



**Government of India
Ministry of Water Resources
Ganga Flood Control Commission**

ANNUAL REPORT 2013-14



Patna

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From Chairman's Desk



The Ganga River basin covers the eleven States of India comprising Bihar, Jharkhand, Uttar Pradesh, Uttarakhand, West Bengal, Haryana, Rajasthan, Madhya Pradesh, Chhattisgarh, Himachal Pradesh, and Delhi. The occurrence of floods in one part or the other in Ganga River basin is an annual feature during the monsoon period. Since the Ganga is an inter-state river, it is necessary to prepare integrated flood management plans to tackle the flood and related problems of the basin and to ensure their implementation in a co-ordinated manner.

Ganga Flood Control Commission was created in 1972 as a subordinate office of Ministry of Water Resources. Since its inception, GFCC has played a vital role in assisting the Ganga basin States to manage the floods. As a part of its mandate, it has prepared comprehensive plans for flood management of all the 23 river systems of the Ganga basin and these have been sent to the State Governments for taking follow up action on the recommendations made in these plans. It has also prepared the reports for adequacy of waterways under road & rail bridges for all the 23 river systems except for main Ganga for the Buxor to Haridwar and Haridwar to Gangotri reaches and Tidal rivers. These are under preparation.

GFCC has carried out its assigned functions as described in detail in this report in an efficient and effective manner during the year 2013-14 inspite of many constraints especially shortage of technical officers with requisite qualification and experience. Particular mention is to be made about the proactive role played by the GFCC in the implementation of the scheme of Flood Management Programme in the Ganga basin, a scheme of national importance initiated by the Government of India during the 11th Five Year Plan and continuing in 12th Plan. The scheme has made good progress and a financial assistance to the tune of Rs. 292.46 crore has been provided to the Ganga basin States during the year 2013-14.

GFCC officers have also played important role in tackling international issues with the Government of Nepal and Bangladesh in matters relating to flood and drainage management. The implementation of schemes on extension of the embankment on the international rivers of Lalbakeya, Bagmati and Kamla in Nepal has achieved good progress.

It gives me great pleasure to present the Annual Report of GFCC for the year 2013-14 and I am sure that this report will give a comprehensive overview of the role of GFCC and its contribution in the field of flood management and other associated works in the Ganga basin during the year.



(A. K. Jain)
Chairman

Ganga Flood Control Commission

Highlights of the Year 2013-14

1. Techno-economic appraisal of 49 Flood Management schemes of various Ganga Basin States was carried, out of which 25 schemes were techno-economically cleared by GFCC/TAC-MoWR, whereas 24 schemes were examined and comments/observations were conveyed to the concerned State Governments.
2. Monitoring of 21 Flood Management/Anti Erosion Schemes under FMP pertaining to Bihar, Jharkhand, Uttarakhand, Himachal Pradesh, Uttar Pradesh and West Bengal was carried out and Central Assistance recommended.
3. GFCC monitors the progress of construction of embankments on Kamla, Bagmati and Lalbakeya rivers in Nepal being funded by Government of India. For this purpose, one meeting of India-Nepal Joint Committee on Inundation and Flood Management (JCIFM) was held at Kathmandu, Nepal in February 2014.
4. Monitoring of Schemes for bank protection on common/borders rivers with Bangladesh in West Bengal implemented with funding under the Plan Scheme – “River Management Activities and Works related to Border Areas” was carried out.
5. Recommendations for taking up flood management works on river Kosi and right bank of river Gandak before the flood of 2014 were made by Kosi High Level Committee (KHLC) and Gandak High Level Standing Committee (GHLSC) respectively after inspection of sites. Both these Committee are chaired by Chairman, GFCC.
6. Updating of two Comprehensive Plans for Flood Management viz. Kosi and Rupnarain-Haldi-Rasulpur river system was taken up.
7. The 45th meeting of the Ganga Flood Control commission was held on 21st March, 2014 at New Delhi in which various issues related to floods and its management in Ganga basin States were discussed and various decisions were taken for follow up action.
8. Ministry of Water Resources entrusted Chairman, GFCC to initiate the process of negotiation on the request of Govt. of Bihar for constitution of a Tribunal for adjudication of Sone River Water dispute among the co-basin States in accordance with Section-4 of the Inter-State River Water Dispute Act, 1956.

1 Introduction

1.1 Ganga River Basin

Two holy rivers originating from the glacial peaks of the Himalayas at an altitude of about 7000 meter, the Alaknanda and the Bhagirathi unite near Devprayag and form river Ganga which traverses its course of 2525 Km (1450 Km in Uttarakhand and Uttar Pradesh, 110 Km along Uttar Pradesh-Bihar border, 445 km in Bihar and Jharkhand and 520 km in West Bengal) before its outfall into the Bay of Bengal. The important tributaries which join the Ganga in its course are the Ramganga, Gomati, Ghaghra, Gandak, Burhi Gandak, Kosi, Kamla, Bagmati and Mahananda on the left and Yamuna, Tons, Sone, Kiul, Ajoy, Damodar, Punpun and Rupnarayan on the right. The Ganga river drains a total catchment area of 10.68 lakh Sq. Km, out of which 8.61 lakh Sq. Km lies in India. All the major left bank rivers draining into the Ganga are of the Himalayan origin. On the other hand, out of the major right bank rivers only the Yamuna is of Himalayan origin whereas the rest of the major right bank rivers originate either from the Vindhya or the plateau between the Ganga and the Vindhya.

Ganga basin is spread over 11 States namely, (i)Uttarakhand, (ii)Himachal Pradesh,(iii)Haryana, (iv)Delhi, (v)Uttar Pradesh, (vi)Rajasthan, (vii)Madhya Pradesh, (viii)Chhattisgarh, (ix) Bihar, (x)Jharkhand and (xi)West Bengal.

The Ganga basin has been divided into 23 river systems. The river systems of the basin are (i) Gomati, (ii) Adhwara Group, (iii) Ghaghra, (iv) Mahananda, (v) Kamla Balan, (vi) Burhi Gandak, (vii) Bagmati, (viii) Punpun, (ix) Kosi, (x) Gandak, (xi) Ajoy, (xii) Kiul-Harohar, (xiii) Damodar, (xiv) Mayurakshi, (xv) Yamuna, (xvi) Ramganga, (xvii) Tons, (xviii) Badhua-Chandan, (xix) Rupnarain-Haldi-Rasulpur, (xx) Jalangi, (xxi) Sone, (xxii) Tidal rivers and (xxiii) Main Ganga Stem. Most of these rivers are inter-state though a few are within one state.

1.2 Flood Problem in Ganga Basin

Among the various Ganga basin States, the State of Bihar (particularly its northern part), Uttar Pradesh (particularly its eastern part) and West Bengal are the worst flood affected. During the floods of 2013, the State of Uttarakhand, a hilly State and not generally affected by floods due to its topography, got very badly affected by floods and resulted in landslides, erosion of banks etc. The flood problems in the other Ganga basin States are not so severe. The main reasons of flood in the Ganga basin are as under:

- (i) Heavy precipitation for long duration in the catchment.
- (ii) Impediment of flow in tributaries and catchment drains by the river Ganga due to its high stage in monsoon season.
- (iii) Bank erosion by the river during the monsoon season.

- (iv) Meandering of river causing loss of land, property and life.
- (v) Inadequate bank full capacity.
- (vi) Poor maintenance of flood control structures resulting in their damage during the monsoon period.
- (vii) Inundation of villages situated within the flood plains of the rivers.

As regards erosion problems, longitudinal bed slopes of the river Ganga and its tributaries are steep in the upper reaches, become flatter in middle reaches and are almost level in the lower reaches. The upper courses are noted predominantly for deep erosion i.e., bed retrogression. The scoured material is carried downstream by the flow and the middle courses have evidence of both erosion and aggradation. The lower reaches where the bed slope is flatter and velocities are low, accumulation process i.e., sedimentation and accretion of the river bed is predominant. At the same time due to meandering, erosion and sedimentation take place simultaneously.

As per XII Plan Working Group Report, total flood affected area in the country as a whole is about 50 million Ha, out of which 24 million Ha lies in Ganga Basin States i.e nearly 50% of flood affected area in the country lies in Ganga Basin States.

A total area of 24.00 million hectares (about 50% of total flood prone area in the country) is prone to floods in these States and recurring floods cause huge loss to life and property every year.

The State-wise details of flood prone area in the Ganga basin are given below:

Table 1.1

| Sl. No. | State | Flood Prone Area (in Lakh Ha.) | |
|---------|--|--------------------------------|--|
| | | As assessed by RBA | As reported by States to 12 th Plan Working Group |
| 1 | Himachal Pradesh | 2.30 | 2.31 |
| 2 | Haryana | 23.50 | 23.50 |
| 3 | NCT of Delhi | 0.50 | 0.70 |
| 4 | Uttar Pradesh (including Uttarakhand) | 73.36 | 73.40 |
| 5 | Rajasthan | 32.60 | 32.60 |
| 6 | Madhya Pradesh (including Chhattisgarh) | 2.60 | 3.37 |
| 7 | Bihar (including Jharkhand) | 42.60 | 68.80 |
| 8 | West Bengal | 26.50 | 37.66 |
| | Total : | 203.96 | 242.34 |

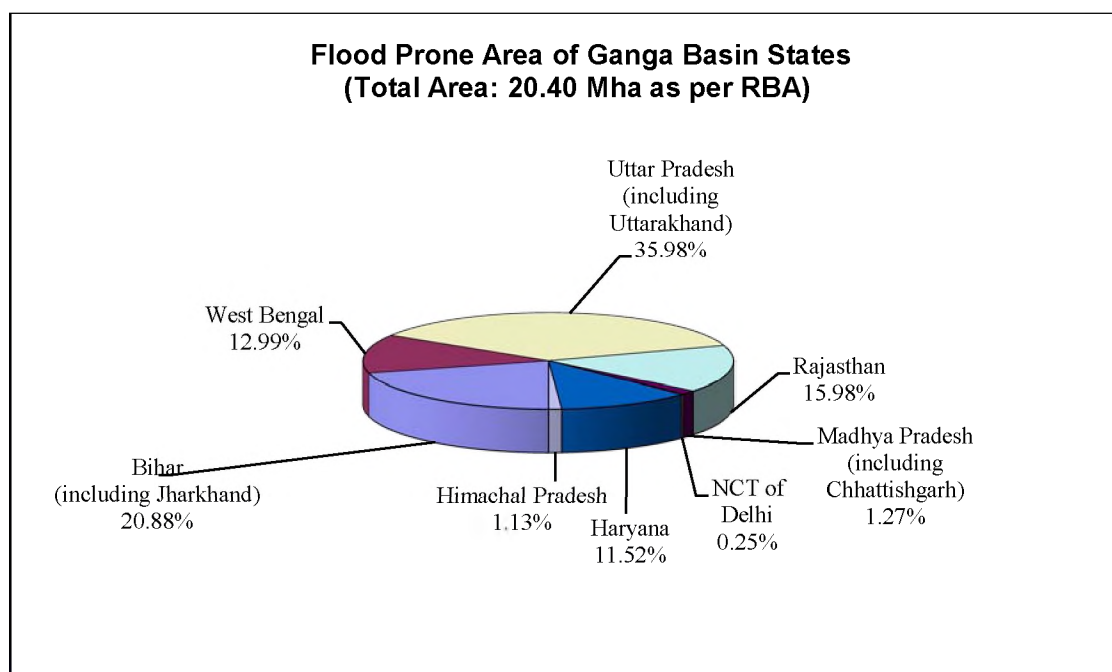


Figure-1.1

1.2 Ganga Flood Control Board

With the objective to effectively tackle the critical and chronic flood problems of the Ganga basin and to minimize the associated damages, it was considered necessary to have an integrated plan of flood management, erosion control etc. and facilitate quick drainage and its implementation in a comprehensive and coordinated manner. To achieve this objective, Ganga Flood Control Board (GFCB) was set up by the Government of India vide Resolution No. FC-47(2)/72 dated 18.4.1972, headed by the Hon'ble Union Minister of Water Resources.

Functions:

- To lay down the broad policies and decide priorities in the implementation of various schemes.
- To issue necessary directions to Ganga Flood Control Commission in respect of formulation of a comprehensive plan of flood control in the Ganga Basin and approval of the schemes so formulated.

1.2.1 Composition of Ganga Flood Control Board

The composition of Ganga Flood Control Board as notified by the Ministry of Water Resources vide Resolution no.22/3/99-ER/2586 dated 28.06.2001 is given below

- | | | |
|----|---|----------|
| 1. | Union Minister of Water Resources | Chairman |
| 2. | Union Minister of State for Water Resources | Member # |

| | | |
|-----|---|------------------|
| 3. | Union Minister of Finance or his representative | Member |
| 4. | Union Minister of Railways or his representative | Member |
| 5. | Union Minister of Road Transport and Highways or his representative | Member |
| 6. | Union Minister of Agriculture or his representative | Member |
| 7. | Chief Minister of Bihar or his representative | Member |
| 8. | Chief Minister of West Bengal or his representative | Member |
| 9. | Chief Minister of Uttar Pradesh or his representative | Member |
| 10. | Chief Minister of Haryana or his representative | Member |
| 11. | Chief Minister of Rajasthan or his representative | Member |
| 12. | Chief Minister of Madhya Pradesh or his representative | Member |
| 13. | Chief Minister of Himachal Pradesh or his representative | Member |
| 14. | Chief Minister of Jharkhand or his representative | Member |
| 15. | Chief Minister of Uttarakhand or his representative | Member |
| 16. | Chief Minister of Chhattisgarh or his representative | Member |
| 17. | Member, Planning Commission | Member |
| 18. | Chief Minister, NCT of Delhi or his representative | Member |
| 19. | Chairman, Ganga Flood Control Commission | Member-Secretary |

(Chairman in absence of Union Minister of Water Resources)

Up to March, 2013, 16 meetings of the Ganga Flood Control Board have been held. The 16th meeting of GFCB was held on 16.01.2013 at New Delhi in which various issues relating to floods and its management in Ganga basin States were discussed and necessary decisions were taken for implementation.

1.3 Ganga Flood Control Commission (GFCC)

To deal with floods and its management in the Ganga basin States, Ganga Flood Control Commission was created in the year 1972 vide Government of India Resolution No. F.C.47(3)/72 dated 18.4.1972 as a subordinate office of Ministry of Water Resources and as the Secretariat and executive limb of Ganga Flood Control Board with its headquarters at Patna.

1.3.1 Composition of Ganga Flood Control Commission

The composition of Ganga Flood Control Commission (GFCC) is given below:

Chairman, GFCC

Chairman

Full Time Members

1. Member (Planning), GFCC Member
2. Member (Co-ordination), GFCC Member

Part Time Members

1. Member (River Management), Central Water Commission, Government of India, New Delhi Member
2. Chief Engineer, Incharge of Flood Control, Water Resources Department, Government of Bihar. Member
3. Chief Engineer, Incharge of Flood Control, Water Resources Department, Government of Jharkhand. Member
4. Chief Engineer, Incharge of Flood Control, Irrigation Department, Government of Uttar Pradesh. Member
5. Chief Engineer, Incharge of Flood Control, Irrigation Department, Government of Uttarakhand Member
6. Chief Engineer, Incharge of Flood Control, Irrigation and Waterways Department, Government of West Bengal. Member
7. Engineer-in-Chief, Water Resources Department, Government of Madhya Pradesh. Member
8. Engineer-in-Chief, Water Resources Department, Government of Chhattisgarh. Member
9. Director, Central Water and Power Research Station, Government of India, Pune. Member
10. Chief Engineer (Lower Ganga Basin), Central Water Commission, Government of India, Patna Member
11. Chief Engineer (Planning), Roads Wing, Ministry of Road Transport and Highways, Government of India. Member
12. Director (Civil Engineering Wing), Railway Board, Government of India. Member

Permanent Invitees of the Commission

1. Chief Engineer, Incharge of Flood Control, Government of Haryana.
2. Chief Engineer, Incharge of Flood Control, Government of Himachal Pradesh.
3. Chief Engineer, Incharge of Flood Control, Government of Rajasthan.
4. Chief Engineer, Incharge of Flood Control, Government of NCT of Delhi.
5. Director (B&S), R.D.S.O., Ministry of Railways, Lucknow.

1.3.2 Functions of GFCC

The main functions of GFCC as originally envisaged are as under.

- (a) Preparation of comprehensive plan for flood control in the Ganga Basin.
- (b) To chalk out a phased and coordinated programme of implementation of the works included in the basin wise flood control plans by the States concerned.
- (c) Formulate and ensure proper standards for works and their regular maintenance.

In due course of time, some additional works were entrusted to GFCC by Ministry of Water Resources and today its broad functions are as under:

- (a) To prepare and update a Comprehensive Plan of flood management in the Ganga basin comprising 23 river sub-basins. The field investigation and collection of data for the purpose are carried out by the concerned State Governments as directed by the Ganga Flood Control Board.
- (b) To draw out a phased and co-ordinated programme of implementation of works included in the sub-basin wise comprehensive flood management plans.
- (c) To advise the States concerned to follow guidelines in respect of quality control, material specifications and maintenance in order to ensure the implementation of works and the maintenance thereof to proper standards.
- (d) To prepare the annual programme of works and recommend allocation of funds, wherever required for consideration of the Board.
- (e) To make an assessment of the existing waterways under the road and rail bridges and to determine additional waterways to be provided for reducing the drainage congestion to reasonable limits and their periodic updation.
- (f) To monitor the execution of the important flood control schemes particularly those receiving central assistance or being executed under the central sector.
- (g) To examine all major and medium flood control, drainage, anti-waterlogging and anti-erosion schemes of Ganga basin States except for schemes of the States of Haryana, Uttar Pradesh and Delhi on the river Yamuna in the reach from Tajewala to Okhla barrage.
- (h) Processing the proposals received from Ganga Basin States for central funding under Flood Management Programme and monitoring of such schemes.

- (i) Documentation and dissemination of findings emerging out of special studies or investigations conducted in participation with scientific organisations for appropriate use by basin States.
- (j) To evaluate the performance of major flood control measures executed by the States including all the inter-State flood control schemes.
- (k) To participate in various National and International Committees set up by the Government of India and the Ganga basin States pertaining to the subject of flood management.

GFCC apart from being engaged in the preparation and periodic updation of comprehensive master plans for flood management in the Ganga basin is also responsible for carrying out techno-economic appraisal of flood management and anti-erosion schemes in the Ganga basin. It has also been given the task of coordinating several activities concerning flood management with Nepal and Bangladesh.

1.3.3 Annual Meetings of Ganga Flood Control Commission

A total of 45 meetings of the GFCC have been held so far and its 45th meeting was held on 21.03.2014 at New Delhi under the Chairmanship of Chairman, GFCC. In the meetings, various issues pertaining to the Ganga Basin such as floods management and anti-erosion works, progress made in implementation of recommendations of Rashtriya Barh Ayog, preparation of flood plain zoning/flood risk maps, implementation of sub-basin wise comprehensive plans for flood control, monitoring and evaluation of flood management schemes, use of remote sensing techniques/satellite imageries for delineation of flood plain areas, use of model studies before formulation and execution of flood management and anti-erosion schemes, preparation of annual catalogue of flood management schemes etc. were discussed and decisions taken thereon for follow up action by the Ganga basin States / Central organisations concerned.

1.3.4 Organisational Structure of GFCC

Ganga Flood Control Commission has sanctioned strength of 101 officers and supporting staff. Out of the total sanctioned strength of 101, 69 posts were allowed to be continued during the year 2013-14 as other posts had gone into deemed abolished category and their revival is required. The filled staff strength of GFCC as on 31.3.2014 is 55. The category-wise details of the posts are given below.

Table 1.2

| S. No. | Group | Sanctioned | Continuation of Posts conveyed by MoWR for 2013-14 | | |
|--------|--------------|------------|--|--------|--------|
| | | | Total | Filled | Vacant |
| 1 | A | 23 | 18 | 12 | 6 |
| 2 | B (Gazetted) | 13 | 9 | 7 | 2 |

| S. No. | Group | Sanctioned | Continuation of Posts conveyed by MoWR for 2013-14 | | |
|--------|------------------|------------|--|-----------|-----------|
| | | | Total | Filled | Vacant |
| 3 | B (Non-Gazetted) | 7 | 7 | 6 | 1 |
| 4 | C | 42 | 24 | 19 | 5 |
| 5 | D | 16 | 11 | 11 | 0 |
| | Total | 101 | 69 | 55 | 14 |

Organisation Chart of GFCC is in Figure-1.2.

In addition, 18 work-charged staff comprising of 3 Motor Vehicle drivers, 3 Work Assistants and 12 Khalasis are also on the strength of GFCC for carrying out various field activities.

All the Engineering cadre posts from Chairman and upto the level of Assistance Director-II in GFCC are from the Central Water Engineering Services Group 'A' & 'B' Services.

1.4 Vigilance and Disciplinary Cases

No vigilance or disciplinary case concerning any officer or staff was pending or contemplated in the Commission during the year 2013-14.

1.5 Parliament Questions and VIP References

- (i) 38 Parliament questions were received by GFCC during 2013-14. The material for reply to these questions was prepared and sent to the Ministry of Water Resources.
- (ii) 18 VIP references on various matters were received by GFCC during 2013-14. The material for reply to these references was prepared and sent to the Ministry of Water Resources.

GANGA FLOOD CONTROL COMMISSION ORGANISATION CHART

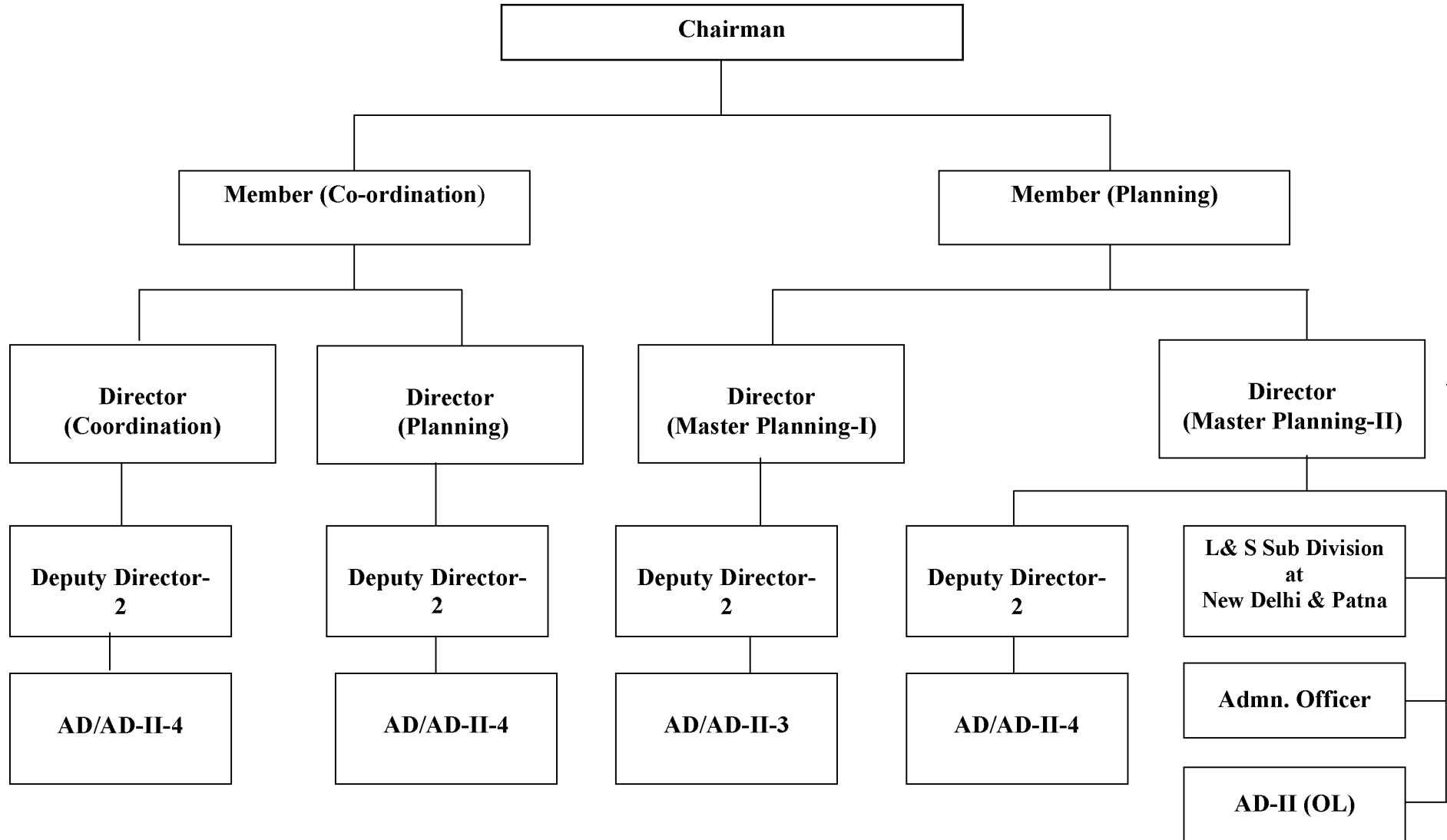


Figure -1.2
9

1.6 Implementation of RTI Act, 2005

The Ganga Flood Control Commission has designated the following officers as Appellate Authority, Central Public Information Officer (CPIO) and Assistant Public Information Officer (APIO) to provide information to the applicants in compliance of RTI Act,2005.

| | | |
|---|--|------------------------------------|
| 1 | Sh.A.K.Sinha, Member (Planning) | Appellate Authority |
| 2 | Sh. Ravi Bhusan Kumar, Director(MP-II) | Central Public Information Officer |
| 3 | Sh. Harsh Vardhan, Assistant Director | Asstt. Public Information Officer |

Ganga Flood Control Commission has implemented the directions as indicated in the RTI Act, 2005. The Commission has compiled and published manuals under clause 4(1)(b) of the Act and displayed them on its Website (<http://gfcc.bih.nic.in>).

During the year 2013-14, eighteen requests for supply of information under RTI Act, 2005 were received in GFCC. The necessary information was provided to applicants in compliance of said Act.

1.7 Financial Aspect

An expenditure of Rs. 456.18 lakh was incurred by GFCC during the year 2013-14. A statement showing sub-headwise final estimate and actual expenditure during 2013-14 is given below:

Table 1.3

(Amount in Rs.)

| S.No. | Head of account | Final Estimate 2013-14 | Expenditure 2013-14 |
|-------|--------------------------|------------------------|---------------------|
| 1 | Salary | 3,36,00,000 | 3,56,08,204 |
| 2. | Medical | 1,50,000 | 65,235 |
| 3 | Domestic Travel Expenses | 29,00,000 | 28,96,070 |
| 4 | Foreign Travel Expenses | 1,00,000 | 1,05,138 |
| 5 | Office Expenses | 8,00,000 | 5,01,602 |
| 6 | Minor Works | 73,90,000 | 58,13,149 |
| 7 | Machinery & Equipment | 6,00,000 | 6,28,821 |
| 8 | Over Time Allowances | 10,000 | -Nil- |
| | TOTAL | 4,55,50,000 | 4,56,18,219 |



45th meeting of Ganga Flood Control Commission chaired by Shri A.K.Jain, Chairman, GFCC held on 21.3.2014 at Delhi



2

Comprehensive Plans for Flood Management

2.1 Preparation of Comprehensive Plans for Flood Management

In the Ganga basin, covering eleven States, floods in some part or the other are an annual feature. On account of the inadequacy of the protection works carried out so far, the large scale damage due to floods often occur every year. It was therefore felt necessary to prepare an integrated plan to tackle floods, erosion and drainage problems in the basin and implement it in a coordinated manner. It was with this in view that GFCC was set up to prepare Comprehensive Plans for flood management for the Ganga basin. The Ganga basin is broadly divided into 23 river systems and comprehensive plans for flood management of these 23 river systems were prepared by GFCC between 1975 and 1990. These comprehensive plans were then circulated to the State Governments concerned for preparing specific schemes for implementation as per recommendations given therein.

2.2 Updating of Comprehensive Plans for Flood Management

Due to changes in the behaviour of the rivers in the Ganga basin over a period of time and for other associated changes, it was considered necessary to update the Comprehensive Plans for flood management of all the river systems periodically. This work was started in 1986 and till March 2014, GFCC has updated comprehensive plans for twenty two river systems.

The updated comprehensive plans were also circulated to the State Governments concerned for further follow-up action.

During the year 2013-14, the work of updating of Comprehensive plans of the Kosi and Rupnarain-Haldi-Rasulpur river system were taken up.

2.3 Monitoring of Floods and Preparation of Flood Reports

The flood situation in the year 2013 in Ganga Basin States was monitored and 18 weekly reports were sent to the Ministry of Water Resources.

The state-wise summary of flood situation during 2013 in Ganga Basin States is as under:

2.3.1 Rainfall

The rainfall during the monsoon period in the year has been normal in the Ganga basin States except Bihar and western Uttar Pradesh.

2.3.2 Flood situation in rivers in Ganga Basin

According to data received from Central Water Commission, the State-wise flood situation in rivers during 2013-14 was as under:

- (i) **Uttar Pradesh:** The River Ganga at Ballia, Narora (D/S) and Gangpur Siswan; River Yamuna at Mawi, Mathura, Auraiya, Kalpi, Hamirpur, Chillaghat and Naini; River Betwa at Mohana and Sahjina ; River Ken at Banda ; River Ghaghra at Elign Bridge, Ayodhya and Turtipar; River Sharda at Palia Kalan; river Burhi Rapti at Kakarahi; River Rapti at Balrampur and Birdghat and River Kuwano at Chandradeep ghat, Basti and Mukhalishpur were reported to flow beyond danger level during the monsoon months.
- (ii) **Bihar:** The River Ganga at Gandhighat, Hathidah, Kahalgaon and Bhagalpur, Munger, Buxar ; River Sone at Maner ; River Punpun at Sripalpur ; River Ghaghra at Darauli, Gangpur Siswan and Chapra ; River Kosi at Basua and Kursela; River Bagmati at Benibad; River Mahananda at Dhenraghat and Jhawa; river Kamla Balan at Jhanjharpur; and River Burhi Gandak at Khagaria were reported to flow above the danger level during the monsoon months
- (iii) **Jharkhand:** River Ganga at Sahebganj and River Damodar at Ramgarh and Hindgir were reported to flow above the danger level during the monsoon months
- (iv) **West Bengal:** River Ganga at Farakka, River Mayuarakhshi at Narayanpur and River Kangsbati at Phulberia were reported to flow above the danger level during the monsoon months.

There was no report of rivers flowing above danger level from other Ganga basin States.

2.3.3 Flood Damage

No report regarding damage due to flood has been received from the States. However, according to data received from the website of Disaster Management Division, Ministry of Home Affairs, about 78.83 lakh people were affected by the floods during 2013 in the Ganga Basin States. A total loss of 957 human lives and 26030 cattles was reported in the region. A total no. of 192842/30551 houses were reported to be partially / fully damaged. The crops in an area of about 7,07,112 Hactare was also reported damaged. The total loss due to flood is reported to be Rs. 276249.85 Lakhs. (excluding Uttarakhand & U.P)

3

Assessment of Adequacy of Waterways under Road and Rail Bridges

3.1 This exercise is aimed at determining additional waterways required for reducing drainage congestion to a reasonable limit. This activity which commenced during the later half of the eighties has been completed except for the some stretches of the Ganga main stem.

3.2 These reports have been circulated to the Ganga basin States and departments of Central and State Governments concerned for follow up action. The list of river basins along with the year of completion of reports on adequacy of water ways is given in Table 3.1.

Table 3.1

List of Adequacy of Waterways under Road & Rail Bridges

| Sl.No. | Name of Basin | Year of Completion |
|--------|---------------------------------|--------------------|
| 1 | Punpun | 1986 |
| 2 | Ajoy | 1987 |
| 3 | Burhi Gandak | 1987 |
| 4 | Mayurakshi | 1988 |
| 5 | Bagmati | 1988 |
| 6 | Mahananda | 1989 |
| 7 | Damodar | 1990 |
| 8 | Yamuna | 1990 |
| 9 | Jalangi | 1991 |
| 10 | Gandak | 1991 |
| 11 | Gomati | 1991 |
| 12 | Ghaghra | 1992 |
| 13 | Ramganga | 1992 |
| 14 | Rupnarayan Haldi Rasulpur | 1993 |
| 15 | Tons | 1994 |
| 16 | Kamla Balan | 1994 |
| 17 | Adhwara Group | 1996 |
| 18 | Kiul-Harohar | 1996 |
| 19 | Badua Chandan | 1997 |
| 20 | Sone | 1999 |
| 21 | Kosi | 2002 |
| 22 | Damodar (updating) | 2003 |
| 23 | (a) Ganga (Buxar to Sahabaganj) | 2005 |

| | | |
|--|-----------------------------------|--|
| | (b) Ganga (Sahabganj to outfall) | 2011 |
| | (c) Ganga (Haridwar to Gangotari) | <ul style="list-style-type: none"> • Survey from Haridwar to Harsil (via Devprayag, Tehri, Chamba and Uttarkasi) completed. • Survey from Harsil to Gangotri to be done • Survey from Devprayag to Joshimath (via Rudraprayag-Karanprayag-Gopeshwar) to be done. • Drawing works from Haridwar to Harsil under progress. |
| | (d) Ganga (Buxar to Haridwar) | Survey completed |

The balance works at (b) and (c) are proposed to be taken up next year i.e. 2014-2015.

3.3 GFCC has often been called upon to examine the adequacy or otherwise of the waterways under existing rail and road bridges by the Ministry of Railways and also by the Ministry of Road Transport and Highways.

4

Flood Management Programme

4.1 Background

Due to unprecedented floods in Bihar, Assam and West Bengal and consequent large scale damages in these States in the year 2004, Government of India under the direction of Hon'ble Prime Minister of India, keeping in view the seriousness of the flood problem and consequently the grave situation created on the ground, constituted a Task Force for Flood Management/Erosion Control headed by the Chairman, Central Water Commission, New Delhi to look into the problem of recurring floods in Assam and neighbouring States as well as Bihar, West Bengal and Eastern Uttar Pradesh in August 2004. The Task Force deliberated upon various issues relating to floods in these States and taking into account the prevailing situation on the ground, suggested various measures for controlling flood/erosion. The report of the Task Force was submitted to the Ministry of Water Resources in December, 2004.

4.2 Flood Management Programme during XI Plan

Keeping in view the recommendations of Task Force and other similar committees, a Plan Scheme titled 'Flood Management Programme' with a budget of Rs.8000 crore under the State sector was drawn up by MoWR for implementation during the XI Plan period. This plan scheme covers the works of flood management, river bank-erosion, sea erosion, drainage development and flood proofing. The financial approval of the individual schemes is given by an Empowered Committee headed by the Secretary (Expenditure), Ministry of Finance, Government of India after taking into consideration the critical and emergent situation and availability of annual budget/plan outlay and provision of State share and Central share by the respective State Govts. Besides Ministry of Finance, the Committee has representatives from the Ministry of Water Resources, Ministry of Development for North Eastern Region (DONER), Ministry of Environment & Forests and Planning Commission.

The detailed schemes for flood management are formulated and submitted by the implementing States to the concerned appraising agency for techno economic appraisal as per the prevailing guidelines laid down by the Planning Commission.

The central assistance is provided to the State Govts. on the following funding pattern:

- (i) For special category States – 70%.
(The special category States cover the North Eastern States, Sikkim, Himachal Pradesh, Jammu & Kashmir and Uttarakhand)

- (ii) For non-special category States – 50%.
- (iii) For restoration of damaged flood management works and funding pattern for such works will be applicable to respective category of State. Central Assistance will not be provided for regular maintenance of flood management works but only for restoration of flood management works damaged under force majeure like conditions. It would be ensured that such works are not covered under CRF (SDRF)/NCCF(NDRF).

Financial and physical management, quality control, timely completion of the work etc. are the responsibility of the State Government/ implementing agency.

4.3 Monitoring of schemes under Flood Management Programme

The schemes under Flood Management Programme are to be monitored by the Central Water Commission (CWC), Ganga Flood Control Commission (GFCC) and Brahmaputra Board (BB) in their respective jurisdiction. The Department of Space / NRSC are also associated in monitoring of physical progress of the works through remote sensing techniques.

After the completion of work, performance evaluation studies are conducted by independent agencies in consultation with CWC/GFCC/Brahmaputra Board as the case may be.

4.4 Schemes taken up during XI Plan for execution with their status (State-wise):

The details of the FMP schemes taken up (State-wise) and their progress during the XI Plan are given below:

Table 4.1

| Sl. No | State | No. of schemes approved | No. of schemes completed | No. of schemes under progress during 2013-14 (spillover schemes) |
|--------|------------------|-------------------------|--------------------------|--|
| 1 | Bihar | 46 | 35 | 8 [#] |
| 2 | Jharkhand | 3 | 2 | 1 |
| 3 | West Bengal | 11 | 6 | 4 [*] |
| 4 | Uttar Pradesh | 24 | 6 | 18 |
| 5 | Uttarakhand | 12 | 8 | 4 |
| 6 | Himachal Pradesh | 1 | - | 1 |
| | Total | 97 | 57 | 46 |

Two schemes of Bihar dropped by EC- FMP and one scheme foreclosed

* One scheme of West Bengal withdrawn by the State Government

4.5 Schemes taken up during XII Plan and their status (State-wise)

The details of the FMP schemes taken up (State-wise) and their progress during the XII Plan are given below:

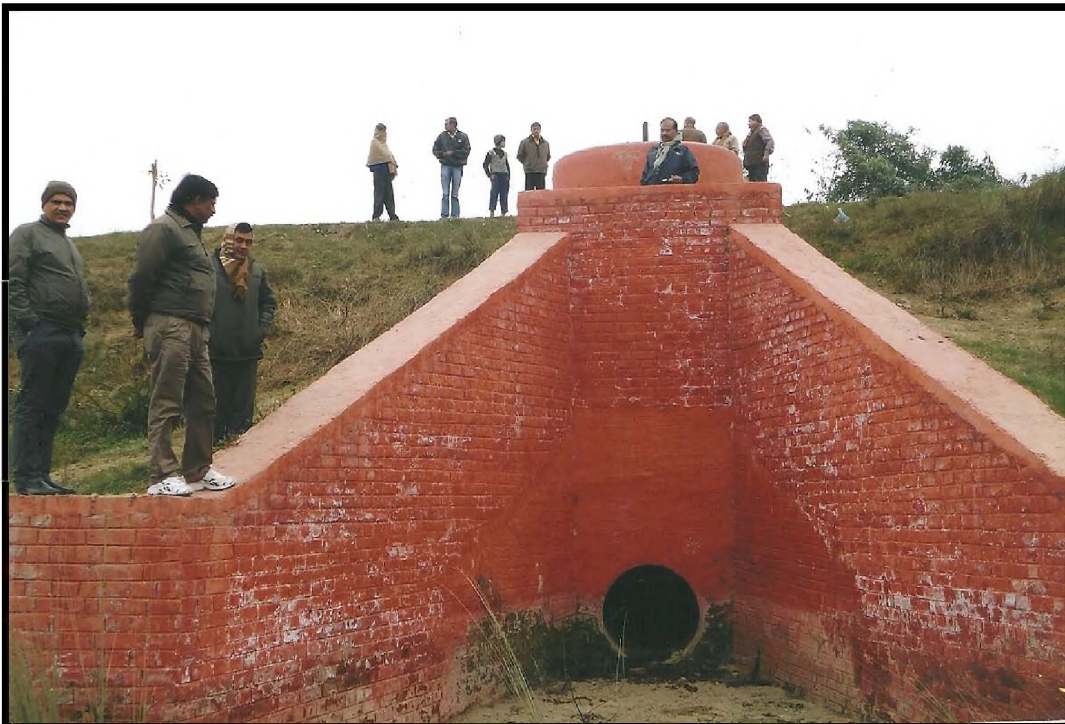
Table 4.2

| Sl. No | State | No. of schemes approved | No. of schemes completed | No. of schemes under progress during 2013-14 (spillover schemes) |
|--------|------------------|-------------------------|--------------------------|--|
| 1 | Bihar | 4 | - | 4 |
| 2 | Jharkhand | - | - | - |
| 3 | West Bengal | 1 | - | 1 |
| 4 | Uttar Pradesh | 2 | - | 2 |
| 5 | Uttarakhand | 9 | - | 9 |
| 6 | Himachal Pradesh | 1 | - | 1 |
| | Total | 17 | - | 17 |

GLIMPSES



Anti-Flood Sluice constructed on Embankment



Anti Flood Sluice constructed on river Bagmati in Bihar

5

Appraisal of Flood Management and Anti-Erosion Schemes

5.1 Appraisal of schemes by GFCC- Scope

Techno-economic appraisal of flood management and anti-erosion schemes received from the Ganga basin States is an important activity of GFCC. As per revised guidelines issued by the Planning Commission on 29th June 2012, schemes estimated to cost between Rs. 12.5 crore (earlier Rs. 7.5 crore) and Rs.25 crore (earlier Rs. 15 crore) are examined by GFCC for their techno-economic viability and, if found acceptable, are cleared by GFCC itself and recommended to the Planning Commission for investment clearance.

Schemes costing less than Rs. 12.5 crore are cleared at the State level by the State Flood Control Boards.

Schemes costing above Rs. 25 crore if found acceptable, after appraising them for their techno-economic viability are recommended by GFCC, to the Advisory Committee of the Ministry of Water Resources for Irrigation, Flood Control and Multi Purpose Projects for clearance.

Normally, GFCC does not examine schemes costing less than Rs. 12.5 crore. However, in special cases, such as schemes on emergent flood protection works in the Eastern Sector on common / border rivers with Bangladesh, Ministry of Water Resources, Government of India issued an instruction that GFCC would scrutinize such schemes on the common / border rivers with Bangladesh and make recommendations to MoWR for release of funds. In addition, all Central sector schemes in Ganga Basin irrespective of cost are, however, examined from techno-economic aspect in GFCC.

5.2 Appraisal of schemes during 2013-14

The details of schemes appraised during 2013-14 and their status are given below:-

Table 5.1

| S. No | Name of Scheme | Estimated Cost in Rs. Lakh | Status |
|-------|---|----------------------------|------------------------------------|
| | Bihar | | |
| 1 | A.E work near village Khairpur Raghapur & Akidatpur at left bank of of Ganga U/ S of Bikaramshila Setu in Bhagalpur Distt | 2498.00 | Scheme cleared techno-economically |

| S. No | Name of Scheme | Estimated Cost in Rs. Lakh | Status |
|-------|--|----------------------------|---|
| 2 | A. E works for restoration of Spur No. 2, 3 , 4 & 7 and revetment in between Spur No. 4 to 7 near village Ismailpur & Bindtoli at left bank of river Ganga D/S of | 3883.00 | Scheme cleared techno-economically |
| 3 | Scheme for extension of embankment from Manouber to Phuhia with protection work at vulnerable points and brick soling road on top of embankment in between Km 96.50 to 110.48 of right Kamla Balan Embankment | 5663.00 | Scheme cleared techno-economically |
| 4 | Bagaha Town Protection scheme (Phase-II) | 5946.00 | Scheme cleared techno-economically |
| 5 | Raising & strengthening of flood protection embankment on Bangari river in East Champaran District | 1512.00 | Scheme cleared techno-economically |
| 6 | Anti-erosion work on the right bank of river Ghaghra near Sitab Diara | 1803.00 | Scheme cleared techno-economically |
| 7 | Construction of Head Regulator, tagging bundh and edge protection work at Belwa on Bagmati river in Sheohar District (Bagmati Flood Management Scheme, Phase-IV (A) | 7345.00 | Scheme cleared techno-economically |
| 8 | Restoration of spur no.1,7,8,9 , construction of new spur between spur no. 4&5 , construction of bed bar d/s of spur no. 1,2,3,4,7,9 and u/s of spur no.1, maintenance of approach road, service road and activation of Chaurasidhar | 9630.00 | Scheme examined & observations sent to State Government |
| 9 | Ani erosion work at Mangalpur near Rahua Nala at Ratanmala and near Poorhouse in West Champaran district (Bagaha Town Protection Scheme Phase-III) | 8809.00 | Under examination |
| 10 | Revised Bagaha Town Protection Scheme (Phase-1) | 9085.00 | Under examination |
| 11 | Anti erosion work for protection of Valmikinagar forest on the left bank of Gandak river in West Champaran district of Bihar | 4964.00 | Under examination |
| 12 | A E work for Protection of Left bank of Gandak river in u/s of Gandak barrage in West Champaran district | 4250.00 | Under examination |

| S. No | Name of Scheme | Estimated Cost in Rs. Lakh | Status |
|-------|---|----------------------------|---|
| 13 | Revised Detailed Project Report of Bagmati Flood Management Scheme | 380400.00 | Under examination |
| 14 | Revised Detailed Project Report for Construction of embankments on Left and right side of river Jhim, Banke, Jamura (Adhwara group) in Sitamarhi district | 11727.00 | Under examination |
| 15 | Extension of left Kamla Balan embankment from km 102.38 to km 105.35(up to Western Kosi embankment) with provision of 3 Nos Anti-flood sluice and protection work of the new embankment | 2492.00 | Under examination |
| 16 | Tagging of left& right Kamla Balan embankment of Indian Territory to both Kamla embankments of Nepali Territory | 851.00 | Under examination |
| 17 | Anti Erosion Work to be executed before flood 2014 near Khairpur, Raghapur, Akidatpur & Shankarpur village on the left bank of river Ganga. | 6798.88 | Under examination |
| 18 | Revised scheme for raising and strengthening of Lalbakaiya left and right embankment, Bairgania ring bund and Doab embankment in East Champaran Distt | 2461.24 | Under examination |
| 19 | Revised Bagmati Flood Scheme Phase-III | 55693.00 | Under examination |
| 20 | Revised Bagmati Flood Management Scheme Phase-III(b) | 45046.00 | Under examination |
| 21 | Mahananda Flood Management Scheme Phase-II | 56955.20 | Under examination |
| | Jharkhand | | |
| 1 | Anti-erosion Work on the right bank of river Ganga from Rafatola to Srighar 10 nos in Sahibganj Disstt. | 3168.67 | Scheme examined & observations sent to State Government |
| | West Bengal | | |
| 1. | Master Plan and DPR for Ghatal and adjoining area | 174000.00 | Scheme under examination |
| 2 | Resectioning of river Ichamati for better drainage & flood protection in the reach from BSF Bridge at 140.415 Km to Tipi at 152.315 Km in the District of North 24-Parganas | 2972.00 | Scheme under examination |

| S. No | Name of Scheme | Estimated Cost in Rs. Lakh | Status |
|--------------|--|-----------------------------------|---|
| 3 | Improvement and extension of Banikantha Khal upto the existing lead channel linking to river Sunti under Barasat-II Block, District North 24-Parganas | 1399.00 | Scheme examined & observations sent to State Government |
| 4 | Protection to the right bank of river Nagar from erosion near Khunti BOP Camp and border fencing along the Indo-Bangladesh Border in PS Islampur, District Uttar Dinajpur (Length - 575m) | 221.00 | Scheme examined & observations sent to State Government |
| 5 | Protection to the right bank of river Nagar from erosion near Moraghati BOP Camp and border fencing along the Indo-Bangladesh Border in PS Islampur, District Uttar Dinajpur (Length - 520m) | 201.00 | Scheme examined & observations sent to State Government |
| 6 | Protection to the right bank of river Nagar from erosion near Hatkhola BOP Camp and border fencing along the Indo-Bangladesh Border in PS Islampur, District Uttar Dinajpur (Length - 480m) | 212.00 | Scheme examined & observations sent to State Government |
| 7 | Protection to the right bank of river Nagar from erosion near Fatepur BOP Camp and border fencing along the Indo-Bangladesh Border in PS Islampur, District Uttar Dinajpur (Length - 450m) | 221.00 | Scheme examined & observations sent to State Government |
| 8 | Protection to the right bank of river Nagar from erosion near Sonamati BOP Camp and border fencing along the Indo-Bangladesh Border in PS Islampur, District Uttar Dinajpur (Length - 500m) | 203.00 | Scheme examined & observations sent to State Government |
| 9 | Protection to the left bank of river Tangon from erosion near Padmakumari and Chandgaon BOP Camp in PS Kaliaganj, District - Uttar Dinajpur (Length - 900m) | 415.00 | Scheme examined & observations sent to State Government |
| | Uttar Pradesh | | |
| 1 | Scheme for restoration of spurs at Km 1.000 & Km 1.5000, construction of stud at Km 1.30 and laying of revetment from Km 0.800 to Km 1.3000 of Narwajot embankment along right bank of river Gandak in Kushinagar District | 1391 | Scheme cleared techno-economically |

| S. No | Name of Scheme | Estimated Cost in Rs. Lakh | Status |
|--------------|--|-----------------------------------|---|
| 2 | Scheme for anti-erosion works from Km 23.00 to Km 26.00 & Km 59.70 to Km 62.40 of Belha - Behrauli bund on left bank of river Ghaghra in Behraich District | 1781 | Scheme cleared techno-economically |
| 3 | Revised Scheme for construction of Ghaziabad Marginal Bund from Km 0.00 to Km 3.175 on left bank of river Hindon in Ghaziabad district | 2999 | Scheme cleared techno-economically |
| 4 | Scheme for closing spill of river Ghaghra and construction of slope pitching & launching apron from km 10.980 to km 12.380 of Madraha-Behradadik Bund on left bank of river Ghaghra in Tehsil Dhanghata of Sant Kabir Nagar district | 2496 | Scheme cleared techno-economically |
| 5 | Scheme for increasing drainage capacity of Bakulahi river in the districts of Pratap Garh and Chhatrapati Shahuji Maharaj Nagar | 1662.00 | Scheme examined & observations sent to State Government |
| 6 | Scheme for river training works on left bank (from Indo-Nepal Border to Kamboj Nagar) & on right bank (from Indo-Nepal Border to Naujalha-Naktaha) along river Sharda in Pilbhit District | 2423.00 | Scheme examined & observations sent to State Government |
| 7 | Revised Scheme for construction of Marginal bund from Lucknow- Sultanpur Road to Amar Shahid Path on right bank of river Gomati in Lucknow district | 8181.00 | Scheme examined & observations sent to State Government |
| 8 | Revised Scheme for construction of Marginal bund from Amar Shahid Path to Gomti Aquaduct on left bank of river Gomati in Lucknow district | 16200 | Scheme examined & observations sent to State Government |
| 9 | Scheme for construction of 12.70 Km long embankment from Bhagwanpur to Rukumpur on right bank of river Ramganga in Bareilly district | 2451.00 | Scheme examined & observations sent to State Government |
| 10 | Scheme for construction of cunnette in river Sharda to maintain proper river flow at D/S of Sharda Barrage, Banbasa from Km 0.050 to Km 1.350 in Champawat district | 1225.00 | Scheme examined & observations sent to State Government |

| S. No | Name of Scheme | Estimated Cost in Rs. Lakh | Status |
|--------------|---|-----------------------------------|--|
| 11 | Project for construction of anti-erosion works on left bank of river Yamuna from km 21.100 to km 21.700 of Hindon Yamuna Doab bund near village Kamnagar in Gautambudh Nagar of Uttar Pradesh | 1946.00 | Scheme examined & observations sent to State Government |
| 12 | Project for construction of Aile Persauli Lolpur bund on the left bank of river Ghaghra/Saryu in Gonda district of Uttar Pradesh | 4355 | Under Examination |
| 13 | Project for construction of Afflux bund from km.0.500 to km. 1.675 in downstream of Sharda Barrage at Banbasa on left bank of river Sharda in Champawat district of Uttarkhand maintained by Uttar Pradesh | 2328 | Scheme examined & observations sent to State Government |
| 14 | Project for protection of Bakulaha Sansar Tola bund and village group of Imbrahimabad. Naubrar between km 5.175 to km 6.500 of B S T bund on the right bank of river Ghaghra in Ballia dikstrict of Uttar Pradesh | 1701 | Scheme examined & observations sent to State Government. |
| 15 | Project for protection of village group of Sangapour Kakarghata at T S bund between km 39.800 to km 41.600 on the right bank of river Ghaghra in Ballia district of Uttar Pradesh. | 1577 | Under examination |
| 16 | Revised scheme for construction of Parsa Deharia Tilakpur Marginal bund on left bank of river Rapti in Shrawasti district | 1431 | Scheme examined & observations sent to State Government |
| 17 | Revised scheme for construction of Marginal bund from Amar Shahid Path to Goamati Aquaduct on right bank of river Gomati in Lucknow district | 9674 | Scheme examined & observations sent to State Government |
| 18 | Project for construction of anti-erosion works to protect village group of Sherpour-Shemra on the left bank of river Ganga in Ghazipur district of Utttar Pradesh | 1964 | Scheme cleared techno-economically |
| 19 | Protection of village group of Ballia-Bairia bund from km 27.1 to Km 28.5 and B.S.T bund from Km 6.00 to Km 7.00 by constructing pitching with launching apron on left bank of river Ganga district Ballia. | 3490 | Scheme examined & observations sent to State Government |

| S. No | Name of Scheme | Estimated Cost in Rs. Lakh | Status |
|-------|---|----------------------------|--|
| 20 | Revised project estimate of Marginal Embankment along right bank of river Sarda & Ghaghra from Iera bridge to Chahlari Ghat from Km 0.00 to Km 52.62 in Lakhimpur Kheri district. | 8865 | Scheme examined & observations sent to State Government. |
| | Uttarakhand | | |
| 1 | Project for flood protection and anti erosion work along both banks of Dhela, Phika and Levra rivers (tributaries of Ramganga river) in Ramnagar, Kashipur, Jaspur, and Bazpur blocks, District- Nainital and Udham Singh Nagar | 7582.00 | Scheme examined & observations sent to State Government. |
| 2 | Anti erosion scheme for village Jogipura, Gobra and Bainthkeri along left bank of river Kosi and its tributaries Dabka in Distt. Udham Singh Nagar of Uttarakhand | 1496.00 | Scheme cleared techno-economically |
| 3 | Flood protection scheme to protect villages, canals and roads from river Kosi in Betalghat block, District Nainital | 3121.00 | Scheme cleared techno-economically |
| 4 | Project for anti erosion scheme of nearby village at right bank of Sukhi river in block Haldwani, District Nainital | 1627.00 | Scheme cleared techno-economically |
| 5 | Flood protection scheme in district Nainital for protection of villages, crop land and roads at right bank of Gola river (Gola barrage to Shrilanka Tapu) and protect Gujora and Puranpur kumtiya at left bank of Bhakhra river | 3171.00 | Scheme cleared techno-economically |
| 6 | Flood protection scheme for protection of Ramnagar city along with Puchhari village in distt. Nainital | 1489.00 | Scheme cleared techno-economically |
| 7 | Project for construction of studs and marginal bund for protection of population and agricultural land of villages situated at banks of river Ganga in District Haridwar | 3485.00 | Scheme cleared techno-economically |
| 8 | Project for flood protection work along Suswa river in Doiwala Block of District Dehradun(Uttarakhand) | 9800.00 | Scheme cleared techno-economically |
| 9 | Project report for river Jakhan from village Rani Pokhari to confluence with Song river in Doiwala Block of District Dehradun(Uttarakhand) | 3314.99 | Scheme cleared techno-economically |

| S. No | Name of Scheme | Estimated Cost in Rs. Lakh | Status |
|-------|---|----------------------------|------------------------------------|
| 10 | Project for flood protection work along river Song and its tributaries deom D/S of the confluence of river Jakhan and river Song upto Ganga river in Doiwala Block of Distriict Dehradun(Uttarakhand) | 3425.62 | Scheme cleared techno-economically |
| 12 | Flood protection work of Bindal river from Cantt. Road to Mothronwala in Distt. Dehradun | 4642.16 | Scheme cleared techno-economically |
| 13 | Construction of flood protection work of Thature and Bhawan from Aglad river in Dist- Tehri | 1443.73 | Scheme cleared techno-economically |
| 14 | Project for flood protection works for Air Force Colony, Power Sub Station & Village Jhajra at Thakurpur Tarla along Tons river in Sahaspur Block, Distt. Dehradun | 1376.74 | Scheme cleared techno-economically |
| 15 | Project for construction of studs and marginal bund for protection population and agricultural land from Banjarewala to Alwalpur, villages situated at banks of river Solani in District Haridwar | 3316.47 | Under examination |
| 16 | Changa Mazri village in Distt. Haridwar under Development Block Bhagwanpur anti-erosion scheme from Solan River | 1305.91 | Under examination |
| 17 | Flood Protection work in channel originated from Shivalik Mountain series in Distt. Dehradun under Development Block Vikashnagar | 3261.92 | Under examination |
| 18 | SSB and Kedar village Flood Protection scheme in Shrinagar from River Alaknanda in Distt.Pawri Garhwal | 2492.51 | Under examination |
| 19 | IIT and Lower Bhakhtiyana in Shrinagar Distt. Pauri Garhwal flood protection scheme from river Alaknanda. | 2487.51 | Under examination |
| 20 | Tiwari Mohalla and New Bus Stand in Shrinagar flood protection scheme fromd River Alaknanda in Distt. Pawri Garhwal | 2496.41 | Under examination |
| 21 | Shri Kot Phase-I in Shrinagar, Distt. Pawri flood protection scheme from river Alaknanda | 2495.34 | Under examination |
| 22 | Shri Kot Phase-2 in Shrinagar, Distt. Pawri flood protection scheme from river Alaknanda | 2124.31 | Under examination |

| S. No | Name of Scheme | Estimated Cost in Rs. Lakh | Status |
|-------|--|----------------------------|-------------------|
| 23 | Shaspur-Sbhawala Culvert to village Kunjagrnt (including villages between them) Flood Protection scheme from River Aasan | 5134.20 | Under examination |
| 24 | Flood Protection scheme from Yamuna river, Dal Pathar Barrage to National Highway-72 Kulhala-Pawata Sahibpur (Left bank Gramo) in Distt. Dehradun under Vakash Nagar Development Block | 6509.69 | Under examination |
| 25 | Flood Protection scheme of village Matak-Mazri to Pratitpur and village Kalyanpur to Signiwala from channel originating from Shivwalik Mountain in Distt. Dehradun, Block-Vikashnagar | 1860.12 | Under examination |
| 26 | Anti-Erosion and Drainage scheme of village Khera-Pachuwa to village-Fatehpur (Aasan River) in Distt. Dehradun under Block Vikash Nagar. | 2710.68 | Under examination |
| 27 | Flood Protection scheme on river Kmal River (from Gundiyad to Sundali), (Dhawra to Purola) and old P.W.D colony to Sunara Chhani) in Distt. Uttarakashi under Block Purola | 2441.54 | Under examination |
| 28 | Flood Protection works on both sides of River Yamuna from Janki Chatee to Damta | 2468.564 | Under examination |
| 29 | Flood Protection scheme Kumola Khadd, Chhara Khadd, Malgar Khadd in Distt. Uttarakashi, Block-Purola under C,M Proclamation No. 255/2013 | 1319.30 | Under examination |
| 30 | Flood Protection scheme Uttarakhand State Reconstruction Distt.Almora, Block-Chaukhutia and Syalde from River Ramganga and tributries | 2344.00 | Under examination |
| 31 | Flood Protection scheme of Gram Chanura to gram Bhawri between Koshi Uttarakhand State Reconstruction, Distt. Almora, Block Taluka under Someshwar Area | 1344.00 | Under examination |
| 32 | Flood Protection scheme of vollage Langha to Jamanlhata near NH72 from Gayana Khadd & Sheetla river in Vikashnagar block, Distt. Dehradun | 1360.00 | Under examination |

| S. No | Name of Scheme | Estimated Cost in Rs. Lakh | Status |
|------------------|--|----------------------------|-------------------|
| 33 | Flood Protection work along Tons River & its Tributories in Mori Block of Dist. Uttarkashi (under centrally funded flood protection scheme) | 4642.16 | Under examination |
| 34 | DPR on river training works including Mide associated works on both banks of river Bhagirathias per requirement from Jhulapul to Tiloth bridge including proposed works onleft from Tiloth bridge to switchyard Uttarkashi | 6010.00 | Under examination |
| 35 | DPR on protection work of both banks of river Bhagirathi at Uttarkashi | 3180.00 | Under examination |
| Rajasthan | | | |
| 1 | Flood Protection Scheme for Baran City | 5616.00 | Under examination |

5.3 Summary of status of Appraisal of Schemes (State-wise)

State-wise status of appraisal of schemes is give in table below :

Table 5.2

| State | Scheme received | Schemes cleared | Schemes examined & observations communicated to State Government | Schemes under examination |
|------------------|-----------------|-----------------|--|---------------------------|
| Bihar | | 7 | 1 | 13 |
| Jharkhand | | - | 1 | - |
| West Bengal | | - | 7 | 2 |
| Uttar Pradesh | | 5 | 14 | 1 |
| Uttarakhand | | 13 | 1 | 21 |
| Himachal Pradesh | | - | - | - |
| Rajasthan | | - | - | 1 |
| Total | | 25 | 24 | 38 |

GLIMPSES



Anti-Erosion Works (boulder spurs) in Uttarakhand



Anti-Erosion Works (Revetment) in West Bengal

6

Monitoring of Ongoing Flood Management and Anti-Erosion Schemes

6.1 Monitoring of Schemes by GFCC - Scope

GFCC monitors flood management and anti-erosion schemes under Central funding for their physical and financial progress and monitoring reports are sent to the Ministry of Water Resources regularly.

6.2 Monitoring of Schemes during 2013-14

During the year 2013-14, FMP schemes as per the details given below were monitored by GFCC officers and monitoring reports were prepared and sent to Ministry of Water Resources:

Table 6.1

| Sl. No. | Scheme Code | Name of Scheme | Approved Cost (Rs. in Lakh) |
|--------------|-------------|---|-----------------------------|
| Bihar | | | |
| 1 | BR-02 | Bagmati Flood Management embankment construction (Left bank 17.55 to 56.97 km, r/b 15.2 to 56.97 km) | 13516.00 |
| 2 | BR-19 | Khagaria Town Protection Scheme Part- II | 1339.18 |
| 3 | BR-39 | Anti erosion work along the left bank of river Ganga (i)near village kasimchak in Danapur Diara (ii)downstram of Mokama bridge (iii) downstream of vikramshila bridge (iv) town protection Work near patna city and Ramnagar diara (v) near village mathurapur-Ami. | 6354.42 |
| 4 | BR-03 | Raising and Strengthening of Simaria-Gorgama embankment | 1236.10 |

| Sl. No. | Scheme Code | Name of Scheme | Approved Cost (Rs. in Lakh) |
|----------------------|-------------|---|--|
| Jharkhand | | | |
| 1. | JHK-3 | Anti-erosion work on the right bank of river Ganga from Budhwaria to Kanhaiyasthan, Sahibganj district | 991.00 |
| Uttar Pradesh | | | |
| 1. | UP-12 | Scheme for flood protection works along left & right bank of river Ghaghra in the districts of Bahraich, Barabanki, Gonda, Basti, Faizabad and Mau | 841.53 |
| 2. | UP-13 | Flood protection works along right bank of river Gandak in the district of Kushinagar, Uttar Pradesh | 604.89 |
| 3. | UP-14 | Scheme for flood protection work on left & right bank of river Ganga in the distt of J P Nagar, Shahjahanpur, Meerut and Bulandshahar | 1191.67 |
| 4. | UP-15 | Scheme for flood protection work on left & right bank of river Rapti in districts of Sidharthnagar & Gorakhpur | 1638.46 |
| 5. | UP-18 | Scheme for flood protection work on left & right bank of river Yamuna in districts of Muzaffar Nagar, Baghpat, Ghaziabad, Gautam Budha Nagar, Aligarha and Mathura. | Not recommended due to non-receipt of UC |
| 6. | UP-19 | Scheme for flood protection work on right bank of river Kho and Kosi and left and right bank of river Ramganga in Bijnor and Moradabad districts | 300.81 |
| 7. | UP-20 | Scheme for flood protection work on left & right bank of river Hindon in districts of Baghpat & Gautam Budha Nagar. | 322.01 |
| Uttarakhand | | | |
| 1. | UK-10 | Flood protection scheme in District Udhan Singh Nagar to protect Khatima & Sitatganj area from Ramganga river's tributaries | 1065.00 |
| 2 | UK-05 | Flood protection scheme in district-Nainital & district-Udhamsingh Nagar to protect chorgalia & Sitarganj area by Naundhour river & its tributaries | 1423.87 |

| Sl. No. | Scheme Code | Name of Scheme | Approved Cost (Rs. in Lakh) |
|--------------------|-------------|---|-----------------------------|
| 3 | UK-06 | Flood protection of ITTI Jhajhra along Tons river and villages along five tributaries of Yamuna basin rivers in district-Dehradun | 1065.00 |
| 4 | UK-07 | Flood protection of village Shyampur along Bangala Nala and village Shyampur-Garhi along Goila Nala, tributaries of river Ganga, Rishikesh Dehradun | 1058.00 |
| 5 | UK-08 | Flood protection of village Ruhada (Haripur) from Yamuna river in tribal block Kalsi, district Dehradun | 1043.00 |
| 6 | UK-09 | Flood protection scheme for Indra colony in village Kalsi from Amlawa river in tribal block Chakrata, district Dehradun | 793.00 |
| 7 | UK-11 | Flood Protection works under three flood schemes along river song and its tributaries in district Dehradun, Uttarakhand | 920.90 |
| West Bengal | | | |
| 1. | WB-1 | Improvement of south Saraswati river from off take at Nasibpur, Hoogly to outfall at Sankrail, Hawra (Length 46 Km) | 3210.00 |
| 2. | WB-17 | Master Plan and DPR for Kaliaghai-Kapleshwari- Baghai drainage basin scheme | 32520 |

6.3 Release of Funds during 2013-14 under Flood Management Programme

Based on the monitoring reports and recommendation of GFCC, the Ministry of Water Resources released a total amount of Rs. 292.46 crore to the State Governments of Bihar, Jharkhand, Uttar Pradesh and West Bengal during 2013-14. The total fund released up to 2013-14 under the Flood Management Programme is Rs. 2078.99 crore. The break up is given below:

Table 6.2

(Amount in Rs Crore)

| Sl. No | State | Approved Central Share | Amount Released in 2013-14 | Total amount released upto March 2014 |
|--------|-------|------------------------|----------------------------|---------------------------------------|
| 1. | Bihar | 1392.42 | 88.57 | 814.71 |

| Sl. No | State | Approved Central Share | Amount Released in 2013-14 | Total amount released upto March 2014 |
|---------------|---------------------|-------------------------------|-----------------------------------|--|
| 2. | Jharkhand | 29.48 | - | 21.34 |
| 3. | Uttarakhand | 288.07 | 53.13 | 102.75 |
| 4. | Himachal Pradesh | 31.21 | - | 16.20 |
| 5. | Uttar Pradesh | 645.89 | 21.96 | 321.80 |
| 6. | West Bengal | 1679.02 | 128.80 | 766.76 |
| 7. | Xth Plan Spill over | - | - | 35.43 |
| | TOTAL | 4066.09 | 292.46 | 2078.99 |

GLIMPSES



Collection of Soil Sample during Monitoring Visit



Weighing of Soil Sample during Monitoring Visit

7

River Management Activities & Works related to Border Areas

7.1 Background

During the XI Plan period, Ministry of Water Resources has undertaken a plan scheme titled “River Management Activities and Works related to Border Areas” for water resources development and flood management activities. The scheme includes provision for taking up maintenance of flood protection works of Kosi and Gandak projects and bank protection works on common/border rivers between India and Bangladesh.

7.2 Maintenance of Flood Protection Works on Kosi and Gandak Projects

7.2.1 Kosi High Level Committee & Protection Works on Kosi

The Kosi High Level Committee (KHLC) was constituted by the then Irrigation Department Government of Bihar in the year 1978 under the Chairmanship of Chairman, GFCC to review/examine the protection works already executed on the river and recommend protection measures to be taken up and completed before the next flood season. Since then, the Committee is inspecting every year the protection works on the river and is making recommendations regarding protection work to be executed on the river before the next flood season. The State Government executes the schemes on the basis of the recommendations of the Committee.

The present Composition of the Committee is given below:

- | | |
|---|----------|
| 1. Chairman, GFCC, Patna. | Chairman |
| 2. Member (River Management), Central Water Commission, New Delhi or his representative | Member |
| 3. Director, CWPRS, Pune or his representative. | Member |
| 4. Engineer-in-Chief (North), Water Resources Deptt., Government of Bihar. | Member |
| 5. Chief Engineer, Water Resources Deptt., Government of Bihar, Darbhanga. | Member |
| 6. Chief Engineer (Research), Water Resources Deptt., Government of Bihar, Khagaul. | Member |
| 7. Chief Engineer (Hydrology & Project Planning), Water | Member |

Resources Deptt., Government of Bihar.

- | | | |
|-----|---|----------------------|
| 8. | Director, Eastern Region, Water Resources Deptt., Government of Nepal, Biratnagar. | Member |
| 9. | Dy. Director General, Water Resources Deptt. ,Government of Nepal, Kathmandu. | Member |
| 10. | Chief Engineer, Water Resources Deptt., Government of Bihar, Birpur. | Member- Secretary |

Like previous years, the KHLIC inspected the protection works in November 2013 and recommended works to be carried out before the floods of 2014.

7.2.2 Protection work in Nepal Portion

The expenditure incurred by Government of Bihar on protection works in Nepal, is reimbursed in full by Government of India under a central scheme. The reimbursement is made based on the expenditure statement received from the Government of Bihar for the amount spent on carrying out protection works on river Kosi in the Nepal portion.

7.3 Gandak High Level Committee & Protection Works on Gandak

A Committee for the river Gandak namely Gandak High Level Committee (GHLC) was initially constituted by the then Ministry of Irrigation, Government of India vide office memorandum No.10/12/80-FC dated 12th November, 1981 to evaluate the performance of flood protection works on the right bank of the river Gandak in the States of Uttar Pradesh and Bihar during the floods of 1981, to guide and advise construction activities in the two States and to suggest programme of works for the year 1981-82. The term of the committee was extended from time to time. This Committee has now been renamed as Gandak High Level Standing Committee (GHLSC) vide Ministry of Water Resources letter No. 5/15/2002-ER/Ganga /1219-27 dated 21.03.2006.

The terms of reference of the Committee are:

- To review the flood control and anti-erosion works so far executed by the State Governments of U.P and Bihar and evaluate their performance during the floods.
- To recommend a programme of works which could be executed by the two States in a coordinated manner.
- To guide the construction activities in the States and advise on the steps to be taken to get over any difficulties that may arise with a view to ensure that all the necessary works are completed by the States latest by June each year.

The Chairman, GFCC is the Chairman of the Committee. The composition of the GHLSC is given below:

| | |
|--|------------------|
| 1. Chairman, GFCC, Patna | Chairman |
| 2. Engineer-in-Chief, Water Resources Deptt., Government of Bihar. | Member |
| 3. Engineer-in-Chief, Irrigation Department, Government of U.P. | Member |
| 4. A Representative from Central Water and Power Research Station, Pune. | Member |
| 5. Chief Engineer (Research), Irrigation Research Institute, Government of Bihar, Patna. | Member |
| 6. Director, Irrigation Research Institute, Government of Uttarakhand (Roorkee). | Member |
| 7. Director(Co-ordination), GFCC, Patna. | Member-Secretary |

Since its constitution, 46 meetings of the GHLSC have been held upto 2013-14 and recommendations were made for protection works to be executed before the next floods. The respective State Govts. executed the works as per recommendations of the Committee.

7.3.1 Inspection during 2013-14

During the year 2013-14, the meeting / site inspection by the Committee was held in the month of October, 2013 and recommendations were made for the works to be carried out before the floods of 2014.

7.3.2 Protection Works in Nepal Portion

The expenditure incurred by Government of U.P.in Nepal portion for maintaining the flood protection works on the right bank of the river Gandak is reimbursed by the Government of India.

7.4 Schemes on Common/Border rivers in West Bengal

India shares 54 rivers with Bangladesh. At many places, these rivers have a tendency to shift their course by eroding the banks on either side. Sites of active erosion are identified by both the countries and the bank protection works for such sites are finalized by consultation among the two countries.

Twenty four (24) such sites have been identified in Ganga Basin, which lie on seven rivers, namely, Mahananda, Nagar, Punarbhaba, Atrai, Kulik, Karatowa and Tangon. Irrigation and Waterways Department, Government West Bengal is taking up bank protection work for such sites under the above plan scheme.

A total of 13 schemes for bank protection works at the above 24 sites on common/border rivers have been taken up by the State Government with funding under the Central Plan scheme "River Management Activities and work related to Border rivers". All aforementioned 13 schemes have been completed in 2012-13

In addition, a scheme for de-silting of river Ichamati along the Indo-Bangladesh Border has also been taken up and completed.

However, in the technical level meeting of Joint River Commission between India and Bangladesh which was held at Kolkata on 10th February 2012, some bank protection works (Indian side) were identified to be executed during XII plan. The Government of West Bengal has submitted twenty five nos. of schemes to GFCC for their techno-economic appraisal. Out of 25 nos. of schemes, GFCC has cleared 19 and rest 6 are under examination, as per list shown below:

The Government of West Bengal has started execution work on 19 Bank protection schemes cleared by GFCC.

Table 7.1

Status of Appraisal of schemes for common border rivers in West Bengal during XII plan

| S. No. | Name of scheme | Estimated cost (Rs in lakh) | Remarks |
|---------------|---|------------------------------------|----------------|
| 1 | Protection to the left bank of river Atrai at downstream of Samjhia B.O.P. camp in P.S. Kumarganj, District- Dakshin Dinajpur (Phase- II) (Length- 240 m) | 143.54 | Cleared |
| 2 | Protection to the left bank of river Atrai near Rasulpur B.O.P. camp in P.S. Kumarganj, District- Dakshin Dinajpur (Length- 1295 m) | 873.19 | Cleared |
| 3 | Protection to the left bank of river Tulai near Purbasil B.O.P. camp in P.S. Kushmandi, District Dakshin Dinajpur (Length- 550 m) | 218.63 | Cleared |
| 4 | Protection to the right bank of river Punarbhava near Mallickpur, B.O.P. camp in P.S. Gangarampur, District Dakshin Dinajpur (Length- 525m) | 265.67 | Cleared |
| 5 | Protection to the left bank of river Tangon upstream and downstream of Iron bridge No. 1 near Kholtor B.O.P. camp in P.S. Kushmandi, district Dakshin Dinajpur (Length- 320 m) | 153.81 | Cleared |
| 6 | Bank protection work along the right bank of river Mahananda from 445/10-S to 448/3-S under Phansidewa B.O.P. camp (Indian side) in P.S. Phansidewa, District Darjeeling (Length-450 m) | 194.52 | Cleared |

| S. No. | Name of scheme | Estimated cost (Rs in lakh) | Remarks |
|--------|---|-----------------------------|---------|
| 7 | Bank protection work along the right bank of river Mahananda from 443/1-S to 445/10-S under Murikhewa B.O.P. camp (Indian side) in P.S. Phansidewa, District- Darjeeling (Length- 1250 m) | 749.24 | Cleared |
| 8 | Bank protection work along the right bank of river Mahananda from 448/12-S to 730/M under Phansidewa B.O.P. camp (Indian side) in P.S. Phansidewa, District- Darjeeling (Length- 750 m) | 321.62 | Cleared |
| 9 | Bank protection work along the right bank of river Mahananda from 731/M to 731/24-R Laldasjote B.O.P. camp in P.S. Phansidewa, District- Darjeeling (Length- 2200 m) | 1061.03 | Cleared |
| 10 | Bank protection work along the left bank of river Mahananda at village Asrafpur in Mouza-Asrafpur in block and P.S. Habibpur, District- Malda (Length- 1100 m) | 1095.61 | Cleared |
| 11 | Bank protection work along the left bank of river Mahananda at village Asrafpur in Mouza-Asrafpur (from Plot No. 609 to 777, near Border Gate No. 43) in block and P.S. Habibpur, District- Malda (Length- 950 m) | 957.46 | Cleared |
| 12 | Bank protection work along the right bank of river Punarbhaba at Mouza-mahadebpur in B.O.P. Battali in block and P.S. Bamangola, District- Malda (Length- 300 m) | 323.29 | Cleared |
| 13 | Bank protection work along the left bank of river Mahananda at village Jadavnagar and Chandra Para in B.O.P. Sukhnagar in block and P.S. Habibpur, District- Malda (Length- 250 m) | 263.22 | Cleared |
| 14 | Bank protection work along the right bank of river Punarbhaba at Mouza-Nasratpur Pathar Mahadevbati within block and P.S. Habibpur, District- Malda under Anuradhapur B.O.P. (Length- 100 m) | 710.75 | Cleared |
| 15 | Bank protection work along the left bank of river Mahananda in B.O.P. Asrafpur in Mouza-Asrafpur (from plot no. 785 to 1015) in block and P.S. Habibpur, district Malda (Length- 950 m) | 968.60 | Cleared |

| S. No. | Name of scheme | Estimated cost (Rs in lakh) | Remarks |
|---------------|--|------------------------------------|-------------------|
| 16 | Bank protection work along the right bank of river Punarbhaba at Mouza-Pathar Nasratpur and Dhaka Pathar within block and P.S. Habibpur, district Malda under Kaliabari B.O.P. (Length 1000 m) | 709.27 | Cleared |
| 17 | Bank protection work along the left bank of river Punarbhaba at village- Kalibari within Mouza- Anuradhapur (Ananda Pathar) in block and P.S. Habibpur, district Malda under Kalibari B.O.P. (Length- 400 m) | 283.11 | Cleared |
| 18 | Protection to the right bank of river Nagar from erosion near Khunti B.O.P. camp and border fencing along the Indo-Bangladesh border in P.S. Jamalpur, district- Uttar Dinajpur (Length- 575 m) | 220.84 | Under examination |
| 19 | Protection to the left bank of river Kulik from erosion near Makorhat B.O.P. camp in P.S. Hemtabad, district- Uttar Dinajpur (Length- 350 m) | 149.39 | Cleared |
| 20 | Protection to the right bank of river Nagar from erosion near Morageti B.O.P. camp and border fencing along the Indo- Bangladesh border in P.S. Islampur, district- Uttar Dinajpur (Length- 520 m) | 200.81 | Under examination |
| 21 | Protection to the right bank of river Nagar from erosion near Hatkhola B.O.P. camp and border fencing along the Indo- Bangladesh border in P.S. Islampur, district- Uttar Dinajpur (Length- 480 m) | 212.34 | Under examination |
| 22 | Protection to the right bank of river Nagar from erosion near Fatepur B.O.P. camp and border fencing along the Indo- Bangladesh border in P.S. Islampur, district- Uttar Dinajpur (Length- 450 m) | 200.567 | Under examination |
| 23 | Protection to the right bank of river Nagar from erosion near Sonamati B.O.P. camp and border fencing along the Indo- Bangladesh border in P.S. Islampur, district- Uttar Dinajpur (Length- 500 m) | 202.87 | Under examination |
| 24 | Protection to the left bank of river Tangon from erosion near Padmakumari and Chandgaon B.O.P. in P.S. Kalianganj, district- Uttar Dinajpur (Length- 900 m) | 415.07 | Under Examination |

| S. No. | Name of scheme | Estimated cost (Rs in lakh) | Remarks |
|--------|--|-----------------------------|---------|
| 25 | Protection to the right bank of river Korotoya from erosion near Barmanbasti B.O.P. camp and border fencing along the Indo-Bangladesh border in P.S. Chopra, district Uttar Dinajpur (Length- 460 m) | 224.02 | Cleared |

The year-wise status of funding under the above mentioned plan scheme is as under:

Table 7.2

(Rs. in crore)

| Sl. No. | State | Amount released | | | | | | |
|---------|-------------|-----------------|-------|-------|-------|-------|-------|--------|
| | | 08-09 | 09-10 | 10-11 | 11-12 | 12-13 | 13-14 | Total |
| 1 | West Bengal | NIL | 17.51 | 71.31 | 39.49 | NIL | 1.60 | 130.09 |

8

Cooperation with Neighbouring Countries

8.1 India-Nepal Cooperation

Several rivers like the Gandak, the Bagmati, the Kamla, the Kosi etc. originate in Nepal and flow through the hilly tracts of Nepal before entering the plains of India. Heavy rains in the upper reaches not only bring floods of large magnitude but also carry huge quantities of sediment to the plain reaches of India. Hence any measures to be taken up to alleviate the flood and silting problems are to be done in an integrated manner with proper co-ordination between the two countries. GFCC is playing a vital role in this context by providing all the technical know-how and guidance.

As floods in Bihar and part of U.P are generally caused by the rivers coming from Nepal, long term solution to the problem of flood lies in the watershed management and construction of multi-purpose projects with flood cushion in the upper reaches to achieve flood moderation. Since suitable sites to locate reservoir/dams to control the floods lie in Nepal, the construction of these dams/reservoirs on these rivers is subject to agreement with Government of Nepal.

8.1.1 India Nepal Joint Ministerial Committee on Water Resources (JMCWR)

Government of India is having continuous dialogue with the Government of Nepal to mitigate the devastation caused by the flood from the rivers coming from Nepal. In order to have interaction at highest level pertaining to the cooperation in the field of water resources, an India-Nepal Joint Ministerial Committee on Water Resources (JMCWR) with Indian side headed by Hon'ble Union Minister of Water Resources, has been constituted. So far only one meeting of JMCWR has taken place. The first meeting of JMCWR was held on 15.2.2012.

For implementation of existing arrangement and better understanding, India-Nepal Joint Committee on Water Resources (JCWR) headed by the Water Resources Secretaries of both the countries is functioning with the mandate to act as umbrella committee for all other sub-committees and groups under it. So far seven meetings of the JCWR have been held which covered the entire gamut of bilateral cooperation in the water resources sector including flood management aspects and issues regarding multi-purpose projects on rivers coming from Nepal like the Sapta Kosi, the Sun Kosi, the Pancheshwar multi-purpose projects and other related matters. The last meeting of JCWR was held in January 2013.

8.1.2 Joint Standing Technical Committee (JSTC)

This Committee was constituted during the 3rd meeting of India-Nepal Joint Committee on Water Resources (JCWR) held from 29.09.08 to 01.10.08 at

Kathmandu (Nepal). The function of JSTC is to coordinate the work of existing committees and sub-committees under the JCWR. The Constitution (Indian side) and terms of reference of the Committee are as under:

| Sl. No. | Composition-Indian side | |
|---------|---|------------------|
| 1 | Chairman, GFCC, Patna | Team Leader |
| 2 | Commissioner (Ganga), MOWR | Member |
| 3 | Joint Secretary (Hydro), Ministry of Power | Member |
| 4 | Chief Engineer (UGBO), CWC, Lucknow | Member |
| 5 | Chief Engineer (HP & I), CEA | Member |
| 6 | Director (North), MEA, New Delhi | Member |
| 7 | Representative from Embassy of India, Kathmandu | Member |
| 8 | Engineer-in-Chief (North), WRD, Government of Bihar | Member |
| 9 | Representative of Government of U.P | Member |
| 10 | Representative from Government of West Bengal | Member |
| 11 | Representative from Government of Uttarakhand | Member |
| 12 | Sr.Joint Commissioner, MOWR | Member-Secretary |

Terms of Reference of JSTC

- (i) To coordinate all existing Committees and Sub Committees under the JCWR

So far three meetings of JSTC have been held. The last meeting was held in New Delhi on 13-14 September, 2011 in which various issues of bilateral concern were discussed and decisions taken.

8.1.3 Joint Committee on Inundation and Flood Management (JCIFM)

This Committee was constituted in the 4th meeting of India-Nepal Joint Committee on Water Resources (JCWR) held on 12-13, March, 2009 in New Delhi. This Committee replaces the earlier bilateral committees namely SCIP, HLTC, JCFM, SCEC and SCFF. The Constitution (Indian side) and terms of reference of the committee are as under:

| Sl. No. | Composition-Indian side | |
|---------|--|-------------|
| 1 | Member (Coordination), GFCC, Patna | Team Leader |
| 2 | Chief Engineer, CWC | Member |
| 3 | Chief Engineer (WRD), Government of Bihar/Chief Engineer, Irrigation Department, | Member |

| | | |
|---|--|------------------|
| | Government of Uttar Pradesh / Chairman, North Bengal Flood Control Commission, Government of West Bengal | |
| 4 | Director (North), MEA, New Delhi | Member |
| 5 | Sr. Joint Commissioner, MOWR | Member |
| 6 | Representative of EOI, Kathmandu | Member |
| 7 | Director (MP-II), GFCC, Patna | Member-Secretary |
| 8 | Director (Finance), MEA/MOWR, New Delhi | Invitee |

Terms of Reference of JCIFM

- (i) The JCIFM shall be an umbrella Committee to implement the decisions of JSTC on inundation and flood management issues.
- (ii) The JCIFM shall address the issues related to flood management and inundation and can form Task Group(s), if required.
- (iii) The JCIFM shall monitor the progress of works and provide guidance to task group(s) and report to JSTC.

So far eight meetings of JCIFM have been held. The last inspection / meeting was held in February, 2014 in Nepal in which various issues relating to inundation and flood management were discussed and decision taken.

8.1.4 Extension of Embankment on River Bagmati, Kamla, Lalbakeya and Khando rivers

In order to prevent spilling of flood water from the Bagmati, the Kamla, Lalbakeya and the Khando rivers from Nepal side in the protected area in Bihar, both sides have agreed to extend the embankments along these rivers from the India-Nepal border to high grounds in Nepal with corresponding strengthening of embankments on the Indian side. The work relating to this aspect is under various stages of implementation.

8.2 India-Bangladesh Cooperation

8.2.1 Indo-Bangladesh Joint River Commission

The Indo-Bangladesh Joint Rivers Commission (JRC) was set up in November 1972 to discuss and sort out the issues related to common/border rivers between India and Bangladesh. The setup provides a platform for resolution of common problems related to developments works on common/border rivers, causing no harm to either side.

Under the aegis of above Commission, meetings are held at regular interval at various levels to discuss related issues. The decisions taken in such meetings are finally ratified by the Commission.

Various issues related to management of floods in common/border rivers have been discussed. The issues in respect of Ganga Basin under deliberations are summarized as under:

8.2.2 Bank Protection Works

Most of common/border rivers between India and Bangladesh traverse through alluvial plains and they keep on changing their course due to meandering and erode banks on either side. Bank protection works are thus required to arrest erosion at vulnerable points.

The matter was discussed in the 36th meeting of JRC held in 2005 and at various subsequent occasions. Later in the Secretary (Water Resources) level meeting between India and Bangladesh held in August 2007, it was decided that bank protection works on identified sites could be taken up simultaneously on both sides within a time frame of three successive working sessions with similar specifications of works. The specifications of works to be undertaken were finalized in a technical level meeting held in December, 2009. As per the list exchanged between the countries, the bank protection works were proposed on 41 sites in India and 28 sites in Bangladesh. It was also agreed to add more sites as per requirement.

In 2013-14, thirteen Bank Protection Schemes in India were completed and nineteen Bank Protection Schemes are being implemented by Government of West Bengal.

9 Promotion of Use of Hindi

9.1 Progressive Use of Hindi

An Official Language Implementation Committee headed by the Chairman, GFCC is functioning in Ganga Flood Control Commission. Both Members of GFCC and various Directors, Deputy Directors, Administrative Officer, P.S. to Chairman, Assistant Director (Gr.II), Hindi Translator and Branch heads from GFCC besides Dy. Director (Implementation), Official Language, Ministry of Home Affairs and one officer from Hindi Teaching Scheme are its members. Assistant Director (Gr-II) of the Commission is Member- Secretary of this Committee.

The said Committee holds its meetings once in every quarter. In these meetings, detailed discussions are held on the quarterly progress reports and emphasis is given on achieving the targets laid down in the annual programme. The Committee makes an assessment of actual position of progressive use of Hindi in day to day work of the Commission and suggests measures for removing the difficulties experienced at the working levels. During the year 2013-14, four meetings of the Committee were held.

Chairman, GFCC is a Member of Hindi Salahkar Samiti, Ministry of Water Resources and “Nagar Rajbhasa Karyanvayan Samiti”, Patna. Chairman or a senior officer of the Commission participates in the meetings of above Committee regularly.

9.2 Achievements

9.2.1 Achievements During 2013-14

During the year 2013-14 generally all office orders were issued in both languages i.e. Hindi and English. During the year 2013-14, out of 5797 letters issued by GFCC, 5257 were in Hindi. The region-wise break up is given below:

Table 9.1

| S. No. | Region | Total letters issued | Letters issued in Hindi |
|--------|--------------|----------------------|-------------------------|
| 1 | A | 5691 | 5169 |
| 2 | B | 13 | 12 |
| 3 | C | 93 | 76 |
| | Total | 5797 | 5257 |

To increase the awareness of use of Hindi language, Hindi fortnight was organized from 13.9.2013 to 27.9.2013. Competition for Hindi Essay, Noting/ Drafting and General Hindi/ Knowledge was also organized among officials of the commission during this period. After evaluation, prizes were distributed among the winners.

The following officials of the Commission were awarded prizes:

Table 9.2

| (a) Hindi Essay Competition | | |
|------------------------------------|---|---------------|
| S. No. | Name/Post | Prizes |
| 1 | Shri Satish Kumar, L.D.C. | First |
| 2 | Shri Dilip Kumar Singh, Jr. Computer | Second |
| 3 | Shri Sachindra Kr. Sharma, Sr. Computer | Third |
| 4 | Shri Tapas Kumar Das, Steno. Gr.I | Consolation |

| (b) Hindi Noting & Drafting Competition | | |
|--|--------------------------------------|---------------|
| S. No. | Name/Post | Prizes |
| 1 | Shri Dilip Kumar Singh, Jr. Computer | First |
| 2 | Shri Jitendra Kumar, Head Clerk | Second |
| 3 | Shri Sachindra Sharma, Sr. Computer | Third |

| (c) Hindi Typing Competition | | |
|-------------------------------------|-------------------------------------|---------------|
| S. No. | Name/Post | Prizes |
| 1 | Shri Sachindra Sharma, Sr. Computer | First |
| 2 | Shri Balmiki Prasad, Khalasi | Second |
| 3 | Shri Satish Kumar, L.D.C. | Third |

| (d) General Hindi / Knowledge Competition (For “Grade- D” Staff only) | | |
|--|-------------------------------|---------------|
| S. No. | Name/Post | Prizes |
| 1 | Shri Balmiki Prasad, Khalasi | First |
| 2 | Shri Kewal Mochi, Khalasi | Second |
| 3 | Shri Rameshwar Yadav, Khalasi | Third |

| (e) Incentive for doing work in Hindi Award Scheme | | |
|---|---------------------------------|---------------|
| S. No. | Name/Post | Prizes |
| 1 | Shri Jitendra Kumar, Head Clerk | First |
| 2 | Shri Satish Kumar, L.D.C. | First |
| 3 | Shri Kewal Mochi, Khalasi | Second |
| 4. | Mohan Jha, D/man | Second |
| 5. | Pappu Lal, L.D.C. | Second |

10 | Participation in Trainings, Workshops and Seminars

During the year 2013-14, officers and staff of GFCC participated in various training programmes, workshops and seminars as per the details given below:

Table 10.1

| Sl. No. | Training Course/ Workshop/ Seminar | Dates | Name of Officers |
|----------------|--|--------------------------------|----------------------------------|
| 1. | Workshop on Outcome Budget at ISTM, New Delhi | 06.06.2013 to 07.06.2013 | Sh. Satish Kumar, LDC |
| 2. | Training programme on pension and other retirement benefits at ISTM, New Delhi | 08.07.2013 to 11.07.2013 | Sh. U.K. Sharma, Dy. Director |
| 3. | Training programme on Results – Frameworks Management System Cabinet Secretariat, Govt. of India | 19.08.2013 | Shri Harshwardhan, A.D. |

11

Representation of Ganga Flood Control Commission in Various Committees

Chairman and other senior officers of GFCC represent GFCC on various technical committees either as Chairman, Member-Secretary or as Members. The list of such Committees are as under

Table 11.1

| Sl. No. | Name of Committee/ Board/ Experts/ Technical Group etc. | Representation of GFCC | |
|---------|---|---|--------------------|
| | | Officer | Position |
| 1 | Ganga Flood Control Board | Chairman, GFCC | Member-Secretary |
| 2 | Ganga Flood Control Commission | Chairman, GFCC | Chairman |
| 3 | Gandak High Level Standing Committee | Chairman, GFCC | Chairman |
| 4 | Kosi High Level Committee | Chairman, GFCC | Chairman |
| 5 | India-Nepal Joint Ministerial Commission on Water Resources (JMCWR) | Chairman, GFCC | Member |
| 6 | India-Nepal Joint Committee on Water Resources (JCWR) | Chairman, GFCC | Member |
| 7 | India-Nepal Joint Standing Technical Committee | Chairman, GFCC | Indian Team Leader |
| 8 | National Institute of Hydrology Society | Chairman, GFCC | Member |
| 9 | NNRMS Standing Committee on Water Resources (SC-WR) | Chairman, GFCC | Member |
| 10 | Technical Advisory Committee of Farakka Barrage Project | Chairman, GFCC Alternate: Member(P), GFCC | Member |
| 11 | Water Resources Division Council of Bureau of Indian Standards | Chairman, GFCC Alternate Member-Member(C),GFCC | Member |

| Sl. No. | Name of Committee/ Board/ Experts/ Technical Group etc. | Representation of GFCC | |
|---------|---|---|-------------|
| | | Officer | Position |
| 12 | Farakka Barrage Project Advisory Committee | Member(P), GFCC | Member |
| 13 | Tender Committee of Farakka Barrage Project | Member(P), GFCC | Member |
| 14 | Yamuna Standing Committee | Member(P), GFCC | Member |
| 15 | Coastal Protection And Development Advisory Committee | Member(P), GFCC | Member |
| 16 | India Nepal Joint Committee on Inundation & Flood Management (JCIFM) | Member(C), GFCC | Team Leader |
| 17 | Indian-Nepal Joint Committee on Kosi & Gandak Projects | Member(C), GFCC | Member |
| 18 | U.P. State Committee of Engineers | Director, GFCC | Member |
| 19 | Bihar State Committee of Engineers | Director, GFCC | Member |
| 20 | West Bengal State Committee of Engineers | Director, GFCC | Member |
| 21 | M.P. State Committee of Engineers | Director, GFCC | Member |
| 22 | T.A.C. of Bihar | Director, GFCC | Member |
| 23 | T.A.C. of Uttar Pradesh | Director, GFCC | Member |
| 24 | T.A.C. of Himachal Pradesh | Director, GFCC | Member |
| 25 | T.A.C. of Haryana | Director, GFCC | Member |
| 26 | T.A.C. of Rajasthan | Director, GFCC | Member |
| 27 | Technical Committee of West Bengal State Flood Control Board | Director, GFCC | Member |
| 28 | TAC of Jharkhand | Director, GFCC | Member |
| 29 | TAC of Uttarakhand | Director, GFCC | Member |
| 30 | TAC of Chhattisgarh | Director, GFCC | Member |
| 31 | T.A.C. of Madhya Pradesh | Director, GFCC | Member |
| 32 | NIH Regional Coordination Committee for Ganga Plain North Regional Centre | Director, GFCC | Member |
| 33 | River Training & Diversion Works Sectional Committee (WRD-22) of Bureau of Indian Standards | Director (MP-II), GFCC Alternate Member-Director (P), GFCC | Member |
