur | 192.1 | 298.4 | -36 |

| | | | | |
|---|---|---|---|---|
| Total | : | 2566.0 | 2660.0 | (-)4 |
| Average | : | 427.7 | 443.3 | |

*Data not available.

# MONTHLY DISTRICTWISE ACTUAL & NORMAL RAINFALL RECEIVED FROM I.M.D. ALIPORE, KOLKATA ALONG WITH PERCENT DEPARTURE FROM NORMAL FOR THE MONTH OF JULY-2003.

Period from 01.07.2003 to 31.07.2003.

| Sl.No. | Name of District | Actual (in mm) | Normal (in mm) | Departure (in %) |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

Sub-Division : Gangetic West Bengal

| | | | | |
|---|---|---|---|---|
| 1. | Bankura | 238.7 | 309.3 | -23 |
| 2. | Birbhum | 186.5 | 305.7 | -39 |
| 3. | Burdwan | 235.3 | 324.8 | -28 |
| 4. | Hooghly | 252.7 | 301.5 | -16 |
| 5. | Howrah | 193.6 | 338.6 | -43 |
| 6. | Midnapore | 249.8 | 307.8 | -19 |
| 7. | Murshidabad | 159.5 | 325.9 | -51 |
| 8. | North 24-Parganas | 278.1 | 326.0 | -15 |
| 9. | Nadia | 239.9 | 244.3 | -2 |
| 10. | Purulia | 250.6 | 294.1 | -15 |
| 11. | South 24-Parganas | 338.6 | 356.8 | -5 |

| | | | | |
|---|---|---|---|---|
| Total | : | 2623.3 | 3434.8 | |
| Average | : | 238.5 | 312.3 | (-) 24 |

Sub-Division : Sub-Himalayan West Bengal

| | | | | |
|---|---|---|---|---|
| 12. | Coochbehar | 764.3 | 717.8 | 6 |
| 13. | Darjeeling | 929.4 | 766.3 | 21 |
| 14. | Jalpaiguri | 1220.9 | 841.7 | 45 |
| 15. | Malda | 362.2 | 327.1 | 11 |
| 16. | North Dinajpur | 480.0 | 378.0 | 27 |
| 17. | South Dinajpur | 261.7 | 378.0 | -31 |

| | | | | |
|---|---|---|---|---|
| Total | : | 4018.5 | 3408.9 | |
| Average | : | 669.8 | 568.2 | (+) 18 |

# MONTHLY DISTRICTWISE ACTUAL & NORMAL RAINFALL RECEIVED FROM I.M.D. ALIPORE, KOLKATA ALONG WITH PERCENT DEPARTURE FROM NORMAL FOR THE MONTH OF AUGUST-2003.

Period from 01.08.2003 to 31.08.2003.

| Sl.No. | Name of District | Actual (in mm) | Normal (in mm) | Departure (in %) |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

Sub-Division : Gangetic West Bengal

| | | | | |
|---|---|---|---|---|
| 1. | Bankura | 201.8 | 296.9 | -32 |
| 2. | Birbhum | 293.3 | 293.3 | 0 |
| 3. | Burdwan | 145.4 | 303.6 | -52 |
| 4. | Hooghly | 116.2 | 272.3 | -57 |
| 5. | Howrah | 271.5 | 351.5 | -23 |
| 6. | Midnapore | 247.9 | 336.4 | -26 |
| 7. | Murshidabad | 160.2 | 261.9 | -39 |
| 8. | North 24-Parganas | 191.5 | 336.4 | -43 |
| 9. | Nadia | 142.9 | 230.0 | -38 |
| 10. | Purulia | 208.3 | 311.7 | -33 |
| 11. | South 24-Parganas | 283.6 | 362.3 | -22 |

| | | | | |
|---|---|---|---|---|
| Total | : | 2262.6 | 3356.3 | |
| Average | : | 205.7 | 305.1 | (-) 33 |

Sub-Division : Sub-Himalayan West Bengal

| | | | | |
|---|---|---|---|---|
| 12. | Coochbehar | 348.5 | 553.4 | -37 |
| 13. | Darjeeling | 475.8 | 555.5 | -14 |
| 14. | Jalpaiguri | 435.7 | 649.1 | -33 |
| 15. | Malda | 142.9 | 264.1 | -46 |
| 16. | North Dinajpur | 199.6 | 242.8 | -18 |
| 17. | South Dinajpur | 292.6 | 242.8 | 20 |

| | | | | |
|---|---|---|---|---|
| Total | : | 1895.1 | 2507.7 | |
| Average | : | 315.9 | 418.0 | (-) 24 |

# MONTHLY DISTRICTWISE ACTUAL & NORMAL RAINFALL RECEIVED FROM I.M.D. ALIPORE, KOLKATA ALONG WITH PERCENT DEPARTURE FROM NORMAL FOR THE MONTH OF SEPTEMBER-2003.

Period from 01.9.2003 to 30.09.2003.

| Sl.No. | Name of District | Actual (in mm) | Normal (in mm) | Departure (in %) |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

Sub-Division : Gangetic West Bengal

| | | | | |
|---|---|---|---|---|
| 1. | Bankura | 188.3 | 246.9 | -24 |
| 2. | Birbhum | 124.3 | 258.9 | -52 |
| 3. | Burdwan | 117.8 | 240.3 | -51 |
| 4. | Hooghly | 129.9 | 219.8 | -41 |
| 5. | Howrah | 85.6 | 297.0 | -71 |
| 6. | Midnapore | 132.4 | 310.3 | -57 |
| 7. | Murshidabad | 112.9 | 228.2 | -51 |
| 8. | North 24-Parganas | 189.3 | 300.0 | -37 |
| 9. | Nadia | 148.1 | 185.6 | -20 |
| 10. | Purulia | 105.9 | 254.3 | -58 |
| 11. | South 24-Parganas | 191.8 | 319.5 | -40 |

| | | | | |
|---|---|---|---|---|
| Total | : | 1526.3 | 2860.8 | |
| Average | : | 138.8 | 260.1 | (-) 47 |

Sub-Division : Sub-Himalayan West Bengal

| | | | | |
|---|---|---|---|---|
| 12. | Coochbehar | 352.3 | 470.0 | -25 |
| 13. | Darjeeling | 404.0 | 424.2 | -5 |
| 14. | Jalpaiguri | 523.8 | 540.3 | -3 |
| 15. | Malda | 182.0 | 237.4 | -23 |
| 16. | North Dinajpur | 350.8 | 269.1 | 30 |
| 17. | South Dinajpur | 134.5 | 269.1 | -50 |

| | | | | |
|---|---|---|---|---|
| Total | : | 1947.4 | 2210.1 | |
| Average | : | 324.6 | 368.4 | (-) 12 |

# MONTHLY DISTRICTWISE ACTUAL & NORMAL RAINFALL RECEIVED FROM I.M.D. ALIPORE, KOLKATA ALONG WITH PERCENT DEPARTURE FROM NORMAL FOR THE MONTH OF OCTOBER-2003.

Period from 01.10.2003 to 31.10.2003.

| Sl.No. | Name of District | Actual (in mm) | Normal (in mm) | Departure (in %) |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

Sub-Division : Gangetic West Bengal

| | | | | |
|---|---|---|---|---|
| 1. | Bankura | 343.0 | 106.7 | 221 |
| 2. | Birbhum | 279.6 | 110.6 | 153 |
| 3. | Burdwan | 257.2 | 108.0 | 138 |
| 4. | Hooghly | 271.9 | 101.5 | 168 |
| 5. | Howrah | 264.7 | 100.3 | 164 |
| 6. | Midnapore | 475.1 | 161.0 | 195 |
| 7. | Murshidabad | 273.5 | 124.2 | 120 |
| 8. | North 24-Parganas | 422.3 | 141.1 | 199 |
| 9. | Nadia | 290.1 | 111.3 | 161 |
| 10. | Purulia | 284.9 | 85.0 | 235 |
| 11. | South 24-Parganas | 376.9 | 177.5 | 112 |

| | | | | |
|---|---|---|---|---|
| Total | : | 3539.2 | 1327.2 | |
| Average | : | 321.7 | 120.7 | (+)167 |

Sub-Division : Sub-Himalayan West Bengal

| | | | | |
|---|---|---|---|---|
| 12. | Coochbehar | 217.1 | 172.3 | 26 |
| 13. | Darjeeling | 273.9 | 125.3 | 119 |
| 14. | Jalpaiguri | 313.9 | 161.0 | 95 |
| 15. | Malda | 337.2 | 116.7 | 189 |
| 16. | North Dinajpur | 191.2 | 132.3 | 45 |
| 17. | South Dinajpur | 264.8 | 132.3 | 100 |

| | | | | |
|---|---|---|---|---|
| Total | : | 1598.1 | 839.9 | |
| Average | : | 266.4 | 140.0 | (+) 90 |

**MONTHLY DISTRICTWISE ACTUAL & NORMAL RAINFALL RECEIVED FROM I.M.D. ALIPORE, KOLKATA ALONG WITH PERCENT DEPARTURE FROM NORMAL FOR THE MONTH OF NOVEMBER-2003.**

Period from 01.11.2003 to 30.11.2003.

| Sl.No. | Name of District | Actual (in mm) | Normal (in mm) | Departure (in %) |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

Sub-Division : Gangetic West Bengal

| | | | | |
|---|---|---|---|---|
| 1. | Bankura | 22.7 | 15.8 | 44 |
| 2. | Birbhum | 0.0 | 14.4 | -100 |
| 3. | Burdwan | 0.9 | 11.0 | -92 |
| 4. | Hooghly | 3.1 | 21.3 | -85 |
| 5. | Howrah | 23.0 | 30.2 | -24 |
| 6. | Midnapore | 13.5 | 33.2 | -59 |
| 7. | Murshidabad | 0.0 | 15.6 | -100 |
| 8. | North 24-Parganas | 1.6 | 24.3 | -94 |
| 9. | Nadia | 0.0 | 13.9 | -100 |
| 10. | Purulia | 6.2 | 13.2 | -53 |
| 11. | South 24-Parganas | 16.4 | 36.5 | -55 |

| | | | | |
|---|---|---|---|---|
| Total | : | 87.4 | 229.4 | |
| Average | : | 7.9 | 20.9 | (-) 62 |

Sub-Division : Sub-Himalayan West Bengal

| | | | | |
|---|---|---|---|---|
| 12. | Coochbehar | 3.2 | 11.4 | -72 |
| 13. | Darjeeling | 13.0 | 9.9 | 31 |
| 14. | Jalpaiguri | 21.8 | 8.7 | 151 |
| 15. | Malda | 0.0 | 11.6 | -100 |
| 16. | North Dinajpur | D.N.A. | 12.4 | - |
| 17. | South Dinajpur | 0.0 | 12.4 | -100 |

| | | | | |
|---|---|---|---|---|
| Total | : | 38.0 | 54.0 | |
| Average | : | 7.6 | 10.8 | (-) 30 |

## MONTHLY DISTRICTWISE ACTUAL & NORMAL RAINFALL RECEIVED FROM I.M.D. ALIPORE, KOLKATA ALONG WITH PERCENT DEPARTURE FROM NORMAL FOR THE MONTH OF DECEMBER-2003.

Period from 01.12.2003 to 31.12.2003.

| Sl.No. | Name of District | Actual (in mm) | Normal (in mm) | Departure (in %) |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

Sub-Division : Gangetic West Bengal

| | | | | |
|---|---|---|---|---|
| 1. | Bankura | 12.2 | 6.1 | 99 |
| 2. | Birbhum | 13.2 | 5.8 | 128 |
| 3. | Burdwan | 11.7 | 3.1 | 277 |
| 4. | Hooghly | 18.8 | 6.5 | 189 |
| 5. | Howrah | 24.4 | 13.4 | 82 |
| 6. | Midnapore | 23.0 | 7.3 | 216 |
| 7. | Murshidabad | 1.0 | 2.6 | -62 |
| 8. | North 24-Parganas | 26.9 | 6.1 | 341 |
| 9. | Nadia | 19.0 | 4.1 | 363 |
| 10. | Purulia | D.N.A.* | 5.4 | - |
| 11. | South 24-Parganas | 31.7 | 10.8 | 194 |
| Total | : | 181.9 | 65.8 | |
| Average | : | 18.2 | 6.6 | 176 |

Sub-Division : Sub-Himalayan West Bengal

| | | | | |
|---|---|---|---|---|
| 12. | Coochbehar | 17.5 | 2.8 | 525 |
| 13. | Darjeeling | 23.4 | 3.6 | 550 |
| 14. | Jalpaiguri | 25.7 | 4.5 | 471 |
| 15. | Malda | 3.9 | 4.3 | -9 |
| 16. | North Dinajpur | D.N.A.* | 4.9 | - |
| 17. | South Dinajpur | 0.0 | 4.9 | -100 |
| Total | : | 70.5 | 20.1 | |
| Average | : | 14.1 | 4.02 | 251 |

* Data not available.

# DISTRICTWISE ACTUAL & NORMAL RAINFALL DURING MONSOON PERIOD ALONG WITH PERCENT DEPARTURE FROM NORMAL FOR THE YEAR-2003.

Period from June 2003 to October 2003.

| Sl.No. | Name of District | Actual (in mm) | Normal (in mm) | Departure (in %) |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

Sub-Division : Gangetic West Bengal

| | | | | |
|---|---|---|---|---|
| 1. | Bankura | 1287.40 | 1176.6 | 9 |
| 2. | Birbhum | 1113.60 | 1196.8 | (-)7 |
| 3. | Burdwan | 973.80 | 1206.10 | (-)19 |
| 4. | Hooghly | 1028.40 | 1131.90 | (-)9 |
| 5. | Howrah | 1114.70 | 1325.10 | (-)16 |
| 6. | Midnapore | 1413.20 | 1361.00 | 4 |
| 7. | Murshidabad | 912.60 | 1162.9 | (-)22 |
| 8. | North 24-Parganas | 1358.0 | 1393.0 | (-)3 |
| 9. | Nadia | 959.3 | 994.4 | (-)4 |
| 10. | Purulia | 1074.6 | 1163.2 | (-)8 |
| 11. | South 24-Parganas | 1535.5 | 1486.4 | 3 |
| Total | : | 12771.1 | 13597.4 | |
| Average | : | 1161.0 | 1236.1 | (-)6 |

Sub-Division : Sub-Himalayan West Bengal

| | | | | |
|---|---|---|---|---|
| 12. | Coochbehar | 2448.2 | 2621.7 | (-)7 |
| 13. | Darjeeling | 2718.9 | 2378.8 | 14 |
| 14. | Jalpaiguri | 3119.4 | 2826.8 | 10 |
| 15. | Malda | 1340.7 | 1158.1 | 16 |
| 16. | North Dinajpur | 1252.2 | 1320.6 | (-)5 |
| 17. | South Dinajpur | 1145.7 | 1320.6 | (-)13 |
| Total | : | 12025.1 | 11626.6 | |
| Average | : | 2004.2 | 1937.8 | 3 |

## YEARLY DISTRICTWISE ACTUAL & NORMAL RAINFALL WITH PERCENT DEPARTURE FROM NORMAL FOR THE YEAR-2003.

Period from January 2003 to December 2003.

| Sl.No. | Name of District | Actual (in mm) | Normal (in mm) | Departure (in %) |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

Sub-Division : Gangetic West Bengal

| | | | | |
|---|---|---|---|---|
| 1. | Bankura | 1515.2 | 1365.8 | 10.9 |
| 2. | Birbhum | 1349.2 | 1409.0 | (-) 4.2 |
| 3. | Burdwan | 1186.3 | 1381.0 | (-) 14.1 |
| 4. | Hooghly | 1278.3 | 1355.8 | (-) 5.7 |
| 5. | Howrah | 1266.8 | 1614.4 | (-) 21.5 |
| 6. | Midnapore | 1649.5 | 1624.7 | 1.5 |
| 7. | Murshidabad | 1017.8 | 1384.8 | (-) 26.5 |
| 8. | North 24-Parganas | 1661.6 | 1653.2 | 0.5 |
| 9. | Nadia | 1212.1 | 1234.9 | (-) 1.8 |
| 10. | Purulia | - | 1325.9 | - |
| 11. | South 24-Parganas | 1827.8 | 1742.6 | 4.9 |

| | | | | |
|---|---|---|---|---|
| Total | : | 13964.6 | 14766.2 | |
| Average | : | 1396.46 | 1476.62 | (-) 4.6 |

Sub-Division : Sub-Himalayan West Bengal

| | | | | |
|---|---|---|---|---|
| 12. | Coochbehar | 3007.3 | 3246.3 | (-) 7.4 |
| 13. | Darjeeling | 3166.9 | 2928.0 | 8.2 |
| 14. | Jalpaiguri | 3824.5 | 3319.8 | 15.2 |
| 15. | Malda | 1528.1 | 1351.4 | 13.1 |
| 16. | North Dinajpur | - | 1609.1 | - |
| 17. | South Dinajpur | 1153.9 | 1609.1 | (-) 28.3 |

| | | | | |
|---|---|---|---|---|
| Total | : | 12680.7 | 12454.6 | |
| Average | : | 2536.14 | 2490.92 | 1.8 |

# DISTRICTWISE MONSOON RAINFALL IN PERCENTAGE OF ANNUAL RAINFALL FOR THE YEAR -2003.

| Sl.No. | Name of District | Actual Monsoon Rainfall (in mm) | Normal Annual Rainfall (in mm) | In percentage of Annual Normal Rainfall |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

Sub-Division : Gangetic West Bengal

| | | | | |
|---|---|---|---|---|
| 1. | Bankura | 1287.40 | 1365.8 | 94.3 |
| 2. | Birbhum | 1113.60 | 1409.0 | 79.0 |
| 3. | Burdwan | 973.80 | 1381.0 | 70.5 |
| 4. | Hooghly | 1028.40 | 1355.8 | 24.2 |
| 5. | Howrah | 1114.70 | 1614.4 | 69.1 |
| 6. | Midnapore | 1413.20 | 1624.7 | 86.9 |
| 7. | Murshidabad | 912.60 | 1384.8 | 65.9 |
| 8. | North 24-Parganas | 1358.0 | 1653.2 | 82.1 |
| 9. | Nadia | 959.3 | 1234.9 | 77.7 |
| 10. | Purulia | 1074.6 | 1325.9 | 81.0 |
| 11. | South 24-Parganas | 1535.5 | 1742.6 | 88.1 |

Sub-Division : Sub-Himalayan West Bengal

| | | | | |
|---|---|---|---|---|
| 12. | Coochbehar | 2448.2 | 3246.3 | 75.4 |
| 13. | Darjeeling | 2718.9 | 2928.0 | 92.9 |
| 14. | Jalpaiguri | 3119.4 | 3319.8 | 94.0 |
| 15. | Malda | 1340.7 | 1351.4 | 99.2 |
| 16. | North Dinajpur | 1252.2 | 1609.1 | 77.8 |
| 17. | South Dinajpur | 1145.7 | 1609.1 | 71.2 |

# IMPORTANT RESERVOIR LEVELS & OUTFLOW DATA DURING THE FLOOD SEASON OF 2003.

**Name of Reservoir : Maithon**
**Conservation Level : 146.310 M (480.00 Ft.)**
**Dead Storage Level : 132.590 M (435.00 Ft.)**

| Date | Time (in hours) | Reservoir Level (in M) | Outflow (in Cumecs) | Remarks |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
| 10.6.03 | 06.00 | 135.170 | - | |
| 26.6.03 | 06.00 | 136.230 | 80.00 | |
| 27.6.03 | 06.00 | 136.31 | 78.00 | |
| 30.6.03 | 06.00 | 137.04 | 52.00 | |
| 1.7.03 | 06.00 | 137.34 | - | |
| 5.7.03 | 06.00 | 138.01 | 77.00 | |
| 11.7.03 | 06.00 | 138.52 | - | ***Maximum Reservoir Level** |
| 17.7.03 | 06.00 | 141.32 | 115.00 | **149.21 M. recorded on** |
| 19.7.03 | 06.00 | 141.30 | 150.00 | **13.10.2003 at 6.00 hours.** |
| 25.7.03 | 06.00 | 140.48 | **229.00**** | |
| 26.7.03 | 06.00 | 140.16 | 211.00 | |
| 3.8.03 | 06.00 | 142.75 | 140.00 | **** Maximum Outflow 229.00** |
| 12.8.03 | 06.00 | 142.75 | 72.00 | **Cumecs recorded on** |
| 20.8.03 | 06.00 | 144.53 | 61.00 | **25.7.2003 at 6.00 hours.** |
| 27.8.03 | 06.00 | 145.73 | 64.00 | |
| 30.8.03 | 06.00 | **146.40***** | 56.00 | |
| 1.9.03 | 06.00 | 146.17 | 56.00 | *****Above conservation level.** |
| 5.9.03 | 06.00 | **146.36***** | 57.00 | |
| 7.9.03 | 06.00 | 146.21 | 57.00 | |
| 11.9.03 | 06.00 | **146.46***** | 57.00 | |
| 17.9.03 | 06.00 | 146.31 | 56.00 | |
| 18.9.03 | 06.00 | 146.25 | 21.00 | |
| 23.9.03 | 06.00 | **146.44***** | 20.00 | |
| 27.9.03 | 06.00 | **146.55***** | 62.00 | |
| 29.9.03 | 06.00 | **146.41***** | 62.00 | |
| 2.10.03 | 06.00 | **146.63***** | 63.00 | |
| 8.10.03 | 06.00 | 146.29 | - | |
| 11.10.03 | 06.00 | **148.80***** | 102.00 | |
| 12.10.03 | 06.00 | **148.76***** | 103.00 | |
| 13.10.03 | 06.00 | **149.21*** | 104.00 | |
| 15.10.03 | 06.00 | **148.97***** | 20.00 | |
| | | | | |

# IMPORTANT RESERVOIR LEVELS & OUTFLOW DATA DURING THE FLOOD SEASON OF 2003.

**Name of Reservoir : Panchet**
**Conservation Level : 124.970 M (410.00 Ft.)**
**Dead Storage Level : 119.480 M (392.00 Ft.)**

| Date | Time (in hours) | Reservoir Level (in M) | Outflow (in Cumecs) | Remarks |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
| 10.6.03 | 06.00 | 119.24 | - | |
| 25.6.03 | 06.00 | 120.37 | 301.00 | |
| 30.6.03 | 06.00 | 120.68 | 124.00 | |
| 2.7.03 | 06.00 | 120.97 | 333.00 | |
| 5.7.03 | 06.00 | 120.16 | 331.00 | |
| 15.7.03 | 06.00 | 121.91 | 301.00 | *** Maximum Reservoir Level** |
| 20.7.03 | 06.00 | 120.66 | 372.00 | **128.39 M recorded on** |
| 23.7.03 | 06.00 | 119.53 | - | **11.10.2003 at 06.00 hours.** |
| 31.7.03 | 06.00 | 123.26 | 30.00 | |
| 2.8.03 | 06.00 | 124.92 | 383.00 | |
| 3.8.03 | 06.00 | **125.06***** | 128.00 | **** Maximum Outflow 405.00** |
| 10.8.03 | 06.00 | 122.74 | 224.00 | **Cumecs recorded on** |
| 19.8.03 | 06.00 | **125.95***** | 393.00 | **11.10.2003 at 06.00 hours.** |
| 23.8.03 | 06.00 | 123.98 | 391.00 | |
| 31.8.03 | 06.00 | 124.62 | 390.00 | *****Above conservation level** |
| 2.9.03 | 06.00 | 123.96 | 382.00 | |
| 6.9.03 | 06.00 | 124.90 | 242.00 | |
| 10.9.03 | 06.00 | **125.78***** | 126.00 | |
| 15.9.03 | 06.00 | 124.72 | 124.00 | |
| 19.9.03 | 06.00 | 124.05 | 377.00 | |
| 23.9.03 | 06.00 | 123.09 | 73.00 | |
| 27.9.03 | 06.00 | 124.13 | 5.00 | |
| 30.9.03 | 06.00 | 123.47 | 372.00 | |
| 1.10.03 | 06.00 | 123.66 | 71.00 | |
| 4.10.03 | 06.00 | 124.58 | 45.00 | |
| 8.10.03 | 06.00 | **125.03***** | - | |
| 11.10.03 | 06.00 | **128.39*** | **405.00**** | |
| 15.10.03 | 06.00 | **127.66***** | 116.00 | |
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| | | | | |

# IMPORTANT RESERVOIR LEVELS & OUTFLOW DATA DURING THE FLOOD SEASON OF 2003.

**Name of Reservoir : Tenughat**
**Conservation Level : 263.66 M (865.00 Ft.)**
**Dead Storage Level : 249.02 M (817.00 Ft.)**

| Date | Time (in hours) | Reservoir Level (in M) | Outflow (in Cumecs) | Remarks |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
| 17.6.03 | 06.00 | 257.11 | 1.87 | |
| 25.6.03 | 06.00 | 257.37 | 1.89 | |
| 30.6.03 | 06.00 | 258.10 | 1.92 | |
| 4.7.03 | 06.00 | 258.93 | 1.96 | |
| 9.7.03 | 06.00 | 259.02 | 1.71 | |
| 15.7.03 | 06.00 | 259.67 | 54.60 | |
| 16.7.03 | 06.00 | 259.45 | 87.03 | |
| 17.7.03 | 06.00 | 259.17 | 111.62 | |
| 23.7.03 | 06.00 | 258.70 | 1.52 | |
| 27.7.03 | 06.00 | 259.75 | 1.51 | |
| 28.7.03 | 06.00 | 259.35 | 234.60 | |
| 31.7.03 | 06.00 | 259.13 | 176.26 | * Maximum Reservoir Level |
| 6.8.03 | 06.00 | 259.25 | 1.54 | 260.60 M recorded on |
| 12.8.03 | 06.00 | 259.64 | 1.56 | 10.10.2003 at 06.00 hours. |
| 13.8.03 | 06.00 | 259.54 | 52.28 | |
| 14.8.03 | 06.00 | 259.57 | 1.55 | |
| 17.8.03 | 06.00 | 259.90 | 57.82 | ** Maximum Outflow 876.00 |
| 21.8.03 | 06.00 | 259.78 | 165.00 | Cumecs recorded on |
| 27.8.03 | 06.00 | 259.55 | 52.78 | 10.10.2003 at 06.00 hours. |
| 28.8.03 | 06.00 | 259.57 | 104.24 | |
| 1.9.03 | 06.00 | 259.57 | 1.81 | |
| 6.9.03 | 06.00 | 259.72 | 55.39 | |
| 9.9.03 | 06.00 | 259.64 | 159.02 | |
| 14.9.03 | 06.00 | 259.86 | 1.82 | |
| 15.9.03 | 06.00 | 259.66 | 159.73 | |
| 18.9.03 | 06.00 | 259.54 | 1.81 | |
| 23.9.03 | 06.00 | 259.90 | 58.08 | |
| 29.9.03 | 06.00 | 259.60 | 1.83 | |
| 30.9.03 | 06.00 | 259.99 | 139.01 | |
| 4.10.03 | 06.00 | 259.46 | 5.31 | |
| 10.10.03 | 06.00 | 260.60* | 876.00** | |
| 15.10.03 | 06.00 | 259.55 | 52.78 | |

# IMPORTANT RESERVOIR LEVELS & OUTFLOW DATA DURING THE FLOOD SEASON OF 2003.

**Name of Reservoir : Kangsabati**
**Conservation Level : 134.11 M (440.00 Ft.)**
**Dead Storage Level : 120.40 M (395.00 Ft.)**

| Date | Time (in hours) | Reservoir Level (in M) | Outflow (in Cumecs) | Remarks |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
| 10.6.03 | 06.00 | 123.35 | - | |
| 15.6.03 | 06.00 | 122.710 | 89.65 | |
| 30.6.03 | 06.00 | 123.64 | - | |
| 1.7.03 | 06.00 | 123.69 | - | |
| 9.7.03 | 06.00 | 124.27 | - | |
| 17.7.03 | 06.00 | 125.03 | - | |
| 25.7.03 | 06.00 | 125.29 | - | |
| 31.7.03 | 06.00 | 126.20 | - | |
| 5.8.03 | 06.00 | **128.24*** | - | |
| 6.8.03 | 06.00 | 128.15 | 170.14 | |
| 8.8.03 | 06.00 | 127.62 | **219.73**** | |
| 14.8.03 | 06.00 | 126.37 | 214.18 | *** Maximum Reservoir Level** |
| 22.8.03 | 06.00 | 125.23 | 191.19 | **128.24 M recorded on** |
| 28.8.03 | 06.00 | 124.68 | 147.90 | **5.8.2003 at 06.00 hours.** |
| 29.8.03 | 06.00 | 124.63 | 84.42 | |
| 8.9.03 | 06.00 | 125.96 | 114.09 | |
| 20.9.03 | 06.00 | 127.07 | - | |
| 24.9.03 | 06.00 | 126.23 | 199.01 | **** Maximum Outflow 219.73** |
| 25.9.03 | 06.00 | 126.17 | 62.16 | **Cumecs recorded on** |
| 30.9.03 | 06.00 | 125.90 | 119.23 | **8.8.2003 at 06.00 hours.** |
| 2.10.03 | 06.00 | 125.38 | 190.88 | |
| 7.10.03 | 06.00 | 124.49 | 92.10 | |
| 15.10.03 | 06.00 | 127.34 | - | |
| | | | | |
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# IMPORTANT RESERVOIR LEVELS & OUTFLOW DATA DURING THE FLOOD SEASON OF 2003.

**Name of Reservoir : Massanjore**
**Conservation Level : 121.34 M (398.00 Ft.)**
**Dead Storage Level : 106.37 M (349.00 Ft.)**

| Date | Time (in hours) | Reservoir Level (in M) | Outflow (in Cumecs) | Remarks |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
| 10.6.03 | 06.00 | 107.290 | - | |
| 29.6.03 | 06.00 | 110.810 | - | |
| 30.6.03 | 06.00 | 111.526 | - | |
| 1.7.03 | 06.00 | 111.877 | - | |
| 11.7.03 | 06.00 | 112.465 | - | |
| 18.7.03 | 06.00 | 114.193 | - | |
| 30.7.03 | 06.00 | 111.267 | - | |
| 4.8.03 | 06.00 | 111.907 | - | ***Maximum Reservoir Level** |
| 7.8.03 | 06.00 | 111.313 | - | **117.662 M. recorded on** |
| 20.8.03 | 06.00 | 109.317 | - | **15.10.2003 at 6.00 hours.** |
| 27.8.03 | 06.00 | 110.383 | - | |
| 31.8.03 | 06.00 | 110.642 | - | |
| 3.9.03 | 06.00 | 110.856 | - | |
| 10.9.03 | 06.00 | 111.496 | - | |
| 17.9.03 | 06.00 | 112.105 | - | |
| 24.9.03 | 06.00 | 112.532 | - | |
| 30.9.03 | 06.00 | 113.294 | - | |
| 3.10.03 | 06.00 | 113.477 | 57.39 | |
| 6.10.03 | 06.00 | 113.765 | - | |
| 8.10.03 | 06.00 | 113.706 | - | |
| 9.10.03 | 06.00 | 114.178 | - | |
| 10.10.03 | 06.00 | 116.525 | - | |
| 11.10.03 | 06.00 | 117.135 | - | |
| 15.10.03 | 06.00 | **117.622*** | - | |
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# IMPORTANT BARRAGE LEVELS & DISCHARGE DATA DURING THE FLOOD SEASON OF 2003.

**Name of Barrage : Durgapur**

| Date | Time (in hours) | Barrage Level (in M) | Discharge ( in Cumecs) | Remarks |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
| 10.6.03 | 06.00 | 64.373 | 80.712 | |
| 16.6.03 | 06.00 | 64.465 | 15.576 | |
| 20.6.03 | 06.00 | 64.465 | 115.404 | |
| 26.6.03 | 06.00 | 64.465 | 480.024 | |
| 1.7.03 | 06.00 | 64.465 | 183.372 | |
| 3.7.03 | 06.00 | 64.313 | 434.004 | |
| 6.7.03 | 06.00 | 64.312 | 358.956 | |
| 15.7.03 | 06.00 | 64.312 | 298.068 | |
| 19.7.03 | 06.00 | 64.465 | 481.44 | |
| 25.7.03 | 06.00 | 64.333 | 72.216 | |
| 29.7.03 | 06.00 | 64.465 | 301.608 | |
| 3.8.03 | 06.00 | 64.312 | 615.96 | |
| 9.8.03 | 06.00 | 64.465 | 407.10 | |
| 19.8.03 | 06.00 | 64.465 | 706.584 | *** Maximum discharge 1604.667 cumecs recorded on 11.10.2003 at 06.00 hrs.** |
| 24.8.03 | 06.00 | 64.465 | 516.84 | |
| 31.8.03 | 06.00 | 64.465 | 584.808 | |
| 2.9.03 | 06.00 | 64.465 | 553.656 | |
| 5.9.03 | 06.00 | 64.465 | 345.504 | |
| 10.9.03 | 06.00 | 64.465 | 448.872 | |
| 12.9.03 | 06.00 | 64.312 | 641.448 | |
| 16.9.03 | 06.00 | 64.312 | 444.624 | |
| 18.9.03 | 06.00 | 64.312 | 580.56 | |
| 22.9.03 | 06.00 | 64.008 | 209.568 | |
| 26.9.03 | 06.00 | 64.465 | 504.09 | |
| 28.9.03 | 06.00 | 64.465 | 261.96 | |
| 2.10.03 | 06.00 | 64.465 | 346.212 | |
| 5.10.03 | 06.00 | 64.465 | 256.296 | |
| 9.10.03 | 06.00 | 64.465 | 417.72 | |
| 11.10.03 | 06.00 | 64.160 | **1604.667*** | |
| 13.10.03 | 06.00 | 64.160 | 1403.369 | |
| 15.10.03 | 06.00 | 64.465 | 199.656 | |
| | | | | |

# IMPORTANT BARRAGE LEVELS & DISCHARGE DATA DURING THE FLOOD SEASON OF 2003.

**Name of Barrage : Tilpara**

| Date | Time (in hours) | Barrage Level (in M) | Discharge ( in Cumecs) | Remarks |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
| 15.7.03 | 06.00 | 62.79 | - | |
| 17.7.03 | 06.00 | 62.179 | 59.131* | |
| 22.7.03 | 06.00 | 62.575 | - | |
| 26.7.03 | 06.00 | 62.514 | - | |
| 31.7.03 | 06.00 | 62.21 | - | |
| 2.8.03 | 06.00 | 62.484 | - | |
| 10.8.03 | 06.00 | 62.332 | - | |
| 19.8.03 | 06.00 | 62.484 | - | |
| 22.8.03 | 06.00 | 62.362 | - | |
| 29.8.03 | 06.00 | 62.149 | - | |
| 31.8.03 | 06.00 | 61.813 | - | |
| 1.9.03 | 06.00 | 62.484 | - | |
| 5.9.03 | 06.00 | 61.996 | - | |
| 7.9.03 | 06.00 | 62.088 | - | |
| 8.9.03 | 06.00 | 62.057 | - | * Maximum discharge 59.131 cumecs recorded on17.7.2003 at 06.00 hrs. |
| 11.9.03 | 06.00 | 62.149 | - | |
| 13.9.03 | 06.00 | 61.905 | - | |
| 19.9.03 | 06.00 | 62.392 | - | |
| 21.9.03 | 06.00 | 61.99 | - | |
| 24.9.03 | 06.00 | 62.575 | - | |
| 27.9.03 | 06.00 | 62.301 | - | |
| 29.9.03 | 06.00 | 62.789 | - | |
| 30.9.03 | 06.00 | 62.179 | - | |
| 2.10.03 | 06.00 | 62.667 | - | |
| 3.10.03 | 06.00 | 62.332 | 42.48 | |
| 4.10.03 | 06.00 | 62.484 | - | |
| 9.10.03 | 06.00 | 62.301 | 58.79 | |
| 11.10.03 | 06.00 | 62.088 | 28.63 | |
| 12.10.03 | 06.00 | 62.332 | 29.45 | |
| 13.10.03 | 06.00 | 62.484 | - | |
| 15.10.03 | 06.00 | 62.210 | - | |
| | | | | |

# GAUGE LEVELS OF IMPORTANT RIVERS DURING FLOOD SEASON OF 2003.

**North Bengal Rivers**

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Sankosh | L.R.P.Crossing | 16.6.2003 | 45.65 | 10.00 | |
| Warning Level | | 24.6.2003 | 46.75 | 10.00 | |
| E.D.L. | 49.100 | 2.7.2003 | 47.13 | 10.00 | |
| D.L. | 48.200 | 9.7.2003 | **47.70*** | 10.00 | |
| | | 10.7.2003 | 47.10 | 10.00 | |
| | | 21.7.2003 | 46.75 | 10.00 | |
| | | 30.7.2003 | 46.55 | 10.00 | |
| | | 31.7.2003 | 46.95 | 10.00 | * This years's highest level. |
| | | 11.8.2003 | 46.45 | 10.00 | |
| | | 19.8.2003 | 46.95 | 10.00 | |
| | | 24.8.2003 | 46.50 | 10.00 | |
| | | 2.9.2003 | 46.60 | 10.00 | |
| | | 6.9.2003 | 46.65 | 10.00 | |
| | | 16.9.2003 | 46.80 | 10.00 | |
| | | 18.9.2003 | 46.75 | 10.00 | |
| | | 28.9.2003 | 46.10 | 10.00 | |
| | | 4.10.2003 | 45.90 | 10.00 | |
| | | 10.10.2003 | 46.40 | 10.00 | |

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Raidak-I | L.R.P.Crossing | 16.6.2003 | 44.70 | 10.00 | |
| Warning Level | | 24.6.2003 | 44.90 | 10.00 | |
| E.D.L. | 47.600 | 1.7.2003 | 45.65 | 10.00 | |
| D.L. | 46.700 | 4.7.2003 | **46.25*** | 10.00 | |
| | | 13.7.2003 | 46.10 | 10.00 | |
| | | 21.7.2003 | 44.80 | 10.00 | |
| | | 30.7.2003 | 44.85 | 10.00 | |
| | | 31.7.2003 | 44.80 | 10.00 | * This years's highest level. |
| | | 8.8.2003 | 44.80 | 10.00 | |
| | | 19.8.2003 | 44.75 | 10.00 | |
| | | 21.8.2003 | 44.60 | 10.00 | |
| | | 28.8.2003 | 44.55 | 10.00 | |
| | | 7.9.2003 | 44.50 | 10.00 | |
| | | 17.9.2003 | 44.90 | 10.00 | |
| | | 19.9.2003 | 45.35 | 10.00 | |
| | | 28.9.2003 | 45.45 | 10.00 | |
| | | 3.10.2003 | 44.60 | 10.00 | |
| | | 12.10.2003 | 45.05 | 10.00 | |

# GAUGE LEVELS OF IMPORTANT RIVERS DURING FLOOD SEASON OF 2003.

North Bengal Rivers

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Raidak-II | L.R.P.Crossing | 17.6.2003 | 45.80 | 10.00 | |
| Warning Level | | 25.6.2003 | 46.69 | 10.00 | |
| E.D.L. | 49.000 | 2.7.2003 | 47.13 | 10.00 | |
| D.L. | 48.100 | 8.7.2003 | **47.60*** | 10.00 | |
| | | 10.7.2003 | 47.00 | 10.00 | |
| | | 18.7.2003 | 46.55 | 10.00 | |
| | | 30.7.2003 | 46.55 | 10.00 | |
| | | 31.7.2003 | 46.70 | 10.00 | * This years's highest level. |
| | | 9.8.2003 | 46.20 | 10.00 | |
| | | 19.8.2003 | 46.70 | 10.00 | |
| | | 25.8.2003 | 46.40 | 10.00 | |
| | | 2.9.2003 | 46.40 | 10.00 | |
| | | 6.9.2003 | 46.45 | 10.00 | |
| | | 16.9.2003 | 46.50 | 10.00 | |
| | | 18.9.2003 | 46.50 | 10.00 | |
| | | 25.9.2003 | 46.10 | 10.00 | |
| | | 2.10.2003 | 46.00 | 10.00 | |
| | | 10.10.2003 | 46.70 | 10.00 | |

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Torsa | Hasimara | 16.6.2003 | 115.10 | 10.00 | |
| Warning Level | | 25.6.2003 | 114.21 | 10.00 | |
| E.D.L. | 116.900 | 1.7.2003 | **117.30**** | 10.00 | |
| D.L. | 116.300 | 8.7.2003 | **116.85*** | 10.00 | |
| | | 10.7.2003 | 116.10 | 10.00 | |
| | | 18.7.2003 | 115.60 | 10.00 | |
| | | 29.7.2003 | 115.50 | 10.00 | **Above E.D.L. & this years's highest level. |
| | | 31.7.2003 | 115.35 | 10.00 | |
| | | 11.8.2003 | 115.40 | 10.00 | |
| | | 20.8.2003 | 115.15 | 10.00 | *Above D.L. |
| | | 23.8.2003 | 115.75 | 10.00 | |
| | | 2.9.2003 | 115.05 | 10.00 | |
| | | 5.9.2003 | 115.30 | 10.00 | |
| | | 16.9.2003 | 115.40 | 10.00 | |
| | | 20.9.2003 | 114.90 | 10.00 | |
| | | 25.9.2003 | 114.65 | 10.00 | |
| | | 6.10.2003 | 115.96 | 10.00 | |
| | | 10.10.2003 | 115.20 | 10.00 | |

# GAUGE LEVELS OF IMPORTANT RIVERS DURING FLOOD SEASON OF 2003.

North Bengal Rivers

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Kaljani | Alipurduar | 16.6.2003 | 42.95 | 10.00 | |
| Warning Level | | 24.6.2003 | 43.00 | 10.00 | |
| E.D.L. | 45.700 | 1.7.2003 | 44.25 | 10.00 | |
| D.L. | 45.100 | 4.7.2003 | **45.25*** | 10.00 | |
| | | 10.7.2003 | 44.40 | 10.00 | |
| | | 21.7.2003 | 43.80 | 10.00 | |
| | | 30.7.2003 | 43.40 | 10.00 | |
| | | 31.7.2003 | 43.25 | 10.00 | * Above D.L. & this years's highest level. |
| | | 9.8.2003 | 43.95 | 10.00 | |
| | | 18.8.2003 | 43.20 | 10.00 | |
| | | 21.8.2003 | 43.30 | 10.00 | |
| | | 28.8.2003 | 43.15 | 10.00 | |
| | | 6.9.2003 | 43.20 | 10.00 | |
| | | 17.9.2003 | 43.15 | 10.00 | |
| | | 18.9.2003 | 43.70 | 10.00 | |
| | | 28.9.2003 | 43.75 | 10.00 | |
| | | 2.10.2003 | 45.00 | 10.00 | |
| | | 10.10.2003 | 43.75 | 10.00 | |

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Jaldhaka | N.H.-31 | 12.6.2003 | 79.44 | 10.00 | |
| Warning Level | | 24.6.2003 | 79.49 | 10.00 | |
| E.D.L. | 80.500 | 1.7.2003 | **80.13*** | 10.00 | |
| D.L. | 80.000 | 8.7.2003 | **80.14**** | 10.00 | |
| | | 10.7.2003 | 79.80 | 10.00 | |
| | | 19.7.2003 | 79.68 | 10.00 | |
| | | 29.7.2003 | 79.79 | 10.00 | * Above D.L. |
| | | 31.7.2003 | 79.70 | 10.00 | **Above D.L. & this years's highest level. |
| | | 9.8.2003 | 79.85 | 10.00 | |
| | | 20.8.2003 | 79.61 | 10.00 | |
| | | 23.8.2003 | 79.74 | 10.00 | |
| | | 31.8.2003 | 79.59 | 10.00 | |
| | | 7.9.2003 | 79.56 | 10.00 | |
| | | 16.9.2003 | 79.83 | 10.00 | |
| | | 19.9.2003 | 79.60 | 10.00 | |
| | | 28.9.2003 | 79.45 | 10.00 | |
| | | 6.10.2003 | 79.50 | 10.00 | |
| | | 10.10.2003 | 79.75 | 10.00 | |

# GAUGE LEVELS OF IMPORTANT RIVERS DURING FLOOD SEASON OF 2003.

North Bengal Rivers

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Diana | Chengmari | 18.6.2003 | 198.05 | 10.00 | |
| Warning Level | | 25.6.2003 | 198.10 | 10.00 | |
| E.D.L. | 201.400 | 1.7.2003 | **200.20*** | 10.00 | |
| D.L. | 200.500 | 8.7.2003 | 200.05 | 10.00 | |
| | | 10.7.2003 | 198.75 | 10.00 | |
| | | 18.7.2003 | 198.55 | 10.00 | |
| | | 27.7.2003 | 198.30 | 10.00 | |
| | | 3.8.2003 | 198.20 | 10.00 | * This years's highest level. |
| | | 11.8.2003 | 198.40 | 10.00 | |
| | | 20.8.2003 | 198.45 | 10.00 | |
| | | 24.8.2003 | 198.50 | 10.00 | |
| | | 30.8.2003 | 198.35 | 10.00 | |
| | | 4.9.2003 | 198.35 | 10.00 | |
| | | 16.9.2003 | 198.50 | 10.00 | |
| | | 18.9.2003 | 198.50 | 10.00 | |
| | | 27.9.2003 | 198.30 | 10.00 | |
| | | 6.10.2003 | 198.30 | 10.00 | |
| | | 10.10.2003 | 198.40 | 10.00 | |

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Mansai | Mathabhanga | 18.6.2003 | 46.39 | 10.00 | |
| Warning Level | | 25.6.2003 | 46.75 | 10.00 | |
| E.D.L. | 48.700 | 2.7.2003 | 47.67 | 10.00 | |
| D.L. | 48.200 | 9.7.2003 | **48.49*** | 10.00 | |
| | | 10.7.2003 | **48.63**** | 10.00 | |
| | | 21.7.2003 | 46.67 | 10.00 | * Above D.L. |
| | | 30.7.2003 | 46.58 | 10.00 | |
| | | 31.7.2003 | 47.05 | 10.00 | **Above D.L. & this years's highest level. |
| | | 11.8.2003 | 47.50 | 10.00 | |
| | | 18.8.2003 | 46.96 | 10.00 | |
| | | 26.8.2003 | 46.92 | 10.00 | |
| | | 1.9.2003 | 46.59 | 10.00 | |
| | | 5.9.2003 | 46.43 | 10.00 | |
| | | 17.9.2003 | 46.83 | 10.00 | |
| | | 21.9.2003 | 47.53 | 10.00 | |
| | | 28.9.2003 | 46.91 | 10.00 | |
| | | 4.10.2003 | 46.62 | 10.00 | |
| | | 10.10.2003 | 47.45 | 10.00 | |

# GAUGE LEVELS OF IMPORTANT RIVERS DURING FLOOD SEASON OF 2003.

**North Bengal Rivers**

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Teesta | Corn.Bridge | 12.6.2003 | 146.20 | 10.00 | |
| Warning Level | | 24.6.2003 | 146.90 | 10.00 | |
| E.D.L. | 151.800 | 30.6.2003 | **149.60*** | 10.00 | |
| D.L. | 149.400 | 9.7.2003 | 148.75 | 10.00 | |
| | | 10.7.2003 | 149.15 | 10.00 | |
| | | 18.7.2003 | 147.75 | 10.00 | |
| | | 30.7.2003 | 147.90 | 10.00 | * Above D.L. & this years's highest level. |
| | | 31.7.2003 | 148.75 | 10.00 | |
| | | 8.8.2003 | 147.50 | 10.00 | |
| | | 18.8.2003 | 147.15 | 10.00 | |
| | | 23.8.2003 | 147.85 | 10.00 | |
| | | 28.8.2003 | 147.35 | 10.00 | |
| | | 5.9.2003 | 147.40 | 10.00 | |
| | | 15.9.2003 | 148.05 | 10.00 | |
| | | 20.9.2003 | 147.10 | 10.00 | |
| | | 1.10.2003 | 146.75 | 10.00 | |
| | | 6.10.2003 | 146.60 | 10.00 | |
| | | 10.10.2003 | 146.30 | 10.00 | |

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Teesta | Domohoni | 12.6.2003 | 85.21 | 10.00 | |
| Warning Level | | 24.6.2003 | 85.50 | 10.00 | |
| E.D.L. | 85.950 | 1.7.2003 | **85.94**** | 10.00 | |
| D.L. | 85.650 | 8.7.2003 | **85.74*** | 10.00 | |
| | | 10.7.2003 | 85.36 | 10.00 | |
| | | 22.7.2003 | 85.30 | 10.00 | |
| | | 27.7.2003 | **85.838*** | 10.00 | *Above D.L. |
| | | 31.7.2003 | 85.36 | 10.00 | |
| | | 11.8.2003 | 85.25 | 10.00 | **Above D.L. & this years's highest level |
| | | 20.8.2003 | 85.14 | 10.00 | |
| | | 23.8.2003 | 85.27 | 10.00 | |
| | | 3.9.2003 | 85.28 | 10.00 | |
| | | 5.9.2003 | 85.24 | 10.00 | |
| | | 13.9.2003 | 85.15 | 10.00 | |
| | | 20.9.2003 | 85.25 | 10.00 | |
| | | 25.9.2003 | 85.23 | 10.00 | |
| | | 3.10.2003 | 85.18 | 10.00 | |
| | | 10.10.2003 | 85.27 | 10.00 | |

# GAUGE LEVELS OF IMPORTANT RIVERS DURING FLOOD SEASON OF 2003.

**North Bengal Rivers**

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Mahananda | H.C.Road | 11.6.2003 | 113.80 | 10.00 | |
| Warning Level | | 24.6.2003 | 113.90 | 10.00 | |
| E.D.L. | 116.590 | 30.6.2003 | 115.50 | 10.00 | |
| D.L. | 115.970 | 8.7.2003 | **115.90*** | 10.00 | |
| | | 15.7.2003 | 113.95 | 10.00 | |
| | | 19.7.2003 | 114.10 | 10.00 | |
| | | 27.7.2003 | 114.20 | 10.00 | |
| | | 2.8.2003 | 114.40 | 10.00 | * This years's highest level. |
| | | 11.8.2003 | 115.20 | 10.00 | |
| | | 20.8.2003 | 114.50 | 10.00 | |
| | | 23.8.2003 | 114.20 | 10.00 | |
| | | 1.9.2003 | 114.50 | 10.00 | |
| | | 9.9.2003 | 114.30 | 10.00 | |
| | | 16.9.2003 | 114.33 | 10.00 | |
| | | 20.9.2003 | 114.30 | 10.00 | |
| | | 27.9.2003 | 114.35 | 10.00 | |
| | | 6.10.2003 | 114.41 | 10.00 | |
| | | 13.10.2003 | 114.15 | 10.00 | |

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Mahananda | Sonapur | 16.6.2003 | 73.95 | 06.00 | |
| Warning Level | | 24.6.2003 | 75.15 | 06.00 | |
| E.D.L. | 76.380 | 30.6.2003 | 75.49 | 06.00 | |
| D.L. | 75.770 | 4.7.2003 | 75.58 | 06.00 | |
| | | 10.7.2003 | **75.675*** | 06.00 | |
| | | 21.7.2003 | 74.70 | 06.00 | |
| | | 29.7.2003 | 75.175 | 06.00 | |
| | | 1.8.2003 | 74.38 | 06.00 | |
| | | 12.8.2003 | 74.55 | 06.00 | * This years's highest level. |
| | | 20.8.2003 | 75.56 | 06.00 | |
| | | 26.8.2003 | 74.60 | 06.00 | |
| | | 2.9.2003 | 74.58 | 06.00 | |
| | | 9.9.2003 | 74.59 | 06.00 | |
| | | 17.9.2003 | 74.73 | 06.00 | |
| | | 21.9.2003 | 74.93 | 06.00 | |
| | | 29.9.2003 | 74.56 | 06.00 | |
| | | 8.10.2003 | 74.84 | 06.00 | |
| | | 10.10.2003 | 75.41 | 06.00 | |

# GAUGE LEVELS OF IMPORTANT RIVERS DURING FLOOD SEASON OF 2003.

North Bengal Rivers

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Mahananda | Jhawa | 17.6.2003 | 28.38 | 06.00 | |
| Warning Level | | 25.6.2003 | 28.80 | 06.00 | |
| E.D.L. | 31.900 | 2.7.2003 | **31.44*** | 06.00 | *Above D.L. |
| D.L. | 31.400 | 6.7.2003 | **32.02**** | 06.00 | **Above E.D.L. |
| | | 11.7.2003 | **32.72***** | 06.00 | |
| | | 21.7.2003 | 31.15 | 06.00 | |
| | | 24.7.2003 | 30.61 | 06.00 | |
| | | 1.8.2003 | **31.46*** | 06.00 | |
| | | 13.8.2003 | 31.02 | 06.00 | ***Above E.D.L. & this years's highest level. |
| | | 20.8.2003 | 30.91 | 06.00 | |
| | | 21.8.2003 | 30.85 | 06.00 | |
| | | 3.9.2003 | 29.79 | 06.00 | |
| | | 4.9.2003 | 29.51 | 06.00 | |
| | | 17.9.2003 | 30.32 | 06.00 | |
| | | 23.9.2003 | 31.11 | 06.00 | |
| | | 25.9.2003 | 30.60 | 06.00 | |
| | | 2.10.2003 | 30.00 | 06.00 | |
| | | 11.10.2003 | 31.11 | 06.00 | |

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Mahananda | Dengraghat | 17.6.2003 | 33.76 | 06.00 | |
| Warning Level | | 25.6.2003 | 34.68 | 06.00 | |
| E.D.L. | 36.150 | 2.7.2003 | **36.18**** | 06.00 | |
| D.L. | 35.650 | 9.7.2003 | **36.71**** | 06.00 | * Above D.L. |
| | | 10.7.2003 | **36.95***** | 06.00 | **Above E.D.L. |
| | | 19.7.2003 | 35.39 | 06.00 | |
| | | 24.7.2003 | **34.70** | 06.00 | |
| | | 1.8.2003 | **35.98*** | 06.00 | |
| | | 12.8.2003 | **35.75*** | 06.00 | *** Above E.D.L. & this years's highest level. |
| | | 20.8.2003 | 35.55 | 06.00 | |
| | | 21.8.2003 | 35.22 | 06.00 | |
| | | 3.9.2003 | 34.56 | 06.00 | |
| | | 4.9.2003 | 34.32 | 06.00 | |
| | | 17.9.2003 | 35.02 | 06.00 | |
| | | 22.9.2003 | 35.64 | 06.00 | |
| | | 26.9.2003 | 34.99 | 06.00 | |
| | | 2.10.2003 | 34.46 | 06.00 | |
| | | 11.10.2003 | **35.80*** | 06.00 | |

# GAUGE LEVELS OF IMPORTANT RIVERS DURING FLOOD SEASON OF 2003.

**North Bengal Rivers**

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Mahananda | Eng. Bazar | 13.6.2003 | 15.37 | 06.00 | |
| Warning Level | | 25.6.2003 | 15.33 | 06.00 | |
| E.D.L. | 23.500 | 2.7.2003 | 18.00 | 06.00 | |
| D.L. | 22.750 | 9.7.2003 | 19.66 | 06.00 | |
| | | 16.7.2003 | 21.21 | 06.00 | |
| | | 18.7.2003 | 21.49 | 06.00 | |
| | | 24.7.2003 | 20.69 | 06.00 | |
| | | 6.8.2003 | 19.80 | 06.00 | |
| | | 7.8.2003 | 19.78 | 06.00 | * This years's highest level. |
| | | 14.8.2003 | 19.25 | 06.00 | |
| | | 26.8.2003 | 19.76 | 06.00 | |
| | | 29.8.2003 | 19.92 | 06.00 | |
| | | 10.9.2003 | 19.95 | 06.00 | |
| | | 17.9.2003 | 20.73 | 06.00 | |
| | | 20.9.2003 | **21.91*** | 06.00 | |
| | | 25.9.2003 | 20.96 | 06.00 | |
| | | 2.10.2003 | 20.57 | 06.00 | |
| | | 14.10.2003 | 20.86 | 06.00 | |

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Sui | Pazol | 13.6.2003 | 24.55 | 06.00 | |
| Warning Level | | 25.6.2003 | 24.25 | 06.00 | |
| E.D.L. | 28.000 | 2.7.2003 | 26.00 | 06.00 | |
| D.L. | 27.430 | 9.7.2003 | 26.65 | 06.00 | |
| | | 16.7.2003 | **27.40*** | 06.00 | |
| | | 17.7.2003 | 27.37 | 06.00 | |
| | | 24.7.2003 | 25.45 | 06.00 | |
| | | 4.8.2003 | 25.25 | 06.00 | * This years's highest level. |
| | | 7.8.2003 | 24.90 | 06.00 | |
| | | 15.8.2003 | 24.25 | 06.00 | |
| | | 22.8.2003 | 24.20 | 06.00 | |
| | | 28.8.2003 | 24.08 | 06.00 | |
| | | 10.9.2003 | 24.00 | 06.00 | |
| | | 17.9.2003 | 24.25 | 06.00 | |
| | | 24.9.2003 | 24.40 | 06.00 | |
| | | 28.9.2003 | 24.45 | 06.00 | |
| | | 2.10.2003 | 21.70 | 06.00 | |
| | | 15.10.2003 | 24.62 | 06.00 | |

# GAUGE LEVELS OF IMPORTANT RIVERS DURING FLOOD SEASON OF 2003.

North Bengal Rivers

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Sui | Katchua | 18.6.2003 | 21.62 | 06.00 | |
| Warning Level | | 24.6.2003 | 21.65 | 06.00 | |
| E.D.L. | 26.980 | 2.7.2003 | 23.03 | 06.00 | |
| D.L. | 25.490 | 9.7.2003 | 24.60 | 06.00 | |
| | | 16.7.2003 | **25.52*** | 06.00 | |
| | | 17.7.2003 | 25.48 | 06.00 | |
| | | 24.7.2003 | 23.32 | 06.00 | |
| | | 6.8.2003 | 23.60 | 06.00 | * Above D.L. & this years's highest level. |
| | | 7.8.2003 | 23.50 | 06.00 | |
| | | 15.8.2003 | 22.35 | 06.00 | |
| | | 21.8.2003 | 21.85 | 06.00 | |
| | | 28.8.2003 | 21.50 | 06.00 | |
| | | 10.9.2003 | 21.40 | 06.00 | |
| | | 17.9.2003 | 21.75 | 06.00 | |
| | | 19.9.2003 | 21.90 | 06.00 | |
| | | 26.9.2003 | 22.35 | 06.00 | |
| | | 2.10.2003 | 21.70 | 06.00 | |
| | | 15.10.2003 | 24.62 | 06.00 | |

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Tangon | Radhikapur | 18.6.2003 | 28.60 | 06.00 | |
| Warning Level | | 25.6.2003 | 28.78 | 06.00 | |
| E.D.L. | 34.050 | 2.7.2003 | 31.10 | 06.00 | |
| D.L. | 33.450 | 4.7.2003 | 32.30 | 06.00 | |
| | | 12.7.2003 | **32.90*** | 06.00 | |
| | | 17.7.2003 | 30.10 | 06.00 | |
| | | 24.7.2003 | 29.00 | 06.00 | |
| | | 2.8.2003 | 30.00 | 06.00 | |
| | | 7.8.2003 | 29.00 | 06.00 | * This years's highest level. |
| | | 20.8.2003 | 29.10 | 06.00 | |
| | | 21.8.2003 | 29.10 | 06.00 | |
| | | 1.9.2003 | 29.25 | 06.00 | |
| | | 4.9.2003 | 29.10 | 06.00 | |
| | | 17.9.2003 | 29.00 | 06.00 | |
| | | 24.9.2003 | 29.80 | 06.00 | |
| | | 25.9.2003 | 30.00 | 06.00 | |
| | | 8.10.2003 | 29.50 | 06.00 | |
| | | 12.10.2003 | 32.20 | 06.00 | |

# GAUGE LEVELS OF IMPORTANT RIVERS DURING FLOOD SEASON OF 2003.

North Bengal Rivers

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Tangon | Banshihari | 13.6.2003 | 21.60 | 06.00 | |
| Warning Level | | 25.6.2003 | 22.40 | 06.00 | |
| E.D.L. | 26.210 | 2.7.2003 | 25.08 | 06.00 | |
| D.L. | 25.600 | 5.7.2003 | **25.85*** | 06.00 | |
| | | 14.7.2003 | **26.22**** | 06.00 | |
| | | 17.7.2003 | 24.87 | 06.00 | |
| | | 24.7.2003 | 22.92 | 06.00 | *Above D.L. |
| | | 3.8.2003 | 24.65 | 06.00 | |
| | | 7.8.2003 | 22.80 | 06.00 | ** Above E.D.L. & this years's highest level. |
| | | 20.8.2003 | 22.58 | 06.00 | |
| | | 22.8.2003 | 22.52 | 06.00 | |
| | | 30.8.2003 | 22.25 | 06.00 | |
| | | 4.9.2003 | 22.08 | 06.00 | |
| | | 17.9.2003 | 21.71 | 06.00 | |
| | | 24.9.2003 | 23.53 | 06.00 | |
| | | 25.9.2003 | 24.05 | 06.00 | |
| | | 2.10.2003 | 23.15 | 06.00 | |
| | | 13.10.2003 | **26.00*** | 06.00 | |

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Nagore | Makdampur | 18.6.2003 | 27.69 | 06.00 | |
| Warning Level | | 25.6.2003 | 27.90 | 06.00 | |
| E.D.L. | 31.860 | 2.7.2003 | 29.63 | 06.00 | |
| D.L. | 31.540 | 9.7.2003 | 29.97 | 06.00 | |
| | | 14.7.2003 | **31.00*** | 06.00 | |
| | | 17.7.2003 | 29.80 | 06.00 | |
| | | 24.7.2003 | 28.60 | 06.00 | |
| | | 3.8.2003 | 29.87 | 06.00 | |
| | | 7.8.2003 | 28.65 | 06.00 | * This years's highest level. |
| | | 16.8.2003 | 28.35 | 06.00 | |
| | | 21.8.2003 | 28.20 | 06.00 | |
| | | 30.8.2003 | 28.35 | 06.00 | |
| | | 4.9.2003 | 28.12 | 06.00 | |
| | | 16.9.2003 | 28.37 | 06.00 | |
| | | 23.9.2003 | 28.27 | 06.00 | |
| | | 26.9.2003 | 28.41 | 06.00 | |
| | | 8.10.2003 | 28.07 | 06.00 | |
| | | 15.10.2003 | 28.77 | 06.00 | |

# GAUGE LEVELS OF IMPORTANT RIVERS DURING FLOOD SEASON OF 2003.

**North Bengal Rivers**

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Kullick | Rly.Bridge | 14.6.2003 | 25.45 | 06.00 | |
| Warning Level | | 25.6.2003 | 26.35 | 06.00 | |
| E.D.L. | 32.690 | 2.7.2003 | 28.50 | 06.00 | |
| D.L. | 31.200 | 9.7.2003 | 29.50 | 06.00 | |
| | | 14.7.2003 | **30.50*** | 06.00 | |
| | | 17.7.2003 | 29.70 | 06.00 | |
| | | 25.7.2003 | 26.85 | 06.00 | |
| | | 4.8.2003 | 29.35 | 06.00 | |
| | | 7.8.2003 | 28.70 | 06.00 | * This years's highest level. |
| | | 15.8.2003 | 27.10 | 06.00 | |
| | | 25.8.2003 | 27.30 | 06.00 | |
| | | 28.8.2003 | 26.90 | 06.00 | |
| | | 4.9.2003 | 26.45 | 06.00 | |
| | | 17.9.2003 | 27.05 | 06.00 | |
| | | 24.9.2003 | 27.40 | 06.00 | |
| | | 26.9.2003 | 27.60 | 06.00 | |
| | | 2.10.2003 | 27.15 | 06.00 | |
| | | 15.10.2003 | 29.50 | 06.00 | |

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Dauk | Chopra | 16.6.2003 | 67.50 | 06.00 | |
| Warning Level | | 24.6.2003 | 68.25 | 06.00 | |
| E.D.L. | 70.070 | 30.6.2003 | 68.98 | 06.00 | |
| D.L. | 69.460 | 5.7.2003 | 69.41 | 06.00 | |
| | | 10.7.2003 | **69.43*** | 06.00 | |
| | | 17.7.2003 | 67.90 | 06.00 | |
| | | 25.7.2003 | 67.45 | 06.00 | |
| | | 3.8.2003 | 67.50 | 06.00 | |
| | | 9.8.2003 | 68.50 | 06.00 | * This years's highest level. |
| | | 18.8.2003 | 67.56 | 06.00 | |
| | | 26.8.2003 | 68.15 | 06.00 | |
| | | 2.9.2003 | 68.30 | 06.00 | |
| | | 9.9.2003 | 68.57 | 06.00 | |
| | | 11.9.2003 | 68.45 | 06.00 | |
| | | 21.9.2003 | 68.45 | 06.00 | |
| | | 29.9.2003 | 67.83 | 06.00 | |
| | | 8.10.2003 | 68.10 | 06.00 | |
| | | 10.10.2003 | 69.19 | 06.00 | |

# GAUGE LEVELS OF IMPORTANT RIVERS DURING FLOOD SEASON OF 2003

North Bengal Rivers

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Gamari | Itahar | 16.6.2003 | 24.10 | 06.00 | |
| Warning Level | | 25.6.2003 | 24.12 | 06.00 | |
| E.D.L. | 27.410 | 2.7.2003 | 25.80 | 06.00 | |
| D.L. | 26.820 | 9.7.2003 | 26.45 | 06.00 | |
| | | 10.7.2003 | **26.55*** | 06.00 | |
| | | 17.7.2003 | 26.42 | 06.00 | |
| | | 24.7.2003 | 25.60 | 06.00 | |
| | | 3.8.2003 | 25.44 | 06.00 | |
| | | 7.8.2003 | 25.35 | 06.00 | * This years's highest level. |
| | | 20.8.2003 | 25.23 | 06.00 | |
| | | 21.8.2003 | 25.20 | 06.00 | |
| | | 28.8.2003 | 25.00 | 06.00 | |
| | | 4.9.2003 | 24.78 | 06.00 | |
| | | 17.9.2003 | 25.00 | 06.00 | |
| | | 19.9.2003 | 24.90 | 06.00 | |
| | | 26.9.2003 | 25.05 | 06.00 | |
| | | 2.10.2003 | 24.90 | 06.00 | |
| | | 11.10.2003 | 26.15 | 06.00 | |

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Fulhar | Teljana (u/s) | 3.7.2003 | 27.135 | 06.00 | |
| Warning Level | | 9.7.2003 | 27.82* | 06.00 | |
| E..D.L. | 28.350 | 11.7.2003 | **28.645*** ** | 06.00 | |
| D.L. | 27.430 | 17.7.2003 | 27.073 | 06.00 | * Above D.L. |
| | | 24.7.2003 | 26.66 | 06.00 | |
| | | 2.8.2003 | 27.34 | 06.00 | **Above E.D.L. |
| | | 13.8.2003 | 27.18 | 06.00 | |
| | | 14.8.2003 | 27.34 | 06.00 | |
| | | 22.8.2003 | 27.39 | 06.00 | *** Above E.D.L. & this years's highest level. |
| | | 28.8.2003 | 27.315 | 06.00 | |
| | | 10.9.2003 | 27.36 | 06.00 | |
| | | 17.9.2003 | **28.40**** | 06.00 | |
| | | 20.9.2003 | **28.565**** | 06.00 | |
| | | 25.9.2003 | **28.20*** | 06.00 | |
| | | 2.10.2003 | **27.68*** | 06.00 | |
| | | 11.10.2003 | 27.315 | 06.00 | |
| | | | | | |
| | | | | | |

# GAUGE LEVELS OF IMPORTANT RIVERS DURING FLOOD SEASON OF 2003.

**North Bengal Rivers**

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Fulhar | Teljana (d/s) | 3.7.2003 | 22.96 | 06.00 | *Above D.L. & this years's highest level. |
| Warning Level | | 6.7.2003 | 23.75 | 06.00 | |
| E.D.L. | 27.130 | 16.7.2003 | 25.67 | 06.00 | |
| D.L. | 26.510 | 20.7.2003 | **27.01*** | 06.00 | |
| | | 24.7.2003 | 24.925 | 06.00 | |
| | | 31.7.2003 | 23.81 | 06.00 | |
| | | 13.8.2003 | 22.62 | 06.00 | |
| | | 14.8.2003 | 22.67 | 06.00 | |
| | | 22.8.2003 | 22.97 | 06.00 | |
| | | 28.8.2003 | 22.56 | 06.00 | |
| | | 8.9.2003 | 22.59 | 06.00 | |
| | | 15.9.2003 | 22.95 | 06.00 | |
| | | 24.9.2003 | 23.415 | 06.00 | |
| | | 30.9.2003 | 23.385 | 06.00 | |
| | | 6.10.2003 | 23.62 | 06.00 | |
| | | 13.10.2003 | 25.99 | 06.00 | |
| | | 15.10.2003 | 25.90 | 06.00 | |
| | | | | | |

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Punarbhaba | Gangarampur | 13.6.2003 | 22.25 | 06.00 | *Above D.L. ** Above D.L. & this years's highest level. |
| Warning Level | | 25.6.2003 | 22.85 | 06.00 | |
| E.D.L. | 26.420 | 2.7.2003 | 25.30 | 06.00 | |
| D.L. | 25.820 | 4.7.2003 | 25.70 | 06.00 | |
| | | 12.7.2003 | **26.41**** | 06.00 | |
| | | 17.7.2003 | 24.55 | 06.00 | |
| | | 24.7.2003 | 23.75 | 06.00 | |
| | | 2.8.2003 | 24.30 | 06.00 | |
| | | 13.8.2003 | 23.40 | 06.00 | |
| | | 14.8.2003 | 23.05 | 06.00 | |
| | | 22.8.2003 | 22.85 | 06.00 | |
| | | 1.9.2003 | 22.96 | 06.00 | |
| | | 4.9.2003 | 22.50 | 06.00 | |
| | | 11.9.2003 | 22.25 | 06.00 | |
| | | 23.9.2003 | 24.75 | 06.00 | |
| | | 25.9.2003 | 24.05 | 06.00 | |
| | | 2.10.2003 | 22.65 | 06.00 | |
| | | 12.10.2003 | **25.85*** | 06.00 | |

# GAUGE LEVELS OF IMPORTANT RIVERS DURING FLOOD SEASON OF 2003.

North Bengal Rivers

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Atrai | Balurghat | 18.6.2003 | 18.58 | 06.00 | |
| Warning Level | | 25.6.2003 | 19.34 | 06.00 | |
| E.D.L. | 23.750 | 2.7.2003 | 21.52 | 06.00 | |
| D.L. | 23.150 | 4.7.2003 | 21.82 | 06.00 | |
| | | 13.7.2003 | **23.39*** | 06.00 | |
| | | 23.7.2003 | 20.64 | 06.00 | |
| | | 24.7.2003 | 20.06 | 06.00 | |
| | | 2.8.2003 | 20.70 | 06.00 | * Above D.L. & this years's highest level. |
| | | 13.8.2003 | 22.12 | 06.00 | |
| | | 14.8.2003 | 19.74 | 06.00 | |
| | | 22.8.2003 | 19.26 | 06.00 | |
| | | 30.8.2003 | 19.22 | 06.00 | |
| | | 4.9.2003 | 18.90 | 06.00 | |
| | | 23.9.2003 | 21.24 | 06.00 | |
| | | 25.9.2003 | 20.24 | 06.00 | |
| | | 2.10.2003 | 19.10 | 06.00 | |
| | | 12.10.2003 | 22.37 | 06.00 | |
| | | 15.10.2003 | 20.24 | 06.00 | |

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Ganga | Allahabad | 18.6.2003 | 71.40 | 06.00 | |
| Warning Level | | 25.6.2003 | 72.06 | 06.00 | |
| E.D.L. | 87.980 | 30.6.2003 | 73.07 | 06.00 | |
| D.L. | 84.730 | 7.7.2003 | 73.13 | 06.00 | |
| | | 16.7.2003 | 74.27 | 06.00 | |
| | | 20.7.2003 | 75.30 | 06.00 | |
| | | 30.7.2003 | 76.75 | 06.00 | |
| | | 31.7.2003 | 76.60 | 06.00 | |
| | | 7.8.2003 | 75.94 | 06.00 | * Above D.L. & this years's highest level. |
| | | 20.8.2003 | 78.21 | 06.00 | |
| | | 21.8.2003 | 78.36 | 06.00 | |
| | | 3.9.2003 | 78.25 | 06.00 | |
| | | 10.9.2003 | 82.33 | 06.00 | |
| | | 13.9.2003 | **85.15*** | 06.00 | |
| | | 18.9.2003 | 81.44 | 06.00 | |
| | | 1.10.2003 | 79.98 | 06.00 | |
| | | 3.10.2003 | 80.36 | 06.00 | |
| | | 9.10.2003 | 77.04 | 06.00 | |

# GAUGE LEVELS OF IMPORTANT RIVERS DURING FLOOD SEASON OF 2003.

**North Bengal Rivers**

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Ganga | Banaras | 18.6.2003 | 58.28 | 06.00 | |
| Warning Level | | 25.6.2003 | 59.02 | 06.00 | |
| E.D.L. | 73.900 | 2.7.2003 | 59.46 | 06.00 | |
| D.L. | 71.260 | 9.7.2003 | 60.57 | 06.00 | |
| | | 15.7.2003 | 61.55 | 06.00 | |
| | | 22.7.2003 | 63.37 | 06.00 | |
| | | 30.7.2003 | 64.61 | 06.00 | |
| | | 31.7.2003 | 64.94 | 06.00 | |
| | | 13.8.2003 | 64.33 | 06.00 | * Above D.L. & this years's highest level. |
| | | 20.8.2003 | 67.02 | 06.00 | |
| | | 21.8.2003 | 67.20 | 06.00 | |
| | | 3.9.2003 | 66.49 | 06.00 | |
| | | 10.9.2003 | 70.15 | 06.00 | |
| | | 13.9.2003 | **72.08*** | 06.00 | |
| | | 19.9.2003 | 69.65 | 06.00 | |
| | | 25.9.2003 | 68.64 | 06.00 | |
| | | 4.10.2003 | 68.76 | 06.00 | |
| | | 9.10.2003 | 66.04 | 06.00 | |

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Ganga | Patna | 18.6.2003 | 42.15 | 06.00 | |
| Warning Level | | 25.6.2003 | 43.09 | 06.00 | |
| E.D.L. | 49.200 | 2.7.2003 | 44.56 | 06.00 | |
| D.L. | 48.600 | 8.7.2003 | 45.37 | 06.00 | * Above D.L. |
| | | 15.7.2003 | 46.37 | 06.00 | |
| | | 23.7.2003 | 46.73 | 06.00 | ** Above E.D.L. |
| | | 25.7.2003 | 47.02 | 06.00 | |
| | | 6.8.2003 | 47.98 | 06.00 | *** Above E.D.L. & this years's highest level. |
| | | 7.8.2003 | 47.65 | 06.00 | |
| | | 20.8.2003 | 48.04 | 06.00 | |
| | | 23.8.2003 | **48.90*** | 06.00 | |
| | | 28.8.2003 | 48.37 | 06.00 | |
| | | 10.9.2003 | 49.97** | 06.00 | |
| | | 14.9.2003 | **50.60***** | 06.00 | |
| | | 18.9.2003 | **49.73**** | 06.00 | |
| | | 26.9.2003 | **49.23**** | 06.00 | |
| | | 3.10.2003 | **48.81*** | 06.00 | |
| | | 10.10.2003 | 47.81 | 06.00 | |

# GAUGE LEVELS OF IMPORTANT RIVERS DURING FLOOD SEASON OF 2003.

**North Bengal Rivers**

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Ganga | Hatidah | 18.6.2003 | 33.89 | 06.00 | |
| Warning Level | | 25.6.2003 | 34.29 | 06.00 | |
| E.D.L. | 42.360 | 2.7.2003 | 36.30 | 06.00 | |
| D.L. | 41.760 | 8.7.2003 | 37.69 | 06.00 | |
| | | 16.7.2003 | 38.88 | 06.00 | |
| | | 22.7.2003 | 39.75 | 06.00 | * Above D.L. |
| | | 26.7.2003 | 39.65 | 06.00 | ** Above E.D.L. |
| | | 5.8.2003 | 40.81 | 06.00 | |
| | | 9.8.2003 | 41.31 | 06.00 | *** Above E.D.L. & this years's highest level. |
| | | 20.8.2003 | 41.03 | 06.00 | |
| | | 24.8.2003 | 41.75 | 06.00 | |
| | | 28.8.2003 | 41.43 | 06.00 | |
| | | 10.9.2003 | **42.30*** | 06.00 | |
| | | 13.9.2003 | **42.71*** ** | 06.00 | |
| | | 18.9.2003 | **42.52** ** | 06.00 | |
| | | 26.9.2003 | **41.81*** | 06.00 | |
| | | 7.10.2003 | **41.81*** | 06.00 | |
| | | 9.10.2003 | 40.21 | 06.00 | |

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Ganga | Mungher | 18.6.2003 | 30.11 | 06.00 | |
| Warning Level | | 25.6.2003 | 30.23 | 06.00 | |
| E.D.L. | 39.930 | 2.7.2003 | 32.81 | 06.00 | |
| D.L. | 39.330 | 9.7.2003 | 34.17 | 06.00 | |
| | | 16.7.2003 | 35.42 | 06.00 | |
| | | 18.7.2003 | 35.56 | 06.00 | |
| | | 26.7.2003 | 36.08 | 06.00 | |
| | | 6.8.2003 | 37.01 | 06.00 | |
| | | 7.8.2003 | 37.00 | 06.00 | * Above D.L. & this years's highest level. |
| | | 20.8.2003 | 37.18 | 06.00 | |
| | | 25.8.2003 | 38.14 | 06.00 | |
| | | 28.8.2003 | 37.81 | 06.00 | |
| | | 10.9.2003 | 38.53 | 06.00 | |
| | | 16.9.2003 | **39.40*** | 06.00 | |
| | | 18.9.2003 | 39.07 | 06.00 | |
| | | 27.9.2003 | 38.07 | 06.00 | |
| | | 2.10.2003 | 37.55 | 06.00 | |
| | | 9.10.2003 | 36.32 | 06.00 | |

# GAUGE LEVELS OF IMPORTANT RIVERS DURING FLOOD SEASON OF 2003.

**North Bengal Rivers**

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Ganga | Bhagalpur | 18.6.2003 | 25.21 | 06.00 | |
| Warning Level | | 25.6.2003 | 25.66 | 06.00 | |
| E.D.L. | 34.180 | 2.7.2003 | 28.10 | 06.00 | |
| D.L. | 33.680 | 9.7.2003 | 29.61 | 06.00 | |
| | | 16.7.2003 | 30.84 | 06.00 | * Above D.L. |
| | | 18.7.2003 | 30.93 | 06.00 | ** Above E.D.L & this years's highest level. |
| | | 26.7.2003 | 31.30 | 06.00 | |
| | | 6.8.2003 | 32.17 | 06.00 | |
| | | 7.8.2003 | 32.23 | 06.00 | |
| | | 20.8.2003 | 32.38 | 06.00 | |
| | | 25.8.2003 | 33.19 | 06.00 | |
| | | 28.8.2003 | 32.93 | 06.00 | |
| | | 10.9.2003 | 33.59 | 06.00 | |
| | | 16.9.2003 | **34.60**** | 06.00 | |
| | | 18.9.2003 | **34.16*** | 06.00 | |
| | | 25.9.2003 | 33.43 | 06.00 | |
| | | 2.10.2003 | 33.15 | 06.00 | |
| | | 10.10.2003 | 31.99 | 06.00 | |

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Ganga | Kalagaon | 18.6.2003 | 23.86 | 06.00 | |
| Warning Level | | 19.6.2003 | 25.65 | 06.00 | |
| E.D.L. | 31.690 | 2.7.2003 | 27.20 | 06.00 | |
| D.L. | 31.090 | 7.7.2003 | 28.50 | 06.00 | * Above D.L. |
| | | 16.7.2003 | 29.69 | 06.00 | |
| | | 18.7.2003 | 29.77 | 06.00 | ** Above E.D.L. |
| | | 27.7.2003 | 30.11 | 06.00 | |
| | | 6.8.2003 | 30.88 | 06.00 | *** Above E.D.L. & this years's highest level. |
| | | 9.8.2003 | **31.73**** | 06.00 | |
| | | 20.8.2003 | **31.10*** | 06.00 | |
| | | 26.8.2003 | **31.86**** | 06.00 | |
| | | 28.8.2003 | **31.74**** | 06.00 | |
| | | 10.9.2003 | **32.40**** | 06.00 | |
| | | 17.9.2003 | **32.86**** | 06.00 | |
| | | 18.9.2003 | **32.87***** | 06.00 | |
| | | 25.9.2003 | **32.25**** | 06.00 | |
| | | 2.10.2003 | **31.91**** | 06.00 | |
| | | 9.10.2003 | 30.72 | 06.00 | |

# GAUGE LEVELS OF IMPORTANT RIVERS DURING FLOOD SEASON OF 2003.

North Bengal Rivers

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Ganga | Manikchakghat | 17.6.2003 | 22.07 | 06.00 | |
| Warning Level | | 25.6.2003 | 21.72 | 06.00 | |
| E.D.L. | 25.540 | 2.7.2003 | 22.43 | 06.00 | |
| D.L. | 24.690 | 9.7.2003 | 22.77 | 06.00 | * Above D.L. |
| | | 14.7.2003 | 23.22 | 06.00 | |
| | | 17.7.2003 | 23.24 | 06.00 | ** Above E.D.L. |
| | | 27.7.2003 | 23.30 | 06.00 | |
| | | 6.8.2003 | 24.18 | 06.00 | *** Above E.D.L. & this years's highest level. |
| | | 8.8.2003 | 24.30 | 06.00 | |
| | | 20.8.2003 | 24.38 | 06.00 | |
| | | 27.8.2003 | **25.33*** | 06.00 | |
| | | 28.8.2003 | **25.31*** | 06.00 | |
| | | 10.9.2003 | **25.55**** | 06.00 | |
| | | 17.9.2003 | **26.13**** | 06.00 | |
| | | 18.9.2003 | **26.19***** | 06.00 | |
| | | 25.9.2003 | **25.74**** | 06.00 | |
| | | 2.10.2003 | **25.35*** | 06.00 | |
| | | 10.10.2003 | 24.32 | 06.00 | |

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Ganga | Farakka | 16.6.2003 | 15.88 | 06.00 | |
| Warning Level | | 25.6.2003 | 16.66 | 06.00 | |
| E.D.L. | 23.770 | 2.7.2003 | 19.50 | 06.00 | |
| D.L. | 22.250 | 9.7.2003 | 20.69 | 06.00 | * Above D.L. |
| | | 16.7.2003 | 21.92 | 06.00 | |
| | | 17.7.2003 | 21.95 | 06.00 | ** Above E.D.L. |
| | | 28.7.2003 | **21.96** | 06.00 | |
| | | 6.8.2003 | **22.57*** | 06.00 | *** Above E.D.L. & this years's highest level. |
| | | 7.8.2003 | **22.67*** | 06.00 | |
| | | 20.8.2003 | **22.71*** | 06.00 | |
| | | 26.8.2003 | **23.60*** | 06.00 | |
| | | 28.8.2003 | **23.66*** | 06.00 | |
| | | 10.9.2003 | **23.88**** | 06.00 | |
| | | 17.9.2003 | **24.44**** | 06.00 | |
| | | 19.9.2003 | **24.52***** | 06.00 | |
| | | 25.9.2003 | **24.18**** | 06.00 | |
| | | 2.10.2003 | **23.74*** | 06.00 | |
| | | 9.10.2003 | **22.56*** | 06.00 | |

# GAUGE LEVELS OF IMPORTANT RIVERS DURING FLOOD SEASON OF 2003.

**North Bengal Rivers**

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Ganga | Nurpur | 13.6.2003 | 14.92 | 06.00 | |
| Warning Level | | 25.6.2003 | 15.14 | 06.00 | |
| E.D.L. | 21.650 | 2.7.2003 | 17.54 | 06.00 | |
| D.L. | 21.030 | 9.7.2003 | 18.94 | 06.00 | |
| | | 16.7.2003 | 20.15 | 06.00 | |
| | | 20.7.2003 | 20.22 | 06.00 | ** Above E.D.L. |
| | | 28.7.2003 | 20.90 | 06.00 | |
| | | 6.8.2003 | 20.84 | 06.00 | *** Above E.D.L. & this years's highest level. |
| | | 8.8.2003 | 20.98 | 06.00 | |
| | | 20.8.2003 | 20.95 | 06.00 | |
| | | 27.8.2003 | **21.87**** | 06.00 | |
| | | 28.8.2003 | **21.88**** | 06.00 | |
| | | 10.9.2003 | **22.02**** | 06.00 | |
| | | 17.9.2003 | **22.66**** | 06.00 | |
| | | 20.9.2003 | **22.75***** | 06.00 | |
| | | 25.9.2003 | **22.33**** | 06.00 | |
| | | 2.10.2003 | **21.86**** | 06.00 | |
| | | 9.10.2003 | 20.87 | 06.00 | |

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Ganga | Geria | 16.6.2003 | 14.01 | 06.00 | |
| Warning Level | | 25.6.2003 | 14.47 | 06.00 | |
| E.D.L. | 21.550 | 2.7.2003 | 16.95 | 06.00 | |
| D.L. | 20.940 | 9.7.2003 | 18.34 | 06.00 | * Above D.L. |
| | | 16.7.2003 | 19.54 | 06.00 | |
| | | 18.7.2003 | 19.62 | 06.00 | ** Above E.D.L. |
| | | 28.7.2003 | 20.24 | 06.00 | |
| | | 6.8.2003 | 20.20 | 06.00 | *** Above E.D.L. & this years's highest level. |
| | | 8.8.2003 | 20.34 | 06.00 | |
| | | 20.8.2003 | 20.31 | 06.00 | |
| | | 27.8.2003 | **21.26*** | 06.00 | |
| | | 28.8.2003 | **21.27*** | 06.00 | |
| | | 10.9.2003 | **21.43*** | 06.00 | |
| | | 16.9.2003 | **22.12**** | 06.00 | |
| | | 20.9.2003 | **22.17***** | 06.00 | |
| | | 25.9.2003 | **21.77**** | 06.00 | |
| | | 2.10.2003 | **21.33*** | 06.00 | |
| | | 9.10.2003 | 20.32 | 06.00 | |

# GAUGE LEVELS OF IMPORTANT RIVERS DURING FLOOD SEASON OF 2003.

North Bengal Rivers

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Ganga | Chakghat | 16.6.2003 | 13.58 | 06.00 | |
| Warning Level | | 25.6.2003 | 14.04 | 06.00 | |
| E.D.L. | 21.490 | 2.7.2003 | 16.51 | 06.00 | |
| D.L. | 20.880 | 9.7.2003 | 17.83 | 06.00 | |
| | | 15.7.2003 | 18.92 | 06.00 | * Above D.L. |
| | | 20.7.2003 | 19.14 | 06.00 | |
| | | 28.7.2003 | 19.61 | 06.00 | ** Above E.D.L. |
| | | 6.8.2003 | 19.71 | 06.00 | |
| | | 8.8.2003 | 19.85 | 06.00 | *** Above E.D.L. & this years's highest level. |
| | | 20.8.2003 | 19.82 | 06.00 | |
| | | 27.8.2003 | **20.77** | 06.00 | |
| | | 28.8.2003 | 20.78 | 06.00 | |
| | | 10.9.2003 | **20.94*** | 06.00 | |
| | | 17.9.2003 | **21.58**** | 06.00 | |
| | | 20.9.2003 | **21.69***** | 06.00 | |
| | | 25.9.2003 | **21.31*** | 06.00 | |
| | | 2.10.2003 | 20.85 | 06.00 | |
| | | 9.10.2003 | 19.84 | 06.00 | |

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
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# GAUGE LEVELS OF IMPORTANT RIVERS DURING FLOOD SEASON OF 2003

**South Bengal Rivers**

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Pagla | Bansloi | 25.6.03 | 28.80 | 6.00 | |
| Warning Level | | 26.6.03 | 29.10 | 6.00 | |
| E.D.L. | 32.76 | 3.7.03 | 28.45 | 6.00 | |
| D.L. | 31.85 | 16.7.03 | 28.80 | 6.00 | |
| | | 18.7.03 | 28.80 | 6.00 | |
| | | 30.7.03 | 28.80 | 6.00 | |
| | | 2.8.03 | 28.80 | 6.00 | *This year's highest level. |
| | | 7.8.03 | 28.60 | 6.00 | |
| | | 17.8.03 | 27.60 | 6.00 | |
| | | 26.8.03 | 28.15 | 6.00 | |
| | | 3.9.03 | 28.30 | 6.00 | |
| | | 5.9.03 | 28.20 | 6.00 | |
| | | 14.9.03 | 28.30 | 6.00 | |
| | | 18.9.03 | 27.70 | 6.00 | |
| | | 29.9.03 | 28.75 | 6.00 | |
| | | 2.10.03 | 28.20 | 6.00 | |
| | | 10.10.03 | **30.02*** | 6.00 | |
| | | | | | |

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Brahmoni | ADB Rd. Bridge | 25.6.03 | 28.60 | 6.00 | |
| Warning Level | | 26.6.03 | 28.30 | 6.00 | |
| E.D.L. | 33.40 | 3.7.03 | 28.20 | 6.00 | |
| D.L. | 33.00 | 22.7.03 | 28.80 | 6.00 | |
| | | 28.7.03 | 28.60 | 6.00 | |
| | | 2.8.03 | 28.60 | 6.00 | |
| | | 10.8.03 | 28.00 | 6.00 | *This year's highest level. |
| | | 20.8.03 | 28.80 | 6.00 | |
| | | 25.8.03 | 28.30 | 6.00 | |
| | | 3.9.03 | 28.45 | 6.00 | |
| | | 10.9.03 | 28.55 | 6.00 | |
| | | 13.9.03 | 28.80 | 6.00 | |
| | | 18.9.03 | 27.95 | 6.00 | |
| | | 26.9.03 | 28.45 | 6.00 | |
| | | 4.10.03 | 28.25 | 6.00 | |
| | | 10.10.03 | **30.50*** | 6.00 | |
| | | | | | |
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# GAUGE LEVELS OF IMPORTANT RIVERS DURING FLOOD SEASON OF 2003

**South Bengal Rivers**

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Dwarka | Sankoghat | 25.6.03 | 16.75 | 6.00 | *Above E.D.L. & this year's highest level. |
| Warning Level | | 29.6.03 | 18.75 | 6.00 | |
| E.D.L. | 21.30 | 3.7.03 | 16.46 | 6.00 | |
| D.L. | 20.42 | 16.7.03 | 16.20 | 6.00 | |
| | | 21.7.03 | 15.16 | 6.00 | |
| | | 29.7.03 | 16.24 | 6.00 | |
| | | 4.8.03 | 17.32 | 6.00 | |
| | | 9.8.03 | 17.78 | 6.00 | |
| | | 20.8.03 | 19.88 | 6.00 | |
| | | 22.8.03 | 19.08 | 6.00 | |
| | | 3.9.03 | 16.70 | 6.00 | |
| | | 4.9.03 | 16.93 | 6.00 | |
| | | 11.9.03 | 17.15 | 6.00 | |
| | | 24.9.03 | 15.82 | 6.00 | |
| | | 30.9.03 | 18.10 | 6.00 | |
| | | 4.10.03 | 17.62 | 6.00 | |
| | | 11.10.03 | **21.45*** | 6.00 | |
| | | | | | |

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Mayurakshi | Narayanpur | 15.6.03 | 23.725 | 6.00 | *This year's highest level. |
| Warning Level | | 19.6.03 | 23.685 | 6.00 | |
| E.D.L. | 28.58 | 30.6.03 | 24.25 | 6.00 | |
| D.L. | 27.98 | 3.7.03 | 23.875 | 6.00 | |
| | | 15.7.03 | 23.725 | 6.00 | |
| | | 17.7.03 | 24.035 | 6.00 | |
| | | 29.7.03 | 23.635 | 6.00 | |
| | | 2.8.03 | 23.885 | 6.00 | |
| | | 13.8.03 | 23.665 | 6.00 | |
| | | 18.8.03 | 23.925 | 6.00 | |
| | | 21.8.03 | 24.755 | 6.00 | |
| | | 1.9.03 | 23.73 | 6.00 | |
| | | 4.9.03 | 23.545 | 6.00 | |
| | | 11.9.03 | 23.555 | 6.00 | |
| | | 18.9.03 | 23.455 | 6.00 | |
| | | 30.9.03 | 24.475 | 6.00 | |
| | | 3.10.03 | 23.87 | 6.00 | |
| | | 10.10.03 | **25.695*** | 6.00 | |

# GAUGE LEVELS OF IMPORTANT RIVERS DURING FLOOD SEASON OF 2003

South Bengal Rivers

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Ajoy | Sikatia | 12.6.03 | 162.80 | 6.00 | |
| Warning Level | | 18.6.03 | 163.11 | 6.00 | |
| E.D.L. | 166.24 | 24.6.03 | 163.23 | 6.00 | |
| D.L. | 165.64 | 26.6.03 | 164.02 | 6.00 | |
| | | 3.7.03 | 162.64 | 6.00 | |
| | | 15.7.03 | 163.53 | 6.00 | |
| | | 17.7.03 | 162.88 | 6.00 | *This year's highest level. |
| | | 29.7.03 | 163.15 | 6.00 | |
| | | 1.8.03 | 163.76 | 6.00 | |
| | | 13.8.03 | 162.55 | 6.00 | |
| | | 19.8.03 | 163.85 | 6.00 | |
| | | 21.8.03 | 163.27 | 6.00 | |
| | | 28.8.03 | 162.68 | 6.00 | |
| | | 10.9.03 | 162.69 | 6.00 | |
| | | 11.9.03 | 162.83 | 6.00 | |
| | | 24.9.03 | 162.86 | 6.00 | |
| | | 26.9.03 | 163.24 | 6.00 | |
| | | 10.10.03 | **164.20*** | 6.00 | |

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Ajoy | Katwa | 18.6.03 | 9.50 | 6.00 | |
| Warning Level | | 24.6.03 | 9.78 | 6.00 | |
| E.D.L. | 15.09 | 2.7.03 | 11.15 | 6.00 | |
| D.L. | 14.48 | 3.7.03 | 11.10 | 6.00 | |
| | | 16.7.03 | 10.60 | 6.00 | |
| | | 17.7.03 | 11.10 | 6.00 | |
| | | 28.7.03 | 10.75 | 6.00 | *This year's highest level. |
| | | 4.8.03 | 11.90 | 6.00 | |
| | | 7.8.03 | 11.30 | 6.00 | |
| | | 20.8.03 | 12.00 | 6.00 | |
| | | 22.8.03 | 12.58 | 6.00 | |
| | | 28.8.03 | 11.65 | 6.00 | |
| | | 5.9.03 | 11.06 | 6.00 | |
| | | 13.9.03 | 10.90 | 6.00 | |
| | | 18.9.03 | 10.60 | 6.00 | |
| | | 29.9.03 | 11.57 | 6.00 | |
| | | 2.10.03 | 11.63 | 6.00 | |
| | | 12.10.03 | **13.29*** | 6.00 | |

# GAUGE LEVELS OF IMPORTANT RIVERS DURING FLOOD SEASON OF 2003

South Bengal Rivers

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Ajoy | Gheropara | 12.6.03 | 35.60 | 6.00 | |
| Warning Level | | 21.6.03 | 36.24 | 6.00 | |
| E.D.L. | 40.46 | 1.7.03 | 36.96 | 6.00 | |
| D.L. | 39.41 | 3.7.03 | 36.72 | 6.00 | |
| | | 16.7.03 | 37.16 | 6.00 | |
| | | 17.7.03 | 36.89 | 6.00 | *This year's highest level. |
| | | 30.7.03 | 37.07 | 6.00 | |
| | | 2.8.03 | 37.73 | 6.00 | |
| | | 7.8.03 | 36.26 | 6.00 | |
| | | 20.8.03 | 37.36 | 6.00 | |
| | | 21.8.03 | 37.30 | 6.00 | |
| | | 29.8.03 | 36.64 | 6.00 | |
| | | 4.9.03 | 36.51 | 6.00 | |
| | | 11.9.03 | 36.56 | 6.00 | |
| | | 19.9.03 | 36.14 | 6.00 | |
| | | 28.9.03 | 36.87 | 6.00 | |
| | | 6.10.03 | 36.82 | 6.00 | |
| | | 11.10.03 | **37.93*** | 6.00 | |

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Ajoy | Budra | 18.6.03 | 35.58 | 6.00 | |
| Warning Level | | 20.6.03 | 36.73 | 6.00 | |
| E.D.L. | 40.10 | 1.7.03 | 37.13 | 6.00 | |
| D.L. | 39.49 | 3.7.03 | 36.77 | 6.00 | |
| | | 16.7.03 | 37.44 | 6.00 | |
| | | 17.7.03 | 37.01 | 6.00 | *This year's highest level. |
| | | 30.7.03 | 37.31 | 6.00 | |
| | | 4.8.03 | 37.10 | 6.00 | |
| | | 7.8.03 | 36.19 | 6.00 | |
| | | 20.8.03 | 37.62 | 6.00 | |
| | | 21.8.03 | 37.47 | 6.00 | |
| | | 1.9.03 | 36.89 | 6.00 | |
| | | 4.9.03 | 36.52 | 6.00 | |
| | | 12.9.03 | 36.67 | 6.00 | |
| | | 19.9.03 | 36.12 | 6.00 | |
| | | 1.10.03 | 37.04 | 6.00 | |
| | | 6.10.03 | 36.98 | 6.00 | |
| | | 11.10.03 | **38.11*** | 6.00 | |

# GAUGE LEVELS OF IMPORTANT RIVERS DURING FLOOD SEASON OF 2003

South Bengal Rivers

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Damodar | Rondia | 18.6.03 | 48.01 | 6.00 | |
| Warning Level | | 20.6.03 | 48.40 | 6.00 | |
| E.D.L. | 53.49 | 26.6.03 | 49.895 | 6.00 | |
| D.L. | 52.88 | 3.7.03 | 49.987 | 6.00 | |
| | | 15.7.03 | 49.59 | 6.00 | |
| | | 22.7.03 | 50.139 | 6.00 | *This year's highest level. |
| | | 30.7.03 | 50.107 | 6.00 | |
| | | 31.7.03 | 50.109 | 6.00 | |
| | | 13.8.03 | 50.017 | 6.00 | |
| | | 20.8.03 | 50.17 | 6.00 | |
| | | 25.8.03 | 50.048 | 6.00 | |
| | | 1.9.03 | 50.078 | 6.00 | |
| | | 10.9.03 | 50.048 | 6.00 | |
| | | 17.9.03 | 50.078 | 6.00 | |
| | | 18.9.03 | 50.078 | 6.00 | |
| | | 1.10.03 | 50.139 | 6.00 | |
| | | 8.10.03 | 50.109 | 6.00 | |
| | | 13.10.03 | **50.352*** | 6.00 | |

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Damodar | Edilpur | 25.6.03 | 28.66 | 6.00 | |
| Warning Level | | 26.6.03 | 29.19 | 6.00 | |
| E.D.L. | 32.94 | 4.7.03 | 29.10 | 6.00 | |
| D.L. | 32.79 | 16.7.03 | 29.43 | 6.00 | |
| | | 17.7.03 | 29.52 | 6.00 | *This year's highest level |
| | | 30.7.03 | 29.58 | 6.00 | |
| | | 5.8.03 | 29.86 | 6.00 | |
| | | 7.8.03 | 29.57 | 6.00 | |
| | | 20.8.03 | 29.83 | 6.00 | |
| | | 25.8.03 | 29.95 | 6.00 | |
| | | 3.9.03 | 29.83 | 6.00 | |
| | | 8.9.03 | 29.74 | 6.00 | |
| | | 16.9.03 | 29.95 | 6.00 | |
| | | 19.9.03 | 29.89 | 6.00 | |
| | | 1.10.03 | 29.58 | 6.00 | |
| | | 8.10.03 | 29.74 | 6.00 | |
| | | 13.10.03 | **30.61*** | 6.00 | |
| | | | | | |

# GAUGE LEVELS OF IMPORTANT RIVERS DURING FLOOD SEASON OF 2003

**South Bengal Rivers**

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Damodar | Jamalpur | 18.6.03 | 16.68 | 6.00 | |
| Warning Level | | 25.6.03 | 16.77 | 6.00 | |
| E.D.L. | 23.53 | 26.6.03 | 17.40 | 6.00 | |
| D.L. | 23.23 | 4.7.03 | 18.09 | 6.00 | |
| | | 16.7.03 | 17.58 | 6.00 | |
| | | 17.7.03 | 18.03 | 6.00 | |
| | | 30.7.03 | 17.13 | 6.00 | * This year's highest level |
| | | 5.8.03 | 18.47 | 6.00 | |
| | | 13.8.03 | 18.83 | 6.00 | |
| | | 20.8.03 | 18.03 | 6.00 | |
| | | 21.8.03 | 18.30 | 6.00 | |
| | | 3.9.03 | 18.21 | 6.00 | |
| | | 4.9.03 | 18.21 | 6.00 | |
| | | 13.9.03 | 18.18 | 6.00 | |
| | | 19.9.03 | 17.88 | 6.00 | |
| | | 1.10.03 | 17.88 | 6.00 | |
| | | 2.10.03 | 17.88 | 6.00 | |
| | | 13.10.03 | **19.89*** | 6.00 | |

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Damodar | Amta | 29.6.03 | 3.60 | 6.00 | |
| Warning Level | | 5.7.03 | 3.87 | 6.00 | |
| E.D.L. | 6.24 | 13.7.03 | 2.80 | 6.00 | |
| D.L. | 5.64 | 19.7.03 | 3.90 | 6.00 | |
| | | 24.7.03 | 3.25 | 6.00 | |
| | | 5.8.03 | 4.32 | 6.00 | |
| | | 7.8.03 | 3.60 | 6.00 | *This year's highest level & Above E.D.L. |
| | | 18.8.03 | 3.25 | 6.00 | |
| | | 21.8.03 | 3.95 | 6.00 | |
| | | 3.9.03 | 3.95 | 6.00 | |
| | | 4.9.03 | 4.25 | 6.00 | |
| | | 14.9.03 | 3.45 | 6.00 | |
| | | 19.9.03 | 3.30 | 6.00 | |
| | | 1.10.03 | 3.45 | 6.00 | |
| | | 3.10.03 | 3.30 | 6.00 | |
| | | 13.10.03 | **6.29*** | 6.00 | |
| | | | | | |
| | | | | | |

# GAUGE LEVELS OF IMPORTANT RIVERS DURING FLOOD SEASON OF 2003

**South Bengal Rivers**

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Damodar | Champadanga | 11.6.03 | 8.78 | 6.00 | |
| Warning Level | | 17.6.03 | 8.81 | 6.00 | |
| E.D.L. | 13.49 | 25.6.03 | 9.60 | 6.00 | |
| D.L. | 12.89 | 30.6.03 | 9.72 | 6.00 | |
| | | 5.7.03 | 10.36 | 6.00 | |
| | | 16.7.03 | 9.51 | 6.00 | |
| | | 18.7.03 | 10.27 | 6.00 | * This year's highest level. |
| | | 24.7.03 | 9.36 | 6.00 | |
| | | 4.8.03 | 10.10 | 6.00 | |
| | | 13.8.03 | 9.90 | 6.00 | |
| | | 20.8.03 | 9.51 | 6.00 | |
| | | 21.8.03 | 10.20 | 6.00 | |
| | | 3.9.03 | 9.81 | 6.00 | |
| | | 4.9.03 | 9.99 | 6.00 | |
| | | 16.9.03 | 9.69 | 6.00 | |
| | | 18.9.03 | 9.60 | 6.00 | |
| | | 3.10.03 | 9.49 | 6.00 | |
| | | 13.10.03 | **11.57*** | 6.00 | |

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Mundeswari | Harinkhola | 11.6.03 | 5.52 | 6.00 | |
| Warning Level | | 17.6.03 | 5.71 | 6.00 | |
| E.D.L. | 12.80 | 25.6.03 | 7.08 | 6.00 | |
| D.L. | 12.19 | 28.6.03 | 7.65 | 6.00 | |
| | | 5.7.03 | 7.90 | 6.00 | |
| | | 16.7.03 | 6.96 | 6.00 | |
| | | 18.7.03 | 7.82 | 6.00 | *This year's highest level. |
| | | 30.7.03 | 7.02 | 6.00 | |
| | | 5.8.03 | 8.34 | 6.00 | |
| | | 7.8.03 | 7.92 | 6.00 | |
| | | 20.8.03 | 7.30 | 6.00 | |
| | | 21.8.03 | 8.15 | 6.00 | |
| | | 2.9.03 | 7.85 | 6.00 | |
| | | 4.9.03 | 8.17 | 6.00 | |
| | | 13.9.03 | 7.73 | 6.00 | |
| | | 19.9.03 | 7.54 | 6.00 | |
| | | 1.10.03 | 7.43 | 6.00 | |
| | | 13.10.03 | **11.10*** | 6.00 | |

# GAUGE LEVELS OF IMPORTANT RIVERS DURING FLOOD SEASON OF 2003

**South Bengal Rivers**

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Dwarakeswar | Arambag | 11.6.03 | 11.43 | 6.00 | |
| Warning Level | | 18.6.03 | 11.43 | 6.00 | |
| E.D.L. | 17.83 | 24.6.03 | 12.07 | 6.00 | |
| D.L. | 17.22 | 1.7.03 | 11.59 | 6.00 | |
| | | 10.7.03 | 11.59 | 6.00 | |
| | | 22.7.03 | 11.86 | 6.00 | |
| | | 30.7.03 | 11.77 | 6.00 | *This year's highest level. |
| | | 1.8.03 | 12.65 | 6.00 | |
| | | 8.8.03 | 11.59 | 6.00 | |
| | | 14.8.03 | 11.64 | 6.00 | |
| | | 21.8.03 | 11.83 | 6.00 | |
| | | 3.9.03 | 11.77 | 6.00 | |
| | | 9.9.03 | 11.59 | 6.00 | |
| | | 14.9.03 | 11.59 | 6.00 | |
| | | 19.9.03 | 11.59 | 6.00 | |
| | | 29.9.03 | 11.46 | 6.00 | |
| | | 8.10.03 | 11.49 | 6.00 | |
| | | 10.10.03 | **13.05*** | 6.00 | |

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Silabati | Gadghat | 20.6.03 | 2.92 | 6.00 | |
| Warning Level | | 25.6.03 | 5.91 | 6.00 | |
| E.D.L. | 9.60 | 27.6.03 | 5.27 | 6.00 | |
| D.L. | 9.00 | 7.7.03 | 5.53 | 6.00 | |
| | | 16.7.03 | 4.31 | 6.00 | |
| | | 17.7.03 | 4.02 | 6.00 | |
| | | 30.7.03 | 3.81 | 6.00 | *This year's highest level. |
| | | 3.8.03 | 6.75 | 6.00 | |
| | | 7.8.03 | 5.21 | 6.00 | |
| | | 18.8.03 | 4.57 | 6.00 | |
| | | 25.8.03 | 6.00 | 6.00 | |
| | | 2.9.03 | 4.87 | 6.00 | |
| | | 10.9.03 | 4.44 | 6.00 | |
| | | 11.9.03 | 4.56 | 6.00 | |
| | | 18.9.03 | 3.93 | 6.00 | |
| | | 29.9.03 | 4.69 | 6.00 | |
| | | 8.10.03 | 6.21 | 6.00 | |
| | | 11.10.03 | **8.03*** | 6.00 | |

# GAUGE LEVELS OF IMPORTANT RIVERS DURING FLOOD SEASON OF 2003

South Bengal Rivers

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Silabati | Banka | 20.6.03 | 12.26 | 6.00 | |
| Warning Level | | 9.7.03 | 11.59 | 6.00 | |
| E.D.L. | 15.68 | 16.7.03 | 12.35 | 6.00 | |
| D.L. | 15.08 | 17.7.03 | 12.11 | 6.00 | |
| | | 30.7.03 | 12.47 | 6.00 | |
| | | 1.8.03 | 14.94 | 6.00 | *Above D.L. & this year's highest level. |
| | | 13.8.03 | 12.35 | 6.00 | |
| | | 20.8.03 | 12.41 | 6.00 | |
| | | 25.8.03 | 13.11 | 6.00 | |
| | | 30.8.03 | 12.44 | 6.00 | |
| | | 10.9.03 | 12.47 | 6.00 | |
| | | 15.9.03 | 12.44 | 6.00 | |
| | | 18.9.03 | 12.02 | 6.00 | |
| | | 29.9.03 | 12.35 | 6.00 | |
| | | 8.10.03 | 14.58 | 6.00 | |
| | | 10.10.03 | **15.46*** | 6.00 | |
| | | 15.10.03 | 12.47 | 6.00 | |
| | | | | | |

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Kangsabati | Mohanpur | 11.6.03 | 22.44 | 6.00 | |
| Warning Level | | 17.6.03 | 23.02 | 6.00 | |
| E.D.L. | 25.72 | 21.6.03 | 24.24 | 6.00 | |
| D.L. | 24.72 | 27.6.03 | 23.68 | 6.00 | * Above D.L. |
| | | 3.7.03 | 23.81 | 6.00 | |
| | | 15.7.03 | 23.40 | 6.00 | ** Above D.L. & this year's highest level. |
| | | 23.7.03 | 24.16 | 6.00 | |
| | | 28.7.03 | 24.42 | 6.00 | |
| | | 2.8.03 | 24.70 | 6.00 | |
| | | 13.8.03 | 24.38 | 6.00 | |
| | | 17.8.03 | 24.50 | 6.00 | |
| | | 23.8.03 | 24.56 | 6.00 | |
| | | 3.9.03 | 23.92 | 6.00 | |
| | | 10.9.03 | **24.74*** | 6.00 | |
| | | 11.9.03 | 24.66 | 6.00 | |
| | | 18.9.03 | 24.48 | 6.00 | |
| | | 28.9.03 | **24.74*** | 6.00 | |
| | | 9.10.03 | **25.14**** | 6.00 | |

# GAUGE LEVELS OF IMPORTANT RIVERS DURING FLOOD SEASON OF 2003

South Bengal Rivers

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Kangsabati | Kalmijore | 11.7.03 | 7.04 | 6.00 | |
| Warning Level | | 18.7.03 | 5.76 | 6.00 | |
| E.D.L. | 9.90 | 28.7.03 | 5.64 | 6.00 | |
| D.L. | 9.30 | 3.8.03 | 6.55 | 6.00 | |
| | | 7.8.03 | 5.85 | 6.00 | |
| | | 18.8.03 | 5.91 | 6.00 | *This year's highest level. |
| | | 25.8.03 | 6.80 | 6.00 | |
| | | 29.8.03 | 6.00 | 6.00 | |
| | | 4.9.03 | 5.94 | 6.00 | |
| | | 11.9.03 | 6.28 | 6.00 | |
| | | 18.9.03 | 5.70 | 6.00 | |
| | | 8.10.03 | 7.38 | 6.00 | |
| | | 9.10.03 | **9.05*** | 6.00 | |
| | | 15.10.03 | 7.16 | 6.00 | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Kaliaghai | Amgachia | 15.6.03 | 3.65 | 6.00 | |
| Warning Level | | 25.6.03 | 4.84 | 6.00 | |
| E.D.L. | 6.40 | 27.6.03 | 4.75 | 6.00 | |
| D.L. | 5.79 | 5.703 | 5.18 | 6.00 | |
| | | 10.7.03 | 4.54 | 6.00 | * Above D.L. ** Above E.D.L. & this year's highest level. |
| | | 18.7.03 | 4.45 | 6.00 | |
| | | 30.7.03 | 4.99 | 6.00 | |
| | | 31.7.03 | 5.05 | 6.00 | |
| | | 7.8.03 | 4.72 | 6.00 | |
| | | 14.8.03 | 4.38 | 6.00 | |
| | | 27.8.03 | 4.96 | 6.00 | |
| | | 31.8.03 | 5.24 | 6.00 | |
| | | 4.9.03 | 4.87 | 6.00 | |
| | | 11.9.03 | 4.54 | 6.00 | |
| | | 18.9.03 | 4.35 | 6.00 | |
| | | 25.9.03 | 4.23 | 6.00 | |
| | | 8.10.03 | **6.24*** | 6.00 | |
| | | 9.10.03 | **7.37**** | 6.00 | |

# GAUGE LEVELS OF IMPORTANT RIVERS DURING FLOOD SEASON OF 2003.

**South Bengal Rivers**

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Jalangi | Swarupganj | 11.6.03 | 5.54 | 6.00 | |
| Warning Level | | 16.6.03 | 5.60 | 6.00 | |
| E.D.L. | 9.05 | 25.6.03 | 5.67 | 6.00 | |
| D.L. | 8.44 | 2.7.03 | 6.58 | 6.00 | |
| | | 3.7.03 | 6.56 | 6.00 | |
| | | 16.7.03 | 6.57 | 6.00 | *Above D.L. & this year's highest level. |
| | | 18.7.03 | 6.95 | 6.00 | |
| | | 30.7.03 | 6.87 | 6.00 | |
| | | 4.8.03 | 7.73 | 6.00 | |
| | | 7.8.03 | 7.36 | 6.00 | |
| | | 20.8.03 | 7.54 | 6.00 | |
| | | 24.8.03 | 8.14 | 6.00 | |
| | | 28.8.03 | 7.96 | 6.00 | |
| | | 4.9.03 | 7.48 | 6.00 | |
| | | 14.9.03 | 7.44 | 6.00 | |
| | | 18.9.03 | 7.40 | 6.00 | |
| | | 1.10.03 | 7.71 | 6.00 | |
| | | 14.10.03 | **8.87*** | 6.00 | |

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Churni | Hanskhali | 15.6.03 | 3.52 | 6.00 | |
| Warning Level | | 25.6.03 | 2.92 | 6.00 | |
| E.D.L. | 8.14 | 2.7.03 | 3.70 | 6.00 | |
| D.L. | 7.53 | 9.7.03 | 3.67 | 6.00 | |
| | | 16.7.03 | 4.60 | 6.00 | |
| | | 20.7.03 | 4.90 | 6.00 | |
| | | 27.7.03 | 4.94 | 6.00 | *This year's highest level. |
| | | 5.8.03 | 5.42 | 6.00 | |
| | | 7.8.03 | 5.32 | 6.00 | |
| | | 15.8.03 | 5.16 | 6.00 | |
| | | 27.8.03 | 5.79 | 6.00 | |
| | | 31.8.03 | 5.98 | 6.00 | |
| | | 4.9.03 | 5.68 | 6.00 | |
| | | 17.9.03 | 6.05 | 6.00 | |
| | | 22.9.03 | 6.31 | 6.00 | |
| | | 28.9.03 | 6.47 | 6.00 | |
| | | 8.10.03 | 6.57 | 6.00 | |
| | | 13.10.03 | **6.97*** | 6.00 | |

# GAUGE LEVELS OF IMPORTANT RIVERS DURING FLOOD SEASON OF 2003

**South Bengal Rivers**

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Bhagirathi | Jangipur | 15.6.03 | 18.40 | 6.00 | |
| Warning Level | | 23.6.03 | 18.37 | 6.00 | |
| E.D.L. | 20.88 | 29.6.03 | 18.51 | 6.00 | |
| D.L. | 20.27 | 3.7.03 | 18.37 | 6.00 | |
| | | 11.7.03 | 18.49 | 6.00 | *This year's highest level. |
| | | 17.7.03 | 18.49 | 6.00 | |
| | | 27.7.03 | 18.44 | 6.00 | |
| | | 3.8.03 | 18.55 | 6.00 | |
| | | 8.8.03 | 18.45 | 6.00 | |
| | | 19.8.03 | 18.87 | 6.00 | |
| | | 21.8.03 | 18.52 | 6.00 | |
| | | 2.9.03 | 18.46 | 6.00 | |
| | | 6.9.03 | 18.54 | 6.00 | |
| | | 14.9.03 | 18.49 | 6.00 | |
| | | 19.9.03 | 18.44 | 6.00 | |
| | | 1.10.03 | 18.54 | 6.00 | |
| | | 6.10.03 | 18.40 | 6.00 | |
| | | 11.10.03 | **18.90*** | 6.00 | |

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Bhagirathi | Berhampur | 15.6.03 | 14.89 | 6.00 | |
| Warning Level | | 23.6.03 | 14.86 | 6.00 | |
| E..D.L. | 17.83 | 30.6.03 | 15.04 | 6.00 | |
| D.L. | 17.22 | 6.7.03 | 15.01 | 6.00 | |
| | | 16.7.03 | 15.06 | 6.00 | |
| | | 17.7.03 | 15.06 | 6.00 | |
| | | 26.7.03 | 15.01 | 6.00 | *This year's highest level. |
| | | 3.8.03 | 15.12 | 6.00 | |
| | | 11.8.03 | 15.08 | 6.00 | |
| | | 19.8.03 | 15.10 | 6.00 | |
| | | 23.8.03 | 15.37 | 6.00 | |
| | | 31.8.03 | 15.15 | 6.00 | |
| | | 8.9.03 | 15.18 | 6.00 | |
| | | 15.9.03 | 15.16 | 6.00 | |
| | | 18.9.03 | 15.16 | 6.00 | |
| | | 1.10.03 | 15.22 | 6.00 | |
| | | 6.10.03 | 15.13 | 6.00 | |
| | | 13.10.03 | **15.69*** | 6.00 | |

# GAUGE LEVELS OF IMPORTANT RIVERS DURING FLOOD SEASON OF 2003

**South Bengal Rivers**

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Bhagirathi | Katwa | 18.6.03 | 9.72 | 6.00 | |
| Warning Level | | 24.6.03 | 10.00 | 6.00 | |
| E.D.L. | 14.32 | 30.6.03 | 10.90 | 6.00 | |
| D.L. | 13.71 | 3.7.03 | 10.78 | 6.00 | |
| | | 16.7.03 | 10.38 | 6.00 | |
| | | 17.7.03 | 10.65 | 6.00 | |
| | | 30.7.03 | 10.32 | 6.00 | * This year's highest level |
| | | 4.8.03 | 11.18 | 6.00 | |
| | | 7.8.03 | 10.60 | 6.00 | |
| | | 20.8.03 | 11.28 | 6.00 | |
| | | 22.8.03 | 11.83 | 6.00 | |
| | | 28.8.03 | 11.15 | 6.00 | |
| | | 5.9.03 | 10.63 | 6.00 | |
| | | 13.9.03 | 10.60 | 6.00 | |
| | | 18.9.03 | 10.45 | 6.00 | |
| | | 1.10.03 | 10.81 | 6.00 | |
| | | 5.10.03 | 11.00 | 6.00 | |
| | | 12.10.03 | **12.44*** | 6.00 | |

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Bhagirathi | Kalna | 18.6.03 | 3.72 | 6.00 | |
| Warning Level | | 25.6.03 | 3.745 | 6.00 | |
| E.D.L. | 8.24 | 2.7.03 | 4.60 | 6.00 | |
| D.L. | 7.63 | 3.7.03 | 4.59 | 6.00 | |
| | | 16.7.03 | 4.655 | 6.00 | |
| | | 17.7.03 | 4.735 | 6.00 | |
| | | 28.7.03 | 4.65 | 6.00 | *This year's highest level. |
| | | 4.8.03 | 5.73 | 6.00 | |
| | | 7.8.03 | 5.34 | 6.00 | |
| | | 20.8.03 | 5.425 | 6.00 | |
| | | 27.8.03 | 6.005 | 6.00 | |
| | | 29.8.03 | 6.02 | 6.00 | |
| | | 4.9.03 | 5.51 | 6.00 | |
| | | 14.9.03 | 5.51 | 6.00 | |
| | | 18.9.03 | 5.385 | 6.00 | |
| | | 29.9.03 | 5.825 | 6.00 | |
| | | 8.10.03 | 6.00 | 6.00 | |
| | | 13.10.03 | **6.83*** | 6.00 | |

# GAUGE LEVELS OF IMPORTANT RIVERS DURING FLOOD SEASON OF 2003

South Bengal Rivers

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Rupnarayan | Bander | 25.6.03 | 4.17 | 6.00 | |
| Warning Level | | 26.6.03 | 3.04 | 6.00 | |
| E.D.L. | 7.45 | 7.7.03 | 2.25 | 6.00 | |
| D.L. | 6.85 | 16.7.03 | 3.17 | 6.00 | |
| | | 17.7.03 | 3.17 | 6.00 | |
| | | 30.7.03 | 3.04 | 6.00 | *This year's highest level. |
| | | 3.8.03 | 5.24 | 6.00 | |
| | | 7.8.03 | 4.23 | 6.00 | |
| | | 18.8.03 | 3.71 | 6.00 | |
| | | 25.8.03 | 4.20 | 6.00 | |
| | | 2.9.03 | 3.90 | 6.00 | |
| | | 4.9.03 | 3.50 | 6.00 | |
| | | 11.9.03 | 3.93 | 6.00 | |
| | | 18.9.03 | 2.89 | 6.00 | |
| | | 1.10.03 | 3.87 | 6.00 | |
| | | 8.10.03 | 4.42 | 6.00 | |
| | | 12.10.03 | **6.69*** | 6.00 | |
| | | | | | |

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Rupnarayan | Gopiganj | 9.7.03 | 1.98 | 6.00 | |
| Warning Level | | 16.7.03 | 2.04 | 6.00 | |
| E.D.L. | 5.63 | 17.7.03 | 2.28 | 6.00 | |
| D.L. | 5.03 | 25.7.03 | 1.98 | 6.00 | |
| | | 5.8.03 | 3.11 | 6.00 | |
| | | 7.8.03 | 2.98 | 6.00 | *This year's highest level. |
| | | 18.8.03 | 2.47 | 6.00 | |
| | | 26.8.03 | 2.37 | 6.00 | |
| | | 3.9.03 | 2.82 | 6.00 | |
| | | 4.9.03 | 2.62 | 6.00 | |
| | | 13.9.03 | 2.28 | 6.00 | |
| | | 18.9.03 | 2.04 | 6.00 | |
| | | 9.10.03 | 3.68 | 6.00 | |
| | | 13.10.03 | **4.08*** | 6.00 | |
| | | 15.10.03 | 3.62 | 6.00 | |
| | | | | | |
| | | | | | |

# GAUGE LEVELS OF IMPORTANT RIVERS DURING FLOOD SEASON OF 2003

South Bengal Rivers

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Rupnarayan | Ranichak | 27.6.03 | 3.38 | 6.00 | |
| Warning Level | | 3.7.03 | 3.01 | 6.00 | |
| E.D.L. | 5.94 | 16.7.03 | 3.11 | 6.00 | |
| D.L. | 5.34 | 17.7.03 | 3.32 | 6.00 | |
| | | 30.7.03 | 2.92 | 6.00 | |
| | | 3.8.03 | 4.72 | 6.00 | |
| | | 7.8.03 | 4.08 | 6.00 | *This year's highest level & above D.L. |
| | | 18.8.03 | 3.56 | 6.00 | |
| | | 27.8.03 | 3.81 | 6.00 | |
| | | 3.9.03 | 3.81 | 6.00 | |
| | | 4.9.03 | 3.53 | 6.00 | |
| | | 14.9.03 | 3.41 | 6.00 | |
| | | 18.9.03 | 2.92 | 6.00 | |
| | | 8.10.03 | 3.78 | 6.00 | |
| | | 13.10.03 | **5.91*** | 6.00 | |
| | | 15.10.03 | 5.33 | 6.00 | |
| | | | | | |
| | | | | | |

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Subarnarekha | Sonakanai | 18.6.03 | 8.08 | 6.00 | |
| Warning Level | | 24.6.03 | 8.35 | 6.00 | |
| E.D.L. | 16.75 | 28.6.03 | 9.70 | 6.00 | |
| D.L. | 16.15 | 5.7.03 | 9.25 | 6.00 | |
| | | 16.7.03 | 9.05 | 6.00 | |
| | | 18.7.03 | 9.40 | 6.00 | |
| | | 30.7.03 | 10.80 | 6.00 | *This year's highest level. |
| | | 3.8.03 | 11.24 | 6.00 | |
| | | 7.8.03 | 10.12 | 6.00 | |
| | | 18.8.03 | 10.25 | 6.00 | |
| | | 24.8.03 | 10.51 | 6.00 | |
| | | 30.8.03 | 10.25 | 6.00 | |
| | | 10.9.03 | 11.40 | 6.00 | |
| | | 11.9.03 | 11.08 | 6.00 | |
| | | 18.9.03 | 10.02 | 6.00 | |
| | | 26.9.03 | 9.87 | 6.00 | |
| | | 8.10.03 | 12.00 | 6.00 | |
| | | 10.10.03 | **13.60*** | 6.00 | |

# GAUGE LEVELS OF IMPORTANT RIVERS DURING FLOOD SEASON OF 2003

**South Bengal Rivers**

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Ichamati | Bangaon | 18.6.03 | 1.72 | 6.00 | |
| Warning Level | | 20.6.03 | 1.81 | 6.00 | |
| E.D.L. | 7.675 | 2.7.03 | 2.00 | 6.00 | |
| D.L. | 5.075 | 3.7.03 | 2.90 | 6.00 | |
| | | 15.7.03 | 2.07 | 6.00 | |
| | | 17.7.03 | 2.07 | 6.00 | *This year's highest level. |
| | | 30.7.03 | 1.945 | 6.00 | |
| | | 4.8.03 | 2.19 | 6.00 | |
| | | 13.8.03 | 2.17 | 6.00 | |
| | | 14.8.03 | 2.21 | 6.00 | |
| | | 21.8.03 | 2.17 | 6.00 | |
| | | 3.9.03 | 2.55 | 6.00 | |
| | | 10.9.03 | 2.59 | 6.00 | |
| | | 17.9.03 | 2.73 | 6.00 | |
| | | 18.9.03 | 2.71 | 6.00 | |
| | | 1.10.03 | 3.00 | 6.00 | |
| | | 8.10.03 | 3.50 | 6.00 | |
| | | 13.10.03 | **4.05*** | 6.00 | |

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Jamuna | Gaighata | 15.6.03 | 1.93 | 6.00 | |
| Warning Level | | 24.6.03 | 2.33 | 6.00 | |
| E.D.L. | 4.50 | 2.7.03 | 3.11 | 6.00 | |
| D.L. | 3.90 | 3.7.03 | 3.13 | 6.00 | |
| | | 16.7.03 | 3.10 | 6.00 | |
| | | 17.7.03 | 3.03 | 6.00 | |
| | | 24.7.03 | 2.56 | 6.00 | *Above D.L. & this year's highest level. |
| | | 3.8.03 | 2.69 | 6.00 | |
| | | 12.8.03 | 2.61 | 6.00 | |
| | | 14.8.03 | 2.51 | 6.00 | |
| | | 27.8.03 | 2.52 | 6.00 | |
| | | 3.9.03 | 2.88 | 6.00 | |
| | | 5.9.03 | 2.94 | 6.00 | |
| | | 13.9.03 | 2.98 | 6.00 | |
| | | 18.9.03 | 2.78 | 6.00 | |
| | | 27.9.03 | 2.78 | 6.00 | |
| | | 8.10.03 | 3.70 | 6.00 | |
| | | 12.10.03 | **4.26*** | 6.00 | |

# GAUGE LEVELS OF IMPORTANT RIVERS DURING FLOOD SEASON OF 2003

**South Bengal Rivers**

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Jamuna | Gobardanga | 24.6.03 | 2.31 | 6.00 | |
| Warning Level | | 2.7.03 | 3.03 | 6.00 | |
| E.D.L. | 4.37 | 3.7.03 | 3.04 | 6.00 | |
| D.L. | 3.77 | 16.7.03 | 2.89 | 6.00 | |
| | | 17.7.03 | 2.85 | 6.00 | |
| | | 24.7.03 | 2.40 | 6.00 | *Above D.L. & this year's highest level. |
| | | 3.8.03 | 2.51 | 6.00 | |
| | | 12.8.03 | 2.43 | 6.00 | |
| | | 14.8.03 | 2.33 | 6.00 | |
| | | 27.8.03 | 2.34 | 6.00 | |
| | | 3.9.03 | 2.78 | 6.00 | |
| | | 5.9.03 | 2.83 | 6.00 | |
| | | 13.9.03 | 2.88 | 6.00 | |
| | | 18.9.03 | 2.68 | 6.00 | |
| | | 27.9.03 | 2.68 | 6.00 | |
| | | 8.10.03 | 3.57 | 6.00 | |
| | | 12.10.03 | **4.16*** | 6.00 | |
| | | | | | |

| River | Gauge at | Date | Level (in M) | Time (in hours) | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| | | | | | |
| Warning Level | | | | | |
| E.D.L. | | | | | |
| D.L. | | | | | |
| | | | | | |
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# STATEMENT OF RAINFALL DATA OF DIFFERENT RIVERS (SUB-BASIN WISE) WITHIN WEST BENGAL DURING MONSOON PERIOD OF 2003.

(As per available data)

| Sl. No. | Name of the River Sub-Basin including the name of gauge station | Rainfall upto 15.06.03 (mm) | Rainfall upto 15.10.03 (mm) | Rainfall during monsoon period (mm) | Sub-basin wise average rainfall during monsoon period (mm) | Yearly average rainfall (mm) | Sub-basin wise yearly average rainfall (mm) | Sub-basin wise monsoon rainfall in percentage of yearly average rainfall |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 1. | **SANKOSH** | | | | | | | |
| a) | Not yet installed | Rain Gauge to be installed | | | | | | |
| 2. | **KALJANI** | | | | | | | |
| a) | Alipurduar | 958.80 | 3692.60 | 2733.80 | 2733.80 | 3797.00 | 3797.00 | 72 |
| 3. | **RAIDAK** | | | | | | | |
| a) | Tufangunj | 1585.90 | 4761.60 | 3175.70 | 3175.70 | 3492.00 | 3492.00 | 91 |
| 4. | **TORSA** | | | | | | | |
| a) | Coochbehar | 1092.60 | 3408.30 | 2315.70 | 2680.25 | 3580.00 | 3543.00 | 76 |
| b) | Hasimara | 1084.50 | 4129.30 | 3044.80 | | **3505.00**** | | |
| 5. | **DIANA** | | | | | | | |
| a) | Banarhat | 897.75 | 3447.00 | 2549.25 | 2549.25 | **3590.00**** | 3590.00 | 71 |
| 6. | **JALDHAKA** | | | | | | | |
| a) | Mathabhanga | 727.00 | 2326.40 | 1599.40 | 1599.40 | 3120.00 | 3120.00 | 51 |
| 7. | **TEESTA** | | | | | | | |
| a) | Jalpaiguri | 962.60 | 3810.00 | 2847.40 | 2958.20 | 3290.00 | 3615.00 | 82 |
| b) | Malbazar | 929.80 | 3998.70 | 3068.90 | | 3940.00 | | |
| 8. | **MAHANANDA** | | | | | | | |
| a) | Siliguri | 741.10 | 3968.00 | 3226.90 | | 3620.00 | | |
| b) | Raigunj | 283.60 | 1046.47 | 762.87 | 1683.40 | 1577.00 | 2199.00 | 77 |
| c) | Malda | 234.00 | 1294.50 | 1060.50 | | 1400.00 | | |
| 9. | **PUNARBHAVA** | | | | | | | |
| a) | Gangarampur | 742.00 | 2139.00 | 1397.00 | 1397.00 | 1591.00 | 1591.00 | 88 |
| 10. | **ATRAI** | | | | | | | |
| a) | Balurghat | 293.00 | 1445.00 | 1152.00 | 1152.00 | 1430.00 | 1430.00 | 81 |
| 11. | **PAGLA-BANSLOI** | | | | | | | |
| a) | Paikar | 267.50 | 1064.25 | 796.75 | 796.75 | 1402.00 | 1402.00 | 57 |
| 12. | **BRAHMONI-DWARKA** | | | | | | | |
| a) | Rampurhat | 229.90 | 959.30 | 729.40 | 817.20 | 1437.00 | 1232.00 | 66 |
| b) | Nalhati | 329.80 | 1234.80 | 905.00 | | 1026.00 | | |
| 13. | **MAYURAKSHI** | | | | | | | |
| a) | Maharo | 161.80 | 1153.50 | 991.70 | | 1480.00 | | |
| b) | Massanjore | 302.20 | 1570.40 | 1268.20 | 1101.00 | 1460.00 | 1437.00 | 77 |
| c) | Tilpara Barrage | 299.70 | 1262.80 | 963.10 | | 1400.00 | | |
| d) | Kandi | 162.10 | 1343.00 | 1180.90 | | 1408.00 | | |

** average annual rainfall calculated on the basis of annual rainfall from 1987 to1995 for Banarhat & from 1996 to 2001 for Hasimara.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|
| 14. | **AJOY** | | | | | | | |
| a) | Sikatia | 217.20 | 1047.80 | 830.60 | 919.52 | 1377.00 | 1311.00 | 70 |
| b) | Bolepur | 225.00 | 1370.73 | 1145.73 | | 1220.00 | | |
| c) | Gheropara | 237.60 | 1137.40 | 899.80 | | 1282.00 | | |
| d) | Katwa | 289.12 | 1091.07 | 801.95 | | 1365.00 | | |
| 15. | **DAMODAR** | | | | | | | |
| a) | Tilaiya | 110.40 | 1042.30 | 931.90 | 954.19 | 1118.00 | 1311.00 | 73 |
| b) | Tenughat | 202.60 | 1200.00 | 997.40 | | 1321.00 | | |
| c) | Maithon | 227.60 | 1115.20 | 887.60 | | 1113.00 | | |
| d) | Panchet Dam | 187.20 | 972.20 | 785.00 | | 1146.00 | | |
| e) | Durgapur | 250.20 | 1146.50 | 896.30 | | 1210.00 | | |
| f) | Harinkhola | 333.30 | 1339.30 | 1006.00 | | 1444.00 | | |
| g) | Amta | 255.40 | 1313.70 | 1058.30 | | 1668.00 | | |
| h) | Champadanga | 289.00 | 1360.00 | 1071.00 | | 1468.00 | | |
| 16. | **DWARAKESWAR** | | | | | | | |
| a) | Simulia | 171.00 | 1122.80 | 951.80 | 878.78 | 1270.00 | 1357.00 | 65 |
| b) | Arambag | 238.50 | 1044.25 | 805.75 | | 1444.00 | | |
| 17. | **SILABATI** | | | | | | | |
| a) | Ghatal | 412.70 | 1743.00 | 1330.30 | 1330.00 | 1455.00 | 1455.00 | 91 |
| 18. | **KANGSABATI** | | | | | | | |
| a) | Tusuma | 189.20 | 1125.30 | 936.10 | 1126.00 | 1355.00 | 1432.00 | 79 |
| b) | Kangsabati Dam | 257.20 | 1157.80 | 900.60 | | 1300.00 | | |
| c) | Mohanpur | 337.20 | 1435.60 | 1098.40 | | 1556.00 | | |
| d) | Panskura | 75.00 | 1644.08 | 1569.08 | | 1516.00 | | |
| 19. | **KALIAGHAI** | | | | | | | |
| a) | Amgachia | 252.12 | 2014.77 | 1762.65 | 1762.65 | 1508.00 | 1508.00 | 117 |
| 20. | **JALANGI** | | | | | | | |
| a) | Swarupganj | 360.52 | 1407.20 | 1046.68 | 1046.68 | 1440.00 | 1440.00 | 73 |
| 21. | **CHURNI** | | | | | | | |
| a) | Ranaghat | Rain Gauge to be installed | | | | 1348.00 | 1348.00 | |
| 22. | **BHAGIRATHI-HOOGHLY** | | | | | | | |
| a) | Berhampore | 137.08 | 1300.80 | 1163.72 | 1205.86 | 1390.00 | 1500.00 | 80 |
| b) | Kolkata | 287.00 | 1535.00 | 1248.00 | | 1610.00 | | |
| 23. | **RUPNARAYAN** | | | | | | | |
| a) | Tamluk | 293.00 | 1922.00 | 1629.00 | 1629.00 | 1608.00 | 1608.00 | 101 |
| 24. | **SUBARNAREKHA** | | | | | | | |
| a) | Digha | 216.50 | 1678.75 | 1462.25 | 1462.25 | 1610.00 | 1610.00 | 91 |
| 25. | **24-PGS & KOLKATA** | | | | | | | |
| A) | Tentulia | 297.00 | 1742.00 | 1445.00 | 1256.25 | 1623.00 | 1566.00 | 80 |
| b) | Barasat | 284.75 | 1352.25 | 1067.50 | | 1508.00 | | |
| 26. | **PICHABONI** | | | | | | | |
| a) | Ramnagar | Rain Gauge to be installed | | | | 1641.00 | 1641.00 | |
| 27. | **RASULPUR** | | | | | | | |
| a) | Contai | 215.60 | 1689.00 | 1473.40 | 1473.40 | 1700.00 | 1700.00 | 87 |
| 28. | **HALDI** | | | | | | | |
| a) | Haldia | Rain Gauge to be installed | | | | 1737.00 | 1737.00 | |

## Statement of damages to Embankments/Structures in different districts of West Bengal during the Flood – 2003.

| Sl. No | Districts | River | Damaged Site/ Police Station/ Block | Nature & extent of damages | | | | | Inundatd Area (Sq.km.) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Breach No./km | Severely/ partially damaged (km) | Damages to protective works (km) | Slip/ Bank Erosion (km) | Sluice (No.) | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 1. | Darjeeling | Mechi | Left Bank, P.S.Khariabari, P.S.Naxalbari Bhaluka embnk., Dhulabri Road Bridge | - | - | Partial Damage | - | - | |
| | | Batania | Both Banks,P.S. Naxalbari | - | - | -Do- | - | - | |
| | | Chenga | Right Bank, P.S. Kharibari, P.S.Phansidewa, P.S. Naxalbari | - | - | -Do- | - | - | |
| | | Manjha | R/B, P.S. Kharibari.Naxalbari | - | - | -Do- | - | - | |
| | | Balason | Right Bank, P.S. Phansidewa,P.S.Matigara | - | - | -Do- | - | - | |
| | | Rakti | R/B.L/B, P.S. Matigara | - | - | -Do- | - | - | |
| | | Rohini | Left Bank, P.S. Matigara | - | - | -Do- | - | - | |
| | | Mahananda | Right Bank, P.S. Phansidewa, P.S.Matigara, P.S. Bhaktinagar | - | - | -Do- | - | - | |
| | | Sahu | Right Bank, P.S. Raiganj | - | - | -Do- | - | - | |
| | | Fuleswari | Both Banks, Bhaktinagar | - | - | -Do- | - | - | |
| | | Dumuria | Right Bank/Left Bank,.P.S. Kharibari | - | - | -Do- | - | - | |
| | | Pitchla | Right Bank, P.S. Phansidewa | - | - | -Do- | - | - | |
| | | Champta | Left Bank, P.S.Phansidewa, P.S. Matigara | - | - | -Do- | - | - | |
| | | Teesta | Right Bank, P.S. Matigara | - | - | -Do- | - | - | |
| | | Panchnai | Both banks,P.S. Matigara | - | - | -Do- | - | - | |

**Statement of damages to Embankments/Structures in different districts of West Bengal during the Flood – 2003.**

| Sl. No | Districts | River | Damaged Site/ Police Station/ Block | Nature & extent of damages | | | | | Inundatd Area (Sq.km.) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Breach No./km | Severely/ partially damaged (km) | Damages to protective works (km) | Slip/ Bank Erosion (km) | Sluice (No.) | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 2. | Jalpaiguri | | Alipurduar Town | - | - | Minor Damage | - | - | |
| | | Diana | Left Bank, Right Bank, Khakata Basti, Chengmari embankment, P.S.Banarhat | - | - | Partial Damage | - | - | |
| | | Koli | Right Bank, Sarugaon, Left Bank, Malsagaon, P.S. Falakata | - | - | -Do- | - | - | |
| | | Jaldhaka | Left Bank, Bamandanga, Kurshamari,P.S. Nagrakata | - | - | -Do- | - | - | |
| | | Garam | Left Bank,Dakshin Bhairaguri, Ghagra | - | - | -Do- | Erosion | - | 41 |
| | | Torsa | Dalsinghpara, Left Bank, P.S. Jaigaon Subhasini, Left Bank, Spur No.-I, Ichamari, Champaguri, Right Bank | - | - | -Do- | -Do- | - | |
| | | Kaljani | Left Bank,Pathapara,Right Bank, Nathuatary, Nakadola | - | - | - | -Do- | - | |
| | | Godadhar | Left Bank, Bindipra embankment | - | - | Damaged | - | - | |
| | | Pagli | Left Bank | - | - | Damaged | - | - | |
| | | Sukriti | Right Bank, P.S. Banarhat | - | - | Damaged | - | - | |
| | | Sankosh | Right Bank, Jaraguri,P.S. Kumargram | - | - | Damaged | - | - | |
| | | Teesta | Spur No.-4, Right Bank at Rangdhamali | - | - | Severe Damage | - | - | |

Annexure-VI
Sheet 3/5.

## Statement of damages to Embankments/Structures in different districts of West Bengal during the Flood – 2003.

| Sl. No | Districts | River | Damaged Site/ Police Station/ Block | Nature & extent of damages | | | | | Inundatd Area (Sq.km.) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Breach No./km | Severely/ partially damaged (km) | Damages to protective works (km) | Slip/ Bank Erosion (km) | Sluice (No.) | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 3. | Coochbehar | Mansai | R/B, Adahari, Kodaldhawa | - | - | Partial Damage | - | - | |
| | | Dudna | East Fulbari, Right Bank, Singimari (L/B) | - | - | -Do- | - | - | |
| | | Jaldhaka | Rangapani,L/B,R/B, B.P.Work,Balasi Spur No.-I, Fulbari, Spur No.-6, Extension Kheti, Singijani, Daibhangi, Tinkoia | - | - | -Do- | - | - | 400 |
| | | Sutunga | Both Banks, Khaterbari | - | - | -Do- | - | - | |
| | | Kaljani - | Right Bank/ Left Bank,Balabhat, Guasvita, Chilakhana, Guriarpur Spur No.-I, P.S. Baxirkuthi | - | - | -Do- | Bank Erosion | - | |
| | | Torsa | Right Bank/Left Bank,Bhajanerpar, Panisala, Lakabar, P.S. Kotwali | - | - | -Do- | Bank Erosion | - | |
| | | Gudadhar | Right Bank, Krishnapur, Deodharai | - | - | -Do- | -Do- | - | |
| | | Raidak-II | Right Bank, Mahiskuchi, Ghanapara | - | - | -Do- | Bank Erosion | - | |
| | | Raidak-I | Left Bank, Langalgram Begarkhata, Dhalpal, Shikdarkhata | - | - | -Do- | Bank Erosion | - | |
| | | Dharala | Right Bank, Panaguri | - | - | -Do- | - | - | |
| | | Siltorsa | Singimari, Putimari, Left Bank | - | - | -Do- | - | - | |
| 4. | Malda | Ganga | Left Bank,Panchanandapur, Sakurullapur, P.S. Kaliachak Khaskol, P.S. Englishbazar, Manikchakghat, Bhatni<br>P.S. Manikchak, Ganga Bhawan, Panchanandapur, P.S. Kaliachak | -<br>- | -<br>- | -<br>- | Severe Erosion<br>(5.45 km) Fully engulfed | - | |
| | | Fulahar | Sankoritola ghat Left Bank, P.S. Manikchak | - | - | Badly damaged | -Do- | - | |

REMARK
TOTAL ERODED AREA 184.30 HA
INFORMATION FROM E/E MALDA IRRIGATION DIV^N MALD.
MEMO NO - 2861/2
MALDA 17-12/12/2003

## Statement of damages to Embankments/Structures in different districts of West Bengal during the Flood – 2003.

| Sl. No. | Districts | River | Damaged Site/ Police Station/Block | Nature & extent of damages | | | | | Inundatd Area (Sq.km.) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Breach No./km | Severely/ partially damaged (km) | Damages to protective works (km) | Slip/ Bank Erosion (km) | Sluice (No.) | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 5. | Uttar Dinajpur | Kullick | P.S. Raiganj, Both Banks | - | - | - | Erosion | - | |
| | | Nagar | P.S. Raiganj, Both Banks | - | - | - | -Do- | - | |
| | | Sui | P.S. Itahar, Both Banks | - | - | - | -Do- | - | |
| | | Mahananda | Both Banks, Itahar | - | - | - | -Do- | - | |
| | | Dauk | P.S. Chakulia, Both Banks | - | - | Partial Damage | - | - | |
| 6. | Murshidabad | Bhagirathi | Left Bank, Majhyampur, P.S. Beldanga | - | - | Partial Damage | Bank Erosion | - | |
| | | Ganga-Padma | Right Bank, Alipur P.S. Bhagawangola | - | - | Badly damaged (0.05 km) | Bank Erosion (0.06 km) | - | |
| | | Falgu & Bhagirathi Confluence | P.S. Kanupur, Raghunathganj | - | - | - | Bank Erosion (0.2 km) | - | 60 |
| 7. | South Dinajpur | Atrai | Right Bank.P.S. Chak-Mayanamari, Balurghat | - | - | - | Erosion | - | |
| 8. | Nadia | Hooghly | Baira, Left Bank Tarapur, Tarinipur, P.S. Santipur, Kalyani, Ranaghat | - | - | - | Bank Erosion | - | |
| | | Bhagirathi | Prachin Maypur, P.S. Nabadwip | - | - | - | -Do- | - | |
| | | Jalangi | Ghosuri danga,P.S. Kaliganj | - | - | - | -Do- | - | |
| | | Churni | P.S. Hanskhali Left Bank | - | - | 0.18 km damaged | -Do- | - | |
| | | Padma | Kacharipara Basumari, P.S. Karimpur, Suti, Right Bank, Ghospara,P.S. Samserganj, Geria,Labanchua, Sayedpur | - | - | - | -Do- | - | |

**Statement of damages to Embankments/Structures in different districts of West Bengal during the Flood – 2003.**

| Sl. No | Districts | River | Damaged Site/ Police Station/ Block | Nature & extent of damages | | | | | Inundatd Area (Sq.km.) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Breach No./km | Severely/ partially damaged (km) | Damages to protective works (km) | Slip/ Bank Erosion (km) | Sluice (No.) | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 9. | South 24-Parganas | Muriganga | Sundarban Embankment P.S. Sagar | - | - | Severe Damage | - | - | |
| | | - | Pathar Pratima, Patibonia, Kusumtola, Kakdwip | - | - | Partial Damage | - | - | |
| | | Matla, Herobhanga, Kartal, Hogal, Bidya, Hana & Banibalia | Embankment | - | - | Partial Damage | - | - | |
| 10. | Midnapore | - | Sea Wall, Digha | - | - | Partial Damage | - | - | |

# STATEMENT OF DISTRICT-WISE INUNDATED AREA IN THE YEAR 2003 DUE TO FLOOD

| Sl.No. | Name of District | Geographical Area (Sq.km.) | Area in un-dated in (Sq.km.) | Percentage | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| 1. | Bankura | 6881.00 | Nil | - | - |
| 2. | Birbhum | 4545.00 | Nil | - | - |
| 3. | Burdwan | 7024.43 | Nil | - | - |
| 4. | Hooghly | 3149.00 | Nil | - | - |
| 5. | Howrah | 1466.62 | Nil | - | - |
| 6. | Midnapore | 14081.00 | Nil | - | - |
| 7. | Murshidabad | 5324.00 | 60 | 1% | - |
| 8. | Nadia | 3927.45 | Nil | - | - |
| 9. | North 24-Parganas | 4094.00 | Nil | - | - |
| 10. | South 24-Parganas | 9960.00 | Nil | - | - |
| 11. | Purulia | 6258.72 | Nil | - | - |
| 12. | Coochbehar | 3387.00 | 400 | 12% | - |
| 13. | Darjeeling | 3149.00 | Nil | - | - |
| 14. | Jalpaiguri | 6227.00 | 41 | 1% | - |
| 15. | Maldah | 3732.00 | Nil | - | - |
| 16. | North Dinajpur | 3139.80 | Nil | - | - |
| 17. | South Dinajpur | 2218.65 | Nil | - | - |
| 18. | Calcutta | 187.33 | Nil | - | - |
| | **Total** | **88.752.00** | **501** | | |

# IMPORTANT GAUGE LEVEL OF RIVERS DURING FLOOD SEASON OF 2001

L.R.P. CROSSING
RIVER. RAIDAK-II

HILL CART ROAD
RIVER. MAHANANDA

PAJOL
RIVER SUI.

MAKDAMPUR
RIVER NAGORE

TELJANA (C.S.)
RIVER FULHAR

ALIPURDUAR
RIVER. KALJANI.

MATHABHANGA
RIVER. MANSAI

DANGRAGHAT
RIVER. MAHANANDA.

BANSHIHARI
RIVER. TANGON.

TELJANA (U/S)
RIVER FULHAR

HASIMARA
RIVER. TORSA

CHENGMARI
RIVER. DIANA

JHAWA
RIVER MAHANANDA

RADHIKPUR
RIVER. TANGON.

ITAHAR
RIVER. GAMARI.

DOMOHANI
RIVER. TEESTA

CORONATION BRIDGE
RIVER. TEESTA

N.H. 31 CROSSING
RIVER. JALDHAKA

SONAPURGHAT
RIVER. MAHANANDA

RADHIKPUR
RIVER. TANGON.

CHOPRA
RIVER. DAKU.

BALURGHAT
RIVER. ATRAI.

L.R.P. CROSSING
RIVER. SANKOSH.

L.R.P. CROSSING
RIVER. RAIDAK-I

ENGLISH BAZAR
RIVER. MAHANANDA

KATCHUA
RIVER SUI.

RLY. BRIDGE
RIVER. KULLICK

GANGARAMPUR
RIVER. PUNARBHABA.

(ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED)

DRAWN BY:- SAMIR DUTTA CHOWDHURY (DRAUGHTSMAN)
C.E.'S DRG. OFFICE SALT LAKE

A. BHATTACHARJIA (EXECUTIVE ENGINEER)
C.E.'S DRG. OFFICE SALT LAKE

# GAUGE LEVELS OF IMPORTANT RIVERS DURING FLOOD SEASON OF 2003

SCALE:- VER. 1 CM. = 0.1 M. HOR. 1 CM. = 10 DAYS

ALL DIMENTION ARE IN M.

KOLMIJORE
RIVER:- KANGSABATI

JANGIPUR
RIVER:- BHAGIRATHI

BERHAMPUR
RIVER:- BHAGIRATHI

GAIGHATA
RIVER:- JAMUNA

GOBARDANGA
RIVER:- JAMUNA

BANGAON
RIVER:- ICHAMATI

NARATANPUR
RIVER:- MAYURAKSHI

BUDRA
RIVER:- AJOY

AMTA
RIVER:- DAMODAR

GADGHAT
RIVER:- SILABATI

SWARUPGANJ
RIVER:- JALANGI

BANDAR
RIVER:- RUPNARAYAN

SONAKONIA
RIVER:- SUBARNAREKHA

SANKOGHAT
RIVER:- DWARAKA

GHERUPARA
RIVER:- AJOY

JAMALPUR
RIVER:- DAMODAR

ARAMBAG
RIVER:- DWARAKESWAR

AMGACHIA
RIVER:- KALIAGHAI

KALNA
RIVER:- BHAGIRATHI

RANICHAK
RIVER:- RUPNARAYAN

ADB ROAD BRIDGE
RIVER:- BRAHMONI

KATWA
RIVER:- AJOY

EDILPUR
RIVER:- DAMODAR

HARINKHOLA
RIVER:- MUNDESWARI

MOHANPUR
RIVER:- KANGSABATI

KATWA
RIVER:- BHAGIRATHI

GORIGANJ
RIVER:- RUPNARAYAN

BANSLOI
RIVER:- PAGLA

SIKATIA
RIVER:- AJOY

RONDIA
RIVER:- DAMODAR

CHAMPADANGA
RIVER:- DAMODAR

BANKA
RIVER:- SILABATI

HANSKHALI
RIVER:- CHURNI

DRAWN BY:-
BISWAJIT CHATTERJEE
(DRAUGHTSMAN)
C.E.S DRG. OFFICE,
SALT LAKE.
DATE:- 18-12-2003

P.L. BANERJEE
(EXECUTIVE ENGINEER)
C.E.S DRG. OFFICE
SALT LAKE.

# IMPORTANT GAUGE LEVEL OF RIVERS DURING FLOOD SEASON OF 2003

(ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED)

SCALE :- VERTICAL 1CM = 1M.

DRAWN BY: Adhoodhury
SAMIR DUTTA CHOWDHURY
(DRAUGHTSMAN)
C.E.'S DRG. OFFICE
SALT LAKE.
DATE: 12.12.2003.

(P. L. BANDYOPADHYAY)
(EXECUTIVE ENGINEER)
C.E.'S DRG. OFFICE
SALT LAKE.