



DROUGHT 2009

OVERVIEW AND MANAGEMENT



**DROUGHT MANAGEMENT DIVISION
DEPARTMENT OF AGRICULTURE & COOPERATION
MINISTRY OF AGRICULTURE
GOVERNMENT OF INDIA
NEW DELHI- 110001**

DROUGHT OVERVIEW & MANAGEMENT

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शरद पवार
SHARAD PAWAR



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FOOD & PUBLIC DISTRIBUTION
GOVERNMENT OF INDIA
19th August, 2010


FOREWORD

Agriculture in India is predominantly dependent on rains and the rainfall during the South-West Monsoon, i.e., from 1st June to 30th September is crucial for the agriculture sector as more than 70% of annual rainfall in the country occurs during this period. Droughts and drought like situations that have occurred in the past have emanated from extreme fluctuations in Monsoon during this period. The deficient and erratic rainfall during the South-West Monsoon 2009 caused widespread drought in most parts of the country. As a result, 14 States declared drought/drought like situation/scarcity in 338 districts of the country.

I am glad that despite almost half the nation being under the stress of drought during 2009, the situation was effectively managed by the Central Government and the State Governments through regular and concerted efforts, inter-alia, utilizing past experiences and best practices available and the impact of the drought was substantially minimized. Mitigation efforts also contributed to reduction in the suffering of farmers.

Department of Agriculture and Cooperation has documented the drought scenario during 2009, bringing out the deficiency and erratic behavior of rainfall, impact of drought, mitigation efforts initiated and their results. I fervently hope that 2009 drought management would further help in ushering in an era of climate variability management phasing out the ad-hoc relief centric approach.

I compliment all the officials involved in bringing out this comprehensive and insightful documentation on the management of drought during 2009.


(SHARAD PAWAR)

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PREFACE

Drought, though less spectacular in its fury, is a slow setting disaster which ravages some part of the country or the other, almost every year, following deficiencies in rainfall or its erratic spatial distribution. In recent years the impact of drought has been wide-spread and became a national concern during 1987-88 and 2002-03. During South-West Monsoon 2009 (June to September) there was deficiency of rainfall to the extent of 22% coupled with erratic behaviour of the Monsoon like late rainfall and abnormal spatial distribution leading to 338 districts in 14 States being declared as drought affected by the concerned State Governments.

Disturbing trends of rainfall deficiency started emerging right from the middle of June, 2009. Steps were initiated by the Central Government and the State Governments to manage the situation. While an Empowered Group of Ministers under the chairmanship of Minister of Finance was constituted to review the drought situation from time to time and take appropriate decisions for mitigating its impact, an Inter-Ministerial Group was constituted under the chairmanship of Secretary(A&C), which met as many as 12 times to take stock of the situation and initiate remedial measures. Video conferences/meetings were also held with the State Governments to review the situation at regular intervals and take appropriate mitigation measures.

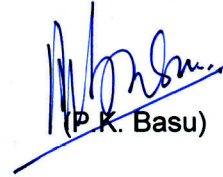
The Government took various proactive steps for reducing losses suffered by farmers. A diesel subsidy scheme was introduced to help the farmers to provide supplementary irrigations to save the standing crops. Additional allocation of power was made to the States from the central pool to improve the power supply situation in the rural areas. Financial support was provided to the States for sustaining agricultural production. These measures provided the required support to the States in managing the Drought in the best possible manner. Despite the severe impact of 2009 drought, the nation's ability to mobilize resources and regular and concerted efforts put in to manage the situation resulted in minimal losses and sufferings. The efforts made by the Central and State Governments have been documented and presented in two parts. The first part gives an overall perspective on the various initiatives taken by the Central Government and the second part dwells on drought situation in the States and action taken by them to tackle the situation. It is hoped that this documentation would prove useful to the relief administrators, policy

-: 2 :-

makers, researchers of various disciplines and academicians. It is also felt that this publication would hopefully generate considerable debate for further refining policies/programmes to manage future climate risks more effectively.

I compliment the officials of the Drought Management Division of Department of Agriculture and Cooperation for putting in strenuous efforts in bringing out this document.

New Delhi
20th August, 2010



(P. K. Basu)

HIGHLIGHTS

- South - West Monsoon set in over Kerala on 23rd May, one week before its normal date of 1st June. From 8th - 20th June, there was hiatus in the advance of the monsoon.
- Later the monsoon advanced rapidly and covered the entire country by 3rd July, compared to its normal date of 15th July. As in the previous two years, the withdrawal of monsoon from West Rajasthan was delayed and it commenced only on 25th September compared to its normal date of 1st September.
- Cyclone 'Aila' which occurred over the Bay of Bengal at the end of May disturbed the normal monsoon pattern just after its setting in and distorted the system completely.
- This weakened the early monsoon advance landwards and its progress towards north was tardy.
- For the country as a whole, the rainfall for the season (June-September) was 78% of its Long Period Average (LPA).
- Seasonal rainfall was 65% of its LPA over Northwest India, 80% of its LPA over Central India, 94% of its LPA over South Peninsula and 77% of its LPA over East and Northeast (NE) India.
- Monthly rainfall was 53% of LPA in June, 96% of LPA in July, 73% of LPA in August and 80% of LPA in September.
- Out of 511 meteorological districts for which data were available, 217 districts (42%) of the meteorological districts received excess/normal rainfall and the remaining 294 districts (58%) received deficient/scanty rainfall during the season.
- Lack of clouds and rainfall and clear sky in the northern India raised air temperature during the second fortnight of June damaging crops, and vegetables and had adverse effect on milch animals, especially cross-bred cows.
- The rainfall was patchy, scanty and lacked normal vigour.
- Drought prone areas of Gujarat had relatively better rainfall.
- Droughts occurred in the traditionally flood prone areas of Assam, Bihar and high rainfall areas of Jharkhand, Uttar Pradesh and Himachal Pradesh.
- There was great demand for electricity and diesel (energy) from the States.

- The rate of growth of GDP for 2009-10 (at factor cost 1999-2000) was estimated at 7.2%. However, the rate of growth of GDP for 2009-10 (at factor cost 1999-2000) for Agriculture, Forestry & Fishing Sector is estimated at -0.2% despite the fact that the South West Monsoon was the most deficient by 22% since 1972. (Source: Economic Survey 2009).
- In the agriculture season 2009-10, the impact of delayed and sub-normal monsoon was reflected in the production for Kharif crops. As per the Second Advance Estimates for 2009-10, the Kharif production was estimated to be 99.85 million tonnes and the Rabi production was estimated to be 117.00 million tonnes. As per Fourth Advance Estimates of production of foodgrains for 2009-10, the Kharif production was estimated to be 103.84 million tonnes and the Rabi production was estimated to be 114.36 million tonnes.
- Foodgrain area sown in kharif season declined by 11.78% compared to the previous year and foodgrain production during 2009-10 was expected to be less by 7% compared to the Fourth Advance Estimates of 2008-09.
- There has been a welcome rebound in the growth rate of investment in the agricultural sector which grew at 16.5 per cent and 26.0 per cent in the years 2007-08 and 2008-09. This helped in sustaining the agricultural production in 2009-10.
- During 2009-10, around 1477 MW additional power was allocated to States with deficit rainfall from Central pool to cater to the additional demand of power for agriculture.
- 338 Districts in 14 States of Andhra Pradesh, Assam, Bihar, Himachal Pradesh, Jammu & Kashmir, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Manipur, Nagaland, Orissa, Rajasthan and Uttar Pradesh were declared drought affected by the respective State Governments. Government of Kerala also declared drought in 14 districts on 19.03.2010 owing to acute shortage of drinking water and drying up of water sources. As intimated by the States, around 1205.34 lakh people got affected in seven States (Assam, Bihar, Karnataka, Maharashtra, Manipur, Nagaland and Rajasthan) and 480.03 lakh animals got affected in five States (Bihar, Jharkhand, Karnataka, Rajasthan and Uttar Pradesh), by drought. About 300 lakh hectares of cropped area got damaged.
- Alternative employment was provided under Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) (formerly known as NREGS). Number of households who completed 100 days (as persondays) of employment provided under MGNREGS, was maximum in Andhra Pradesh followed by Rajasthan, amongst drought declared States.
- Government approved additional 50 days of employment under MGNREGS out of the Calamity Relief Fund (CRF) / National Calamity Contingency Fund (NCCF) for those areas in the drought affected States where 100 days of mandatory limit under MGNREGS was completed.
- An amount of Rs.2554.87 crores as Central Share from the Calamity Relief Fund (CRF) was released to the admissible drought affected States.
- An amount of Rs.4890.945 crores was approved from the National Calamity Contingency Fund for drought relief to 13 States.

- A new Diesel Subsidy scheme was introduced by the Government in Kharif 2009 in the drought and deficit rainfall affected areas to enable the farmers to provide supplementary irrigation through diesel pump sets for saving the standing crops in the field, to mitigate the adverse impact of drought/deficit rainfall conditions on foodgrains production. The subsidy amount was to be shared by the Government of India and the States in the ratio of 50:50 with the Government of India's subsidy pegged to a maximum of Rs.7.50 per litre of diesel and limited to Rs. 500/- per hectare. The scheme was effective from 15.7.2009 and was in operation upto 30.9.2009. The Governments of Bihar and Tamil Nadu implemented the scheme and claimed reimbursement. They were reimbursed Rs.21.52 crores and Rs.1.43 crores, respectively.
- Though State Governments of Punjab & Haryana had not declared drought despite deficit rainfall conditions, Central assistance to the tune of Rs. 800 crores to Punjab and Rs.400 crores to Haryana was provided towards additional costs incurred by them in providing power to the agriculture sector during Kharif 2009.

Chronology of Events

S.No	Date	Events
i)	24th June, 2009	Meeting of Group of Secretaries/ Committee of Secretaries taken by the Cabinet Secretary to review progress of South West Monsoon.
ii)	25th June, 2009	The Department of Agriculture & Cooperation held a meeting with the Secretaries of States with deficit rainfall and periodic telephonic discussions and video conferences held with the State Government officials concerned to review the status of on-going agricultural operations and the steps that were required to be taken to mitigate the effect of drought/ deficit rainfall.
iii)	3rd August 2009	The scheme of "Diesel Subsidy" announced for the drought affected States and districts with deficit rainfall of more than 50% as on 15th July, 2009, for the period upto 30.09.2009.
iv)	4th August 2009	Constitution of Inter-Ministerial Group (IMG) of Secretaries under the Chairmanship of Secretary (Agriculture & Cooperation) by the Cabinet Secretariat for monitoring and taking necessary mitigation measures in a coordinated manner.
v)	7th August 2009	First Meeting of IMG was held and 12 such meetings held till February, 2010.
vi)	8th August 2009	Meeting held by the Cabinet Secretary with Chief Secretaries of States / UTs to review the situation and steps which needed to be taken.
vii)	17th August 2009	Address by the Agriculture Minister on Drought in the Chief Ministers' Conference on Internal Security.
viii)	21st August, 2009	Meeting of Union Agriculture Minister with Agriculture Ministers of States and UTs to review the drought situation and steps that were required to be taken.
ix)	22nd August, 2009	Agriculture Minister wrote to the Union Cabinet Ministers and Ministers of State with Independent Charge regarding the drought situation prevailing in various States of the country and steps which were required to be taken.
x)	25th August, 2009.	First meeting of Empowered Group of Ministers (EGoM) on drought held under the Chairmanship of Union Finance Minister for taking necessary policy decisions for effective management of drought. EGoM approved relaxations in the Diesel Subsidy Scheme and enhancement of upper ceiling of distribution subsidy of seed under the Government of India programmes.
xi)	25th August, 2009	Meeting held with Scientific Organizations involved in research pertaining to drought like situations for devising ways to mitigate the impact of drought on agriculture.

S.No	Date	Events
xii)	26th August, 2009	Agriculture Minister wrote to all the Members of Parliament (Lok Sabha and Rajya Sabha) regarding use of MPLAD funds for mitigation of drought.
xiii)	27th August, 2009	Meeting with the Relief Commissioners of States held to review the drought relief operations.
xiv)	31st August, 2009	Agriculture Minister wrote to the Chief Ministers of all 28 States and UTs of Delhi and Puducherry regarding action to be taken by the States to mitigate the adverse effects of drought/ deficit rainfall.
xv)	17th September, 2009	Second meeting of EGoM on drought was held to consider request of States for financing additional 50 days employment under Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) from Calamity Relief Fund (CRF) / National Calamity Contingency Fund (NCCF) in cases where 100 days of employment had already been availed by households.
xvi)	24-25th September, 2009	Rabi' 2009 Conference held and States were advised to adopt strategy to enhance Rabi production to make up for Kharif losses.
xv)	5th & 6th October, 2009	Video Conferences held with the drought declared States for assessing the impact of drought and the measures required to be taken.
xvi)	15th February, 2010	Secretary (A&C) wrote to the Chief Secretaries of drought affected States for taking measures to ensure water and fodder availability during summer of 2010.
xvii)	12th March, 2010	Meeting with the Relief Commissioners of States, Scientific Organizations and Line Ministries held to review the drought situation and Crisis Management Plan-2009.
xviii)	18 & 19th March, 2010	Kharif Conference held and strategies discussed for maximizing Kharif production in 2010.

**Excerpts from "Mid-Term Appraisal for 11th Five Year Plan 2007-12" of
Planning Commission, Government of India**

Growth in agriculture in 2007-08, the first year of Eleventh Plan was 4.9%. This continued the strong recovery after 2004-05, which reversed a prolonged deceleration since mid-1990s. However, agricultural growth fell to 1.6% in 2008-09; and a severe drought in 2009 (the worst in 37 years) produced virtually flat growth because of major losses in kharif output which also led to high food price inflation.

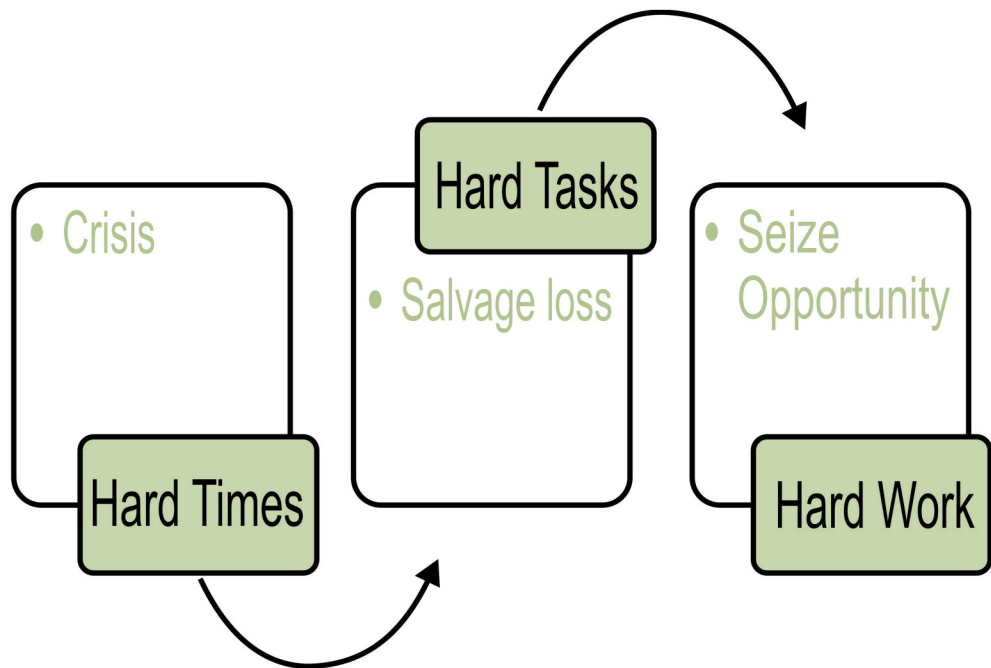
..... The year to year variation in annual growth rates of output and GDP as measured by their standard deviation over five year periods have now dropped to all-time low although the absolute level remains high. This reflects not only better public sector response to the 2009-10 drought but also probably a general improvement in the ability to adapt to the adverse climated trends noted earlier.

PART-I



– NATIONAL LEVEL

APPROACH TO MANAGEMENT OF DROUGHT 2009



CHAPTER-1



METEOROLOGICAL & HYDROLOGICAL STATUS

MONSOON-2009

1.1 Background

- 1.1.1 India, like the rest of the Indian sub-continent has two monsoon systems operating in the country, viz., (a) the South-West Monsoon from 1st June to 30th September of the year and (b) North-East Monsoon from 1st October to 31st December of the year. However, about 73 per cent of the annual rainfall is accounted for by the South-West Monsoon. Consequently, the rainfall during this period is more crucial for production of crops and other biomass as well as for supporting surface and ground water irrigation. It is the failure/ lack of rainfall during the South-West Monsoon period, which generally results in drought or drought like conditions in India.
- 1.1.2 Although monsoon did set in about one week in advance (23rd May, 2009) in Kerala, its advancement stagnated soon for about 10 days. The rainfall deficit was evident for the entire country right from the first week of June, 2009 and by 24th June, 2009, the deficit was 54%. For the country as a whole, the rainfall for the season (June-September-2009) was 78% of its Long Period Average (LPA). In other words, there was a deficit rainfall of 22%. The rainfall distribution during this period, as informed by India Meteorological Department (IMD) for different regions was as under:-

Table 1 - Actual Rainfall & Percentage Departure from LPA - South West Monsoon 2009

Region	Actual (mm)	Long Period Average (LPA) (mm)	Actual % of LPA	% Departure
All-India	698.1	892.2	78	-22%
Northwest India	394.6	611.7	65	-35%
Central India	795.5	995.1	80	-20%
South Peninsula	682.3	722.5	94	-6%
East & Northeast India	1098.1	1427.3	77	-23%

- 1.1.3 During the South-West Monsoon 2009, out of 36 Meteorological Sub-Divisions, 3 Sub-Divisions received **Excess** rainfall (+20% or more), 11 received **Normal** rainfall (+19% to -19%), 22 received **Deficient** rainfall (-20% to -59%) and none received **Scanty** rainfall (-60% to -99%).
- 1.1.4 The South-West Monsoon was not only weak, it was also erratic. Its spatial distribution was uneven and there were long dry spells in between during the season.
- 1.1.5 The monthly monsoon rainfall over the country as a whole during all the months of the season was below the respective LPA. The rainfall in June, July, August and September was 53%, 96%, 73% and 79% of LPA respectively.

Table 2 - Monsoon 2009 - Long Range Forecast & Actual Rainfall

Region	Period	Issued on	Forecast	Actual
All India	June to	17 April, 2009	96% ± 5% of LPA	78% of LPA
	September	24 June, 2009	93%± 4% of LPA	
All India (Month-wise)	June			53% of LPA
	July	24 June, 2009	93%± 9% of LPA	96% of LPA
	August	24 June, 2009	101% ± 9% of LPA	73% of LPA
	September			79% of LPA
Northwest India	June to		81% ± 8% of LPA	65% of LPA
East & Northeast India	September	24 June, 2009	92% ± 8% of LPA	77% of LPA
Central India			99% ± 8% of LPA	80% of LPA
South Peninsula			93% ± 8% of LPA	94% of LPA

- 1.1.6 Large rainfall deficiency was observed over most parts of the country due to prolonged hiatus in the advance of monsoon over central and northern parts of the country. During July, rainfall over most of the Meteorological Sub-divisions along the foothills of Himalayas and few in the eastern part of the Peninsula was highly deficient. The rainfall over most of the subdivisions along the monsoon trough zone region and along west coast was excess / normal due to the strengthening of monsoon over these regions in association with the passage of fast moving synoptic scale systems from Bay region along the monsoon trough zone. In August rainfall over most of the subdivisions along the west coast and that over North West India & neighbouring central India was highly deficient. In September the rainfall over all subdivisions from south Peninsula & neighbouring Central India and that over few subdivisions from north was excess or normal. Rainfall over other subdivisions was deficient or scanty.
- 1.1.7 The following Rainfall maps of India for different seasons during the year 2009 depict the deficiency of the rainfall situation during monsoon season of the year:

Figure 1 - Season-wise Rainfall during 2009

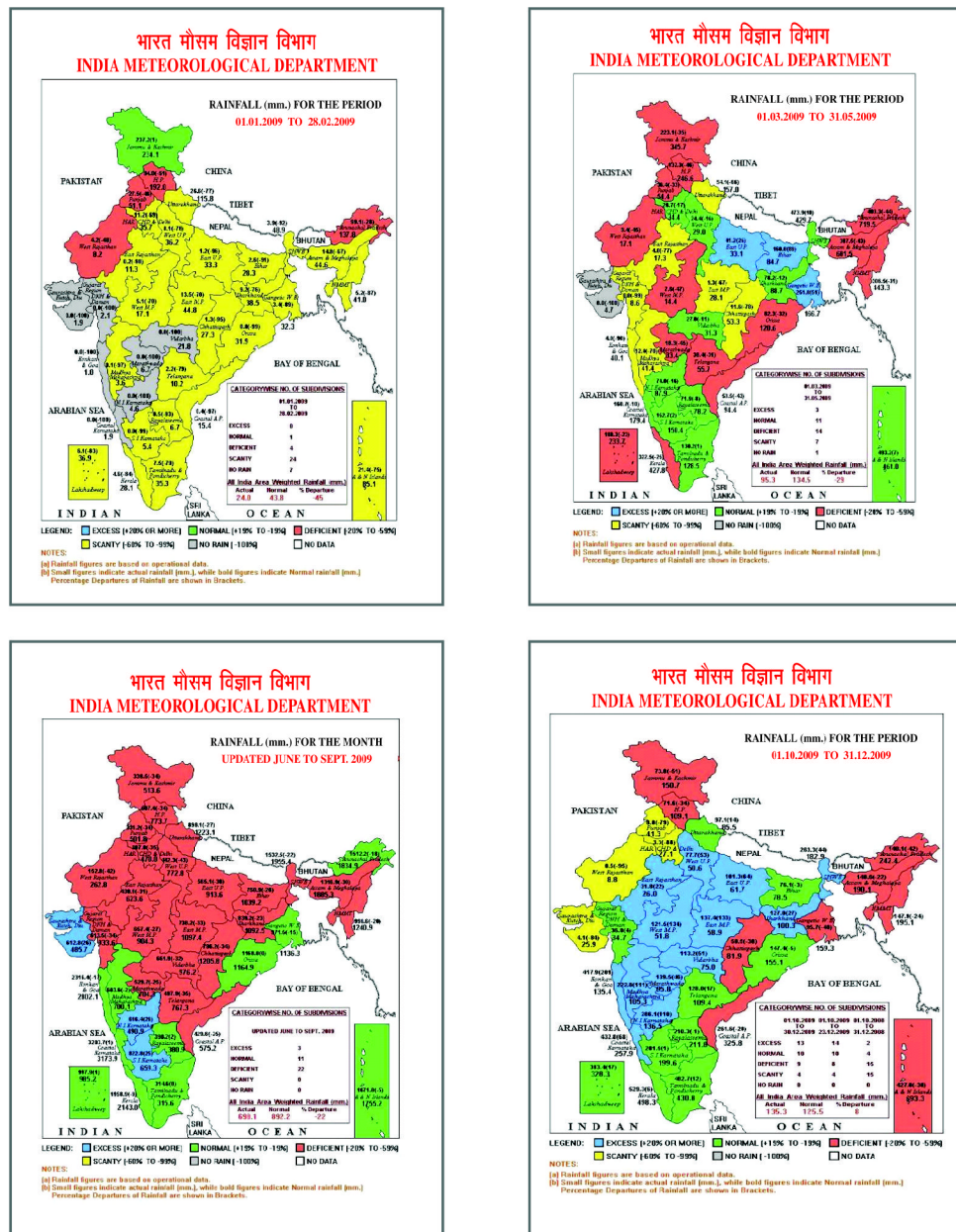


Figure 2 - Monthwise Rainfall during South West Monsoon 2009

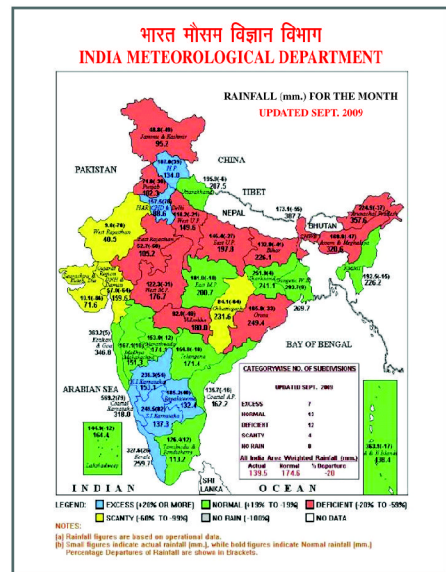
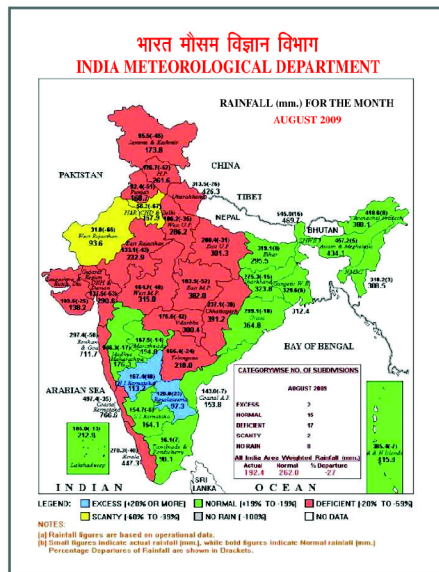
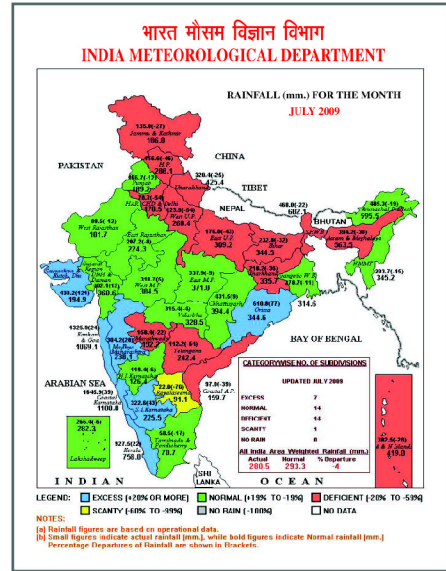
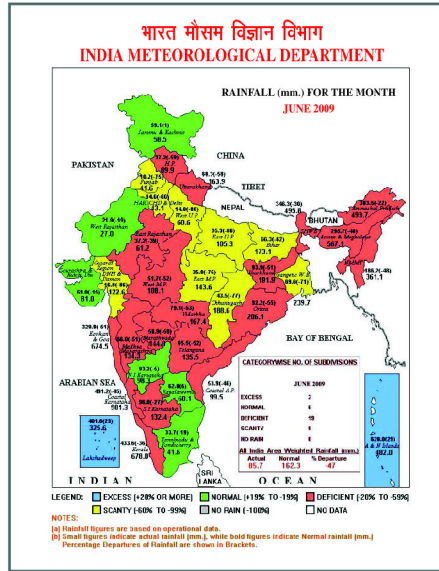
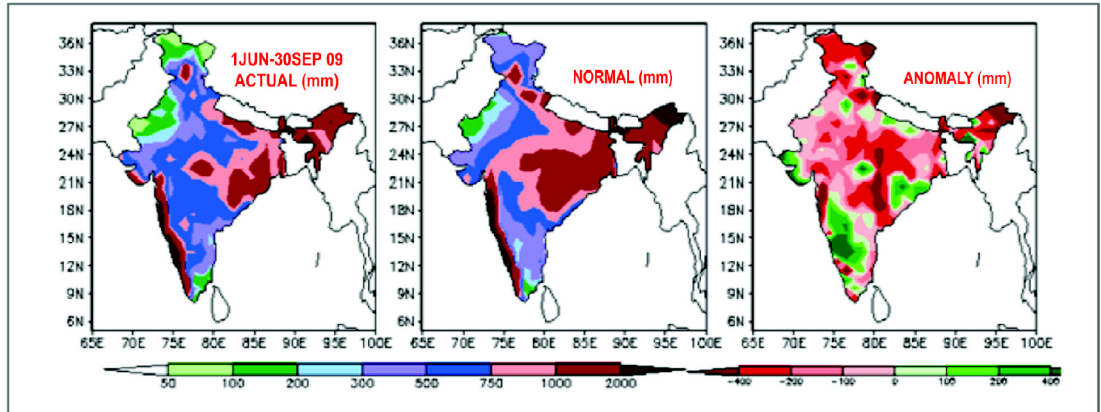
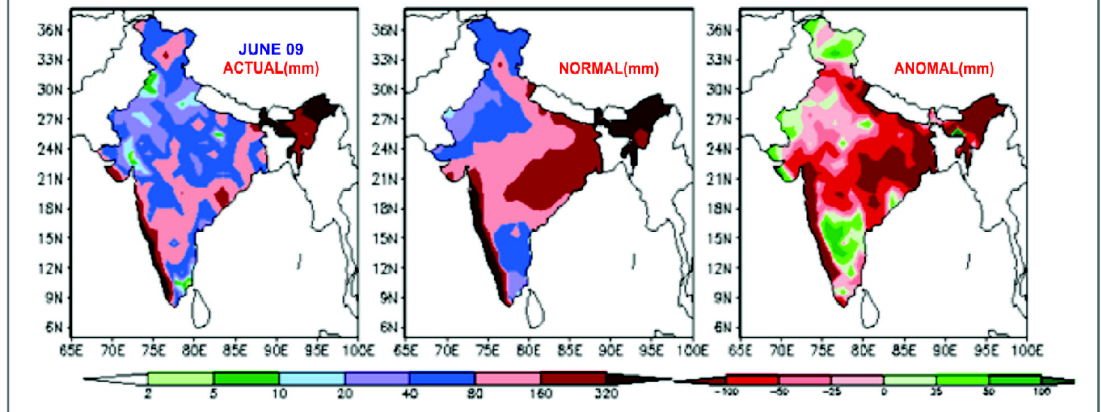


Figure 3 - Accumulated Seasonal Rainfall Anomaly Map (June - September 2009)



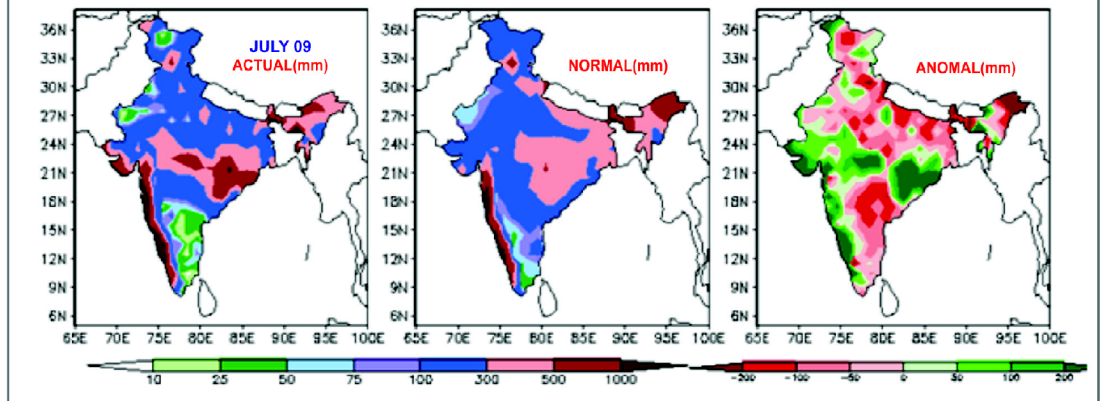
AREA WEIGHTED RAINFALL OVER THE COUNTRY AS A WHOLE DURING JUNE 2009

ACTUAL-84 mm NORMAL-152 mm (52% of Long Period Average)
 (Based on real time data)



AREA WEIGHTED RAINFALL OVER THE COUNTRY AS A WHOLE DURING JULY 2009

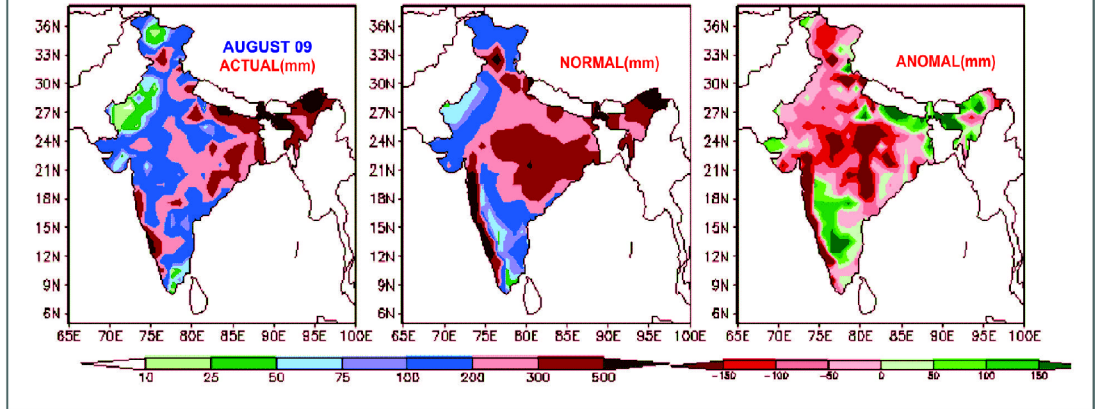
ACTUAL-278 mm NORMAL-293 mm (95% of Long Period Average)
 (Based on real time data)



AREA WEIGHTED RAINFALL OVER THE COUNTRY AS A WHOLE DURING AUGUST 2009

ACTUAL-190 mm NORMAL-262 mm (73% of Long Period Average)

(Based on real time data)



AREA WEIGHTED RAINFALL OVER THE COUNTRY AS A WHOLE DURING SEPTEMBER 2009

ACTUAL-136 mm NORMAL-175 mm (79% of Long Period Average)

(Based on real time data)

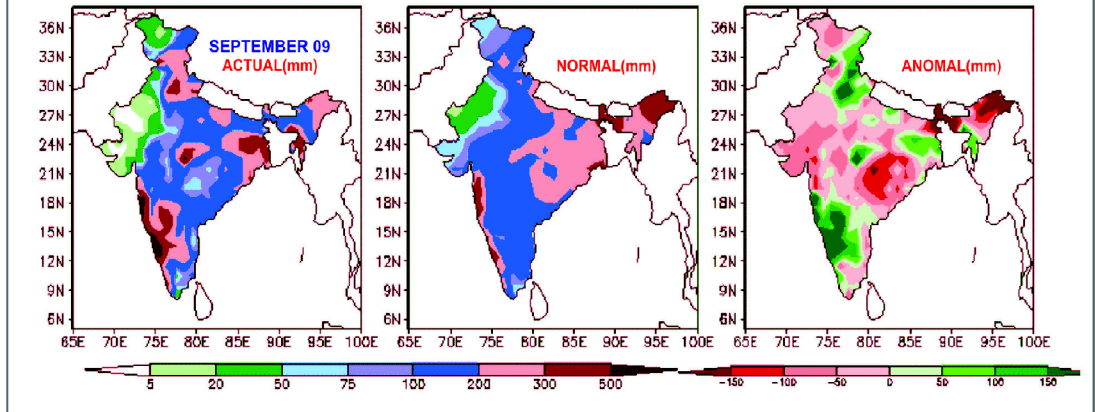


Figure 4 - Region-wise Daily Rainfall Graph during Jun-Sep 2009

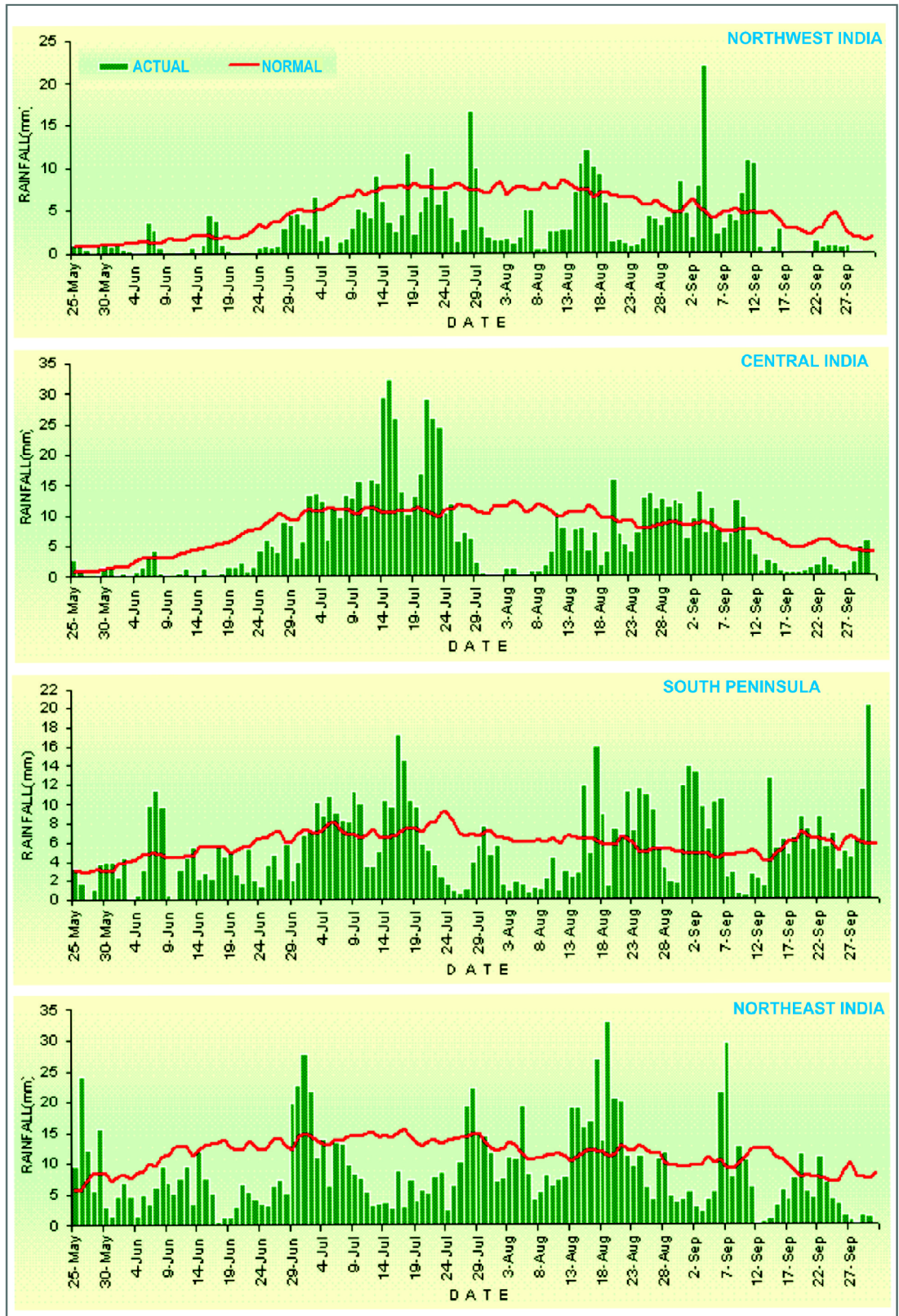


Figure 5 - All India Daily Rainfall Graph and Standard Deviation from Normal

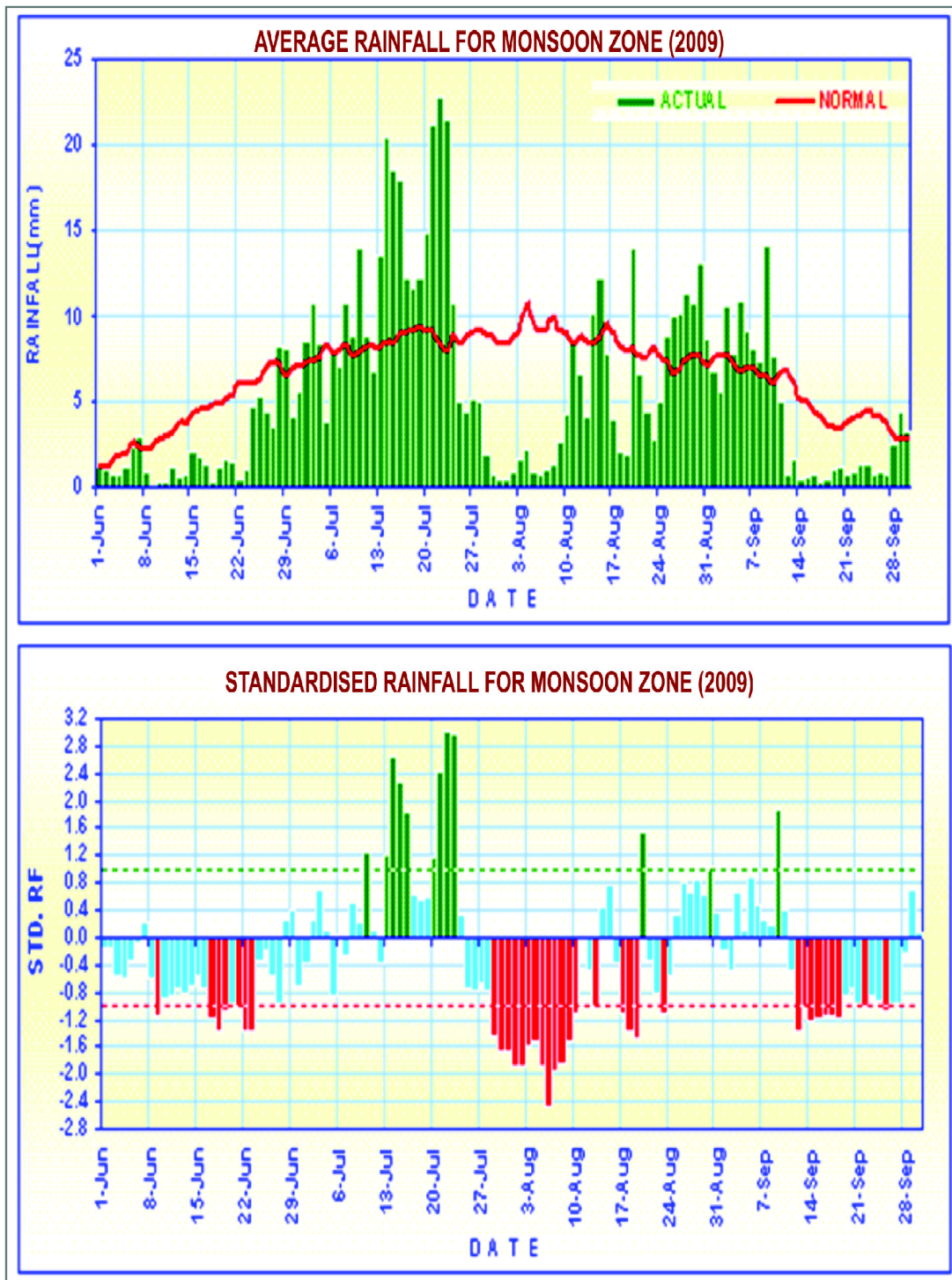


Figure 6 - Advance of South West Monsoon 2009
 (Indicates delayed onset over Northern India)

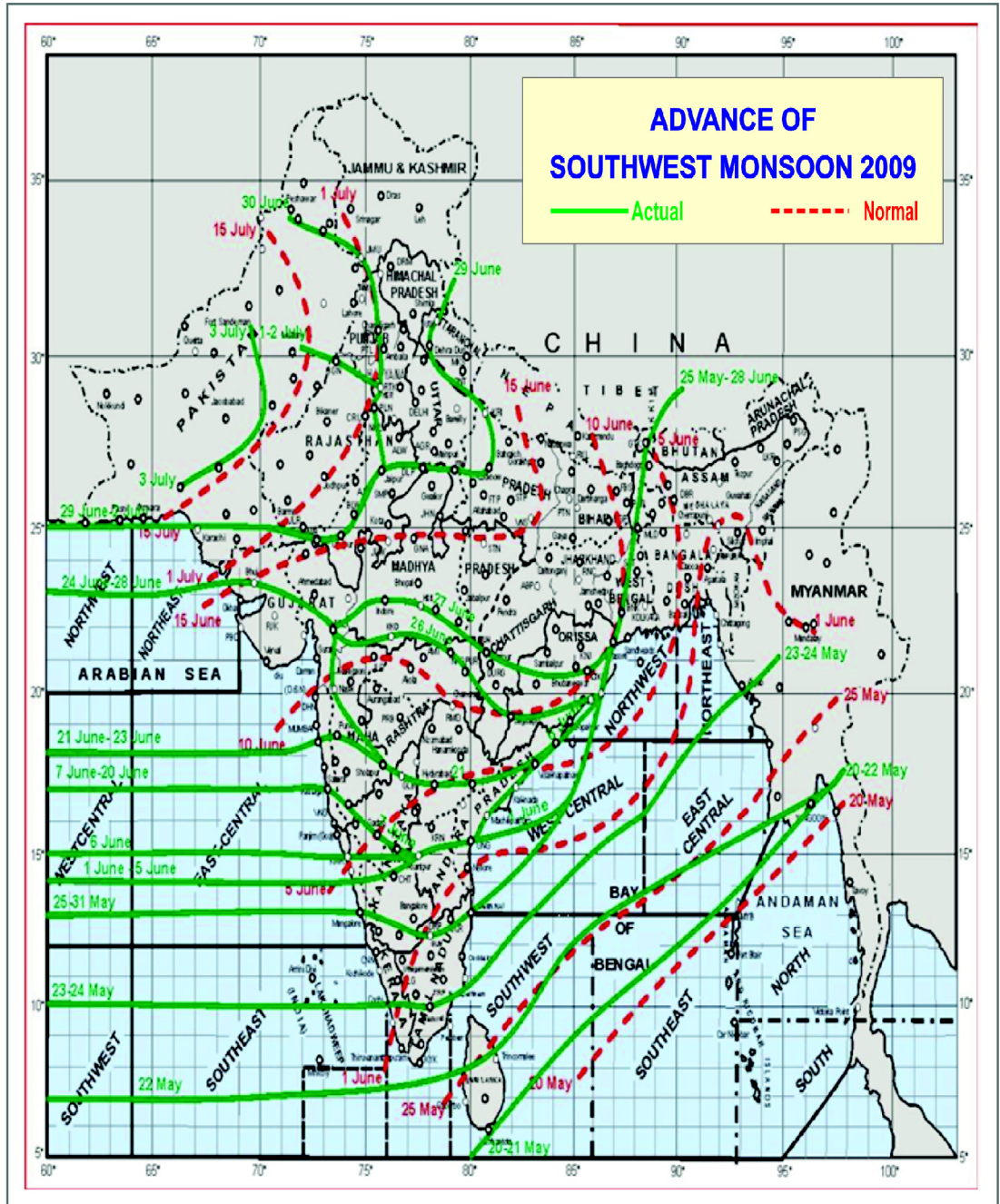
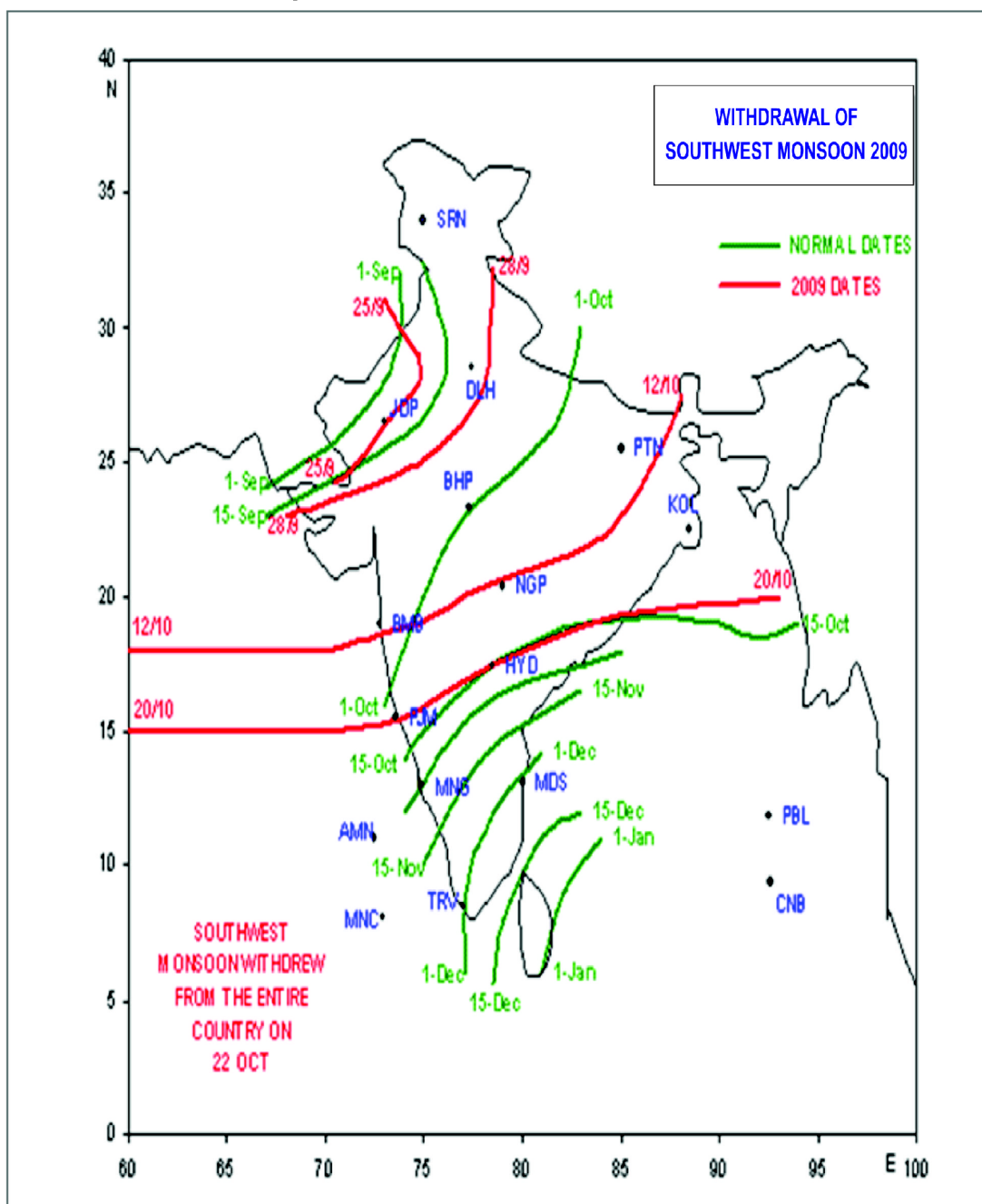


Figure 7 - Withdrawal of South West Monsoon



2009 - THE WARMEST YEAR SINCE 1901

In 2009, annual mean temperature averaged over the country as a whole was +0.913 °C above the 1961-1990 average. The annual average for the country is 24.64°C.

The year 2009 was the warmest year on record since 1901.

The other warmer years on record in order were 2002(0.708), 2006(0.6), 2003(0.560), 2007(0.553), 2004(0.515), 1998(0.514), 1941(0.448), 1999 (0.445), 1958(0.435), 2001(0.429), 1987(0.413) and 2005(0.410).

Figure 8 - Graphical illustration of Category & Week-wise rainfall during SW Monsoon 2009

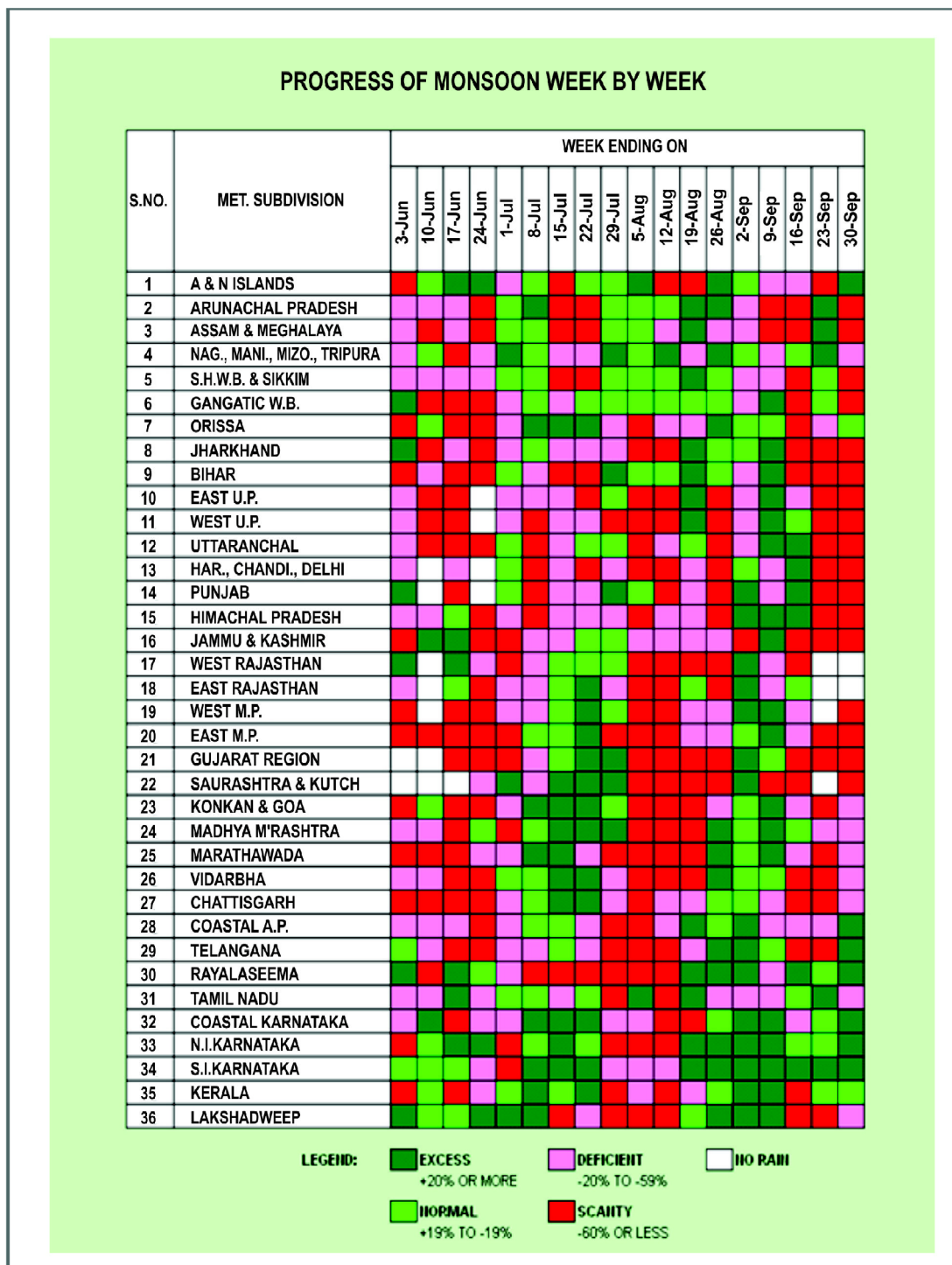


Figure 9-Graphical illustration of Category-wise Cumulative Rainfall during SW Monsoon 2009

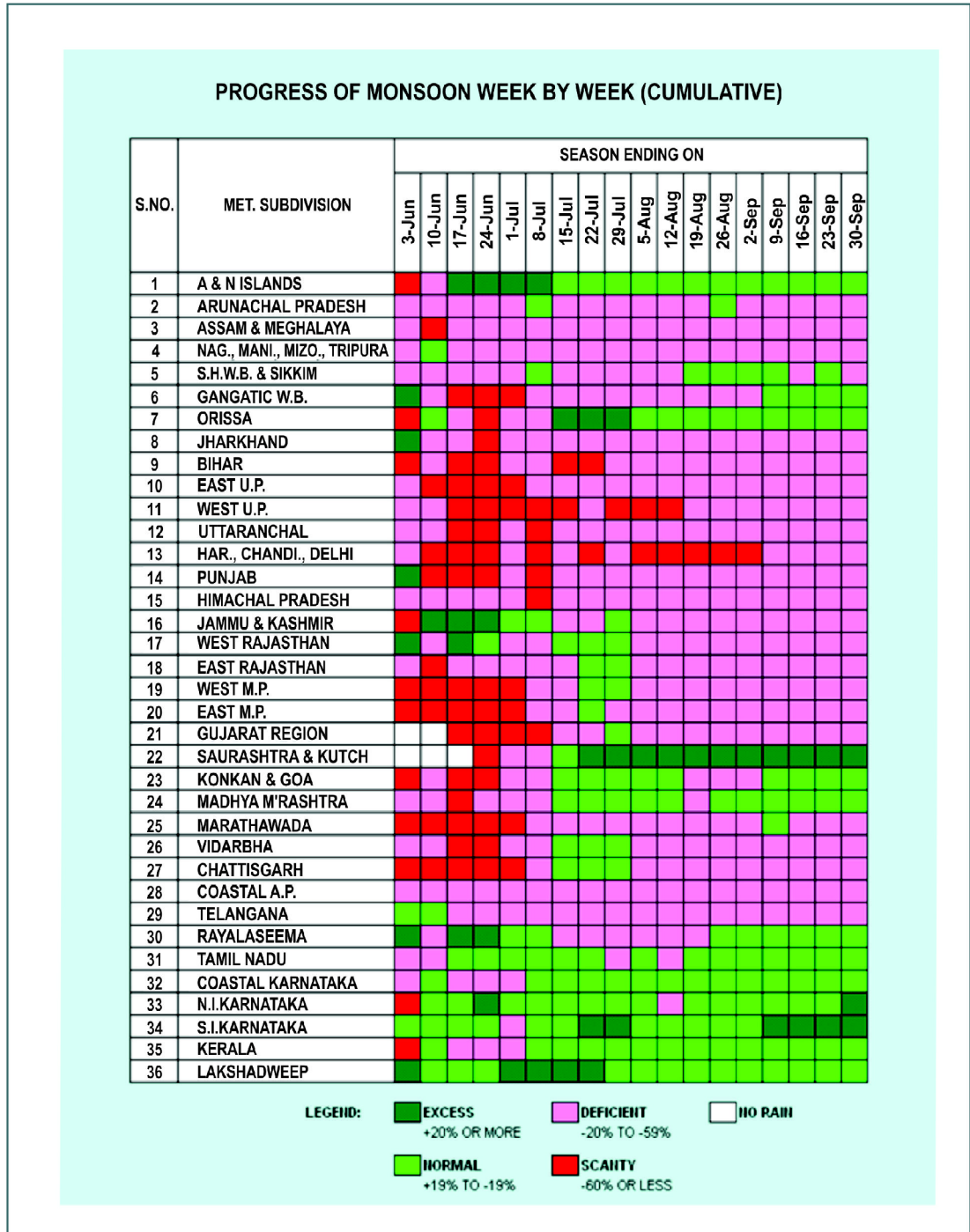


Figure 10 - Statewise Rainfall during SW Monsoon 2009

S.No.	STATE /UT	June-Sep 2009 (monsoon) till 30.09.2009		
		Actual (mm)	Normal (mm)	Dep%
1	Andhra Pradesh	448.5	607.8	-26
2	Arunachal Pradesh	1323.9	1834.9	-28
3	Assam	1181.9	1434.1	-18
4	Bihar	736.3	1039.2	-29
5	Chhattisgarh	796.3	1205.8	-34
6	Goa	2814.6	2773.9	1
7	Gujarat	608.9	678.2	-10
8	Haryana	283.0	462.4	-39
9	Himachal Pradesh	494.2	773.7	-36
10	Jammu & Kashmir	337.6	513.6	-34
11	Jharkhand	799.6	1092.5	-27
12	Karnataka	1004.8	834.7	20
13	Kerala	1959.4	2143.0	-9
14	Madhya Pradesh	692.6	989.0	-30
15	Maharashtra	806.4	1005.2	-20
16	Manipur	377.0	839.3	-55
17	Meghalaya	3148.0	5585.7	-44
18	Mizoram	1040.4	1345.1	-23
19	Nagaland	577.1	1344.1	-57
20	Orissa	1167.3	1164.9	0
21	Punjab	323.6	501.8	-36
22	Rajasthan	276.4	417.9	-34
23	Sikkim	1398.1	2023.9	-31
24	Tamilnadu	315.3	315.6	0
25	Tripura	1348.2	1476.6	-9
26	Uttarakhand	864.9	1223.1	-29
27	Uttar Pradesh	514.0	856.1	-40
28	West Bengal	1121.9	1333.6	-16
29	A&N Islands	1671.8	1755.2	-5
30	Chandigarh	758.4	846.6	-10
31	Delhi	484.8	667.1	-27
32	Diu	894.1	574.2	56
33	DNH & Daman	2004.5	2142.2	-6
34	Lakshadweep	1026.4	985.2	4
35	Pondicherry	180.3	326.7	-45
	All India Total	698.1	892.2	-22

LEGEND on percentage departure : Excess = (+20 or more), Normal = (+19 to -19), Deficient = (-20 to -59), Scanty = (-60 to -99), No rain = (- 100), No Data = (*) N.A = Not available

Rainfall Break up in Drought Years

The Table below indicates that the situation arising out of deficit rainfall in the country in 2009 was akin to that of drought year 1972. In the other recent documented drought years of 1979, 1987 and 2002 the misery was caused due to deficient rainfall during the month of July, which is crucial for the sustenance and sowing of agricultural crops. In 2009, the rainfall was deficient in June 2009, which delayed sowing operations in many States. However, subsequent to revival of monsoon in July 2009, the agricultural operations geared up and sowing of alternative short-term / other crops could be undertaken.

Table 3 - Rainfall Break-up in Drought Years

(Source: Drought Research Unit, IMD, Pune)

Drought Year	June		June		Aug		Sept.		Season	
	Actual (mm)	% Dept.	Actual (mm)	% Dept.	Actual (mm)	% Dept.	Actual (mm)	% Dept.	Actual (mm)	% Dept.
1877	133.0	-21	176.6	-37	169.6	-31	139.7	-15	618.8	-28
1891	83.6	-46	256.7	-7	223.3	-8	215.2	31	778.7	-7
1899	185.3	21	186.7	-32	141.8	-41	95.0	-42	608.7	-27
1901	109.7	-29	241.0	-16	279.7	9	120.1	-30	750.5	-14
1904	159.5	4	264.2	-8	210.8	-17	128.2	-25	762.8	-12
1905	87.4	-43	253.7	-11	201.6	-20	173.7	2	716.4	-17
1907	149.4	-3	223.2	-22	310.1	22	94.4	-44	777.1	-10
1911	188.6	22	157.3	-45	211.3	-17	182.6	7	739.8	-15
1913	214.7	39	270.7	-6	188.8	-26	106.6	-38	780.8	-10
1915	154.9	-1	232.2	-20	232.3	-9	174.8	2	794.2	-9
1918	208.1	22	180.5	-41	241.1	-11	109.0	-40	738.6	-21
1920	166.0	-5	302.9	-2	192.4	-29	122.3	-32	783.7	-16
1925	211.2	21	312.2	1	239.4	-12	140.2	-22	903.0	-3
1939	167.4	-4	285.0	-8	248.1	-7	158.4	-12	858.8	-8
1941	167.5	-4	251.3	-18	240.4	-10	154.4	-13	813.5	-12
1951	153.2	-8	247.8	-17	228.2	-12	120.8	-31	750.1	-17
1965	115.3	-30	282.6	-4	205.9	-20	134.3	-21	738.1	-17
1966	173.2	7	251.6	-15	211.6	-17	144.0	-17	780.4	-12
1968	149.2	-9	306.0	5	208.5	-17	129.0	-25	792.7	-10
1972	126.2	-26	216.2	-28	218.7	-14	132.4	-25	693.5	-23
1974	123.1	-24	288.4	-1	241.8	-3	144.2	-17	797.5	-9
1979	135.9	-19	266.3	-8	203.0	-17	133.9	-22	739.0	-16
1982	135.1	-19	229.0	-22	262.0	3	127.8	-27	753.9	-15
1985	155.5	-6	275.8	-6	233.2	-8	149.7	-14	814.2	-8
1987	135.7	-19	230.3	-23	256.8	-1	163.0	-10	785.8	-13
2002	180.1	6	146.2	-51	262.5	-1	151.2	-14	740.1	-19
2009	83.9	-47	277.9	-4	273.7	-27	138.2	-20	698.1	-22

1.2 Water Storage in Reservoirs

- 1.2.1 Central Water Commission (CWC) under the Ministry of Water Resources monitors storage status of 81 important reservoirs spread all over the country. 36 of these reservoirs provide hydropower benefit, each with installed capacity of more than 60 MW. The total live storage in 81 important reservoirs in different parts of the country monitored by CWC as on 1st October 2009 was 90.476 Billion Cubic Meters (BCM), which was 60 per cent of the storage capacity at Full Reservoir Level (FRL) of 151.77 BCM. The storage during 2009 was nearly 80 percent of the previous year's storage and 90 percent of the average of previous ten years.
- 1.2.2 As reported by CWC, water level in these reservoirs was much lower, in the wake of deficit rainfall during the South-West Monsoon, 2009. The reservoirs in northern India particularly had low water storage. Week-wise status of water level in the important reservoirs for the period from June to September, 2009, as intimated by CWC was as under:-

Table -4 Storage Status of Reservoirs in the Country

Week ending	Live Storage (in BCM)*	% FRL	% Last Year	% Average Last Ten Years
11.06.2009	16.533	11	58	81
18.06.2009	15.068	10	50	73
25.06.2009	14.184	9	44	65
02.07.2009	14.318	9	42	55
09.07.2009	16.003	11	43	48
16.07.2009	20.731	14	48	55
23.07.2009	34.327	23	79	78
30.07.2009	52.79	35	112	102
06.08.2009	54.839	36	104	95
13.08.2009	57.148	38	85	83
20.08.2009	59.059	38	67	75
27.08.2009	63.445	42	66	73
03.09.2009	68.826	45	71	75
10.09.2009	77.431	51	78	82
17.09.2009	85.987	57	82	89
24.09.2009	88.965	59	80	89
1.10.2009	90.476	60	80	90

- Live capacity at Full Reservoir Level (FRL) is 151.77 BCM.

Table 5 - Region Wise Storage of Water in 81 Important Reservoirs

Source : Central Water Commission, 01.10.2009

S.No.	Region/ State	No. of Reservoirs Monitored	Live Capacity At FRL (BCM)	Live Storage (BCM)			Storage as Percentage of Live Capacity at FRL			% departure from 10 yrs avg.
				Current Year	Last Year	Last 10 Yrs. Avg.	Current Year	Last Year	Last 10 Yrs. Avg.	
NORTHERN REGION										
1	H.P.	2	12.39	6.75	12.09	9.74	54	98	79	-31
2	PUNJAB	1	2.34	0.58	1.38	1.18	25	59	50	-51
3	RAJASTHAN	3	3.28	1.72	2.41	2.18	52	73	66	-21
SUB-TOTAL		6	18.01	9.04	15.88	13.10	50	88	73	
EASTERN REGION										
1	JHARKHAND	5	1.79	1.35	1.30	1.22	75	73	68	11
2	ORISSA	7	15.33	9.04	12.79	12.10	59	83	79	-25
3	W. BENGAL	2	1.39	0.85	1.18	0.97	61	85	69	-12
4	TRIPURA	1	0.31	0.14	0.12	0.23	43	38	73	-41
SUB-TOTAL		15	18.83	11.38	15.39	14.52	60	82	77	
WESTERN REGION										
1	GUJARAT	8	10.91	5.72	7.61	7.69	52	70	71	-26
2	MAH.	11	10.98	6.04	9.14	8.28	55	83	75	-27
SUB-TOTAL		19	21.89	11.76	16.75	15.98	54	77	73	
CENTRAL REGION										
1	U.P.	2	6.36	2.59	3.82	4.25	41	60	67	-39
2	UTTARAKHAND	2	4.81	2.81	3.64	2.97	58	76	62	-5
3	M.P.	5	26.86	13.69	12.93	11.57	51	48	43	18
4	CHHATISGARH	2	3.81	2.36	2.86	2.78	62	75	73	-15
SUB-TOTAL		11	41.84	21.45	23.24	21.58	51	56	52	
SOUTHERN REGION										
1	A.P.	5	20.04	11.59	18.00	12.83	58	90	64	-10
2	KARNATAKA	14	23.32	19.80	19.53	18.17	85	84	78	9
3	KERALA	5	3.61	2.53	2.24	2.47	70	62	68	3
4	T.N.	6	4.23	2.93	2.72	2.32	69	64	55	26
SUB-TOTAL		30	51.20	36.85	42.48	35.78	72	83	70	3
COUNTRY AS A WHOLE		81	151.77	90.48	113.74	100.95	60	75	67	

Figure 11 - Graphical illustration of live capacity in 81 important reservoirs

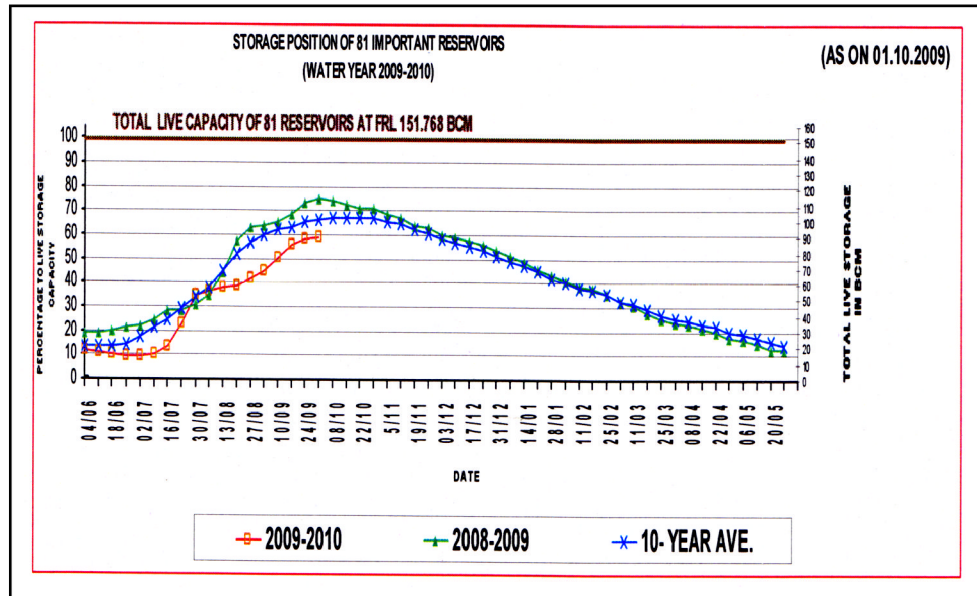
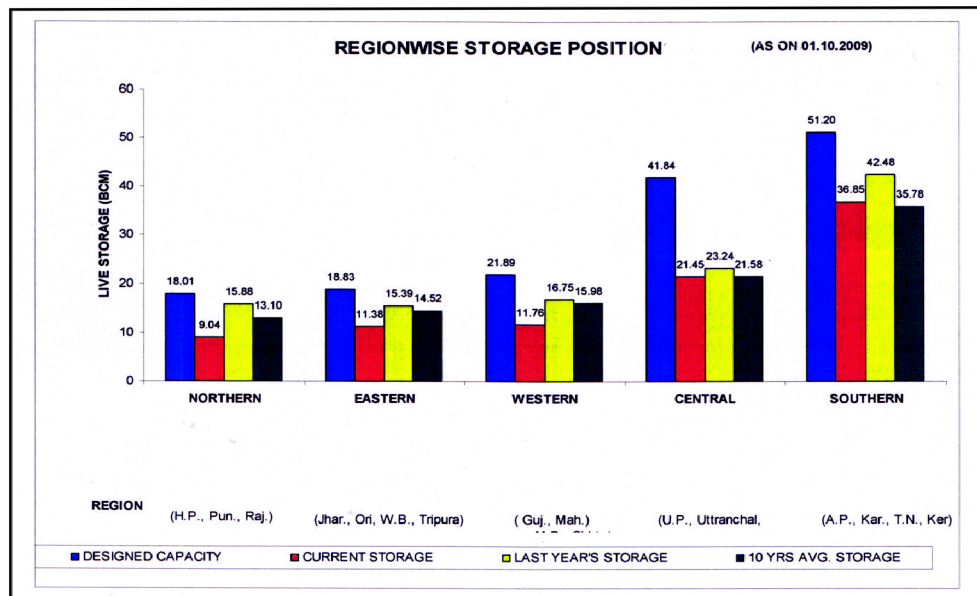


Figure 12 - Graphical illustration of region-wise Live Storage



CHAPTER-2



SECTORAL IMPACT

DROUGHT 2009

2.1 Impact

2.1.1 The adverse meteorological and hydrological conditions during the South West Monsoon season 2009 (June - September) with added woes of deficit winter rains and pre-Monsoon rains resulted in severe drought conditions in the country. The impact of drought was felt in all sectors of the economy. Although it was too early to measure the financial impact of drought, the physical impact was visible on agriculture, water resources, power, employment etc. When India was successfully fighting the impact of global recession on the country's economy during the financial year 2008-09, Drought 2009 made a significant dent on growth. This part of the report gives a broad picture of the impact of drought on certain sectors of the economy. Sector-wise impact is discussed below:

2.2 Agricultural Production-Physical Impact:

2.2.1 Kharif 2009-10

Except Punjab & Haryana, agriculture in the rest of the country during Kharif season is largely dependent on rainfall during South-West Monsoon. The erratic and irregular monsoon behaviour in 2009 resulted in reduction of area coverage under Kharif crops. Besides shortfall in area, the long dry spells also resulted in loss of productivity of standing crops with the result that the production and productivity during Kharif 2009 was severely affected. Among the agricultural crops grown in the country in the Kharif season, paddy is the main crop, as it is widely grown in many States. Paddy is a water intensive crop and is grown in the areas where there is adequate availability of water. Due to the erratic and weak behaviour of the South West Monsoon during 2009, cultivation of paddy was adversely affected with approximately about 5.4 million hectares of paddy area remaining unsown.

2.2.2 As a consequence of lower area coverage and yield, foodgrain production during Kharif Season 2009-10 was 103.84 Million Tonnes as against the Target of 125.15 Million Tonnes (as per 4th Advance Estimates). The 4th Advance Estimates indicated a fall in production of Kharif foodgrains by 12% over the previous year 2008-09. Paddy alone suffered a loss of production by 8.67 Million Tonnes over the previous year production of 84.58 Million Tonnes.

2.2.3 Rabi 2009-10

High rainfall deficit during South West Monsoon and reduced water storage in the reservoirs coupled with economic constraints of the farming community, led to lower output of agriculture sector during 2009-10. The Governments, both at the Centre and the State level, geared up to offset the loss suffered in Kharif by targeting higher production in Rabi. The strategy adopted was to go for early Rabi in the areas which were left unsown in Kharif and additional coverage under normal areas. As a result of the proactive approach of the Government, the crop coverage of Cereals during Rabi 2009-10 was reported to be more than the area coverage during 2008-09.

2.2.4 4th Advance Estimates of Production of Foodgrains, Oilseeds & Other Commercial Crops:

- Total foodgrains production for 2009-10 estimated at 218.20 million tonnes as against 234.47 million tonnes for 2008-09(Final Estimates)
- Total Kharif foodgrain production estimated at 103.84 Million Tonnes as against 118.14 Million tonnes for 2008-09(Final Estimates)
- Total Rabi foodgrains production estimated at 114.36 Million Tonnes (Target was 113.95 Million Tonnes) as against 116.33 Million Tonnes for 2008-09(Final Estimates)

- Total Kharif Oilseeds production estimated at 156.63 Lakh Tonnes as against 178.08 Lakh Tonnes for 2008-09(Final Estimates)
- Total Rabi Oilseeds production estimated at 92.65 Lakh Tonnes as against 99.11 Lakh Tonnes for 2008-09(Final Estimates)
- Sugarcane (Cane) production estimated at 2777.50 Lakh tonnes as against 2850.29 Lakh Tonnes for 2008-09(Final Estimates).
- Cotton production estimated at 239.35 Lakh bales (170 kg each) as against 222.76 Lakh bales during 2008-09.
- Jute & Mesta production estimated at 107.00 Lakh bales (180 kg each) as against 96.34 Lakh bales during 2008-09.

2.2.5 Foodgrain Stock & Release

In the beginning of the financial year 2009-10, rice and wheat stocks with the Central and State agencies were 35.03 million tonnes, which was higher by 78.4% than the level of 19.64 million tonnes as on April 1, 2008. On 1st October 2009, the foodgrain stocks were 43.81 million tonnes as against 29.89 million tonnes on 1st October, 2008. The Government made additional allocation from the Central Pool to meet the additional demand of foodgrains in the drought affected States. Additionally, import of edible oils & sugar was allowed to augment the stock in the market and the Central Pool. These measures helped in containing the rise in the market prices of foodgrains and essential commodities.

2.3 Water Resources

- 2.3.1 The physical constraints on the hydrological sector were illustrated in the previous chapter. Both surface water and ground water sources were adversely affected resulting in reduced availability of water for agriculture and drinking water purposes. North West India suffered due to already depleted sources of ground water. Constraints were also noted in the normally flood prone States like, Assam, Bihar and Jharkhand, as well as in Madhya Pradesh and Uttar Pradesh.
- 2.3.2 To augment the sources of drinking water supply, the Ministry of Railways extended the facility of transportation of drinking water free of charge to the districts of drought affected States upto 31.07.2010. To augment the irrigation to standing crops, many States permitted the use of ground water to save the standing crops. To reduce the economic burden of the farming community, the Government announced a "Diesel Subsidy Scheme" to provide supplementary irrigation in the drought/deficit rainfall affected areas.

2.4 Power Generation

- 2.4.1 The adverse impact of deficit rainfall was also felt in the secondary sectors like power. The reduced availability of water in the reservoirs adversely affected hydro-electric power generation. Out of 81 important reservoirs monitored by Central Water Commission (CWC), 36 reservoirs are used for hydropower generation. As on 1.10.2009 out of this 36 reservoirs, the storage build up was less than normal in 22 reservoirs. This adversely affected Hydel Power Generation units. Alternative options had to be explored for sustaining energy requirements of agriculture and industrial sectors. Thermal and Atomic Power generation had to be augmented.

2.5 Economic Impact:

*Source: Economic Survey 2009-10
(Chapter-8 - Agriculture and Food Management)*

- 2.5.1 Good monsoon between 2005-06 and 2008-09 and the efforts of our farmers led to consistent increase in foodgrains production during the period with a record production of 234.47 million tonnes of foodgrains in 2008-09. Notwithstanding the fact that the South West Monsoon was the most deficient since 1972,

the overall agricultural Gross Domestic Product (GDP) is estimated to have fallen by only 0.2 per cent in 2009-10 (Advance Estimates) as against the previous year's growth rate of 1.6 per cent. Foodgrain area sown in Kharif season declined by 6.5 per cent compared to the previous year and food production is expected to be short by 16 per cent compared to the Fourth Advance Estimates of 2008-09. Rising food prices, spurred by expectations of shortfall in food production, have brought the issues of food security, food stocks management and need for improving food production and productivity to the forefront of national strategy.

CHAPTER-3



DECLARATION OF DROUGHT & RELEASE OF CENTRAL ASSISTANCE

3.1 Declaration of Drought by States

3.1.1 Declaration of drought is the domain of the State Government and as per practice in vogue, the State Governments declared drought after considering various factors including deficiency in rainfall, availability of water for agriculture and other purposes, estimated loss of crops due to deficit rains, etc. 14 States declared 338 districts as affected by drought/scarcity/drought-like situation as detailed below:

Table 6 - State-wise Details of Districts Declared Drought Affected During 2009

Sl. No.	Name of State/ (No. of districts)	Names of Districts (Date of declaration of Drought by the State Government is given below)
1.	Andhra Pradesh (22)	09.9.2009 (21) Adilabad, Anantapur, Chittoor, East Godavari, Guntur, Kadapa, Karimnagar, Khammam, Krishna, Kurnool, Mahabubnagar, Medak, Nalgonda, Nellore, Nizamabad, Prakasam, Rangareddy, Visakhapatnam, Vizianagaram, Warangal, West Godavari 22.9.2009 (1) Srikakulam,
2.	Assam (27) (Drought like situation)	14.7.2009 (14) Bongaigaon, Cachar, Dhubri, Goalpara, Golaghat, Hailakandi, Jorhat, Kamrup, Karbi-Anglong, Kokrajhar, Lakhimpur, Morigaon, Nagaon, Sivasagar 22.7.2009 (13) Baksa, Barpeta, Chirang, Darrang, Dhemaji, Dibrugarh, Kamrup (Metro), Karimganj, Nalbari, North Cachar Hills, Sonitpur, Tinsukia, Udalguri.
3.	Bihar (26)	10.8.2009 (26) Arawal, Aurangabad, Banka, Begusarai, Bhagalpur, Bhojpur, Buxar, Gaya, Jahanabad, Jamui, Kaimur, Katihar, Kishanganj, Lakhisarai, Madhepura, Munger, Muzaffarpur, Nawada, Nalanda, Patna, Rohtas, Saran, Shekhpura, Sitamarhi, Siwan, Vaishali
4.	Himachal Pradesh (12)	6.8.2009 (12) Bilaspur, Chamba, Hamirpur, Kangra, Kullu, Kinnaur, Lahaul-Spiti, Mandi, Shimla, Solan, Sirmaur, Una.
5.	Jharkhand (24)	10.7.2009 (4) Chatra, Garhwa, Latehar, Palamau. 31.7.2009 (7) Deoghar, Dumka, Giridih, Godda, Jamtara, Pakur, Sahebganj. 3.8.2009 (13) Bokaro, Dhanbad, East Singhbhum, Gumla, Hazaribagh, Koderma, Khunti, Lohardaga, Ramgarh, Ranchi, Saraikela-Kharsawan, Simdega, West Singhbhum.
6.	Jammu & Kashmir (18)	22-12-2009 (18) Anantnag, Bandipora, Baramulla, Budgam, Doda, Jammu, Kargil, Kathua, Kishtwar, Kulgam, Kupwara, Poonch, Pulwama, Rajouri, Ramban, Reasi, Samba, Udhampur.
7.	Karnataka (20)	11.8.2009 (20) Bangalore Rural, Bangalore Urban, Bagalkote, Belgaum, Bellary, Bidar, Bijapur, Chamarajnar, Chikkaballapur, Chitradurga, Davangere, Gadag, Gulbarga, Kolar, Koppal, Mandya, Mysore, Raichur, Ramanagara, Tumkur.

Sl. No.	Name of State/ (No. of districts)	Names of Districts (Date of declaration of Drought by the State Government is given below)
8.	Madhya Pradesh (38)	13.8.2009 (37) Alirajpur, Anuppur, Ashoknagar, Badwani, Balaghat, Bhind, Burhanpur, Chhatarpur, Damoh, Datia, Dewas, Dindori, Guna, Gwalior, Jabalpur, Jhabua, Katni, Khandwa, Mandla, Morena, Narsinghpur, Panna, Raisen, Ratlam, Rewa, Sagar, Satna, Sehore, Shahdol, Shajapur, SheopurKalan, Shivpuri, Sidhi, Singrauli, Tikamgarh, Umaria, Vidisha. 31.8.2009 (1) Rajgarh
9.	Maharashtra (28)	20.8.2009 (28) Ahmednagar, Akola, Amravati, Aurangabad, Beed, Buldhana, Chandrapur, Dhule, Gadchiroli, Hingoli, Jalgaon, Jalna, Kolhapur, Latur, Nanded, Nandurbar, Nashik, Osmandbad, Parbhani, Pune, Raigad, Sangli, Satara, Solapur, Thane, Wardha, Washim, Yavatmal.
10.	Manipur (9)	25.6.2009 (9) Bishnupur, Chandel, Churachandpur, Imphal East, Imphal West, Senapati, Tamenglong, Thoubal, Ukhrul.
11.	Nagaland (11) (Drought like situation)	15.7.2009 (11) Dimapur, Kiphore, Kohima, Longleng, Mokokchung, Mon, Peren, Phek, Tuensang, Wokha, Zunheboto.
12.	Orissa (18)	21.11.2009 (15) Angul, Baragarh, Deogarh, Dhenkanal, Jharsuguda, Kalahandi, Kandhamal, Koraput, Malkangiri, Mayurbhanj, Nawarangpur, Nawapara, Subaranapur, Sambalpur, Sundargarh. 19.02.2010 (3) Bolangir, Gajapati, Ganjam
13.	Rajasthan (27) (Scarcity)	25.8.2009 (26) Ajmer, Alwar, Banswada, Barmer, Bhilwara, Bikaner, Bundi, Chittorgarh, Churu, Dausa, Dungarpur, Ganganagar, Hanumangarh, Jaipur, Jasalmer, Jalore, Jhunjhunu, Jodhpur, Nagaur, Pali, Rajsamand, Sawai Madhopur, Sikar, Sirohi, Tonk, Udaipur, 13.11.2009 (1) Pratapgarh
14.	Uttar Pradesh (58)	25.7.2009 (20) Ambedkarnagar, Ballia, Bareilly, Basti, Deoria, Farukhabad, Fatehpur, Ghazipur, Hardoi, Hathrus, Jaunpur, Kannauj, Kanpur Dehat, Kashiram Nagar, Mainpuri, Mau, Rai Bareilly, Sultanpur, Sant Kabir Nagar, Unnao 26.7.2009 (27) Agra, Aligarh, Allahabad, Auraiya, Azamgarh, Badaun, Balrampur, Banda, Chandauli, Etah, Faizabad, Firozabad, Ghaziabad, Gautam Budh Nagar, Jalaun, Jyotiba . Phule Nagar, Kanpur Nagar, Mahoba, Mathura, Meerut, Moradabad, Rampur, Siddharth Nagar, Sitapur, Saharanpur, Shahjahanpur, Varanasi. 30.7.2009 (11) Bijnore, Bulandshahar, Chitrakoot, Etawah, Jhansi, Kaushambi, Kushinagar, Lucknow, Muzaffarnagar, Mirzapur, Pilibhit.
	TOTAL	338 DISTRICTS IN 14 STATES

3.2 Financing Relief Expenditure

3.2.1 Though it is primarily the responsibility of the State Governments concerned to take necessary measures in the wake of natural calamities including drought, the Government of India supplements the efforts of the States with financial and logistic support. There is ready availability of funds with the States under the Calamity Relief Fund (CRF) to take immediate remedial measures. The Government of India and State Governments concerned contribute to CRF in the ratio of 3:1. During the financial year 2009-10, the central share of 1st & 2nd installments of CRF to the tune of Rs.2554.87 crores was released to 14 drought affected States which included Central share for previous year(s) also.

Table 7 - Allocation of Funds Under Calamity Relief Fund (CRF) to Drought Affected States During 2009-10

S.No.	Name of State	Calamity Relief Fund (CRF)		
		Allocation	Centre's Share	State's Share
1.	Andhra Pradesh	418.23	313.67	104.56
2.	Assam	217.07	162.80	54.27
3.	Bihar	167.45	125.59	41.86
4.	Himachal Pradesh	113.21	84.91	28.30
5.	Jharkhand	141.75	106.31	35.44
6.	Karnataka	139.36	104.52	34.84
7.	Madhya Pradesh	285.88	214.41	71.47
8.	Maharashtra	270.95	203.21	67.74
9.	Manipur	6.25	4.69	1.56
10.	Nagaland	4.29	3.22	1.07
11.	Orissa	339.03	254.27	84.76
12.	Rajasthan	505.20	378.90	126.30
13.	Uttar Pradesh	332.74	249.55	83.19
14.	Jammu & Kashmir	97.20	72.90	24.30
TOTAL		3038.61	2278.95	759.66

* **Note:** Centre's share was released in time.

3.3 Memorandum for Assistance from NCCF

3.3.1 All the 14 States, which declared drought/scarcity/drought like situation submitted memorandum to the Government for assistance under the National Calamity Contingency Fund (NCCF). Inter-Ministerial Central Teams (IMCTs) were sent to these States to visit the drought affected areas to assess damage caused due to drought and give the recommendations regarding requirement of central assistance. Reports submitted by IMCTs were considered by the Inter-Ministerial Group (IMG) under the Chairmanship of Secretary (A&C). The recommendations of IMG were placed before the High Level Committee (HLC) comprising the Union Ministers of Agriculture & Consumer Affairs, Food & Public Distribution, Home Affairs and Deputy Chairman, Planning Commission under the Chairmanship of the Finance Minister for approving the quantum of assistance under the NCCF for individual States. Items and assistance sought by various States which were found not qualifying for consideration under NCCF as per norms / guidelines were referred to the concerned Ministries/Departments of the Government of India for consideration under various ongoing schemes / programmes.

3.3.2 An amount of Rs. 4890.945 crores was approved for 13 States as per the approved norms from the NCCF by the Government (HLC) subject to adjustment of 75% of the balance available in the CRF of respective States. Details of assistance sought by the States from the NCCF, and the assistance approved by the Government (HLC) are as under:-

Table 8 - Details of Assistance Sought and Approved from NCCF

Name of State	Date of Receipt of Memorandum from the State Government	Assistance sought from NCCF (Rs. in crore)	Period of Central Team's visit	Assistance approved (Rs. in crores)
Andhra Pradesh	01.10.2009	10106.77	03.11.2009 to 06.11.2009	575.30
Assam	16.09.2009	792.60	05.10.2009 to 09.10.2009	89.94
Bihar	16.08.2009	23071.13	19.8.2009 to 22.08.2009	1163.64
Himachal Pradesh	24.08.2009	608.13	02.09.2009 to 05.09.2009	88.93
Jammu & Kashmir	30.11.2009	211.82	07.04.2010 to 09.04.2010	Under consideration
Jharkhand	07.08.2009	890.31	13.08.2009 to 16.08.2009	200.955
Karnataka	18.08.2009	394.92	24.08.2009 to 26.08.2009	116.49
Madhya Pradesh	17.08.2009	11669.68	07.09.2009 to 11.09.2009	246.31
Maharashtra	24.08.2009	15059.64	01.09.2009 to 05.09.2009	671.88
Manipur	10.08.2009	22.09	20.08.2009 to 23.08.2009	14.57
Nagaland	02.09.2009	74.76	14.09.2009 to 17.09.2009	21.12
Orissa	22.12.2009	2266.65	06.01.2010 to 08.01.2010	151.92
Rajasthan	27.08.2009	12690.99	02.09.2009 to 05.09.2009	1034.84
Uttar Pradesh	06.08.2009 15.09.2009	12133.42	17.08.2009 to 20.08.2009	515.05
TOTAL				4890.945

Table 9 - State-wise summary of Item-wise assistance approved from NCCF

(Rs. in crores)

State (No. of districts declared drought)	Input Subsidy (Agri. & Horti.)	Gratuitous Relief	Employment Generation	Supplementary Nutrition	Health	Drinking Water Supply	Irrigation	Animal Husbandry	Assistance approved
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
Andhra Pradesh (22)	209.77	114.78	209.72 *			38.03		3.00	575.30
Assam (27)	87.23					1.36		1.35	89.94
Bihar(26)	409.58	714.78		7.48	1.30	10.50	20.00	--	1163.64
Himachal Pradesh (12)	70.32					14.42		4.19	88.93
J & K (18)									
Jharkhand (24)	164.35	14.085		10.00	1.32	5.20		6.00	200.955
Karnataka (20)	111.49					4.00		1.00	116.49
Madhya Pradesh (38)	227.77					13.54		5.00	246.31
Maharashtra (28)	564.11					97.77		10.00	671.88
Manipur (9)	14.57								14.57
Nagaland (11)	20.12 [#]							1.00	21.12
Orissa (18)	62.06	43.00	3.99*	10.72	1.50	26.72		3.93	151.92
Rajasthan (27)	797.57	39.90	150.00*		6.17	30.00		11.20	1034.84
Uttar Pradesh (58)	410.60				5.80	96.26		2.39	515.05
Total: 338	3149.54	926.545	363.71	28.20	16.09	337.80	20.00	49.06	4890.945

includes Rs. 0.14 crores for sericulture

* As per the decision of EGoM on 17th September, 2009, allocation for additional 50 days of employment from NCCF at the ratio of 75:25 (Centre : State), over and above 100 days of employment under MGNREGS. In addition Rs. 4.95 crores, Rs. 7.00 crores and 15.00 crores were approved by HLC for Assam, Jharkhand and Orissa respectively from the Special Component of National Rural Drinking Water Programme (NRDWP) of Department of Drinking Water & Sanitation.

CHAPTER-4



MITIGATION EFFORTS

4.1 Drought Mitigation

4.1.1 The Government was concerned about the erratic behaviour of South-West Monsoon during 2009 right from the beginning when the first signs of low rainfall were reported by the India Meteorological Department (IMD). The impact of deficit rainfall and the steps being taken to mitigate its impact were closely monitored at the highest level of the Government regularly. The arrangements and initiatives for tackling the impact of drought, timely pre-emptive measures taken by the Government had a salutary effect in countering the adverse impact of deficit rainfall in the country during the South West Monsoon, 2009. Some of the important administrative arrangements are discussed below:

4.2 Empowered Group of Ministers (EGoM):

4.2.1 An Empowered Group of Ministers (EGoM) was constituted by the Government on 13th August 2009 under the Chairmanship of the Union Finance Minister with the Union Ministers of Agriculture and Consumer Affairs, Food & Public Distribution, Home Affairs, Railways, Power, Urban Development, Petroleum & Natural Gas, Rural Development and Panchayati Raj, Parliamentary Affairs and Water Resources and the Deputy Chairman, Planning Commission as its Members, to review the drought situation and take quick and timely decisions on policy issues as well as on other issues for effective management of drought and related issues. The Terms of Reference of the EGoM were as follows:

- (i) To assess and monitor the situation arising out of drought/deficit rainfall on regular basis;
- (ii) To take decisions on policy issues and approve new and innovative schemes for effective management of drought/deficit rainfall and related issues; and
- (iii) To examine the existing schemes of the Government of India and take decisions on any suitable modifications/relaxations that may be required for effective management of drought/deficit rainfall and related issues.

4.2.2 EGoM met twice, on 25th August, 2009 and on 17th September, 2009 to consider the drought situation prevailing in various parts of the country. The important decisions taken by EGoM were:

- (i) Relaxation in criteria of eligibility under the Scheme on "Diesel Subsidy" for areas with prolonged dry spell.
- (ii) Enhancement of upper ceiling of subsidy for distribution of seed under the Government of India programmes.
- (iii) Enhancement in the number of days of employment beyond 100 days under Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) with provision of upto 50 days of additional employment in the affected areas over and above the initial 100 days (from MGNREGS) through assistance from Calamity Relief Fund (CRF) / National Calamity Contingency Fund(NCCF).

4.3 Inter-Ministerial Group (IMG)

4.3.1 An Inter-Ministerial Group (IMG) for monitoring drought was constituted on 4th August, 2009 under the chairmanship of Secretary (A&C) with the Secretaries of 17 Ministries/ Departments, viz, Planning Commission, Urban Development, Health & Family Welfare, Water Resources, Women and Child Development, Rural Development, Environment & Forests, Drinking Water Supply, Food and Public Distribution, Expenditure, Panchayati Raj, Animal Husbandry, Dairying & Fisheries, Border Management, Power, Agriculture Research & Education, Railway Board and IMD as Members to review the position and steps that needed to be taken for mitigation of drought in the country. Further, the Ministry of Petroleum & Natural Gas, Departments of Fertilizers and Land Resources were also invited in IMG meetings as per the need of the situation. As many as 12 meetings of IMG were held till February 2010. IMG monitored and reviewed the situation on regular basis and apprised the position to the Prime Minister's Office, EGoM, the Committee of Secretaries and the Cabinet Secretariat.

4.4 Conference of Chief Secretaries

Hon'ble Prime Minister and Agriculture Minister addressed the Conference of Chief Secretaries of all States/U.Ts., held on 8.8.2009, to review the situation arising out of deficit rainfall and steps that were required to be taken.

4.5 Conference of Chief Ministers

In the Chief Ministers' Conference on Internal Security held on 17.8.2009, situation arising out of deficit rainfall was also discussed. Agriculture Minister addressed the Chief Ministers in the Conference and requested them to take appropriate remedial actions to mitigate the impact of drought.

4.6 State Agriculture Ministers Conference

State Agriculture Ministers conference was held on 21.8.2009 to review the position and facilitate drawing up and implementation of appropriate Contingent Action Plan in the wake of drought.

4.7 Review by Union Agriculture Minister

The Union Agriculture Minister after reviewing the situation on regular basis wrote to all the Union Ministers and the Ministers of State with independent charge on 22nd Aug'2009, and the Chief Ministers of States on 31st Aug'2009 highlighting the drought situation and requested them for taking appropriate measures to initiate drought mitigation activities at grassroot level to reduce the impact of drought. He also wrote to the Members of Parliament on 26th Aug '2009 requesting them to utilize the available resources under MPLAD funds to undertake drought mitigation measures, like provision of drinking water, lift irrigation schemes, creation of common nurseries etc. within the guidelines of scheme.

4.8 Interaction with Technical & Scientific Institutions

- 4.8.1 Meeting with technical institutions of Indian Council for Agricultural Research (ICAR), National Remote Sensing Centre, and India Meteorological Department (Drought Research Unit, Pune) was held on 25th August 2009 under the Chairmanship of the Additional Secretary & Central Drought Relief Commissioner, Government of India to get technical inputs from these organisations to evolve an integrated mitigation plan.
- 4.8.2 Scientists from the Institutes under Indian Council for Agricultural Research (ICAR), Krishi Vigyan Kendras as well as Technical Experts of National Rainfed Area Authority (NRAA), National Food Security Mission (NFSM) and the National Horticulture Mission (NHM) visited the drought affected States and helped them in their efforts to counter the impact of drought / deficit rainfall on agriculture and gave guidance to the State Agriculture Departments for alternative crop strategy to tackle the drought situation. Institutional arrangements of ICAR were utilized for issuing alternative crop advisories through electronic and print media. The State Agriculture Universities were also engaged in enhancing capacity of the farmers through visits. Institutions like Central Arid Zone Research Institute (CAZRI), Central Research Institute for Dryland Agriculture (CRIDA) and Indian Grassland and Fodder Research Institute (IGFRI) were engaged in special drought mitigation programmes, All India Climate Research Programme (AICRP) etc. Guide / Books / Bulletins were published / released by these institutions for the help of managers involved in drought coping up strategies. ICAR made use of their State-wise Agro Advisory Bulletins in mitigating the impact of drought and ensured that their advisories were disseminated through Extension Machinery and Media in local languages.

4.9 Relief Commissioners meeting.

A meeting of the Relief Commissioners of drought affected States was held on 27th August, 2009 under the Chairmanship of the Central Drought Relief Commissioner, Government of India, to review measures being taken to reduce the impact of drought. Besides this they were regularly contacted by the Senior Officers through video conferences, telephone and other mode of communication. Another meeting with the Relief Commissioners of 10 drought affected States was held on 12th March, 2010 under the Chairmanship of Secretary (A&C) to review the fodder and drinking water availability. Haryana and Punjab State Governments were requested to supply green fodder to other drought affected States.

4.10 Control Room

A Control Room was made operational in Department of Agriculture and Cooperation for interacting with the States and other organizations like India Meteorological Department (IMD) Indian Council for Agricultural Research (ICAR), National Remote Sensing Centre (NRSC) etc responsible for monitoring of drought & taking up remedial measures.

"National Agricultural Drought Assessment and Monitoring System" (NADAMS) of National Remote Sensing Centre

National Remote Sensing Centre (NRSC) under the Department of Space has been undertaking the monitoring and assessment of Drought since 1989 under a project titled "National Agricultural Drought Assessment and Monitoring System" (NADAMS) supported by Disaster Management Support Program (DMSP) of Department of Space, Government of India. The execution of the project is being done by the Agricultural Division, Land Resources Group, RS & GIS AA, NRSC.

*Under NADAMS, the Centre gives report on **Normalised Difference Vegetation Index (NDVI)** compared to that of normal and complementary ground data on rainfall and crop sowing progress which are utilized in the assessment of agricultural drought, **Normalised Difference Water Index (NDWI)** for monitoring the crop canopy water status from space using the Short Wave Infrared Channel (SWIC) of the Advanced Very High Resolution Radiometer (AVHRR), which is sensitive to the stress due to the liquid water content in the vegetation canopies and for some States Surface Soil Moisture from Advanced Microwave Scanning Radiometer - Earth Observing System (AMSR-E) data is also monitored by NRSC, as it is a key variable in monitoring the agricultural drought, which controls the proportion of rainfall that percolates, runs off or evaporates over the land. It gives the soil moisture in the top few millimeters of the soil averaged over the retrieval footprint.*

For the Kharif 2009, the analysis of NRSC was as under:

- 1. During June & July months of Kharif 2009, the satellite derived surface wetness observations showed intense agricultural drought situation in most parts of the country.*
- 2. Rainfall during the 2nd fortnight of July improved the situation in many States and the agricultural vegetation status progressed during August and September months.*
- 3. NDVI significantly improved in September indicating the progression of season although it is less than normal due to deficit rainfall in many States*
- 4. Overall, the trend of agricultural vegetation development from the beginning of the season indicated the prevalence of agricultural drought situation in 179 districts spread across 13 States. Of these 179 districts spread across 13 States monitored by NRSC, **123 districts were affected with moderate (sown area reduction 25% to 50%) to severe (50% above) agricultural drought conditions and 56 districts with mild agricultural conditions.***
- 5. Among the States, Andhra Pradesh, Uttar Pradesh, Rajasthan, Bihar, Gujarat and Madhya Pradesh had more districts under moderate to severe agricultural drought.*
- 6. Based on objective comparisons with the previous normal year and severe drought year of 2002, NRSC stated that the agricultural situation of **Kharif 2009 was better than that of Kharif 2002** although it was less than that of normal Kharif season.*

7. NRSC observed **Normal or slightly less than normal agricultural performance** in the met-subdivisions of Orissa, Uttar Pradesh, Jharkhand, Madhya Pradesh, Haryana, Maharashtra, Karnataka and Chhattisgarh States; **better than 2002 but less than normal agricultural situation** in East & West Rajasthan, Gujarat and Saurashtra sub-divisions, **equally intensive agricultural drought situation as in 2002 in all the three sub-divisions of Andhra Pradesh**. It is less than normal agricultural situation in Bihar.
8. Out of the above 13 States observed by NRSC, the State Governments of Andhra Pradesh, Bihar, Orissa, Jharkhand, Karnataka, Maharashtra, Madhya Pradesh, Rajasthan, Uttar Pradesh have declared drought in their States.
9. Although NDVI Status is not yet taken as a criteria for declaration of drought due to various scientific lacuna associated with it, the NDVI Status cannot be ruled out totally keeping in view our own reports of Kharif sowing.

NADAMS report is a corroborated document of the impact and progress of SW Monsoon in the Country. It is an additional tool for impact measurement on macro scale.

4.11 Rabi Conference

Rabi' 2009 Conference was held during 24-25 September, 2009 to deliberate on strategies to be adopted for Rabi Season to offset the Kharif losses.

4.12 Efforts of Central Ministries / Departments

- 4.12.1 **The Department of Agriculture & Cooperation**, the nodal Department for coordination of relief efforts necessitated by drought, monitored the progress of South-West Monsoon 2009 in the country and took timely appropriate remedial action. Secretary (Agriculture & Cooperation) took the first review meeting on the slow progress of monsoon and preparation of the Contingency Plan on 25th June, 2009. On 6th July, 2009 first meeting with some of the States likely to be affected due to slow progress of monsoon, like Gujarat, Madhya Pradesh, Maharashtra, Rajasthan, Uttar Pradesh, etc. was held. Review meetings with different Ministries/Departments of the Government responsible for taking action for mitigating the impact of deficit rainfall and video conferences with the State Governments, who were ultimately responsible for implementing the steps for drought mitigation at the grass-root level, were held at regular intervals. Review meetings of the Secretary/Nodal Officers of all concerned Ministries/Departments were held on 14th July and 31st July 2009 to discuss the impact of deficit rainfall in some parts of the country.
- 4.12.2 **The Department published Crisis Management Plan for Drought** in the month of June 2009. The Crisis Management Plan provided for Crisis Management Framework for Drought and Strategic Activity Planner, which, inter alia, advocates preparation of appropriate action plan by Central and State Ministries / Departments for mitigation of drought. States were requested to prepare State specific contingency plans for specific agro-climatic conditions which included planning for cultivation of early maturing short duration varieties, and alternate crops accordingly.
- 4.12.3 Drought **Management Information System (DMIS)** was designed during 2009-10 for online reporting by State Governments. The Inter Ministerial Teams visiting States for assessing the impact of drought and requirement of funds from NCCF depended on this database to a large extent in deciding the districts to be visited by them as also in cross checking the extent of damage as reported by the States.
- 4.12.4 **Manual for Drought Management** was released by Minister of Agriculture, Consumer Affairs, Food and Public Distribution on 4th January 2010. The drought manual is expected to prove an effective practical guide for administrators, experts and civil society in implementing drought mitigation and relief measures and for alleviating distress of the drought affected people.
- 4.12.5 **Crop Weather Watch Group (CWWG)** in the Department of Agriculture and Cooperation continued to meet on regular basis to take stock of rainfall, weather forecast, progress of sowing, crop health, level

of water in the major water reservoirs in the country, etc. The findings of the CWWG and IMD reports were discussed by Secretary (A&C) with the officials concerned of the Department and necessary actions were accordingly taken by the Central Government. The State Governments were also advised suitably.

- 4.12.6 **Video Conferences** were held with drought declared States to review the situation regarding contingency plans for implementation and for tying up availability of inputs. As many as 15 video conferences with the officials of State Governments were held to review the actions being taken by the State Governments towards mitigating the impact of deficit rainfall.

4.13 Mitigation Measures taken to save Agricultural Production

- 4.13.1 **Saving Kharif Crop:** The first and the foremost strategy of the Department was to save the standing crop in the field. Towards this end, the Department constantly monitored the progress of rainfall/sowing of kharif crops through meetings, video conferences, etc.
- 4.13.2 **Diesel subsidy:** With the approval of Cabinet Committee on Economic Affairs (CCEA), the scheme of "Diesel Subsidy" was introduced during Kharif 2009 in the drought and deficit rainfall affected areas of States to enable the farmers to provide supplementary irrigation through diesel pump sets for saving the standing crops in the field, and mitigate the adverse impact of drought/deficit rainfall conditions on foodgrains production.
- 4.13.3 The scheme was made applicable in those districts where deficit rainfall, as on 15.7.2009, was more than 50% or such talukas/districts, which had been declared as drought affected by the respective State Governments / U.T. Administrations. 50% subsidy on the cost of diesel was to be provided to the affected farmers for providing upto 3 protective irrigations, subject to a maximum total subsidy of Rs.1000/- per hectare limited to a maximum of 2 hectares per farmer. The subsidy amount provided was to be shared by the Government of India and the States/UTs in the ratio of 50:50, subject to the participating States/UTs willing to contribute their share. Subsequently relaxation was provided in the scheme to include areas with prolonged dry-spell for any continuous 15 days period starting from 15.7.2009 and those areas with scanty rainfall (-60% or more).
- 4.13.4 The scheme was to be operationalized on reimbursement basis. The State Government/U.T Administrations were to claim reimbursement for getting the Central share of the subsidy so paid after full disbursement of the subsidy amount. The share of Government of India's subsidy was pegged to a maximum amount of Rs.7.50 per litre of diesel restricted to a limit of Rs.500/- per hectare. The scheme was in operation till 30.9.2009.
- 4.13.5 Guidelines regarding implementation of the scheme were initially intimated to the States on 3.8.2009 and subsequently on 3.9.2009 including the relaxation provided to areas with prolonged dry spell for a period of 15 days. Punjab and Haryana did not implement the scheme. The Governments of Bihar and Tamil Nadu submitted reimbursement claims towards GOI's share for Rs.21.52 crores and Rs.1.43 crores, respectively.

4.14 Measures to ensure availability of Seeds:

- 4.14.1 Age limit(10 years) for distribution of certified seeds of rice and kharif pulses was relaxed under NFSM keeping in view the non availability of seeds of prescribed age limit. Truthfully Labelled (TL) seeds were also allowed under the Government of India programmes to meet the additional seed demand. This resulted in increased distribution of High Yield Variety paddy seeds to about 12 lakh qtls against the previous year's (2008-09) distribution of about 6.7 lakh qtls. In pulses, HYV seed distribution in 2009-10 was 5.6 lakh qtls against 4.8 lakh qtls during 08-09.
- 4.14.2 The existing seed subsidy was enhanced from Rs. 500/- per qtl to Rs. 700/- per qtl in case of paddy and wheat, from Rs. 1200/- per qtl to Rs.2000/- per qtl for pulses and oilseeds and from Rs. 800/- to Rs. 1000/- per qtl for coarse cereals to help the farmers severely affected by the failure of South West Monsoon during the Kharif season. Additional fund for the Scheme-wise enhancement of seed subsidy is indicated below:

Table 10 - Scheme-wise enhancement of Subsidy

No.	Crops	Programme	Existing Subsidy	Enhanced Subsidy
1	Oilseed, Pulses, Maize	ISOPOM NFSM MMA	Rs.1200 per quintal	50% of cost subject to limit of Rs. 2000 per quintal.
2.	Wheat, Paddy	NFSM MMA	Rs.500 per quintal	50% of cost subject to limit of Rs. 700 per quintal.
3.	Coarse cereals (excluding maize)	MMA	Rs.800 per quintal	50% of cost subject to limit of Rs. 1000 per quintal.

Restriction on import of fodder (Berseem) seed was relaxed to ensure adequate availability of fodder seed. 33468 MT of Berseem seed was imported during 2009-10 against 7520 MT during the previous year.

- 4.14.3 The States were given the flexibility of using unutilized funds of NFSM rice for Pulses promotion in the NFSM districts.
- 4.14.4 Zonal Seed Review Meetings (ZSRM) for Rabi 2009-10 were organized in August / September 2009. Overall 153.21 lakh quintals of certified / quality seed were made available against the requirement of 138.15 lakh quintals indicated by the States with a surplus of 15.06 lakh quintals.
- 4.14.5 Additional 3,01,000 minikits of High Yielding Variety (HYV) wheat (to 8 major wheat growing States) and 1,58,680 minikits of Boro / Summer /Rabi rice (to Assam, West Bengal, Bihar and Orissa) were allocated to the States.
- 4.14.6 A special review of early Rabi seed requirement was also carried out. Requirement of 41,78,176 qtls for crops like Toria, fodder, gram, wheat, peas, mustard, potato, linseed and lentil was finalized. Use of farm saved seed was the alternative strategy as shift to other crops was not favoured by the States.
- 4.14.7 Seed minikits of oilseed, pulses and maize for Rabi 2009-10 were increased significantly as per details below:

Table 11 - Increase of Seed minikits during Rabi 2009-10

Crops	Rabi 2008-09			Rabi 2009-10			% increase in minikits over last year Rabi
	No. of minikits	Qty. (in Qtls.)	Value (Rs. in lakh)	No. of minikits	Qty. (in Qtls.)	Value (Rs. in lakh)	
Oilseeds	713943	15041.85	830.67	1232210	37105.85	2002.07	72.59
Pulses	545000	41260	1826.38	1412772	110544.01	5197.79	159.22
Maize	332500	6650	346.67	351000	7020.00	477.60	5.56
Total	1591443	62951.85	3003.72	2995982	154669.86	7677.46	

- 4.14.8 Transfer of seed from surplus to deficit areas was coordinated expeditiously as per requirement. Availability of seed was thus ensured for implementing crop contingency plans.
- 4.14.9 A special review of seed requirement was conducted for late Kharif crops. A requirement of 3,31,652 qtls for late Kharif crops such as Urd, Moong, Arhar, Jowar, Bajra, Maize, Vegetables, Horsegram, Sunflower, Groundnut and Paddy was tied up.
- 4.14.10 Government also provided seed minikits under National Food Security Mission (NFSM) and Integrated Scheme of Oilseeds, Pulses, Oilpalm and Maize (ISOPOM) as per the details given below:

Table 12 - Distribution of seed minikits under NFSM & ISOPOM*Minikits (Qtls)*

Scheme	Kharif - 2009
NFSM (paddy and wheat)	25532
ISOPOM (oilseeds, pulses, maize)	1007551
Grand Total	1033083

4.14.11 Under Seed Village Programme, participatory seed production was substantially expanded through increased financial assistance. Assistance under Seed Village programme during 2009-10 was higher by one and a half times over the total assistance in the last 4 years as per details given below:

Table 13 - Assistance under Seed Village programme during last 5 years*Rs. in lakhs: Qty. in qtls.*

Year	Funds Released	Number of Seed Villages Organized	Quantity of Seed Produced
2005-06	1476.99	1701	5.36
2006-07	1349.36	10776	22.95
2007-08	4657.74	18498	33.56
2008-09	5736.58	33216	42.30
Total	13220.67	64191	104.17
2009-10	21344.80 (As on 05.1.2010)	75000 (Proposed)	100 (Expected)

4.14.12 As regards pest control, the position was reviewed in the Zonal Conferences on Agricultural Inputs held prior to Kharif 2009 and Rabi 2009-10 with States and Pesticides Industry. It was found that there was no problem in availability of pesticides. Advisories were issued from time to time to the concerned States on outbreak of pests. In addition, the Central Integrated Pest Management Centers (CIPMCs) are implementing Integrated Pest Management Programme, under which Farmer Field Schools are organized on a regular basis to create awareness among the farming community about pest management and judicious use of pesticides. During Kharif 2009, 404 Farmer Field Schools (FFS) were conducted as against 389 in Kharif 2008. More Agriculture Extension Officers and farmers were trained on integrated pest management during Kharif 2009 as compared to Kharif 2008. Seed Treatment campaigns were also undertaken to create awareness among the farmers on the benefits of using treated seeds in controlling the occurrence of pest and disease at initial stages during crop growth.

Release of funds under the flagship schemes of DAC:

4.14.13 Funds under the Centrally Sponsored Schemes being implemented by DAC are released on the basis of utilization by the States and the unspent balance lying with them. Through a letter addressed to the Agriculture Production Commissioners of State Governments they were requested to take into account the situation arising out of delayed monsoon and include the efforts required to be made as per the Contingency Plan while finalizing the Action Plan under RKVY. In order to mitigate the drought situation in the country in 2009-10, the Government decided to make early release of 100% funds under Rashtriya Krishi Vikas Yojana (RKVY) to the States / UTs. Funds under other flagship Central Schemes such as NFSM, NHM and Micro-Irrigation were released on fast track to the States. Flexibility was also provided to the States to utilize funds allocated under RKVY to meet agricultural contingent situations.

4.14.14 Normally, under the Centrally Sponsored Schemes, the States are required to furnish Utilization Certificates of the funds released to them before release of further installment. At the end of the financial

year, the States are required to furnish Utilization Certificates for the funds released during the year. However, in view of the drought situation in 2009, National Consultants engaged under Schemes like National Food Security Mission (NFSM), National Horticulture Mission (NHM) were assigned drought affected States to review the progress of Kharif as well as to track the utilization of funds. As a result of such close monitoring, area coverage under Rabi 2009-10 increased marginally over the corresponding period of Rabi 2008-09 which indicated proper use of funds under the schemes, inspite of drought.

4.15 Credit:

- 4.15.1 The Reserve Bank of India issued guidelines on 1st July, 2009 to the Banks for providing relief to the farmers in areas affected by natural calamities. These guidelines were issued to enable the Banks to take uniform and concerted action expeditiously, particularly to provide the financial assistance to the farmers affected by natural calamities.
- 4.15.2 The Government constituted a Task Force during 2009-10 to look into the issue of indebtedness of a large number of farmers, who had taken loans from private money lenders in the country.
- 4.15.3 To relieve the burden of overdues, the Government provided debt waiver through one time settlement to about 3.68 crore farmers involving an amount of Rs. 65,318.33 crores. These farmers were made eligible to avail fresh credit from the banking system. Under One Time Settlement, Government extended the time limit for repayment of dues from 30.06.2009 to 31.12.2009.
- 4.15.4 Total agriculture credit flow during 2009-10 (upto Nov, 2009) was Rs.1,96,227 crores which was about 43% higher than the credit flow for the same period during 2008-09.
- 4.15.5 States were asked to conduct State Level Banker's Committee (SLBC) meeting in view of the drought to provide relief to farmers as per RBI guidelines. 23 States had conducted these SLBC meetings.

4.16 Fertilizer Availability:

- 4.16.1 Taking into consideration the drought situation during Kharif 2009, the Zonal Conference for assessment of fertilizer requirements during the Rabi 2009-10 was held in coordination with the **Department of Fertilizers** on 17th August 2009 in respect of North and East Zone States (Haryana, Punjab, Uttar Pradesh, Uttarakhand, Himachal Pradesh, Jammu & Kashmir, Delhi, Bihar, Jharkhand, Orissa and West Bengal) and on 19th August 2009 for the South and West Zone States/UTs (Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, Puducherry, Andaman & Nicobar Islands, Gujarat, Madhya Pradesh, Chhattisgarh, Maharashtra, Rajasthan, Goa) in New Delhi. The assessment for North Eastern States was made on 16th September 2009. Government also organized Video Conferences with States and reviewed the availability of fertilizers from time to time.
- 4.16.2 Government worked out in advance the procurement of fertilizers especially Di Ammonium Phosphate (DAP) and made arrangements for their prepositioning in all the States where prospects of Rabi crop was good, like Gujarat, Madhya Pradesh, Rajasthan, Haryana, Punjab, UP, Bihar, West Bengal etc. by conducting periodic video conferences and daily telephonic monitoring with all major States.
- 4.16.3 Despite the loss of cropped area due to drought in 2009, the availability of fertilizers (except Urea) during the period April - December, 2009 registered increase as compared to the corresponding period in 2008, as indicated below:

Table 14 - Availability of Fertilisers during 2008 & 2009

(Lakh tonnes)

Year	Urea	DAP	MOP	NPK Complex	Total
2008	208.83	89.24	33.91	59.85	391.83
2009	202.47	94.38	35.60	61.32	393.77

4.17 Augmentation of Water Resources:

4.17.1 Existing guidelines for major schemes of the Ministry of Water Resources provide for special consideration to drought-prone areas. Central assistance @ 90% of the project cost is provided to States for Irrigation projects benefiting drought-prone areas under the Accelerated Irrigation Benefits Programme (AIBP) as well as under the scheme for Repair, Renovation and Restoration (RRR) of water bodies for their expeditious implementation. There is also no limit to the number of irrigation projects, which may be funded under AIBP in drought-prone areas. Further, the Central Ground Water Board carried out drilling of exploratory wells in drought-prone areas on priority.

4.17.2 Central Ground Water Board (CGWB) deployed 50% of its drilling rigs in drought-prone districts for the development of ground water in these areas. The State-wise achievements by the respective State Governments as per information available were as follows:

- a) **Rajasthan**
Government of Rajasthan commissioned 192 new tubewells, 2,158 hand pumps and arranged 16,922 tanker trips per day during the drought period.
- b) **Andhra Pradesh**
Government of Andhra Pradesh deployed tankers in 495 habitations and 752 tankers through private sources were also hired for supply of drinking water in drought affected areas of the State.
- c) **Bihar**
Government of Bihar informed that in the drought affected areas of the State 364 borewells were deepened, 54,197 hand pumps were repaired/ rejuvenated and tanker water supply was arranged in 5 villages.
- d) **Himachal Pradesh**
Government of Himachal Pradesh informed that 704 tankers and 482 mules were deployed during the peak drought period for providing safe drinking water to the affected population.
- e) **Maharashtra**
Government of Maharashtra took up deepening of 9,947 borewells, and construction of 3,406 new tubewells. Special repairs were undertaken to make the 610 piped water supply schemes functional. Water supply was provided by tankers/bullock carts in 2,467 villages and wells in 265 villages were deepened in the water scarcity affected areas during the drought period.
- f) **Gujarat**
Government of Gujarat intimated that in 321 non-drought prone but severely water scarce areas, tanker water supply was provided and an expenditure of Rs 551.38 lakh was incurred.
- g) **Haryana**
During the drought period, 208 new tube wells were drilled and 30 to 100 tankers were daily deployed in the State for providing safe drinking water in water scarcity areas.
- h) **Uttarakhand**
2,482 hand pumps were repaired, 99 water filling stations established and 83 tankers deployed in 251 drought prone rural habitations of the State.
- i) **Jammu & Kashmir**
The Government of Jammu & Kashmir informed that 160 tankers were deployed in drought-hit areas of the State.
- j) **Arunachal Pradesh**
The Government of Arunachal Pradesh informed that tankers were deployed in 400 water scarcity villages of the State by incurring an expenditure of Rs 2.04 crores.

4.17.3 An amount of Rs. 7.00 crore was approved for Jharkhand, Rs.4.96 crore for Assam and Rs.15 crore for Orissa from the special component under the National Rural Drinking Water Programme (formerly Accelerated Rural Water Supply Programme-ARWSP). Central Ground Water Board (CGWB) also handed over exploratory tube wells to States for drinking water purposes.

4.18 Movement of Drinking Water & Fodder:

4.18.1 Indian Railways arranged for transportation of drinking water and fodder to the affected areas at "NO COST" to the concerned State Governments, as per the decision of the Government. The actual expenditure incurred in this regard would be reimbursed to the Railways from National Disaster Response Fund (NDRF - earlier NCCF). Funds as per norms were approved from NCCF for emergency drinking water supply in Rural and Urban areas.

4.19 Energy Sector

4.19.1 There was higher demand for electricity and diesel (energy) from the States. The decision to release additional power to the States with deficit rainfall was taken in the month of June 2009 by the Government keeping in view the additional demand from States and in pursuance of the decisions taken in the meetings to review the situation arising out of deficit rainfall during South West Monsoon 2009 at various levels of the Government.

4.19.2 The **Ministry of Power** provided additional allocation of power to the States with deficit rainfall for agricultural operations during the month of July and August, 2009. The State-wise details in this regard are as under:

Table 15 - Allocation of additional power to States

State	Date of Ministry's Order	Date of Implementation	Additional Allocation (MW)	Cumulative Additional Allocation (MW)
Punjab	09.07.2009	11.07.2009	50	50
	15.07.2009	18.07.2009	50	100
	27.07.2009	02.08.2009	Nil	50
	01.08.2009	05.08.2009	37.5	87.5
	13.08.2009	15.08.2009	57 to 77 *	145 to 165 *
	28.08.2009	30.08.2009	Nil	125 to 145 *
Haryana	09.07.2009	11.07.2009	50	50
	15.07.2009	18.07.2009	50	100
	27.07.2009	02.08.2009	Nil	50
	01.08.2009	05.08.2009	37.5	87.5
	13.08.2009	15.08.2009	57 to 77 *	145 to 165 *
	28.08.2009	30.08.2009	Nil	125 to 145 *
Uttar Pradesh	27.07.2009	02.08.2009	45 to 100 *	45 to 100 *
Bihar	01.08.2009	05.08.2009	31	31
	19.08.2009	22.08.2009	0 to 46 *	31 to 77 *
Assam	01.08.2009	05.08.2009	10 to 24 *	10 to 24 *
Andhra Pradesh	13.08.2009	15.08.2009	50	50

* In different time slots of the day

4.20 Animal Husbandry:

- 4.20.1 The Central Government reviewed the impact of drought on Animal Husbandry Sector and the State Governments were requested to take necessary action to ensure availability of adequate quantity of fodder for the animals. Restriction on import of fodder seed was relaxed to ensure adequate availability of fodder seeds.
- 4.20.2 As per the regular programme of the Department of Animal Husbandry, Dairying and Fisheries, for distribution of fodder minikits, the target for 2009-10 was 6.00 lakh against which 6.71 lakh minikits were allotted to the States. To increase fodder production for sustaining livestock due to drought, additional 2.52 lakh minikits were allocated to the States of Andhra Pradesh, Assam, Bihar, Gujarat, Haryana, Himachal Pradesh, Jharkhand, Karnataka, Madhya Pradesh, Punjab and Rajasthan taking the total allotment to 9.23 lakh minikits, for free distribution to the farmers. For the Kharif season allotment of minikits was done on 21st April, 2009, for Rabi on 7th August, 2009 and additional minikits on 25th August, 2009. All the States were advised on 7th September, 2009 for availing funds available under RKVY for purchase of fodder seeds to meet any further additional requirements. The minikits were delivered to the States by seed supplying agencies for distribution to the farmers for timely sowing during Rabi. The seed supplying agencies were instructed to supply the fodder minikits within 30 days for regular allotment and 20 days for additional minikits.

The State-wise minikits allotment during 2009-10 is given below:

Table 16 - Statewise allotment of Fodder Seed Minikits during 2009-10

S.No.	State/UTs	Kharif	Rabi	Additional allotment for Rabi due to drought	Total
1.	Andhra Pradesh	11000	7000	24000	42000
2.	Arunachal Pradesh	1000	1000		2000
3.	Assam	10000	3000	2000	15000
4.	Bihar	10000	13000	69500	92500
5.	Chattisgarh	13000	5000		18000
6.	Goa	4000	0		4000
7.	Gujarat	30840	23000	11000	64840
8.	Haryana	19368	16819	20000	56187
9.	Himachal Pradesh	18500	15150	17000	50650
10.	Jammu & Kashmir	24000	15773		39773
11.	Jharkhand	11000	6000	7000	24000
12.	Karnataka	45342	4700	18000	68042
13.	Kerala	14250	6000		20250
14.	Madhya Pradesh	22000	15000	25000	62000
15.	Maharashtra	25000	11000		36000
16.	Manipur	1000	2000		3000
17.	Meghalaya	1000	1500		2500
18.	Mizoram	1000	1000		2000
19.	Nagaland	1000	2200		3200
20.	Orissa	48500	20000		68500
21.	Punjab	13500	7000	6000	26500
22.	Rajasthan	23970	16096	52500	92566
23.	Sikkim	1000	2000		3000
24.	Tamil Nadu	21550	6750		28300
25.	Tripura	1000	2000		3000
26.	Uttar Pradesh	27000	32347		59347
27.	Uttarakhand	8000	12000		20000
28.	West Bengal	9500	6000		15500
29.	A & N Islands	0	500		500
	Total	417320	253835	252000	923155

4.20.3 Timely allotment of minikits was done by the Government. After the minikits allotment, States, vide letter dated 22-9-2009, were requested to ensure that these minikits reach the farmers for expeditious distribution in Rabi season and also send district-wise and village-wise list of minikits distributed. The Government did not receive any report about alarming shortage of green fodder from the affected States. A meeting was held on 27th August, 2009 with Relief Commissioners of States to discuss various issues including availability of fodder. The concerned officials of Punjab and Haryana (States which had surplus fodder availability), also attended that meeting. The States having inadequate fodder availability were requested to tie up with the Governments of Haryana and Punjab for dry fodder. Subsequently, a suitable communication was sent to the Governments of Haryana and Punjab in this regard.

4.21 Alternative Employment

4.21.1 The Department of Rural Development launched the National Rural Employment Guarantee Scheme (NREGS) in the year 2006-07 for providing a fall-back employment source for the vulnerable segments of the society in the rural areas, when other employment alternatives are scarce or inadequate. During the period of Drought, loss of employment due to failure of agriculture operations affects the livelihood security of farm labourers. Accordingly, this scheme proved handy to the States in providing alternative employment in the drought affected areas. To cater to the employment needs of the rural population, employment upto 100 days is provided under Mahatma Gandhi National Rural Employment Guarantee Act (formerly NREGA). This scheme also takes care of the job requirements of agriculture labour during drought years. Under this scheme rural assets are created, as part of drought proofing measures. During 2009-10, Department of Rural Development wrote to the States for assessment of labour and works under NREGA in the event of deficit rainfall, on 29th June 2009, 30th July 2009, 26th August 2009 and 27th October 2009.

4.21.2 Keeping in view the additional demand for employment beyond 100 days in drought affected States additional 50 days employment under MGNREGS through assistance from CRF/NCCF, was approved by the Government. Number of households completing 100 days of employment under MGNREGS was higher in the State of Andhra Pradesh followed by Rajasthan

4.22 Foodgrain allocation under Public Distribution:

4.22.1 The Department of Food and Public Distribution is the Nodal Department which ensures adequate availability and distribution of food grains in the country at affordable prices under the Public Distribution System (PDS). It also ensures that no starvation deaths take place by providing foodgrains to vulnerable population of the country, at highly subsidized rates.

4.22.2 Keeping in view the situation arising out of drought/scarcity/drought like situation in the country, Government of India made additional adhoc monthly allocation of foodgrains for Above Poverty Line (APL) category under Targeted Public Distribution Scheme (TPDS) to drought affected States during the period from October 2009 to December 2009, as indicated below:

Table 17 - Additional ad hoc allocation of foodgrains to drought affected States*(in Thousand Tonnes)*

S.No	STATE / UT	WHEAT	RICE	TOTAL
1	2	3	4	5
1	ANDHRA PRADESH	35.785	17.893	53.678
2	ASSAM	8.857	4.428	13.285
3	BIHAR	12.215	6.108	18.323
4	HIMACHAL PRADESH	2,477	1.238	3.715
5.	JHARKHAND	6.540	3.270	9.810
6.	KARNATAKA	14.501	7.251	21.752
7.	MADHYA PRADESH	20.639	--	20.639
8.	MAHARASHTRA *	22.386	11.193	33.579
9.	MANIPUR	0.803	0.402	1.205
10.	NAGALAND	0.593	0.297	0.890
11.	RAJASTHAN	25.354	--	25.354
12.	UTTAR PRADESH	63.159	--	63.159
	TOTAL:	213.309	52.080	265.389

* For Maharashtra, these allocations were effective from November, 2009 in view of additional rice (52000 tonnes) & wheat (50000 tonnes) allocation issued upto October, 2009 at MSP based issue price.

4.23 Measures taken on the Price front

- 4.23.1 Government constantly studied and monitored the issues related to the impact of drought on production, availability of essential commodities and their domestic and international prices. There is an inter-ministerial consultation mechanism at the highest level to frame policy for containing the price rise. The inflation trend was monitored regularly by the Committee of Secretaries, Cabinet Secretariat, PMO and the Cabinet Committee on Prices (CCP). The Government set up a Price Monitoring Cell (PMC) in the **Department of Consumer Affairs** to monitor and analyse price data and trends of availability of essential commodities. The Department also regulated the stock of essential commodities.
- 4.23.2 The fifteen essential commodities the prices of which are monitored by the cell are Rice, Wheat, Atta, Gram Dal, Tur (Arhar) Dal, Sugar, Gur, Groundnut Oil, Mustard Oil, Vanaspati, Tea, Milk, Potato, Onion and Salt. Information on Retail Prices is received on daily basis from 18 centres of the country. Similarly, information on Wholesale Prices is received from 37 centres of the country on weekly basis for monitoring purposes.
- 4.23.3 The Government took several additional initiatives to improve the availability of essential commodities like wheat, rice, sugar, edible oils, pulses etc. and to moderate price of essential commodities. These include the scheme of subsidised distribution of edible oil which was continued upto 31st October, 2010 with a subsidy of Rs. 15 per kg. All public sector trading companies were advised to intensify their efforts for the import of pulses from all sources; National Agricultural Cooperative Marketing Federation of India Limited (NAFED) and National Consumer Cooperative Federation (NCCF) were authorized to implement the scheme to distribute imported pulses at a subsidy of Rs. 10 per kg in States where this scheme could not be implemented by the State Governments. For augmenting domestic sugar stocks and check sugar prices, import of duty free raw and white/refined sugar was allowed. Also accelerated sale of sugar processed out of imported raw sugar was allowed. Stock limits were notified in respect of wholesalers and bulk consumers to ensure that released non-levy sugar actually reaches the consumers. Raw sugar was permitted to be refined by importers of raw sugar in other States.

CHAPTER-5



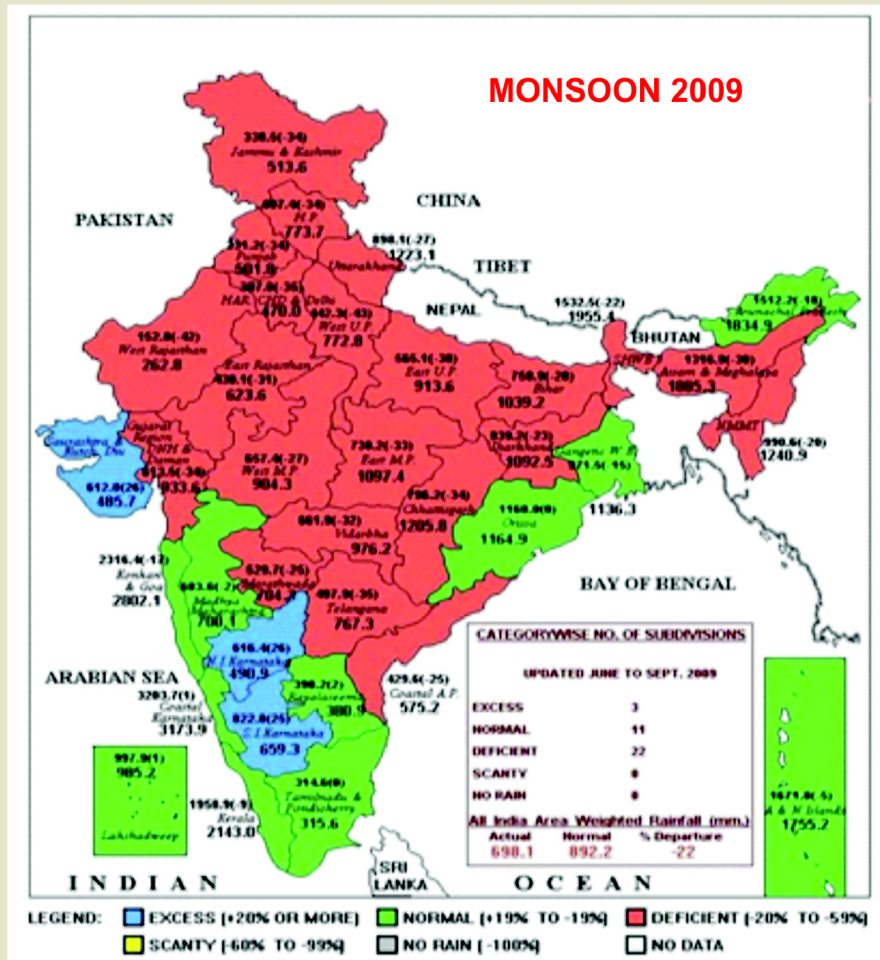
LESSONS LEARNT

LESSONS LEARNT

1. Drought has a slow and prolonged effect. Therefore there is need to identify the signs of the impending drought early and monitor the same proactively to gauge its severity, so that appropriate timely measures can be taken to mitigate its impact.
2. Impact of drought is primarily felt on production of foodgrains and fodder, and in the availability of water for domestic and industrial consumption
3. Mitigating the impact of drought needs both short term and long term planning, particularly with reference to agricultural production.
4. Short term planning is required to save the standing crops in the field and for taking alternate/catch crops in the areas where sowing/crop has failed due to drought within the cropping season.
5. Long term planning is required to make good the losses suffered by bringing additional area under agricultural operation in the following cropping season if the rains are good later in the year.
6. In the wake of drought, it makes sense to revisit the ongoing Government programmes on agricultural production and make necessary modifications where possible to provide additional benefit/subsidy, etc., to the affected farmers to enthuse them to make extra effort for achieving higher production and for reducing losses.
7. In the event of drought there is fall in employment in the agricultural sector, which seriously affects the livelihood security of the farm labourers. Hence, it is imperative to explore possibilities of alternate employment, especially in the rural sector to reduce the hardships of the rural poor.
8. There is a need to create water harvesting structures, excavate existing community and private water bodies to store water for agricultural and domestic consumption. As part of long term planning, the States should use the opportunities available under the centrally sponsored programmes, like, MGNREGS, RKVY, NFSM etc., for this purpose.
9. Constant review of ground water position is required to economise on ground water use.
10. Since States have ready availability of funds under CRF, they should immediately mount relief measures for the vulnerable sections of the society without waiting for the release of funds from NCCF. Special care should be taken of the children, pregnant women and lactating mothers.
11. There is a need to bring back fodder cultivation in the crop cycle. If required, farmers may be encouraged to go for fodder cultivation by free distribution of fodder seeds and subsidy for other inputs required for fodder cultivation.
12. Pre-positioning of inputs in the areas receiving good rains in largely drought conditions helps in salvaging agricultural production to some extent.
13. Impact of drought has a negative psychological impact as there is loss of food grains production. As a result there is a tendency to hoard foodgrains leading to artificial price rise. To contain this tendency, the administrative machinery at all levels needs to remain vigilant and take firm demonstrative action against the hoarders/black marketers.
14. All the States should have in place alternate crop plan and put them into operation whenever there is failure of monsoon. Short duration crops, coarse cereals and fodder should be considered for alternate crop plans.
15. There should be a systematic rationing in the use of water during drought so that requirements of the majority of the population could be met from the available sources. The States having a history of droughts should have a water use policy and action plan in place for the drought period.

16. The situation on availability of drinking water and fodder should be closely monitored and remedial measures initiated on priority for ensuring availability in areas of distress. Sources of drinking water should be maintained properly so that emergency supply can be made with least hindrance and wastage.
17. Periodical monitoring of drought at the highest level, both at the central and state levels has a salutary effect; it provides encouragement and recognition to the machinery which is engaged in containing the impact of drought.
18. Since drought has a multi-dimensional impact, a committee should be set up with Secretaries of all the Departments and Agencies of the State Government responsible for taking appropriate drought mitigating measures under the chairmanship of the Chief Secretary and the Committee should meet as often as required to take stock of the prevailing situation. Similar Committee should be formed at the district level under the chairmanship of the District Magistrate for reviewing the situation at the grass root level.
19. Help of the local self government representatives and social organizations should be taken in implementing mitigating measures, particularly in the administration of relief measures.
20. All the States should formulate / review and update the existing drought manual / codes in consonance with the Manual for Drought Management published by the Government of India.
21. States should make use of the on-line Drought Management Information System (DMIS) prepared by the Government of India for regularly posting their information so as to enable regular dissemination of information by mitigation agencies.
22. National Agricultural Drought Assessment and Monitoring System (NADAMS) under National Remote Sensing Centre (NRSC) should be used to assess the impact of drought for drawing up alternative agricultural plan.

PART-II



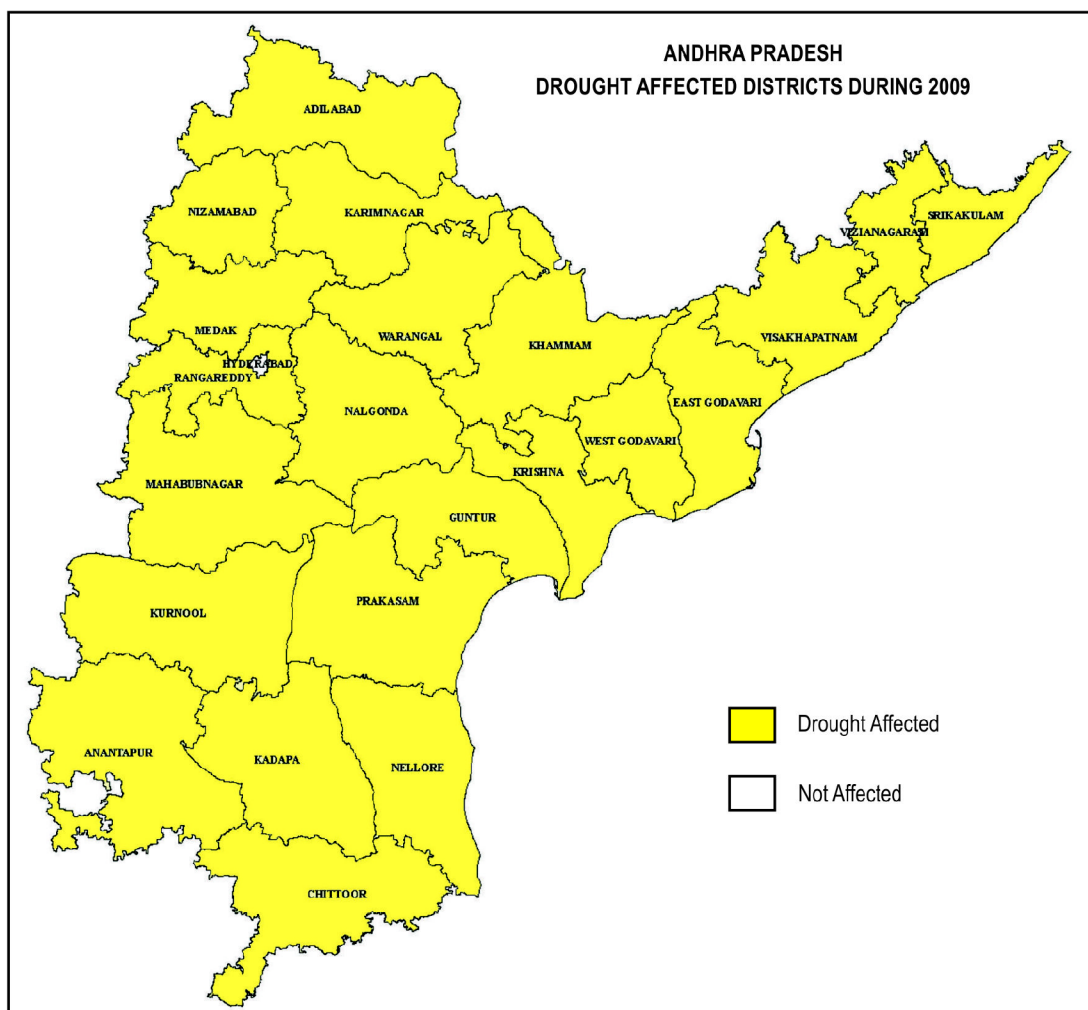
- STATE LEVEL

Introduction

Due to adverse meteorological and hydrological conditions during South-West Monsoon 2009, 14 States, viz., Andhra Pradesh, Assam, Bihar, Himachal Pradesh, Jammu & Kashmir, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Manipur, Nagaland, Orissa, Rajasthan, Uttar Pradesh declared drought/drought like situation in 338 districts. This Chapter details the impact of drought in the 14 States and efforts made by the State Governments to contain the impact of drought.

ANDHRA PRADESH

22 Districts declared drought affected : Adilabad, Anantapur, Chittoor, East Godavari, Guntur, Kadapa, Karimnagar, Khammam, Kurnool, Krishna, Mahabubnagar, Medak, Nalgonda, Nellore, Nizamabad, Prakasam, Rangareddy, Visakhapatnam, Vizianagaram, Warangal, West Godavari, Srikakulam.



1. RAINFALL SCENARIO AND DECLARATION OF DROUGHT

The annual normal rainfall in the state is 940 mm, of which 624 mm (66%) is received from South-West monsoon (June-Sept.), 224 mm (24%) from North-East monsoon (Oct.-Dec.) and remaining 10% rainfall takes place during the rest of the months.

The South - West monsoon arrived in southern Andhra Pradesh on 26-05-2009 and further advanced to Rayalaseema and South Coastal Andhra Pradesh on 01-06-2009. All the districts except Srikakulam and Vizianagaram received deficit rainfall due to break in the monsoon and the rains were not widespread

As on 15-8-2009, the State received a rainfall of 178.9 mm as against the normal rainfall of 392.8 mm with a deficit of 54%. Out of 23 districts in the state, 21 districts received deficient / scanty rainfall. In 2008, the State received 430.3 mm of rainfall which was 10% in excess of the normal rainfall during South-West monsoon. The details of district wise rainfall received during 2009 are given in table below:

Table-1 : District-wise Rainfall as on 15.08.2009

S.No	Name of the District	Rainfall in mm		
		Actual	Normal	% Dev.
1	Srikakulam	375.4	419.9	-11
2	Vizianagaram	408.9	411.0	-1
3	Visakhapatnam	304.6	426.4	-29
4	East Godavari	244.5	471.9	-48
5	West Godavari	231.5	492.8	-53
6	Krishna	138.1	416.2	-67
7	Guntur	122.8	305.9	-60
8	Prakasam	96.6	195.2	-51
9	Nellore	84.5	190.7	-56
10	Chittoor	176.5	248.0	-29
11	Kadapa	106.3	222.9	-52
12	Anantapur	70.0	172.1	-59
13	Kurnool	127.3	265.1	-52
14	Mahabubnagar	118.0	280.3	-58
15	Rangareddy	168.9	378.5	-55
16	Hyderabad	113.5	370.3	-69
17	Medak	134.8	456.5	-70
18	Nizamabad	259.6	579.5	-55
19	Adilabad	314.0	678.4	-54
20	Karimnagar	225.4	557.5	-60
21	Warangal	165.6	556.6	-70
22	Khammam	229.9	599.3	-62
23	Nalgonda	75.6	338.1	-78
	STATE	178.9	392.8	-54

Note: A=Actual, N=Normal and D=Departure Percentage (+/-)

During the month of June, the State received 64.7 mm of rainfall as against the normal of 108.5 mm with a deviation of (-) 40%. In the month of July 2009, almost all the districts in the State experienced deficit rainfall. The rainfall received in July was 85.8 mm as against the normal of 188.7 mm, with a deviation of (-) 55%. Upto 15th Aug' 2009, the state as a whole received 28.4 mm of rainfall as against the normal of 95.6 mm with a deviation of (-) 70%.

Taking into consideration the deficit rainfall, dry spells, area left fallow and damage to the standing crops etc., as on 15th Aug'2009, i.e., after 2½ months after the onset of monsoon, the State Government reviewed the situation and declared 981 mandals in 21 districts as drought affected on 9th Sept'2009. Subsequently another 87 mandals in one more district (Srikakulam) were also declared as drought affected on 22nd September, 2009. Thus 1068 mandals in all were declared as drought affected in 22 districts of the State. The district-wise number of mandals declared as drought affected is given in the table below:

Table-2 :Districts-wise Mandals Declared as Drought Affected

Sl. No	Name of the District	Total Number of Mandals	Number of Mandals Declared as Drought affected
1	Srikakulam	38	26
2	Vizianagaram	34	19
3	Visakhapatnam	43	42
4	East Godavari	60	58
5	West Godavari	46	46
6	Krishna	50	49
7	Guntur	57	55
8	Prakasam	56	56
9	Nellore	46	46
10	Chittoor	66	66
11	Kadapa	51	51
12	Anantapur	63	63
13	Kurnool	54	49
14	Mahabubnagar	64	64
15	Ranga Reddy	37	32
16	Hyderabad	16	0
17	Medak	46	46
18	Nizamabad	36	36
19	Adilabad	52	52
20	Karimnagar	57	57
21	Warangal	51	50
22	Khammam	46	46
23	Nalgonda	59	59
Total		1128	1068

II. IMPACT OF DROUGHT

a) Agriculture:

Normal area sown in the State during Kharif and Rabi seasons is 79.07 lakh ha. and 37.68 lakh ha. respectively.

During Kharif, 2009 the area sown was only 35.87 lakh ha. as on 15th Aug'2009, as against the normal area of 71.85 lakh ha. Thus, 51% of the season's normal area could not be sown due to deficit rainfall in the State.

During Kharif, 2008, the percentage of sown area as on 15th August, 2008 was 75% of the normal area. Similarly, during the Kharif, 2007, the percentage of sown area as on 15th August, 2007 was 81% of the normal area.

The crop-wise area left unsown and area dried up, is given in the following table:

Table -3: Crop-wise Damage (Area in ha.)

Sl. No.	Crop	Season's Normal area (up to 15.08.2009)	Normal area as on 15.8.2009	Total Area affected
1	Paddy	2381270	1852628	56129
2	Maize	494634	384825	181408
3	Bajra	58008	45130	8782
4	Jowar	150686	117232	57915
5	Ragi	48807	37971	1555
6	Sugarcane	213944	166448	3241.24
7	Redgram	421802	328161	35793
8	Blakhkgram	75089	58419	49697
9	Greengram	241655	188007	130688
10	Horsegram	7889	6137	859
11	Groundnut	1366756	1063336	131907
12	Sesamum	85150	66246	11682.9
13	Sunflower	113126	88012	22681
14	Soybean	94567	73573	104070
15	Castor	215686	167803	38131
16	Cotton	1064462	828151	160600
17	Chillies	151423	117806	1624
	Total	7184954	5589885	996763

Total Normal area sown in Kharif for the state as a whole : 79.07 lakh ha.

- **As on 15th Aug'2009**

- Normal Sown Area in 981 mandals : 71.85 lakh ha.
- Sown Area : 35.87 lakh ha. (49.9%)
- Unsown Area : 35.98 lakh ha. (50.1%)
- Area damaged out of the Sown Area : 9.97 lakh ha.

- Area sown by 30th Sept'2009 : 63.42 lakh ha.
- Revised estimate of Area damaged : 13.63 lakh ha., out of the Sown Area
- The Unsown area was 50.1% as on 15th Aug' 2009 and 19.79% by end of Kharif season in the State.

The crop-wise estimated production loss due to drought in the State is given in the table below:

Table -4: Crop-wise Estimated Production Loss

(In Lakh MTs)

Sl.No.	Crop	Normal	2008	2009
1	Rice	72.58	83.81	48.75
2	Maize	17.13	15.68	12.65
3	Total Foodgrains	93.23	102.33	63.66
4	Total Pulses	3.87	3.36	3.22
5	Total Oil Seeds	13.48	7.92	9.26
6	Sugarcane	202.96	153.22	111.84

(Source: As per Kharif 2009 advance estimates of the D&ES., Hyderabad.)

b) Horticulture:

The total cropped area under horticulture is 19.80 lakh ha. in the state, of which 0.88 lakh ha. area was damaged as on 15th Aug'2009 due to drought. By the end of Sept'2009, after final enumeration the area damaged was reported to be 25,711.52 ha.

Out of the total area damaged, the area damaged under fruit crops was 20,297.22 ha. in the districts of Prakasam, Kadapa, Anantapur, Kurnool, Mahabubnagar, Medak and Nalgonda. Among fresh fruit crops, Sweet Orange and Banana were mostly damaged.

Under vegetable crops, 4,768.40 ha. out of the sown area of 7,695 ha. suffered losses. Further, nurseries of vegetable crops raised by small and marginal farmers could not be transplanted in 24,172 ha. due to drought in the districts of Guntur, Prakasam, Kurnool, Ranga Reddy, Adilabad and Khammam.

In case of other crops, 129.51 ha. of chillies, 514.39 ha. of turmeric, 2.0 ha. of flowers suffered losses by more than 50% due to the drought situation.

c) Life and Property:

A total of 1068 mandals of 22 districts were affected due to drought in the State. The estimated loss of crops under agriculture and horticulture in money value was about Rs.3350.56 crores. Approximately 5.95 crores of population was affected due to drought. Cattle camps were organized in three districts during the drought period. State Government took all steps to prevent distress sale of land, cattle, farmer suicide, etc.

III. MITIGATION ACTIVITIES

a. Administrative:

Control Rooms were set up at Mandal/District/State levels in the State. These Control Rooms were monitored by Mandal Revenue Officer at Mandal level, the District Collector at District level and the Commissioner Disaster Management at State level.

The State Government conducted fortnightly review meetings with concerned heads of departments and monitored the adverse seasonal conditions and drought situation in the State.

The following review meetings were held on adverse seasonal conditions:

- The Chief Minister reviewed the adverse seasonal conditions with the respective Heads of the Departments (HODs) on 15th July 2009, 1st and 20th August, 2009, 2nd September, 2009 and 16th October, 2009.
- The Chief Secretary of the State reviewed the drought situation at regular intervals with Commissioners / all the HODs / District Collectors through Video Conference.
- The Commissioner, Disaster Management reviewed the situation on fortnightly basis with all the concerned HODs since 15th July, 2009. The situation was also reviewed with the District Collectors telephonically at regular intervals and required steps were taken for mitigation of drought situation, particularly with regard to drinking water supply in the state.
- Following further steps were also taken:
 - The State Government appointed senior officers as Special Officers in 20 districts for monitoring the drought situation in the respective districts.
 - The Departments undertaking Rural Water Supply (RWS) and Urban Water Supply (UWS) were directed to monitor the drinking water situation on a daily basis and ensure supply of 40 ltrs per head per day in rural areas and 70 ltrs per head per day in urban areas.
 - The Agriculture Department instructed district level administration to open Control Rooms in the office of the Joint Director, Agriculture in the respective districts for monitoring of drought situation.
 - The Agriculture and Animal Husbandry Departments issued instructions for enumeration of agriculture area and livestock affected by constituting village / mandal level committees.
 - Instructions were issued to district administration for assessment of losses to agriculture and horticulture crops and for organizing camps at critical places by provision of fodder, feed, health care water etc.
 - The Animal Husbandry Department instructed the district administration to take immediate steps for production of fodder locally by supply of fodder seed at 75% subsidy and if possible under tank beds.

'PARISHKARAM' - A Special Call Centre

A special call centre with a toll free number '1100' for BSNL users and '18004251110' for mobile users was organized during the drought period in the State to receive information/complaints related to drought situation from public and to take necessary action.

This call centre was centrally located at Hyderabad with 30 lines and all the grievances were registered, redressed, updated online and reviewed expeditiously on daily basis.

All the Heads of the Departments and District Collectors effectively utilized this facility in redressal of the problems / grievances received. The Commissioners and the Heads of the Departments closely monitored the redressal and updation of grievances on daily basis. This system immensely helped in providing timely assistance during the drought period.

A large number of complaints/grievances were received in this Call Centre from the drought affected areas which were suitably redressed.

b. Release of Funds:

The State Government released an amount of Rs.576.77 crores to mitigate the drought affected families in the State. The department wise details are:-

Agriculture	-	Rs.506.47 crores *
Horticulture	-	Rs. 26.18 crores **
Animal Husbandry	-	Rs. 3.50 crores
Rural Drinking Water Supply	-	Rs. 18.50 crores
Urban Drinking Water Supply	-	Rs. 22.12 crores

c. Agriculture:

In order to mitigate the problems of farmers in drought affected districts, the department prepared a contingency plan to take up seed distribution among the farmers in the affected districts.

An amount of Rs 576.77 crores was released to mitigate the impact of drought affected families in the state of which Rs.471.47 crores was towards agricultural input subsidy and Rs.35.00 crores towards seed subsidy.

d. Horticulture:

A contingency plan was prepared by the department for raising of fruit Crops, vegetables, spices and vegetable nursery beds belonging to small and marginal farmers.

An amount of Rs 26.18 crores was released, of which Rs.21.18 crores was towards input subsidy and Rs.5.00 crores towards seed subsidy in the affected areas in the state.

e. Employment Generation:

Provision of wage employment is an important drought mitigation measure. State Government is fully geared up to provide wage employment to all the wage seekers in the rural areas under Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS). During the month of July, 2009, 49 lakh labourers and during Aug 2009, 45 lakh labourers reported for work. Accordingly, in the month of July, 2009, and in the month of Aug 2009, 462 lakh mandays and 390 lakh mandays respectively were generated.

In order to sustain the level of employment for next 5 to 6 months, the State Government raised a demand of an additional amount of Rs.1239.25 crores for providing employment to the labour in the drought affected areas of the State.

f. Drinking water

Rural Water Supply

Drinking water is provided in rural areas through bore-wells & hand-pumps (3,29,166), Protected Water Supply schemes (49,772) and Community Protected Water Supply schemes (476) covering groups of villages.

The drought conditions have affected the supply of drinking water in the rural habitations. As a result, many of the districts experienced the following problems:

- The ground water table had fallen down drastically as evidenced by the fact that 11,625 bore-wells had gone dry as on 15.8.09. During the previous year as on the date, only 5,136 bore-wells dried up.
- PWS / CPWS schemes became dry due to depletion of ground water which in-turn led to increased usage of hand-pumps resulting in more repairs of the hand-pumps.
- Ingression of salinity into ground water had increased in the coastal areas.
- There was increase in the fluoride concentration in many habitations in the fluoride affected districts due to depletion of ground water. Hence, it had become inevitable to transport water to these habitations.
- The depleted ground water scenario and incremental suction necessitated more repairs to the pumping machinery.
- The level of supply in all the habitations had gone down.

In order to mitigate the drinking water scarcity a contingency plan was prepared by the RWS & UWS for an amount of Rs.211.07 crores. The measures included transportation of drinking water, flushing of bore wells, deepening of bore wells/open wells, hiring charges of irrigation wells for drinking water supply, augmentation of PWS / CPWS Schemes, Restoration of PWS Schemes, etc. Component wise contingency action plan and the funds required are furnished below:

Component	No	Amount (Rs. in Crores)
Transportation of drinking water	1616	17.41
Flushing of borewells	5257	4.02
Deepening of bore wells/Open wells	4798	15.39
Hiring charges of Irrigation wells for D.W supply	1294	3.02
Augmentation & Restoration of Existing Schemes	2907	171.23
TOTAL		211.07

An amount of Rs 18.50 crores was released to mitigate the impact of drought in the state.

Urban Water Supply

There are 110 Municipalities and 15 Municipal Corporations in Andhra Pradesh. The maintenance of Water Supply in 110 Municipalities and 14 Municipal Corporations is being looked after by the respective Municipalities / Corporations and the Water Supply and Sewerage facilities in the twin cities of Hyderabad and Secunderabad are being looked after by Hyderabad Metro Water Supply and Sewerage Board.

54 Urban Local Bodies (ULBs) are dependent on surface water sources i.e., canals & reservoirs, 38 ULBs are dependent on infiltration wells, galleries & filter points & the remaining 30 ULBs are dependent on ground water.

Surface water sources to towns, viz, Chittoor, Kandukur, Siddipet, Suryapet, Yellandu, Mahaboobnagar, Nirmal and Wanaparthy reached dead storage or dried up completely, hence the water supply to these towns was supplemented by transportation of water by hiring of private irrigation bore wells.

Sub- surface flow in the sources to towns, viz., Marakapur, Raychoti, Vijayanagaram, Bheemunipatnam, Jaggaihpeta, Anakapalle and Srikalahasti depleted drastically, which resulted in low yields. Hence water supply to these towns was supplemented by transportation of water by hiring of private irrigation bore-wells.

Water storage in summer storage tanks providing water supply to Chilakaluripet, Narasaraopet, Macherla, Vinukonda and Ongole towns reached dead storage level. Maximum storage capacity of summer storage tanks is for 60 days requirement. However, these tanks could not be filled due to non release of water into canals from the respective reservoirs, as expected in the month of June 2009. Therefore, water had to be released immediately into the canals exclusively for drinking water purpose so as to pump water into summer storage tanks.

Due to depletion of ground water table, there was reduction in the yield from bore-wells leading to drying up of wells in the towns namely Madanapalli, Kadiri, Dharmavaram, Gudur, Punganoor and Hindupur, which are dependent on ground water.

Similarly, towns, viz., Rayadurg, Kadapa, Badvel, Dhone, Janagaon, Bhainsa, Sircilla, Jagtial, Korutla, Metpally, Mancherla, Bellampally, Mandamarry, Ramagundem, Medak, Armour, Kamareddy Tandoor and Vikarabad were also affected due to scarcity of drinking water.

A contingent plan was prepared for an amount of Rs.119.12 crores to mitigate drinking water problems upto the end of March 2010. The details are as follows:

		(Rs. in Crores)
1.	Transportation of drinking water	67.16
2.	Hiring of Private bore wells / Filling of S.S. Tanks	19.89
3.	Deepening /Flushing of bore wells, repairs to bore wells & Purchase of Water	32.07
Total		119.12

g) Cattle care:

Livestock farming plays a pivotal role in the rural economy. 23.63 lakh families depend on livestock farming in the state. The requirement of fodder is met mostly from the crop residues of various food crops and in a limited way from the fodder crops and ever diminishing pasture lands.

Due to the adverse seasonal conditions, fodder production reduced by 16.84 Lakh MTs and milk production by 26% during August 2009. Severe fodder deficit / nutritional deficiency is the primary cause for major productive and reproductive problems of livestock.

Apprehending shortage of fodder in view of the prevailing deficient rainfall and dry spells; the State Government formulated a contingency plan for Rs.128.50 crores and took immediate measures to promote fodder production locally at individual farmer level through supply of fodder seed at 75% subsidy. The farmers were encouraged to take up fodder cultivation wherever irrigation facilities were available or by utilizing available soil moisture.

Under the Fodder Development Programme, the Department supplied 29,040 qtls. of fodder seed on 75% subsidy to grow fodder in about 1.5 lakh acres owned by individual farmers to yield about 45 to 65 lakh MTs. of green fodder.

It was planned to organize 400 cattle camps in the critical drought affected areas in the months of March, April and May 2010 covering about 4 lakh bovine population in the state with an amount of Rs.93.80 crores.

Further, it was also planned to provide fodder to the animals outside the cattle camps and provision for medicines and mineral mixture in the affected areas with an amount of Rs.34.70 crores.

An amount of Rs.3.50 crores was released to mitigate the drought affected families in the state for cattle care.

h) Food-Grains:

Andhra Pradesh has an extensive network of Public Distribution System (PDS) spanning into 43,000 fair price shops located in the remotest and inaccessible pockets of the state catering to the needs of the poor citizens of the State. More than 2.3 crore families (belonging to BPL and APL categories) are covered under this system. All the BPL families were supplied rice at the subsidized rate of Rs. 2 per kg through the PDS. The State Government spends nearly Rs.4000 crores every year on the maintenance of Public Distribution System.

The Government of India allocates rice, both under the BPL/AAY as well as APL category to the states. This allocation was, however, not sufficient to meet the requirements of all BPL cardholders in the state. The State is required to meet this deficit by resorting to local purchases incurring huge amounts not within the means of the state.

i) Gratuitous Relief:

Several assetless families in rural areas are entirely dependent on agricultural labour for survival. During the drought period, such families suffer from lack of income due to stoppage of agricultural operations. Some of these families do not have able bodied members who could work under MGNREGA and provide income for the entire family. It was estimated that there were around 20 such families in every Gram Panchayat aggregating to 500 families in each Mandal, who fall in this category.

It was proposed to provide gratuitous relief to 100 families (@ Rs.75/- per family per day) in each of the drought affected mandals for 90 days. The estimated budget worked out to Rs.66.22 crores for 981 mandals.

j) Drought Pensions:

Around 7000 old disabled and destitute persons who were over 60 years of age received social security pension of Rs.200/- per month. It was estimated about 1500 persons per mandal who were over 65 years were not covered under the Social Security Pension Scheme. Such persons could not take up any work due to old age and infirmity. During normal times, they are dependent on other earning members in the family. These people needed to be taken care of during the drought period.

It was proposed to cover 1500 such persons per mandal under Drought Pension Scheme (@ Rs.200/- per month per person) for a period of 10 months from Sept' 2009 to June, 2010. The requirement of funds was Rs.294.30 crores for 981 mandals.

k) Nutritional Support Programme (NSP)

The Department of Women Development & Child Welfare is implementing the programme of nutritional support to Women and Children under the Integrated Child Development Services (ICDS) programme. Children between 6 months to 6 years of age, pregnant & lactating mothers are covered under this programme for provision of hot cooked food/ pre-mixes and Modified Therapeutic Food (MTF). There are 64,542 Anganwadi Centres in the drought affected mandals of the State.

Decrease in production and supply of pulses during drought led to rise in the prices of these commodities / ingredients, thus eroding the purchasing power of the people. Lack of wage employment added to the malnutrition of the vulnerable sections of the society.

The Adolescent age is the most important stage in the development and growth of girl child which must be taken care of in every respect to improve both the nutritional status and also the psychological status of the girls.

There were 25.82 lakh adolescent girls in the state who required to be provided with nutritional support.

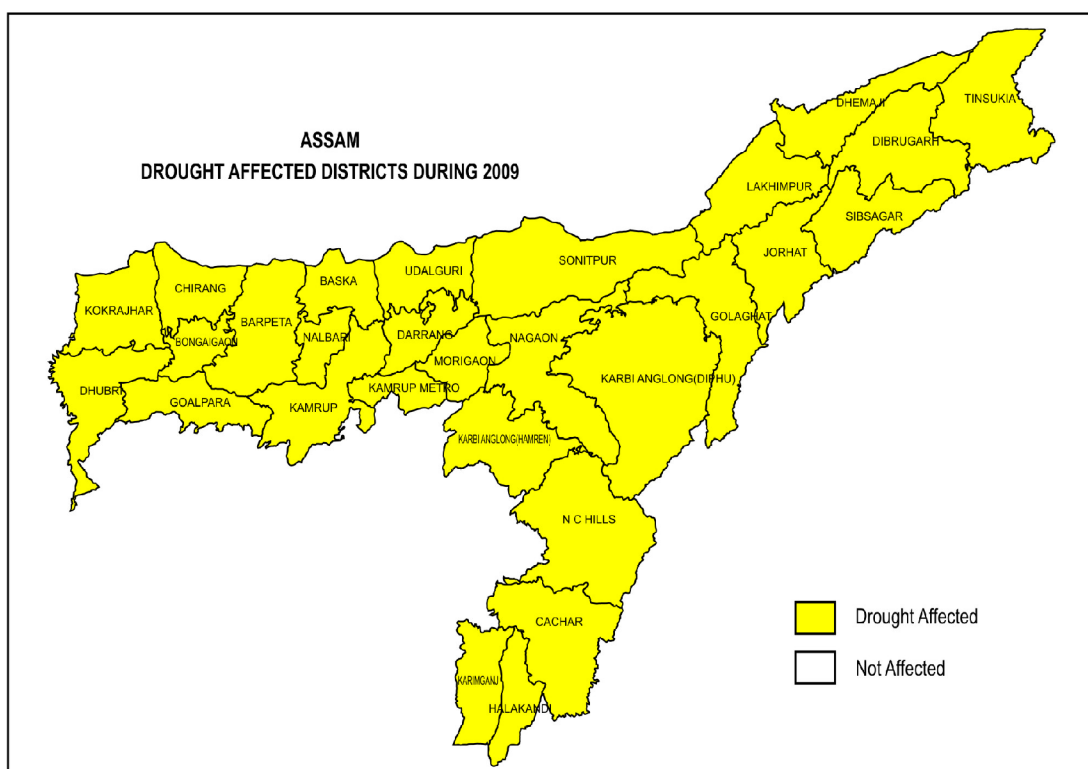
Under this programme, it was proposed to cover 25.82 lakh adolescent girls with Supplementary Nutrition Programme in the drought affected mandals by providing 6 kgs of rice per month @ Rs.6.50 per kg i.e., @ B.P.L rate in the State. Therefore, the funds required for implementation of the programme upto end of May 2010 was Rs.80.55 crores.

l) Assistance from Calamity Relief Fund (CRF):

The State Government released an amount of Rs.576.77 crores from CRF to mitigate the impact of drought on the affected families in the State and anticipated central assistance from National Calamity Contingency Fund (NCCF).

ASSAM

All 27 Districts declared Drought affected : Baksa, Barpeta, Bongaigaon, Cachar, Chirang, Darrang, Dhemaji, Dhubri, Dibrugarh, Goalpara, Golaghat, Hailakandi, Jorhat, Kamrup, Kamrup (M), Karbi-Anglong, Karimganj, Kokrajhar, Lakhimpur, Morigaon, Nagaon, Nalbari, North Cachar Hills, Sivsagar, Sonitpur, Tinsukia, Udalguri



I. RAINFALL SCENARIO AND DECLARATION OF DROUGHT

The State is situated in the high rainfall climatic zone and normally experiences 2-3 waves of floods every year. But in 2009, the rainfall during the Kharif season i.e. from 1st June to the first week of August 2009 was very low. The overall deficit in the State was recorded as (-) 35% by 30th June, (-) 27% by 31st July and (-) 17% by 15th August. Even though the deficit reduced to (-) 17% by 15th August 2009, there was a wide variation in rainfall among the districts. The deficit in the various districts in the State ranged from -20% to -69%.

Statements of rainfall pattern in the State and the districts during 2009 from 1st January to 22nd July are as detailed below:

Table-1: Rainfall Received by the State during January to July 2009

Month / Period	Actual (mm)	Normal (mm)	Departure from normal	Pattern
January,2009	4.2	18.4	-77%	Scanty
February, 2009	10.0	27.4	-63%	Scanty
March,2009	40.0	78.4	-49%	Deficient
May,2009	185.3	334.4	-45%	Deficient
June, 2009	270.7	419.5	-35%	Deficient
1st June to 15th July, 2009	425.7	627.3	-32%	Deficient
1st June to 22nd July, 2009	470.7	717.0	-34%	Deficient

Table -2: Rainfall Received in the Districts of Assam during 2009

Month / Period	Pattern of rainfall in the districts			
	Normal rainfall	Deficient rainfall	Scanty rainfall	No rainfall
January	Nil	4 districts	5 districts	14 districts
February	Nil	10 districts	4 districts	9 districts
March	6 districts	8 districts	8 districts	1 districts
April	10 deficient	8 deficient	5 deficient	Nil
May	6 deficient	14 deficient	5 deficient	Nil
June	6 deficient	12 deficient	5 deficient	Nil
1st June to 15th July	6 deficient	13 deficient	2 deficient	Nil
1st June to 22nd July	5 deficient	14 deficient	2 deficient	Nil

Table -3: District wise Rainfall for the period 1st June to 30th September, 2009

Sl.No.	DISTRICT	ACTUAL (mm)	NORMAL (mm)	%DEP	CAT.
1.	Barpeta	1791.7	1281.3	40%	E
2.	Bongaigaon	1680.2	2051.0	-18%	N
3.	Cacher	1833.7	2053.3	-11%	N
4.	Darang	1105.3	1254.0	-12%	N
5.	Dhubri	1313.4	1932.4	-32%	D
6.	Dibrugarh	1579.4	1717.5	-8%	N
7.	Goalpara	1376.2	1663.8	-17%	N
8.	Golaghat	836.3	1060.2	-21%	D
9.	Hailakandi	741.4	1624.6	-54%	D
10.	Jorhat	906.6	1383.8	-34%	D
11.	Kamrup	934.6	1203.7	-22%	D
12.	Karbi-Anglong	648.5	718.6	-10%	N
13.	Karimganj	1910.5	2193.1	-13%	N
14.	Kokrajhar	1838.5	2051.0	-10%	N
15.	Lakhimpur	1675.7	2140.5	-22%	D
16.	Morigaon	888.0	1305.1	-32%	D
17.	N. C. Hills		1636.9		*
18.	Nalbari	1066.5	1203.7	-11%	N
19.	Nowgong	481.0	1305.1	-63%	S
20.	Sibsagar	1282.9	1475.4	-13%	N
21.	Sonitpur	1087.6	1290.7	-16%	N
22.	Tinsukia	1419.1	1458.2	-3%	N

(Source: IMD)

Following deficient and erratic rainfall, the State Government declared 14 districts as affected by drought like situation on 14.07.2009 and thereafter the remaining 13 districts were declared drought affected on 22nd July 2009.

II. IMPACT OF DROUGHT

a) Agriculture:

The deficit rainfall caused widespread damage to Kharif crops in the State. An area of about 8.70 lakh hectares was affected covering 15.95 lakh farm families in 15362 villages. It was estimated that only 15.90 lakh hectares out of the targeted 18.00 lakh hectares would be covered under crops by the end of the season and 2.10 lakh hectares (12% of targeted area) may remain uncovered during Kharif, 2009

Moreover, Winter Paddy seedling of 60,000 hectares was affected by drought. In some cases Sali Paddy seedling had to be raised more than once. Normally, approximately 16.24 lakh hectare area is planted with Sali paddy in the State during the Kharif season. But during 2009 Sali paddy could be planted only in 14.50 lakh hectares and around 1.74 lakh hectares could not be planted. Even though, an area of 14.50 lakh hectares had been planted with Sali paddy, the yield could not be of desired expectation as moisture level had gone down considerably due to poor rainfall and low precipitation during the peak season of plantation. Although late rainfall from the first week of August, 2009 improved the condition, still it was estimated that there would be loss of production to the tune of 20% to 25%.

The total loss in terms of money value incurred by the State was estimated to be Rs. 406.23 crore. A statement showing district-wise financial loss due to drought condition, is shown below, with the basis for estimating the loss:

1. Anticipated loss calculated @ 600 kg / hectare rice
2. Value of rice Rs. 854.00 per Quintal
3. Prices of Sali seeds @ Rs. 1200.00 quintal.
4. For uncovered area @ 1500 kg per hectare.

Table-4: District-wise financial loss due to drought condition

District	Total transplanted area (Area in hectares)	Total affected area (Area in hectares)	Uncovered area (Area in hectares)	Loss from transplanted Sali (in Crore rupees)	Loss from uncovered area (in Crore rupees)	Loss from damage of seeding (in Crore rupees)	Total loss (in Crore rupees)
Dhubri	19300	32257	6451	4.958	8.260	1.855	15.073
Goalpara	32000	451	90	0.069	0.115	0.026	0.211
Kokrajhar	54624	65000	13000	9.991	16.644	3.738	30.373
Chirang	21000	12628	2526	1.941	3.233	0.726	5.901
Baksa	60500	2673	535	0.411	0.684	0.154	1.249
Udanguri	48788	18727	3745	2.879	4.795	1.077	8.751
Bongaigaon	36673	7261	1452	1.116	1.859	0.418	3.393
Barpeta	63850	62930	12586	9.673	16.114	3.619	29.406
Nalbari	59890	22100	4420	3.397	5.659	1.217	10.327
Kamrup (M)	69367	13281	2656	2.041	3.401	0.764	6.206
Kamrup		67079	13416	10.311	17.176	3.858	31.345
Darrang	37737	46654	9331	7.171	11.946	2.683	21.801
Sonitpur	103116	41229	8246	6.338	10.557	2.371	19.266
Nagaon	70316	93217	18643	14.329	23.869	5.361	43.559
Morigaon	18876	34745	6949	5.341	8.897	1.998	16.236
Golaghat	72628	81160	16232	12.475	20.781	4.668	37.825
Jorhat	71790	9284	1857	1.427	2.377	0.534	4.338
Sivsagar	96120	16442	3288	2.528	4.210	0.946	7.683
Dibrugarh	66711	4336	967	0.667	1.110	0.249	2.026
Tinsukia	52050	49000	9800	7.532	12.547	2.818	22.897
Lakhimpur	93200	54400	10880	8.362	13.929	3.129	25.420
Dhemaji	56200	15015	3003	2.308	3.845	0.864	7.017
Cachar	74800	30200	6040	4.642	7.733	1.737	14.112
Hailakandi	27787	11850	2370	1.822	3.034	0.682	5.567
Karimganj	58770	35200	7040	5.411	9.013	2.024	16.448
K-Anglong	89756	34041	6808	5.232	8.716	1.958	15.907
N.C. Hills	4374	8182	1636	1.258	2.095	0.471	3.824
Total	1450205	369342	173868	133.630	222.600	50.000	406.230

Crop area of 8.69 lakh ha is likely to be affected in 15362 villages in the State affecting about 15.95 lakh farm families.

The table below shows the number of villages, affected farm families and crop area estimated to be affected, district wise:

Table - 4: District wise affect of Drought on Kharif Paddy

Sl.No.	District	Villages affected	Farm families affected	Crop area affected (Hectares)
1	Dhubri	729	98984	32257
2	Goalpara	82	2220	451
3	Kokrajhar	1007	107825	65000
4	Chirang	308	20430	12528
5	Baksa	235	5346	2673
6	Udalguri	495	31249	18727
7	Bongaigaon	330	10920	7261
8	Barpeta	718	124705	62930
9	Nalbari	410	26500	22100
10	Kamrup (M)	137	9714	13281
11	Kamrup	883	86831	67079
12	Darrang	463	105824	46654
13	Sonitpur	1305	104327	41229
14	Nagaon	888	292811	93217
15	Morigaon	572	69686	34745
16	Golaghat	958	107131	81160
17	Jorhat	215	36074	9284
18	Sivsagar	3325	18335	16442
19	Dibrugarh	388	18233	4336
20	Tinsukia	800	41000	49000
21	Lakhimpur	570	59725	54400
22	Dhemaji	523	31700	15015
23	Cachar	865	80000	30200
24	Hailakandi	300	2400	11850
25	Karimganj	607	64830	35200
26	Karbi-Anglong	637	26230	34041
27	North Cachar Hills	607	12467	8182
	Total in Assam	15362	1595493	869342

b) Life & property:

No report received on out break of any disease / epidemic affecting human and animal population due to drought. No human /cattle camps opened up on account of drought. No report of migration of population and distress sale of land and cattle and farmers suicide on account of drought.

III. MITIGATION ACTIVITIES:

a) Administrative:

Revenue and Disaster Management Department set up state control room in the capital to monitor the situation and apprised the Chief Minister daily, on the basis of the report received from the different districts on drought and its impact on various sectors. Under the Chairmanship of the Chief Secretary, the State Level Committee on Drought / Flood monitored the situation and took measures to mitigate the impact of the calamity on the population in the state.

A State Level Committee was constituted with officials of Agriculture, Revenue & Disaster Management, Fishery, Animal Husbandry & Veterinary, and Panchayat & Rural Development Departments to guide and monitor proper implementation of the action plans in their districts.

All Deputy Commissioners were directed to prepare district specific action plan for Rabi and early Rabi crops in consultation with the progressive farmers of the district and submit proposals to the Government for release of funds for timely implementation of the action plans. The Deputy Commissioners were directed to select seeds/ crops suitable to the soil conditions and implement the action plans in their districts.

Drought is an unusual phenomenon in Assam. However, the situation was monitored regularly at the level of the Chief Minister who directed all Line Departments to provide immediate relief to the affected farmers on war footing.

The Deputy Commissioners were asked to activate their drought action plans for supply of drinking water, fodder and irrigation, particularly to the Small and Marginal farmers.

To mitigate the effects of the Drought situation the State Govt. released Rs. 78,36,05,969/- for Rabi Seeds etc. as per requirement received from the districts.

b) Agriculture:

Revenue & Disaster Management Department provided funds to all the Deputy Commissioners for drought mitigation activities including making available diesel free of cost to the Small & Marginal farmers for operating pumps for irrigating paddy fields in districts affected by poor rainfall till 25th August, 2009.

Table - 5 : Details of Agriculture Contingency Plan for crops, season wise:

Sl. No.	Input (Seed)	Physical (Quintal)	Area to be covered (Ha)	Amount (Rs. In Lakh)
1.	Blackgram (Pre Rabi)	15750	70000	1102.50
Rabi				
2.	Mustard	16000	160000	1016.32
3.	Lentil	15000	50000	1350.00
4.	Pea	10500	20000	678.30
5.	Wheat	60000	50000	1996.80
6.	Maize	11250	50000	698.40
7.	Corander	2000	20000	100.00
8.	Potato	101250	4500	2703.40
9.	Summer (Boro Paddy, Variety: Mashuri, Ranjit, Joymoti, Bishnuprashad, Jyotiprasad, Boro-1, Boro-2, IR-50)	40000	100000	1170.00
10.	Contingency	LS	20.00	
Total =		271750	524500	10815.72

Optimum utilization of funds under various Centrally Sponsored schemes was emphasized in drought affected districts.

It was proposed to distribute diesel free of cost to the farming families having Shallow Tube Wells / Low Lift Pumps to save the standing crops. An estimate of 4.00 lakh hectares would be covered under this scheme during the Kharif season.

In addition to this, it was also proposed to cover another 4.00 lakh hectares under assured irrigation facility to help the affected farmers to compensate for their loss through higher production of Boro Rice and Rabi crops.

As the weather condition improved by the end of July the farmers were able to cover most of the Winter Paddy area by late transplanting of fresh Winter Paddy seedlings. It was anticipated that the drought situation and late transplantation would affect the overall production of Winter Rice during 2009. It was observed that production of Winter Paddy was by and large satisfactory.

c) Irrigation:

In order to provide immediate relief to the Small and Marginal farmers, action was taken by the Irrigation Department to revive the irrigation potential of 10,000 ha during the drought like situation through 217 schemes, for which an amount of Rs. 7.00 crore was required. The concerned agencies were instructed to go ahead with the works of repairing of the said 217 Major, Medium & Minor irrigation schemes.

In addition to the above, 119 diesel operated schemes of the department were identified to extend help by providing Petroleum/Oil/Lubricant to the small and marginal cultivators by the district administration. Accordingly, the concerned agencies were instructed to forward the application of the respective Water Users Associations/Field Management Committees of the schemes to their agriculture counterparts and Deputy Commissioners of the districts for getting the Petroleum/Oil/Lubricant free of cost as a relief measure.

Steps for expanding irrigation facilities during the Rabi crop season of the year was also provided to be taken up by reviving 168 partially defunct irrigation schemes at a cost of Rs. 124 Crore. On completion, this would revive a total irrigation potential of 55,674 ha out of which about 21,000 ha was meant for Rabi in addition to the existing Rabi potential of 21,111 hectares

d) Power:

The State Government planned for intensive agriculture programme during Rabi in the State to tide over the situation and for this purpose additional allocation of 50 MW of power would be required from the Government of India. The Irrigation Department would deposit the required funds for completing the infrastructure works for power supply to their schemes.

e) Employment Generation:

Projects/Schemes & availability of jobs under MGNREGA:-

The State P&RD had a labour budget of Rs. 1361 crore approved by the Govt. of India but it was insufficient in view of the increased pressure on MGNREGA worksites in view of the drought like conditions prevailing in the districts. The expenditure during first 4 months of the financial year 2009-10 increased by about 7 times that of the corresponding period of previous year.

Rural Unemployment

The drought condition also resulted in unemployment of landless agricultural labourers in the rural sector. Around 40%-50% of a total of 12.63 lakh agricultural labour were to be provided with alternative employment in various sectors due to the prevailing drought conditions. The affected population was to wait till the end of March/April to get the benefit from Rabi crops and till such time some alternative means of livelihood was to be created.

f) Drinking Water:

Drinking Water Supply

In order to mitigate the temporary scarcity of drinking water, the Public Health Engineering Department took the following measures:

- New drinking water schemes were implemented expeditiously out of the already sanctioned schemes of the department.
- Existing defunct Spot sources and Piped Water Supply Schemes (PWSS) were made functional as an immediate relief measure, by undertaking major & minor repairs.
- Drinking water was supplied through tankers/truck mounted PVC Reservoirs in Rural areas from existing water supply schemes.

The Public Health Engineering Department took up the following activities:

- 877 spot sources were repaired and restored in drought affected area
- 26 existing PWSS were restored in affected areas
- 1190 new Spot sources were installed (from normal plan)
- 52 new PWSS were completed & put in service
- 32 habitations / villages were supplied water through tankers

i) Installation of additional Shallow Tube Wells (STWs) (Long Term Measures)

Additional irrigation potential of 2.0 lakh ha could be created by installing one lakh STWs with diesel/ electrical pump sets as a long term measure to face drought - like situation and achieve higher production of Rabi and Boro crops.

As per Survey of Central Ground Water Board, there is scope for creation of additional irrigation through installation of potential 7.00 lakh of STWs in the State and there was big gap between potential and availability of STWs. Therefore, to provide irrigation to the needy farmers, the Department proposed to provide additional one lakh STWs to the farmers at subsidized rate.

g) Animal Husbandry & Veterinary:

Fodder availability (Contingency and actual supply of fodder in drought affected districts)

State Animal Husbandry & Veterinary Department has proposed the following action plan for drought mitigation in the State:-

- Establishment of 53 Fodder Banks/Depots in each of the sub-divisions of the State at an estimated cost of. Rs. 21.20 Lakh. Price of fodder was calculated @Rs.60.00 per quintal.
 - Distribution of Fodder Seeds to 1000 farmers in each of 53 sub-divisions @ 5.00 kg per farmer with total cost involvement of Rs. 92.75 lakh @ Rs. 35.00/kg of seeds;
 - Procurement of UMMB (Urea Molaless Mineral Blocks) 700 grams/day/ head for 60 days @ Rs. 12.00 per kg at an estimated cost of Rs. 360.00 lakh
- Total Rs. 473.95 lakh

h) Providing Cattle care

- I. The following activities were proposed:
- II. Proposal to organize 50 camps for vaccination & Animal Health check up in 53 sub-divisions of Assam at an estimated cost of Rs. 132.50 lakh.
- III. Proposal to procure medicines & vaccines for health camps under CRF at an estimated cost of Rs. 294.00 lakh

- IV. Proposal to organize 5 camps in each of the 53 sub-divisions of the State for providing food, water, shelter & transportation to abandoned/distressed animals with cost involvement of Rs. 20,000/- per camp with the total cost of Rs. 53.00 lakh

Total Rs. 479.50 lakh

GrandTotal Rs. 953.45 lakh (say Rs. 9.54 crore)

h) Availability of foodgrains:

Food grain availability & their prices

Local productions being insufficient, essential commodities have to be procured from outside the State. A total projected household of the State was 60.20 lakhs, of which 12.02 lakh were BPL card holders and 7.04 lakh were AAY card holders. The requirement of State under PDS was higher than the allocation made by Government of India.

• **Stock position & prices of essential commodities**

Stock position as on 25.08.2009

Rice - available for 12 days

Pulses - 87 days

Sugar - 40 days

Salt - 56 days

• **Availability of essential commodities in open market**

Rice - 216960 MT

Wheat - 14486 MT

• **Pulses - 201223MT**

Sugar - 32759 MT

Salt - 34359 MT

S.K. Oil - 18023 MT

Daily requirement of essential commodities

Rice - 17780 MT

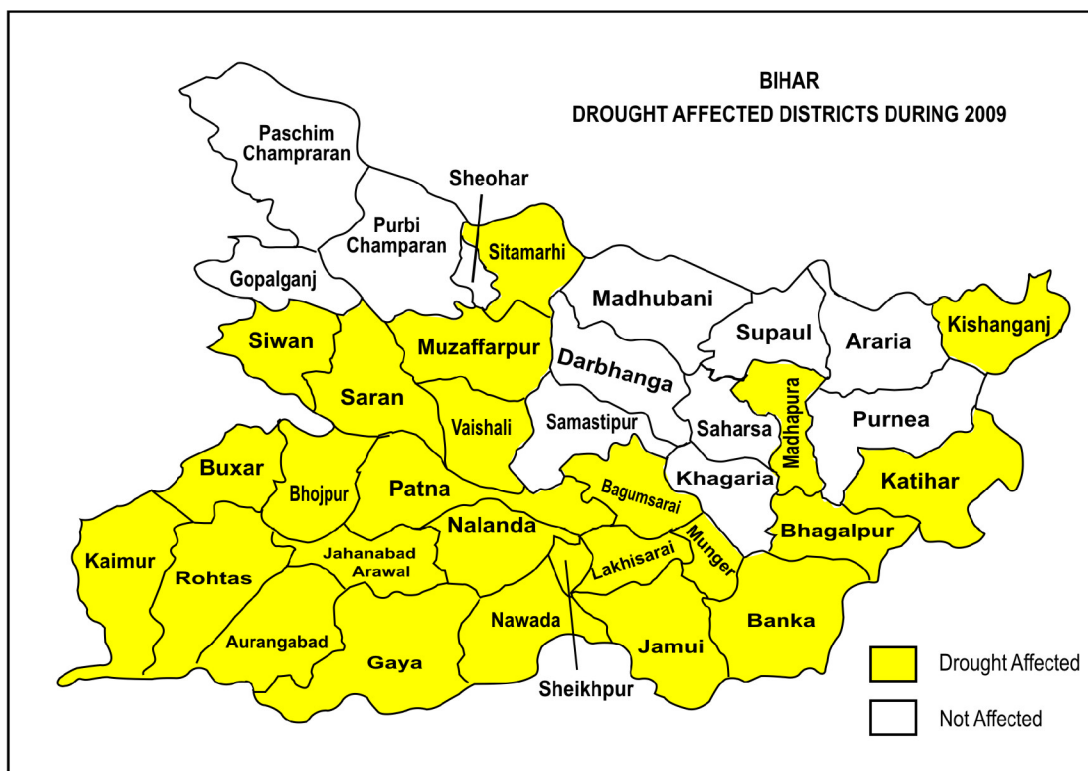
Pulses - 2325 MT

Sugar - 827 MT

Salt - 620 MT

BIHAR

26 Districts declared drought affected: Arawal, Aurangabad, Banka, Begusarai, Bhagalpur, Bhojpur, Buxar, Gaya, Jahanabad, Jamui, Kaimur, Katihar, Kishanganj, Lakhisarai, Madhepura, Munger, Muzaffarpur, Nawada, Nalanda, Patna, Rohtas, Saran, Shekhpura, Sitamarhi, Siwan, Vaishali



I. RAINFALL SCENARIO AND DECLARATION OF DROUGHT

Normal arrival of monsoon in Bihar is in the second week of June. In 2009 the monsoon arrived about two weeks late. However, even after inception, it did not cause much rainfall. The state received deficient to scanty rainfall with scattered distribution & rainy days were followed by long dry spells accompanied by higher than normal temperature. During the monsoon 2009 season the state received 736.3 mm actual rainfall against the normal of 1039.2 mm with a deficiency of 29%.

Due to deficient rainfall and erratic behavior of South West Monsoon 2009 the State declared 26 districts as drought affected on 10.08.2009. A map showing the drought affected districts is as under.

II. IMPACT OF DROUGHT

a) Agriculture:

- Normal kharif/rabi area in the state: Normal area of Kharif and Rabi crops in Bihar are about 39.00 Lakh hectares and about 31.20 hectares respectively.
- Impact of deficient rain in sowing of crops (with reference to time of sowing):
- Nursery raising was delayed in some parts.
- Transplanting was delayed.
- Over age seedlings were transplanted.
- Deficient rainfall did not favour healthy growth of seedling.
- Intermittent dry spell coupled with high temperature restricted proper growth of paddy crops & other standing crops also withered under moisture stress.
- Coverage of paddy was severely restricted. Paddy was transplanted only in 23.03 Lakh hec. against the normal area of 35 Lakh hectares
- Crops affected (crop wise area and production) with damage in terms of monetary value: Crop wise coverage and expected production during kharif 2009 was as under:

Table -1 : Crops affected and damage in terms of monetary value

Sl. No	Crops	Covered area (in 000' ha)	Estimated production (in 000'MT)	Crop damage in terms of money (in Crores)
1	Rice	2303	2763	4650.53
2	Maize	299	355	166.99
3	Pulses	83	55	105.75
4	Oilseed	8	6	28.86

b) Life & property:

126.6 lakh of human population and 110 lakh of animal population were affected by drought. A directive was issued by the Health Department to all the Regional Commissioners / District Magistrates / Civil Surgeons to ensure the following preparation:

- Every district was directed to have their Action Plan.
- The Districts were directed to be prepared with following arrangements:-
- Stockpiling of essential Medicines.
- Tents for temporary medical camp.
- Maternity Huts for pregnant mothers.

- Fogging machines with Malathion for spraying in camps as per need.
- Chloroscope for monitoring the purification of drinking water (Training of the paramedical staff for this)
- Pathological mobile van to combat any epidemic out break.
- Ambulance with life saving drugs & equipments.
- Vehicles for medical mobile teams.
- Isolation Ward in institutions / medical colleges/ district hospitals/ sub Divisional hospitals & referral hospitals to combat the epidemic outbreak.
- Medical mobile teams were directed to visit camps / shelters setup in drought affected areas.
- In special circumstances at sensitive places deputation of medical officers / paramedical staff maximum for three / till the epidemic exists.
- At State level -
 - a) A monitoring cell was established.
 - b) Bleaching powder & ORS packets were stockpiled.
 - c) Bleaching powder & ORS packets were supplied to districts.

In view of the above mentioned action taken by the Health Department, no Epidemic or Drought related diseases were reported from the drought affected districts.

III MITIGATION ACTIVITIES:

a) Administrative:

In view of the drought situation in the state, the State Government immediately set up a control room (24x7) in the Disaster Management Department to monitor the situation in the affected districts. Officers and staff were assigned roster duty round the clock to maintain the MIS and information flow to different quarters. Instructions were also issued to all the District Magistrates to setup similar control rooms at the district level to have a close vigil on the situation and rainfall. A separate webpage www.drought2009.bih.nic.in was also developed by the State Control Room, Disaster Management Department, Government of Bihar to upload press reports, rainfall data, situation report, circulars issued to concerned authorities, mitigation measures taken by different departments on daily basis.

Before declaring drought in 26 districts, a meeting was held at the Chief Minister's level to discuss the gravity of the impact of shortfall in rain on agriculture, fodder availability and drinking water in different districts of the state. Discussions were also held to plan out interventions under different sectors by the Line Departments. For this purpose, it was also directed by the Chief Minister that a Contingency Plan for drought mitigation may be prepared well in advance.

The Government formally established the Crisis Management Group (CMG) on 22nd June 2009 comprising of Principal Secretaries/ Secretaries of different Line Departments under the chairmanship of the Chief Secretary. The situation was continuously reviewed and monitored on a daily basis in the meeting chaired by the Chief Secretary. It was further decided to conduct Crisis Management Group (CMG) meeting twice a week (i.e. on Monday & Wednesday). Later this Group was meeting once a week (i.e. on every Wednesday) as per the decision taken in the CMG meeting held on 29th October 2009. Similarly a Task Force was constituted at the district level to review and monitor the situation at the district and lower levels. Ministers and Departmental Secretaries were also reviewing and monitoring the situation in their respective Departments. Ministers and Secretaries/ Principal Secretaries were assigned districts for close supervision and guidance and oversight of relief work in the drought affected districts. The Chief Minister personally monitored the situation with the members of CMG, Departmental heads, Ministers and others concerned, regularly.

In view of the prevailing drought, the State Government initiated measures to provide immediate relief to the affected population and also make necessary preparations after scientifically estimating the future

scenario which was likely to arise due to scarce water conditions. Besides making necessary arrangements for irrigation, fodder and drinking water for cattle and other animals, the State Government stepped up its efforts to create employment opportunities for landless labourers through the schemes implemented by the Rural Development Department including Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) and other poverty alleviation schemes. The State Government also planned distribution of gratuitous relief to the drought affected families after their grain stock was exhausted. The Government also issued orders for storing one quintal grain in every Panchayat for combating emergencies.

All the districts were asked to form a task force, consisting of officials of different Line Departments to monitor the situation. Steps were taken for providing necessary assistance as per govt. norms and for preventing any starvation death at this particular stage, as indicated below:

b) Agriculture:

- Agriculture department was instructed to have a close vigil on the daily rainfall situation and crop coverage / crop condition in the affected districts.
- The Department was asked to provide seed and diesel subsidy to the farmers in the affected districts.
- The Department was also directed to implement crop contingency plans.
- Direct seeding of short duration varieties of paddy was encouraged till the first week of Aug. in upland soils.
- Sowing of Urd, Moong, Kulthi, Maize, Sunflower etc. was encouraged where paddy could not be transplanted.
- 773.8 qtls. of toria seeds was made available to districts for sale on subsidy.
- Additional 200 qtls of toria seed was made available as Minikits for free distribution.
- A 4-day campaign was launched by the Agriculture Department to suggest measures to the farmers for saving standing kharif crops, sowing alternate crops and early sowing of Rabi crops.
- The Department was asked to utilize the funds under various centrally sponsored schemes with special focus on drought affected districts;
- Funds specially released by the State Government for repair of agriculture damages; Seed Subsidy - Rs. 50 Crore sanctioned and released for implementing contingency plan and early sowing Rabi crops, and Rs. 3.95 crore was sanctioned and released for Fodder seeds @ 50% of the cost.
- Drive for distribution of additional Kisan Credit Cards (KCCs);

Mega camps were organised every month at block level for distribution of Kisan Credit Cards to facilitate credit to the affected farmers. 414541 Kisan Credit cards were sanctioned till 30.09.09. In K.C.C Mega camp on 09.11.2009. 56672 K.C.C were distributed with average credit limit of Rs. 45,000 per K.C.C.

- Implementation of Diesel Subsidy Scheme with details on fund utilized (both state & central)
 - Total fund released Rs.345.58 crores
 - Total fund distributed Rs.43.0331779 crores
 - State share Rs.21.516589 crores
 - Central share Rs.21.516589 crores

c) Irrigation & Electricity:

- The concerned Department was asked to make functional all Minor Irrigation works with necessary power supply and repair all govt. tube wells and/or install new tube wells if required for irrigation purpose.

- In this context the department also coordinated with the State Electricity Board to sort out the electricity problems reported and ensure uninterrupted electricity supply in the drought affected areas for providing continuous irrigation facility. Both the Departments were also instructed to form a Special Task Force for regular monitoring of the irrigation points for smooth irrigation services. A control room was also made functional in the State Electricity Board for lodging complaints relating to power supply and transformer problems in these districts.

d) Animal & Fish Resources:

Animal & Fish Resources Department was asked to prepare a plan for setting up cattle relief centres in drought affected districts & make necessary provision for fodder and medicine.

e) Public Health & Education:

Public Health and Education Department was asked to repair or reinstall hand pumps, if found defunct, in drought affected areas on priority and also ensure proper distribution of drinking water through sufficient number of tankers. A Contingency plan in this regard was also prepared for smooth distribution of drinking water in water scarcity areas.

f) MGNREGA:

Rural Development Department was asked to stream line MGNREGA scheme by coordinating with other Departments and ensure proper delivery of income generation schemes for enhancing livelihood support to villagers in affected districts.

g) Food and Civil supplies:

- The Department was asked to ensure stock piling of food materials in affected districts and ensure proper distribution of PDS rice to the needy people.
- The Department was also requested to estimate the food materials required for distribution of Gratuitous Relief if required and prepare plans for procurement and transportation of the same.
- All concerned districts were requested to submit daily situation reports to the Disaster Management Department.

h) Drinking water:

Energizing non functional Tube wells:

- a) 50 non functional high yielding tube wells were made functional upto 30th Nov., 2009.
- b) Renovation of 47 rural piped water schemes was sanctioned under National Rural Drinking Water Programme (NRDWP)
- c) A scheme for commissioning of 187 defunct rural piped water supply schemes due to electric fault and other reasons was also sanctioned.

• Contingency plan for transportation of drinking water and action taken.

- a) 1114 habitations/tolas were identified for transportation of drinking water in case of water crisis in the next financial year.
- b) Contingency plan for transportation of water was prepared.
- c) Currently 13 habitations in Gaya and Kaimur (Bhabhua) districts had water supply problem. Transportation of water through nine tankers to these habitations was being undertaken. 89.6 kilo liters per day water was being transported.

- **Timely repair of hand pumps which have become non- functional.**
 - a) The department did a splendid job by repairing non functional hand pumps on war footing. Against a target of 103009 hand pumps, 139624 hand pumps had already been repaired and made functional.
 - b) 954 hand pumps were made functional by increasing their depth.
 - c) A scheme for repair of 105240 hand pumps at an estimated cost of Rs. 1902.70 lakhs was in the process of being sanctioned.
 - d) A scheme for special repair/ renovation or relocation of 46919 hand pumps was sanctioned at an estimated cost of Rs. 6266.62 lakhs.

- **Sinking of Shallow Tube Wells:**
 - a) 22841 new hand pumps were installed.
 - b) 79 new rural piped water supply schemes were commissioned.
 - c) Schemes for installing India Mark-III hand pumps in place of old defunct ordinary hand pumps in drought affected areas was sanctioned. 7721 hand pumps would be made functional at an estimated cost of Rs. 3174.22 lakhs.
 - d) 84 new piped water supply schemes were under the process of being sanctioned.
 - e) 1900 mini piped water supply schemes based on electric motor pump/ diesel generating sets/ solar pumps in water scarcity areas of drought affected districts was under the process of being sanctioned.

- i) **Availability of food grains:**
 - Under the Targeted Public Distribution System food grains were made available to the targeted BPL families under Antyodaya Anna Yojna & BPL Yojna through fair price shops.
 - Under PDS (Control) Order- 2001, provisions were made to appoint a fair price shop for every 1900 population in rural areas and 1350 population in urban areas. Similar fair price shops were functional in remote and inaccessible areas to cater to SC/ST population.
 - All districts were instructed to keep one quintal foodgrain per panchayat as revolving stock. Rs. one lakh was released to drought affected districts for this purpose.

- j) **Release of funds:**

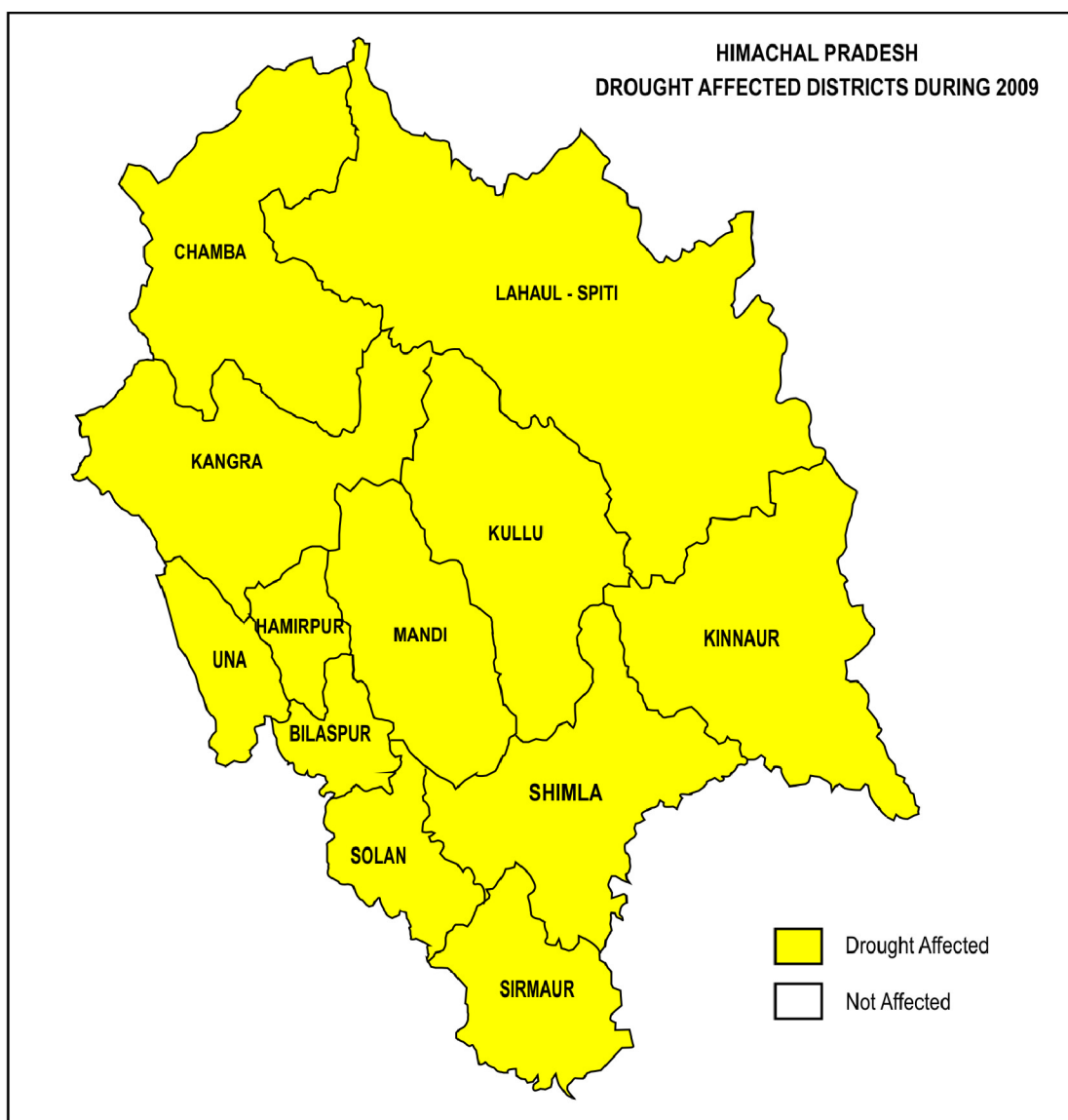
- k) **Involvement of Local Govt. Institutions:**

The village panchayats were empowered to provide relief to the people affected by natural calamities and District Parishads were instructed to make necessary managements in this regard.

Sl.No.	Fund Allotted	(Rs. in Crores)
1	26 Drought affected districts	7.20 Crore
2	PHED for providing Drinking water to drought affected districts	5.00 Crore
3	Health Deptt. For providing health services	0.50 Crore
4	Veterinary & Fish Resources Deptt.	2.00 Crore
Total fund allotted		14.70 Crore

HIMACHAL PRADESH

All 12 Districts declared drought affected : Bilaspur, Chamba, Hamirpur, Kangra, Kullu, Kinnaur, Lahaul-Spiti, Mandi, Shimla, Solan, Sirmaur, Una.



I. RAINFALL SCENARIO AND DECLARATION OF DROUGHT

During 2009, the South West Monsoon arrived in Himachal Pradesh on 30th June, 2009 i.e. late by about 15 days from the normal monsoon arrival date of June, 15. As per the rainfall data supplied by the IMD, the percentage departure of rainfall in the months of April, May and June, 2009 was to the extent of -22% , -25%, -50% respectively. About 20% of area was sown in the months of April-May and 70% of area in the month of June which was the peak Kharif sowing period. Combined analysis of rainfall in the month of June-July (Monsoon) revealed that the rainfall percentage departure was -52% from 1st June to 15th July and -68% from 1st June to 23rd July and. The District wise analysis showed that in the month of June, 2009, 5 Districts received scanty rainfall, 7 Districts received deficient rainfall and 2 Districts received normal rainfall. The analysis of rainfall data showed that in the peak sowing season of Kharif crops i.e. June to mid July, most of the districts either had scanty rainfall or deficient rainfall. It was also observed that rains in the State received were not widespread but sporadic. The State as a whole received rainfall to the extent of 494.2 mm as against the normal rainfall of 773.7 mm during the South-West Monsoon, i.e. a deficit of 36%.

Due to deficient rainfall and erratic behavior of monsoon all 12 districts in the State were declared drought affected on 06.08.2009.

II. IMPACT OF DROUGHT

a) Agriculture:

4,66,531 lakh ha. area was targeted to be sown under major Kharif crops like maize, Paddy, Pulses, Potato, Vegetables etc., against which only 4,24,000 ha. could be sown. Due to deficient and scanty rains in most parts of the State, the sowing could not take place in time. Wherever sowing was done, the seed did not germinate and in such cases, the farmers had to go for re-sowing twice and even three times. Out of the total cropped area of 4.66 lakh ha. in Kharif, 2009, the area affected was 3.53 lakh ha. About 2.88 lakh ha. suffered more than 50% crop loss.

Table -1: Crop loss in terms of monetary value

(Loss in Cr.)

Maize	274.43
Paddy	29.16
Pulses	15.62
Oil Seeds	2.41
Vegetables	288.00
Potato	14.40
Total	624.02

Horticulture crops suffered huge losses. Prolonged drought spell during the winter and summer months caused huge losses to fruit crops. The normal production of fruit crops in different districts in the State was pegged at 9.52 lakh MT for the year 2009-10, which came down to 4.73 lakh MT. Total losses of horticulture crops due to drought and other natural calamities amounted to Rs.248.34 crores.

b) Life & Property:

Due to deficient/scanty rainfall, availability of fodder crops was adversely affected. The impact would, however, be felt in the coming months. Meagre winter snowfall and rain affected the functioning of drinking water schemes in the State as also various irrigational schemes.

Himachal Pradesh is a food deficit State. Agriculture in the State is dominated by Small and Marginal farmers and production is not enough for self consumption, leave alone marketable surpluses. All the essential commodities come from outside and PDS is an important mechanism for meeting the requirements of food and other essential commodities. The poor production of agricultural crops since last few crop seasons increased the demand on PDS. Further, open market prices of commodities also increased considerably.

I. MITIGATION ACTIVITIES

a) Administrative:

- Control Rooms were set up in all 12 District Headquarters and Nodal Officers were appointed to coordinate disaster relief measures
- DDMA's were set up at District level to monitor and coordinate with the State.
- Rs. 1.00 lakh was released to each district for purchase of essential disaster management related equipments.
- Special funds to the tune of Rs. 1.00 crore was made available to the Disaster Management Cell for purchase of essential equipments and for imparting training to improve capacity building in disaster management.
- Land identified and being acquired for installation of Doppler Radar at Shimla.
- Monthly meetings followed by weekly interactions were held at the level of State Relief Commissioner.
- Following Special Girdwari conducted by all District Collectors in Himachal Pradesh to assess the loss to the crops due to deficient rainfall, the State Government declared all the 12 districts as drought affected.
- Besides relief measures taken by the State Government to mitigate the hardships of the affected population, a Memorandum was submitted to the Government of India for assistance under NCCF.

b) Agriculture:

- Under crop contingency planning, the Department advocated sowing of Pulses, Oilseeds and Fodder (Chari, Bajra) in July and Toria, Potato, Peas, Fodder (Oats and Berseem) and vegetable crops during August and September.
- Wide publicity was given to the National Agricultural Insurance Scheme (NAIS) so that farmers could get the full benefit under the scheme.
- Main thrust was given to efficient irrigation through Sprinkler, Drip, Mulching and rain water harvesting through check dams, ponds, and construction of water harvesting/conservation structures.
- A campaign was carried out by the Department of Horticulture by organizing farmers training camps at the village level. In these camps farmers were educated to adopt various water conservation measures like mulching of orchards.

c) Irrigation:

- i) I&PH Department of the State undertook sustainability measures in terms of source augmentation by adopting multi disciplinary approach in terms of setting up of State Water Management Board, to synergize the activities of various departments involved in water management and utilization, to coordinate efforts of various departments for utilizing MGNREGS funds and to encourage construction of water harvesting structures.

- ii) The Department constructed about 110 roof top rain harvesting structures and was in the process of undertaking work for construction of rain water harvesting structures in all schools at the cost of Rs.8.00 crores.

d) Drinking Water

- Drinking water was supplied in the scarcity areas through tankers and at some places on mules.
- To mitigate water scarcity as discussed above, the following contingency plan had been prepared:-

Sr.No.	Description	Amount (in Lakhs)
1.	For installation of 3000 hand pumps in water scarcity areas in the State	5366.94
2.	For energisation of hand pumps to augment the existing water supply schemes (40 Nos.)	86.50
3.	For linking of traditional sources of water with existing schemes	461.50

In addition to the above, 40576 of tankers and 3319 mules were deployed for transportation of water in water scarcity areas. Requirement of financial assistance on this account was Rs.10.31 Cr.(40576 XRs.2500/-) +(3319 Mules X Rs.500/-)

e) Foodgrains:

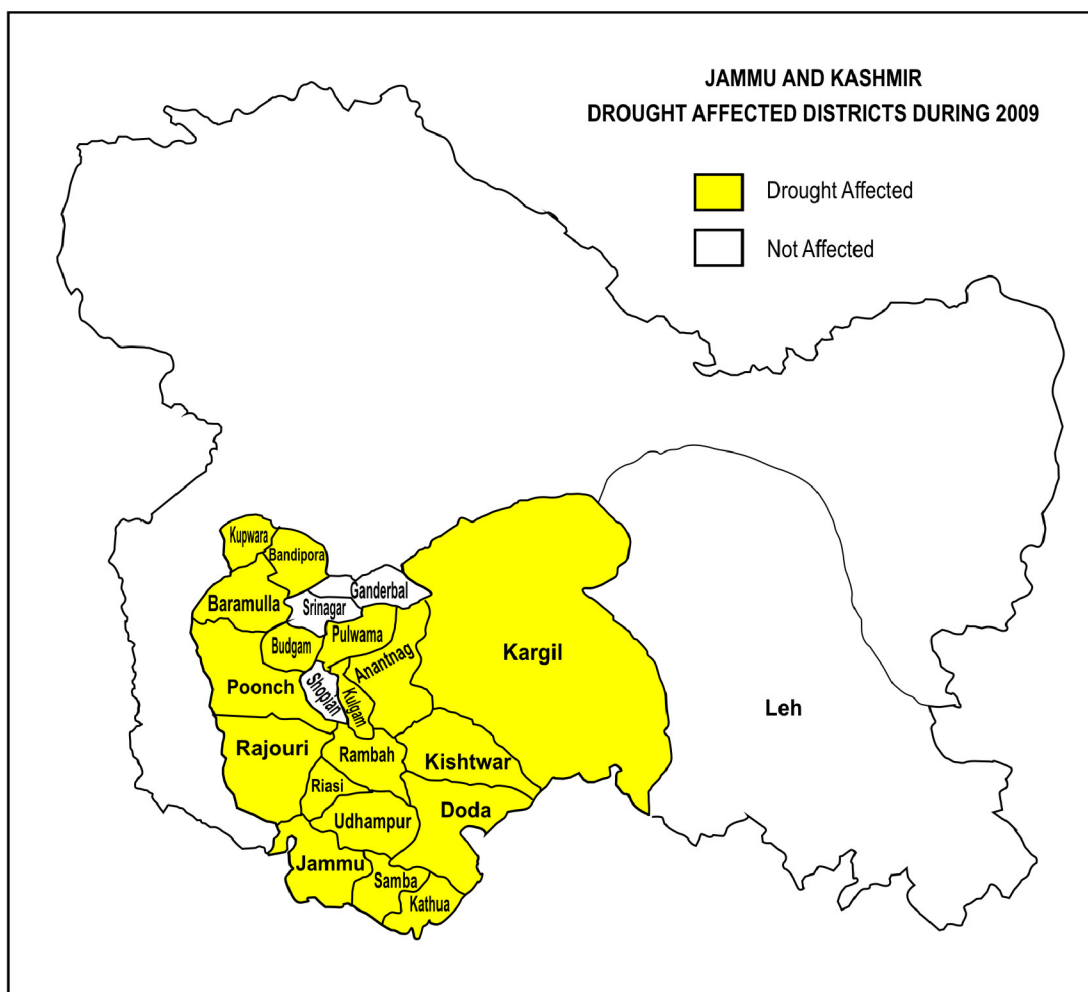
The lifting of foodgrains under the PDS was nearly 100% of the allocation, especially in the APL Category during several months.

f) Financial

The State Government released funds to the tune of Rs.4.25 crores to Agriculture Department and Rs.1.75 crore to Horticulture Department for providing subsidy on seeds to the farmers and Rs.14.34 crores to the I & PH Department for installation of Hand pumps. The Government also released funds for augmentation of water supply schemes, provision of additional hand pumps, linking of traditional water sources, deployment of water tankers, subsidy on transportation of fodder, and for providing subsidized inputs to the farmers.

JAMMU AND KASHMIR

18 Districts declared drought affected : Anantnag, Bandipora, Baramulla, Budgam, Doda, Jammu, Kargil, Kathua, Kishtwar, Kulgam, Kupwara, Poonch, Pulwama, Rajouri, Ramban, Reasi, Samba, Udhampur.



I. RAINFALL SCENARIO AND DECLARATION OF DROUGHT

Jammu and Kashmir witnessed severe drought during 2009 as the monsoon arrived very late and it was erratic and scanty when it arrived, resulting in rainfall deficit to the extent of 34% during the period from June to September, 2009 as compared to the corresponding period of 2008.

Table-1: Status of rainfall in Jammu and Kashmir from 01.06.2009 to 30.09.2009:

Met.Sub-Divisions	Actual rainfall (in mm)	Normal rainfall (in mm)	% departure.
Anantnag	261.1	271.8	-4
Budgam	N.A.	190.7	-
Doda	274.2	370.8	-26
Jammu	562.4	860.6	-35
Kathua	469.2	1033.5	-55
Kupwara	163.6	209.1	-22
Ladakh(Leh)	4.5	36.4	-88
North Baramulla	261.9	292.8	-26
Pulwama	159.3	216.2	-26
Srinagar	124.7	187.1	-33
Udhampur	668.5	1283.5	-48
Total Rainfall	338.1	513.6	-34

Due to deficient rainfall and erratic behaviour of monsoon 18 districts in the State were declared drought affected on 22.12.2009.

II. IMPACT OF DROUGHT

a) Agriculture:

The two Divisional Commissioners got the losses assessed on tentative basis after conducting sample surveys in coordination with the Agriculture and the Horticulture Departments. They reported that loss in respect of Kharif crops was more than 50% and it could further increase due to insufficient rainfall and late sowing.

Table -2: Crop wise area and loss of production during Kharif-2009 vs Kharif-2008:

Sl.No.	Crop	Kharif 2008		Kharif-2009		% loss
		Area (Ha.)	Prodn. (lakh Qtls)	Area (Ha.)	Prodn. (lakh Qtls)	
1.	Paddy	116873	32.8055	102565	12.3520	62.35
2.	Maize	226003	53.3013	199140	16.1200	69.76
3.	Pulses	18598	0.71754	19980	0.2439	66.01
4.	Oilseeds	5367	0.23111	8173	0.088	38.08
5.	Bajra	17892	1.05511	5795	0.28	26.54
6.	Fodder	7638	1.69153	14113	1.405	83.06

Fruit production in both Jammu and Kashmir Divisions also suffered losses. While the monetary loss in Jammu division was to the extent of Rs.61.77crores, the loss in Kashmir Division was to the tune of Rs.140.00 crores.

b) Life & Property:

As many as 9,69,246 families under the categories of APL, BPL and AAY were affected by drought and were in need of free ration.

Though loss of production of fodder crop had taken place in Jammu, Samba and Reasi districts in comparison to Kharif-2008, the State was able to manage the situation without setting up cattle camps/ fodder banks.

III. MITIGATION ACTIVITIES

a) Administrative:

- The State Government declared 18 districts as drought affected.
- "Special Girdawari" was ordered to be conducted wherever required so that exact and clear picture of the damage to crops could be ascertained.
- A meeting under the Chairmanship of the Chief Minister was held on 9th October,2009 to discuss the effect of drought and admissibility of relief in terms of CRF/NCCF norm

b) Agriculture:

While no details about mitigation activities in the context of agricultural activities immediately following drought was available, the State worked out a demand of Rs.135.82 crores for being met from NCCF towards agriculture input subsidy.

c) Drinking Water:

While no information about steps taken to meet the situation in respect of drinking water shortages is available, the State has worked out a demand of Rs.5.00 crores to be met from NCCF for providing emergency supply of drinking water in rural and urban areas of drought affected districts.

d) Foodgrains:

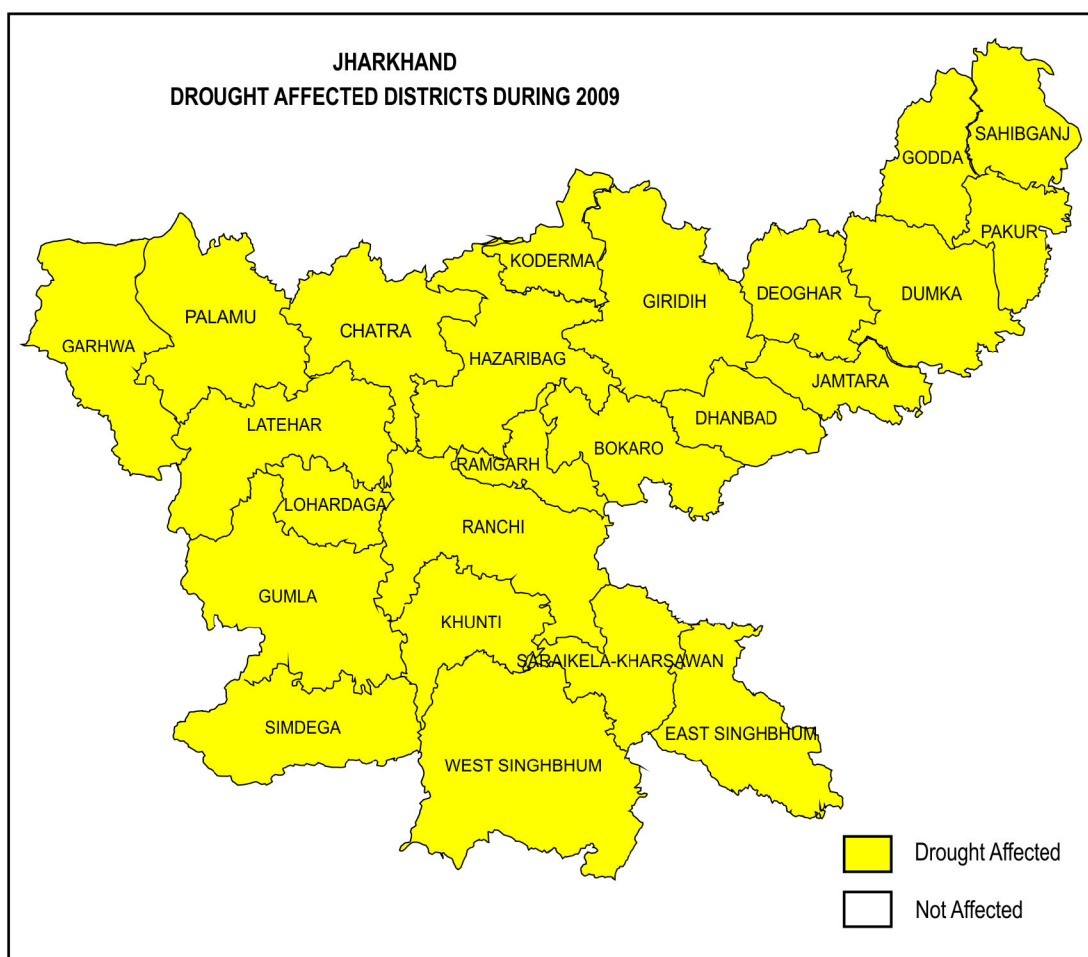
The State resorted to free distribution of foodgrains to the affected families for a period of three months (December 2009, January and February,2010) @35kg. of foodgrain per family per month. Reportedly an expenditure of Rs.71 crores had been incurred on this account.

e) Availability of funds under CRF:

As on 31.03.2010, the State had Rs.347.34 crores as balance in the CRF to take care of expenditure towards measures to be taken to meet requirements arising from natural calamities including drought.

JHARKHAND

All 24 Districts declared drought affected : Bokaro, Chatra, Deoghar, Dhanbad, Dumka, East Singhbhum, Garhwa, Giridih, Godda, Gumla, Hazaribagh, Jamtara, Khunti, Koderma, Latehar, Lohardaga, Pakur, Palamau, Ramgarh, Ranchi, Sahebganj, Saraikela-Kharsawan, Simdega, West Singhbhum.



I. RAINFALL SCENARIO AND DECLARATION OF DROUGHT

Normally Monsoon arrives in the State on 12th June but during 2009 it arrived on 29th June. District wise Actual and Normal Rainfall along with percentage departure from normal in respect of Jharkhand for the period from 01.06.2009 to 30.09.2009 was as follows:-

Table 1: Rainfall during the South West Monsoon

Sl.No.	Districts	Actual (mm)	Normal (mm)	% Departure
1	Ranchi	842.6	1151.0	-26.7
2	Gumla	763.0	1244.0	-38.6
3	Simdega	872.7	1198.3	-27.1
4	Lohardaga	708.5	949.0	-25.3
5	East Singhbhum	881.3	1037.6	-15.0
6	West Singhbhum	895.5	1028.6	-12.9
7	Saraikela-Kharsawan	840.7	996.6	-15.6
8	Palamau	692.1	1091.9	-36.6
9	Garhwa	554.6	1070.5	-48.1
10	Latehar	594.4	1130.7	-47.4
11	Hazaribagh	760.7	1014.4	-25.0
12	Chatra	746.6	1003.4	-25.5
13	Koderma	832.6	1014.4	-17.9
14	Giridih	746.8	1095.1	-31.8
15	Dhanbad	923.3	1079.1	-14.4
16	Bokaro	777.4	1005.5	-22.6
17	Dumka	714.5	1134.6	-37.0
18	Jamtara	892.1	1158.4	-22.9
19	Deoghar	774.2	1012.0	-23.4
20	Godda	646.5	881.2	-26.6
21	Sahibganj	688.6	1076.4	-36.0
22	Pakur	894.1	1415.1	-36.8
23	Khunti	887.3	1020.5	-13.0
24	Ramgarh	692.9	1108.1	-37.4
Jharkhand State		761.6	1079.9	-29.4

The State faced a severe drought situation in all 24 districts. Primarily because of low rainfall during the months of June and July 2009 as compared to the previous year and delayed monsoon showers i.e., their initiation in the last 3 days of June 2009 there has been drastic reduction in the area coverage of paddy and other crops during South West Monsoon-2009.

Table-2: District-wise details of rainfall during June/ July 2009 vs June/July 2008

Sl. No.	Districts	Rainfall during Month of June and July/MM					
		June Average	June 2008	June 2009	July Average	July 2008	July 2009
1	Ranchi	177.9	378.8	45.0	362.4	439.2	286.3
2	Gumla	252.4	263.7	40.1	357.0	342.0	371.4
3	Simdega	187.3	319.8	86.7	403.4	391.0	416.1
4	Lohardaga	137.3	341.2	66.0	305.0	315.6	196.1
5	E. Singhbhum	247.9	585.5	55.9	316.8	238.0	236.7
6.	W. Singhbhum	172.5	456.2	94.9	271.7	218.6	336.6
7.	Seraikella	138.2	568.0	55.7	280.9	317.6	333.1
8.	Palamau	152.4	319.5	32.9	344.7	239.8	254.4
9	Garhwa	148.8	166.4	13.8	362.4	162.4	251.4
10	Latehar	194.2	176.5	60.0	354.4	209.3	173.8
11	Hazaribagh	194.0	380.0	45.7	301.0	411.6	217.2
12	Chatra	167.1	297.3	44.6	308.2	260.3	249.7
13	Koderma	165.7	274.2	76.1	323.7	418.3	230.9
14	Giridih	202.0	282.6	64.0	292.6	578.8	146.0
15	Dhanbad	205.3	159.3	65.2	341.7	484.2	240.2
16	Bokaro	184.8	437.6	36.8	286.8	509.9	207.3
17	Dumka	217.2	211.4	28.2	335.2	408.8	196.6
18	Jamtara	247.7	219.2	66.8	322.6	538.9	145.9
19	Deoghar	184.9	269.6	26.6	363.2	382.8	193.4
20	Godda	186.9	231.7	37.8	251.4	328.1	199.9
21	Sahebganj	225.4	265.4	42.5	320.6	298.3	247.4
22	Pakur	214.0	295.9	42.3	377.3	514.3	212.6
	Total Average	184.9	313.6	51.2	325.3	363.9	242.9

During the entire year 2009, only 373.8mm of average rainfall occurred, of which only 51.2 mm was received in June.

Due to deficient rainfall and erratic behavior of monsoon 4 districts were declared drought affected on 10.07.2009, 7 districts on 31.07.2009 and 13 districts on 03.08.2009. Thus all 24 districts of the State were declared drought affected. A map of Jharkhand depicting affected districts.

II. IMPACT OF DROUGHT

a) Agriculture:

The total Kharif area in the State is 23,55,000 ha. However, due to impact of deficient rainfall during crop sowing period, only 726,137 ha. could be sown. The following crops suffered losses in terms of area and production:-

Table -3: Loss of Area and production of Crops

Crop	Targeted area in Thousand Ha.	Sown Area in Thousand Ha.	Loss in MTs	Loss in Rupees (Crores)
Paddy	1692	462.5	2213049	2058.13
Maize	250	134	162206	121.65
Pulses	361	111	164585	576.05
Oil seeds	52	17.8	19127	66.94

b) Life & property:

There was no outbreak of any disease/epidemic affecting human and animal population arising due to deficient and erratic rainfall during South West Monsoon 2009. There was also no report of any deaths on this count. Similarly, no cases of distress sale of land, cattle and suicides by farmers were reported from anywhere. However, 449 cattle camps were set up by the State and as many as 83684 cattle population benefited from these camps.

III. MITIGATION ACTIVITIES

a) Administrative:

All the Deputy Commissioners of the districts monitored the situation arising from drought on a regular basis. Regular review meetings were held under the Chairmanship of Chief Secretary to monitor the situation and take remedial measures. Instructions were issued to the Deputy Commissioners of all 24 drought declared districts and line departments to take necessary action as required. State Government also released Rs. 169.45 Crores to the districts/ line departments for taking up immediate relief measures.

b) Agriculture:

Agriculture contingency plan worked out by the State Government (crop and season wise).

Table -4 : Summary of crop contingency for 2009-10

Crop	Normal Coverage (Ha.)	Seed required for normal coverage quintal	Seed rate per hectare per quintal	Seed to be distributed quintal	Area covered by seed distribution ha.	Seed replacement rate (in %)
Mustard/rai /tori	88000	7040	0.08	2479	30987	35
Linseed	56000	11200	0.2	1688	8440	15
Lentil	32000	8000	0.25	2400	9600	30
Gram	150000	112500	0.75	22500	29663	20
Pea	35000	26250	0.75	7538	7560	29
Wheat	120000	120000	1	30000	30000	25
Urad	120000	36000	0.3	4452	14840	12
Kulthi	31900	6380	0.2	1060	5300	16
Niger	7500	450	0.08	105	1750	23
Tomato	21805	130.83	0.006	19.62	3270	15
Brinjal	22695	158.865	0.007	20.64	2949	13
Mirch	13443	80.658	0.006	16.55	2758	20
Lady's Finger	29780	2978	0.01	460	4600	15

Required quantity of rhizobium culture was distributed to treat the seeds to cover 7908 ha. 500 units of micro lift irrigation system were proposed to be distributed.

c) Employment generation:

The provisions of MGNREGS were effectively utilized to generate alternate employment. As a result employment to the extent of 502.93 Lakh mandays was generated

d) Drinking water:

There are 318390 Tube wells in the State. While 268226 tubewells were functional, the remaining 50164 tubewells were defunct. Immediate action was taken to energize non-functional tubewells. The State was also pursuing completion of ongoing IWDP Programmes. Action was taken to implement the contingency plan of transportation of drinking water. Similarly, action was initiated for repair of handpumps which had become non-functional. Funds released under Government of India Schemes/ State Schemes to create additional facilities for availability of water, both in the urban and rural areas were optimally utilized.

e) Cattle care:

Contingency plan for cattle care and supply of fodder in drought affected districts was kept in readiness and as stated earlier, 449 cattle camps were set up in the State which benefited 83864 animals.

f) Food grains

Food grains were distributed to the affected people, especially to BPL families through Fair Price Shops. District wise break up of the actual quantity of food grains distributed/made available for the drought districts for the Antyodaya families and the BPL families was as under:-

Table - 5: District-wise breakup of distribution of foodgrains to Antyodaya families

Sl. No.	Name of Districts	Population in 2001	Number of Antyodya Families	Quantity of Grain for Antyodaya Families (in quintals)	
				Rice	Wheat
1	2	3	4	5	6
1.	Sahebganj	927584	40625	867.44	554.54
2.	Pakur	701616	19808	422.90	270.37
3.	Gumla	760488	32947	703.42	449.82
4.	Simdega	585032	17408	371.76	237.71
5.	Godda	1047264	28483	608.22	388.79
6.	Dumka	1155385	49561	1058.13	616.60
7.	Jamtara	599186	18345	391.76	250.40
8.	Deoghar	1161370	15652	334.17	213.64
9.	Dhanbad	2394434	34243	731.12	467.48
10.	Koderma	498683	17037	363.73	232.55
11.	Chatra	79680	38810	828.59	529.75
12.	Ranchi	2378187	105598	2254.51	1441.52
13.	Khunti	405390	33537	716.02	457.78
14.	Hazaribagh	1774659	56347	1203.10	769.28
15.	Ramgarh	502449	21328	455.45	291.22
16.	Garhwa	1034151	31111	664.21	424.66
17.	Palamau	1267336	47185	1007.39	644.17
18.	Latehar	824668	14541	310.46	198.48
19.	Lohardaga	364405	14185	302.84	193.67
20.	E.Singhbhum	1978671	58871	1256.89	803.58
21.	Bokaro	1775961	21922	468.13	299.23
22.	Giridih	1901564	69166	1476.69	944.14
23.	W.Singhbhum	1286395	96705	2064.76	1320.02
24.	Saraikela-Kharsawan	793870	34480	736.24	470.65
	Total-	26909428	917900	19598.00	12530.00
Total Expenditure Approx.-					83854000

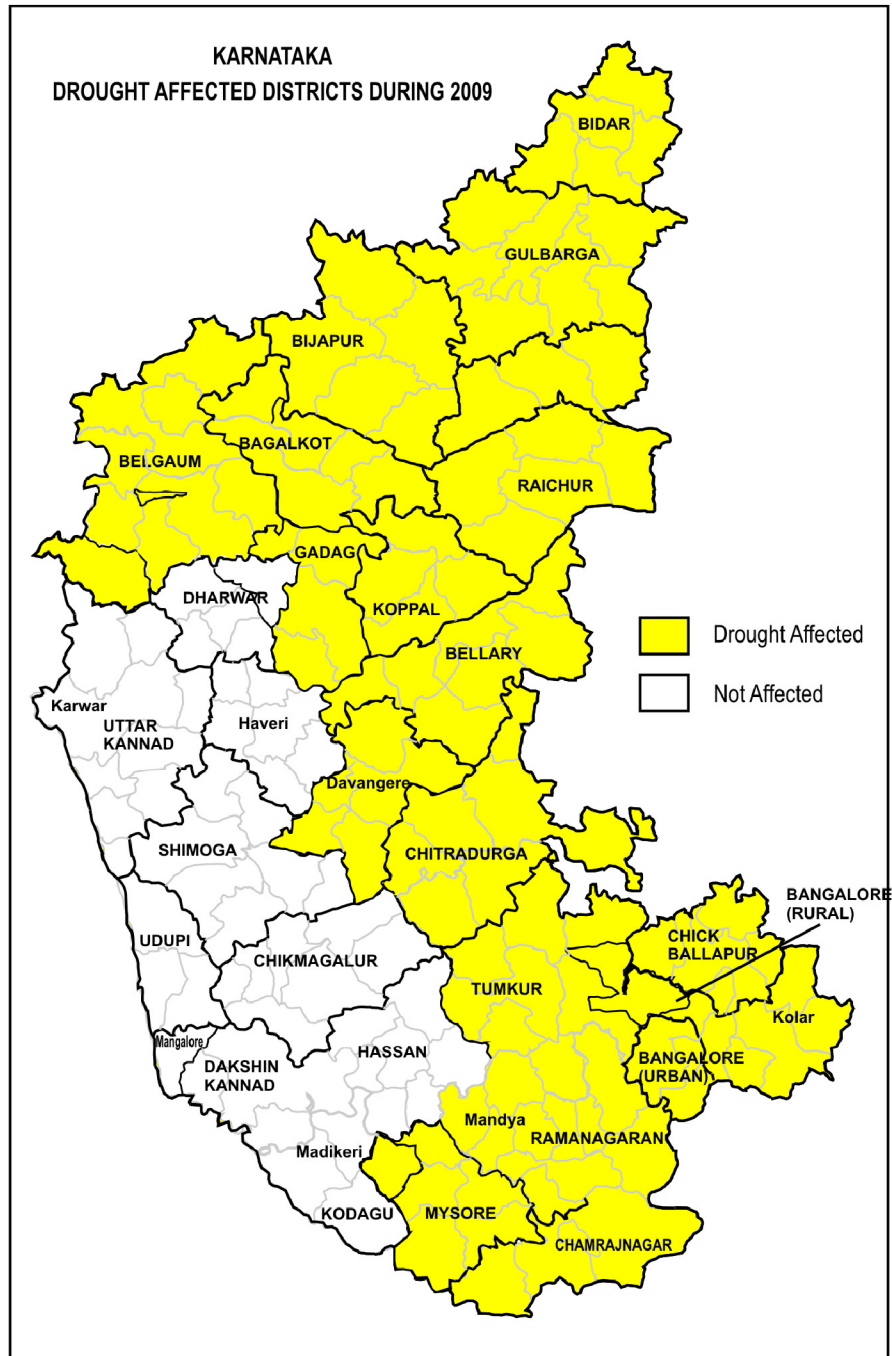
Table -6 : Distribution Foodgrains to BPL families

Sl. No.	Name of Districts	Population in 2001	Number of BPL Family	Quantity of Grain for BPL Families	
				Rice	Wheat
1	2	3	4	5	6
1.	Sahebganj	927584	54730	1417.50	498.04
2.	Pakur	701616	45437	1176.70	413.47
3.	Gumla	760488	44385	1149.44	403.90
4.	Simdega	585032	39933	1034.26	363.59
5.	Godda	1047264	65336	1692.20	594.55
6.	Dumka	1155385	66766	1729.23	607.67
7.	Jamtara	599186	42081	1089.78	382.94
8.	Deoghar	1161370	35902	929.76	326.90
9.	Dhanbad	2394434	78562	2034.65	714.92
10.	Koderma	498683	39080	1012.17	355.63
11.	Chatra	79680	52283	1354.12	475.77
12.	Ranchi	2378187	142393	3687.97	1295.77
13.	Khunti	405390	45042	1166.48	409.89
14.	Hazaribagh	1774659	78869	2042.70	717.70
15.	Ramgarh	502449	25769	667.42	234.50
16.	Garhwa	1034151	71366	1848.37	649.43
17.	Palamau	1267336	63564	1646.30	578.43
18.	Latehar	824668	33356	863.92	303.53
19.	Lohardaga	364405	19110	494.83	173.90
20.	E.Singhbhum	1978671	79307	2054.05	721.69
21.	Bokaro	1775961	50285	1302.38	457.59
22.	Giridih	1901564	93176	2413.25	847.90
23.	W.Singhbhum	1286395	130275	3374.02	1185.60
24.	Saraikela-Kharsawan	793870	79093	2048.50	719.69
Total-		26909428	1476100	38230.00	13433.00
Total Expenditure Approx				141556000 (in lakhs)	

Fair Price Shops were mobilized in inaccessible areas. Mid-day meals as admissible were provided to students in the schools. Gratuitous relief was distributed to the aged, the infirm and the destitute as per CRF norms.

KARNATAKA

20 Districts declared drought affected : Bagalkote, Bangalore Rural, Bangalore Urban, Belgaum, Bellary, Bidar, Bijapur, Chamarajnar, Chikkaballapur, Chitradurga, Davangere, Gadag, Gulbarga, Kolar, Koppal, Mandya, Mysore, Raichur, Ramanagara, Tumkur.



I. RAINFALL SCENARIO AND DECLARATION OF DROUGHT

During July 2009 the State as a whole recorded 339 mm of rainfall as against its normal of 272 mm with a percentage deviation of (+) 24%. Almost all the districts of interior Karnataka recorded deficit to scanty rainfall. During 1st August to 12th August 2009 the State recorded 32 mm of rainfall as against its normal of 89 mm with a percentage deviation of (-) 64%. The rainfall during 1st July to 13th August, 09 was the lowest in the last 40 years in many districts of North interior Karnataka especially in Bidar, Gulbarga, Raichur, Koppal, Bellary, Bijapur and Bagalkote. During June to September, 2009 (South-West Monsoon) as against 834.7mm, the State received 1004.8 mm of rainfall i.e. 20% in excess. However, the break of Monsoon conditions with dry spell covering vast areas of interior Karnataka from 1st July,2009 to 13th August, resulted in distress situation of rare severity. The poor monsoon resulted in vast cultivatable area left unsown in south interior Karnataka.

Following erratic monsoon resulting in dry spell for long duration and consequential damage to agricultural activities, the State declared 86 talukas as drought affected in 20 districts on 11.08.2009.

II. IMPACT OF DROUGHT

a) Agriculture:

During Kharif 2009, as against 72 lakh ha. target area, only 53.14 lakh ha. was sown and about 19 lakh ha. area remained unsown. Out of 53 lakh ha. sown area, rainfed crops in an area of about 16.04 lakh ha. were affected by dry spell of more than 4 consecutive weeks.

The assessed losses of rainfed agriculture crops on the basis of cost of cultivation, covering 3 of the major rainfed cereals, pulses and oil seeds crops i.e. jowar, Bajra, maize, tur, greengram, blackgram, groundnut, sunflower and soyabean was estimated at Rs.700.20 crores.

Horticulture crops in 60,521 hectares were also affected by the drought situation.

b) Life & Property:

Erratic monsoon also had its impact on availability of rural and urban water supply and fodder availability.

II. MITIGATION ACTIVITIES

a) Administrative:

The Cabinet Sub Committee of the State reviewed the situation on 11th August, 2009 and recommended declaration of 86 talukas in 20 districts as drought affected.

Orders were issued to all the Deputy Commissioners to take up relief measures for the following:

- i) To provide employment under the National Rural Employment Guarantee Scheme.
- ii) To supply drinking water.
- iii) To supply fodder and open cattle camps.

b) Agriculture:

The State assessed the impact of drought on agricultural activities and projected a requirement of Rs.21680.94 lakhs towards input subsidy for agriculture and horticulture crops from the NCCF.

They also projected a requirement of 1284.71 lakhs towards fodder from NCCF.

c) Drinking Water:

Rural and Urban habitations likely to be affected by shortage of drinking water were identified and requirement of tankers to be engaged for transportation of water as also emergency works proposed to

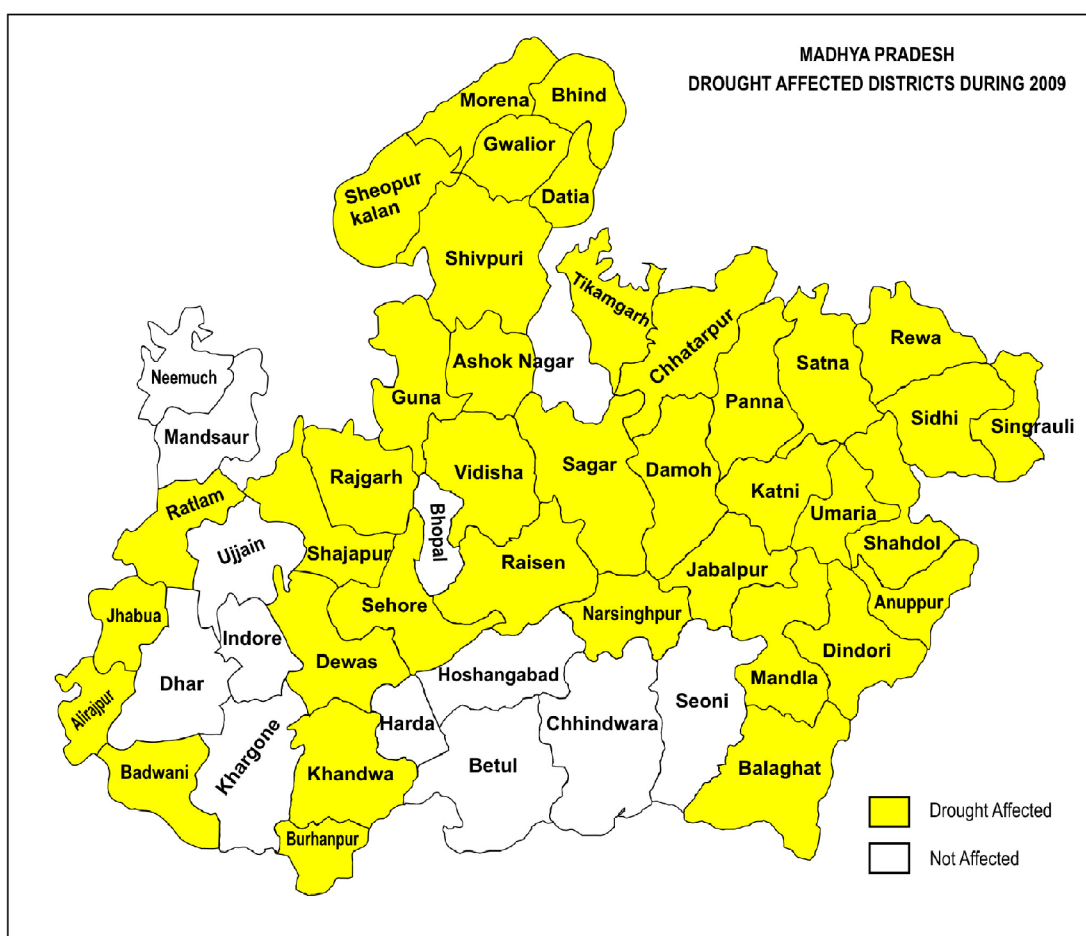
be undertaken were worked out/identified. Water supply through tanker was started by hiring 139 high yielding bore wells. 86 bore wells were flushed and 33 bore wells hydro-fractured to increase the yield of ground water for drinking water purposes in urban areas. To tackle drinking water crisis in the rural areas, revival of 662 piped water supply schemes (motor pump, pipe lining, drilling of additional bore wells and energisation costs) and 831 mini-water supply schemes, hydro fracturing in 174 bore wells, drilling of 541 new bore wells and supply of drinking water in 203 habitations were undertaken.

d) Cattle Care:

Contingency plan was also brought into action to mobilize fodder and supply minikits at a cost of Rs.53.17 crores. Fodder was supplied to the farmers at subsidized rates. Fourteen fodder banks were opened and fodder was accordingly distributed. It was proposed to have 290 cattle camps with 1,45,000 cattle and buffalos and supply feed and fodder.

MADHYA PRADESH

38 Districts declared drought affected : Alirajpur, Anuppur, Ashoknagar, Badwani, Balaghat, Bhind, Burhanpur, Chhatarpur, Damoh, Datia, Dewas, Dindori, Guna, Gwalior, Jabalpur, Jhabua, Katni, Khandwa, Mandla, Morena, Narsinghpur, Panna, Raisen, Rajgarh, Ratlam, Rewa, Sagar, Satna, Sehore, Shahdol, Shajapur, SheopurKalan, Shivpuri, Sidhi, Singrauli, Tikamgarh, Umari, Vidisha.



I. RAINFALL SCENARIO AND DECLARATION OF DROUGHT

Drought has been a common phenomenon in Madhya Pradesh, mainly due to deficient rainfall at the time, when it is needed most. The drought of 1986-87, 1987-88, 2000-2001, 2002-2003, 2004-2005 and 2007-2008 were the most severe in recent times. It is significant to note that in 2001 and 2003, 25% area had suffered from scarcity in different pockets.

In the year 2009, the South-West monsoon was delayed by 15 days in Madhya Pradesh and it arrived in the last week of June, 2009. The average rainfall in the State during the monsoon upto 30th September, 2009 was 698.00 mm against the average normal rainfall of 974.00 mm for the same period. This represents 28% overall deficiency compared to the normal rainfall. Out of 50 districts in the State there was no district with excess rainfall. 15 districts had normal rainfall and 35 districts had deficient rainfall (-20% to -59% of normal rainfall). There was a long dry spell from 26th July to 8th August, 2009 in most of the districts of the State. As the onset of monsoon 2009 was delayed and a long spell of dry days continued, 38 districts where the rainfall deficiency was more than 25% of average alongwith long spell of dry days were seriously affected.

Due to deficient rainfall and erratic behavior of monsoon 37 districts in the State were declared affected by drought on 13.08.2009 and one district (Rajgarh) was declared drought affected on 31.08.2009.

II. IMPACT OF DROUGHT

a) Agriculture:

The normal area under Kharif crop is 102.37 lakh ha. The target for Kharif, 2009 was 106.70 lakh ha. However, due to delayed and insufficient rains, the area sown was only 100.67 lakh ha. The shortfall in the area sown vis-à-vis the targeted area was 6.03 lakh ha., which was mostly in Paddy, the second major Kharif crop in the State after soyabean. The targeted area for paddy was 16.25 lakh ha., against which the sowing could take place only in 11.41 lakh ha. leaving a shortfall of 4.84 lakh ha.

Production of Kharif crops was adversely affected due to failure of South-West monsoon 2009. Major impact was on the production of paddy crop due to large shortfall in the area sown (about 30 percent). It was estimated that the overall loss in the yield of paddy crop was about 50 percent. Production loss in soyabean and other Kharif crops would be about 20 to 40 percent.

b) Drinking Water Supply:

Rural Water supply in the State is mainly based on ground water through 4.34 lakh handpumps and 8400 piped schemes. 31000 hand pumps (7.1%) and about 374 piped water schemes were dysfunctional as their sources had dried up. More handpumps and piped water schemes were likely to become dysfunctional due to depletion of yield and water levels. Dugwells also dried up.

III. MITIGATION ACTIVITIES

a) Drinking Water:

- (i) District wise preliminary Action Plans were prepared to combat scarcity of drinking water. The estimated cost was Rs.146.50 crore for the year 2009-10 and Rs.167 crore for the year 2010-11 (from April to July) totaling to Rs.313.50 crores.
- (ii) Regular operation and maintenance of hand pumps, piped water schemes and water quality monitoring was being carried out.
- (iii) Other works being done and proposed to combat water scarcity were drilling of new tube wells, installation of single phase pumps, and extension of riser pipes in handpumps and hydrofracturing of tubewells.
- (iv) Transportation of water was undertaken where needed.

- (v) There were 357 Urban Local Bodies (ULBs) comprising 14 Municipal Corporations, 96 Municipal councils and 247 Nagar Panchayats in the State. Water Supply schemes of these ULBs are mainly based on rivers/lakes/dams/reservoirs supplemented by ground water sources. During the previous year Ujjain, Indore and Bhopal divisions of the State faced drought conditions because of scanty rainfall.
- (vi) In view of the above scenario, the Urban Local Bodies had to create new sources, augment their existing sources and transport water from nearby areas.

b) Fodder availability and their prices:

Notwithstanding deficient or scanty rainfall, sufficient quantity of drinking water, green fodder, dry fodder and concentrates were available for livestock. The situations of drinking water, feed and fodder for the livestock was expected to become critical after December, 2009. The following steps were taken:

- (i) All the districts were instructed to form Fodder Cell to monitor weekly situation.
- (ii) The Cell had to prepare the scarcity proposal and submit to the District Collector.
- (iii) The Cell had to ensure availability of feed and fodder from adjacent districts/States.
- (iv) The Cell had to monitor proper utilization of minikits distributed in the district in Kharif season.
- (v) Vaccination and treatment of animals were being continuously carried out by Animal Husbandry Department.
- (vi) Routine cattle camps were being organized.
- (vii) Extension work on scarcity was being carried out.
- (viii) In view of the possibility of shortage of drinking water, feed and fodder for the livestock in the State from the month of January 2010 onwards, a contingency plan was prepared for the supply of fodder, medicines and vaccines and for organizing camps.

c) Mahatma Gandhi National Rural Employment Guarantee Programme (MGNREGP)

It was anticipated that guaranteed employment would have to be provided for full 100 days in all the drought affected districts. The approved labour budget of 41 districts for the year 2009-10 was Rs.5999 crore. The cost of 100 days employment generation was projected at Rs.7707 crore. An additional amount of Rs.1708 crore would therefore be required. Out of this Rs.1537 crore was the Central share and Rs.171 crore the State share.

Instructions were issued to districts for undertaking maximum labour oriented water conservation works.

The total requirement of additional funds under MGNREGP to effectively combat adverse conditions during 2009-10 was estimated at Rs.3941.00 crore.

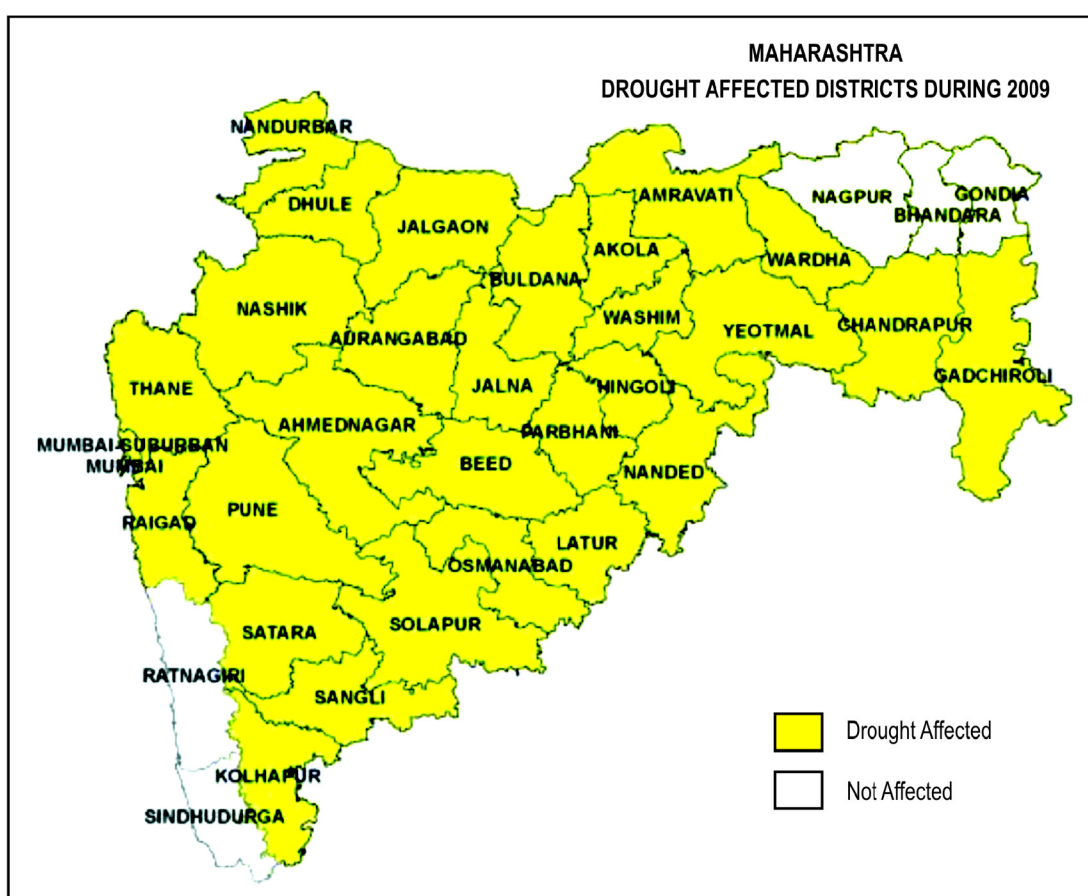
d) Agriculture:

The districts where paddy was the predominant crop, prospects of good production receded and the crop output was expected to suffer a steep fall. This would entail the need for additional eighty days of employment. In these districts, for generating an additional eighty days of employment the requirement of funds would be about Rs.2233 crores. Of this, Rs.2010 crores would be the share of Central Government and Rs.223 crores would be State Government's share

The total requirement of additional funds under MGNREGP to effectively combat adverse conditions during 2009-10 was estimated at Rs. 3941.00 crore.

MAHARASHTRA

28 Districts declared drought affected : Ahmednagar, Akola, Amravati, Aurangabad, Beed, Buldhana, Chandrapur, Dhule, Gadchiroli, Hingoli, Jalgaon, Jalna, Kolhapur, Latur, Nanded, Nandurbar, Nashik, Osmandbad, Parbhani, Pune, Raigad, Sangli, Satara, Solapur, Thane, Wardha, Washim, Yavatmal.



I. RAINFALL SCENARIO AND DECLARATION OF DROUGHT

Though the monsoon arrived in the State on time (7th June 2009) it did not spread beyond coastal districts. It was only on 27th June 2009 that the monsoon covered all parts of Maharashtra. The pattern of rainfall clearly showed that the month of June had almost a total dry spell which affected sowing of crops. There was a continuous dry spell beginning from 23rd July 2009 for more than a month in the entire State. The dry spell after 23rd July affected the growth of the crops across the State. Against the normal average rainfall of 910.1 mm during June to August, the average rainfall during 2009-10 was 695.9 mm which was 76.5% of normal rainfall. Out of 355 Talukas in the State, 221 Talukas received deficient rainfall (less than 50%). This included all the 8 districts of Marathwada i.e. Nanded, Parbhani, Latur, Aurangabad, Beed, Hingoli, Jalna, Osmanabad. Progress of rainfall upto 18th August, 2009 as indicated in the table below reveals the deficiency of rainfall in the State:-

Table -1: Division-wise Rainfall during SW Monsoon

District	Number of Talukas						
	0% to 20%	20% to 40%	40% to 60%	60% to 80%	80% to 100%	100% to 120%	120% & above.
Konkan Division	28	17	1	1	0	0	0
Nasik Division	36	3	1	0	0	0	0
Pune Division	31	3	2	2	0	1	0
Kolhapur Division	16	10	2	0	1	0	4
Aurangabad Division	26	2	0	0	0	0	0
Latur Division	39	6	3	0	0	0	0
Amravati division	48	7	1	0	0	0	0
Nagapur Division	28	27	5	4	0	0	0
State	252	75	15	7	1	1	4

During the entire South-West monsoon (June to September, 2009), the State received 692.6 mm of rainfall against the normal rainfall of 989.0mm which indicated a deficit of 30%. Following deficient and erratic rainfall the State Government declared 28 districts as drought affected on 20.08.2009.

II. IMPACT OF DROUGHT

a) Agriculture:

- Delayed rainfall caused reduction in the area under pulses to 26%
- In Eastern Vidarbha an area of more than 2.14 lakh hectares was left unplanted.
- Due to dry spell and extreme heat, pests like semi looper and tobacco emerged with vengeance affecting 4 to 5 lakh hectares across four districts of Chandrapur, Gadchiroli, Wardha and Nagpur.
- Dry spell after transplanting allowed army worm and stem borer to infest the paddy crop.
- The soyabean crop was in serious danger of wilting.
- The area under moong and urad had come down from 12.94 lakh ha. to 7.62 lakh ha.
- The estimated area of crop damage was 96.77 lakh ha., of which 44.28 lakh ha. suffered more than 50% loss. 90.27 lakh farmers were affected by the drought.

Table -2 :Crop-wise loss of area during Kharif 2009

Crop group	Normal area (lakh hectares)	Sown area (lakh hectares)	%
Cereals	34.33	24.70	72
Pulses	22.18	16.35	74
Foodgrains	56.22	41.05	73
Oilseeds	13.92	25.99	187
Cotton	24.74	29.73	120
Total	95.17	96.77	102

b) Life & Property:

- In all 90.27 lakh farmers were affected by drought.
- Apart from withering of crops, the entire region faced acute shortage of drinking water.
- Water levels in reservoirs got depleted. The reservoir level in all the dams put together was only 6% in Marathwada and 23% in Amravati region.
- Drought affected areas also faced fodder scarcity.

III) MITIGATION ACTIVITIES

a) Administrative:

- Following assessment of the situation including losses to crops, the State declared 221 Talukas out of 355 talukas as drought affected on 20.08.2009.

b) Agriculture:

- The State prepared a contingency plan to mitigate the effect of these adverse conditions, which included contingency crop planning, augmenting drinking water supply and making fodder available in affected areas. Under the contingency plan, it was envisaged to cover the affected area with Rabi Jowar, Gram, Maize, sunflower and also some fodder crops.
- Under the Rashtriya Krishi Vikas Yojana the State undertook a massive farm ponds programme in cotton growing areas and more than 35500 farm ponds were completed
- Several steps were taken to ensure availability of agricultural credit to the farmers. Due to Central and State scheme of debt waiver and incentives to regular payers, the situation improved considerably and nearly 50 lakh more farmers became eligible for fresh loans.
- Keeping in view the poor recovery from regular payers in the year 2007-08, the Government of Maharashtra announced for 2008-09 a scheme of debt waiver and debt relief to those farmers who were left out from the Government of India scheme. The scheme was to cover 40 lakh farmers at an outlay of Rs.6208 crores.
- Nearly 30 lakh farmers were disbursed loans to the tune of Rs.7383 crores.
- The State Government provided 1% extra rebate on interest and disbursed crop loan @6% interest rate.
- Rescheduling of loans in drought affected areas was planned to take place during March/ June,2010

c) Employment Generation:

- Under Mahatma Gandhi National Rural Employment Guarantee Programme (MG NREGP) the mandays generated went up from 159 lakhs during 2006-07 to 418 lakhs during 2008-09. The workforce was mainly deployed for water conservation and water harvesting programmes.
- Number of days of employment provided per family went up from 39 days to 55 days, of which the share of women and tribals in the total mandays generated was of the order of about 35% to 40%.
- The State Government enhanced the minimum wages under the Minimum Wages Act from Rs.66/- to Rs.100/- w.e.f.13th August, 2009.
- Number of days of employment provided per family till July,2009 was about 55 days.
- To ensure that during scarcity, employment was provided on demand, about 94,000 works were approved across the State and were available on shelf.

d) Drinking Water:

- A detailed plan was drawn up by the District Collectors to tackle the problem of drinking water scarcity.
- Normally in August, there is no need to deploy water tankers, but as on 21st August,2009 there were 844 tankers supplying water to more than 1500 habitations. In Marathwada alone, 626 tankers were deployed.
- With more than 85% drinking water sources being ground water based, regulatory measures under the Maharashtra Ground Water Act, 1993 were taken for regulating the drawal of ground water around drinking water sources in the affected areas.
- Riser pipes were increased in 10164 bore wells to draw water from deeper levels. Special squads were formed to work in all Talukas to maintain and keep 2,20,000 borewells in working condition.

e) Cattle Care:

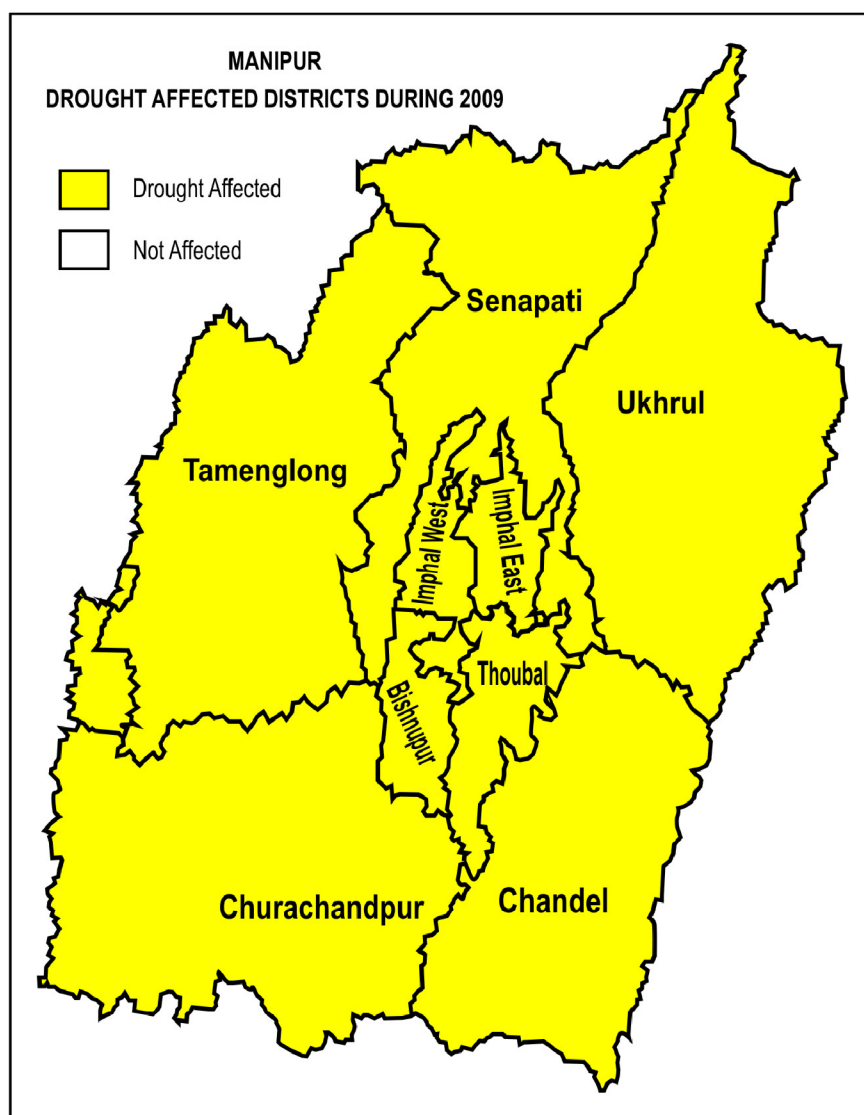
- Though there was a general scarcity of dry fodder, no cattle camps were set up by the State Authorities.
- A scheme was prepared to distribute fodder seeds and fertilizers to the farmers who already possessed irrigation infrastructure.
- It was proposed to establish fodder depots in 173 scarcity affected talukas. It was further proposed to procure dry as well as green fodder for these depots from districts having surplus fodder or from adjoining States, if needed.
- It was also proposed to provide dry fodder @6 kg. per animal per day and green fodder @15kg. per animal per day during the fodder scarcity conditions.

f) Foodgrains:

- The State took all necessary measures to cope with the situation arising from drought including rise in prices of essential commodities.
- Foodgrains were distributed to all categories of beneficiaries through the Public Distribution System (PDS).
- In addition to distribution of foodgrains through PDS to Below Poverty Line and Antyodaya Anna Yojana families, Government of Maharashtra envisaged distribution of wheat, rice, Tur Dal, Palm Oil and Sugar through PDS at subsidized rates to various beneficiaries.

MANIPUR

All 9 Districts declared drought affected : Bishnupur, Chandel, Churachandpur, Imphal East, Imphal West, Senapati, Tamenglong, Thoubal, Ukhrul.



I. RAINFALL SCENARIO AND DECLARATION OF DROUGHT

The average annual rainfall of Manipur for the last 10(ten) years was about 1436 mm with heavy precipitation in the months of June and July. During the year 2009-10, the rainfall received upto July 2009 was 509 mm against the actual rainfall of 868.60 mm. This indicated that during the period ending July, 2009, the drought condition prevailed in the State.

Table -1: Month wise rainfall during 2009-10 upto July 2009

Month	Normal Monthly Rainfall(mm)	Actual Monthly Rainfall (mm)	% deficit
January	16.30	-	16.30
February	36.00	22.50	13.50
March	65.50	40.10	25.40
April	137.80	65.10	72.70
May	203.70	105.30	98.40
June	208.20	109.1	99.10
July	229.10	167.20	61.90
Total	896.60	509.30	43.00

Due to weak South-West Monsoon and deficient rainfall which adversely affected the Kharif Crop, the State on 25.06.2009 declared all the nine districts as drought affected.

II. IMPACT OF DROUGHT

a) Agriculture:

Average land holding size in Manipur is quite small. Most of the farmers are small and marginal ones (about 85%). The effect of drought on the small and marginal farmers was severe.

Table -2: The impact of drought on sowing of different crops

District	*Drought affected Areas (2009)							
	Geo-graphical Area(Ha)	Net Agricultural area (Ha)	Main paddy area (Ha)	Maize area (Ha)	Oilseeds area (Ha)	Pulses Area (Ha)	Sugar cane Area (Ha)	Total affected area
Imphal East	68200	28100	12461	109	410	357	126	13463
Imphal West	51900	32784.4	6939	92	500	381	101	8013
Bishnupur	53000	26138	10353	83	825	356	324	11941
Thoubal	50700	22967	8364	145	945	521	427	10402
Chandel	331300	15662.82	8027	146	949	274	308	9704
Churchandpur	457000	38998.02	11699	182	1375	205	164	13625
Ukhul	454400	14902.92	8394	125	1011	212	191	9933
Tamenglong	439100	33917	10175	75	1200	229	153	11832
Senapati	327100	20553.82	11568	91	945	225	258	13087
Total	2232700	234025.46 (10.48% of Geo Area)		1048	8160	2760	2052	102000

* Drought affected areas are those areas where the crops have not been sown or the areas where crops have withered due to lack of moisture/rain.

In so far as horticulture crops were concerned 7145 ha. area was affected. 5003 ha. out of this suffered crop loss of more than 50%

b) Life & Property:

- All the villages of the State were affected by the drought and as per 2001 census 22.94 lakh population was adversely affected.
- 1.02 lakh ha. cropped area was affected with an estimated loss of Rs.133.95 crores

III. MITIGATION ACTIVITIES

a) Administrative:

- Following drought, the State Government declared all the nine districts as drought affected and submitted a memorandum to the Government of India for assistance under the NCCF.

b) Agriculture:

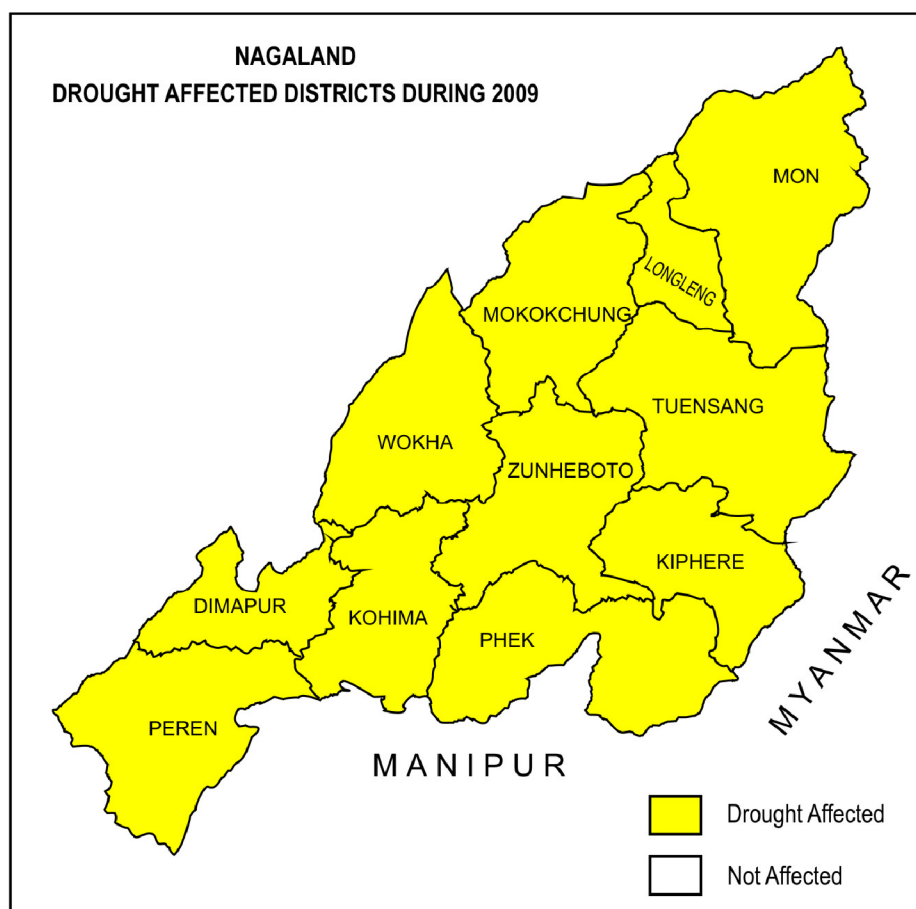
- Keeping in view the losses caused to the agriculture, the State projected a demand of Rs.2040 lakhs as assistance for agriculture input subsidy from NCCF. For the losses caused to horticultural crops, an assistance of Rs.169.18 lakhs was sought from NCCF.

c) Calamity Relief Fund:

As on 01.04.2009 the State had a balance of Rs.12.38 crores under CRF. Out of this an amount of Rs.7.00 crores was incurred towards expenditure on drought mitigation by the State upto 06.08.2009.

NAGALAND

All 11 Districts declared drought affected : Dimapur, Kiphire, Kohima, Longleng, Mokokchung, Mon, Peren, Phek, Tuensang, Wokha, Zunheboto.



I. RAINFALL SCENARIO AND DECLARATION OF DROUGHT

During the year 2009, Nagaland experienced severe drought like situation on account of the climatic changes together with the late arrival of monsoon in the State. An average rainfall of 750.50 mm is normally received in the State from 1st January to 15th of July. However, the rainfall received for the corresponding period during the year 2009 was 471.18 mm indicating a deficit of 37.10%.

The State Government accordingly declared the whole State of Nagaland comprising of 11 (eleven) districts as drought affected on 15.07.2009.

Due to severe deficiency in rainfall during the South-West Monsoon, Agriculture and allied sectors were badly affected resulting in poor productivity and performance.

II. IMPACT OF DROUGHT

a) Agriculture:

The period from January to July is the most crucial period for cultivation purposes in Nagaland, especially for paddy, which is a major Kharif crop of the State. The cultivation of paddy during 2009 had been adversely affected 15% of Jhum cultivation and 25% of Wet Terrace Rice Cultivation (WTRC). The delay in the arrival of rains had extensive adverse effect on the cultivation process of other horticultural crops in the State, especially shallow rooted crops like vegetables, passion fruit, aromatic plants such as lemon grass and spices such as cardamom, etc., in which 50% to 80% mortality was reported.

Table-1: District-wise Crops affected in terms of area and value of loss incurred

Sl. No.	District	Village Affected	No. of Households	Total Area under Cultivation (in Ha.)		Total Area Affected (in Ha.)		Percentage Affected/Loss	
				WTRC	JHUM	WTRC	JHUM	WTRC	JHUM
1.	Kohima	89	29754	6000	9000	2400	900	40%	10%
2.	Dimapur	175	14000	30000	7000	17400	630	58%	9%
3.	Zunheboto	110	10680	4750	8000	2660	1200	56%	15%
4.	Mon	109	10900	2650	10000	1325	1000	50%	10%
5.	Phek	94	17672	20529	2804	4106	365	20%	13%
6.	Mokokchung	83	16600	2700	15000	810	3000	30%	20%
7.	Wokha	119	17850	3960	10000	1584	2000	40%	20%
8.	Tuensang	98	18900	2800	10560	560	528	20%	5%
9.	Peren	103	15450	5728	5383	2119	2099	37%	39%
10.	Longleng	32	18394	800	5140	344	1028	43%	20%
11.	Kiphire	74	7941	1076	5613	635	1572	59%	28%

Total Area Affected WTRC:41%

Total area Affected JHUM:17%

Total Area Affected in %:58%

Area Affected Crop-Wise (in Ha.)

Horticulture Crops

District	Area of Crops Affected (in ha.)											Total Area in ha.)
	Passion fruit	Citrus	Cardemom	Vegetable	Straw Berry/ Plum/ Pine	Areca Nut Coconut	Banana	Pine Apple	Naga King Chilli	Ginger	Turmeric	
Dimapur		50		500		80	280	280	30	100	230	1550
Phek	340	100	560	360	38		200	60		200		1858
Kohima	500	200	450	350	30		300	60	200	300	200	2590
Longleng		150	300	260		75	260	120		240	120	1525
Kiphire	400	200	100	320			180			160	150	1510
Wokha	400	300	300	400		120	240	160		150	130	2200
Tuensang	200	150	550	500			220	100		180	140	2040
Zunheboto	400	160	360	350		60	190	200		170	160	2050
Peren		120		200		100	160	210	130	140	190	1250
Mokokchung	472	320		510		142	590	250	96	230	130	2740
Mon		180	1060	340		110	360	200	70	260	140	2720
Total	2712	1930	3680	4090	68	687	2980	1640	526	2130	1590	22033

b) Life & Property:

Over 70% of the population in the State is dependent on agriculture. The drought situation had a considerable impact on life and property in the State. On account of the erratic behavior of the South-West Monsoon 2009, the agricultural community in the State were put in a panic situation, which had by then anticipated total crop failure. However no mass migration of farmers took place. Also, no distress sale of land, cattle, farmers suicide, etc. were reported in the State of Nagaland.

III. MITIGATION ACTIVITIES

a) Administrative:

On account of the severity of the drought situation in the State, the State Government set up a Drought Monitoring Cell under the State Agriculture Department at the State level and under the District Administration at the district level. Series of meetings were also held under the Chairmanship of Chief Minister, the Chief Secretary, and also under the Chairmanship of the Development Commissioner, Nagaland, for monitoring the drought situation and initiating drought mitigation activities. Instructions were also issued to the district administration and concerned Departments for keeping a close watch on the drought situation.

b) Agriculture:

With a view to mitigate the adverse impact of the drought in the State, the Agriculture Department adopted a few "On-Farm" short-term remedial measures, such as, re-sowing of castor seeds whereby castor was intercropped with perennial host plants, like Payam by direct sowing method, reclaiming of plantations such as, Kesseru, Som, Mulberry, Payam, etc.

As a long term measure, supplementary irrigation by way of tank construction, ponds, ring wells, bore wells etc. depending on the feasibility of the area was taken up.

c) Employment Generation:

Under Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) employment was given to job card holders engaged for execution of MGNREGS works in the respective villages/Blocks.

d) Drinking Water:

Energizing of non-functional tube wells was taken up. Existing NRDWP Programmes was expedited.

e) Cattle Care:

Feed supplements such as Mineral mixture (Milk Min) Vitamins (Cal more Liq.) and vaccines, FMD (Polyvalent), HS, BQ, were procured for animal camps. Animal camps were held in every village under Village Development Board. Minimum 800 animal camps were targeted within the year.

f) Foodgrains:

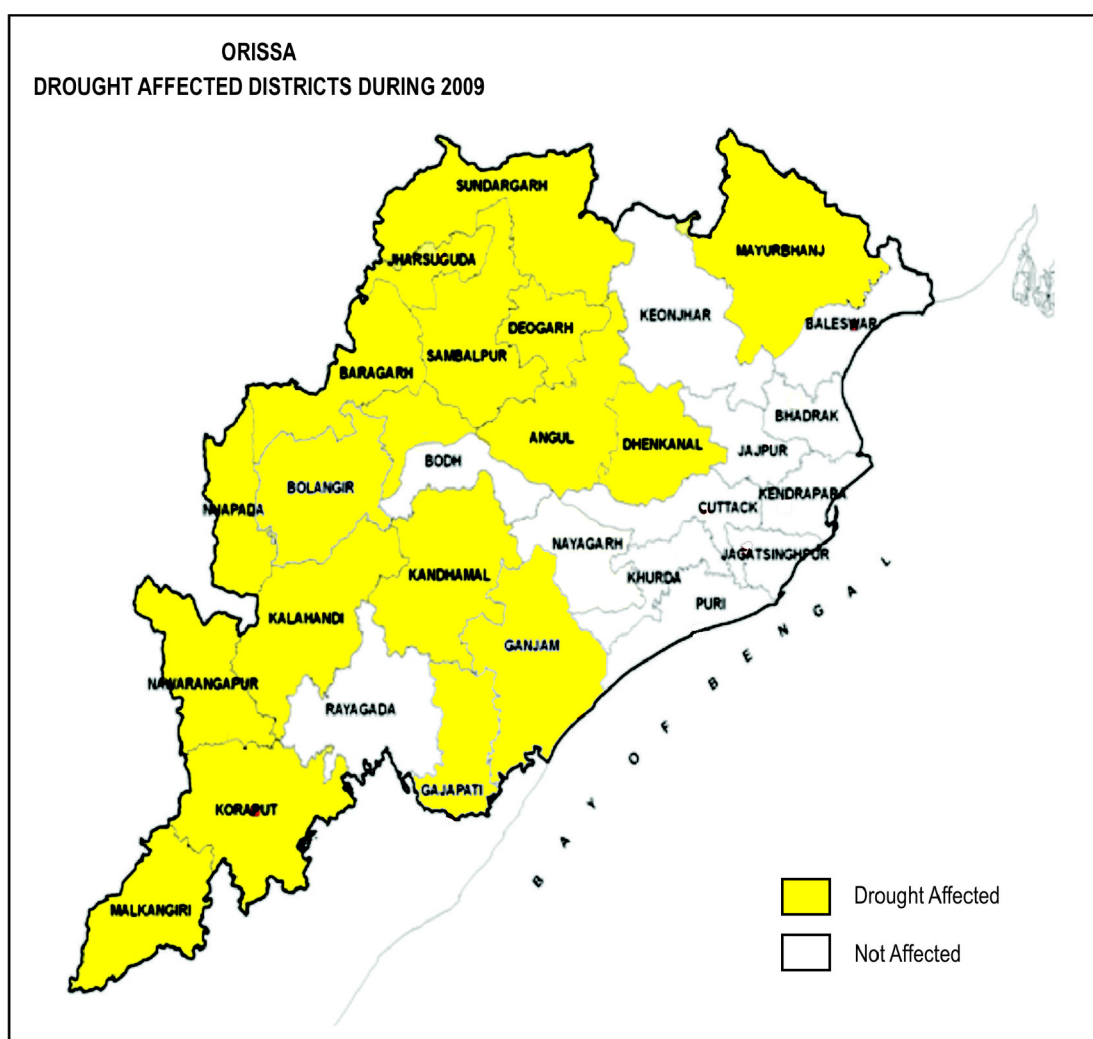
Department of Food & Civil Supply procured BPL rice and supplied to the affected areas at the lowest rate.

g) Involvement of the Local Government Institutions:

The Village Development Board (VDB), which is the recognized competent authority for any developmental work at the village level, and Municipal bodies were actively involved in all the mitigation programmes initiated by the Government.

ORISSA

18 Districts declared drought affected : Angul, Baragarh, Bolangir, Deogarh, Dhenkanal, Gajapati, Ganjam, Jharsuguda, Kalahandi, Kandhamal, Koraput, Malkangiri, Mayurbhanj, Nawarangpur, Nawapara, Subaranapur, Sambalpur, Sundargarh.



I. RAINFALL SCENARIO AND DECLARATION OF DROUGHT

Orissa is prone to multiple and recurring natural disasters. Its location and geo-climatic conditions makes it one of the most vulnerable States for frequent natural disasters. While the coastal plains of the State bear the brunt of cyclones and floods, its western and southern parts are usually affected by flash floods and drought. Four districts namely Phulbani, Kalahandi, Bolangir and Kendrapada find place in the list of 102 districts in 15 States of the country identified as chronically drought prone. With nearly 90% of the population living in disaster-prone areas and more than 60% of the population at or below the poverty line, the coping mechanism of the State and its people is constantly under severe strain.

Due to erratic behaviour of monsoon manifested through irregular and scanty rainfall, the State experienced severe drought during the year 2009 in addition to other disasters like tornado/hailstorm, heat-wave, floods and pest attack.

Normally monsoon breaks around 10th of June in Orissa. In 2009, it actually broke around the end of June in some parts of the State and beginning of July in other parts, resulting in an extended heat wave condition. During June, rainfall was deficient by about 61%.

Although the South West Monsoon revived in July 2009 after playing truant in June, its spatial distribution in the State remained unsatisfactory. During July 2009, there was excess rainfall by about 76%. There was 93 percent of excess rainfall upto 21st of July, whereas from 22nd July onwards, the rainfall was deficient by about 63%. The trend of deficient rainfall, which started from 22nd of July, continued in August as well as in September. In August 2009, rainfall was deficient by about 23%.

During September the axis of monsoon did not lie in all parts of the State. Five districts namely, Cuttack, Jajpur, Kendrapara, Balasore and Bhadrak received more rainfall as compared to normal due to the effect of low pressure over North-West Bay of Bengal. The remaining districts received rainfall much less than the normal and the State cumulatively received 31% less rainfall than the normal.

Table-1: Normal and actual rainfall position in the State from June to September 2009

Month	Normal (mm)	Rainfall (in mm)	
		Actual	Deficiency
June	216.5	85.0	-60.7
July	339.9	601.4	76.9
August	356.0	281.2	-21.9
September	231.9	159.6	-31.2

Table -2: Rainfall Pattern 2009 in the affected districts

SI.No.	Month	Number of Blocks with deficient rainfall			
		0 to -20%	-20 to -40%	-40 to -50%	Above -50%
1	June	14	14	9	118
2	July	9	2	3	5
3	August	51	30	0	31
4	September	28	25	20	63

Due to deficient rainfall and erratic behaviour of South West Monsoon 2009 the State on 21.11.2009 and 19.02.2010 declared 3650 villages under 91 Blocks and 41 wards under 9 ULBs of 18 districts as drought affected.

II. IMPACT OF DROUGHT

a) Agriculture:

Agriculture in Orissa is mainly rain-fed. Only 33% of the cultivated area has irrigation facilities from various sources, some of which are again dependent on rainfall. The rivers of the State are rain-fed and they receive their runoff mainly from the monsoon rainfall.

Normal Kharif area is about 61.80 lakh hectares comprising 29.16 lakh hectares (47.15%) highlands, 17.55 lakh hectares (28.39%) medium and 15.11 lakh hectares (24.44%) low land. About 20 lakh hectares (32.4%) are covered by irrigation from various sources and the remaining 41.80 lakh hectares (67.6%) depend on rains only. The normal area for Rabi crop is 23.90 lakh hectares.

Agricultural operations in Orissa traditionally start with the pre-monsoon showers in the month of May and continue till the end of June. As rainfall was deficient in June, sowing was delayed for most kharif crops and the yield of the early sown crops was affected. Against the normal sowing area of 16.21 lakh hectares in June, only 9.12 lakh hectares could be covered during the month. Although excess rainfall of 93% was recorded upto 21st July, the trend of deficient rainfall again started from 22nd of July and continued in August as well as September. As a result, the paddy transplantation was delayed due to lack of sufficient rains and could not be undertaken in many areas later on.

To sum up, the month of June had almost a totally dry spell, which affected sowing of crops whereas the dry spell after 22nd July delayed transplantation, affecting the paddy crop across the State. Further, there was no sufficient soil moisture for the crops sown very late and there was moisture stress upon the standing crops. Thereafter, infestation of swarming caterpillar in August and September also affected the crop.

But the deficient and erratic rainfall and consequential moisture stress as well as pest attack adversely affected both paddy and non-paddy crops particularly in western districts during Kharif 2009.

Crop cutting experiment in respect of autumn paddy had shown that 3264 villages and 41 wards of 15 districts sustained crop loss of 50% and above. Similarly, 2030 villages and 7 wards of 12 districts sustained crop loss of winter paddy to the extent of 50% and above. Out of the total area of 3.09 lakh hectares under autumn paddy, the loss of production was estimated to be 3,41,993 quintals, the cost of which worked out to be Rs.341.99 crore. Similarly, 60,913 hectares of non paddy crops like vegetables and spices were also severely affected, the cost of which came to Rs.48.73 crore.

Further, the crop cutting report in respect of Winter Paddy indicated that 2030 villages and 07 wards of 12 districts sustained crop loss of 50% and above.

b) Life and property:

More than 1.5 crore population in eighteen districts was affected due to drought. The areas affected by drought are mostly located in the tribal belts of Western Orissa with sizeable population belonging to the Scheduled Caste and Scheduled Tribe communities. The average size of land holding of the poor people is less than one hectare. Low Kharif productions due to the poor monsoon had broken the backbone of the rural economy. People of the affected areas were at a disadvantage from various angles starting from inability to work more in the field, low income and procuring ration at a higher price. Drought affected the availability of foodgrains with the family. It caused agricultural employment to decline and increased the incidence of debt at the household level, both for the purpose of production and consumption.

Due to shortage of water and food, people in the drought affected areas very often suffer from water borne diseases like diarrhoea and dysentery, common types of diseases like anemia, malnutrition and skin diseases like scabies. In order to tackle these problems in the drought affected areas, health measures, both curative and preventive, were taken. No epidemic was reported affecting human population in the affected districts. However, health camps were organized in the affected districts for treatment of people.

The cattle were worst affected by a drought situation. Due to drought, the availability of green fodder was hampered. 2959 cattle camps were organized in eighteen affected districts since 01.12.2009 and fodder was provided to 9.69 lakh cattle population.

III. MITIGATION ACTIVITIES

a) Administrative:

The drought situation was being monitored constantly through the Control Room set up in the State Emergency Operation Centre and District Emergency Operation Centres. A committee of Crop Weather Watch Group was constituted under the Chairmanship of Agriculture Production Commissioner, Orissa to monitor the progress of Kharif 2009 crops every week. Similarly, a Drought Monitoring Committee under the Chairmanship of Agriculture Production Commissioner, Orissa was constituted with effect from 28.10.2009 for regular monitoring of various short term and long term measures to deal with the situation arising out of deficient and erratic rainfall.

The Chief Minister took a review meeting with high level officers on drought situation on 28.10.09, in which decisions were taken to create large number of farm ponds in a campaign mode under MGNREGS, to conduct a special drive for revival of defunct Lift Irrigation points and for taking steps for repair / renovation of Minor Irrigation projects. Subsidized seeds and other inputs were provided to drought affected farmers. The Minister, Revenue and Disaster Management also held meeting on 29.10.2009 with Revenue Divisional Commissioners and high officials to take stock of the situation. Further, on 17.11.2009, the Minister, Revenue and Disaster Management took a meeting with the concerned officers to review the crop loss position due to deficient rainfall and pest attack.

All Revenue Divisional Commissioners and Collectors were instructed to monitor the situation through frequent tours and by having meetings with the Revenue and Agricultural Field Level Officers. They were asked to submit weekly reports to the Special Relief Commissioner. The Collectors of the affected districts were instructed to convene special meeting of the District Level Natural Calamity Committee to review the situation and to take necessary drought mitigation measures.

A chapter on drought was incorporated in the existing MIS (Management Information System) report for Tracking Hunger and Malnutrition from the fortnight ending 15th October, 2009 with a view to keep track of the drought situation in the field so that prompt interventions could be made to diffuse the situation with the resources available.

In response to the serious drought situation, the State Government undertook different relief measures, which include distribution of input subsidy, ensuring supply line of food, provision of drinking water, provision of immediate irrigation facilities and distribution of fodder through cattle camps. An amount of Rs.50.00 crore out of CRF was released to the Agriculture Department to provide agriculture input subsidy to the affected farmers who sustained crop loss of 50% and above. An amount of Rs.3.23 crore was released for supply of drinking water.

b) Agriculture:

With a view to recoup the loss in Kharif, a comprehensive Rabi Programme was mounted. The foodgrain production target in Rabi was fixed at 27.51 MTs. Besides, production of oilseeds was also programmed at 6 MT. Subsidized seeds were provided to farmers of drought affected districts during the Rabi Season.

Due to erratic monsoon during 2009 and the poor reservoir level of the Hydro electric stations within the State, the hydro electric generation, which supplements major portion of state's power demand got reduced. As a result, power supply to agriculture sector also suffered. As per the request of the State, Government of India allotted 50 MW of extra power during peak hours from ER NTPC stations for the period from 27.6.09 to 17.7.09 and 24 MW from 18.7.09 to 05.8.09.

c) Employment generation:

Generation of additional employment through detailed planning is an important aspect which calls for urgent attention in a drought situation to cater to the employment needs of the labour force in the affected villages. 4.31 lakh households in the affected districts were provided employment under MGNREGS out of which 8308 households completed 100 days upto December, 2009. The State Government furnished an additional proposal worth Rs.342.20 lakh for generation of additional 50 mandays in the affected areas.

d) Drinking water:

Due to abnormally low rainfall in large parts of the State during the Monsoon, drinking water scarcity was felt in the affected districts. Drinking water was being supplied through tankers to water scarcity pockets. Cross bundh/dredging of river bed was being done to collect required quantity of water. Steps were taken for repair of the defunct tube wells promptly and extension of Riser Pipes was being made wherever required. New Hand Pumps and Tube Wells were also sunk in water scarcity pockets. Contingency plan was formulated to overcome the drinking water problems at an estimated cost of Rs.186.00 crore for rural areas and Rs.1.67 crore for urban areas.

A programme was chalked out to install 11230 tube wells covering habitations having no tube wells and partially covered habitations and to replace permanently defunct tube wells. Complaint Registers to receive complaints on functioning of tube wells were maintained at Block level and repair work was taken up within 48 hours from receipt of complaints. 1463 tube wells / sanitary wells and 300 rural water supply projects had been completed as on 31.12.2009. Government of India released Rs.183.3874 crore and State Government Rs.231.3380 crores for providing drinking water facilities in the State, of which an expenditure of Rs.121.0768 crores was incurred from the Government of India share and Rs.73.1230 crores from State Government share.

e) Cattle care:

Due to the drought situation, the availability of green fodder was hampered. Contingency Plan with an estimated amount of Rs.145.63 crore was prepared to ensure supply of 1.6 lakh MT fodder for a period of 90 days to the affected 9.69 lakh cattle population.

Drought affected animals are prone to a number of contagious diseases. Vaccination and mass de-worming of animals are necessary to combat the drought situation. Mobile veterinary clinics, animal health camps and de-worming camps were conducted in the affected areas to safeguard animal health.

f) Foodgrains:

Steps were taken to ensure availability of all essential foodgrains like wheat products, pulses, edible oil, sugar, potato and onion in the open market. Regular checks and raids were conducted by the State and District Authorities at the business premises against hoarding of foodgrains. Rice, Wheat, Sugar and kerosene were distributed to the ration card holders at the Government prescribed rate under Public Distribution System (PDS) through 14209 Fair Price shops in the affected districts. All BPL families, all beneficiaries under Antyodaya Anna Yojana, APL families of KBK Districts, all S.C./S.T. boarders staying in S.C. and S.T. Development Department Hostels were provided rice @ Rs.2.00 per kg. 76102 MT of foodgrains per month was allotted for distribution in the drought affected districts under Targeted Public Distribution System. With a view to provide safeguards against starvation of marginalised food insecure households during natural calamities and in lean season, Village Grain Banks with 40 Quintals of rice were set up to enable those families to borrow foodgrains. 500 such Village Grain Banks had been created in the State.

g) Gratuitous Relief:

To ensure food security in the drought affected Districts, 9,61,367 people belonging to farmers and agricultural labourers were to be provided gratuitous relief for a period of 90 days, for which expenditure of Rs.128.88 crore was targeted.

h) Emergency Feeding Programme:

Special care and attention is necessary for the old, infirm and destitute people of unsound mind and indigent persons in view of the drought situation. To cover 7.98 lakh such persons under the scheme at least for a period of three months, an amount of Rs.21.75 crore was targeted to be spent.

i) Supplementary Nutrition Programme:

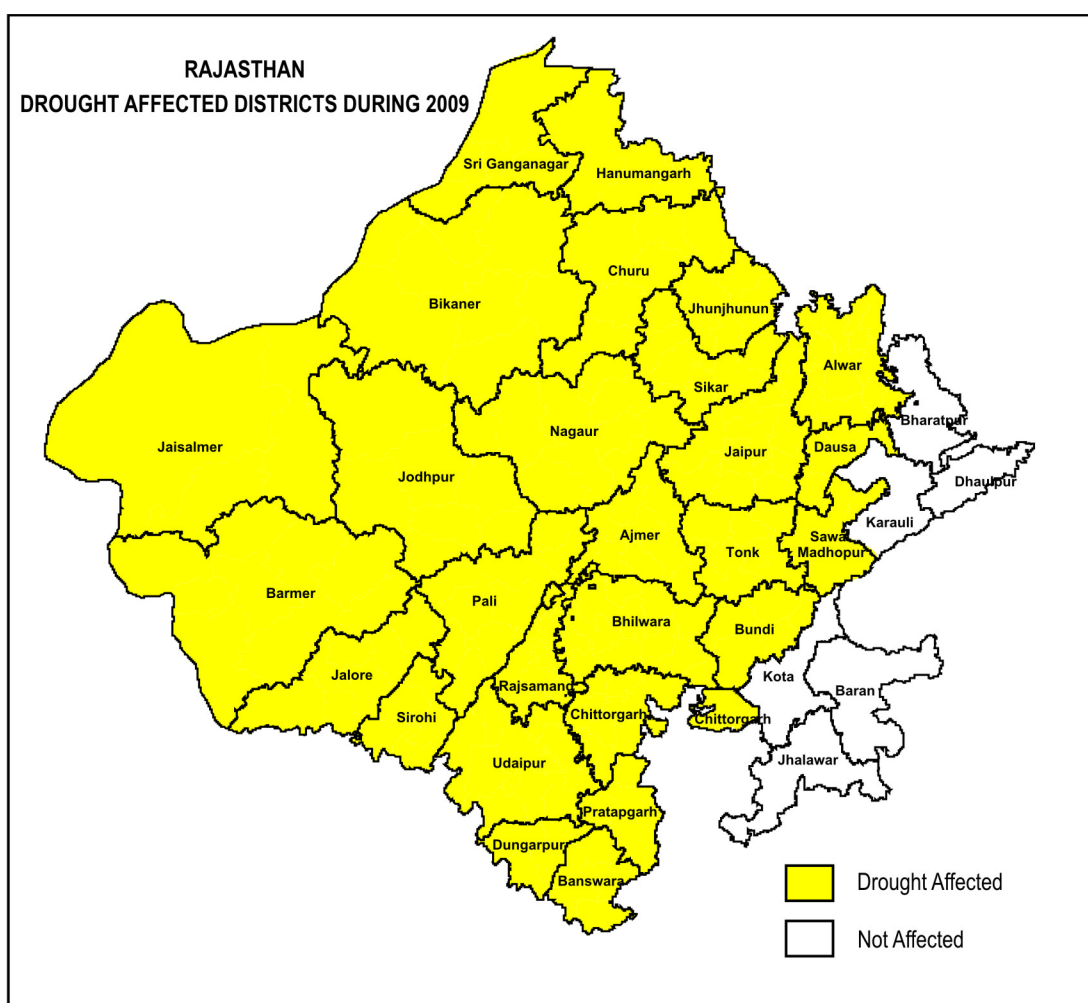
Keeping in view the adverse effects of the drought on children, pregnant women and lactating mothers belonging to vulnerable groups, it was proposed to cover them under the ICDS. 5,95,622 such beneficiaries were to be covered for 90 days involving an estimated expenditure of Rs.21.23 crore.

j) Involvement of Local Government Institutions:

All concerned Departments and agencies including Panchayat Raj Institutions were involved in drought mitigation programmes. Works under Mahatma Gandhi NREGS were being implemented by the Gram Panchayats and Panchayat Samitis to provide employment to people in drought affected areas.

RAJASTHAN

27 Districts declared drought affected : Ajmer, Alwar, Banswada, Barmer, Bhilwara, Bikaner, Bundi, Chittorgarh, Churu, Dausa, Dungarpur, Ganganagar, Hanumangarh, Jaipur, Jaisalmer, Jalore, Jhunjhunu, Jodhpur, Nagaur, Pali, Pratapgarh, Rajsamand, Sawai Madhopur, Sikar, Sirohi, Tonk, Udaipur,



I. RAINFALL SCENARIO AND DECLARATION OF DROUGHT

South West Monsoon 2009 arrived in the State on 29th June, 2009 as compared to its normal date of 15th June. The Monsoon withdrew in the last week of September, 2009. Against the normal rainfall of 539.8 mm, the actual average rainfall during the Monsoon period 2009 was 378.8 mm, which was 30% less than the normal. The performance of Monsoon 2009 was not satisfactory in terms of its periodical and spatial distribution.

As regards the inflow in dams/tanks having capacity of more than 150 mcft against the total gross storage of 4.05 lakh mcft., only 1.67 lakh mcft water was received, which was 41% of the gross storage capacity. Similarly, the water position in small tanks of the capacity of 150 mcft or less was only 15% of their full capacity, thus the State had overall 1/3rd water level in water reservoirs/dams to their capacity and the position of recharging ground water was critical in the State.

Due to deficient rainfall and erratic behaviour of monsoon, 27 districts in the State were declared as scarcity affected on 25.08.2009 (26 districts) and 1 district on 13.11.2009.

II. IMPACT OF DROUGHT

a) Agriculture:

- The total area shown in Kharif 2009 was estimated at 140.98 lakh hectare which was 102% of the target.
- The State Government conducted a special Girdawari in the month of August, 2009 to find out the extent of the losses incurred under Kharif crops 2009 due to erratic behaviour of Monsoon rains.

b) Life & Property:

- Out of 44713 villages, 32833 villages were affected by drought with population affected being 424.64 lakh out of total cattle population of 375.27 lakh, 360.40 lakh population was affected by drought. The money value of the damaged crops due to drought was to the tune of Rs.1542083.65 lakh
- No cases of distress sale of land, cattle, farmers' suicide and migration of human and cattle population etc. were reported.

III. MITIGATION ACTIVITIES

a) Administrative:

- The State Government declared 33464 villages of 27 districts and 191 Tehsils as scarcity affected.
- Land Revenue and Irrigation Cess were suspended in the affected areas and the short term cooperative crop loans of farmers were re-phased and converted into medium term loans to provide relief to farmers.
- The State Government constituted 5 Task Forces for reviewing /managing the position of drinking water & health, supply of fodder & electricity etc. in the affected areas. These Task Forces reviewed the position from time to time, and took appropriate measures to mitigate the situation.
- A set of detailed instructions was circulated to the District Collectors for undertaking relief activities like relief works, opening of fodder depots & cattle camps, providing subsidy to goshalas, making available water through transportation in the problematic villages/dhanies, providing gratuitous relief to the infirm, old & destitute persons and taking veterinary/human health care measures etc. with immediate effect, after the declaration of scarcity. The District Collectors were instructed

to conduct weekly review meetings with DLOs, conduct regular meetings of District Disaster Management Authority and take appropriate measures and prepare contingency plans for providing relief to the victims of drought.

- At the village level, one of the officials from the Department of Revenue/Panchayat/Cooperative/Medical/Education etc. was designated as "incharge of village level relief activities".
- The District Collectors were instructed to mobilize the services of NGOs/Non Residents of Rajasthan in terms of physical and financial help to the affected population.
- The Line Departments like Agriculture, Animal Husbandry, Cooperative, PHED, Medical & Health, Food & Civil Supplies and Panchayat Raj were directed to take up appropriate measures for providing necessary relief to the affected people. State Disaster Management Authority has been issuing directions in this regard.
- The State Government nominated incharge Ministers and Principal Secretaries/Secretaries for each district to supervise the relief activities.
- The Hon'ble Chief Minister requested Government of India/Railway Ministry to provide free transportation of drinking water and fodder through the Railways.
- Chief Secretary and Addl. Chief Secretary conducted regular Video Conferencing with the district authorities to review and monitor the situation. Suitable instructions were given during videoconferencing.
- The State Government set up State/District Emergency Operation Centres for keeping a close watch/coordination over the drought situation.

b) Agriculture:

- Agriculture Department enforced a Contingency Plan of Rs.213.25 crore for providing relief to the affected farmers.
- Agriculture Department organised a State-wide campaign termed "Rabi Mahotsav" in the months of September-October, 2009 at all the Gram Panchayats of the State to educate the farmers to adopt such practices of farming, which were useful during the time of drought. Further, 9.02 lakh fodder minikits were distributed free of cost to the farmers, who had some irrigation facilities, so that they could avail the incentive of fodder production for their animals. It was estimated that these fodder minikits would cover 0.90 lakh hectare sown area and produce 61.50 lakh MT green fodder in the State. One lakh Kisan Credit Cards had also been prepared / distributed in the camps.
- All efforts were made for arranging necessary inputs for the Rabi crops like buffer stock of 50000 MT Urea and 2.50 lakh MT, DAP etc.. Also, the Deptt. ensured availability of good quality seeds, specially wheat, to the farmers at subsidized rates.
- Weather based crop insurance scheme was implemented in 7 districts of the State during Rabi Crop season, which would likely be extended to 17 other districts.
- Construction of 2000 farm ponds, 1000 diggies and 1200 tanks was taken up for conservation of water.
- An expenditure of Rs. 2000.31 lakh was incurred on distribution of fodder minikits, Rs. 335 lakh on construction of storage bins, Rs.186.56 lakh on construction of diggies etc., Rs.437.00 lakh on Bajra seed production by Rajasthan State Seeds Corporation and Rs.181.21 lakh on Beej Rath Project for Kharif 09-10 by the Agriculture Department.
- The situation was being constantly monitored at the level of Addl. Chief Secretary, Agriculture; Commissioner, Agriculture and Principal Secretary, Animal Husbandry. The field level agricultural machinery was geared up for undertaking suitable measures.
- Energy Department ensured four hour electricity supply to farmers by imposing power cut on domestic and industrial sector. The Energy Department also purchased additional Power from market to meet the demands of farmers especially for the Rabi season.

c) Employment Generation:

- 57.91 lakh families were provided employment under Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) upto November 2009 and thus, 36.71 crore mandays of employment were generated. 7.39 lakh families completed 100 days of employment upto November, 2009.
- As per the labour estimates approved for 2009-10, 71.13 lakh families were employed under MGNREGA and 60.48 crore mandays would be generated during the period. Further, 48.31 lakh families were estimated to complete 100 days of employment with 85 days of average employment to the families deployed under MGNREGA.
- The State Government requested the Government of India to allow Indira Awas Yojana, Sarva Shiksha Abhiyan, TFC, construction of Anganwadi Centres & play grounds etc. under MGNREGA works.

d) Drinking Water:

- The problem of drinking water arose due to scanty and erratic rains. In this context, various measures were taken, including the contingency plan for urban and rural sectors.
- The districts were instructed to provide water through transportation in the problematic areas.
- 35th hand pump repair campaign was taken up in rural and urban sectors.

e) Cattle Care:

- A Campaign 'Pashu Chikitsalaya Pashu Palak Ke Dwar' was organised from August, 2009. 5436 veterinary camps were organised every month for the distribution of veterinary medicines, vaccinations and for general check up of animal health in the State.
- The Animal Husbandry Department undertook distribution of mineral mixture to prevent pica and other malnutrition related diseases of animals.
- Fodder availability and its prices were being continuously monitored.
- Various cattle conservation activities i.e. opening of fodder depots, cattle camps, subsidy to goshalas and veterinary care measures were undertaken in the affected areas.

f) Foodgrains:

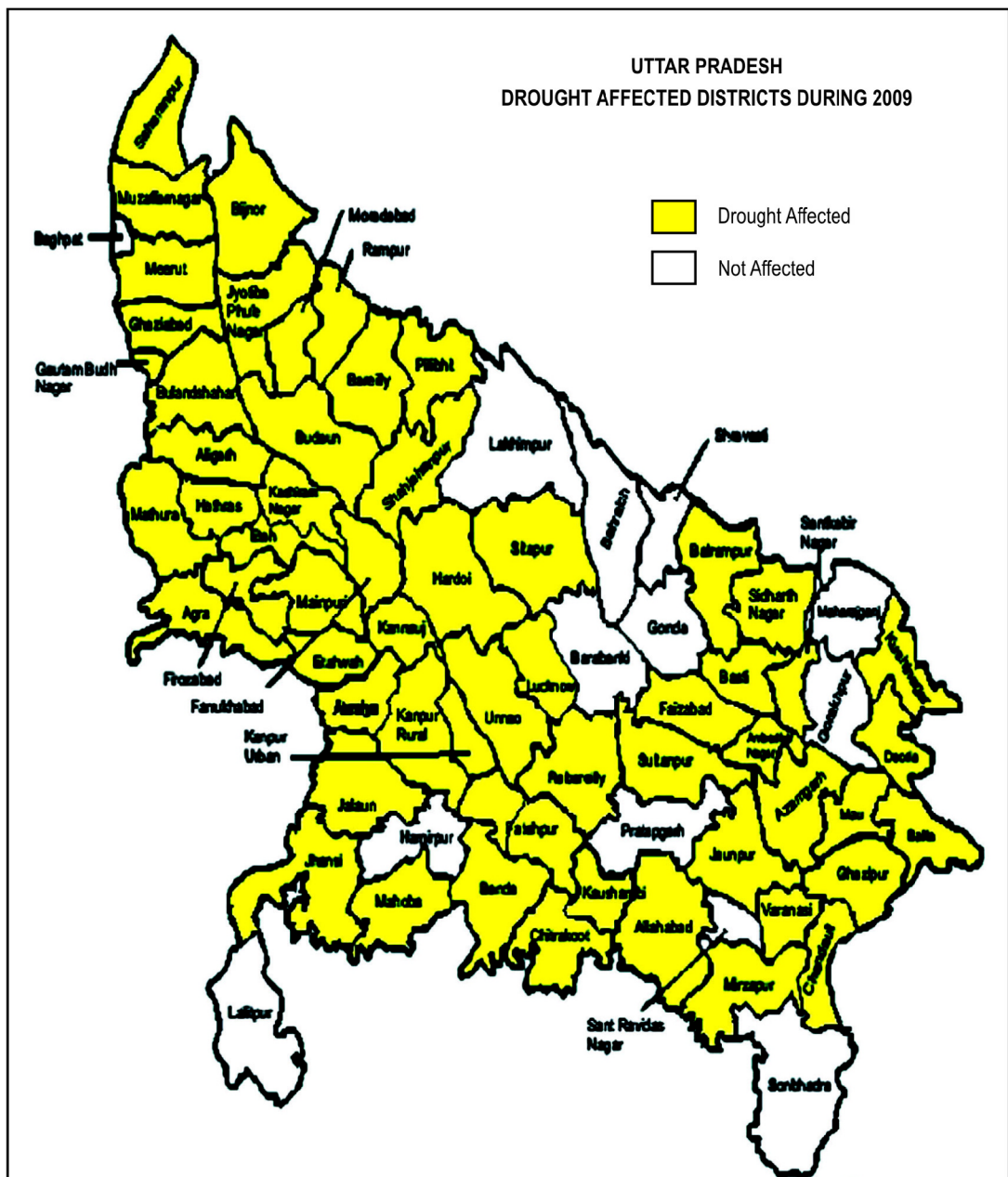
- The Food & Civil Supplies Department enforced the stock and turnover limits for sugar and pulses along with the compulsion of license to the traders having turn over of more than 10 qtl. pulses w.e.f 12-8-2009.
- 5000 MT pulses of Moong and Urad were imported through the National Consumer Federation.
- The Public Distribution System was strengthened and appropriate measures were taken for the distribution of essential commodities like wheat, sugar etc.
- Mid-day-Meal programme in schools was continued in all districts of the State.
- Gratuitous relief was disbursed to aged, infirm and destitute persons as per CRF norms by the districts.

g) Involvement of Local Government Institutions:

- At village level, one of the officials, from the departments of Revenue/Panchayat/Cooperative/Medical/Education etc. was designated as incharge of village level relief activities.
- For making provision of material component under relief works, the funds of MGNREGA/MPLAD/MLALAD and other developmental schemes of the concerned departments were allowed to be dovetailed, at district level.

UTTAR PRADESH

58 Districts declared drought affected : Agra, Aligarh, Allahabad, Ambedkarnagar, Auraiya, Azamgarh, Badaun, Balrampur, Ballia, Banda, Bareilly, Basti, Bijnore, Bulandshahar, Chandauli, Chitrakoot, Deoria, Etah, Etawah, Faizabad, Farukhhabad, Fatehpur, Firozabad, Gautam Budh Nagar, Ghaziabad, Ghazipur, Hardoi, Hathrus, Jalaun, Jaunpur, Jhansi, Jyotiba Phule Nagar, Kannauj, Kanpur Dehat, Kanpur Nagar, Kashiram Nagar, Kaushambi, Kushinagar, Lucknow, Mahoba, Mainpuri, Mathura, Mau, Meerut, Mirzapur, Moradabad, Muzaffarnagar, Pilibhit, Rae Bareilly, Rampur, Saharanpur, Sant Kabir Nagar, Shahjahanpur, Siddharth Nagar, Sitapur, Sultanpur, Unnao, Varanasi.



I. RAINFALL SCENARIO AND DECLARATION OF DROUGHT

During the South West Monsoon season 2009 almost the whole state faced drought and drought like situation due to scanty rains and delayed monsoon. Normally, the rainfall starts from 3rd week of June whereas during 2009 it started from 29th June, 2009. The normal rainfall in the monsoon season is 829.8 mm against which state received only 511.4 mm rainfall during June to September, 2009 which was 61.6% of the normal.

Table -1: Month wise details of rainfall

Sl.No.	Month	Normal rainfall (mm)	Actual rainfall (mm)	% of its normal
1.	June,09	95.0	21.8	23.0
2.	July,09	280.9	150.9	53.7
3.	August,09	275.6	200.2	72.6
4.	September,09	178.3	138.5	77.3
	Total	829.8	511.4	61.6

Rainfall was less with large variation among the districts. Category-wise rainfall during the monsoon season showed that only one district received excess rainfall and 20 districts fall in the category of normal rainfall. Rest of the districts received deficient or scanty rainfall.

Table -2: Category-wise Rainfall during the SW Monsoon

Sl.No.	Category	Rainfall %	Districts No
1	Excess	More than 120	1
2	Normal	80-120	20
3	Deficient	60-80	21
4.	Highly Deficient	40-60	17
5.	Scanty	Less than 40%	11
TOTAL			70

Due to deficient rainfall and erratic behaviour of monsoon, 20 districts in the State were declared drought affected on 25.07.2009, another 27 districts were declared drought affected on 26.07.2009 and 11 more districts were declared drought affected on 30.07.2009.

II. IMPACT OF DROUGHT

a) Agriculture:

*Normal Kharif/Rabi Area in the State:

The average Kharif coverage based on last five year's figures was 89.47 lakh ha.

The coverage under Rabi ranges from 115.30 lakh ha. to 120.62 lakh ha. in the last 5 years.

*Impact of deficient rain in Crop sowing (with reference to time of sowing)

Deficient rainfall conditions during Kharif 2009 had negative impact on Kharif sowing. The targeted Kharif sowing was 91.98 lakh ha, against which only 81.28 lakh ha area could be sown. The major shortfall in the coverage was observed in cereals crops whereas there was marked increase in the coverage under pulses and oilseed crops especially in Til.

Table-3: Crop-wise coverage during Kharif 2009

(in lakh ha.)

S.No.	Crops	Target	Coverage	%
1	Paddy	59.5	50.50	84.87
2	Maize	9.20	6.71	72.93
3	Jowar	2.98	1.93	64.76
4	Bajra	8.51	8.53	100.23
5	Other Millets	0.91	0.26	28.57
6	Urd	3.62	5.24	144.75
7	Moong	0.32	0.40	125.00
8	Arhar	3.94	3.40	86.29
9	Ground nut	0.96	0.95	98.95
10	Soya bean	0.11	0.11	100.00
11	Til	1.93	3.25	168.39
Total		91.98	81.28	88.37

Crops affected (crop wise: area and production)

Due to deficient rainfall the crop coverage was about 88.37% and, therefore, decline in production was quite obvious. Due to non-conducive atmosphere (high temperature and longer dry spell) sprouting, tillering and growth of different crops had been affected adversely. This resulted in lower production. According to the production estimates production of Kharif 2009 was 127.77 lakh MT.

Table - 4: Crop-wise production estimates for Kharif 2008 & 2009

S.No.	Crops	Kharif 2008-09		Kharif 2009-10	
		Area Lakh Ha	Production Lakh MT	Area Lakh Ha	Production Lakh MT
1	Rice	60.12	130.51	50.50	98.63
2	Maize	7.70	11.51	6.71	9.05
3	Jowar	1.93	1.95	1.93	1.96
4	Bajra	8.29	13.02	8.53	12.35
5	Small Millets	0.14	0.08	0.26	0.14
6	Urd	3.62	1.95	5.24	1.90
7	Moong	0.30	0.11	0.40	0.10
8	Arhar	3.15	3.28	3.40	2.64
9	G Nut	0.95	0.67	0.95	0.49
10	Til	1.92	0.32	3.25	0.45
11	Soyabean	0.11	0.09	0.11	0.06
Total		88.09	163.41	81.28	127.77

b) Life & Property:

Drought affected the normal lives of people, particularly the farmers. Consequently the State had to request for assistance to the extent of Rs.7789.14 lakhs from NCCF for a number of sectors, such as, Agriculture, Horticulture, Fisheries, Power, Land Development, Water Resources, animal Husbandry, Irrigation, Ground Water, Basic Education, Health Services, Drinking Water, Forestry and Rural Development.

III. MITIGATION ACTIVITIES

a) Administrative:

A control room at Relief Commissioner's Office at state level was made operational for monitoring and management of the drought situation in the State. Similarly Control Rooms were also made operational at District Magistrate's office in respective districts.

State level steering committee meeting under the Chairmanship of Chief Secretary was held on every Tuesday for evaluating and monitoring the relief activities taken up by the districts along with various related Departments for the management of drought. Instructions were issued from time to time from State Government departmental heads and Relief Commissioner, for effectively carrying out the relief work in the field.

b) Agriculture:

The Truthfully Labelled (TL) Kharif seeds were permitted for free minikit distribution by GOI under RKVY and required budget in this regard was sanctioned by Government. The minikit distribution programme for distribution of 22590 minikits of seeds was finalised by Agriculture Department. TL seeds of maize, Jowar, Bajra, Urd, Moong, Arhar, til and 2400 quintals of certified seed of toria were planned for distribution under Crop Contingency plan.

Table -5: Crop-wise minikit distribution

S.No.	Crops	Kharif 2008-09		Kharif 2009-10	
		Area	Production	Area	Production
		Lakh Ha	Lakh MT	Lakh Ha	Lakh MT
1	Maize	290	7250	-	-
2	Jowar	2000	66666	36147	36147
3	Bajra	6400	640000	607481	607481
4	Urd	5400	133000	105305	105305
5	Moong	2500	62500	38680	38680
6	Arhar	5500	137500	86939	86939
7	Til	500	50000	37885	37885
8	Toria	2400	240000	240000	240000

UP Seed Development Corporation prepared the required seed minikits. Total estimated cost of Kharif seeds was Rs.27.23 crores. The benefit of age relaxation for all varieties of paddy and wheat seeds under National Food Security Mission was made available to the farmers.

Utilization of funds under various centrally sponsored Schemes with emphasis on drought affected districts:

Table -6: Release and fund utilization under the centrally sponsored schemes*(Rs.in crore)*

SI.No.	GOI Scheme	Unspent Balance (1-4-09)	Releases During 09-10	Total Amount	Amount Utilized (25.1.2010)
(1)	(2)	(3)	(4)	(5)	(6)
	RKVY	124.19	244.36	368.55	150.90
	NFSM	63.52	148.99	212.51	145.53
	Macro Management	4.62	120.60	125.22	44.63
	ISOPOM	-	13.47	13.47	4.82
	ATMA	10.83	33.64	44.47	16.47

The cost of Kharif minikits i.e., Rs.27.23 crores was funded by RKVY.

c) Institutional Finance:

Special camps for distribution of Kisan Credit Cards (KCC) were organized by commercial banks including RRBs & a total of 1337207 credit cards were distributed till 31st October, 2009. As per the Agriculture Department report, the progress of distribution of KCCs upto September, 2009 was 1143938 KCC cards. In the month of October 193269 additional KCCs were distributed.

The achievement under crop loan was Rs.4223 crores for Kharif 2009 & Rs.372 crores for Rabi against an annual target of Rs.20744 crores for crop loans.

Special efforts including active monitoring at all levels were made for timely and adequate credit disbursement in the Rabi season and it was expected that targets set for the year would be met.

d) Horticulture and Food Processing:

1. Under RKVY.Scheme, vegetable cultivation in 7,800 ha. in 67 districts of U.P. was planned. During Kharif 2009, an area of 5535 ha. was brought under early hybrid vegetable cultivation of capsicum, chillies, tomato and cucurbits with the help of plastic low tunnels erected at beneficiaries' fields to help in raising early virus free seedlings for cultivation. The subsidy on seeds, fertilizers, irrigation, plastic tunnels, and FYM/Compost was provided and an amount of Rs.25.96 crores was utilized. This resulted in early production during Kharif season itself and helped in early sowing in the Rabi season. Based on the feedback from the Field officers, the production and productivity of these crops increased significantly and farmers benefited through higher income.
2. Training was imparted to 11471 beneficiaries in cultivation of horticulture crops for better utilization of resources in drought conditions.
3. Under National Horticulture Mission, green chilly cultivation (which is traditionally a Zaid crop) in 2229 ha. was taken up during Kharif 2009, with the financial assistance of Rs.11250 per ha. in the form of seeds and other inputs. Based on preliminary feedback, this crop helped in fetching a good price to the beneficiaries.

e) Employment Generation:

With deficient rainfall in the state an early assessment of the situation was conducted by the Department of Rural Development with the objective of undertaking water conservation and water harvesting projects under NREGS and alternative sources of livelihood were provided to people in the drought areas by employing them under MGNREGS.

Government Orders were issued from Chief Secretary and Principal Secretary Rural Development to undertake following major activities in drought affected areas:

- To prepare sufficient number of projects ready for employing people.
- To identify vulnerable sections of society and employ them in easy tasks (providing drinking water facilities, crèche, watering the plants, etc.) on MGNREGS work sites.
- As far as possible, to continue one work in each revenue village in such a manner that workers would not have any problem in getting employed immediately.
- To create a pond in each gram panchayat.

Thus the focus of MGNREGS works had been to provide job opportunities for people and to help in creation of assets that could help in long term mitigation efforts.

Table -7: Major outcome of the activities undertaken under MGNREGS

S.No.	Activity	Outcome
1	Creation of Mandays during the period of drought	541.51 lakh
2	Amount disbursed to people on account of wages under NREGS in drought affected areas during the period of drought	Rs. 541.5 Crores
3	No.of Ponds constructed/ renovated	13839
4	Plantation/drought proofing works undertaken	18730 hectare
5	Total no. of projects undertaken to benefit people for providing alternate employment in drought affected regions	120056

f) Drinking Water:

A brief account of works undertaken for management of water supply in the drought affected districts of Uttar Pradesh is given below:

1. Energising non-functional tube wells:

As per the drought management plan re-boring and energisation of 123 tube wells in the Urban areas was proposed, out of which 29 tube wells were commissioned after re-boring and energisation. Similarly, in rural areas, 177 tube wells were proposed to be rebored and 24 pumping plants were proposed to be replaced. Out of this 2 tube wells were commissioned after re-boring and energisation. 5 old pumping plants and appurtenant electrical appliances were replaced. Work on remaining tube wells was under progress.

2. Contingency plans for transportation of drinking water and action taken:

During the drought period, in such drought affected areas where no alternative arrangement for immediate relief through existing water supply systems was possible, transportation of drinking water was done by deploying Tankers. 130 Tankers were deployed in 9 towns and 38 Tankers were deployed in rural areas to cover 47 habitations in 2 districts.

3. Timely repair of Hand Pumps was carried out to make them functional.

As per the Drought Management Plan, re-boring of 7529 hand pumps in Urban areas was proposed, of which 5389 hand pumps were rebored. Similarly, in Rural areas, 17865 hand pumps were proposed to be rebored and 6836 riser pipes were to be extended. All the works proposed were completed.

4. Utilisation of funds under Gol schemes/State schemes to create additional facilities for both urban and rural areas:

In the rural areas under National Rural Drinking Water Programme (NRDWP), Gol funds of Rs.303.50 crores and Govt. of UP funds of Rs.200.50 crores were utilized for creating additional facilities. Similarly in Urban areas, under Jawahar Lal Nehru National Urban Renewal Mission (JNNURM), 37 schemes in 7 towns relating to water supply, sewerage, drainage & SWM were sanctioned and were under implementation. Total outlay allocated to the State had been utilized. Request had been made to Government of India to increase the outlay for the State under this programme.

g) Efforts of Panchayati Raj Department:

Sufficient funds were allotted to the Gram Panchayats in accordance with the guidelines issued by Gol for the utilization of 12th Finance Commission funds. Gram Panchayats were utilizing them for operation and maintenance of water supply schemes especially hand pumps, Approximately 19 lakh handpumps, were installed in rural areas.

h) Cattle Care:

An action plan to tackle the drought was sent to all the affected districts for execution in the month of June 2009 itself. All the dry fodder (straw) suppliers were enlisted as per instructions and daily fodder rate record was maintained in all districts. Proper monitoring was conducted for availability of dry fodder, green fodder and drinking water for cattle.

i) Foodgrains:

Food & Civil Supplies Department took special measures to cope with the drought situation in the State. Availability of food grains was ensured, particularly for BPL population.

j) Horticulture:

The following activities were undertaken under the National Horticulture Mission (NHM) /National Agriculture Development Programme (NADP)/Commercial Horticulture Development (CHD) in intensive areas and Special Components Plan:

Table - 8 : Activities under NHM / NADP/CHD under Special Components Plan

Sl.No.	Programme	Unit	Physical Target	Physical Achievement	Achievement Percentage
1	Plantation of new gardens under fruit plants	Hect.	21275	16627	78.15
2	Area extension under Vegetable crops	Hect.	8600	4811	55.94
3	Area extension under spices	Hect.	10821	5218	48.22
4	Area extension under flowers	Hect.	3892	763	19.60
5	Farming of Medicinal and Aromatic plants	Hect.	2465	276	11.20
6	Fruits and vegetable cropping from Bio-method	Hect.	1800	748	41.56
7	Farmers Training Programme	No.	35450	11471	32.36

k) Irrigation (Mechanical):

Status of irrigation comprised 27932 state tube wells, 244 minor lift pump canals and 28 major and medium pump canals. Operation and maintenance of state tube wells and minor lift pump canals were carried out and maintenance of mechanical and electrical equipments was undertaken in all major and medium pump canals.

l) Fisheries:

Department of Fisheries, UP, initiated mitigation activities by making 48 Departmental Fish Farms functional. These farms remained non functional over the years for want of recurring expenses. The farms were made functional under RKVY and efforts made in this regard led to production of 488 lakhs of IMC seedlings. In the later phase of Monsoon, many districts of the State received good rains, which rejuvenated the scope of fisheries and till October, 2009, 96.05 crore seedlings were produced and distributed to the fish farmers.

m) Minor Irrigation:

In a normal year, against the annual targets of different minor irrigation schemes, about 55% cumulative targets are fixed till the month of November 2009. But keeping in view the drought situation in the State during 2009-10, the Department issued instructions to complete the annual targets by rabi season. Accordingly CCL norms were relaxed to release all the funds.

Almost all the annual targets under different schemes were achieved well in advance. Upto November, 2009, 82643 free boring/shallow tube wells, 688 deep tube wells and 5,994 medium tube wells were constructed and an additional irrigation potential of 1.95 lakh hectares was created. Under Rashtriya Krishi Vikas Yojana, 7155 private tube wells were energized.

n) Power:

During the year 2008-09, UP Power Corporation supplied power for around 6 to 8 hours per day. But in the year 2009-10 due to drought conditions the average supply hours had to be increased to more than 10 hours per day. Another important fact is that in the previous year the energy consumption in agricultural sector was low as the rainfall was more than the requirement. During 2009, the tube-wells operated at all the times when the supply was available. This resulted into extra supply to rural feeders. Month wise supply data had been compiled of rural feeders for the years 2008-09 and 2009-10 for the period from May to September. The following table indicates the comparative position:

Energy Supply

Table: 9 - Energy Supply during 2008-09 & 2009-10

Month	Energy supplied (MU)	Energy supplied (MU)	Excess Energy Supplied (MU)
	2008-09	2009-10	
May	1195	1492	297
June	1183	1622	439
July	1117	1600	483
August	1188	1649	461
September	1235	1650	415
Total	5918	8013	2095

The above extra energy was drawn under unscheduled interchange (UI) and the average rate was Rs.5.30 per unit. Thus the extra expenditure incurred on account of extra supply to agricultural sector was Rs.1110.35 crores.

CATEGORY-WISE RAINFALL DISTRIBUTION OF DISTRICTS

Source : IMD

01.06.2009 TO 30.09.2009								
Excess	Normal	Deficient				Scanty	No Rain	DNA
20% or More	19% to -19%	-20% to -30%	-31% to -40%	-41% to -50%	-51% to -59%	< = -60%	-100%	*
A & N ISLANDS								
	Andaman							
				Nicobar				
ARUNACHAL PRADESH								
						Changlang		
			Dibang Valley					
		East Kameng						
		East Siang						
	Lohit							
						Lower Subansiri		
Papumpara								
				Tawang				
	Tirap							
								Upper Siang
	Upper Subansiri							
West Kameng								
					West Siang			
ASSAM								
Barpeta								
	Bongaigaon							
	Cacher							
	Darang							
			Dhubri					
	Dibrugarh							
	Goalpara							
		Golaghat						
					Hailakandi			
			Jorhat					
		Kamrup						
	Karbi-Anglong							
	Karimganj							
	Kokrajhar							
		Lakhimpur						
			Morigaon					
								N. C. Hills
	Nalbari							
						Nowgong		
	Sibsagar							
	Sonitpur							
	Tinsukia							

Excess	Normal	Deficient				Scanty	No Rain	DNA
		-20% to -30%	-31% to -40%	-41% to -50%	-51% to -59%			
20% or More	19% to -19%	-20% to -30%	-31% to -40%	-41% to -50%	-51% to -59%	< = -60%	-100%	*
MEGHALAYA								
East Garo Hills								
	East Khasi Hills							Jaintia Hills
NAGALAND								
		Kohima						
						Mon		
				Phek				
						Tuensang		
MIZORAM								
	Aizwal							
								Chhimituipui
MANIPUR								
								Churachandpur
		Imphal						
						Senapati		
TRIPURA								
		North Tripura						
	South Tripura							
	West Tripura							
WEST BENGAL								
			Cooch Behar					
	Darjeeling							
	Jalpaiguri							
		Malda						
	North Dinajpur							
			South Dinajpur					
	Bankura							
	Birbhum							
	Burdwan							
	Hooghly							
		Howrah						
		Midnapore						
	Murshidabad							
		North 24 Parganas						
Nadia								
	Purulia							
	South 24 Parganas							
ORISSA								
	Angul							
	Balasore							
	Baragarh							
Bhadrak								
Bolangir								
	Bodhgarh							

Excess	Normal	Deficient				Scanty	No Rain	DNA
		-20% to -30%	-31% to -40%	-41% to -50%	-51% to -59%			
20% or More	19% to -19%	-20% to -30%	-31% to -40%	-41% to -50%	-51% to -59%	< = -60%	-100%	*
Cuttack			Deogarh					
	Dhenkanal							
	Gajapati							
	Ganjam							
	Jagatsingpur							
	Jajpur							
		Jharsuguda						
Kalahandi								
Kandhamal								
	Kendrapara							
	Keonjhar							
	Khurda							
	Koraput							
			Malkangiri					
	Mayurbhanj							
	Nawapara							
	Nawarangpur							
Nayagarh								
Puri								
	Rayagada							
		Sambalpur						
Sonepur								
		Sundargarh						
JHARKHAND								
	Bokaro							
	Dhanbad							
	East Singhbhum							
	Giridih							
						Godda		
						Gumla		
	Hazaribagh							
					Koderma			
				Lohardaga				
						Pakur		
			Palamau					
	Ranchi							
								Sahebganj
		Santhal Parganas						
	West Singhbhum							
BIHAR								
	Araria							
	Aurangabad							
				Begusarai				
					Bhabua			

Excess	Normal	Deficient				Scanty	No Rain	DNA
20% or More	19% to -19%	-20% to -30%	-31% to -40%	-41% to -50%	-51% to -59%	< = -60%	-100%	*
	Bhagalpur							
					Bhojpur			
	Buxar							
	Darbhanga							
	East Champaran							
		Gaya						
				Gopalganj				
				Jahanabad				
			Jamui					
				Katihar				
		Khagaria						
						Kishanganj		
				Madhepura				
	Madhubani							
	Monghyr							
		Muzaffarpur						
				Nalanda				
		Patna						
	Purnea							
	Rohtas							
		Saharsa						
				Samastipur				
					Saran			
			Sitamarhi					
						Siwan		
				Supaul				
					Vaishali			
	West Champaran							
UTTAR PRADESH								
				Allahbad				
				Ambedkar Nagar				
		Azamgarh						
	Bahraich							
					Ballia			
			Balrampur					
			Banda					
	Barabanki							
			Basti					
					Deoria			
	Faizabad							
				Farukhabad				
					Fatehpur			
			Gazipur					
		Gonda						

Excess	Normal	Deficient				Scanty	No Rain	DNA
20% or More	19% to -19%	-20% to -30%	-31% to -40%	-41% to -50%	-51% to -59%	< = -60%	-100%	*
		Gorakhpur						
			Hardoi					
				Jaunpur				
				Kanpur City				
					Kanpur Dehat			
	Kheri							
						Kushi Nagar		
	Lucknow							
						Maharajganj		
						Mau		
						Mirzapur		
				Pratapgarh				
						Rae Bareilly		
					Sahuji Maharaj Nagar			
			Sant Ravidas Nagar					
	Shrawasti Nagar							
	Sidharth Nagar							
	Sitapur							
					Sonbhadra			
			Sultanpur					
		Unnao						
					Varanasi			
						Agra		
						Aligarh		
				Auriya				
		Badaun						
Baghpat								
	Bareilly							
			Bijnore					
				Bulandshahr				
						Etah		
						Etawah		
						Firozabad		
						Ghaziabad		
		Hamirpur						
					Jalaun			
				Jhansi				
				Jyiba Phule Nagar				
				Lalitpur				
						Mahamaya Nagar		
			Mainpuri					

Excess	Normal	Deficient				Scanty	No Rain	DNA
20% or More	19% to -19%	-20% to -30%	-31% to -40%	-41% to -50%	-51% to -59%	< = -60%	-100%	*
			Mathura					
						Meerut		
			Moradabad					
						Muzaffarnagar		
			Pilibhit					
						Rampur		
		Saharanpur						
	Shahjahanpur							
UTTARAKHAND								
			Almora					
Chmpawat			Chamoli					
		Dehradun						
				Garhwal Pauri				
					Garhwal Tehri			
	Hardwar							
		Nainital						
	Pithoragarh							
						Rudraprayag		
						Udham Singh Nagar		
	Uttarkashi							
HARYANA								
	Ambala							
				Bhiwani				
			Faridabad					
					Fatehabad			
		Gurgaon						
			Hissar					
	Jhajjar							
	Jind							
						Kaithal		
		Karnal						
						Kurukshetra		
				Mahendragarh				
						Panchkkula		
					Panipat			
				Rewari				
				Rohtak				
						Sirsa		
	Sonepat							
		Yamuna Nagar						
PUNJAB								
						Amritsar		
				Bhatinda				

Excess	Normal	Deficient				Scanty	No Rain	DNA
		-20% to -30%	-31% to -40%	-41% to -50%	-51% to -59%			
20% or More	19% to -19%	-20% to -30%	-31% to -40%	-41% to -50%	-51% to -59%	< = -60%	-100%	*
			Faridkot					
						Fatehgarh Sahib		
						Ferozpur		
			Gurdaspur					
			Hoshiarpur					
	Jalandhar							
Kapurthala								
	Ludhiana							
				Moga				
						Muktasar		
			Nawashahar					
	Ropar	Patiala						
			Sangrur					
STATE/METSD(15) : HIMACHAL PRADESH								
Bilaspur								
						Chamba		
	Hamirpur							
			Kangra					
Kinnaur								
	Kulu							
					Lahaul & Spiti			
			Mandi					
		Simla						
				Sirmur				
		Solan						
Una								
JAMMU & KASHMIR								
	Anantnag							
								Badgam
		Doda						
			Jammu					
					Kathua			
		Kupwara						
						Ladakh (Leh)		
	North Baramulla							
		Pulwama						
			Srinagar					
				Udhampur				
RAJASTHAN								
		Barmer						
		Bikaner						
				Churu				

Excess	Normal	Deficient				Scanty	No Rain	DNA
20% or More	19% to -19%	-20% to -30%	-31% to -40%	-41% to -50%	-51% to -59%	< = -60%	-100%	*
			Hanumangarh					
			Jaisalmer					
					Jalore			
					Jodhpur			
					Nagaur			
			Pali					
		Sri Ganganagar						
				Ajmer				
	Alwar							
		Banswara						
		Baran						
	Bharatpur							
				Bhilwara				
				Bundi				
	Chittorgarh							
			Dausa					
				Dholpur				
	Dungarpur							
				Jaipur				
			Jhalawar					
				Jhunjhunu				
			Karauli					
			Kota					
		Rajsamand						
					Sawai Madhopur			
					Sikar			
		Sirohi						
				Tonk				
	Udaipur							
MADHYA PRADESH								
			Barwani					
	Betul							
				Bhind				
	Bhopal							
	Datia							
			Dewas					
		Dhar						
			Guna					
					Gwalior			
		Harda						
	Hoshangabad							
	Indore							
		Jhabua						
				Khandwa				
	Khargaon							

Excess	Normal	Deficient				Scanty	No Rain	DNA
20% or More	19% to -19%	-20% to -30%	-31% to -40%	-41% to -50%	-51% to -59%	< = -60%	-100%	*
	Mandsour							
		Morena						
	Neemach							
		Raisen						
			Rajgarh					
		Ratlam						
			Sehore					
			Shajapur					
						Sheopur		
		Shivpuri						
		Ujjain						
		Vidisha						
		Balaghat						
				Chhatarpur				
	Chhindwara							
				Damoh				
						Dindori		
	Jabalpur							
						Katni		
			Mandla					
	Narsingpur							
			Panna					
						Rewa		
		Sagar						
			Satna					
		Seoni						
				Shahdol				
				Sidhi				
				Tikamgarh				
				Umaria				
GUJARAT								
				Ahmedabad				
					Anand			
				Banaskantha				
				Baroda				
					Broach			
					Dahod			
			Dangs					
			Gandhinagar					
				Kheda				
			Mehsana					
			Narmada					
		Navsari						
					Panchmahal			
				Patan				

Excess	Normal	Deficient				Scanty	No Rain	DNA
		-20% to -30%	-31% to -40%	-41% to -50%	-51% to -59%			
20% or More	19% to -19%	-20% to -30%	-31% to -40%	-41% to -50%	-51% to -59%	< = -60%	-100%	*
	Sabarkantha							
	Surat							
	Valsad							
	Amreli							
			Bhavnagar					
Jamnagar								
Junagarh								
Kutch								
Porbandar								
	Rajkot							
				Surendranagar				
MAHARASHTRA								
	Mumbai							
			Raigad					
	Ratnagiri							
	Sindhudurg							
		Thane						
	Ahmednagar							
	Dhulie							
		Jalgaon						
Kolhapur								
			Nandurbar					
Nasik								
		Pune						
	Sangli							
	Satara							
	Sholapur							
		Aurangabad						
	Beed							
	Jalna							
				Latur				
				Nanded				
	Osmanabad							
		Parbhani						
Akola								
		Amraoti						
		Bhandara						
	Buldana							
				Chandrapur				
			Gadchiroli					
		Gondia						
	Nagpur							
			Wardha					
				Washim				
				Yeotmal				

Excess	Normal	Deficient				Scanty	No Rain	DNA
		-20% to -30%	-31% to -40%	-41% to -50%	-51% to -59%			
20% or More	19% to -19%	-20% to -30%	-31% to -40%	-41% to -50%	-51% to -59%	< = -60%	-100%	*
CHHATTISGARH								
		Bastar						
			Bilaspur					
				Dantewada				
	Dhamtari							
			Durg					
			Janjgir					
			Jashpur					
			Kanker					
			Korba					
			Koriya					
				Kowardha				
	Mahasamund							
		Raigarh						
	Raipur							
			Rajnandgaon					
					Surguja			
ANDHRA PRADESH								
			East Godavary					
		Guntur						
			Krishna					
		Nellore						
		Prakasam						
	Srikakulam							
		Vishakhapatnam						
	Vizianagaram							
			West					
Godavary								
			Adilabad					
	Hyderabad							
				Karimnagar				
			Khamman					
		Mahabunagar						
				Medak				
			Nalgonda					
			Nizamabad					
	Rangareddy							
			Warangal					
	Anantapur							
	Chittoor							
	Cuddapah							
	Kurnool							
TAMIL NADU								
				Chennai				
Coimbtore								

Excess	Normal	Deficient				Scanty	No Rain	DNA
20% or More	19% to -19%	-20% to -30%	-31% to -40%	-41% to -50%	-51% to -59%	< = -60%	-100%	*
		Cuddalore						
	Dharmapuri							
	Dindigul							
	Erode							
		Kanchipuram						
	Kanyakumari							
			Karur					
	Krishnagiri							
	Madurai							
				Nagapatinam				
		Namakkal						
	Nilgiri							
			Perambalur					
				Pudukottai				
	Ramanathapuram							
Salem								
	Sivaganga							
		Thanjavur						
Theni								
Tirunavelli								
		Tiruvallur						
	Tiruvannamalai							
		Tiruvarur						
	Trichy							
			Tuticorin					
	Vellore							
	Villupuram							
					Virudunagar			
KARNATAKA								
	Dakshina Kannada							
	Udupi							
	Uttar Kannada							
Bagalkote								
Belgam								
			Bidar					
Bijapur								
Dharwada								
	Gadag							
	Gulbarga							
Haveri								
Koppal								
	Raichur							
	Bangalore Rural							
Bangalore urban								
Bellary								

Excess	Normal	Deficient				Scanty	No Rain	DNA
		-20% to -30%	-31% to -40%	-41% to -50%	-51% to -59%			
20% or More	19% to -19%	-20% to -30%	-31% to -40%	-41% to -50%	-51% to -59%	< = -60%	-100%	*
	Chamarajnaraga							
Chikmagalur								
Chitradurga								
Davangere								
	Hassan							
Kodagu								
Kolar								
Mandya								
Mysore								
Shimoga								
Tumkur								
KERALA								
		Alapuzha						
	Cannur							
	Ernakulam							
	Idukki							
	Kasargode							
		Kollam						
		Kottayam						
	Kozhikode							
	Malapuram							
	Palakked							
	Pathanamthitta							
			Thiruvananthapuram					
	Trissur							
		Wynad						

