



**STATEMENT ON THE FLOOD SITUATION AND THE
FLOOD CONTROL PROGRAMME LAID ON THE
TABLE OF THE LOK SABHA BY SHRI
GULZARILAL NANDA, MINISTER
OF PLANNING AND
IRRIGATION AND POWER ON
THE 27th JULY, 1956**

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MINISTRY OF IRRIGATION & POWER**



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PART III—APPENDICES

APPENDIX I

[vide para 2(A) of Part I of the Statement]

PROGRESS ON SURVEYS AND INVESTIGATIONS

A. SURVEYS

(I) Surveys by Survey of India (Up to 30th June, 1956)

The programme of aerial photography and spot-levelling for the year 1955 56 was drawn up by Central Water & Power Commission in consultation with the Survey of India Department towards the end of June, 1955 This programme was later approved by the concerned River Commissions with slight modifications The programme included the balance work left over from the previous year's programme as well as further work proposed for the current year The progress achieved so far in respect of the flood control surveys being carried out by Survey of India Department for the years 1954 55 and 1955-56 *vis-a-vis* the programme laid down for these years is detailed below —

Brahmaputra Basin

Particulars of work	Season	W Bengal & Bhutan		Assam	
		Programme	Progress	Programme	Progress
2' Aerial photography by Air Survey Co of India (in sq miles)	1954 55	3 684	3,404	15 711	15,646
	1955 56			1 700	1 700
2 Semi controlled photo-mosaics (in sq miles)	1954 55	3 800	3 522	17 800	9 909
	1955 56			1 650	
<i>Field Levelling —</i>					
(a) Secondary levelling (in linear miles)	1954 55	313	313	448	448
	1955 56			523	523
(b) Tertiary levelling (in sq miles)	1954-55	1,470	1,425	3,800	3 589
	1955 56			1 930	1,927

Ganga Basin

Particulars of work	Season	Uttar Pradesh		Bihar and Nepal		West Bengal	
		Programme	Progress	Programme	Progress	Programme	Progress
2 Aerial photography by Air Survey Co of India (in sq miles)	1954 55	7 020	7,020	7 535	7 520	330	320
	1955 56	3 550	3 550	350	350	125	125
a Semi-controlled photomosaics (in sq miles)	1954 55	8 560	7 656	12,500	10,155	400	400
	1955 56	3 550	1,303	350	350		
<i>Field Levelling —</i>							
(a) Secondary levelling (in linear miles)	1954 55			401	401		
	1955 56	157	157	657	657		
(b) Tertiary levelling (in sq miles)	1954 55			3 420	3,250	30	30
	1955 56	1 245	1,245	4 505	3 570		

North West Rivers Basins

Particulars of work	Season	Punjab		Pepsu		Jammu & Kashmir	
		Programme	Progress	Programme	Progress	Programme	Progress
						Over 500	Completed by IAF on 1/25000 Scale
2' Aerial photography by Air Survey Co of India (in sq miles)	1954 55						
	1955-56	1,370	1,370	360	360		
2" Semi controlled photomosaics]	1954 55						
	1955 56	1 050	741	390	390		
Field Levelling							
(a) Secondary levelling (Linear miles)	1954 55						
	1955 56	209	209	69	69	198	198
(b) Tertiary levelling (sq miles)	1954 55						
	1955 56	925	798	291	291	445	

1.43

In addition to the progress tabulated above, photography of about 1175 sq miles in Orissa has been completed during 1955 56 as per programme. About 170 sq miles of repetition photography of the course of the Brahmaputra river in Palasbari area has also been completed this year. The Survey of India Department have also carried out planimetric control for the preparation of 4"=1 mile maps of Wular Lake and Upper Jhelum Basin areas. The progress of flood control Surveys completed by the Survey of India Department during the last two years can be summed up as under

1 2 *Aerial photography*—Area to the extent of 43,040 sq miles has been covered against the target figure of 43,410 sq miles for the years 1954 55 & 1955 56

2 *Preparation of Photomosaics*—Photomosaics were planned to be prepared for an area of about 50 050 sq miles out of which the area covered during the last two years is 34 426 sq miles

3 *Field Levelling*—Field levelling programmed to be completed during the last and the current year involves secondary levelling operations extending to about 2975 linear miles and the tertiary levelling network covering approximately 18061 sq miles. While secondary levelling has been done in its entirety the upto-date progress in respect of tertiary levelling is 16 128 sq miles

(II) Surveys by C W & P C

Assam has a network of rivers running into Brahmaputra from their hilly catchments on either banks flooding extensive areas in the valley. Practically whole river system there is being surveyed by C W & P C. This comprises topographical surveys covering about 450 miles of Brahmaputra and 1719 miles on 41 of its tributaries. The work of topographical surveys was commenced in January 1955. These include (a) double levelling along the banks of the rivers (b) cross sections one mile apart and (c) longitudinal sections of the rivers. The progress on the surveys up to the end of June 1955 has been as detailed below —

		Programme	Progress
(a) <i>Main Brahmaputra</i>			
Single levelling —	Longitudinal sections	450 miles	29 miles
	Cross-sections	4500	301
(b) <i>Tributaries</i>			
Single levelling —	Longitudinal sections	1719	1979
	Cross-sections	1719	2192
Double levelling —		1719	2027

(III) Surveys by the States*Assam*

The progress on river surveys undertaken by the State is as follows

		Programme	Progress
Double Levelling along Brahmaputra		915	549
Tributaries	13 Nos	754	299
Barak & its tributaries		220	113

W Bengal

Bank survey	219 miles completed
Cross Sections	220 Nos

Bihar

Longitudinal Sections	1441 miles	1138 miles
Cross sections	16292 miles	1329 miles

In addition 519 miles of river surveys along January, Dhauri, Dhanauti Adhwara and other remaining channels have been completed

Uttar Pradesh

	Programme	Progress
Longitudinal sections	118 miles	102 miles
Cross-sections	1922 "	421 "

1073 miles of spot levelling in the Ghaghra, Rapti and Ganga Basins has also been completed. Surveys have also been done in Nepal over an area of 300 sq miles

B INVESTIGATIONS**(I) INVESTIGATIONS BY C W & P C**

The floods in the Himalayan rivers flowing through Assam and West Bengal are due to heavy rainfall in Bhutan and other neighbouring Himalayan countries. In order to devise suitable measures to secure relief from floods it was decided to collect basic river and rainfall data in the catchment areas of some of the rivers flowing through Bhutan before entering into the Indian territory. It was necessary to secure co-operation of the Bhutan Government before this work could be undertaken. Accordingly a meeting between the representatives of Bhutan Government and the Government of India was arranged towards the end of April 1955 when a programme of the work to be done in Bhutan was drawn up. The programme was divided into three phases as under —

Phase I—Collection of rainfall and river data and transmission of advance intimation about the approach of the floods so that bordering areas in Assam and West Bengal could take timely action to prevent heavy losses to life and property

Phase II—Collection of data regarding the volume of water carried by the rivers and their silt content etc, for the purpose of locating zones of excessive soil erosion. Aerial surveys were also planned to be started in this phase

Phase III—Continuation of aerial surveys to completion and also supplementing these surveys by ground visits for locating areas of potential land-slides, presence of gullies, etc with the object of formulating soil conservation schemes. Investigations for flood detention basins etc were also proposed to be carried out in the third and final phase

In accordance with the above phased programme, the details of the work to be done before the monsoon of 1955 were drawn up and the West Bengal Government was requested to depute the personnel required to man the various hydrological and meteorological stations in Bhutan. The work done in Bhutan before the 1955 monsoon is given below —

	<i>No of stations programmed to be installed</i>	<i>No of stations actually installed</i>
(i) Installation of wireless stations	6	6
(ii) „ „ rain gauge stations	10	10
(iii) „ „ river gauge stations	6	6

It has not been possible, due to shortage of technical personnel willing to work in Bhutan to implement fully the programme drawn up for the pre-1956 monsoon season. The details of the work being done this year are given below —

	<i>No of stations programmed to be installed</i>	<i>No of stations being installed</i>
(i) Installation of wireless stations	2	2
(ii) „ rain gauge stations	10	6
(iii) „ river gauge stations	4	3
(iv) „ discharge and silt observation sites	7	Nil

The difficulty due to shortage of staff is being overcome by imparting training to seven Bhutanese boys in the overseers course. They will ultimately man the discharge and silt observation sites in Bhutan. Twelve Bhutanese nationals who are being trained as wireless operators cum-mechanics who will take over from Indian personnel after the completion of their training.

Arrangements are being made to start aerial photography in the catchment areas of the rivers in Bhutan.

Four Circles have been opened under the administration of C W & P Commission, viz Assam Investigation Circle, Ganga Basin Circle, Central India & Deccan Rivers Circle and Investigation Circle to take up investigations in the States where adequate machinery for collection of data does not exist. These

Investigation Circles are further responsible for collating and analysing the data collected by the States and for supplementing the same wherever necessary to prepare basin-wise reports.

Scope and extent of investigations by C.W. & P. Commission organisations in the various States is reviewed below:—

1. Assam Investigation Circle

(States of Assam, Manipur & Tripura)

The investigations being under taken by C.W. & P.C. in Assam comprise hydrological and silt observations on the Brahmaputra and its 53 tributaries and preliminary reconnaissance for selection of suitable sites for storage and detention reservoirs in the valley.

The hydrological data of the Brahmaputra and Barak rivers including their tributaries are being collected by taking regular observations at gauge and discharge sites established on these rivers. In addition to these observations silt data is also being collected.

The progress on above surveys up to June, 1956, has been as detailed below:—

(i) Main Brahmaputra River

(a) Hydrological observation	Programme	Progress
(i) Discharge site	3	2
(ii) Gauge sites	6	6
(iii) Silt sites	3	1

Tributaries :

(a) Hydrological observations on 53 tributaries

(i) Discharge sites	53	49
(ii) Gauge sites	158	135
(iii) Silt sites	35	32

A. Kopilli Basin.

(i) *Kopilli River*: A dam site was tentatively selected near Umkyrpong and a preliminary reconnaissance report prepared. Finally as a result of further investigations a canyon site downstream of the original site was finally selected for detailed investigations. These investigations are expected to be completed by 1958.

(ii) *Diyung River*: Preliminary investigations of a tentative dam site selected were carried out but the site was rejected by the Geologist. Later on the river was reconneitered again and a few more sites selected which have been inspected by the Geologist.

(iii) *Killing River* Preliminary investigations for a dam site selected on this river were carried out Further sub surface explorations are in progress

(iv) *Borpani Rwer* Preliminary reconnaissance surveys for the dam site have been carried out The Geologist has also inspected the site

B Dihing Basin

(1) *Nao Dihing River* Preliminary report in respect of the proposed dam site at Miao has been prepared and is under examination

(ii) *Burhi Dihing and its Tributaries viz, Namphuk, Namchik and Tirap* Geological investigations of tentative dam site on Namphuk and Namchik have been completed Preliminary investigations at these sites will be started shortly

C Barak Basin

Geological inspection of the proposed dam site near Maniadhar on Barak river has been completed and sub surface explorations are in progress on the recommendations of the Geologist

D Subansiri Basin

Preliminary Geological inspection of the dam site proposed at Dolungmuk has been completed The site appears satisfactory but as the area lies in the Seismic Zones the Geologist has sounded a note of warning against the construction of high dams in this area

In addition to the above, Geological investigations have been carried out for the proposed dam sites on Lohit Dehang Debang and Jai Bhorelli rivers

Investigations are also in progress in Tripura State for preparing schemes for flood erosion control of rivers in the State Gauge observations are in progress on 6 rivers and discharge and silt observations on 5 of them. Investigations of Gumti and Khowai rivers schemes have also been taken up in hand.

2 Ganga Basin Circle

The Circle deals with the problems of the Ganga Basin and is primarily devoted to the work of coordination in the collection of data between the Centre and the States of U.P, Bihar and West Bengal. In addition it carries out the analysis of the data so collected for the preparation of basin wise reports

3 *Central India and Deccan Rivers Circle*

This Circle carries out work similar to that of the Ganga Basin Circle, in respect of the River Basins of Krishna and Pennar Godavari Tapti and Narbada including their tributaries. The Basin wise reports of Girna and Waghur and Purna in Tapti Basin Manjra in Godavari Basin and Musi in Krishna Basin have already been prepared. The hydrological observations on Godavari in Madhya Pradesh and silt observations on 42 discharge sites in the jurisdiction of this Circle are proposed to be taken up. Discharge observations at six sites and silt observations at four sites are already in progress.

4 *Investigation Circle*

This Circle carries out liaison work for the States of Jammu and Kashmir Punjab and Pepsu. These States are being given all technical assistance in the matter of surveys investigations, planning and execution of flood control schemes. Some small storage schemes in Jammu and Kashmir are being investigated by the Circle.

Investigation for River Valley Projects in Bhopal and Vindhya Pradesh are also being carried out by this Circle.

(II) INVESTIGATIONS BY THE STATES

Andhra

Collection of data and other investigations in respect of many schemes (including the Budameru Reservoir) to be undertaken have already been completed. Detailed investigations for the construction of a dam on the Godavari at Ippur and for a reservoir across the Bodderuggedda near Godigummi and two reservoirs across the Tandava near Gantavari Kathagudam and Rekhavani Palem have been completed. Detailed investigations for the Raivada Reservoir Scheme on the Sarda river, Kalyana Pulova Reservoir Scheme on the Varaha river and a reservoir across the Yerrakalva near Appalarajagudem have been in progress.

Bihar

In Bihar collection of necessary data in respect of the Bagmati, the Kamla and the Burhi Gandak have been in progress.

Surveys of two diversion cuts for the Burhi Gandak and of Shanti Nala (a spill channel of the Bagmati) have been undertaken. Survey of Harha Nala upto 38½ miles has been completed.

Village survey of the Kosi below Jhamta between the Kosi embankment and the Bagmati upto Mansi Saharsa Railway line has been completed. Contour survey of the Bagmati Basin from Dheng to Hayaghat has been completed. Regime survey of the Kamla Balan from Jhanjharpur Railway bridge upto Bhakua has been done to ascertain the extension of the channel in 1955. In respect of the Kamla, through the Balan, survey work is being done.

Geological inspection of the possible dam sites in the upper regions of the Bagmati and the Kamla, in Nepal, has been done. Survey work for dam sites in Nepal territory on the Bagmati has been completed. Surveys in the Chisapani Gorge (in Nepal) for the proposed reservoir on the Kamla are in hand. Possibilities of storage reservoirs on the tributaries of the Burhi Gandak are also being investigated.

Jammu and Kashmir

Investigations for the second phase of the Kashmir Valley flood protection scheme are in progress.

Cross sections of the Jhelum from Sangam to Padshahi Bagh (a distance of 48 miles) has been taken up by the State in February, 1956.

The survey of the river from Sopore to Khandyar has been completed and sections prepared.

Orissa

Investigations for the proposed multi-purpose dams across the Baitarani (at Bhimkund) and the Salandi rivers have been undertaken. Similar investigations are proposed for controlling floods in the Brahmani.

Punjab

Surveys have been carried out for specific protective and training works including those for *choes* that are responsible for a good deal of damage in the State. Detailed survey of the tract lying between the Ravi and Naumni *Nallah* near Kamla Kaunta, contour survey of area under *Choes* in Hoshiarpur district and detailed surveys for protecting Indora town from the erosive action of Beas river were done.

Last year (1955) there was extensive damage on account of water-logging in many parts of the State. Necessary investigations to formulate adequate drainage system in the areas have been taken up. Final investigations for Sehna drain (18 miles long) and Wadhni drain (31 miles long) are completed.

Pepsu

Surveys of the proposed protection bund along the left bank of Beas river from Tahili to Alukalan has been completed. Surveys in connection with the proposals for the diversion of the channel for Patiala Nadi has also been completed and survey work for the construction of a protection bund along the right bank of Tangri Nadi in PEPSU for the protection of the area proposed to be irrigated by Bakhra has been completed.

Tripura

The work of investigations in this State has been entrusted to Assam Investigation Circle (C W & P C). Gauges have been fixed and gauge observations are being made on the rivers Gumti, Haora, Khowai, Manu, Deo and Ghoramarachara while discharge observations are being made on the former five. Surveys for specific schemes such as protection works for Agartala, Durgapur, Amarpur, Sonamura and reclamation of areas of Sukhsagar, Rudrasagar and Khowra Beels have been conducted. Investigations for the Gumti and the Khowai Dam Projects have also been undertaken.

Uttar Pradesh

The chief flood affected areas in Uttar Pradesh lie in the Ghaghra basin. Surveys and investigations for the Ghagra, the Rapti and their tributaries and also for River Ganga and its tributaries for construction of marginal bunds have been mostly completed. Spot-levelling in this connection has been done for 1,073 miles. Surveys have been undertaken in Ghagra, Rapti and Ganga basins also for investigation of marooned villages, which require raising.

Hydrological surveys in relation to the longitudinal and bed slopes and the flow of cold weather stream, pertaining to the Ghagra and the Rapti and their tributaries have been in hand.

Investigations in the basins of rivers like the Gomti and the Sai whose special problems came to light during last year's (i.e., 1955) floods, have been taken up. Extensive surveys have also been carried out for improvement of drainage.

In addition, about 550 square miles have been surveyed for location of flood detention reservoir sites on the tributaries of the Rapti. Besides this, survey parties were sent to Nepal for location

of possible sites. They have located one site on the main river (i.e. the Rapti) at Jalkundi. An area of 150 sq miles has been spot-levelled in this connection and a skeleton project of multi-purpose nature, has been prepared.

West Bengal

Most of the survey and investigation work done has been in respect of the short term flood protection measures already undertaken or proposed to be undertaken. Investigations for the proposed barrage on river Karala (in connection with Jalpaiguri Town Protection Scheme) are in progress. Survey of river Jaldhaka for the scheme of protecting Ramshai-Managuri area has been done, further investigations are being taken up. Survey and investigation of river Diana was done for formulating a scheme for protecting the areas in Dhuguri Thana from inundation.

Investigations for long term schemes for soil conservation (including construction of check dams etc), have been undertaken. The reconnaissance surveys have been done in the upper catchments of the tributaries (namely Leesh, Ghish, Chel Noora and Relh) of the river Teesta lying within the district of Darjeeling and of the Teesta in Upper Sikkim. Reconnaissance survey has also been made in the valley of the River Great Rangit. Detailed surveys of the hill catchments of the rivers Great Rangit, Lish Ghish and Chel have been taken up.

APPENDIX II

(vide para 2(B) of part 1 of the Statement)

PROGRESS OF FLOOD CONTROL WORKS UNDERTAKEN BY THE STATES

State-wise Review

ANDHRA

1954-55 Working Season

No major flood protection scheme was carried out during 1954-55 working season

Floods of 1955

There were no high floods in this State during 1955

1955 56 Working Season

During this working season the state started work on "Diversion of half the flood discharge of the Budameru river into Krishna" The progress so far made is about 15 per cent which is below target for the season 4 more major schemes have been prepared by the State on the basis of previous experience of floods These are expected to be taken up during the next working season

ASSAM

1954 55 Working Season

As a result of 1954 and earlier floods three major schemes for protection of Dibrugarh, protection of Palasbari town and for construction of embankment from Silghat to Dihing were prepared and taken up for execution Minor schemes for protection of Sualkochi, Goalpara, Bamundi towns etc were also taken up Besides there were several other minor schemes of embankments along Brahmaputra, Barak, and their tributaries which were already under execution by the State authorities themselves before the present flood organization was set up The progress on town protection schemes was almost according to the targets fixed for the season of 1954-55

1955 Floods

In 1955 Water level in Brahmaputra was higher than ever before but due to construction of flood protection works in the previous season, damages during 1955 were comparatively less i.e., Rs 1 70 crores against Rs 3 43 crores in 1954.

1955-56 Working Season

During this working season 250 miles of embankment along Brahmaputra, Barak and its tributaries were completed. Uptil now 1150 miles of embankments have been constructed.

In some cases raising and strengthening of the old dykes was also considered necessary and this work was taken up during this season. Progress on most of the works had been satisfactory and targets were achieved.

There were some damages to the temporary protection works at Palasbari during 1955 floods. But since it was already decided to shift the town to safer place so no further work was carried out over there.

During 1955 floods it was noticed that Dibrugarh town suffered from defective natural drainage for draining rain water and the water which overflowed the banks. Earthen dykes 6 miles and drains 14 miles long and additional two stone spurs and 5 permeable spurs were constructed at Dibrugarh.

BIHAR*1954-55 Working Season*

North Bihar has always been suffering from floods. The main rivers causing damage are Kosi, Kamla Bagmati, Burhi Gandak and Gandak. About 30 lakh acres of area was inundated in 1954. As a result of these floods an overall programme of flood protection works was drawn up by the State. Schemes of highest priority, embankment along Kosi, embankment along Burhi Gandak (in worst reaches), old Bagmati and repairing of the old embankments on Ghagra were taken up during 1954-55 working season.

In all 12 major schemes at an estimated cost of Rs 3.37 crores and 8 minor schemes costing Rs 24.36 lakhs were taken up. In seven major schemes the targets fixed for the season were nearly achieved whereas for remaining five schemes the progress was below the target. The 8 minor schemes were however almost completed to the target. Four of the minor schemes were of town protection.

Floods of 1955

During 1955, there were heavy rains and large areas were inundated but the extent of damage was 21.62 crores of rupees against 50 crores in 1954. This decrease was partly due to works already completed in the last working season.

1955-56 Working Season

During this Season 18 major and 10 minor schemes were taken up. Progress on five major schemes is quite upto the target whereas for the remaining schemes is below target. For minor schemes, five have already been completed and progress on others is satisfactory. 1955 floods showed that the protection of Samastipur and adjoining area was of a very high priority. Consequently embankment in the reach Angaraghat and Pusa along Burhi Gandak was started and completed to reduced target during this working season.

Similarly it was found that Kamla is making rapid avulsion into Balan and the situation was expected to become serious unless immediate action was taken. A scheme at a cost of Rs 306 lakhs consisting of embankment along Kamla upto Jhanjarpur and a weir near Jamnagar was prepared. Work on this scheme was also started. 21 miles of embankment have already been completed to reduced section. During 1954 floods Bagmati water started going through Sugia Pardeshia channel with increased discharge. This meant likelihood of change in the course of Burhi Gandak. Although some permeable spurs were put in during 1954-55 to stop this development but there were breaches in these during 1955. This year efforts were made by closing these channels by earthen bunds. These bunds have been noticed to be effective but there may be some developments when higher floods occur this flood season.

The main works undertaken this year as a result of 1955 floods in the State can be briefly given as below

- 1 Embankment on right bank of Burhi Gandak from Angaraghat to Pusa.
- 2 Embankment from Angaraghat to point opposite Pusa along left bank of Burhi Gandak.
- 3 Embankment along left bank of Burhi Gandak from a point opposite Pusa to Bachauli.
- 4 Kamla Balan embankment.

DELHI

1954-55 Working Season

No work was taken up during this year But 5 schemes at a total cost of Rs 25 68 lakhs were prepared during this year Out of the above only Protection of Shahdara and adjoining villages costing Rs 17 02 lakhs was a major scheme

Floods of 1955

During 1955 monsoon, the Jamuna rose very high and was 5 feet above the danger level at the Railway Bridge and 1 ft lower than the highest ever recorded (1924) As a result large amount of area on the Shahdara side and out skirts of Delhi were submerged

1955-56 Working Season

Work on the Shahdara embankment along with the other 4 minor schemes was taken up and is nearly completed

The following works were started as a result of 1955 floods

Sl No	Name of the scheme	Estimated cost (Rs)
<i>Major Scheme</i>		
1	Construction of spurs and revetment on right bank of river Jamuna from Power House (Delhi Gate) to Nallah No 12	12 73 775
<i>Minor Schemes</i>		
1	Raising of bund along Jumna river from Nallah No 12 to No 14	24 150
2	Providing needle regulator for the outfall of the Inderprastha drain below National Highway Bridge	8 000
3	Providing needle regulator on Nallah No 14	2,450
4	Providing needle regulator on the city ditch Nallah	3,450
5	Raising of Railway siding bund	2,46 375
6	Raising banks of Nallah No 12	73 037
7	Raising of Power House Bund	60 370

The work on these schemes is in progress though they were scheduled to be completed before the flood season of 1956

JAMMU & KASHMIR

1954-55 Working Season

As a result of previous floods and that of 1954 one major scheme in Kashmir valley costing about Rs 100 lakhs 'Enlarging and

Excavating supplementary channel from Padshahi Bagh to Wular lake and constructing marginal bunds along river Jhelum and its tributaries was taken up in the working season of 1954-55. The progress was only about 50 per cent of the target for the season. Area which is expected to be benefited from this scheme is 60 000 acres.

1955 Floods

There were high floods in 1955 in river Jhelum. The work as formulated in 1954 which formed Phase I of Jhelum Protection Work, was still considered adequate. Some investigations, however, were carried out for finding out reservoir sites on the tributaries of river Jhelum. Results of these investigations are still awaited.

Similarly detailed investigations are going on in Jammu Province for flood protection works.

ORISSA

1954-55 Working Season

There were 120 minor schemes in progress. These schemes were mostly for repairing and strengthening existing embankments. The progress of these was below the target fixed for the season.

Floods of 1955

There was heavy rainfall in the upper catchments of the rivers and in coastal areas. The rivers were in spate. Vast amount of area near sea coast was submerged due to rain water and bank overflow from rivers. Number of works were damaged. Several villages were submerged. Programme were drawn out for carrying out works in the affected areas.

1955-56 Working Season

During this season the minor schemes which were taken up in the last season were continued. The progress on these was about 25 per cent of the target.

As a result of 1955 floods the following works were started —

- 1 Repairing the damaged minor works
- 2 Closing of breach of Machgoan canal at Dalaighai.
- 3 Construction of spurs at Dalaighai

Progress on these works during the season was only 60 per cent of the target.

Detailed estimates were prepared for 57 minor schemes estimated to cost 57.96 lakhs for construction of new embankments, improvement of existing embankments and other protective works.

PEPSU

1954-55 Working Season

No flood protection work was carried out during 1954-55 working season

Floods of 1955

In 1955 there was a heavy rainfall in Pepsu. The drainage of the country was found very defective and vast amount of area was submerged.

1955-56 Working Season

The Pepsu Government prepared 6 minor schemes costing about Rs 115 lakhs. They were programmed to be completed during 1955-56. But the progress so far made is 60 per cent only. Also construction of a bund along the Ghager river and raising and widening of the Dhakansu and Pachisdara bunds were taken up.

As a result of 1955 floods, the State had carried out surveys for 2 major schemes for providing flood protection works for Beas and Patiala Nadi.

PUNJAB

1954-55 Working Season

There was no major scheme carried out during this working season. However, 8 minor schemes at an estimated cost of Rs 31.76 lakhs were taken up. About 60 per cent of the work was completed in this working season though they were programmed to be completed during that season.

Floods of 1955

During 1955, heavy rains occurred in whole of the Punjab and there were heavy damages to works, crops, houses, cattle and even to human life.

1955-56 Working Season

* The programme of the year was to complete 8 schemes of the previous year, repair works damaged during 1955 flood and prepare schemes on the experience of 1955 floods. The State authorities remained busy in carrying out these repairs and constructing cross drainage works. Some surveys were also carried out for preparing the flood protection schemes.

(b and c) The following schemes were prepared by the Punjab State as a result of 1955 floods but could not be started

Sl No	Name of the scheme	Estimated cost (Rs in lakhs)
<i>Major Schemes</i>		
1	Construction of dam on January-di khad	14 25
2	Canalising Kasur Nallah	70 00
3	Drainage schemes in Eastern canal	16 96
<i>Minor Schemes</i>		
1	Constructing armoured spur near Sikandri Sub-minor of Mauzam minor opposite Fazilka	8 00
2	Constructing flood protection embankment along right bank of river Beas	6 00
3	Additional cross drainage works on Bist Doab Canal System	9 00
4	Improving outfall of drainage works syphon in tail reach of Jullundur Branch	3 70
5	Excavating cunnette D/S of Adampur Air field embankment, raising and strengthening embankment along Nasraia Choe and making high level boundary Section in Adampur Air field bund	5 20
6	Remodelling Nai Nallah Drain (Karna Division) ¹	1 02
7	Remodelling New Sardana drain	0 13
8	Constructing drain No G to P	2 88
9	Debeta drain	3 05
10	Karnand drain	0 32
11	East or white Bein reconditioning	5 00
12	Constructing Sehna Drain	2 25
13	Constructing Wadhni drain	4 65
14	Adding bays to 7 V R. Bridge on Budha Nalla	0 30
15	Talwandi Naipalan Drain	5 10
TOTAL		157 81

SAURASHTRA.

1954-55 Working Season

No major flood protection work was carried out by the State during 1954-55

Floods of 1955

There were no heavy floods in this State during 1955

1955-56 Working Season

On the basis of the experience of previous floods the State prepared 107 minor schemes costing Rs 56.1 lakhs. On these works carried out so far amount to Rs 12 lakhs. The schemes are expected to be completed during the next working season i.e. 1956-57.

UTTAR PRADESH

1954-55 Working Season

During the past years, north eastern districts of UP used to suffer from floods in river Ghagra, Rapti, Gandak and also Ganga. In 1954-55 working season five major schemes each costing more than Rs. 10 lakhs total costing 183.16 lakhs and 12 minor schemes total costing Rs 48.65 lakhs were taken up. The progress achieved on these schemes was according to the targets fixed. None of the schemes were completed. Out of these five schemes, one was for protection of Banaras Ghats on the Ganga and the other was for raising 300 villages. The other three were for providing embankment along the river Gandak, Ganga and Ghagra respectively. The minor schemes were mainly for providing bunds along Choti Sarai, Rohin and Rapti. About 2.72 lakhs acres of areas were expected to be benefited on the completion of the embankment schemes.

Floods of 1955

During 1955 there were heavy rains in the plains. Consequently small rivers like Gomti, Tons and Sai were in spate. Water overflowed their banks and submerged vast areas. The drainage of the country was found very defective and water remained standing for long time. A large number of villages were marooned. Schemes were therefore drawn up for raising the marooned villages above the flood level, and also improving the drainages of the country. On the basis of behaviour of Gandak river during the floods further extension of Chautani bund on either side and further protection works of the old Chautani bund by means of spurs was found necessary. Model experiments were also carried out at UP Irrigation Research Station for this work.

1955-56 Working Season

The five major schemes which were commenced in working season of 1954-55 were continued and in addition seven more new schemes were taken up. Two of these schemes were completed this year. In the case of one other, the target fixed was achieved whereas for the rest the targets were not achieved. Four of the new schemes consisted of constructing bunds along river Ghagra and remaining three were for raising 2770 villages in Ballia Baria.

and other Eastern districts The progress on the embankment schemes was about 50 per cent of the target As regards raising of villages, 85 villages were raised against programme of 155 Out of the 25 minor schemes, 12 were completed and the remaining were in progress

The area expected to be benefited from the new embankment schemes was about 4 lakh acres thus bringing the total for works in progress to 7 2 lakhs of acres

On Rapti and its tributaries further investigations have been made 14 reservoir schemes have been prepared. Details of these schemes are being worked out Most outstanding of these schemes is Jalkhudi costing about Rs 1400 lakhs This appears to be very attractive scheme In addition to flood protection it provides for irrigation of 5 0 lakhs acres and 27000 k.w power

The following works were started as a result of 1955 floods —

- 1 Raising of 2500 villages in Eastern Districts of U.P
- 2 Extension of Chautani bund towards north (minor works)
- 3 Extension of Chautani bund towards south (minor work)
4. Protection of marooned villages along Ghagra and the Ganga in Azamgarh and Ballia districts (270 Nos)

In addition to above survey work is going on in the catchment area of the Tons and other small rivers for ascertaining the necessary flood protection works

Three major drainage schemes namely Kadrabad Kairon Nadi and Ikhu drain were prepared as a result of 1955 flood but were not started during 1955-56

WEST BENGAL

1954-55 Working Season

During 1954-55 protection works for i.e Jalpaiguri Cooch Behar Alipurduar and Mathabhanga towns at an estimated cost of about 161 lakhs were undertaken In addition to these another major work of embankment in Barnes Domohani costing about Rs 14 74 lakhs was taken up to protect 32000 acres of land Besides two minor schemes for protection of Silguri town and Phansideva village were undertaken The progress on all these was almost to the target fixed for the season.

1955 Floods

The floods in 1955 were not as high as of 1954. The Barnes Domohani Embankment constructed during 1954-55 was, however breached.

1955-56 Working Season.

Works which were started during last season were continued and were completed. In addition to these five major schemes of last year, one more major scheme for protecting "Alipurduas town below the Railway Bridge" was taken up. Besides the above major schemes 8 minor town protection works were taken up.

The progress during this working season was almost to the targets fixed of the season.

As a result of the 1955 floods the Barnes Domohan which was breached was repaired and modified scheme was carried out.

APPENDIX II—contd

ANDHRA

Progress of Works taken up during 1955-56 (working season)

Sl No	Name of Scheme	Estimated cost in rupees lakhs	Area to be benefited in acres	Total estimated quantity of work	Target of work for the working season	Progress to the end of working season	Percentage ¹ progress to the target	Remarks Whether continued in 1956-57
1	2	3	4	5	6	7	8	9
A. Major Schemes costing more than 10 lakhs each.								
1	Diversion of half the flood discharge of Budameru into Krishna river	33.81	No details available, 15% work has been completed					Yes
B. Minor Schemes costing less than Rs 10 lakhs each.								
2	Minor Schemes costing Rs. 12.32 lakhs—Progress not available		—Nil—					Yes

APPENDIX II—contd.

ASSAM

Progress of Works taken up during 1954-55 working season

Sl No	Name of Scheme	Estimated cost in rupees lakhs	Area to be benefited in acres	Total estimated quantity of work	Target of work for the working season	Progress to the end of working season of the target	Percentage Progress of the target to season col. 7 to 9	Remarks Whether continued in 1955-56
1	2	3	4	5	6	7	8	9
A Major Schemes costing more than Rs 10 lakhs each								
1	Dibrugarh Protection Works	160	Dibrugarh Town protection	5 stone spurs & 21 timber spurs and re-vestment	100%	Complete	100	Further protection works are to be undertaken
2	Palasbari Town Protection Works	12.25	Palasbari Town protection	(a) Temporary Protection and (b) construction of bund behind the town	100%	Complete	100	To be taken in 1955-56
3	Construction of an embankment from Silghat to Dhung	41.85	75,000 acres	5,80,000 lakhs cu ft	100%	415 lakhs cft	72	Scheme continued in 1955-56
	Total	214.10						

B Schemes costing less than Rs 10 lakhs each

Four town protection and 12 Embankment Schemes were taken up at an estimated cost of Rs 39.79 lakhs [Of these two town protection schemes were completed and two were partly completed. The embankment schemes are in progress.]

APPENDIX II—contd

ASSAM

Progress of Works taken up during 1955-56 Working Season

Sl. No	Name of Scheme	Estimated cost in Rs lakhs	Area to be benefitted in acres	Total estimated quantity of Work	Target for the working season	Progress during working season	Percentage of Target for the season	Up-to-date		Remarks Whether to be continued during 1956-57	
								Progress of work done	Percentage of total estimated quantity		
1	2	3	4	5	6	7	8	9	10	11	
A Major schemes costing more than Rs 10 lakhs each											
1	Dibrugarh Works	Protection	259 8	Dibrugarh town	(a) Impermeable spurs 13 50 lacks cft	13 5 lakh cft	10 10 lakh cft	74 9	10 1 lakhs cft	74 9	Phase I was completed during 1954-55
					(b) Permeable spurs (Driving of piles) 585 Nos	585 Nos	585 Nos	100	585 Nos	100	Progress on Phase II is shown in this Statement
					(c) Construction of dyke—91 34 Earthwork	91 34 lakh cft	93 9 lakh cft	103 2	93 9 lakh cft	103 3	
					(d) Construction of drains—Earthwork 130 83	130 86 lakh cft	111 35 lakh cft	88 7	111 35	88 7	

1	2	3	4	5	6	7	8	9	10	11
2	Construction of a dyke from Silghat to Dhing	41 85	Culturable land	(a) Earthwork 58 00 lakh cft	165 00	132 0	80	547 0 lakh cft	97	To be continued in 1956-57
				(b) Turfing 105 33 lakh sft	105 33	Nil	Nil	Nil	Nil	
				(c) Const of single Bamboo Muhri 1000 rft	1000 rft	Nil	Nil	Nil	Nil	
				(d) Timber bridge 200 rft	200 rft	Nil	Nil	Nil	Nil	
				(e) Collection of stone metal 36800 cft	36800 cft	Nil	Nil	Nil	Nil	

3 Palasbari town protection A bund behind the town was taken up in 1955 56 Details of progress etc , not yet available

B Minor schemes costing less than Rs 10 lakhs each

(1) Ten town protection works costing less than Rs 10 lakhs each were taken up for total estimated cost of Rs 43 07 lakhs Out of these 2 town protection works, Sual Kuchu and Bamundi protection works were completed during 1954 55 working season

(2) A number of embankments on the Brahmaputra and other rivers and drainage schemes have been under execution About 1150 miles of embankments were constructed during the 1st Plan period out of which 250 miles were constructed during 1955 56 For 1955 56 the State Flood Control Board has approved 36 embankment schemes costing less than Rs 10 lakhs, out of which 22 schemes cost Rs 109 77 lakhs

APPENDIX II—*contd*
 BIHAR (NORTH) (EXCLUDING KOSI)
 Progress of Works for 1954-55 Working Season

Sl No	Name of Scheme	Estimated cost in lakhs of rupees	Area to be benefited in acres	Total Estimated quantity of earth-work in lakhs cft.	Target of work for the working season in lakhs cft.	Progress to end of working season	% of Target to the season	Remarks Whether included in 1955-56
1	2	3	4	5	6	7	8	9
<i>A Major schemes costing more than Rs 10 lakhs each</i>								
1	Embankments on the Burhi Gandak							
	(a) Along Right bank from Akharaghat (Muzaffarpur) to Darbhanga district boundary (Muzaffarpur district)	35 97	2 51 620	539 7	539 7	438 0	81 2	Yes
	(b) Along left bank from Rosera to Parihara (Darbhanga and Monghyr Distt.)	66 08	1 12 600	1111 9	947	917 0	97	Yes
	(c) Along right bank from Rosera to Nima (Darbhanga and Monghyr districts)	61 32	1,02,400	1046 4	950	758 0	79 5	Yes
2	Embankment on the old Bagmau and the Burhi Gandak from Hathauri to Rosera.	43 54	36,000	830 4	500	486 0	97 3	Yes.

1	2	3	4	5	6	7	8	9
3	Kirohi Scheme Desilting & forming embankments on Kirohi river (Darbhanga and Muzaffarpur Districts)	50 43	68 500	731 3	731 3	62 1	8 5	Yes
4	Embankment from confluence of Mahi with the Ganga up to the end of 8 No bund with river Mahi, in Saran district	16 35		278 1	278 1	15 6	5 6	Yes
5	Repairing and strengthening bunds (7 Nos) along the Gogra (Called the Ghaghra in U P) river in Saran District.	19 46	14 000	389 7	211	137 0	65	Yes
6	Improvement of Kharika bund on the right bank of the Burhi Gandak	10 47		169	80	76 8	96	Yes
7	Rosera Angarghat embankment on the Right bank of the Burhi Gandak	18 01		324 3	200	198 0	99 2	Yes
8	Balan river embankment	24 91		411 3	230	126 5	55	Yes
9	Bainty river embankment	16 62		250 4	139	84 0	60 4	Yes
10	Embankment on the right bank of the Burhi Gandak from Darbhanga district border to Pusa	10 08		187 5	36	29 4	81 7	Yes
	TOTAL	373 24						

B Minor schemes costing less than Rs 10 lakhs each

8 Minor schemes costing Rs 24.36 lakhs were taken up, out of which 4 were embankment schemes and 4 were town protection works

4 schemes have been completed and progress on others was near the targets

APPENDIX II—contd

BIHAR (NORTH) (EXCLUDING KOSI)

Progress of Works for 1955-56 Working Season

Serial No	Name of Scheme	Estimated cost in lakhs of Rs	Area to be benefited in acres	Total estimated quantity of Earth work crores cft	Target for the working season crores cft	Progress during working season crores cft	Percentage of Target to the season	Up-to-date		Remarks whether to be continued during 1956-67
								Progress of work done crores cft	Percentage of total estimated quantity	
1	2	3	4	5	6	7	8	9	10	11
<i>A. Major Schemes costing more than Rs 10 lakhs each</i>										
1	Embankments on the Burhi Gandak.									
	(a) Along right bank from Akhara ghat (Muzaffarpur) to Darbanga Distt boundary	35 97	Six lakh acres of land have been benefited so far by carrying out the embankment works in North Bihar	5 32	0 94	0 85	90 4	5 23	98 5	
	(b) Along left bank from Rosera to Parihara	66 08		11 12	2 05	1 52	74 2	10 59	95	
	(c) Along right bank from Rosera to Nima	61 32		10 46	3 48			9 0	86	
2	Embankment on the old Bagmati and the Burhi Gandak from Hathauri to Rosera.	43 52		8 30	3 43	2 45	71 4	5 25	63 3	
3	Kirohi Scheme Desilting and forming embankments on Kirohi river	50 43		7 31	3 08	2 35	76 3	3 07	42	

1	2	3	4	5	6	7	8	9	10	11
4	Embankment from confluence of Mahu with the Ganga up to the end of 8 Nos bund along river Mahu, in Saran Distt	16 35	After completion of all the schemes nine lakhs acres of land will be protected.	2 79	2 63	1 48	56 3	1 64	59	
5	Repairing and strengthening bunds (7 Nos) along the Gogra in Saran District	19 46		3 47	2 10	1 16	55 2	2 53	74	
6	Improvement of Kharika bund on the right bank of the Burhi Gandak.	10 47		1 69	0 92	0 87	94 7	1 64	97	
7	Rosera Angaraghat embankment on the right bank of Burhi Gandak.	18 01		3 19	1 2	0 1	8 3	2 09	65 5	
8	Balan river embankment	24 91		4 20	3 27	2 8	85 6	4 06	96 8	
9	Bainty river embankment	16 62		2 5	1 66	1 6	96 4	2 44	97 5	
10	Embankment on the Right bank of Burhi Gandak from Darbhanga district border to Pusa.	10 08		1 5	1 21	0 9	74 4	1 19	79 5	
11	Embankment on the right bank of Burhi Gandak from Khagaria to Numa.	42 15		10 5	6 38	3 23	50 6	3 23	30 8	
12	Embankment on the left bank of Burhu Gandak from Khagaria to Parihara	30 35		6 37	4 78	3 42	71 6	3 42	53 7	

1	2	3	4	5	6	7	8	9	10	11
13	Embankment on the right bank of Burhi Gandak from Pusa to Angar Ghat.	41 65		8 09	4 42	3 36	78 3	3 36	42 8	
14	Embankment on the left bank of Burhi Gandak from a point opposite Pusa to Bachauli	52 0		9 73	7 12	4 91	69 0	4 91	50 6	
15	Akharasghat to point opposite Pusa along left bank of Burhi Gandak.	39 12		6 48	5 0	2 89	57 8	2 89	44 6	
16	Kamla Balan embankment	400 0		17 41	10 0	8 42	84 2	8 42	48 4	
	TOTAL	<u>884 49</u>								

B. Minor Schemes costing less than Rs 10 lakhs each

10 minor schemes costing Rs 38 84 lakhs of which five have been completed and 4 are in progress

APPENDIX II—contd.

KOSI PROJECT

Progress of Work in Embankment in 1955 & 1956

Name of Embankment	Lengths in miles		Quantity of works to be done in lakh cft			Work done in 1955 in lakh cft.		Total work done in 1955 in lakh cft.	Work done in 56 in lakh cft.		Total work done in 56 in lakh cft.	Total work done in lakh cft upto 30th June and its percentage			
	Public Co-operation	Contractor	Public Co-opn	Contractor	Total men	Public Co opn	Contractor		Public co-opn	Contractor		Public Co-opn.	Percentage Contractor	Percentage	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1 Western Embankment—															
Bharda to Kanauli	9½	Nil	298 41	Nil	298 41	43 65	Nil	43 65	74 1	Nil	74 1	117 75	39 5%	Nil	
Kanauli to Nirmali	8	8	300 0	631 50	931 50	195 49	417 10	612 59	89 01	210 49	299 50	284 50	94 8%	627 59	99 5
Ring Bundhs	Nil	7½	Nil	404 50	404 50	Nil	311 30	321 30	Nil	61 99	61 99	Nil	x	373 29	92 5%
Tiljuga Marginal Embankment	Nil	2	Nil	179 00	179 00	Nil	39 00	39 00	Nil	22 02	22 02	Nil	x	61 02	36 05
Ghoghardiha—Madhopur	7	3	360 00	295 00	655 00	Nil	Nil	Nil	254 50	132 71	387 21	254 50	70 70%	132 71	45 0%
Balan Marginal Embt.	2	Nil	100 00	Nil	100 00	Nil	Nil	Nil	81 25	Nil	81 25	81 25	81 2%	Nil	x
TOTAL	27	20½	1058 41	1501 00	2559 41	239 14	767 40	1006 54	498 86	427 21	926 07	738 00	70 0%	1194 61	79 6%
2 Eastern Embankment—															
Above Afflux Bund and upto Jitpur	Nil	12	Nil	800 00	800 00	Nil	294 00	294 00	Nil	405 14	405 14	Nil	x	699 1	87 5%
Bhimnagar to Rajpur	Nil	8	Nil	200 00	200 00	Nil	Nil	Nil	Nil	183 50	183 50	Nil	x	183 50	91 7%
Rajpur to one mile north of Tharbita	Nil	20	Nil	1000 00	1000 00	Nil	Nil	Nil	Nil	911 00	911 00	Nil	x	911 00	91 1%
One mile north of Tharbita to Pipra	10	Nil	567 89	Nil	567 89	310 43	Nil	310 43	248 94	Nil	248 94	559 37	98 4%	Nil	x
Pipra to Brahi	9	Nil	424 94	Nil	424 94	Nil	Nil	Nil	360 35	Nil	360 35	360 35	85 0%	Nil	x
TOTAL	19	40	992 83	2000 00	2992 83	310 43	294 00	604 43	609 29	1499 64	2108 93	919 72	92 6%	1793 64	89 6%
3 Eastern Afflux Bundh	Nil	8	Nil	589 00	589 00	Nil	236 15	236 35	Nil	319 26	319 26	Nil	x	555 61	94 5%
GRAND TOTAL	46	68½	2051 24	4090 00	6141 24	549 57	1297 75	1847 32	1108 15	2246 11	3354 26	1657 72	80 7%	3543 86	86 6%

APPENDIX II—contd

DELHI

Progress of Works taken up during 1955-56 Working Season

Sl No	Name of Scheme	Estimat ed cost in lakhs of Rs	Area to be benefited in acres	Total estimat ed quan tity of earthwork (lakh cft)	Target for the working season earthwork in lakh cft.	Progress during working season earthwork in lakh cft.	% age of Target for the season	UP TO DATE		Remarks (Whether to be continu ed during 1956-57)
								Progress of work done	%age of total es timated quantity	
1	2	3	4	5	6	7	8	9	10	11
<i>A Major Schemes costing more than Rs 10 lakhs each</i>										
1	Constructing marginal bund on left bank of Jumna river upstream of Railway bridge up to Pabbi village in U P State	17 02	N.A.	225 0	225 0	225	100	Earthwork completed		Yes some masnory works only
2	Construction of spurs and revetment on right bank of river Jumna - from Power House (DELHI GATE) to nallah No 12	12 74	N.A.	Work in progress,			details not available			Yes
	TOTAL	29 76								
<i>B Minor Schemes costing less than Rs 10 lakhs each.</i>										
In all about 13 schemes costing Rs. 13 0 lakhs were taken up Work in progress, details are not available										

APPENDIX II—contd

JAMMU & KASHMIR

Progress of Works taken up during 1954-55 Working Season

Sl No	Name of Scheme	Estimated cost in lakhs of Rs	Area to be benefited in acres	Total estimated quantity of earthwork in lakhs cft.	Target for the working season earth work in lakhs cft	Progress during the season earthwork in lakhs cft	Percentage of target	Remarks whether to be continued during 1955-56 season	
1	2	3	4	5	6	7	8	9	
<i>A/ Major schemes costing more than Rs 10 lakhs each</i>									
1	Kashmir Valley Flood Protection Scheme Phase I (Work actually commenced during 1953-54)								
	(a) Enlargement of spill channel from Padshahi Bagh to Wular								
	(i) Supplementary channel				-700	225	131	58	Yes
	(ii) Marginal bunds (Spill channel)	100 00 for whole Project	60 000 acres Srinagar town and several other villages in Kashmir Valley	600	220	97	44	Yes	
	(iii) Marginal bunds (Lasjan Haigam Wular etc)			250	100	41	41	Yes	
	(b) Strengthening and retiring river Jhelum bunds								
<i>B Minor schemes costing less than Rs 10 lakhs each</i>									
									Nil.

APPENDIX II—contd

JAMMU & KASHMIR—contd

Progress of Flood Control Works taken up during 1955-56

Sl No	Name of Scheme	Estimat ed cost in lakhs of Rs	Area to be bene fited in acres	Total es timated quantity in lakhs cft	Target for the working season E/W in lakhs cft.	Progress during working season E/W in lakhs cft.	Percentage of target for the sea son col 7/6	Up-to-date		Remarks (Whether to be continued during 1956-57)
								Progress of work done E/W in lakhs cft	Percentage of total estimated quantity	
1	2	3	4	5	6	7	8	9	10	11
A. Major schemes costing more than 3 Rs 10 lakhs each										
1 Kashmir Valley Flood Protection Scheme Phase I										
(a) Enlarging and excavation of spillway channel from Pad shahi Bagh to Wullar										
	(i) Supplementary channel			700	225	223	99	568	80	Yes
	(ii) Marginal bunds (spill channel)			600	220	139	63	384	64	Yes
	(iii) Other marginal bunds (Lasjan Naugam Haigam Wullar)	100 00	60,000 acres.	250	100	80	80	174	70	Yes
	(iv) Other miscellaneous bunds etc.			295	128	32	25	32	11	Yes
	(b) Strengthening and retire- ment of river Jhelum bund			250	100 Nil	162	162	242	97	Yes
B Minor schemes costing less than Rs 10 lakhs each.										

APPENDIX II—contd.

ORISSA

Progress of Works taken up during 1954 55 Working Season

Sl No	Name of Scheme	Estimated cost in lakhs of Rs	Area to be benefited in acres	Total estimated quantity of work	Target of work for the working season	Progress to the end of working season	Percentage to the Target to season	Remarks (Whether to be continued in 1955 56)
1	2	3	4	5	6	7	8	9
A.	Major scheme costing more than Rs 10 lakhs each	Nil						
B.	Minor Schemes costing less than Rs 10 lakhs each							
	120 Minor schemes	93 15					10 9%	Rs. 10 25 lakhs spent Schemes are being continued

APPENDIX II—contd

ORISSA

Progress of Works taken up during 1955 56 Working Season

Sl No	Name of Scheme	Estimated cost in lakhs of Rs	Area to be benefited in acres	Total estimated quantity of work	Target of work for the working season	Progress during working season	Percentage of the Target for the season	Remarks (Whether to be continued in 1956 57)
1	2	3	4	5	6	7	8	9
A Major schemes costing more than Rs 10 lakhs each								
1	Construction of spurs at Dalaighai	30 03						
	(i) Rubble collected and dumped							75
	(ii) Earthwork done							16
	(iii) Bullah collected for permeable spur							60
2	Breach closing work of Machgaon canal at Dalaighai and Baradaghai							Work completed and the newly completed embankment is standing against 55.4 ft, the present level in the river
B Minor schemes costing less than Rs 10 lakhs each								
	120 minor schemes	93 15						3 schemes completed. 40 schemes in progress. Average percentage of progress 25 %

APPENDIX II—contd

PRPSU

Progress of Works taken up during 1955-56 Working Season

Sl No	Name of Scheme	Estimated cost in lakhs of Rs	Area to be benefited in acres	Total estimated quantity of Earthwork lakhs cft	Target for the working season	Progress during working season	Percentage of target for the season	Remarks (Whether to be continued during 1956-57)
1	2	3	4	5	6	7	8	9
<i>A Major schemes costing more than Rs 10 lakhs each</i>								
Nil								
<i>B Minor schemes costing less than Rs 10 lakhs each</i>								
Total 6 schemes costing Rs 11.50 lakhs were taken up and work to the extent of 60% was completed								Yes

APPENDIX II—contd

PUNJAB

Progress of Works taken up during 1954-55 Working Season

Sl No	Name of Scheme	Estimated cost in lakhs of Rs.	Area to be benefited in acres	Total estimated quantity of Earthwork in lakhs cft	Target for the working season	Progress during working season	Percentage of target for the season	Remarks (Whether to be continued during 1955-56)
1	2	3	4	5	6	7	8	9
<i>A. Major schemes costing more than Rs 10 lakhs each</i>								
Nil								
<i>B. Minor schemes costing less than Rs 10 lakhs each</i>								
Total 8 Schemes costing Rs. 31.76 lakhs were taken up and about 60 % of work was completed								Yes

APPENDIX II—contd

PUNJAB—contd

Progress of Works taken up during 1955-56 Working Season

Sl No	Name of Scheme	Estimated cost in lakhs of Rs	Area to be benefited in acres	Total estimated quantity of Earthwork lakh cft	Target for the working season	Progress during working season	Percentage of target for the season	Remarks (Whether to be continued during 1956-57)
1	2	3	4	5	6	7	8	9

A Major schemes costing more than Rs 10 lakhs each

Nil

B Minor schemes costing less than Rs 10 lakhs each

In addition to 8 schemes (costing Rs 31.76 lakhs) carried over from last year 6 more schemes were taken up during this year costing Rs 10.36 lakhs. Also repairs to breaches in 5 existing embankments caused by floods of 1955 were carried out and 7 new cross drainages were constructed.

APPENDIX II—contd.

SAURASHTRA

Progress of Works taken up during 1955-56 Working Season

Sl No	Name of Scheme	Estimated cost in lakhs of Rs	Area to be benefited in acres	Total estimated quantity of earthwork (lakh cft)	Target for the working season	Progress during working season	Percentage of target for the season	Remarks (Whether to be continued during 1956-57)
1	2	3	4	5	6	7	8	9
A Major Schemes costing more than Rs 10 lakhs each								
Nil								
B Minor Schemes costing less than Rs 10 lakhs each								
Total 107 schemes costing Rs 56 10 lakhs—Out of these Rs 9 28 lakhs were spent up to March 1956 These schemes are expected to be completed shortly								

APPENDIX II—contd

UTTAR PRADESH

Progress of Works taken up during 1954-55 Working Season

Sl No	Name of Scheme	Estimated cost in lakhs of rupees	Area to be benefited in acres	Total estimated quantity of work E/W in lakhs cft	Target for the working season E/W in lakhs cft	Progress during working season E/W in lakhs cft	percentage of target to the season col 7/6	Remarks (Whether to be continued during 1955-56 season)
1	2	3	4	5	6	7	8	9
A Major schemes costing more than Rs 10 lakhs each								
1	Chitauri Bund on River Gandak in Deoria district. (length 3½ miles)	21 12	1,21 600	159	80	83	104	Yes
2	Ballia Bariá Bund along Ganga river in Ballia district (length 25 miles)	16 28	60 800	452	130	130	100	Yes
3	Raising of marooned villages (300) Nos in districts of Basti, Gorakhpur and Deoria (Rapti basin)	66 00		(300 villages)	300	400	133	Yes
4	Protection of Banaras Ghats (9 Nos) (Ganga river)	49 16	Banaras town	9 ghats	Not known	(one ghat completed and 8 in progress,		Yes
5	Turtipur Srinagar Bund along right bank of Ghagra river in Ballia district (length 51 miles)	30 60	89 600	944		Alignment marked Works in progress		Yes
TOTAL		183 16						
B Minor schemes costing less than Rs 10 lakhs each								
Total 12 schemes = 48 65 lakhs—one scheme completed others in progress								

APPENDIX II—contd

UTTAR PARDESH—contd

Progress of Works taken up during 1955-56 Working Season

Serial No	Name of Scheme	Estimated cost in lakhs of Rs	Area to be benefited in acres	Total estimated quantity of E/W in lakhs cft	Target for the working season E/W in lakhs cft	Progress during working season E/W in lakhs cft	% of Target for the season col 7/6	Up-to-date		Remarks ^s (Whether to be continued during 1956-57)
								Progress of work done E/W in lakhs cft	% of total estimated quantity col 9/5	
1	2	3	4	5	6	7	8	9	10	11
<i>'A) Major Schemes costing more than Rs 10 lakhs each</i>										
1	Chitauni Bund on river Gandak in Deoria district (length 3½ miles)	21 12	121 600	159	76	76	100	159	100	
2	Ballia Baria Bund along Ganga river in Ballia district (length 25 miles)	16 28	60 800	452	322	220	68	350	80	Yes
3	Protection of Banaras Ghats (Ganga river)	67 89	Work in progress				Details not available			Yes
4	Turtipur-Srinagar Bund along right bank of Ghagra river in Ballia district (length 51 miles)	30 60	89,600	944	500	530	106	530	56	Yes
5	Mahola Garhwal Bund along right bank of Ghagra river in Azamgarh district (length 36 miles)	30 09	88 160	710	500	365	73	365	51	Yes

APPENDIX II—contd

UTTAR PRADESH—contd.

I	2	3	4	5	6	7	8	9	10	11
6	Behra Bondi Bund along left bank of Ghagra river in Bahraich district (length 26 miles)	16 60	1 60 000	500	450	405	90	405	81	Yes
7	Bondi Bahrauli Bund along Ghagra river in Bahraich district	16 30	1 50 000	450	425	335	78	335	78	Yes
8	Paraspur Dharamra Bund along left bank of Ghagra river in Gonda district (length 31 miles)	27 00	51 000	1 000	600	110	19	110	11	Yes
9	<i>Raising Marooned Villages</i>									
	(i) 300 village projects in districts of Basti Gorakhpur and Deoria (Rapti basin)	66 00		300 (Villages)	225 (Villages)	225 (Villages)	100	625 (Villages)	100	
	(ii) 120 villages in Ballia district (Ganga river)	16 13		120 (Villages)	60 (Villages)	22 (Villages)	37	22 (Villages)	19	Yes
	(iii) 150 villages in Bahraich district (Ghagra)	16 20		150 (Villages)	40 (Villages)	28 (Villages)	70	28 (Villages)	19	Yes
	(iv) 2,500 villages in eastern U P	301 00		2 500 (Villages)	55 (Villages)	35 (Villages)	64	35 (Villages)	1 4	Yes
	TOTAL		625 41							

B Minor Schemes costing less than Rs 10 lakhs each

Total 25 Schemes 113 64

Out of this 12 Schemes are completed and remaining are in progress

APPENDIX II—contd.

WEST BENGAL

Progress of Works taken up during 1954-55 Working Season

Sl. No.	Name of Scheme	Estimated cost in lakhs of rupees	Area to be benefited in acres	Total estimated quantity of work	Target of work for the working season	Progress to the end of working season	% of the target to season	Remarks Whether continued in 1955-56
1	2	3	4	5	6	7	8	9
A. Major Schemes costing more than Rs. 10 lakhs each								
1	Protection of Jalpaiguri town (on Teesta river)	66.4	Town protection	(E.W.) 190 (B) 10 (P) 12,450	190 8.5 12,450	190 8.25 12,450	100 97 100	Yes
2	Protection of Aliparduars town (on Kaljani river)	18.74	Do.	(E.W.) 30 (B) 6 (P) 4,000	25 5.7 3,700	21 5.7 3,478	84 100 94	Yes
3	Protection of Cooch-Bihar town (on Torsa river)	61.25	Do.	(E.W.) 136.37 (B) 25 (P) 10,500	98 15 11,970	96 14.5 11,970	98 98 100	Yes
4	Protection of Mathabhanga town (on Jaldhaka river)	15.18	Do.	(E.W.) 25 (B) 0.3 (P) 2,000	12.5 0.3 2,033	12.0 0.15 2,033	98 54 100	Yes

1	2	3	4	5	6	7	8	9	
5	Embankments (on left bank) of river Teesta in Barnes—Mainaguri—Domohani Area, in Jalpaiguri District.	14.74	32,000	(E.W.) (B)	67 0.55	54 0.55	80% 100%	80 100	Yes
	TOTAL	<u>176.31</u>							
B.	Minor Schemes costing less than Rs. 10 lakhs each								
	Two town protection schemes costing Rs. 9.82 lakhs were taken up and completed.								

E. W. = Earthwork in lakhs cft.
 B = Boulder Pitching and Dumping in 1 lakh cft.
 P = Pile Driving (Nos.).

APPENDIX II—contd.

WEST BENGAL

Progress of Works taken up during 1955-56 Working Season

Serial No.	Name of Scheme	Estimated cost in lakhs of Rs.	Area to be benefited in acres	Total estimated quantity of earth-work (lakh cft.)	Target for the working season	Progress during working season	% age of Target for the season	Up-to-date		Remarks (Whether to be continued during 1956-57)
								Progress of work done lakhs cft.	% age of total estimated quantity	
I	2	3	4	5	6	7	8	9	10	11.

A. Major Schemes costing more than Rs. 10 lakhs each.

1	Jalpaiguri town protection works	66.4	Jalpaiguri Town	(i) Collection of Boulders=21	9.5	9.5	100%	21 lakh cft.	100	} Completed
				(ii) Earthwork =210	30	30	100%	210	100	
				(iii) Sal Ballis= 13650 Nos.	1200 Nos.	1200	100%	13650 Nos.	100	
				(iv) Dumping and laying boulders =19	8.6	6.4	75%	16.7	88	
				(v) Construction of Drainage sluices =7 Nos.	5 Nos.	5	100%	7 Nos.	100	
				(vi) Short spurs =8 Nos.	Nos.	8	100%	8 Nos.	100	

1	2	3	4	5	6	7	8	9	10	11	
2	Cooch-Bihar town protection works	61.25	Cooch-Bihar Town	(i) E/W=136.37 (ii) Boulder Pitching=25 (iii) Pile Driving=10,500 Nos.	21 lakh cft. 4.5 Nil	21 4.5 ..	100% 100% Nil	122 25 12,000	89% 99% 114%	} Completed	
3	Alipurduar town protection works	18.74	Alipurduar Town	(i) E/W=30 (ii) Boulder pitching=6 (iii) Pile driving=4000 Nos.	6.5 1 ..	6.5 1 ..	100% 100% ..	30 7.7 3480	98% 128% 87%		} Completed
4	Mathabhange town protection works	15.18	Mathabhange Town	(i) E/W=129 (ii) Boulder pitching=1.1 (iii) Pile driving=2000 Nos.	24.1	24.1	100%	129 1.1 2,000	100% 100% 100%			} Completed
5	Protection on left bank of Kaljani below Railway bridge near Alipurduar	10.79	Alipurduar	(i) E/W=14 (ii) Boulder pitching=8.20 lakhs cft.	14 8.20	14 8.2	100% 100%	14 8.20	100% 100%	} Completed	
6	Protection of Barnes-Damohani area on left bank of Teesta river	14.74	32,000	(i) E/W=20 (ii) Stone work (iii) Pitching and dumping=2	20 7 2	20 7 1.6 lakhs	100% 100% 80%	20 7 1.6	100% 100% 80%		} Will be continued.
	Total	187.10									

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B. Minor Schemes costing less than Rs. 10 lakhs each.

8 Schemes costing Rs. 46.64 lakhs, were taken up in 1955-56. Of these two were completed and other six are in progress.

APPENDIX III
 [Vide para 3(a) of Part I of the statement]
 Statement of flood damage during 1955

Sl. No.	Name of State	Area affected Sq. miles	Popula- tion affected in lakhs	Damage to Crops		Damage to houses and property		Cattle lost	Human lives lost	Damage to public utilities	Remarks
				Area Acres	Value Rs. crores,	Nos.	Value Rs. Lakhs.				
										Nos.		Nos.	Rs. lakhs
1	2	3	4	5	6	7	8	9	10	11	12
1.	Andhra . . .	792	Not available	4.85 lakhs	1.26	3569	6.51	1358	18	10.75	
2.	Assam . . .	5400	8.44	..	2.47	..	53.00	3558	Nil	131	
3.	Bihar . . .	6,840	71.08	24.98 lakhs	20.3	111856	112.0	57	44	20.46	
4.	Delhi . . .	125	0.37	..	0.15	..	13.95	24	7	2.64	
5.	Madhya Pradesh . . .	130	Not available	8,10,51	0.025	1196	3.68	266	5	1.1	
6.	Orissa . . .	2361	19.77	10.09 lakhs	7.68	129591	176.0	4641	79	75.00	
7.	Pepsu . . .	5972	18.24	12.26 lakhs	9.21	1.93 lakhs.	412.0	16503	133	47	
8.	Punjab . . .	3947	51.17	..	11.86	..	1827.0	51279	462	*350	*Information incomplete.
9.	Tripura . . .	6	Not available	..	0.05	..	0.07	Nil	Nil	0.09	
10.	U. P. . . .	9275	88.63	Not available	..	4.71 lakhs	..	3244	179	*60	*Information incomplete.
11.	W. Bengal . . .	1330	Not available	..	0.5	600	..	20	2	100	
TOTAL		6179	257.7		535.05		2604.21	800.50	929	798.04	

APPENDIX IV

[Vide para 3 (a) of Part I of the Statement]
Statement of flood damage during 1956 (part)

S.I No.	Name of State.	Area affected sq. miles	Population affected (lakhs)	Damage to crops		Damage to houses and property		Cattle lost Nos.	Human lives lost Nos.	Damage to public utilities in Rs. lakhs	Remarks
				Area in acres	Value in Rs. crores	Nos.	Value in Rs. lakhs				
1	2	3	4	5	6	7	8	9	10	11	12
1	Andhra	3 villages submerged.	.	15,000	..	1,468	..	..	..	..	Approximate value of damage is Rs. 3,79,000.
2	Assam	126.44 sq. miles and 12 muzas.	1.29	66,500	1.54	600	1.92	90	18	1.12	14.5 miles of road damaged. 7,600 families in 254 vill- ages were affected.-
3	Bihar	844	6.57	..	2.10	..	2.40	1	9	..	..
4	Delhi . . . .		..	..	..	..	..	..	..	..	..
5	Madhya Pradesh . .	..	..	..	..	..	..	..	..	..	Due to floods in Indravati River traffic closed for 3 days, several houses collapsed and several cattle washed away.

6 Orissa											
7 PEPSU . . . . .	..	..	..	..	..	..	..	..	..	..
8 Punjab	334.7	0.50								1.73	364 villages and 1,500 persons were affected. Damage to crops not yet assessed.
9 Saurashtra	1000 to 1200	..	15,000	..	..	15			2	0.90	Cattle valued at Rs. 30,000 lost. Damage to private enterprise like salt industry.
10 Tripura . . . . .	..	..	..	..	..			150	11		Total damage less than Rs. 1 crore.
11 Uttar Pradesh	120.00	0.35	*	..	[6,593	..	126		24		79 villages inundated. *Reported very high.
12 West Bengal	60	0.5	..	..	..	..	..	..	6		500 houses completely lost and 500 severely damaged.]
TOTAL	2484 to 2684	9.21	96,500	2.25	8,661	18.32	367	70	3.77		

APPENDIX V
 [Vide para 3 (a) of Part I of the Statement]
 Comparative statement of flood damage in 1954, 1955 and 1956 (part)

Sl. No.	Name of State	Area affected in sq. miles	Popula- tion affected (lakhs)	Damage to crops		Damage to Houses and Property		Cattle lost (Nos.)	Human lives lost (Nos.)	Damage to public utilities (Rs. lakhs)	Remarks
				Area (acres)	Value (Rs. crores)	No.	Value in (Rs. lakhs)				
1	2	3	4	5	6	7	8	9	10	11	12
1	Andhra	1954	..	..	..	..	..	..	..	..	..
		1955	792	..	4.85 lakhs	1.26	3,569	6.51	1,358	18	10.75
		1956	3 Villages submerged	..	5,000	..	1,468
2	Assam	1954	11,470	..	..	11.73	..	590	8,845	17	85.00
		1955	5400	8.44	..	2.47	..	53.00	3,558	Nil	131.00
		1956	126.44 sq. miles and 12 muzas	1.29	66,500	..	0.15	600	1.92	90	18	1.12	14.5 miles of roads damaged, 7,600 families in 254 villages were affected.
3	Bihar	1954	10,000	..	..	15.00	..	500	608	42	150
		1955	6,841	71.08	24.91 lakh	20.30	1,11,856	112.0	57	44	20.46
		1956	844	6.57	..	2.10	..	2.4	1	9	..

4 Delhi	1954	..	..	..	..	..	..	..	..	..	..
	1955	125	0.37	..	0.15	..	13.95	24	..	7	2.64
	1956	..	..	..	..	..	..	..	..	..	..
5 Madhya Pradesh	1954	..	..	..	..	..	..	..	..	..	..
	1955	130	..	81,051	0.025	1,196	3.68	266	..	5	1.10
	1956	..	..	..	..	..	..	..	..	..	..
6 Orissa	1954	..	..	..	..	..	..	..	..	..	..
	1955	2,561	19.77	10.09 lakhs	7.88	1,29,591	176.0	4,641	79	75.00	..
	1956	..	..	..	..	..	..	..	..	..	..
7 PEPSU	1954	..	..	..	..	..	..	..	..	..	..
	1955	5,972	18.24	12.26 lakhs	9.21	1.93 lakhs	412.0	16,503	133	0.47	..
	1956	..	..	..	..	..	..	..	..	..	..
8 Punjab	1954	373 villages & 3500 acres	..	..	0.75	..	..	..	..	..	..
	1955	3,947	51.17	..	11.86	..	1,827	51,279	462	*350	*Information incomplete ;
	1956	334	0.50	..	..	..	..	..	..	1.75	364 villages and 1500 persons affected. Damage to crops not assessed.
9 Saurashtra	1956	1000 to 1200	..	15,000	..	..	15	..	2	0.9	Cattle valued at Rs. 30,000 lost. Damage to private enterprise like salt industry.

Due to flood in Indravati river traffic closed for 3 days and several houses collapsed and several cattle washed away.

*Information incomplete ; 364 villages and 1500 persons affected. Damage to crops not assessed.

Cattle valued at Rs. 30,000 lost. Damage to private enterprise like salt industry.

1	2	3	4	5	6	7	8	9	10	11	12	
10 Tripura	1954	Total damage less than Rs. 1 crore.
	1955	6	..	..	0.05	..	0.07	Nil	Nil	0.09	..
	1956	..	..	..	..	..	..	150	11	..	..
11 Uttar Pradesh	1954	5210	..	..	6.81	19,650	..	1,553	27	150	*Information incomplete.
	1955	9275	86.63	..	..	4.71 lakhs	..	3,244	179	*60	
	1956	120	0.35	..	..	6,593	..	126 (actually more)	24	..	
12 West Bengal	1954	1640	..	..	7.50	..	100	1,500	142	200	500 houses completely lost and 500 severely damaged.
	1955	1330	..	..	0.5	600	..	20	2	100	
	1956	60	0.50	..	..	..	..	..	6	..	

APPENDIX VI

[Vide para 3(a) of Part I of the Statement]

Gauge levels of some of the important rivers during the 1956 flood season (Part)

ASSAM

Gauge Data of Brahmaputra River for the month of June and July, 1956

Site **Dibrugath** Max. Level ever attained—344·10 (1955).

Danger Level—342·00

Maximum Level attained in 1954—343·00—(24-8-1954).

Maximum Level attained in 1955—344·10—(25-7-1955).

Date	Morning	Mid-day	Evening
14-6-56	341·00		
15-6-56	342·50		
20-6-56			340·70
27-6-56		340·4	
1-7-56		342·00	
2-7-56		340·90	
3-7-56		340·00	
4-7-56		339·50	
5-7-56		339·50	
6-7-56		339·50	
7-7-56		339·30	
8-7-56		339·30	
9-7-56		339·00	
10-7-56		338·90	
11-7-56		338·70	

BIHAR

Gauge Data of Kamla River for the month of June and July, 1956

Site **Jainagar** Max. Level ever attained—231·34 (1954).

Danger Level—227·0

Max. Level attained in 1954—231·34 (30-11-54).

Max. Level attained in 1955—229·15 (26-7-55).

Date	Morning	Mid-day	Evening
18-6-56		228·47	
21-6-56	226·07		225·47
22-6-56	227·52		229·22
23-6-56	227·17		227·42
24-6-56	226·70		226·12
25-6-56	225·02		"
26-6-56	225·78		225·58

BIHAR—contd.

Date	Morning	Mid-day	Evening
27-6-56	225.66		225.56
28-6-56	225.59		225.54
29-6-56	225.44		226.57
30-6-56	225.47		
5-7-56		225.18	
6-7-56	225.12		
9-7-56	224.89		
10-7-56	224.82		
11-7-56	(228.80)		
	227.82	227.32	
12-7-56	227.30		
13-7-56	225.20		225.12
14-7-56	225.00		
16-7-56	225.50		
17-7-56	225.10		

BIHAR

Gauge Data of Bagmati River for June and July, 1956

Site Dhing Max. Level ever attained=233.26 (1902).
 Danger Level =228.46
 Max. Level attained in 1954=231.21
 Max. Level attained in 1955=229.04

Date	Morning	Mid-day	Evening
17-6-56		229.16	
20-6-56	228.46		228.21
21-6-56	228.63	228.46	228.13
22-6-56	228.46	228.46	228.21
23-6-56	228.46	228.46	
24-6-56	228.41	228.63	228.46
			226.63
25-6-56	227.79	227.79	227.63
26-6-56	227.21		227.06
27-6-56	226.79		226.71
28-6-56	226.63		226.36
29-6-56	226.36		
30-6-56	226.79		
5-7-56		226.29	
6-7-56	225.96		
9-7-56	226.21		
10-7-56	226.46		
11-7-56	227.60		
12-7-56	226.70		
13-7-56	226.50		
16-7-56	226.90		
17-7-56	227.20		
18-7-56	227.00		

BIHAR—contd.

Gauge Data of Barhi Gandak River for the month of June and July, 1956.

Site Chanpatia Max. Level ever attained=248.78 (1936).
 Danger Level = 243.14

Max. Level attained in 1954 = 246.92
 Max. level attained in 1955 = 247.30

Date	Morning	Mid-day	Evening
20-6-56	232.06	233.40	
21-6-56	233.10		233.35
22-6-56	234.14		238.41
23-6-56	237.49		238.16
24-6-56	236.64		{ 235.14 233.56
25-6-56			231.20
26-6-56	232.39		232.72
27-6-56	230.50		229.89
28-6-56	229.52		229.14
29-6-56	228.91		
30-6-56	228.66		
1-7-56			232.68
2-7-56	232.64		
5-7-56		229.14	
6-7-56	228.60		
9-7-56	227.83		
10-7-56	227.71		
11-7-56	227.60		
12-7-56	227.50		
13-7-56	227.40		
14-7-56	227.39		
16-7-56	227.90		
17-7-56	228.10		
18-7-56	227.90		

BIHAR

Gauge and Discharge Data of River Kosi for May to July, 1956

Site Barahakshetra

Max. discharge in 1954 (24-8-54)=8.50 lakhs cusecs Danger discharge 3 lakhs cusecs
 Max. discharge in 1955 (26-7-55)=2.10 lakhs cusecs Max discharge ever attained 8.50 lakhs cusecs

Max. discharge in 1956 (17-6-56)=1.17 lakhs cusecs

Date	Gauge level in ft.	Discharge in cusecs	Rainfall in inches
1-5-56	23.45	31,702	0.47
2-5-56	23.00	29,418	Nil
3-5-56	26.50	41,965	0.88
4-5-56	28.15	57,778	Nil
5-5-56	25.30	32,970	Nil
6-5-56	26.70	44,592	0.84
7-5-56	23.25	31,424	Nil
8-5-56	22.80	28,779	Nil
9-5-56	23.10	26,817	Nil
10-5-56	23.65	29,888	Nil
11-5-56	23.90	27,336	Nil
12-5-56	24.90	37,311	Nil
13-5-56	30.30	64,692	0.42
14-5-56	26.95	38,218	Nil

BIHAR—contd.

Date	Gauge level in ft.	Discharge in cusecs	Rainfall in inches
15-5-56	25.45	33,508	Nil
16-5-56	27.30	44,270	1.13
17-5-56	28.30	48,222	0.02
18-5-56	27.00	40,355	Nil
19-5-56	26.50	38,056	Nil
20-5-56	25.60	29,877	0.95
21-5-56	24.30	30,790	0.90
22-5-56	23.50	23,437	Nil
23-5-56	22.85	24,534	Nil
24-5-56	22.75	22,423	Nil
25-5-56	29.10	52,521	2.04
26-5-56	24.35	28,687	0.34
27-5-56	27.10	39,704	0.02
28-5-56	25.80	37,854	0.66
29-5-56	24.75	37,331	0.03
30-5-56	26.40	37,454	0.02
31-5-56	26.20	37,889	Nil
1-6-56	25.15	33,834	Nil
2-6-56	25.50	34,003	Nil
3-6-56	26.85	39,835	Nil
4-6-56	33.90	66,829	3.51
5-6-56	33.60	70,407	0.14
6-6-56	32.60	70,056	0.41
7-6-56	32.55	67,902	0.07
8-6-56	31.35	59,711	0.26
9-6-56	34.80	72,525	2.65
10-6-56	31.25	58,844	0.26
11-6-56	31.40	56,519	Nil
12-6-56	30.10	52,387	Nil
13-6-56	29.60	59,156	0.11
14-6-56	33.00	72,325	0.25
15-6-56	34.25	69,197	1.07
16-6-56	37.50	84,911	0.25
17-6-56	42.20	1,16,638	2.05
18-6-56	38.08	88,147	0.77
19-6-56	37.15	79,083	0.72
20-6-56	39.50	95,303	0.32
21-6-56	41.80	1,13,879	2.73
22-6-56	42.20	1,15,953	0.81
23-6-56	40.70	99,967	1.88
24-6-56	41.90	1,05,313	1.51
25-6-56	40.35	98,374	0.78
26-6-56	40.30	98,392	0.88
27-6-56	39.30	90,110	0.04
28-6-56	36.70	78,197	0.02
29-6-56	37.60	88,252	0.45
30-6-56	40.40	99,338	5.97
1-7-56	40.50	99,448	0.45
2-7-56	37.90	89,060	0.28
3-7-56	36.80	77,990	0.04
4-7-56	36.00	76,735	Nil
5-7-56	34.00	64,316	Nil
6-7-56	35.75	72,733	0.02
7-7-56	37.80	87,650	0.03
8-7-56	34.90	71,813	0.01
9-7-56	36.70	79,589	Nil

APPENDIX VII

(Vide para 4 (e) of Part I of the Statement)

§ Allocation of funds to different States and actual expenditure on flood control works

States	1954-55		1955-56		1956-57	
	Allocation	Expenditure	Allocation	Expenditure	Textative Allocation	Expenditure to the end of June, 1956 (In lakhs of rupees)
1. Assam	100.0	*79.96	73.22+ 43.0 (Grant)	**195.37	75.00	not available
2. West Bengal	50.0	43.96	110.00	116.06	64.00	15.97 (end of April)
3. Bihar†	35.00	48.01	200.00	215.86	75.00	not available
4. Uttar Pradesh	35.00	38.9	180.00	240.00	150.00	50.00
5. Andhra	Nil	Nil	1.25	1.46	25.00	0.17 (end of May 1956)
6. Punjab	1.00	1.52	7.00	2.71 (end of Dec. 1955)	19.00	2.9
7. PEPSU . . . . .	..	0.2	6.0	6.45	10.00	0.05
8. Jammu and Kashmir	10.00	19.53	15.00	23.81	35.00	6.00
9. Orissa . . . . .	..	10.25	15.00	27.54	40.00	40.00
10. Saurashtra . . . . .	..	Nil	9.0	††9.29	6.00	††2.57
11. Madhya Pradesh . . . . .	..	..	0.5	0.56	1.00	0.21
12. Delhi . . . . .	..	..	..	1.0	..	5.0
13. Himachal Pradesh . . . . .	..	..	..	0.34	..	..
TOTAL	231.0	242.33	616.97	840.45	7500.00	122.87

*This includes Rs. 72.42 lakhs expenditure on Dibrugarh.

**This includes Rs. 150 lakhs expenditure on Dibrugarh.

†Excludes Kosi.

††Loan advanced by the State to local bodies.

§Allocation means loan assistance.

‡ Review of provision will be made in August 1956.

APPENDIX VIII

[Vide para 6 (a) of Part I of the Statement]

Relief measures undertaken by the States during 1955

Sl. No.	Name of State	Gratuitous Relief in Rs. lakhs	Agriculture & other loans in Rs. lakhs	Test relief in Rs. lakhs	Rehabilitation & house building grants in Rs. lakhs	Non-Govt. Relief in Rs. lakhs	General in Rs. lakhs	Gratuitous relief given by the Centre to States during 1955-56 in Rs. lakhs	Remarks
1	2	3	4	5	6	7	8	9	10
1.	Assam	13.72	12.95	2.75	19.22	..	..	85.66	
2.	Bihar	82.75	103.19	42.87	Nil	..	8.70	100.00	Public organisations such as the Ramakrishna Mission, Bharat Sevak Samaj, The Marwadi Relief Society etc. rendered relief.
3.	Delhi	..	3.00	..	..	..	..	..
4.	Orissa	18.79	19.54	15.25	21.37	..	3.87	227.00	Cost of food grains supplied to the flood affected areas. Rs. 65.18 lakhs.
5.	Pepau	13.00	25.00	..	..	..	..	59.00	

6.	Punjab	305.0	171.00	59.0	..	4.45*	62.5	80.00	(1) 2,500 tons of wheat has been received from U. S. Govt. as free gift. (2) Relief has also been granted in the form of remission of land revenue & Abiana. *P. M.'s & C. M.'s Relief Funds.
7.	U. P.	40.09	144.65	9.3	..	3.26*	..	86.58	1. Remission in outstanding <i>taquasi</i> dues Rs. 24.43 lakhs. 2. Remission of land revenue likely to exceed Rs. 1 crores. * P. M.'s. & C. M.'s Relief Funds.
8.	West Bengal	4.820	6.86	1.50	1.41	0.10†	..	162.77	† In addition, 600 maunds of atta from M/s Wallace & Co.
TOTAL		478.17	486.19	130.67	42.00	7.81	75.07	801.01**	

**In addition a loan of Rs. 378.17 lakhs was given to States and the Ministry of Food & Agriculture sanctioned a sum of Rs. 1,58,000/ from the Indian People's Famine Trust Fund.

APPENDIX IX

[Vide para 6(a) of Part I of the Statement]

Relief measures undertaken by the States during 1956 (part)

Sl. No.	Name of State	Gratuitous Relief in Rs. lakhs	Agriculture and other loans in Rs. lakhs	Test Relief in Rs. lakhs	Rehabilitation and house building grants in Rs. lakhs	Non-Govt. Relief in Rs. lakhs	General in Rs. lakhs	Remarks
1	2	3	4	5	6	7	8	9
1	Andhra . . . . .	..	..	..	..	..	..
2	Assam	1.65	1.80	0.20	0.62	..	..
3	Bihar . . . . .	..	0.31	..	..	..	..	(1) 47 medical centres opened. (2) 23 veterinary centres arranged. (3) 2612 boats arranged. (4) 11,220 mds. of grain distributed. (5) Hutments being constructed. (6) Agriculturists loan given. (7) Floating post offices provided. (8) Mobile hospitals provided.
4	Delhi . . . . .	..	..	..	..	..	..
5	Madhya Pradesh . . . . .	..	..	..	..	..	..
6	Orissa . . . . .	..	..	..	..	..	..
7	PEPSU . . . . .	..	..	..	..	..	..

8	Punjab . . . . .	..	4.05	..	3.29	..	..
9	Tripura	4.705	..	0.40	..	0.55	..	(1) Rs. 1 lakh distributed in cash and more than Rs. 1 lakh in kind. (2) From Prime Minister's fund 5,000 mds. biscuits distributed.
10	Uttar Pradesh	1.0	2.5	..	..	..	..	Arrangement to send 100 wagons of Bhusa made.
11	West Bengal . . . . .	..	..	..	..	0.15	..	
TOTAL		7.35	8.66	0.60	3.91	0.70	..	

NOTE.—A sum of Rs. 2,68,000 has been disbursed from the Prime Minister's National Relief Fund and the Indian Red Cross Society have been distributing large quantities of medicines and clothing and some cash doles.

APPENDIX X
[vide para 6(b) of Part I of the Statement]
**CENTRAL FINANCIAL ASSISTANCE ON ACCOUNT OF
NATURAL CALAMITIES**

No. F.3(1)-P/53

Government of India
MINISTRY OF FINANCE
(Department of Economic Affairs)

New Delhi, the 2nd February, 1955.

FROM

Shri C. S. Krishna Moorthi, I.A.S.;
Deputy Secretary to the Government of India.

TO

The Finance Secretary,
All parts 'A', 'B' & 'C' States.

Sir,

I am directed to say that the question of liberalising the Central assistance on account of natural calamities has been engaging the attention of the Government of India for some time past. As is known, the policy so far has been to meet half the cost of gratuitous relief including loss incurred in issuing foodgrains at a concessional rate and to provide loans, where the ways and means position of the State required it, to share half the expenditure on relief works. The Government of India have now reconsidered the policy and decided to liberalize the scope of Central assistance as detailed below:—

- (a) The State Government will be eligible to a grant of half the total expenditure on gratuitous relief up to Rs. 2 crores and three-fourths of the expenditure in excess thereof. The following items will constitute gratuitous relief:—
 - (i) Concessional supply (free or at subsidised rates) of food, either cooked or otherwise.
 - (ii) Weekly cash payments for purchase of necessaries of indigent persons including food where (a) above is not done.
 - (iii) Cash doles to the disabled.
 - (iv) Free or concessional supply of seeds.

- (v) Free or concessional supply of fodder.
 - (vi) Free or concessional supply of medicines.
 - (vii) Measures for prevention of cattle epidemics.
 - (viii) Provision of drinking water where necessary.
 - (ix) Provision of transport facilities for goods to be moved on relief account.
 - (x) Repair of houses where damaged by floods.
- (b) Apart from these, expenditure on relief works undertaken as a preferable alternative to gratuitous relief which does not create any asset, or where the value of asset created is less than the expenditure incurred, will also be eligible for inclusion as gratuitous relief. Distress loans given as a substitute for gratuitous relief with a view to generate some work will also be considered as an item of gratuitous relief in such cases where subsequent recovery proves impossible.
- (c) In addition, the Government of India will be prepared to render the following assistance as a part of flood relief measures:—
- (i) A grant equal to half the expenditure on the repairs of Government roads, bridges, embankments, etc. damaged by floods in case where such expenditure does not produce any new assets to the State.
 - (ii) A grant equal to half the cost of such repairs to administrative and other government buildings.
 - (iii) In the case of roads and buildings of local bodies whose resources are exiguous and to whom the State Government cannot give the whole of the necessary additional assistance, a grant equal to 37½ per cent of the cost of such repairs.
- (d) For the rest, loans will be given only to the extent that the ways and means position of the State requires. If the State Government has, as a result of the expenditure occasioned by the famine or flood, been compelled to divert existing resources from the implementation of the Plan, development loans will be provided as necessary. The Central Government will *not*, however, share in any loss of revenues that the State Government may be put to.

2. Such comprehensive assistance will naturally be on a due consideration of the magnitude of the calamity involved.

Yours faithfully,

C. S. KRISHNA MOORTHY, Dy. Secy.