

## North-East Monsoon 2007: An Overview\* (October 1 to December 31, 2007)

### Introduction

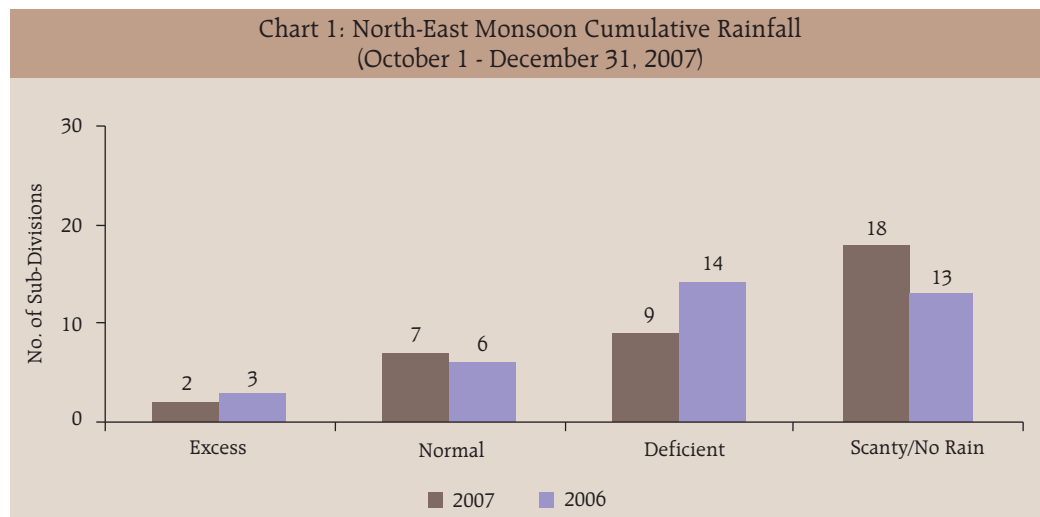
The performance of monsoon assumes a crucial role in influencing agricultural production. There are two monsoon seasons in India *viz.*, South-West, covering the period from June to September and North-East (or post-monsoon period) from October to December. The North-East monsoon season is the major period of rainfall activity over the South Peninsula, particularly, in the eastern half comprising of the meteorological sub-divisions of Coastal Andhra Pradesh, Rayalaseema, Tamil Nadu and Pondicherry.

### North-East Monsoon 2007 - Highlights

- The North-East monsoon rains commenced over Tamil Nadu and adjoining States of South Peninsula on October 22, 2007.
- Cumulative rainfall recorded during the period from October 1 to December 31, 2007 was 32 per cent below normal (Long-Period Average) as compared with 21 per cent below normal during the corresponding period of the previous year.
- During the months under review (*i.e.*, October, November and December), large rainfall deficiency in the range of 16.0 per cent to 49.0 per cent from the Long-Period Average (LPA) was witnessed. The rainfall deficiency was especially acute during the months of October and November.
- In terms of spatial distribution, South Peninsular India received normal<sup>1</sup> rainfall, while the North-East India received deficient rainfall. The North-West India and the Central India received scanty rainfall.
- The seasonal rainfall from October 1, 2007 to December 31, 2007 was excess/normal in 9 (25 per cent) meteorological

\*Prepared in the Division of Rural Economics, Department of Economic Analysis and Policy.

<sup>1</sup> Based on the percentage deviation of the quantum of rainfall from the Long-Period Average, the India Meteorological Department defines five categories of rainfall: Excess: + 20 per cent or more; Normal: + 19 per cent to -19 per cent; Deficient: -20 per cent to - 59 per cent; Scanty: -60 per cent to -99 per cent; and No Rain: -100 per cent.



sub-divisions while it was deficient/scanty/no rains in the remaining 27 sub-divisions (75 per cent).

- As per the available data for 513 meteorological districts, 24 per cent of these received excess/normal rainfall, while the rest received deficient/scanty/no rain.

### North-East Monsoon 2007 Cumulative Rainfall

Cumulative rainfall recorded during the period from October 1 to December

31, 2007 was 32 per cent below normal as compared with 21 per cent below normal during the corresponding period of the previous year.

The rainfall during the North-East monsoon 2007 was distributed unevenly across space. Of the 36 meteorological sub-divisions, cumulative rainfall was excess/normal in 9 sub-divisions (same as in the corresponding period of the previous year) and deficient/scanty/no rains in 27 sub-divisions (same as previous year) (Chart 1, Table 1 and Statement 1). Barring 2002,

Table 1: Distribution of Sub-divisions According to Category of Rainfall

Category of Rainfall	Sub-divisions
Excess +20% or more	Nagaland, Manipur, Mizoram & Tripura, Tamil Nadu & Pondicherry.
Normal +19% to -19%	Assam & Meghalaya, Chhattisgarh, Rayalaseema, Coastal Karnataka, South Interior Karnataka, Kerala, Lakshadweep.
Deficient -20% to -59%	Andaman & Nicobar Islands, Arunachal Pradesh, Sub-Himalayan West Bengal and Sikkim, Gangetic West Bengal, Orissa, Bihar, Vidarbha, Coastal Andhra Pradesh, Telangana.
Scanty -60% to -99%	Jharkhand, East Uttar Pradesh, West Uttar Pradesh, Uttaranchal, Haryana, Chandigarh & Delhi, Punjab, Himachal Pradesh, Jammu & Kashmir, West Rajasthan, East Rajasthan, West Madhya Pradesh, East Madhya Pradesh, Gujarat Region, Daman, Dadra & Nagar Haveli, Saurashtra & Kutch, Konkan and Goa, Madhya Maharashtra, Marathwada, North Interior Karnataka.

Source: India Meteorological Department.

Year	Cumulative Rainfall Above (+)/ Below (-) Normal (per cent)	Rainfall			
		Excess	Normal	Deficient	Scanty/ No Rain
		Number of Sub-Divisions (Total = 36)			
1	2	3	4	5	6
2002	-33	3	7	12	14
2003	8	9	9	6	12
2004	-11	8	10	17	1
2005	10	11	6	5	14
2006	-21	3	6	14	13
2007	-32	2	7	9	18

Source : IMD

the North-East monsoon 2007 witnessed the lowest cumulative rainfall in the last six years (Table 2).

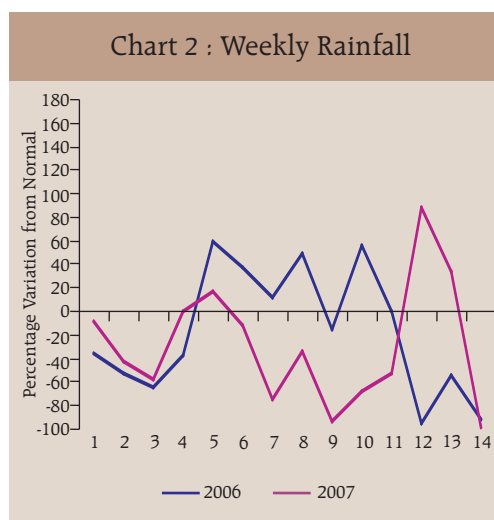
### Temporal Distribution

Temporally, the North-East monsoon witnessed deficient rainfall during the first half of October, entire November and the first half of December (Chart 2).

The rainfall over the country as a whole was deficient (32 per cent below Long Period Average), particularly, in the months of October (30 per cent below LPA) and November (49 per cent below LPA) (Table 3).

### Region-wise Rainfall during the North-East Monsoon 2007

Among the four regions<sup>2</sup>, the rainfall was normal only in the South Peninsular Region. It was deficient in the North-East India, while it was scanty in the



North-West India and the Central India (Table 4).

### District level cumulative rainfall during the North-East monsoon 2007

There are 533 meteorological districts of which data is available for 513 districts. Of these 513 meteorological districts, 24 per cent received excess/normal rainfall, while the rest received deficient/scanty/no rain (Statement 2).

Month	Absolute Rainfall (in mm)		Percentage Departure from Normal
	Actual	Normal	
1	2	3	4
October	54.9	78.4	-30
November	14.4	28.4	-49
December	16.1	19.1	-16
Overall	85.4	125.9	-32

Source: IMD

<sup>2</sup>1. **North-West India:** Uttar Pradesh, Rajasthan, Haryana, Chandigarh and Delhi, Punjab, Uttaranchal, Himachal Pradesh and Jammu and Kashmir. 2. **Central India:** Madhya Pradesh, Chhattisgarh, Maharashtra and Gujarat. 3. **South Peninsula:** Andhra Pradesh, Karnataka, Tamil Nadu & Pondicherry, Kerala and Lakshdweep. 4. **North-East India:** Bihar, Jharkhand, Orissa, West Bengal, Sikkim, Assam, Arunachal Pradesh, Meghalaya, Nagaland, Manipur, Mizoram, Tripura and Andaman & Nicobar Islands.

Table 4: Region-wise Rainfall during the  
North-East Monsoon 2007

Region	Actual (in mm)	Normal (in mm)	Deviation (%)	Category
1	2	3	4	5
North-West India	15.3	66.7	-77	Scanty
Central India	31.6	79.9	-60	Scanty
South Peninsular				
India	254.9	268.4	-5	Normal
North-East India	125.3	161.5	-22	Deficient
Country as a whole	85.4	125.9	-32	Deficient

Source : IMD

### Reservoir Status

The Central Water Commission monitors the total live water storage in the 81 major reservoirs accounting for 72 per cent of the total reservoir capacity in the country. As on January 3, 2008, water stock in the major reservoirs was 61 per cent of the Full Reservoir Level (FRL) as compared with 65 per cent a year ago (Table 5).

### Progress of Sowing

The area sown under rabi crops so far (up to January 4, 2008) has been about 3.8 per cent lower than a year ago. The sowing under rabi was lower in the case of wheat, pulses and oilseeds, while that in case of rice and coarse cereals was higher as compared with the previous year (Table 6).

Table 5: Reservoir Status

Status As on January 3,	2005	2006	2007	2008
1	2	3	4	5
Total Live Storage (BCM)	60.343	89.433	97.939	92.274
Percentage to Live Capacity at FRL	40	59	65	61

Source: Central Water Commission.

Table 6: Progress of Area  
under Rabi Crops - 2007-08

(Million hectares) (As reported on January 4, 2008)

Crop	Normal Area	Area Coverage		
		2006	2007	Absolute Variation 2007 over 2006
1	2	3	4	5
Rice	3.7	0.4	0.4	0.0
Wheat	26.2	27.5	26.6	-0.9
Coarse Cereals	6.4	6.4	6.5	0.1
<i>Of which</i>				
Jowar	5.0	4.7	4.6	-0.1
Maize	0.7	0.8	0.9	0.1
Total Pulses	11.4	13.0	12.6	-0.3
Total Rabi Oilseeds	8.8	9.3	8.2	-1.1
<i>Of which</i>				
Rapeseed and Mustard	5.9	6.6	5.9	-0.8
Groundnut	0.8	0.6	0.5	-0.1
Sunflower	1.2	1.1	0.9	-0.2
All Crops	56.5	56.5	54.3	-2.2

Source : Ministry of Agriculture, Government of India.

Statement - 1 : Basic Rainfall Data (Cumulative)									
Sub-Divisions		Rainfall for the period from October 1 to December 31, 2007.				Rainfall for the period from October 1 to December 31, 2006.			
		Actual (mm)	Normal (mm)	% deviation from Normal		Actual (mm)	Normal (mm)	% deviation from Normal	
1.	Andaman & Nicobar Islands	519.0	700.0	-26	D	530.0	700.0	-24	D
2.	Arunachal Pradesh	146.0	244.0	-40	D	219.0	244.0	-10	N
3.	Assam & Meghalaya	187.0	191.0	-2	N	111.0	191.0	-42	D
4.	Nagaland, Manipur, Mizoram & Tripura	272.0	195.0	39	E	109.0	195.0	-44	D
5.	Sub-Himalayan West Bengal and Sikkim	86.0	183.0	-53	D	145.0	183.0	-21	D
6.	Gangetic West Bengal	97.0	159.0	-39	D	57.0	159.0	-64	S
7.	Orissa	89.0	155.0	-43	D	60.0	155.0	-61	S
8.	Jharkhand	34.0	100.0	-66	S	16.0	100.0	-84	S
9.	Bihar	39.5	78.6	-50	D	24.0	79.0	-70	S
10.	East Uttar Pradesh	8.0	62.0	-87	S	15.0	62.0	-76	S
11.	West Uttar Pradesh	2.4	50.9	-95	S	19.0	51.0	-63	S
12.	Uttaranchal	13.0	87.0	-85	S	18.0	87.0	-79	S
13.	Haryana, Chandigarh & Delhi	2.3	27.4	-92	S	9.2	27.0	-66	S
14.	Punjab	10.0	41.0	-76	S	29.0	41.0	-29	D
15.	Himachal Pradesh	25.0	111.0	-77	S	61.0	111.0	-45	D
16.	Jammu & Kashmir	50.0	153.0	-67	S	253.0	153.0	65	E
17.	West Rajasthan	0.6	8.9	-93	S	7.4	9.0	-18	N
18.	East Rajasthan	0.7	26.0	-97	S	1.9	26.0	-93	S
19.	West Madhya Pradesh	1.7	52.0	-97	S	12.0	52.0	-77	S
20.	East Madhya Pradesh	14.4	59.1	-76	S	10.9	59.0	-82	S
21.	Gujarat Region, Daman, Dadra & Nagar Haveli	1.3	34.7	-96	S	8.9	35.0	-75	S
22.	Saurashtra & Kutch	0.9	25.9	-96	S	1.2	26.0	-95	S
23.	Konkan and Goa	53.2	135.4	-61	S	203.0	135.0	50	E
24.	Madhya Maharashtra	10.8	105.4	-90	S	62.0	105.0	-41	D
25.	Marathwada	5.3	96.0	-95	S	58.0	96.0	-40	D
26.	Vidarbha	34.4	75.3	-54	D	49.0	75.0	-35	D
27.	Chhattisgarh	88.5	82.0	8	N	33.3	82.0	-59	D
28.	Coastal Andhra Pradesh	260.0	326.2	-20	D	335.0	325.5	3	N
29.	Telangana	69.5	109.6	-37	D	70.0	110.0	-36	D
30.	Rayalaseema	210.4	212.1	-1	N	164.0	212.0	-23	D
31.	Tamil Nadu & Pondicherry	521.0	431.8	21	E	496.0	432.0	15	N
32.	Coastal Karnataka	214.6	258.0	-17	N	343.0	258.0	33	E
33.	North Interior Karnataka	52.3	136.7	-62	S	76.1	137.0	-44	D
34.	South Interior Karnataka	205.7	199.7	3	N	149.0	200.0	-26	D
35.	Kerala	472.6	498.5	-5	N	590.0	499.0	18	N
36.	Lakshadweep	392.1	328.9	19	N	289.0	329.0	-12	N
E :	Excess, i.e., +20% or more			2				3	
N :	Normal, i.e., +19% to -19%			7				6	
D :	Deficient, i.e., -20% to -59%			9				14	
S :	Scanty, i.e., -60% to -99%			18				13	
NR :	No Rain, i.e. -100%			0				0	
	<b>TOTAL</b>			<b>36</b>				<b>36</b>	

Source : India Meteorological Department.

## ARTICLE

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An Overview  
(October 1 to  
December 31, 2007)

Statement - 2 : Statewise Distribution of No. of Districts  
with Excess, Normal, Deficient, Scanty and No Rainfall

01.10.2007 to 31.12.2007

S.NO.	STATE/UT	E	N	D	S	NR	ND	TOTAL
1	A & N ISLAND (UT)	0	0	2	0	0	0	2
2	ARUNACHAL PRADESH	1	3	4	5	0	0	13
3	ASSAM	3	9	8	1	0	1	22
4	MEGHALAYA	2	0	0	0	0	1	3
5	NAGALAND	2	1	0	0	0	1	4
6	MANIPUR	1	1	0	0	0	1	3
7	MIZORAM	1	1	0	0	0	0	2
8	TRIPURA	2	1	0	0	0	0	3
9	SIKKIM	0	0	1	0	0	0	1
10	WEST BENGAL	0	4	9	3	0	1	17
11	ORISSA	1	6	9	14	0	0	30
12	JHARKHAND	1	1	4	6	0	3	15
13	BIHAR	2	3	5	11	5	6	32
14	UTTAR PRADESH	0	0	4	30	27	3	64
15	UTTARANCHAL	0	0	0	9	2	1	12
16	HARYANA	0	0	1	6	12	0	19
17	CHANDIGARH (UT)	0	0	0	1	0	0	1
18	DELHI (UT)	0	0	0	1	0	0	1
19	PUNJAB	0	0	3	11	2	0	16
20	HIMACHAL PRADESH	0	0	4	6	2	0	12
21	JAMMU & KASHMIR	0	0	3	6	1	1	11
22	RAJASTHAN	0	0	0	16	16	0	32
23	MADHYA PRADESH	1	1	0	20	23	0	45
24	CHHATTISGARH	1	3	8	4	0	0	16
25	GUJARAT	0	0	1	12	12	0	25
26	DNH & DAMAN (UTs)	0	0	0	1	0	0	1
27	DIU (UT)	0	0	0	0	0	1	1
28	GOA	0	1	0	0	0	0	1
29	MAHARASHTRA	0	4	1	20	8	0	33
30	ANDHRA PRADESH	2	4	15	2	0	0	23
31	TAMILNADU	14	15	1	0	0	0	30
32	PONDICHERY (UT)	0	1	0	0	0	0	1
33	KARNATAKA	5	9	8	5	0	0	27
34	KERALA	0	11	3	0	0	0	14
35	LAKSHADWEEP (UT)	0	1	0	0	0	0	1
	<b>TOTAL</b>	<b>39</b>	<b>80</b>	<b>94</b>	<b>190</b>	<b>110</b>	<b>20</b>	<b>533</b>

E: Excess      N: Normal      D: Deficient      S: Scanty      NR: No Rain      ND: No Data

Source : India Meteorological Department.