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STANDING COMMITTEE ON WATER RESOURCES

(2014-15)

SIXTEENTH LOK SABHA

MINISTRY OF WATER RESOURCES, RIVER DEVELOPMENT AND GANGA REJUVENATION

ISSUES CONCERNING FLOOD MANAGEMENT, COMPENSATION AND STATUS OF OWNERSHIP OF SUBMERGED AND ERODED LAND IN THE COUNTRY, INCLUDING COMPENSATION TO FARMERS FOR LOSS OF THEIR CROPS DESTROYED BY FLOODS AND RIGHT TO DISPOSAL OF THE SAND LEFT IN THE FIELDS OF THE FARMERS

FOURTH REPORT



LOK SABHA SECRETARIAT

NEW DELHI

May, 2015/Vaisakha, 1937 (Saka)

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Presented to Lok Sabha on 13.05.2015

Laid on the Table of Rajya Sabha on 13.05.2015



LOK SABHA SECRETARIAT
NEW DELHI

May, 2015/Vaisakha, 1937 (Saka)

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STANDING COMMITTEE ON WATER RESOURCES

(2014-15)

COMPOSITION

Shri Hukum Singh - Chairperson

LOK SABHA

2. Shri Radheshyam Biswas
3. Shri Devusinh Chauhan
4. Shri Sukhbir Singh Jaunapuria
5. Shri Tariq Hameed Karra
6. Shri Vinod Kumar B.
7. Shri Murali Mohan Maganti
8. Shri Sidhant Mohapatra
9. Shri Abhijit Mukherjee
10. Shri Rodmal Nagar
11. Shri Subhash Patel
12. Shri Sanjay Kaka Patil
13. Shri Vijaysinh Shankarrao Mohite Patil
14. Smt. Aparupa Poddar
15. Shri Vishnu Dayal Ram
16. Shri S. P. Y. Reddy

17. Shri Ram Prasad Sarmah
18. Smt. Sathyabama V.
19. Shri Lallu Singh
20. Shri L.K. Vaghela
21. Smt. Dimple Yadav

RAJYA SABHA

22. Shri Balwinder Singh Bhunder
23. Shri Anil Madhav Dave
24. Smt. Naznin Faruque
25. Shri Mir Mohammad Fayaz
26. Shri Sanjiv Kumar
27. Prof. Mrinal Miri
28. Shri V. Hanumantha Rao
29. Shri Amar Shankar Sable
30. Shri A.V. Swamy
31. Shri Lal Sinh Vadodia

SECRETARIAT

- | | | | |
|----|--------------------|---|----------------------------|
| 1. | Shri A.K. Singh | - | Joint Secretary |
| 2. | Shri S. Chatterjee | - | Director |
| 3. | Smt. Rita Jaikhani | - | Additional Director |
| 4. | Shri Kamal Khurana | - | Senior Committee Assistant |

INTRODUCTION

I, the Chairperson, Standing Committee on Water Resources (2014-15) having been authorized by the Committee to submit the Report on their behalf, present the Fourth Report on "Issues concerning Flood Management, Compensation and Status of ownership of submerged and eroded land in the country, including compensation to farmers for loss of their crops destroyed by floods and right to disposal of the sand left in the fields of farmers."

2. The Committee (2014-15) took up the subject "Issues concerning Flood Management, Compensation and Status of ownership of submerged and eroded land in the country, including compensation to farmers for loss of their crops destroyed by floods and right to disposal of the sand left in the fields of farmers" for a detailed examination and Report. The Committee took evidence of the representatives of the Ministry of Water Resources, River Development and Ganga Rejuvenation, Ministry of Environment, Forests & Climate Change, Ministry of Home Affairs, Ministry of Agriculture and Ministry of Mines on 19 September, 2014, 1 October, 2014 and 29 April, 2015.

3. The Report was considered and adopted by the Committee at their sitting held on 11 May, 2015.

4. The Committee wish to express their thanks to the representatives of the Ministry of Water Resources, River Development and Ganga Rejuvenation, Ministry of Environment, Forests & Climate Change, Ministry of Home Affairs, Ministry of Agriculture and Ministry of Mines for providing them the requisite written material and for depositions in connection with the examination of the subject.

5. The Committee would also like to place on record their sense of deep appreciation for the assistance rendered to them by the officials of the Lok Sabha Secretariat attached to the Committee.

NEW DELHI

11 May, 2015

21 Vaisakha, 1937 (Saka)

HUKUM SINGH,

Chairperson,

Standing Committee on Water Resources

REPORT
PART I
CHAPTER I
INTRODUCTORY

India has more than 18% of the world's population but has only 4% of the world's renewable water resources and only 2.4% of the world's land area. The average annual precipitation in India is estimated as 4000 BCM (Billion Cubic Meter), out of which the average precipitation during Monsoon (June-September) is estimated as 3000 BCM. The average annual run off in the rivers is estimated to be 1869 BCM. Out of the above, the estimated utilizable surface water resource is 690 BCM. Apart from the above, the total utilizable groundwater resource is 431 BCM. As such, the total annual utilizable water resource in the country is estimated to be 1121 BCM.

1.2 There is high variability of rainfall in space and time. Ranging from more than 1000 cm in North-Eastern Region, it is as low as 10 cm in Western parts of Rajasthan. It is observed that about 75% of the annual rainfall is available during four months only (June-September). This high variability of rainfall in the country leads to natural calamities like flood,

erosion in the flood plains of the rivers and also drought. As such, India has a complex system of water scenario and therefore, has several challenges. The high temporal and spatial variability of rainfall leads to floods in areas of high rainfall and drought in areas of scanty rainfall.

1.3 Floods are natural phenomena occurring in many parts of the country in varying magnitudes. The main causes of floods have been assessed as high intensity rainfall in short duration, inadequate channel capacities, inadequate drainage, faulty regulation of reservoirs and failure of flood control structures.

1.4 The Twelfth Plan Working Group on Flood Management estimates that in the period 1953-2010, on an average, an area of 7.208 mha and a population of 3.19 million were affected by floods every year. The average annual flood damage to crops, houses and public utilities at constant (2010-11) prices works out to about Rs. 6,976 crores. This is excluding damage to private investments for which no estimate is available. Expenditure incurred by both the Central and State Governments in various Plans (at 2010-11 prices) is estimated to be about Rs. 1,26,000 crore. On an average this is an investment of Rs. 2,100 crores per annum, although allocation has increased in later Plan periods compared to earlier years.

The States falling within Brahmaputra-Meghna, Ganga and Indus river basins are the most affected by floods. The current estimate of the flood-prone area in the country is 49.815 mha, which is higher than the assessment made by the Rashtriya Barh Aayog (RBA) in 1980 (40 mha). Overall, 39 districts in India have been identified as chronically flood-prone. Indiscriminate development and encroachment of flood plain areas, improper planning in construction of roads and railways, inadequate and ineffective drainage in urban areas, and so on, have contributed to increase in flood damage.

1.5 The subject of flood control, unlike irrigation, does not figure in any of the three legislative lists included in the Constitution of India. However, drainage and embankments are two of the measures specifically mentioned in entry 17 of List II (State List) as under:

"Water, that is to say, water supplies, irrigation and drainage, drainage and embankments, water storage and power subject to the provision of entry 56 (Union List)."

List-I (Union List): Entry-56 however includes the following provision:

"Regulation and development of inter-State rivers and river valleys to the extent to which such regulation and development under the control of the Union is declared by Parliament by law to be expedient in the public interest."

1.6 Detailing the role of Union Government in flood management, the Ministry of Water Resources, River Development and Ganga Rejuvenation (MoWR, RD & GR) in a written reply stated as under:

"The subject of Flood Management being within the purview of the States, the primary responsibility of management of water resources including floods in the States lies with the State Governments. The role of Union Government is technical, advisory, catalytic and promotional in nature."

1.7 Considering the extent, intensity and adverse impact of recurring floods on human habitations, agriculture, soil quality & live stocks etc., the Committee selected the subject for detailed examination on 12 September 2014. The Committee were briefed by the representatives of the MoWR, RD & GR on 19 September 2014. The evidence of the representatives of the MoWR, RD & GR was taken by the Committee on 1 October 2014.

1.8 The Committee's examination of the subject 'Issues concerning flood management, compensation and status of ownership of submerged and eroded land in the country including compensation to farmers for loss of their crops destroyed by floods and right to disposal of the sand left in the fields of the farmers' *inter-alia* includes flood affected area and damaged scenario, causes of flood, role of Union and State Governments in management of floods, flood plain zoning techniques, relief and rehabilitation policy, and desilting of agricultural lands. Besides, other

related aspects, including the views of the Ministries of Water Resources, River Development and Ganga Rejuvenation, Environment, Forests and Climate Change, Agriculture and Home Affairs have been dealt with in the succeeding chapters of this Report.

CHAPTER II

FLOOD SCENARIO IN THE COUNTRY

(i) Flood-affected areas and magnitude of damage

The Committee were informed that in December, 2011, the XII Plan Working Group on Flood Management and Regional Specific Issues compiled the sum of maxima of flood affected area state-wise for the entire country during the period from 1953 to 2010 which was 49.815 mha. The details are given as under (Table 1) :

Table-1: State-wise Maximum Area Affected by Floods during the year from 1953 to 2010

Sl.No.	State	Max. area affected (mha)	Year of Maximum area affected
(1)	(2)	(3)	(4)
1	Andhra Pradesh	9.040	2005
2	Arunachal Pradsh	0.207	2003
3	Assam	3.820	1988
4	Bihar	3.820	2004
5	Chhattisgarh	0.089	2001
6	Delhi	0.458	1997
7	Goa	0.000	0
8	Gujarat	2.050	1988
9	Haryana	1.000	1977
10	Himachal Pradesh	2.870	1999
11	Jammu & Kashmir	0.514	1987
12	Jharkhand	0.000	0
13	Karnataka	0.900	1988
14	Kerala	1.470	1989
15	Madhya Pradesh	0.377	1994
16	Maharashtra	0.391	2002
17	Manipur	0.080	1989

18	Meghalaya	0.095	1987
19	Mizoram	0.541	1993
20	Nagaland	0.009	1993
21	Orissa	1.400	1960
22	Punjab	2.790	1988
23	Rajasthan	3.260	1977
24	Sikkim	1.117	2000
25	Tamil Nadu	1.466	2010
26	Tripura	0.330	1963
27	U.P.	7.340	1978
28	Uttarakhand	0.002	2001
29	West Bengal	3.080	1978
30	Andaman & Nicobar	0.030	1988
31	Chandigarh		
32	Dadra & Nagar Haveli		
33.	Daman & Diu		
34	Lashadweep		
35	Puducherry	0.050	1977
	Total	49.815	

2.2 The Ministry further informed the Committee that as per database maintained by Central Water Commission, the highlights of flood damage indicating extent of damages in terms of area affected, population affected, human lives lost/ cattle loss during the period from 1953 to 2013 are as under (Table 2):

Table-2: Highlights of Flood Damage in India during the period from 1953 to 2012

Sl.No.	Item	Unit	Average Annual Damage	Maximum Damage	
				Extent	Year
1	2	3	4	5	6
1.	Area affected	mha	7.225	17.5	1978
2.	Population affected	Million	32.43	70.45	1978

3.	Human lives lost	nos.	1653	11316	1977
4.	Cattle lost	nos.	96593	618248	1979
5.	Cropped area affected	mha	3.789	12.30	2005
6.	Damage to crops	Rs. Crore	1118.81	7307.23	2003
7.	Houses damaged	Nos.	1254954	3507542	1978
8.	Damage to house	Rs. crore	565.65	10809.79	2009
9.	Damage to public utilities	Rs. crore	1867.85	17509.35	2009
10.	Total damages to crops, houses and public utilities	Rs. crore	3612.12	32554.77	2009
Note:- The Flood damage data of monsoon 2013 is under verification/assessment by States.					

(ii) Flood in River Brahmaputra

2.3 The Committee observed during the briefing held on 19 September, 2014 that river Brahmaputra is a pride for the country but sometimes it is a curse because of devastating floods as it washes away thousands of people and cattle. People are rendered homeless. The Committee also observed that due to annual floods in Brahmaputra, animal life especially elephants and deer in Kaziranga National Park are getting killed. When asked during the examination of Demands for Grants (2014-15), regarding the feasibility of dredging the Brahmaputra river channel for addressing the problem of devastating floods in Assam, the Ministry furnished the following reply:

"Brahmaputra Board has not yet taken up study on feasibility of dredging in the Brahmaputra River for addressing the problem of floods and erosion in Assam."

2.4 Subsequently during the detailed examination of the subject under reference by the Committee, the Ministry through a written reply further submitted as under:

"The method of improving the hydraulic conditions of the river channels by de-silting, dredging, lining etc., to enable the river to carry its discharges at lower levels or within its banks has been often advocated but adopted on a very limited extent because of its high cost and other problems especially because the success of this method of river improvement for lowering flood levels depends on outfall conditions which cannot be changed appreciably.

Dredging operations of the Brahmaputra, which were undertaken in the early seventies on an experimental basis, were discontinued because of their prohibitive cost and limited benefits.

In 2006, a Committee headed by Shri B.K. Mittal, Ex-Chairman, Central Water Commission (CWC) had studied the measure of dredging of rivers as solution of improving their capacities. In view of the fact that an excavated river bed gets filled with sediment soon at the end of monsoon and there are problems of disposal of excavated earth as well as due to high cost of repeated maintenance required , the Committee did not recommend dredging of large rivers in general as a solution for improving their capacities.

Dredging in selected locations may perhaps be considered as a component of a package of measures for channel improvement to check the river bank erosion subject to techno-economic justification. It may be economically justifiable as a method for channel improvement where navigation is involved. Dredging is sometimes advocated for clearing river mouth or narrow constrictions."

2.5 Elaborating on the ongoing measures undertaken on river Brahmaputra, the Secretary, MoWR, RD & GR, during the briefing held on 19 September, 2014 deposed as under:

"One major development that has taken place is that the Government of Assam has taken up with the World Bank a massive flood control project of river Brahmaputra. Just about a month back they had sought clearance from the Ministry. We had already communicated the, in principle, clearance to support to the proposal of Government of Assam. Now, the terms of loan etc., would be negotiated between Government of Assam, the World Bank and the Ministry of Finance. These are some of the measures that have been initiated. It is true that problem is immense, but these are the steps I am aware of".

2.6 He further added as under:

".....Near Kaziranga National Park ... ADB had taken up four projects to help the river embankments of Government of Assam. Kaziranga, due to certain problems from the environmental angle, that part was abandoned, ..."

2.7 During the course of examination of Demands for Grants (2014-15), the MoWR, RD & GR enlightened the Committee that out of the 7 statutory posts in Brahmaputra Board, only the post of Secretary is filled in and other remaining 6 posts are lying vacant. Filling up of posts of Chairman, Vice-Chairman and Financial Adviser are under process in MoWR, RD & GR while vacancy circular for filling up the posts of General Manager and Chief Engineer-I has been issued and the proposal for filling up the post of

Secretary and Chief Engineer-II on regular basis is under submission to the Ministry. Further, the draft Bill on "Brahmaputra and Barak Basin Authority is still under finalization in the Ministry. When the Committee further enquired about the updated status of the vacancy position in Brahmaputra Board, the Ministry furnished the following comments:

"Six posts are lying vacant in Brahmaputra Board and efforts are being made by the Ministry to fill up them. Regarding construction of dams and flood control schemes, the mandate is 'To construct with the approval of the Central Government, multipurpose dams and works connected therewith as proposed in the Master Plan approved by the Central Government and maintain and operate such dams and works. The Ministry had prepared a proposal for reconstitution of Brahmaputra Board as: North East and Brahmaputra River Authority' and circulated the same to the NE States for their comments. The comments have been received. The Ministry is making efforts to address the concerns expressed by Arunachal Pradesh."

(iii) Floods in Jammu & Kashmir

2.8 During the briefing, the Committee observed that flood warning system needs to be strengthened in the country. On being asked about the reasons for the inability of the Central Water Commission (CWC) to timely predict and disseminate the news of floods to the affected areas of the country in advance, the Ministry in their written reply stated as under:

"CWC has countrywide presence in 18 States/ UTs covering 9 river basins/ 71 sub-basins where flood forecasts are issued at 147 stations in respect of river water levels corresponding to river danger levels provided by State governments and flood volume for 28 dams / barrages. The Forecasts are issued to the state administration & other concerned agencies without fail as per Standard Operating Procedure (SOP) i.e. as soon as the river water level rises above warning level with a warning varying from 6 hrs to 30 hrs depending on the location of Forecast station for taking suitable mitigating measures. These forecasts are also uploaded on the CWC website (www.india-water.gov.in/ffs/ or link on www.cwc.gov.in) for public viewing. The warnings corresponding to the forecast issued by CWC is issued by the concerned state local administration. The level of accuracy of forecast is about 96%. However, in such areas as do not experience frequent floods or the flood generation time is very less, the flood forecasting network of CWC is not considered. Therefore, no warnings could be formulated by CWC in the event of unprecedented floods in such areas."

2.9 When the Committee enquired about the reasons for the failure of flood warning system by Central Water Commission in the States of Uttarakhand and Jammu & Kashmir, the representative of CWC deposed as under:

"Sir, in Jammu and Kashmir the rainfall that occurred was unprecedented. Actually, the Central Water Commission in Chenab and Jhelum Rivers are having 11 and 5 hydrological observation stations respectively. They are mainly for gauge discharge silt and water quality."

He further stated :

"Sir, the Central Water Commission is not having any forecasting network in Jammu and Kashmir....In Jammu & Kashmir, Indian Meteorological Department had conveyed in advance the

information three days before, about the rainfall through their website."

2.10 On being asked about the steps being taken by the Ministry to ensure that the knowledge of impending floods reaches people fast, the Ministry in its written reply stated as under:

"The flood forecasts are uploaded on CWC website for public viewing, in addition to sending the forecasts to the local administration as per established protocols as soon as it is formulated and issued and the activity of further providing the warnings to the people based on CWC forecast is undertaken by the local / State Administration."

2.11 On probing further by the Committee whether there are any bottlenecks in achieving the targets, the Ministry in a written reply stated as under: -

"There are no bottlenecks in providing forecast to the local administration as well as uploading of forecasts on the CWC website."

2.12 During the course of briefing held on 19 September, 2014, the Secretary, MoWR, RD & GR deposed before the Committee:-

"Central Water Commission comes later, ... IMD is giving the rain forecast in advance... The Central Water Commission does not give forecast of the heavy rain."

2.13 During the course of oral evidence held on 1 October, 2014 the Chairman, CWC stated as under:

"As far as the forecasting in case of Kashmir valley is concerned, there have been certain very special circumstances, which constrained us from putting our networks in an extensive way. The Kashmir Disaster Management Authority or the Flood Control Department have got their own network and they have been running their own flood warning system in parallel to us. We have been given the responsibility for managing and maintaining the data base network in the Indus Basin Water Treaty with Pakistan. Our focus has been mainly on the water treaty whereas the flood control and the flood management responsibilities were largely being handled by the J&K Government.

In case of many disasters, especially the Uttarakhand disaster last year and J&K disaster which has occurred currently, the primary situation was that the topography of the area was such that even if a flood forecasting network put in place, it would have been very difficult to provide a forecast with a sufficient lead time in order to see that the enough amount of disaster mitigation measures can be taken by the authorities well in time. Especially in case disaster management in respect of floods, we need relatively larger amount of time to make the forecast otherwise the amount of evacuation etc., which has to be done from the civic authorities, is not adequate..... We have had two incidents of this kind. In both the incidents we have seen that the phenomenon that has occurred was unprecedented."

2.14 Briefing the Committee about the steps taken post Jammu & Kashmir floods and the measures contemplated in future so as to obviate the hardships caused to local residents due to sudden influx of floods, the Ministry submitted as follows:

"MoWR, RD &GR constituted a three-member Group comprising of Chairman, Central Water Commission, Commissioner (Indus) and Director, National Institute of Hydrology, Roorkee on 18.09.2014, to conduct an in depth study and analysis of the recent unprecedented floods in J&K so as to make suitable recommendations along with a detailed action plan to deal with such threat in future. The Group was also to review the status of

project 'Flood Threat Management of river Jhelum' by Government of J&K. The Group has finalized its report and submitted to Ministry of WR, RD & GR on 31st October 2014. The Group has analysed the problem and has suggested various immediate, short term and long term measures to tackle the problem. The recommendations of the Expert Group are given hereunder:

- a) The low carrying capacity of the Jhelum river is due to very mild slope of the order of 1/10000 between Sangam and Wular lake resulting in very low flow velocity in the river reach of about 96 km. This slope also results in steep rise of river water level in case of high discharge in river. The bowl shape of the valley and very mild slope of river makes the area between Sangam and Wular lake susceptible to flooding in case of heavy rainfall in the drainage area. This aspect needs to be considered while taking any future development work in the adjoining area of Jhelum between Sangam and Wular lake.
- b) All the components of the comprehensive flood management scheme needs to be planned and implemented simultaneously in time bound manner to get intended benefit.
- c) Based on the analysis of the current flood in J & K as mentioned above, the recommended measures to manage floods in J & K may be categorized in three groups depending upon the implementation time that may be required: Immediate (to be implemented before next flood season), Short term (to be implemented within two to three years) and Long term (to be implemented within five to ten years)

(A) Immediate Measures:

- a) **Closing of breaches**: All the breaches need to be closed before next monsoon and the section of the embankments restored including pitching, if required.
- b) **Development of Flood Forecasting and Warning Networks**: A rainfall based flood forecasting model may be developed along with establishment of protocol for generation of operational forecast followed by its

dissemination and appropriate action by the disaster management authority. Due to bowl shape of Srinagar valley the conventional flood forecast techniques like gauge to gauge correlation may not serve the desired purpose. In such type of terrain a mathematical model comprising of rainfall-runoff, hydrodynamic/hydrological routing and flood forecast components shall be required. MIKE 11 may be considered to be one of the time tested platform to develop such operational flood forecasting tool. Based on established flood forecasting procedures and considering Sangam as base station, the available warning time for Srinagar will be about 3 to 4 hours only. However, advisory forecasts based on rainfall can be issued with a lead time of about 8 hours after validating the model for two to three seasons. Surveys for the river cross section between Sangam and Wular lake including those in flood spill channel may be initiated immediately for the model development to meet the deadline. Further work to be made in this direction is covered in long term measures.

(B) Short Term Measures:

- a) **Raising/ strengthening of existing embankment:** The design of existing embankments may be revisited and appropriate raising/ strengthening may be planned and implemented wherever required. Proper maintenance of embankment may also be ensured by State Govt. Suitable anti-erosion measures as may be required may also be undertaken at the vulnerable areas.
- b) **Enhancement of carrying capacity of existing Flood Spill Channel (FSC):** With passage of time, the carrying capacity of existing FSC got reduced from 481.45 cumec (17000 cusec) to nearly 100 cumec (3531cusec). As informed by officials of J&K Govt., works were undertaken to enhance its capacity under scheme "Flood threat of river Jhelum-urgent works" but the same are yet to be completed. The balance works may be completed to maintain the designed capacity of River Jhelum passing near Srinagar city.

- c) **Dredging of Out Fall Channel (OFC) to increase its carrying capacity**: OFC is the only drainage outlet taking off surface flow out of valley. It was informed by officials of J&K that dredging to avoid siltation was carried out from 1950 to 1986 in the OFC which was later discontinued. Dredging requirement of OFC may be ascertained immediately and may be taken up so that discharge through OFC is increased.
- d) **Setting up of rapid action dewatering facilities in urban areas**: A number of low lying areas have been urbanized. Hence, flooding even under a lesser magnitude flood can not be ruled out. The State Govt. may consider to plan and implement storm drainage network in consultation with drainage experts.
- e) **Establishment of adequate emergency response measures and rescue areas**: By establishing high flood marks, the areas likely to be available for temporary relief may be identified and provisions for evacuation to these areas within the forecast time available may be taken up by State Disaster Management Authority.

(C) **Long Term Measures:**

- a) **Additional Supplementary Flood Spill Channel**: The officials of the Govt. of J&K informed, as River Jhelum has very limited carrying capacity, an additional supplementary flood spill channel just downstream of Sangam was contemplated earlier. The same may be useful. However, this may only be considered after detailed study and its effect/impact on environment/ ecology/ habitation and the economics involved and in between crossings over existing channels including Dudhganga.
- b) **Creation of Storage**: Small storages on various tributaries of Jhelum for General, Power and/or Flood purposes as per provisions of Indus Water Treaty, 1960 may be planned and created. This will help in moderating the floods and also enable in reducing the sediment load of River Jhelum.

- c) Development and enhancing the capacity of Wular Lake:**
As informed by the officials of the Govt. of J&K, the live storage capacity of the Wular lake has reduced due to siltation etc. which has further reduced its capacity to absorb the floods. Therefore, the same may be restored by appropriate measures. This shall help in reducing back water effect and absorb more flood waters thereby reducing the impact of flood in its upstream area.
- d) Flood Plain Zoning:** Flood Plain Zoning Bill may be enacted on priority by State Govt. The process of Flood Plain Zoning may be completed at the earliest and regulation of Flood Plains may be ensured.
- e)** Lot of sewage/solid waste from urban areas goes to Jhelum and connecting lakes which also cause reduction in the capacity of flow channel due to growth of algae. Necessary measures in this regard may be taken up by State Govt.
- f)** Afforestation and catchment area treatment along the hill slopes may be beneficial in reduction of silt load in Jhelum and maintaining the carrying capacity of the channels.
- g)** The flood warning times can be improved further from 8 hours in long term after establishing of further reliable point/gridded rainfall prediction within a relatively narrow variation range by joint effort by IMD and CWC"

CHAPTER III

ISSUES CONCERNING FLOOD MANAGEMENT

(i) Measures taken for Flood Management

The Ministry of Water Resources, River Development and Ganga Rejuvenation informed the Committee that in the year 2002, the Government of India formulated a National Water Policy which emphasizes construction of large storage reservoirs and other non-structural measures for integrated flood management. The National Water Policy of the year 2012 stresses on the need for flood forecasting, operational protocols for reservoirs as also importance of soil erosion preventive measures like spurs and embankments etc. Some of the major highlights of the National Water Policy, 2012 concerning management of flood and drought are highlighted as under:

- a) While every effort should be made to avert water related disasters like floods and droughts, through structural and non-structural measures, emphasis should be on preparedness for flood / drought with coping mechanisms as an option. Greater emphasis should be placed on rehabilitation of natural drainage system.
- b) Land, soil, energy and water management with scientific inputs from local, research and scientific institutions should be used to evolve different agricultural strategies and improve soil and water productivity to manage droughts. Integrated farming systems and non-agricultural developments may also be considered for livelihood support and poverty alleviation.

- c) In order to prevent loss of land eroded by the river, which causes permanent loss, revetments, spurs, embankments, etc., should be planned, executed, monitored and maintained on the basis of morphological studies. This will become increasingly more important, since climate change is likely to increase the rainfall intensity, and hence, soil erosion.
- d) Flood forecasting is very important for flood preparedness and should be expanded extensively across the country and modernized using real time data acquisition system and linked to forecasting models. Efforts should be towards developing physical models for various basin sections, which should be linked to each other and to medium range weather forecasts to enhance lead time.
- e) Operating procedures for reservoirs should be evolved and implemented in such a manner to have flood cushion and to reduce trapping of sediment during flood season. These procedures should be based on sound decision support system.
- f) Protecting all areas prone to floods and droughts may not be practicable; hence, methods for coping with floods and droughts have to be encouraged. Frequency based flood inundation maps should be prepared to evolve coping strategies, including preparedness to supply safe water during and immediately after flood events. Communities need to be involved in preparing an action plan for dealing with the flood/drought situations.
- g) To increase preparedness for sudden and unexpected flood related disasters, dam/embankment break studies, as also preparation and periodic updating of emergency action plans / disaster management plans should be evolved after involving affected communities. In hilly reaches, glacial lake outburst flood and landslide dam break floods studies with periodic monitoring along with instrumentation, etc., should be carried out.”

3.2 When asked about the measures taken for flood control, the MoWR, RD&GR stated in a written reply as under:

“The role of various Structural and Non-structural measures and progress made is enumerated below:

A. Structural measures

- a) The engineering measures for flood control which bring relief to the flood prone areas by reducing flood flows and thereby the flood levels are :
- an artificially created reservoir behind a dam across a river
 - a natural depression suitably improved and regulated, if necessary or by diversion of a part of the peak flow to another river or basin, where such diversion would not cause appreciable damage.
 - parallel channel bye-passing a particular town/reach of the river prone to flooding.
- b) The engineering methods of flood protection, which do not reduce the flood flow but reduce spilling, are:
- embankments which artificially raise the effective river bank and thereby prevent spilling and
 - channel and drainage improvement works, which artificially reduce the flood water level so as to keep the same, confined within the river banks and thus prevent spilling.

The progress of structural measures in the country till March, 2011 is given hereunder in a table (Table – 3).

Table – 3 : Status of Flood Management Measures in the country till March, 2011

SN	Name of States /UTs	Area Benefited	Length of embankments	Length of drainage channel	Village raised/ protected	Town/ Vill. protection works	Raised Platforms
		Mha	Km	Km	(Nos)	(Nos)	(Nos)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Andhra Pradesh	1.311	2230.00	13569.00	23	72	
2	Arunachal Pradesh	0.100	65.23	16.92	17	30	
3	Assam	2.110	4467.90	857.79	1100	795	
4	Bihar	2.949	3610.00	365.00	0	204	58
5	Chattisgarh	0.000	0.00	0.00	0	0	
6	Delhi	0.078	83.00	453.00	0	0	
7	Goa	0.003	23.19	32.77	0	2	
8	Gujarat	0.483	104.12	271.00	30	805	
9	Haryana	2.000	1144.00	4385.00	98	448	7
10	Himachal Pradesh	0.018	159.16	11.00	82		
11	Jammu & Kashmir	0.217	560.68	324.00	1301	22	--
12	Jharkhand	0.001	14.00	0.00	5	2	
13	Karnataka	0.005	73.52	10.00	0	30	
14	Kerala	0.346	205.74	82.19	6	4	
15	Madhya Pradesh	0.004	26.00	0.00	0	37	
16	Maharashtra	0.001	44.50	110.00	0		
17	Manipur	0.132	577.00	166.00	512	38	
18	Meghalaya	0.015	112.00	0.00	10	8	
19	Mizoram			0.00	0	38	
20	Nagaland	0.632	10.52	0.00	0	8	
21	Orissa	0.630	7137.75	650.00	14	29	
22	Punjab	3.190	1370.00	6622.00	0	3	
23	Rajasthan	0.082	145.00	197.00	0	25	
24	Sikkim	0.041	101.81	64.86	0	18	
25	Tamil Nadu	0.122	87.00	19.00	4	46	
26	Tripura	0.033	141.74	95.23	0	11	
27	Uttar Pradesh	1.703	2097.00	3995.00	4511	65	
28	Uttaranchal	0.002	9.00	0.00	0	6	
29	West Bengal	2.568	10539.00	7392.76	0	48	
	Union Territories						
30	A & N Islands	0.000	0.00	0.00	0		0
31	Chandigarh	0.000	0.00	0.00	0		0
32	Dadra & Nagar Haveli	0.000	0.00	0.00	0		0
33	Daman & Diu	0.000	0.00	0.00	0		0
34	Lakshadweep	0.000	0.00	0.00	0		0
35	Pondicherry	0.004	61.00	20.00	0		0
	Total	18.78	35199.86	39709.52	7713	2794	65

A. Non-Structural Measures

- a) **Advance Flood Warning**: The activity is carried out to facilitate timely evacuation of the people and shifting of their movable property to safer grounds by having advance warning of incoming flood through setting up a flood forecasting system. The work of flood forecasting and warning in India is entrusted with the Central Water Commission (CWC). The activity of flood forecasting comprises of Level Forecasting and Inflow Forecasting. The level forecasts help the user agencies in deciding mitigating measures like evacuation of people and shifting people and their movable property to safer locations. The Inflow Forecasting is used by various dam authorities in optimum operation of reservoirs for safe passage of flood downstream as well as to ensure adequate storage in the reservoirs for meeting demand during non-monsoon period.
- b) **Flood Plain Zoning**: Flood-plain zoning measures aim at demarcating zones or areas likely to be affected by floods of different magnitudes or frequencies and probability levels, and specify the types of permissible developments in these zones, so that whenever floods actually occur, the damage can be minimised, if not avoided.”

(ii) Flood Management Schemes

3.3 The subject of flood management falls within the purview of the States. Thus, the primary responsibility of management of water resources including floods lies with the State Governments. Flood management schemes are planned, investigated and executed by the concerned State Governments. The role of Union Government is technical, advisory, catalytic and promotional in nature. The MoWR, RD & GR briefed the

Committee about the details of the role played by the Government in regard to flood management schemes of the States, as under:

"The flood management schemes are formulated by States. The schemes particularly on inter-State rivers are required to obtain investment clearance from Planning Commission. For this purpose, the schemes costing below Rs. 12.5 crore are appraised by States on their own whereas the schemes costing more than Rs. 12.5 crore are appraised by Central Water Commission or Ganga Flood Commission in accordance with instructions of Planning Commission following a set of guidelines. After techno-economic viability clearance from CWC/GFCC or the Advisory Committee of MoWR, RD & GR, the investment clearance is accorded by Planning Commission. The projects which fulfil the criteria of Flood Management Programme (FMP) and have obtained all mandatory clearances are approved under FMP for central funding with applicable funding pattern. Thereafter, the proposals for release of central assistance are submitted by the State Governments and funds are released by the Ministry in accordance with the FMP guidelines and instructions issued by the Ministry of Finance."

3.4 When further asked whether the Government was in favour of bringing the subject "Water" under Concurrent List of the Constitution, the MoWR, RD & GR replied as under:

"In order to have effective flood management in an integrated manner, following uniform standards / guidelines and reduce time in clearance of projects, the subject can be brought under Concurrent List wherein the aspects of planning & design of flood control measures including execution of critical projects on international/ interstate rivers could be considered to be responsibility of central Government whereas, implementation of flood management projects purely on intra-State rivers could be responsibility of States. To achieve this objective, the existing

Central Water Engineering Service (CWES) could be converted into an Indian Water Engineering Services on all-India basis and the required arrangements including financial aspects can be appropriately decided in consultation with DOPT and Ministry of Finance."

3.5 The Ministry of Water Resources, River Development & Ganga Rejuvenation have also submitted to the Committee the State-wise details of Flood Management measures taken till March, 2011 as below:

Table – 4 : State-wise details of Flood Management Measures till March, 2011.

S. No.	Name of States / UTs	Area benefitted	Length of embankments	Length of drainage channel	Village raised / protected	Town / Vill. protection works	Raised platforms
		Mha	Km	Km	(Nos)	(Nos)	(Nos)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.	Andhra Pradesh	1.311	2230.00	13569.00	23	72	
2.	Arunachal Pradesh	0.100	65.23	16.92	17	30	
3.	Assam	2.110	4467.90	857.79	1100	795	
4.	Bihar	2.949	3610.00	365.00	0	204	58
5.	Chattisgarh	0.000	0.00	0.00	0	0	
6.	Delhi	0.078	83.00	453.00	0	0	
7.	Goa	0.003	23.19	32.77	0	2	
8.	Gujarat	0.483	104.12	271.00	30	805	
9.	Haryana	2.000	1144.00	4385.00	98	448	7
10.	Himachal Pradesh	0.018	159.16	11.00	82		
11.	Jammu & Kashmir	0.217	560.68	324.00	1301	22	--
12.	Jharkhand	0.001	14.00	0.00	5	2	
13.	Karnataka	0.005	73.52	10.00	0	30	
14.	Kerala	0.346	205.74	82.19	6	4	
15.	Madhya Pradesh	0.004	26.00	0.00	0	37	
16.	Maharashtra	0.001	44.50	110.00	0		
17.	Manipur	0.132	577.00	166.00	512	38	
18.	Meghalaya	0.015	112.00	0.00	10	8	
19.	Mizoram			0.00	0	38	
20.	Nagaland	0.632	10.52	0.00	0	8	

21.	Orissa	0.630	7137.75	650.00	14	29	
22.	Punjab	3.190	1370.00	6622.00	0	3	
23.	Rajasthan	0.082	145.00	197.00	0	25	
24.	Sikkim	0.041	101.81	64.86	0	18	
25.	Tamil Nadu	0.122	87.00	19.00	4	46	
26.	Tripura	0.033	141.74	95.23	0	11	
27.	Uttar Pradesh	1.703	2097.00	3995.00	4511	65	
28.	Uttarakhand	0.002	9.00	0.00	0	6	
29.	West Bengal	2.568	10539.00	7392.76	0	48	
	Union Territories						
30.	A & N Islands	0.000	0.00	0.00	0		0
31.	Chandigarh	0.000	0.00	0.00	0		0
32.	Dadra & Nagar Haveli	0.000	0.00	0.00	0		0
33.	Daman & Diu	0.000	0.00	0.00	0		0
34.	Lakshdweep	0.000	0.00	0.00	0		0
35.	Puducherry	0.004	61.00	20.00	0		0
	Total	18.779	35199.86	39709.52	7713	2802	65

(iii) Physical achievements and Funds released under Flood Management Programme

3.6 The Ministry of Water Resources, River Development & Ganga Rejuvenation elaborated that they provide Central assistance to the State Governments under Flood Management Programme (FMP) for addressing flood problems in critical areas. The Programme was launched during 11th Plan to provide assistance to the States for taking up works related to river management, flood control, anti-erosion, drainage development, flood proofing works, restoration of damaged flood management works and anti-sea erosion. For 12th Plan, Working Group on Flood Management and Regional Specific Issues was set up, which recommended various measures of flood management. In October, 2013, the Cabinet approved continuation of Flood Management Programme with an outlay of Rs. 10,000 crore during 12th Plan. They furnished the details of State-wise approved works completed and funds released under FMP upto 11 February, 2015 as under (Table – 5):

3.7 The Ministry tendered state-wise details of works completed and area protected / population benefitted under FMP during XI Plan as under (Table – 6):

Table – 6 : State-wise details of works completed and area protected under Flood Management Programme during 11th Plan.

Sl. No.	State	Total Schemes completed (as on 31 st March, 2012)				
		Area protected in lakh ha				Population benefitted in lakh
		Nos.	Old area restored	New area protected	Total	
1.	Arunachal Pradesh	11	0	0.566	0.566	0.697
2.	Assam	77	3.864	1.007	4.871	97.848
3.	Bihar	26	10.237	0.285	10.522	70.92
4.	Goa	1	0	0.002	0.002	0.15
5.	J & K	8	0.9	0	0.9	0
6.	Manipur	19	0	0.28	0.28	1.582
7.	Nagaland	9	0	0.004	0.004	0.6
8.	Odisha	60	1.474	0.082	1.556	7.202
9.	Sikkim	21	0	0.201	0.201	2.397
10.	Uttar Pradesh	6	0.442	0.096	0.538	4.005
11.	Uttarakhand	3	0	0.001	0.001	0.053
12.	West Bengal	7	0.087	0.063	0.15	11.81
13.	Tripura	4	0	0.002	0.002	0.013
	Total	252	17.004	2.589	19.593	197.277

3.8 On probing further as to whether any agency has been nominated for monitoring of these funds and implementation of the work, the Ministry stated as follows:

"The works for such measures are executed by concerned States and the physical & financial progress of works approved under FMP is monitored by Central Water Commission, Ganga Flood Control and Brahmaputra Board in their respective jurisdictions."

3.9 The Ministry, through a written note, also submitted as under:

"The continuation of FMP during XII Plan had been approved by Cabinet in October, 2013 with an outlay of Rs. 10,000 crore. Under this Programme, Central assistance of Rs. 4259.88 crore has been released to various States since XI Plan till date for works related to flood management including channel capacity improvement. The budget allocation under FMP for the year, 2014-15 is Rs. 2092 crore out which an amount of Rs. 120.88 crore been released till date which consists of Rs. 107.80 crore and Rs. 13.08 crore released to Himachal Pradesh and Nagaland respectively"

(iv) Effectiveness of Channels

3.10 On being asked as to what steps the Government had taken to ensure that proper facilities have been made for augmenting the capacity of channels, and their effectiveness to this, the Ministry, through a written note, submitted as under:

"The measures for augmenting the capacity of channels are formulated and implemented by State Governments after assessing their techno-economic viability as the subject falls

within the purview of States. The type of measure depends upon the extent of problem for a region and specific reach of river and is governed by the principle that a river always tends to establish its regime against any artificial disturbance to it. In order to undertake the measures of river bank protection, raising & strengthening of river embankments, anti-erosion, re-sectioning of channels and reach specific dredging wherever, it becomes absolute necessity, the Government of India provides promotional support under Flood Management Programme (FMP) launched in XI Plan.”

(v) Drainage Facility

3.11 When asked about the measures taken to facilitate drainage facilities and the expenditure incurred on that account, the Ministry informed the Committee as under:

"The drainage problems are of two types viz. urban drainage and drainage congestion near embankment of rivers. The former is addressed by local authorities while planning developmental infrastructure and colonies. The NDMA set up in 2005 under the Chairmanship of Hon'ble Prime Minister of India has formulated guidelines on urban flooding. In order to address the latter, the concerned States formulate and implement necessary projects for which promotional financial support is provided by Government of India under FMP which inter alia includes the projects for improvement of drainage. As per the report of XII Plan Working Group on Flood Management and Region Specific Issues, about 39709.52 km long drainage channels had been constructed by various States till 2011. There is no separate allocation of funds under FMP for the works related to drainage measures as each scheme includes items of various types and purposes. The works for such measures are executed by concerned States and the physical and financial progress of works approved under FMP is monitored by Central Water Commission, Ganga Flood Control Commission and Brahmaputra Board in their respective jurisdictions."

(vi) Status of Reservoirs and their Regulation

3.12 The Ministry apprised the Committee that dams can provide effective flood moderation. The reasons of their failure could be overtopping caused by floods that exceed the capacity of the dam, deliberate acts of sabotage, structural failure of materials used in dam construction, movement and/or failure of the foundation supporting the dam, settlement and cracking of concrete or embankment dams, piping and internal erosion of soil in embankment dams or inadequate maintenance and upkeep. Besides, faulty operation of dams may also lead to floods in the downstream areas.

3.13 When asked about the steps taken or proposed to be taken to remove the bottlenecks in the working of existing flood control structures, the Ministry informed as under:

"The Dam owners take necessary measures to ensure safety of flood control structures. Central Water Commission (CWC) plays guiding and advisory role in matters concerning Dam Safety and has accordingly prepared the "Guidelines for Development and Implementation of Emergency Action Plan (EAP) for Dams", and circulated to States for its implementation by Dam owning authorities. These Guidelines are available on CWC website (<http://www.cwc.nic.in>). EAPs are project specific and are to be prepared by Dam owners keeping in view EAP Guidelines. The responsibility of formulation of Emergency Action Plans (EAPs) lies with the Dam owners, who are mostly State Govt.'s/PSU's.

Besides, each dam has an Operation Manual for operation of gates of spillway ensuring safe passage of floods vis-a-vis the storage required for various purposes."

3.13 The Ministry further informed the Committee:

"The dam safety measures are taken by concerned dam owners which include State Governments, PSUs of Centre / State and private power corporations etc. as per requirement, As such, the details of expenditure incurred in 2014-15 by dam authorities are not available in the Ministry. The measures about strengthening of embankments are formulated and implemented by concerned State governments and the Ministry provides promotional financial support under Flood Management Programme for eligible projects."

3.14 The Committee enquired about the steps taken to remove the faults in the regulation of reservoirs. To this, the Ministry submitted a written reply as under:

"The Reservoirs (dams) store water during monsoon season for meeting the demands of irrigation and drinking water. The BIS guidelines (IS : 7323 - Operation of Reservoirs) stipulate that every multipurpose reservoir must have an operation policy (Rule Curve) which should be adhered to.

However, sometimes it is seen that project authorities have a tendency to fill up the reservoir to much higher levels than what is prescribed in Rule Curves. This results in shrinkage of flood cushion and flood is not moderated to the desired level. In such case, if any large flood event occurs then the authorities, in panic, suddenly release large quantity of water and downstream areas get flooded. Had they not encroached upon the flood cushion, the downstream releases could be reduced to acceptable levels.

It is also observed in some cases that authorities, even when the flood forecasts are available, do not take the advantage of pre-depleting the reservoir to accommodate the flood in the reservoir. The pre-depletion plays an important role in mitigating the floods to a considerable extent. The operation of reservoirs without following operation manuals resulting in sudden release of water from the dams is known as faulty reservoir regulation.

Therefore, it is must for every multipurpose reservoir to have Rule Curves formulated in accordance with the stipulations in IS: 7323 and these should be adhered to while operating the reservoir.”

(vii) Encroachment of river beds – closed river mouths

3.15 When the Committee asked during the evidence held on 1 October, 2014 about the available mechanism for effective control of encroachment of river beds as rivers come under State Governments, the Secretary, MoWR, RD & GR elaborated as under:

“.....after the havoc in Uttarkahand, this Ministry had placed before the Ministry of Environment that within the power of their jurisdiction under the Environment Protection Act, execute these powers and make regulation. We had also furnished an example, that some years back when coastal zone regulation was not there, then the areas near the sea banks upto the sea level, many kinds of structures were erected. After the enactment of coastal zone Regulation, there was immense control as such. On the similar lines, a regulation for the river zone may be made The Committee which was set up for river zone regulation, has submitted its Report and whatever laws are to be made now, they are working on it.”

3.16 When asked as to how the Government is planning to control the same and how far have they been successful in doing so, the MoWR, RD & GR replied as under:

"Clearance of encroached river beds is primarily the responsibility of the State Governments. Selective dredging for clearance of river mouths is adopted for smooth passage of flood water without flooding surrounding areas. The Ministry had circulated a Model Bill on Flood Plain Zoning in 1975 for enacting suitable legislation by States and take action for demarcation and enforcement thereof. The legislations have been enacted only in Manipur, Rajasthan and Uttarakhand and other States are yet to take concrete steps in this regard. The Ministry has been emphasising its implementation in various forums and it had also invited suggestions from States about any reasonable modifications required in the model bill."

CHAPTER IV

FLOOD FORECASTING AND WARNING SYSTEM

The Ministry of Water Resources, River Development and Ganga Rejuvenation informed the Committee that Central Water Commission (CWC) has been making continuous endeavour for automation of processes of data collection, transmission, forecast, formulation and dissemination of floods since Ninth Plan onwards. However, in most of the cases, timely warning does not reach people and there has been no decrease in the casualties occurring due to sudden floods. When asked about the reasons for the inability of the CWC to timely predict and disseminate the news of floods to the affected areas of the country, well in advance, the Ministry replied:

"CWC has countrywide presence in 18 States/ UTs covering 9 river basins/ 71 sub-basins where flood forecasts are issued at 147 stations in respect of river water levels corresponding to river danger levels provided by State governments and flood volume for 28 dams / barrages. The Forecasts are issued to the state administration & other concerned agencies without fail as per Standard Operating Procedure (SOP) i.e. as soon as the river water level rises above warning level with a warning varying from 6 hrs to 30 hrs depending on the location of Forecast station for taking suitable mitigating measures. These forecasts are also uploaded on the CWC website (www.india-water.gov.in/ffs/ or link on www.cwc.gov.in) for public viewing. The warnings corresponding to the forecast issued by CWC is issued by the concerned state local administration. The level of accuracy of

forecast is about 96%. However, in such areas which do not experience frequent floods or the flood generation time is very less, the flood forecasting network of CWC is not considered. Therefore, no warnings could be formulated by CWC in the event of unprecedented floods in such areas."

4.2 The Ministry of Water Resources, River Development and Ganga Rejuvenation and other allied departments in close coordination have an effective flood forecasting system. When asked what steps have been taken to ensure that the knowledge of impending floods reaches people fast the Ministry replied:

"The flood forecasts are uploaded on CWC website for public viewing, in addition to sending the forecasts to the local administration as per established protocols as soon as it is formulated and issued and the activity of further providing the warnings to the people based on CWC forecast is undertaken by the local / State Administration".

4.3 The Ministry in response to a query relating to presence of bottlenecks in this regard, stated:

"There are no bottlenecks in providing forecast to the local administration as well as uploading of forecasts on the CWC website".

4.4 On probing further, the Ministry briefed the Committee:

"Since CWC provides the flood forecasts to local administration and other agencies by E-mail and SMS using internet and MTNL bulk SMS services, above consultations by CWC to evolve suitable mobile software as well as utilisation of reliable networks for dissemination of flood forecasts, are not required."

4.5 When asked about the modernization and expansion of existing base and flood forecast stations including expansion of its network during the 12th Plan, the Ministry informed the Committee as under:

“Regarding improvement of flood warning system, Central Water Commission has undertaken plan-wise modernization and extension of its data collection network and flood forecast formulation/dissemination. 445 nos. of stations have been modernized with telemetry system upto XI Plan. During the XII Plan, remaining 219 stations of existing flood forecast network are proposed to be modernized. Additional 100 nos. of level/inflow forecasting stations along with 310 base stations are proposed to be established for various towns and reservoirs/dams in the country. All stations of extended network will be modernized with telemetry system. Rainfall runoff in conjunction with hydro-dynamic mathematical modeling for forecast formulation has been developed and being used for some of the FF stations and is under development for the rest of the stations. Development of inundation forecast model on pilot basis is also planned separately in XII Plan to give information about the area likely to be flooded.”

CHAPTER V

DESILTING OF AGRICULTURAL LAND AFTER FLOODS

(i) Sand – Minor Mineral

The Ministry of Water Resources, River Development & Ganga Rejuvenation informed the Committee that during floods, water recedes from the agricultural lands leaving a lot of sand, making it uncultivable for years together. The Ministry further informed the Committee that according to the Ministry of Mines, sand has been notified as a minor mineral in terms of Mines and Minerals (Development and Regulation) Act. Further Supreme Court of India in "Deepak Kumar" case in April, 2012 had inferred that a lot of damage had been caused to the environment by the uncontrolled and unregulated mining of minor minerals. The apex court had recommended framing of regulations to guide the environmental clearance of minor minerals.

5.2 On being further enquired by the Committee as to why the Government have not initiated any *suo-moto* action in this regard and whether the Government have envisaged any plan to take action, to this query, the MoWR, RD & GR submitted a written reply as under:

"According to the Ministry of Mines, the Sand, other than used for prescribed purposes, being a minor mineral, all powers of regulation are with the State Governments as per section 15 of

the Mines and Minerals (Development and Regulation) Act, 1957. State Governments are required to frame Minor Mineral Concession Rules to regulate mining of minor minerals in the State including sand. The Central Government does not maintain any information in this regard.

Regarding grant of environment clearance for mining of minor minerals, the Ministry of Mines has informed that pursuant to Deepak Kumar judgment, powers to implement directions of Hon'ble Supreme Court have been vested with the Ministry of Environment, Forests and Climate Change."

5.3 The Committee while perusing the jurisdiction of the Mines & Mineral (D&R) Act. enquired about the action taken by the Government with regard to the status of implementation of the said Act and the directions issued by Hon'ble Supreme Court, to this, the representative of the Ministry of Mines during the evidence elaborated as under:

"Being a minor mineral every aspect relating to the regulation of the mine and mineral, whether it be the grant of permits for querying or for the grant of querying leases or other mining leases etc. is completely within the domain of the State Government. There has been a set of events which have happened which have led to some difficulties that we are now experiencing.

Around April, 2012 there was a decision of the Supreme Court which looked at the damage caused to the environment by the uncontrolled and unregulated mining of minor minerals. Sir, prior to that the Ministry of Environment and Forests had exempted all mining activity of less than five hectares from the necessity of obtaining environmental clearance under the Environment Protection Act. The Supreme Court felt that there were some loopholes which this had caused and perhaps in some cases the State Governments were granting leases which were actually for a much larger area but being sub-divided in

terms of areas just below five hectares. So, the Supreme Court said that pending the framing of regulations to guide the environmental clearances of minor minerals all cases of mining of minor minerals even if they are in areas less than five hectares will require environmental clearance from the Ministry of Environment and Forest. This was an order what is known as the Deepak Kumar case.

Subsequently, many of the States have based on the model rules which were circulated by the Ministry of Mines framed their own rules governing the environmental protection in case of mining of minor minerals. What has happened is, this matter was raised before the National Green Tribunal and the National Green Tribunal held that environment is a Union subject and therefore, it is not within the competence of the State Governments to frame rules in that regard. Therefore, the Ministry of Environment and Forests having issued a notification making it compulsory for obtaining environmental clearance even in respect of mining less than five hectares, that notification would prevail over any other Rule which the State Government might make.

Sir, when the matter stood like this, the Ministry of Mines took this up with the Ministry of Environment and Forests. We have conveyed to the Ministry of Environment and Forests that as far as we can understand from the Deepak Kumar's case the environment clearance was made mandatory only pending the framing of relevant rules for this purpose by the respective State Governments and it was to be envisaged as a transitory provision.

So, at a meeting between the Minister of Environment and Forests and the Minister of Mines, this matter was discussed and finally the conclusion which was arrived at was that the Ministry of Environment and Forests would peruse the rules framed by the various State Governments and if they were satisfied that the rules were adequate and satisfactory for the purpose of protection of environment they would make an application in this regard to the Supreme Court where I believe the matter now rests.

Of course, further details may be provided by the representatives of the Ministry of Environment and Forests. From the Ministry of Mines we have been taking up this matter in order to ensure that the procedures relating to grant of permit etc. for minor minerals is simplified and is not subject to these kinds of issues, even though the entire subject of minor minerals, of which sand is an important part, is entirely within the domain of respective State Governments.”

5.4 The representative of the Ministry of Water Resources, River Development and Ganga Rejuvenation had deposed before the Committee that a Central Coordination-cum-Empowered Committee headed by the Secretary, Mines comprising representatives from all the Ministries of the Central Government and State Governments meets at regular intervals where the participating States discuss and share their experience. Similarly some States have also set up State Coordination-cum-Empowered Committees to look into the Mining aspect. When asked about the details relating to such Committees, the Ministry submitted as under:

"Thirteen State Governments, viz. Andhra Pradesh, Chhattisgarh, Gujarat, Goa, Haryana, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Mizoram, Orissa, Rajasthan and West Bengal, have set up State Coordination-cum-Empowered Committees.

The findings of the State Coordination-cum-Empowered Committees are not maintained at the Centre level.

However, the Central Coordination-cum-Empowered Committee has advised State Governments to set up State Coordination-cum-Empowered Committees to coordinate efforts to control illegal mining by including representatives

of Railways, Customs and Port authorities, and various Departments of the State Governments."

(ii) Illegal Mining of Sand

5.5 The MoWR, RD & GR had informed the Committee that the Mines and Minerals Development Regulation Act, 1957 has been amended to incorporate Section 23C which empowers the State Government completely to take adequate action against illegal mining of any mineral, including sand. The MoWR, RD & GR had further informed the Committee that twenty State Governments, viz. Andhra Pradesh, Bihar, Chhattisgarh, Goa, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Nagaland, Odisha, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh, Uttaranchal and West Bengal, have framed the rules under section 23C of MMDR Act, 1957 to curb illegal mining.

5.6 The Committee enquired about the steps contemplated in the near future by the Government to ensure framing of rules in this regard by all the States. To this query, the MoWR, RD & GR replied as under:

"As per Section 23C of the MMDR Act, 1957, State Governments have been delegated powers to make rules for preventing illegal mining, transportation and storage of minerals. As such details of rules framed by State Governments are not maintained centrally. As per the provisions of Section 23C of the Act, it is not mandatory for State Governments to frame rules under the said section. However, the Central

Coordination-cum-Empowered Committee has been advising and impressing upon State Governments to frame rules in this regard.”

5.7 When enquired further as to whether desilting of flooded land is permitted, once flood recedes, and which are the legal agencies permitted to do that job, the MoWR, RD & GR stated that the Ministry of Mines informed that as per section 3(d) of the MMDR Act, 1957, “mining operations” means any operations undertaken for the purpose of mining any mineral. In the context of this definition, if desilting is undertaken per se with the objective of winning a mineral, it will be construed as a mining operation for which a mineral concession is required to be obtained from the State Government apart from other statutory permits / clearances like environment clearance etc. As a corollary, any operation that is not undertaken with the objective of mining a mineral, would not be a mining operation and would not, therefore, require the issue of a permit under the Act.

5.8 On probing further as to ascertain the details of the authority in the State Government / Union Territory Administration responsible for regulating upliftment of sand after the floods from the fertile agricultural land, the Ministry of Mines informed that as per the “Mines, Minerals Development and Regulation Act, 1957, the sand is defined as a minor

mineral and its mining is regulated by concerned States. Further, in OA no. 171/2013 filed by NGT Bar Association, the National Green Tribunal (NGT) had passed an order on 05.08.2013 that “ We restrain any person, company, authority to carryout any mining activity or removal of sand, from river beds anywhere in the country without obtaining Environmental Clearance from MoWF/SEIAA and license from the competent authorities”. In the light of above, the authority for demarcation of rivers flood plains, and river beds rests with the State Governments and issues of permitting sand lifting are decided accordingly.

5.9 Enquired about the status of ownership of fertile land when affected by the floods which differs from State to State and whether the ownership of such affected land by the floods is retained by the farmer or is transferred to the State, the Ministry submitted a written reply as under:

“In this regard, Ministry of Agriculture has informed that it does not have any information.”

5.10 When asked to state the status of submerged piece of land which goes to the river bed due to flooding and remain there for long time and further the status of ownership / legal right on such land by the farmers, to this query the Ministry stated as under:

“In this regard Ministry of Agriculture has informed that it does not have any information.”

5.11 When asked by the Committee about the fate of farmers whose agricultural land becomes infertile and uncultivable due to floods and therefore loses his right over the land, the representative of Ministry of Mines deposed as under:

“Sir, we will take it up with the State Governments. As I said, we have the Coordination Committee which meets every quarter. We will take it up with the State Governments and then work out a solution to this matter.”

CHAPTER VI

RELIEF AND REHABILITATION POLICY

The relief and rehabilitation of people affected by flood in the country is a crucial subject that engages the attention of the Committee. The Committee wanted to know whether the Government have envisaged any plan to converge the efforts by various Ministries to mitigate the problems being faced by farmers affected by floods in various parts of the country. In reply to this query, the MoWR, RD & GR stated that at the Central level, the National Disaster Management Authority (NDMA) convenes an all Ministry / Department meeting prior to onset of monsoon and reviews the arrangements made by each department. During any flood disaster, the National executive Committee headed by Home Secretary reviews the flood situation and issues directions for proper management of flood disaster. At State level, interaction meetings are arranged by State Disaster Management Authorities and flood situation in the State is reviewed.

6.2 When asked as to what steps, the Ministry of Water Resources, River Development & Ganga Rejuvenation have taken in close coordination with the Ministry of Rural Development and Ministry of Home Affairs to ensure timely relief & rehabilitation measures in the

matter so that the ill-effects of damage may be minimized to a great extent, to this, the Ministry submitted as under:

"The Government had issued a revised National Resettlement and Rehabilitation Policy-2007 which deals with the project specific cases. For immediate relief measures, the Ministry of Home Affairs provides central assistance under National Disaster Relief Funds (NDRF) during any flood disaster which is not in the form of any compensation."

6.3 The Committee were apprised about the issues pertaining to the features of the 'National Resettlement and Rehabilitation Policy 2007; Rehabilitation & Resettlement Plan, Rehabilitation & Resettlement Committee, the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013, which are detailed as under:

A. Features of National Resettlement and Rehabilitation Policy, 2007

- a) Social Impact Assessment (SIA) study is to be carried in proposed affected areas where involuntary displacement of 400 families in plain areas and 200 families in hilly areas or more or in blocks/ areas mentioned in Schedule V or Schedule VI of the Constitution.
- b) While undertaking SIA the appropriate Government shall consider the impact that the project will have on public and community properties, assets and infrastructure particularly roads, public transport drinking water, drainage, sanitation, health care, education, places of worship, places of burial/cremation along with drinking water and grazing land for cattle

- c) Where it is required as per the provision of law, regulations or guidelines, Environment Impact Assessment (EIA) study is also required to be carried out simultaneous with SIA
- d) In cases where both EIA and SIA are required, public hearing shall be organized by the appropriate government.
- e) SIA clearance shall be mandatory for all projects involving involuntary displacement. The concerned State Government shall appoint an officer not below the rank of district collector to be the administrator for Rehabilitation and Resettlement (R&R) subject to direction and control of State Government. Administrator shall take all measures for the Rehabilitation and Resettlement of affected families.
- f) Minimum Rehabilitation Grants and other Monetary Benefits must be proposed and should be applicable to all PAFs, whether belonging to Below Poverty Line (BPL) or Non-BPL families.
- g) The states are free to adopt higher R&R packages than prescribed in the NRRP-2007.

B. Rehabilitation & Resettlement Plan

- a) The Government shall declare, by notification in the official gazette, area of villages or localities as an affected area.
- b) Every declaration shall be published in at least three newspapers out of which two shall be local papers having circulation in villages/areas.
- c) Copy of the notification shall be affixed on the notice board of gram panchayat or municipalities.
- d) Once the declaration is made, the administrator for R&R shall undertake baseline survey and census for identification of persons and families likely to be affected.
- e) The appropriate government shall declare any area or areas as resettlement area for affected families.

- f) The administrator on behalf of government may either purchase land from any person through consent award and may enter into an agreement or approach the State Government for acquisition of land for the purpose of R & R scheme or plan.
- g) While preparing the draft scheme or plan, administrator shall ensure the entire estimated cost of the R & R scheme forms an integrated part of the cost of the project for which land is being acquired.
- h) The entire cost of R&R and other expenditure is to be communicated to the requiring body for incorporation in the project cost.
- i) The administrator shall submit the draft scheme or plan for R & R to the government for approval. On its approval it will be published in official gazette.
- j) On final notification, R&R plan shall come into force for the families who are affected on the date of publication of the notification.
- k) The plan shall also contain a programme for development of alternate fuel, fodder and non timber forest produce.
- l) In all the resettlement areas, comprehensive infrastructural facilities and amenities like roads, public transport, drainage, sanitation, safe drinking water, community ponds, grazing land, land for fodder, plantation, fair price shop, panchayat-garh, cooperative societies, post offices, health centers, schools, places of worships, burial and cremation ground are to be provided.
- m) While shifting, the administrator R & R shall, as far as possible, ensure that the entire estimated cost of rehabilitation and resettlement benefits and other expenditure for rehabilitation and resettlement of the affected families is communicated to the requiring body for incorporation in the project cost
- n) In cases the entire populations of the village or area to be shifted belong to a particular community so that socio culture relation and social harmony amongst the shifted families may not be disturbed.

- o) In the case of resettlement of SC & ST families, it may be ensured that such families are resettled in the areas close to the villages.
- p) The Government shall constitute a committee under the chairpersonship of administrator or some senior government officials. The committee shall be called as Rehabilitation and Resettlement Committee and will monitor and review the progress of implementation of R&R scheme and will carry post implementation and social audit.
- q) In case, if a project covers area more than one state, the method of implementation of R&R scheme shall be mutually discussed by the State Governments. In case of any difficulties the matter shall be referred to the Central Government.
- r) The Central Government shall constitute a National Monitoring Committee chaired by the Secretary, Department of Land Resources for reviewing and monitoring the progress of implementation of R&R scheme.

C. Rehabilitation & Resettlement Committee

The R & R Committee shall include, apart from officers of appropriate government, as one of its members.

- a) A representative of women residing in the affected area.
- b) A representative from each of SC & ST residing in the affected area.
- c) A representative of a voluntary organization.
- d) A representative of lead bank.

D. The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013

The Government passed the above Act in 2013 having better compensation and rehabilitation & resettlement benefits to the affected persons on account of land acquisition.

6.4 When asked to comment on the plight of small farmers rendered homeless in flood ravaged agricultural lands and whether the Ministry has compiled data pertaining to losses caused due to flood erosion and sand / debris deposition in agricultural farmlands in the country in terms of acreage, financial and number of farmers affected (state-wise), the Ministry submitted in a written reply as under:

“The Ministry of Agriculture has informed that it does not have information about any restriction or any regulation on the subject. The problem appears to be localised. The Ministry of Water Resources, RD & GR also does not deal with the subject.”

6.5 Probing further, the Committee enquired whether the Ministry has any scheme to rehabilitate those farmlands lost in the country due to flood erosion and sand / debris and also whether the Government has initiated any scheme / programme in this regard. To this query, the Ministry replied that the matter does not come under the purview of their Ministry.

6.6 Elaborating on the role of the Ministry of Agriculture with regard to compensation to farmers in such circumstances, the representative of the Ministry of Agriculture, during the evidence added as under:

“Chairman Sir, whenever there is any disaster, whether due to rain or drought, Ministry of Agriculture sends a team of special Scientists to the spot..... As per the guidelines issued by the Ministry of Home Affairs, after assessment under the guidelines, how

much money the farmers or State is to be given, that recommendation, the Ministry of Agriculture sends to the Ministry of Home. Then money is disbursed through the Ministry of Home Affairs to either NDRF or SDRF.”

6.7 When the Committee enquired about the reasons for delayed disbursement of the compensation, the representative of the MoWR, RD & GR during the evidence deposited as under:

“Sir, suggestions have been given to send the team expeditiously and submit the report. Whatever are the norms for compensation, may be revised. It is in your records, and we have also noted it down. You are right in saying that instead of giving a cheque of Rs. 22/- to a farmer, it would be better to offer nothing. With regard to time-frame..... State Government makes a memorandum; they have the deposits of money related to SDRF. Keeping in view the requirement of the farmer or the requirement of time, the funds from that can be utilized.”

CHAPTER VII

RECOMMENDATIONS OF THE XII PLAN WORKING GROUP ON FLOOD MANAGEMENT AND REGIONAL SPECIFIC ISSUES

When asked to state the main highlights of the recommendations of the Working Group on Flood Management and Regional Specific Issues of XII Plan, the MoWR, RD & GR stated that the Working Group had submitted its report to the erstwhile Planning Commission in December, 2011. They further stated that the response from Planning Commission on the report is awaited. However, the Ministry have taken initiatives on urgent nature of recommendations, which are mentioned hereunder (Table 7):

Table– 7 : Recommendations of XII plan Working Group on Flood Management and Regional Specific Issues - Status of their Implementation and proposed time-schedule.

	Recommendation	Status of Implementation	Proposed Time Schedule
	The Planning Commission has prepared a draft Approach Paper for strategies and focused attention in preparing various components of the XII Plan ensuring development in the key areas in order to achieve the broad objectives, targets, associated challenges and implementation of policies by the	The Planning Commission has made allocations for XII Plan in respect of flood management schemes proposed by Ministry.	Recommendation already implemented.

	<p>Centre and the States. The sustainable management of natural resources including water has been given due emphasis inviting attention on maintenance of water bodies comprising of lakes, reservoirs and tanks so that these storages continue to give fruitful results for the requirements planned. The developmental plans of the country will not be able to achieve the objectives of an overall growth unless flood management sector is given due attention and priority. This is more so in view of the heavy flood damages caused by the floods in the past and the severe floods faced by many parts of the country recently in Bihar, UP, Assam, West Bengal, Odisha and Andhra Pradesh. Therefore, we need to plan our strategies to reduce the flood damages in the country in a best techno-economically viable manner and our efforts should also be oriented towards reduction of the agony brought by floods to the common man. In order to have effective programmes for addressing the problem of flood in the country, the following strategies are recommended to be effectively implemented during XII Plan.</p>		
	<p>1. Integrated Basin</p>		

	Management Approach		
1.1	<p>Integrated flood management calls for a paradigm shift from the traditional, fragmented and localized approach, encourages the use of the resources of a river basin as a whole. Therefore, there is a need for an approach backed by latest technologies and implemented in a most effective manner.</p>	<p>The aspect of integrated flood management has been brought into Flood Management Programme which is continuing in XII Plan.</p> <p>The latest technologies about construction methods and materials are advised during appraisal of projects for structural measures.</p> <p>The non-structural measures like flood forecasting have been re-vamped and flood plain zoning is being regularly pursued with States.</p>	<p>Introduction of new technologies in structural and non-structural measures is regularly ensured.</p>
1.2	<p>In order to have integrated basin development including</p>	<p>Yet to be implemented.</p>	<p>Not yet fixed.</p>

	<p>flood management in a holistic manner, setting up of River Basin Organisations may be expedited by the States and the Central Government.</p>		
	<p>2. Construction of Dams and reservoirs with adequate Flood Cushion</p>		
	<p>2.1 The long term solution to problems of recurrent floods and droughts lies in construction of dams and reservoirs with adequate flood-cushion and interlinking of water abundant and water scarce regions so that excess flood water is judiciously utilized and inherent agony of floods is turned to the benefit of people. However, due to geographical and political constraints, construction of large reservoirs in every region appears to be a tough task. There are other constraints that</p>	<p>CWC is already providing Inflow Forecasts to 28 reservoirs / barrages and the activity is proposed to be extended to additional 64 reservoirs in XII Plan.</p>	<p>The activity of installation of necessary data collection and transmission equipment would commence on approval of Plan Scheme of Flood Forecasting, which is under process in the Ministry.</p>

	<p>some reservoirs were initially constructed without any flood cushion but with the development and population growth, the inhabitations have come up very close to the downstream of these reservoirs and operation of such reservoirs needs to be done carefully. Under such situations, the use of latest knowledge based techniques of inflow forecasting could be employed. Also, an optimum combination of structural and non-structural measures may yield fruitful results.</p>		
2.2	<p>Construction of dams and reservoirs with adequate flood cushion may be undertaken wherever feasible. In the reservoirs initially constructed for power and other benefits and where flood cushion was not initially provided, inflow forecasting may be used for reservoir regulation to achieve flood moderation. The projects for interlinking of rivers for diversion</p>	<p>NWDA has undertaken studies of 30 inter-basin for transfer of surplus water from water abundant basins to water scarce basins links in the country besides intra-state links. The success of the interlinking programme would however depend on the mutual consent of</p>	<p>Depends on consent of states.</p>

	<p>of flood water to water scarce areas may be taken up in a time bound manner. Integrated reservoir operation should be adopted as a matter of rule and there should be a state of the art information system about releases from the reservoirs to enable timely operation of reservoirs located.</p>	concerned states.	
2.3	<p>As a policy, a minimum flood cushion of 10% of the live storage capacity should be provided in all new dams and, if affordable with respect to other purposes, providing even a flood cushion upto 20% could be considered. A portion of the capital cost of the reservoir should be allocated to flood control and shared by all beneficiary States.</p>	<p>Policy in this regard is yet to be formed in consultations with States</p>	Not yet fixed.
3.			
3.1	<p>Development of dam break models and preparation of Basin-wise Emergency Action Plans may be undertaken by the State Governments /</p>	<p>CWC has prepared model guidelines for Emergency Action Plans and circulated them to all States / Project Authorities</p>	Action by States

	Project Authorities.	for action about dams under control.	
3.2	Special emphasis may be given on formulation of operating procedures / manuals for operation of gates / structures in the water resources projects and the associated officers and staff be given specialized training to manage the distress situations in a professional manner.	The dams have their own operation manuals.	Action by States
4.	Detention Basins – The States should identify suitable sites for creation of detention basins for their use to store flood water which would help in flood moderation besides availability of water during non-monsoon periods.	The Ministry is providing central assistance for repair, renovation and restoration of water bodies on the requests of States.	Action by States.
5.	Operation and Maintenance – A separate budget for O&M of the existing flood management works (excluding salary) may be provided by the State Governments in their annual budget estimates in order to ensure that maintenance of the existing works is given due consideration. The O&M works may also be supported by Planning Commission in the State	Action by States	Action by States

	Plan budgetary requirements.		
	6. Flood Forecasting and Warning		
	<p>The existing flood forecasting network of Central Water Commission is not sufficient to cover adequately the entire country. More flood information about the important cities is required to plan measures for safety of lives and property of people. Therefore, a concrete plan for extension of CWC's flood forecasting network may be drawn in consultation with the State Governments and IMD to cover A, B-1, B-2 and C-class Cities located near rivers under the network of automatic data collection, transmission and flood information dissemination.</p>	<p>CWC has proposed modernization of remaining existing stations and expansion of its network in XII Plan.</p>	<p>The activity would commence on approval of Plan Scheme "Flood Forecasting" in XII Plan.</p>
	7. Flood Plain Zoning -		
	<p>MOWR/CWC had prepared a Model Bill on Flood Plain Zoning and circulated it to the State Governments / UTs for enacting suitable legislation and enforcement. In the Bill, flood plain was mentioned to include water channel, flood channel and area of nearby low land susceptible to flood inundation. The flood zone was also defined</p>	<p>The States of Manipur, Rajasthan and Uttarakhand have enacted legislations for flood plain zoning and time schedule of its implementation depends on States and hence not yet</p>	<p>Not yet fixed</p>

	as the area which is required to carry the maximum probable floods.	fixed by Ministry.	
	The State Governments have reported difficulties in enactment of necessary legislation and enforcement of laws in this regard due to constraints of evacuation of people who are already occupying the flood plains and their settlement elsewhere due to constraints of land. Therefore, CWC may revisit its earlier Model Flood Zoning Bill in the above context. Since demarcation of flood plains is felt essential in order to have a safer use of flood plains, the following strategies are recommended:	All the States have been requested by the Ministry to send their suggestions for revision of Model bill to make it implementable.	Response is awaited. Matter is being pursued.
	7.1 The flood plains may be broadly classified into two portions one within embankments and other outside embankments. The design and spacing of the embankments may be revisited for safe passage of flood discharge. The zoning of the flood plains may be done as per criteria based on flood frequency as suggested by CWC.	This will be taken care while revising the Model Bill	Not yet fixed.
	7.2 The Government may provide incentives to the States who	This aspect has been included in	Already implemented

	implement the Flood Plain Zoning Bill.	the scheme “ Flood Management Programme” during XII Plan.	
7.3	The States should also introduce schemes of disincentives about use of flood plains inside embankments.	Action by States	Action by States
7.4	The States should draw zone specific standard norms for types of buildings so that required water way is available for passing the flood discharge.	Action by States	Action by States
8.	Watershed Management - Watershed management in the hilly catchments of the rivers originating in Nepal, Bhutan and hilly areas of India should be selectively chosen and funded fully. Implementation should be done through a joint mechanism. Ministry of Agriculture, who is the nodal Ministry for the watershed management works should work out a detailed programme in consultation with the Ministry of Water Resources.	This aspect has been included in the scheme “Flood management Programme” during XII Plan.	Policy part already implemented. Projects are to be formulated by States.
9.	Drainage Improvement - Drainage development aspects need to be given	This aspect has been included in	Action by States

	<p>due importance, as there have been cases of flooding wherein the flood water stayed for long periods due to drainage related problems. Special schemes may be formulated by States for improvement of drainage.</p>	<p>the scheme "Flood management Programme" during XII Plan.</p>	
	<p>10. Need for proper Strengthening of Organisations for execution of works with conventional approach</p>		
10.1	<p>Presently, the execution of flood management works is done by the Government agencies and expenditure on execution of works including their maintenance is borne by the Government as a social responsibility and the service is provided to the general public by the Government.</p> <p>However, for effectiveness of this approach the working of existing departments needs to be appropriately improved by strengthening the monitoring system with very rigid financial discipline, transparent procedures of</p>	<p>Training courses are being run by National Water Academy (NWA) on these subjects for capacity building of concerned officials.</p>	<p>Implemented.</p>

	<p>tendering of execution of works and involvement of local administration and Grampanchayats.</p> <p>Proper infrastructural facilities including vehicles may be provided to the central and State organizations involved in flood management for more effectiveness of services being provided by them to the public.</p>		
10.2	<p>Restructuring and Strengthening of existing organizations of State / Central Governments may be done in an appropriate and time bound manner to enable them in performing various activities of flood management in an effective manner. Also, there should not be any restriction on new recruitments required for undertaking flood management related field jobs.</p>	Proposals are in process	Not yet fixed.
10.3	<p>Specialized in-house and foreign training may be imparted to the officers/staff of Central/State Governments in all</p>	Being done by concerned organizations as per requirement.	Under implementation

	<p>areas of flood management including hydrological data collection & its management, survey & investigation, planning & design, hydrological studies, preparation of techno-economically sound DPRs, flood forecasting, inundation forecasting, construction, equipment operation & maintenance, use of latest GIS based technologies in decision making, etc. The specific training programmes may be drawn by respective organisations and adequate funds for the purpose may be provided.</p>		
10.4	<p>Appropriate strengthening of NWA, Pune may be done for its functioning as centre of excellence for conducting domestic and international training programmes in flood management and NDMA's disaster risk reduction programmes.</p>	<p>NWA can undertake such training programmes. Its infrastructural requirement is met by the Ministry.</p>	NIL
11. Public-Private Partnership Concept			
11.1	<p>In order to address the concerns about</p>	Needs consultation	To be fixed by Planning

	<p>irregularities and transparency in execution of various projects, the Planning Commission has recently favoured adoption of the concept of Public Private Partnership (PPP) in operation of Infrastructure related projects. Under this concept the services to the general public are provided by the private agencies and the funds are arranged for implementation of projects through investments by private investors and revenue from the users as a commercial system. The responsibility for the services, however, remains with the Government. Such a system is already in practice in case of major highway projects where revenue generation is through toll plazas. Such a system ensures better financial discipline, transparency in award of works and maintenance of the services. However, efficiency, economy, competition and transparency should be the touchstones for</p>	with States	commission
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	assessing the level of success when dealing with the private sector.		
11.2	In the flood sector, if the embankments are made roadworthy, there are great investment opportunities by private investors. Therefore, efforts should be made to make the embankments roadworthy and adopt PPP model for their construction and maintenance and collection of revenue / tax by the private agencies by setting up Toll Plazas.	Needs consultation with States	To be fixed by Planning commission
12.	Inventory of Works completed by State Governments – Presently, no consolidated records are being maintained by the State Governments about the flood management works completed by them. In order to have a holistic view on the works already completed and further measures required for reasonable flood management, the State Governments are required to maintain inventory of the flood management works completed by them. These details may be compiled	Being emphasized by Ministry	Not yet fixed.

	<p>river-wise and district-wise. The appraisal agencies may emphasize preparation of such inventories and no new schemes may be recommended by them unless the inventory registers of works already completed are produced and gaps identified by the State Governments in flood management measures.</p>		
	<p>13. Scientific Assessment of Flood Prone Area - The flood prone area forms the basis of any assessment of prioritizing the programmes of flood management. The flood prone areas assessed by RBA in 1980 were based on many assumptions due to inadequate data for carrying out a scientific and rational analysis. Making use of new technologies available today, it is desirable that a scientific assessment of the flood prone areas detailing at micro level using latest satellite imagery data and considering frequency of flooding, duration and depth of inundation etc., may be done. The NDMA may play a lead role in this regard with the help of NRSC, CWC, GFCC, Brahmaputra Board and representatives from flood prone States.</p>	<p>In July, 2012, the Ministry constituted an Expert Committee headed by Chairman, CWC. The committee has finalized criteria for classification of flood prone areas and asked States to constitute Regional committees to assess flood prone area as per the new criteria.</p>	<p>Yet to be fixed on receipt of information from States</p>

	<p>14. Embankments - Generally, the non-structural measures are conceived as short term measures but in absence of sufficient large storages which could ensure safety on long-term basis and apprehensions developed due to recent breaches in major embankments, the modern techniques like flood plain zoning, durable buildings in flood plains, flood forecasting, inundation forecasting and all remote sensing technology based tools need to be included as part of our long-term strategy of fighting against the menace of floods.</p>	<p>These modern technological tools for flood forecasting, inundation forecasting and all remote sensing technology based tools are proposed in the Plan Scheme on Flood Forecasting during XII Plan.</p>	<p>Time schedule to be finalized on approval of plan scheme.</p>
14.1	<p>The conventional flood management measures like construction of new embankments, raising & strengthening of existing embankments, construction of spurs for deflecting flow directions to ensure safety to the embankments, for better and assured preparedness against floods may be adopted as per necessity. The State Governments are constructing embankments in order to stop spilling of water from the rivers. Some</p>	Action by States	Action by States

	<p>of the important embankments were constructed long back and these have a huge risk to the people and their properties in case of breach. Therefore, State Governments should identify and classify the embankments according to vulnerability and should draw programmes for regular monitoring of the critical reaches of embankments by using mobile arrangements to clear blockages so that the waterway gets cleared and pressure on embankments is reduced. The state Governments should follow the embankment maintenance guidelines.</p>		
14.2	<p>There may be some embankments which were initially designed with a lower return period of flood for providing protection to save agricultural land but at present these embankments need to provide protection to</p>	<p>This aspect is taken care during formulation and appraisal of schemes.</p>	<p>Not applicable</p>

	townships and industrial areas as a result of development. Therefore, there is urgent need for revisiting the design procedures of such embankments making use of latest design technologies and new construction materials by the concerned State Governments.		
14.3	The State Governments should carry out plantation along the flood embankments for safety of embankments against erosion.	Action is taken by States	Not applicable
14.4	Identification of appropriate location for spilling sections/sluices in the flood embankment for the controlled flooding of the protected areas for restoring fertility, recharge of soil moisture and ground water. Drainage sluices are recommended to be made an integral part of embankments to prevent water-logging in the protected areas.	This aspect is taken care during formulation and appraisal of schemes.	Not applicable
15.	Flood Management Programme - During XI	The continuation of Flood	Implemented on

	<p>Plan, Government of India started a Flood Management Programme as a State Sector Scheme under Central Plan and central assistance is being provided under the scheme as per the guidelines laid down by the Ministry of Water Resources. As per these guidelines, the project reports formulated by the State Governments and cleared by the State Technical Advisory Committees, are further techno-economically appraised by CWC/GFCC and major schemes costing Rs. 15 crore and above, are also discussed and cleared by the Advisory Committee of the Ministry of Water Resources, headed by the Secretary (WR) and having members from Ministry of Finance, Planning Commission, CWC, GFCC, Brahmaputra Board, etc. Thereafter, Investment clearance is accorded by Planning Commission. The works which obtain all mandatory clearances, are included under the Flood Management Programme after approval of an Empowered Committee, headed by Secretary (Exp.), Ministry of Finance and having members from Ministry of Finance, Planning Commission,</p>	<p>management Programme in XII Plan has been approved by Cabinet with an outlay of Rs. 10,000 crore. Necessary guidelines have also been issued on 31.10.2013.</p>	<p>31.10.2013</p>
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	MOWR, CWC, GFCC and Brahmaputra Board. As per existing procedure, the central assistance to the States is released in two equal installments in a year.		
15.1	The State Governments have appreciated the Flood Management Programme and they have conveyed their demand for central assistance under Flood management Programme during XII Plan also. In view of the demand of State Governments for undertaking flood management and anti-sea erosion works in critical areas, the Working Group recommends continuation of Flood Management Programme during XII Plan.	Considered in FMP in XII Plan	Action taken
15.2	The State Governments have also expressed concerns over a lot of time consumed in approval of projects and release of funds; which defeats the very objective of criticality of flood management for which the projects are planned.	Process of approval of projects has been streamlined. The earlier Empowered committee has been replaced by an Inter-ministerial Committee headed by Secretary(WR).	Action taken

	<p>Therefore, streamlining of existing procedures for approval of projects / works and release of central assistance to the State Governments needs immediate attention of the Government. In order to curtail procedural delays and enhance effectiveness of the measures under Flood Management Programme, the Working Group recommends following reforms :</p>	<p>The process of appraisal of projects by Brahmaputra Board has also been transferred to CWC.</p>	
15.2.1	<p>The Planning Commission may consider allocating major portion of the Plan outlay for flood management directly to State Governments as per their requirements under Flood Control Sector and make balance allocation under state sector in Central Plan for critical flood management works only.</p>	<p>For XII Plan, Planning Commission has finalized scheme-wise outlays for central and state sector schemes as per the available resources.</p>	<p>Recommendation is already implemented.</p>
15.2.2	<p>As the works under Flood Management Programme are appraised at highest level in CWC/GFCC/MOWR, the existing procedure of</p>	<p>The processes are under review to eliminate delays.</p>	<p>Action in progress.</p>

	selection of schemes and release of funds may be simplified and brought under single window system.		
15.2.3	Works of Non-Special Category States- Only those schemes which are very critical in nature from the angle of long-term protection against floods, costing above Rs. 100 crore and having Benefit Cost Ratio more than 2.0, may be considered for funding by Union Government under Flood Management Programme and other schemes / works may be taken up by the concerned State Governments through State Plan allocation. The Central assistance equal to 75% of the annual State Budget may be released in one installment in a year.	The recommendation was further reviewed by Planning Commission and Ministry of Finance. In October, 2013, Cabinet approved minimum eligibility cost of Rs. 40 crore, BC ratio to be more than 1.0 and central assistance equal to 50% for new projects of non-special category States. The States are demanding these aspects as approved in XI Plan.	Recommendation already implemented to the extent concurred by Ministry of Finance , Planning Commission and Cabinet. The concerns of the States need to be addressed for smooth implementation of Flood Management Programme.
15.2.4	Works of Special Category States - The works of special category States may be decided and funded on the basis of criticality. The works costing below Rs. 7.5 crore of these States may be taken up	The recommendation was further reviewed by Planning Commission and Ministry of	Recommendation already implemented to the extent concurred by Ministry of Finance , Planning Commission and

	<p>through State Plans. The works costing above Rs. 7.5 crore may be funded under Flood Management Programme. The first installment equal to 60% of the estimated cost for works costing between Rs. 7.5 crore and Rs. 15 crore may be released on approval of scheme/work and Investment clearance by Planning Commission and balance central share may be released on completion of the work. For works costing more Rs. 15 crore, releasing of first installment equal to 90% of the Annual State Budget for first year, 2nd Installment equal to 90% of Annual State Budget for 2nd year and balance central share as 3rd Installment on completion of work may be considered.</p>	<p>Finance. In October, 2013, Cabinet approved minimum eligibility cost of Rs. 10 crore, BC ratio to be more than 1.0 and central assistance equal to 70% for new projects of special category States. The States are demanding these aspects as approved in XI Plan.</p>	<p>Cabinet. The concerns of the States need to be addressed for smooth implementation of Flood Management Programme.</p>
	<p>16. Assistance by MHA -The Ministry of Home Affairs is providing central assistance to the States under State Disaster Response Fund (SDRF) and NDRF to facilitate immediate relief in calamities of severe nature including floods. It is recommended that a provision may be made in</p>	<p>Not yet implemented by MHA.</p>	<p>Yet to be done.</p>

	SDRF/NDRF guidelines for assistance to States to meet expenditure on restoration of critical flood management structures.		
17.	Assistance by NDMA - A system of scientifically designed multipurpose flood shelters where people can be accommodated during the four months of floods may be adopted. Flood shelters may be used as school, community centers during non flood time. NDMA may consider funding of pilot projects for development of model multipurpose flood shelters in such critical areas which had floods in at least 4 out of last 10 years include sufficient provision for flood shelters under the Flood Risk Mitigation Project or any other related programme. NDMA may also undertake funding of basin-wise Digital Elevation Models and development of inundation models through States and concerned agencies including SOI and NRSC in close association with CWC.	The matter of funding of pilot projects for flood shelters is under consideration in NDMA. On suggestion of NDMA, the activity of preparation of Digital Elevation Maps is proposed by the Ministry under National Mission for Clean Ganga.	Partially XII Plan.
18.	Procedural Reforms - The Government may consider dispensing with the financial procedure of plan and non-plan, since at present meeting of	Action yet to be taken by Ministry of Finance and Planning Commission.	Not yet fixed.

	expenditure on continuation and maintenance of assets created with plan funds becomes difficult with insufficient funds allocated under non-plan.		
	19. International Dimensions		
19.1	Expedite steps for construction of large storage dams in Nepal and emphasis may be given on flood control besides other benefits of irrigation and hydropower generation. The outstanding bilateral issues regarding mutual acceptance on the DPR of Pancheshwar Multi Purpose Project may be resolved with Nepal at the earliest.	A Pancheshwar Development Authority has been set up at Kathmandu for resolution of outstanding issues on DPR and implementation of Pancheshwar Multipurpose Project.	Recommendation has been implemented.
19.2	Steps may be taken for installation of automatic data collection and its transmission through satellite-based communication systems for the stations in the territories of neighboring countries on rivers which flow into India.	These aspects have been incorporated in a Plan Scheme “River Management Activities and Works Related to Border Areas” in XII Plan .	XII Plan partially.
19.3	Steps may be taken for providing hourly	The issue is raised with Chinese side	Implemented.

	<p>data by China to India on Brahmaputra and Sutlej so that the same could be utilized in the flood forecasting system of India for meaningful flood forecasting in the region.</p>	<p>in the meetings of Joint India-China Expert Level Mechanism. Chinese sides expressed inability to provide hourly data due to difficult terrain conditions.</p>	
	<p>20. Application of New Technologies</p>		
20.1	<p>Digital Elevation Models (DEM) along major river systems including area falling in the flood affected zone in the range of 0.5 m to 1 m should be prepared for all river basins.</p>	<p>The work for DEMs in three States, i.e. UP, Bihar and West Bengal is initially proposed under NMCG. The DEMs prepared would be utilized for inundation forecasts by CWC.</p>	<p>Yet to be fixed</p>
20.2	<p>The State Governments may be encouraged to own the data using modern technology, get it fully digitized and put into application. The State Governments should develop capacity for undertaking such</p>	<p>Needs consultation with States</p>	

	activities in order to tackle the flood problems.		
20.3	The NRSC has been undertaking the activities of preparation of flood hazard zonation maps, close contour information, river configuration & bank erosion studies, development of geo-spatial tools and flood mapping & flood damage assessment under the Plan Scheme “ Disaster Management Support Programme” ; which may be expanded to include more river basins and NDMA may provide necessary support to NRSC in this regard.	Action by NDMA and NRSC	
20.4	The States should include in their State Plans the activities of data collection, technology upgradation, capacity building, preparation of digital elevation models, hazard zonation maps, inundation maps and modeling, installation of computers, VSAT systems for automatic receipt of online flood	Action by States	Action by States

	information from CWC.		
20.5	Basin-wise flood management models including ALTM technology based Digital Elevation Models, Inundation Forecast Models, Bathymetric Surveys and Cubature Study Models may be undertaken jointly by NRSC, CWC and concerned States.	The work for DEMs in three States , UP, Bihar and West Bengal is initially proposed under NMCG. The DEMs prepared would be utilized for inundation forecasts by CWC. The DEMs prepared would be utilized for inundation forecasts by CWC.	Work initiated.
20.6	Development of Integrated mathematical models may be undertaken jointly by IMD and CWC for flood / runoff forecasting using weather parameters, rainfall observed and rainfall forecast.	Actions have been initiated by CWC in this regard and development of such models is proposed in the Plan Scheme of Flood Forecasting in XII Plan.	The Plan Scheme is yet to be approved for XII Plan.

PART II

OBSERVATIONS/RECOMMENDATIONS

Distribution of Legislative Powers between Union and States

The Committee observe that despite having more than 18% of world's population, India has only 4% of world's renewable water resources. The Committee also note that the variability of rainfall in space and time is high in the country. The monsoon season accounts for nearly three-fourth of annual rainfall leading to natural calamities in the form of floods, erosion in flood plains of the rivers, besides drought.

The Committee note that though the subject of flood control does not find a mention in any of the three legislative lists included in the Constitution of India, drainage and embankments are specified in entry 17 of list II (State List). The Committee also note that the subject of flood management falls within the purview of the States and the primary responsibility of management of water resources including floods, therefore, lies with the State Governments. Flood management schemes are planned, investigated and executed by the State Government concerned. The role of Union Government is

technical, advisory, catalytic and promotional in nature. The Committee, however, feel that the role of the Union Government should extend beyond this as not all the flood-prone States are well-equipped to manage devastating floods with the limited resources they have in their possession. However, considering the limited role presently vested in the Union Government with regard to floods under the present constitutional set-up and the urgent necessity to take proactive steps to combat and control recurrent floods in the country, the Committee strongly recommend that the Central Government and State Governments should make necessary periodic reviews to facilitate enhanced role by the Union Government in flood related aspects so that better coordinated, pre-emptive measures are taken before there are indications of impending floods in their respective States. The Committee therefore, feel that mere hand holding by the Union Government is not suffice and the Government must play a pro-active role which according to Committee can effectively be done if the subject “Water” is brought under Concurrent List of the Constitution of India. The Committee would, therefore, like to reiterate their earlier recommendation to bring “Water” as a subject under Concurrent List of the Constitution of India, made in the

Sixteenth Report of the Committee (2012-13) during Fifteenth Lok Sabha.

Assessment of XII Plan Working Group on Flood Management and Regional Specific Issues

2. The Committee observe that the XIIth Plan Working Group on Flood Management and Regional Specific Issues has submitted its report to the erstwhile Planning Commission in December, 2011 and the response from the erstwhile Planning Commission on the report of the Working Group is awaited. The Committee note that the Ministry has, however, taken initiatives on urgent nature of recommendations. The Committee hope that the erstwhile Planning Commission extends its response expeditiously so that necessary follow up action in the matter is taken up immediately by the Government on all the recommendations of the Working Group. The Committee would like to be apprised of the status of the implementation of all the recommendations of the XIIth Working Group on Flood Management and Regional Specific Issues.

Works approved and Completed under Flood Management Programme

3. The Committee observe that Central assistance is being provided to the State Governments under Flood Management Programme for addressing flood problems in critical areas. The Committee were told that this programme was launched during Eleventh Plan to provide assistance to the States for taking up works related to flood management, etc. The Committee note that though 517 works at a total estimated cost of Rs. 12,242.82 crore were approved during XIth and XIIth Plan (till 31st March, 2012), the number of works completed are only 252 and the funds released upto 31st March, 2012 only amount to Rs. 4,431.59 crore. The Committee are constrained to express their total dissatisfaction over the slow & tardy progress of approved programmes and recommend that urgent action would be taken to expedite completion of the remaining pending works. The Committee also urge upon the Ministry to re-prioritise the pending works and more emphasize should be given on the last mile projects to obviate any further possibility of time and cost overruns. The Committee would like to be apprised of the action taken in this regard by the Ministry.

Flood Scenario in the Country

4. The Committee note that the XII Plan Working Group on Flood Management and Regional Specific Issues in December, 2011 compiled the sum of maxima flood affected area state-wise for the entire country during the period 1953 to 2010 which was 49.815 mha. The Committee, however, express their concern on the data furnished by the Ministry, as it does not reflect any information with regard to the maximum area affected (mha) by the Tsunami floods in the States of Kerala and Andaman & Nicobar Islands etc in the year 2004. The Committee would, therefore, like to know from the Ministry the precise reasons for not incorporating the information related to Tsunami floods in the information furnished by the Ministry specially when the Working Group compiled the data for the entire country during the period 1953 to 2010. The Committee desire that the Ministry should come back to the Committee with a comprehensive information in this regard. The Committee also note that the report by XII Plan Working Group on Flood Management and Regional Specific Issues has been submitted to the Planning Commission in 2011. The

Committee would like to be apprised of the action taken on the Report.

The Committee are also displeased to note that the Ministry have furnished information related to human lives lost / cattle loss during the period from 1953 to 2012 only and have stated that information pertaining to the year 2013 is still under verification / assessment by States. Observing the gravity of losses due to floods, the Committee deplore the lackadaisical attitude adopted by the Ministry in furnishing half baked information both in respect of areas affected by Tsunami Floods and losses to lives in 2013. The Committee would therefore, like the Ministry to expedite furnishing of updated information in these regard within three months of the presentation of this Report.

Flood Management in the State of Jammu & Kashmir

5. The Committee note the statement of the representative of the Ministry that the Central Water Commission has no forecasting network in Jammu & Kashmir. This fact reveals an appalling gap in the flood management efforts of the Government which was exposed

to public glare during the unprecedented flood havoc in the State of Jammu & Kashmir in 2014. The Committee therefore, recommend that Central Water Commission should waste no further time but initiate urgent remedial steps to set up a centralized forecasting station in the State. They also desire the Ministry / Central Water Commission to work in close coordination with the local / State administration so that works for flood control in that State do not proceed in an unplanned and haphazard manner as witnessed during the flood fury of 2014.

The Committee also note that an Expert Group under the Chairmanship of Central Water Commission, was constituted on 18 September, 2014 to conduct an indepth study and analysis of the recent unprecedented floods in Jammu & Kashmir. The Committee note that the report of the Expert Group has been finalized and submitted to the Ministry of Water Resources, River Development and Ganga Rejuvenation on 31 October, 2014. The Group has analysed the problem and has suggested various immediate short-term and long-term measures to tackle the problem. The Committee, therefore, hope that the Government initiates necessary follow up action on recommendations / measures of the Expert Group so that there is no

repeat of the flood havoc as witnessed in 2014. The Committee would like to be apprised of the outcome within three months of the presentation of this Report.

Flood Management in River Brahmaputra

6. The Committee express their serious concern over the unabated loss of human lives and damage to properties due to recurring floods in river Brahmaputra. This also have an endangering effect on the animal life of the species, especially in Kaziranga National Park (Assam). The Committee note that dredging operation is a measure for channel improvement and is used for clearing river mouths or narrow constrictions subject to techno-economical justification. The Committee are however, amazed to note that dredging operations on river Brahmaputra which were undertaken in the early seventies on an experimental basis, were discontinued because of the costs involved in it and limited benefits. Having noted that States falling within Brahmaputra-Meghna, Ganga and Indus river basins are the most affected by floods, the Committee strongly recommend the Government to review the proposal seriously and also to explore new

cost-effective technology so that dredging operations of the Brahmaputra could be resumed. The Committee would also like to know the current status of the initiatives taken by the Government of Assam with the World Bank for a massive flood control project of river Brahmaputra for which the Ministry has already given its, in principal, clearance.

Strengthening Brahmaputra Board

7. The Committee further note with dismay that the vacancies in Brahmaputra Board have not been filled up, despite having pointed out by the Committee in its First Report of Sixteenth Lok Sabha (2014-15) on examination of Demands for Grants for the year 2014-15. The Committee feel that Brahmaputra Board which is required to play a vital role in the preparation of master plan for river basin, etc. can ill-afford vacancies in its Board. The Committee, therefore, would like to reiterate its earlier recommendation and request the Ministry to take necessary steps in this regard expeditiously and apprise the Committee of the action taken.

Rivers of International Dimension

8. The Committee note that in order to contain the flood havoc caused by rivers of international dimensions, the Twelfth Plan had recommended that steps be taken for installation of automatic data collection and transmission through satellite – based communication system. However, the Committee note that the same has been only partially implemented. The Committee, therefore, recommend that the Ministry take necessary steps for implementing the recommendations of Twelfth Plan and keep them apprised in due course. In this connection, the Committee further note with satisfaction that the recommendation of the XIIth Plan Working Group for setting up of Pancheshwar Development Authority at Kathmandu, Nepal has been implemented. Besides, the recommendation to take steps by the Government to provide hourly hydrological data by China to India on rivers Brahmaputra and Sutlej for meaningful flood forecasting in India has also been implemented. The Committee desire to be apprised of the updated position in this regard.

Relief and Rehabilitation

9. The Committee note that the Government had issued a revised National Resettlement and Rehabilitation Policy, 2007, which among others include a provision that Social Impact Assessment (SIA) study is to be carried out in proposed affected areas where involuntary displacement is of 400 families in plain areas and 200 families in hilly areas or more or in blocks / areas mentioned in Schedule V or Schedule VI of the Constitution. It was further stipulated that while undertaking SIA, the appropriate Government shall consider the impact, the project will have on public and community properties, assets and infrastructure particularly roads, public transport, drinking water, drainage, sanitation, health care, places of worship, places of burial / cremation along with grazing land for cattle. The Committee recommend the Government to ensure that necessary effective steps to implement the provisions of the revised National Resettlement and Rehabilitation Policy, 2007 are taken by concerned project / State and Central authorities while executing water resources projects in the country, so that the stake-holders, i.e. farmers, landless labourers,

tribals, depressed sections of the community etc., are not put to disadvantage. They also desire that the Ministry formulate a mandatory guideline within this year (2015) to enjoin that the concerned project / State and Central authorities while implementing the projects, duly pay compensation to the project-affected families (PAFs) which is adequate to enable them to adopt an alternative occupations in case of loss of agricultural lands and to settle in alternate lands in case of loss of houses/dwellings. The Committee would like to be apprised of action taken by the Ministry in this regard.

The Committee further note that the XII Plan Working Group on Flood Management and Regional Specific Issues had recommended providing of Central assistance by the Ministry of Home Affairs to the States under State Disaster Response Fund (SDRF) and National Disaster Relief Fund (NDRF) to facilitate immediate relief in calamities of severe nature including floods. It was also recommended that a provision be made in the SDRF / NDRF guidelines for assistance to States to meet expenditure on restoration of critical flood management structures. The Committee are pained to note that the aforesaid recommendation has not yet been implemented by the

Ministry of Home Affairs and further no time schedule has been specified for the implementation of the same. Taking note of the dire necessity of tackling the recurrent devastations caused by floods year after year and to alleviate human miseries and also to reduce the ultimate colossal damage to sand, houses and public utilities, the Committee recommend that the Ministry should in consultation with all the flood-prone States, chalk out a time-bound implementable programme of action in this regard.

Desilting of Soil

10. The Committee observe that erosion causes severe damage to soil fertility. Silt discharged due to erosion chokes lakes, reservoirs and canals; clogs up river beds; blocks navigation passes and aggravates flood and water logging. All these adversely affect the agriculture production in the country. The Committee, therefore, urge the Ministry to impress upon the State Governments the need to check erosion by taking necessary measures on priority basis to plant trees, vegetation in inaccessible terrains and to take appropriate

engineering measures, etc. They would like to be apprised of the achievements made in this regard.

Integrated Basin Development

11. The Committee note that the erstwhile Planning Commission had specifically directed the Ministry of Water Resources, River Development & Ganga Rejuvenation to expedite setting up of River Basin Organisations by the States and Central Government in order to have integrated basin development including flood management in a holistic manner. The Ministry, to the dismay of the Committee, have yet to implement it. Moreover, no time schedule for this has been fixed. The Committee therefore, recommend that the Ministry should initiate measures to implement the recommendations expeditiously and apprise the Committee accordingly.

Flood Cushion

12. The Committee note that the erstwhile Planning Commission had also recommended that as a policy, minimum flood cushion of 10% of the live storage capacity should be provided in all new dams

and if affordable, with respect to other purposes, providing even a flood cushion upto 20% could be considered. A portion of the capital cost of the reservoir should be allocated to flood control and shared by all beneficiary States. To the utter dismay of the Committee, neither the policy in this regard has been formed by the Ministry in consultation with beneficiary States, nor any time schedule for this has been fixed. With development and population growth, habitations are coming very close to the downstream of reservoirs and operation of such reservoirs needs to be done carefully. The Committee, therefore, recommend the Ministry should initiate steps to formulate the policy and also pursue the matter with all the States to achieve better results in this regard. The Committee would like to see expeditious steps taken by the Ministry in this regard.

Flood Spill Channel

13. The Committee note from the reply of the Ministry that the disastrous flood of Jammu and Kashmir was due to combination of several factors, the primary being the low carrying capacity of existing Flood Spill Channel (FSC). With passage of time the carrying

capacity of existing FSC diminished from 481.45 cumec (17080 cusec) to nearly 100 cumec (3531cusec). The Committee are pained to note that the work undertaken to enhance the capacity under scheme "Flood threat of river Jhelum – Urgent works" is yet to be completed to maintain the designed capacity of River Jhelum passing near Srinagar city. Similarly, the live storage capacity of Wular lake, which has been reduced due to siltation, etc., needs to be enhanced in order to reduce back water effect and absorb more flood water, thereby reducing the impact of flood in its upstream areas. The Committee feel that the floods in Jammu & Kashmir though unprecedented could have been managed in a more appropriate way had there been no delay in completing the pending works which have a direct bearing on management of floods in Jammu and Kashmir. The Committee are, therefore, of the view that all works including flood spill channels regarding flood management in Jammu & Kashmir and other parts of the country should be given top priority and a time bound programme should be formulated in consultation with the State Government to complete the pending works expeditiously. The Committee would also like to have a status Report on the work "Flood threat of river Jhelum – Urgent works".

Flood Forecast

14. Taking note of the fact that Central Water Commission (CWC) has been making continuous endeavour for automation of processes of data collection, forecast and dissemination of information of floods since Ninth Plan onwards, the Committee feel that still timely warnings do not reach people and there has been no decline in the number of casualties occurring due to sudden onset of floods. The Ministry in their reply have admitted that in areas which do not experience frequent floods or where the flood generation time is very less, the flood forecasting network of CWC is not considered, and therefore, no warnings are formulated by CWC in event of unprecedented floods in such areas. The Committee feel that the present flood forecasting infrastructure needs to be modernised and broadened to include the entire stretch of the country so that tangible improvements are visible even in non-flood-prone States. The Committee are also amazed to note that though CWC faces no bottlenecks in providing forecast to the local administration as well as uploading on the CWC website, still there is lack of coordination

between the local administration and Central Water Commission in the matter of flood forecasting. The Committee therefore, strongly recommend the Ministry to take steps so that the present flood forecasting infrastructure of CWC is upgraded effectively to disseminate the news of impending floods well in time so as to avert havoc caused by floods. The Committee further note that around 219 stations of existing flood forecast networks are yet to be modernized by the Government. The Committee therefore, strongly recommend that all stations are modernized with telemetry system. The Committee be also informed of the action taken in this regard.

Inadequate Drainage

15. The Committee observe that inadequate drainage is one of the major causes of floods. The Committee are surprised to note that no corrective measures had been taken to facilitate drainage facilities and no separate allocation of funds under Flood Management Programme (FMP) has been made for works related to drainage measures. The Committee have been informed that the works for such measures are executed by concerned States and the physical

and financial progress of works approved under FMP is monitored by Central Water Commission, Ganga Flood Control Commission and Brahmaputra Board.

The Committee while acknowledging the limits to further possibilities of constructing large storages and embankments, feel that floods can be tackled by placing greater emphasis on rehabilitation of traditional, natural drainage systems.

The Committee, however, recommend that the overall supervision should vest with one single nodal authority, i.e. the Ministry of Water Resources, River Development & Ganga Rejuvenation which should obtain regular feedbacks & inputs from the concerned units and should accordingly frame a policy in this regard. The Committee recommend that separate allocation for drainage works may be made under FMP. The Committee would like to be apprised of the action taken.

Flood Plain Zoning

16. The Committee note that the flood plain zoning which is a non-structural measures aim at demarcating zones likely to be affected by floods of different magnitudes or frequencies of probability levels and specify the types of permissible development in these zones so that whenever the floods actually occur, the damage could be minimized. However, although a Model Draft Bill for Flood Plain Zoning was circulated by the Union Government to all the States/UTs for implementation of Flood Plain Zoning approach, only the States of Manipur, Rajasthan and Uttrakhand have enacted legislation about Flood Plain Zoning. The Committee therefore, recommend that the Ministry take vigorous steps for persuading the remaining States to enact the necessary legislation in this regard without delay. Further, the Committee would like the Ministry to coordinate with these State Governments to ensure that, pending enactment of legislation in this regard, they take necessary administrative measures to prevent further encroachment of areas located in the flood plain zone. The Committee may be apprised of the action taken.

River zone Regulation

17. The Committee note that many kinds of structures have been erected in the areas near sea banks upto the sea levels. The Ministry of Water Resources, River Development and Ganga Rejuvenation have taken initiatives for regulation of river zones for which a Committee was set up and a Report has since been submitted. The Committee therefore, would like to know the status of the implementation of the River Zone Regulation Report.

Mining Activities

18. The Committee observe that pursuant to Hon'ble Supreme Court of India decision in "Deepak Kumar case" in April, 2012, regulations were framed by the Ministry of Mines to guide environmental clearance of minor minerals. However, the Committee are shocked to note from the reply of the Government that the Central Government does not maintain any information in this regard as all the powers of regulation of mines vest with State Government as per section 15 of the Mines and Minerals (Development and Regulation) Act, 1957. It

was only the interference of the apex court that led the Ministry of Mines to take up the matter with the Ministry of Environment, Forests and Climate Change and that steps are now being taken to ensure environmental clearance of minor minerals even in areas less than 5 hectares. The Committee, therefore, desire the Ministry of Water Resources, River Development and Ganga Rejuvenation to work in close coordination with the Ministry of Mines and Ministry of Environment, Forests and Climate Change to frame regulations/guidelines in this regard expeditiously. The Committee would like to be apprised of the regulations/guidelines made in this regard within three months from the presentation of this Report.

Mining of Sand

19. The Committee note that as per Mines and Minerals (Development and Regulation) Act, 1957, sand has been notified as a minor mineral. The Committee observe that a lot of damage had been caused to the environment by uncontrolled and unregulated mining of minor minerals. In this connection, the Committee were further informed that only twenty State Governments have framed rules under section 23C of Mines and Minerals (Development and

Regulation) Act, 1957 to curb illegal mining, etc. of minor minerals viz. sand. Taking in view the vital role of agriculture in our economy, the Committee strongly recommend that the Ministry make efforts to induce the remaining States/UTs to frame relevant Rules under the said Act. They also further desire that the necessary mechanism for implementation of the rules so framed by these States/UTs be worked out by the Government within a year, and apprise the Committee accordingly.

20. The Committee further observed that due to the floods, the agricultural land of farmer is destroyed and rendered infertile. Further, the farmer loses his livelihood as the produce of his land is destroyed by flood and become unsaleable. The farmer is also deprived of the right of lifting sands from his land. He is therefore, left helpless and destitute and leave their land in search of job. The Committee also observe that to mitigate the plight of the farmers, neither Central nor State Governments are forthcoming with any assistance. To the utter dismay of the Committee, the Ministry of Agriculture has no information either on the status of ownership of fertile land or submerged piece of land in the aftermath of floods.

Taking a humanitarian view of the plight of these farmers, the Committee therefore, strongly recommend that both State & Central Government should work out a solution to provide maximum possible assistance to the farmers in the post-flood scenario. The Committee would like to be apprised of the action taken in the matter and hope that the Government look into the issue regarding legal status of ownership of submerged piece of land, etc. in the event of floods. The Committee further recommend that the immediate relief so disbursed to the farmers affected by floods in the post-flood scenario should be based on the type of standing crops in the fields and their value not necessarily be uniformly distributed to the affected farmers on the basis of acreage.

21. The Committee observe that “mining operations” means any operation undertaken for the purpose of winning any mineral. Accordingly, if desilting is undertaken per se with the objective of winning a mineral then only it will be construed as a mining operation. Apparently, if the desilting is undertaken not for winning any mineral, it will not be construed as mining operation and therefore, the farmer can remove the sand from the land without requiring the requisite

permit. However, the Committee strongly feel that the farmers be given the right to use and dispose off the sand accumulated over their land post flood, by incorporating the necessary provision in the Mines and Minerals Development and Regulation Act, 1957. The Committee would like to be apprised of the action taken.

Application of New Technology

22. The Committee note that the work for Digital Elevation Models (DEMs) in three States i.e., Uttar Pradesh, Bihar and West Bengal is initially proposed under NMCG for inundation forecast by CWC. The Committee would like to know the further progress made on these projects and also recommend the Government to cover more States with DEMs. The Committee also recommend that the Ministry should strive to evolve new updated technology suitable to compete with the contemporary requirements to effectively fight varied onslaughts of floods. The Committee would like to be apprised of the action taken in this regard by the Ministry within three months of the presentation of the Report.

NEW DELHI
11 May, 2015
21 Vaisakha, 1937 (Saka)

HUKUM SINGH,
Chairperson,
Standing Committee on Water Resource

APPENDIX (I)

MINUTES OF THE SECOND SITTING OF THE STANDING COMMITTEE ON WATER RESOURCES (2014-2015) HELD ON FRIDAY, 19 SEPTEMBER, 2014 ON "ISSUES CONCERNING FLOOD MANAGEMENT, COMPENSATION AND STATUS OF OWNERSHIP OF SUBMERGED AND ERODED LAND IN THE COUNTRY, INCLUDING COMPENSATION TO FARMERS FOR LOSS OF THEIR CROPS DESTROYED BY FLOODS AND RIGHT TO DISPOSAL OF THE SAND LEFT IN THE FIELDS OF FARMERS".

The Committee sat from 1420 hours to 1500 hours in Committee Room 'B', Ground Floor, Parliament House Annexe, New Delhi.

PRESENT

Shri Hukum Singh - Chairperson

LOK SABHA

2. Shri Radheshyam Biswas
3. Shri Sukhbir Singh Jaunapuria
4. Shri Vinod Kumar B.
5. Shri Murali Mohan Maganti
6. Shri Sidhant Mohapatra
7. Shri Rodmal Nagar
8. Shri Subhash Patel
9. Shri Sanjay Kaka Patil
10. Smt. Aparupa Poddar
11. Shri Ram Prasad Sarmah
12. Smt. Sathyabama V.
13. Shri Lallu Singh
14. Shri L.K. Vaghela

RAJYA SABHA

15. Shri Balwinder Singh Bhunder
16. Smt. Naznin Faruque

- 17 Prof. Mrinal Miri
- 18 Dr. K. Keshava Rao
- 19 Shri V. Hanumantha Rao
- 20 Shri A.V. Swamy
- 21 Shri Lal Sinh Vadodia

SECRETARIAT

- | | | | |
|----|---------------------|---|---------------------|
| 5. | Shri A.K. Singh | - | Joint Secretary |
| 6. | Smt. Anita B. Panda | - | Director |
| 7. | Smt. Rita Jaikhani | - | Additional Director |

REPRESENTATIVES OF THE MINISTRY OF WATER RESOURCES, RD & GR

1. Shri Alok Rawat, Secretary
2. Dr. Amarjit Singh, Additional Secretary(WR, RD &GR)
3. Shri Sunil Kumar Kohli, JS &FA (WR, RD &GR)
4. Shri Servesh Kumar, A.D.G. (WR, RD &GR)
5. Smt. Urvilla Khati, JS(WR, RD &GR)
6. Shri Narender Kumar, Commissioner (WR, RD &GR)
7. Shri Kushvinder Vohra, Commissioner (WR, RD &GR)
8. Shri N.K. Mathur, Commissioner (WR, RD &GR)
9. Shri Pradeep Kumar, Commissioner (Parl)
10. Shri C. Lal, Sr. JC (WR, RD &GR)
11. Shri Munni Lal, Sr. JC (WR, RD &GR)
12. Shri Manoj Kumar, Dy. Commr. (WR, RD &GR)
13. K.M.M. Alimalmigothi, Econ. Advisor (WR, RD &GR)
14. Shri R.K. Gupta, Director (WR, RD &GR)
15. Shri Manish Tripathi, Director (WR, RD &GR)
16. Shri Arvind Chaudhury, Director (WR, RD &GR)
17. Shri Ravindra Singh, Director (WR, RD &GR)
18. Shri S. Uke, C. A. (WR, RD &GR)

REPRESENTATIVES OF THE CENTRAL WATER COMMISSION

19. Shri A. Mahendran, Member (CWC)
20. Shri V. N. Wakpanjar, Member (CWC)
21. Shri C. K. Aggarwal, Member (CWC)
22. Shri Anup Kr. Srivastava, Secretary (CWC)
23. Shri Sanjeev Aggarwal, Chief Eng. (CWC)

24. Shri C. P. Singh, Chief Eng. (CWC)
25. Shri D. P. Mathuria, Director (RMC, CWC)
26. Shri Shivanandan, Director (CWC)
27. Shri V. D. Roy, Director (CWC)

REPRESENTATIVE OF THE NATIONAL MISSION FOR CLEAN GANGA

28. Shri R. R. Mishra, JS & Mission Director, NMCG

REPRESENTATIVE OF THE GANGA RIVER BASIN AUTHORITY

29. Shri K. A. Roy, OSD (GRBA)

REPRESENTATIVE OF THE NATIONAL PROJECTS CONSTRUCTION CORPORATION LTD.

30. Shri H. L. Chaudhury, CMD, NPCC

REPRESENTATIVE OF THE WATER & POWER CONSULTANCY SERVICES (INDIA) LIMITED

31. Shri R. K. Gupta, CMD, WAPCOS

REPRESENTATIVE OF THE CENTRAL GROUND WATER BOARD

32. Dr. R. C. Jain, Member, SAM, CGWB

REPRESENTATIVE OF THE GANGA FLOOD CONTROL COMMISSION

33. Shri N. K. Bhandari, Chairman, GFCC

REPRESENTATIVE OF THE NATIONAL WATER DEVELOPMENT AGENCY

34. Shri S. M. Hussain, DG (NWDA)

REPRESENTATIVES OF THE MINISTRY OF HOME AFFAIRS

35. Shri G V V Sarma, JS (DM), MHA
36. Shri A. K. Sanghi, JS, NDMA
37. Shri V. Venkateshan, Consultant NDMA

REPRESENTATIVE OF THE MINISTRY OF AGRICULTURE

38. Shri C. M. Pandey, Addl. Commr. (NRM), M/o Agriculture

At the outset, the Chairperson welcomed the Members in the post-lunch session to the sitting of the Committee convened to brief the Members on the subject **“Issues concerning Flood Management, Compensation and Status of ownership of submerged and eroded land in the country, including compensation to farmers for loss of their crops destroyed by floods and right to disposal of the sand left in the fields of farmers.”** The Chairman also welcomed the representatives of the Ministry of Water Resources, River Development & Ganga Rejuvenation and other allied departments of the Government of India, to the sitting of the Committee.

2. After the introduction, the Secretary, Ministry of Water Resources, River Development & Ganga Rejuvenation briefed the Committee on the subject through power point presentation. The Members sought clarifications on various issues viz. flood warning, flood control, management and its forecasting system, discussed Jammu and Kashmir flood situation and working of Meteorological Department, quantum to compensation to farmers for loss of their crops destroyed by floods and the permission granted to farmers to desilt the soil, to which the representatives replied in part.

3. The Committee then asked the Secretary, Ministry of Water Resources, River Development and Ganga Rejuvenation to furnish written replies to those queries raised by Members during the sitting which could not be replied by the representatives orally.

The witnesses then withdrew.

4. A copy of the verbatim proceedings of the sitting has been kept for record.

The Committee then adjourned.

APPENDIX-II

MINUTES OF THE THIRD SITTING OF THE STANDING COMMITTEE ON WATER RESOURCES (2014-2015) HELD ON WEDNESDAY, 1 OCTOBER, 2014 ON “ISSUES CONCERNING FLOOD MANAGEMENT, COMPENSATION AND STATUS OF OWNERSHIP OF SUBMERGED AND ERODED LAND IN THE COUNTRY, INCLUDING COMPENSATION TO FARMERS FOR LOSS OF THEIR CROPS DESTROYED BY FLOODS AND RIGHT TO DISPOSAL OF THE SAND LEFT IN THE FIELDS OF FARMERS”.

The Committee sat from 1130 hours to 1315 hours in Committee Room ‘C’, Ground Floor, Parliament House Annexe, New Delhi.

PRESENT

Shri Hukum Singh - **Chairperson**

MEMBERS

LOK SABHA

2. Shri Devusinh Chauhan
3. Shri Sukhbir Singh Jaunapuria
4. Shri Vinod Kumar B.
5. Shri Murali Mohan Maganti
6. Shri Sidhant Mohapatra
7. Shri Rodmal Nagar
8. Shri Vishnu Dayal Ram
9. Shri Ram Prasad Sarmah
10. Shri L.K. Vaghela

RAJYA SABHA

11. Shri Balwinder Singh Bhunder
12. Dr. K. Keshava Rao
13. Shri V. Hanumantha Rao
14. Shri A.V. Swamy
15. Shri Lal Sinh Vadodia

SECRETARIAT

- | | | |
|------------------------|---|---------------------|
| 1. Shri A.K. Singh | - | Joint Secretary |
| 2. Smt. Anita B. Panda | - | Director |
| 3. Smt. Rita Jaikhani | - | Additional Director |

REPRESENTATIVES OF THE MINISTRY OF WATER RESOURCES, RD & GR

1. Shri Alok Rawat, Secretary
2. Dr. Amarjit Singh, Additional Secretary(WR, RD &GR)
3. Shri Sunil Kumar Kohli, JS &FA (WR, RD &GR)
4. Shri N.K. Mathur, Commissioner (WR, RD &GR)
5. Shri Narender Kumar, Commissioner (WR, RD &GR)
6. Shri Pradeep Kumar, Commissioner (Parl)
7. Shri C. Lal, Sr. JC (WR, RD &GR)
8. Shri Munni Lal, Sr. JC (WR, RD &GR)
9. Shri Manish Tripathi, Director (WR, RD &GR)
10. Shri R.K. Gupta, Director (WR, RD &GR)
11. Shri Manoj Kumar, Dy. Commr. (WR, RD &GR)
12. Shri N. Ranganathan, Asst, Commr. (WR, RD &GR)

REPRESENTATIVES OF THE CENTRAL WATER COMMISSION

13. Shri A. B. Pandya, Chairman (CWC)
14. Shri A. Mahendran, Member (CWC)
15. Shri V. N. Wakpanjar, Member (CWC)
16. Shri C. P. Singh, Chief Eng. (CWC)
17. Shri D. P. Mathuria, Director (RMC, CWC)
18. Shri Shivanandan, Director (CWC)
19. Shri V. D. Roy, Director (CWC)

REPRESENTATIVE OF THE NATIONAL WATER DEVELOPMENT AGENCY (NWDA)

20. Shri S.M.Hussain, Director General (NWDA)

REPRESENTATIVE OF THE GANGA FLOOD CONTROL COMMISSION (GFCC)

21. Shri A. K. Sinha, Member, GFCC

REPRESENTATIVES OF THE MINISTRY OF HOME AFFAIRS/ NATIONAL DISASTER MANAGEMENT AUTHORITY (NDMA)

22. Shri A.K. Sanghi, Joint Secretary, NDMA
23. Shri V.Venkateshan, Consultant NDMA

REPRESENTATIVE OF THE MINISTRY OF AGRICULTURE AND COOPERATION

24. Shri C.M. Pandey, Additional Commissioner (NRM)

REPRESENTATIVES OF THE MINISTRY OF ENVIRONMENT, FORESTS AND CLIMATE CHANGE

25. Shri Wishwanath Sinha, Joint Secretary
26. Shri B. B. Barman, Director

REPRESENTATIVE OF THE INDIAN METEOROLOGICAL DEPARTMENT

27. Shri B. K. Bandopadhyaya, DDGM (S)

REPRESENTATIVE OF THE MINISTRY OF MINES

28. Shri R. Sridharan, Additional Secretary

At the outset, the Chairperson welcome and the representatives of the Ministries of Water Resources, River Development & Ganga Rejuvenation other allied departments of the Government of India, the Members, to the sitting of the Committee convened to have their oral evidence on the subject **“Issues concerning Flood Management, Compensation and Status of ownership of submerged and eroded land in the country, including compensation to farmers for loss of their crops destroyed by floods and right to disposal of the sand left in the fields of farmers”** the representatives of the Ministry of Water Resources, River Development & Ganga Rejuvenation, Home Affairs, Agriculture and Cooperation, Environment, Forests and Climate Change and Mines as well as other allied departments of the Government of India, The Chairperson draw the attention of the Members to the significance of the five issues of the subject as well as appropriate forecasting of floods.

2. Thereafter, the Secretary, Ministry of Water Resources, River Development & Ganga Rejuvenation briefed the Committee on the subject through a power point presentation. The Members then sought clarifications on various issues viz. flood forecasting system, cloud burst,

flood management, central assistance released in financial terms towards flood protection works, limitations in respect of rivers having international ramifications, encroachment of river beds, uncontrolled and unregulated mining of minor minerals(sand) and River Regulation Zone. The Members also discussed the recent floods in Jammu and Kashmir and working of Meteorological Department, to which the concerned representatives responded in part.

3. The Committee then asked the Secretary, Ministry of Water Resources, River Development and Ganga Rejuvenation to furnish written replies to those queries raised by Members during the sitting which could not be replied by the representatives orally.

The witnesses then withdrew.

4. A copy of the verbatim proceedings of the sitting has been kept for record.

The Committee then adjourned.

MINUTES OF THE TWELFTH SITTING OF THE STANDING COMMITTEE ON WATER RESOURCES (2014-2015) HELD ON WEDNESDAY, 29 APRIL, 2015 ON "ISSUES CONCERNING FLOOD MANAGEMENT, COMPENSATION AND STATUS OF OWNERSHIP OF SUBMERGED AND ERODED LAND IN THE COUNTRY, INCLUDING COMPENSATION TO FARMERS FOR LOSS OF THEIR CROPS DESTROYED BY FLOODS AND RIGHT TO DISPOSAL OF THE SAND LEFT IN THE FIELDS OF FARMERS".

The Committee sat from 0930 hours to 1030 hours in Room No. 139, First Floor, Parliament House Annexe, New Delhi.

PRESENT

Shri Hukum Singh - Chairperson

LOK SABHA

2. Shri Radheshyam Biswas
3. Shri Devusinh Chauhan
4. Shri Tariq Hameed Karra
5. Shri Murali Mohan Maganti
6. Shri Abhijit Mukherjee
6. Shri Rodmal Nagar
8. Shri Vishnu Dayal Ram
9. Shri Ram Prasad Sarmah
10. Smt. Sathyabama V.
11. Shri Lallu Singh

RAJYA SABHA

12. Smt Naznin Faruque
13. Shri Lal Sinh Vadodia

SECRETARIAT

- | | | |
|-------------------------|---|---------------------|
| 4. Shri A.K. Singh | - | Joint Secretary |
| 5. Shri S. Chatterjee | - | Director |
| 6. Smt. Rita Jaikhanani | - | Additional Director |

REPRESENTATIVES OF THE MINISTRY OF WATER RESOURCES, RD & GR

1. Shri Anuj Kumar Bishnoi, Secretary (WR, RD &GR).
2. Shri A.B. Pandya, Chairman, CWC
3. Dr. Amarjit Singh, Additional Secretary (WR, RD &GR).
4. Shri Narendra Kumar, Member(RM), CWC
5. Shri S.M. Hussain, Director General, NWDA.
6. Shri S.K. Kohli, JS&FA, MoWR.
7. Shri N.K. Mathur, Commissioner (FM), MoWR.
8. Shri Pradeep Kumar, Commissioner (SP), MoWR.
9. Shri K. Vohra, Commissioner(Indus), MoWR, RD &GR.
10. Shri T.S. Mehra, Commissioner(B&B), MoWR, RD &GR.
11. Shri C.P. Singh, Chief Engineer (FM), CWC.
12. Shri C. Lal, Sr. Joint Commissioner (Ganga), MoWR.
13. Shri D.P. Mathuria, Director (RMCD), CWC.
14. Shri V.D. Roy, Director (FFM), CWC.
15. Shri Manoj Kumar, Deputy Commissioner (Ganga), MoWR
16. Shri N. Ranganathan, Assistant Commissioner(Ganga), MoWR

REPRESENTATIVE OF THE MINISTRY OF MINES

17. Shri Anup Kumar Pujari, Secretary

REPRESENTATIVES OF THE MINISTRY OF HOME AFFAIRS /NATIONAL DISASTER MANAGEMENT AUTHORITY

18. Shri A. K. Sanghi, JS, NDMA

REPRESENTATIVE OF THE MINISTRY OF ENVIRONMENT, FOREST & CLIMATE CHANGE

19. Shri Manoj Kumar, JS (MoEF)

REPRESENTATIVES OF THE MINISTRY OF AGRICULTURE & COOPERATION

20. Dr. S. K. Chaudhari, ADG (SWM), ICAR
21. Shri C. M. Pandey, Additional Commissioner (MRM), DAC

REPRESENTATIVE OF THE INDIA METEOROLOGICAL DEPARTMENT

22. Shri B.K.Bandyopadhyay, DDGM (S)

At the outset, the Chairperson welcomed the Members to the sitting of the Committee convened to take evidence of the representatives of the Ministry of Water Resources, River Development & Ganga Rejuvenation, Ministry of Mines, Ministry of Home Affairs/NDMA, Ministry of Environment, Forests and Climate Change, Ministry of Agriculture and Cooperation and India Meteorological Department on the subject **“Issues concerning Flood Management, Compensation and Status of ownership of submerged and eroded land in the country, including compensation to farmers for loss of their crops destroyed by floods and right to disposal of the sand left in the fields of farmers”**.

(The witnesses then called in.)

2. The Chairperson welcomed them to the sitting of the Committee and requested them to introduce themselves. After the introduction, the Secretary, Ministry of Water Resources, River Development & Ganga Rejuvenation briefed the Committee on the subject through a power point presentation. The Members sought clarifications on various issues viz. desilting of agricultural land after floods with particular reference to sand, and its illegal mining and its adverse impact on farmers. The Members also discussed Jammu and Kashmir flood situation and working of Meteorological Department, to which the representatives replied in part.

3. The Committee then asked the Secretary, Ministry of Water Resources, River Development and Ganga Rejuvenation to furnish written replies to those queries raised by Members during the sitting which could not be replied by the representatives orally.

The witnesses then withdrew.

4. A copy of the verbatim proceedings of the sitting was kept for record.

The Committee then adjourned.

MINUTES OF THE THIRTEENTH SITTING OF THE STANDING COMMITTEE ON WATER RESOURCES (2014-2015) HELD ON MONDAY, 11 MAY, 2015 ON "ISSUES CONCERNING FLOOD MANAGEMENT, COMPENSATION AND STATUS OF OWNERSHIP OF SUBMERGED AND ERODED LAND IN THE COUNTRY, INCLUDING COMPENSATION TO FARMERS FOR LOSS OF THEIR CROPS DESTROYED BY FLOODS AND RIGHT TO DISPOSAL OF THE SAND LEFT IN THE FIELDS OF FARMERS".

The Committee sat from 1000 hours to 1030 hours in Committee Room 'B', Ground Floor, Parliament House Annexe, New Delhi.

PRESENT

Shri Hukum Singh - **Chairperson**

LOK SABHA

2. Shri Sukhbir Singh Jaunapuria
3. Shri Tariq Hameed Karra
4. Shri Murali Mohan Maganti
5. Shri Abhijit Mukherjee
6. Shri Rodmal Nagar
7. Shri Vijaysinh Shankarrao Mohite Patil
8. Shri Vishnu Dayal Ram
9. Shri Ram Prasad Sarmah
10. Shri Sanjay Kaka Patil

RAJYA SABHA

11. Shri Balwinder Singh Bhunder
12. Shri Mir Mohammad Fayaz
13. Prof. Mrinal Miri

14. Shri Amar Shankar Sable
15. Shri A. V. Swamy
16. Shri Lal Sinh Vadodia

SECRETARIAT

- | | | |
|-----------------------|---|-----------------|
| 1. Shri A.K. Singh | - | Joint Secretary |
| 2. Shri S. Chatterjee | - | Director |

At the outset, the Chairperson welcomed the Members to the sitting of the Committee and observed that the sitting was convened for consideration and adoption of the draft Report on the subject **“Issues concerning Flood Management, Compensation and Status of ownership of submerged and eroded land in the country, including compensation to farmers for loss of their crops destroyed by floods and right to disposal of the sand left in the fields of farmers”**.

2. The Committee took up the above draft Report for consideration. After some discussion, the Committee adopted the Report and authorized the Chairperson to present the Report to both Houses of the Parliament.

The Committee then adjourned.

Table – 5 : State-Wise Works approved, Works completed and Funds released under Flood Management Programme (FMP)

(Up to 11.03.2015)

Sl. No.	State	XI Plan			XII Plan			Total (XI + XII Plan) Status			
		Works Approved		Funds Released (XI Plan)	Works Approved		Funds Released (XII Plan)	Works Approved		Number of Works Completed (upto 31.3.2012)	Total Funds Released (XI + XII Plan)
		Nos.	Estimated Cost		Nos.	Estimated Cost		Nos.	Estimated Cost		
1	Arunachal Pradesh	21	107.33	81.69	0	0.00	16.83	21	107.33	11	98.52
2	Assam	100	996.14	748.86	41	1386.97	9.31	141	2383.11	77	758.17
3	Bihar	43	1370.42	723.18	4	447.63	167.96	47	1818.05	26	891.15
4	Chattisgarh	3	31.13	15.57	0	0.00	3.75	3	31.13		19.32
5	Goa	2	22.73	9.98	0	0.00	2.00	2	22.73	1	11.98
6	Gujarat	2	19.79	2.00	0	0.00	0.00	2	19.79		2.00
7	Haryana	1	173.75	46.91	0	0.00	0.00	1	173.75		46.91
8	Himachal Pradesh	3	225.32	165.98	4	1139.62	142.46	7	1364.94		308.44
9	Jammu & Kashmir	28	408.22	252.57	14	163.18	67.65	42	571.40	8	320.22
10	Jharkhand	3	39.30	18.44	0	0.00	4.27	3	39.30		22.71
11	Karnataka	3	59.46	23.80	0	0.00	0.00	3	59.46		23.80
12	Kerala	4	279.74	63.68	0	0.00	55.22	4	279.74		118.90
13	Manipur	22	109.34	66.34	0	0.00	24.36	22	109.34	19	90.70
14	Meghalaya	0	0.00	3.81	0	0.00	0.00	0	0.00	0	3.81
15	Mizoram	2	9.13	14.48	0	0.00	0.00	2	9.13		14.48
16	Nagaland	11	49.35	28.96	3	37.38	28.53	14	86.73	9	57.49
17	Orissa	67	169.00	101.12	1	62.32	0.00	68	231.32	60	101.12
18	Puducherry	1	139.67	7.50	0	0.00	0.00	1	139.67		7.50
19	Punjab	5	153.40	40.43	0	0.00	0.00	5	153.40		40.43
20	Sikkim	28	104.92	83.69	17	261.40	2.43	45	366.32	21	86.12
21	Tamilnadu	5	635.54	59.82	0	0.00	0.00	5	635.54		59.82
22	Tripura	11	26.57	23.62	0	0.00	0.00	11	26.57	4	23.62
23	Uttar Pradesh	26	667.57	290.69	3	382.27	97.72	29	1049.84	6	388.41
24	Uttrankhand	12	119.82	49.63	9	183.45	96.95	21	303.27	3	146.58
25	West Bengal	17	1822.08	643.26	1	438.94	146.14	18	2261.02	7	789.40
	Total	420	7739.72	3566.00	97	4503.16	865.59	517	12242.88	252	4431.59

