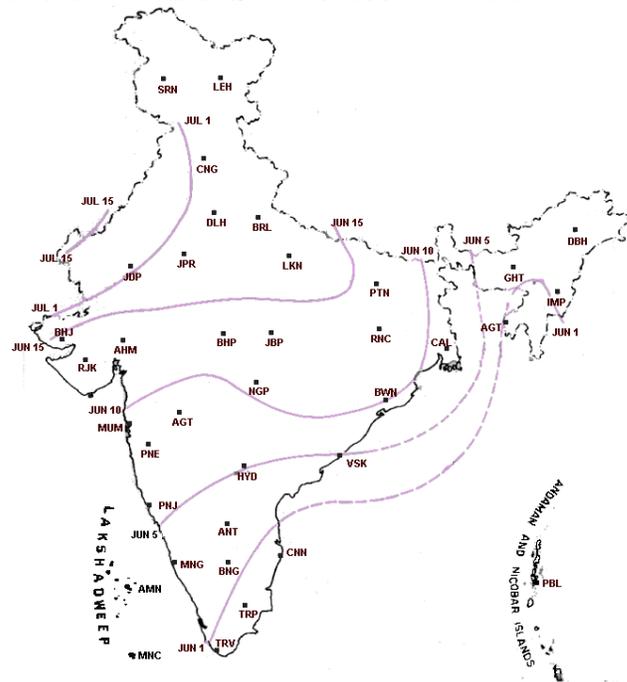


South West Monsoon 2011: Performance in North East India

This year, setting in of southwest monsoon over Andaman Sea was delayed by about 10 days. However, it set over Kerala 3 days before its normal date of 1st June. Monsoon set in over most parts of South Arabian Sea, Kerala, some parts of Tamil Nadu, south Bay of Bengal and South Andaman Sea on 29th May 2011. On the other hand, the eastern branch of monsoon advanced over some more parts of Bay of Bengal and northeastern states, with a delay of nearly 5 days (Normal date: 5th June) (Figure 1). This eastern branch of monsoon (Bay of Bengal branch) is mainly responsible for performance of SW monsoon in North Eastern region. According to IMD, the SW monsoon, in many parts of NE region, is not yet vigorous and causing delay in sowing/transplanting of rainfed crops.

Figure 1: Normal onset dates of SW monsoon in India



Source: IMD

The IMD issued its 1st long range forecast (LFR) on monsoon on 19th April, which may be summarized as follows: “IMD’s long range forecast for the 2011 south-west monsoon season (June to September) is that the rainfall for the country as a whole is most likely to be Normal (96-104% of Long Period Average (LPA)). There is very low probability for season rainfall to be deficient (below 90% of LPA) or excess (above 110% of LPA). Quantitatively, monsoon season rainfall is likely to be 98% of the LPA with a model error of $\pm 5\%$. The LPA of the season rainfall over the country as a whole for the period 1951-2000 is 89 cm.”

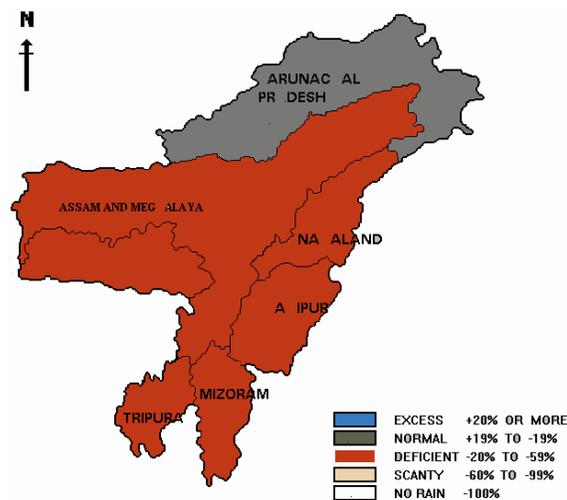
As far as the performance of monsoon in **Northeast India** (comprising states of Arunachal Pradesh, Meghalaya, Assam, Nagaland, Manipur, Mizoram, Tripura, Sikkim, West Bengal, Bihar and Jharkhand) is concerned the long period average (LPA) and coefficient of variability (CV, %) is lowest in this region (Table 1). The values of LPA and CV for NE

Region are 1438.3 mm and 12.6%, respectively, suggesting good receipt and distribution of monsoon compared to other regions of India. But as the season progresses, the performance of monsoon has been found towards negative side of normal ($\pm 19\%$) range in many places of the NE region. The latest updated forecast (August 2011) of IMD suggests that the rainfall during monsoon season will be 95% of its long period average over North-East India with a model error of $\pm 8\%$.

Table 1: The long period average (LPA) and coefficient of variation of season rainfall over various regions based on the 1951-2000 data

Region	LPA (mm)	Coefficient of Variation (%)
Season (June to September) Rainfall		
All India	887.5	10.7
Northwest India	615.0	18.9
Central India	975.5	15.0
Northeast India	1438.3	12.6
South Peninsula	715.5	15.3

As on **3rd August 2011**, the distribution of monsoon rainfall in the North Eastern states has been depicted as follows (Source: IMD):



Figures indicate actual rainfall in mms with percentage departure from normal shown in bracket.

SUBDIVISION	ACT	NOR	% DEP
ARUNACHAL PRADESH	874.2	984.3	-11
ASSAM & MEGHALAYA	707.3	1095.7	-35
NAGALAND, MANIPUR, MIZORAM & TRIPURA	619.7	1006.9	-38

STATES	ACT	NOR	% DEP
ARUNACHAL PRADESH	874.2	984.3	-11
ASSAM	661.8	914.1	-28
MANIPUR	624.8	1295.2	-52
MEGHALAYA	926.3	1767.2	-48
MIZORAM	629.4	939.1	-33
NAGALAND	461.7	780.7	-41
TRIPURA	707.4	913.3	-23

ACT – ACTUAL, NOR – NORMAL, DEP – DEPARTURE

Both state and meteorological sub-division wise, the monsoon rainfall is towards deficit side in NE region since its onset in June 2011, except in Arunachal Pradesh (-11%). The rainfall deficit is highest at Manipur (-52%), followed by Meghalaya (-48%), Nagaland (-41%), Mizoram (-33%), Assam (-28%) and Tripura (-23%). The deficiency may cause moderate to severe hampering in rainfed crop production including delayed sowing, mid-season water stress, infestation of weeds, pests and diseases etc. Further, anomalous distribution may lead

to heavy intensity torrential rains causing extensive and irreversible damage to standing crops. The torrential rainfall found to occur in Arunachal Pradesh has already led to floods in many parts of North Assam, viz., Lakhimpur, Dhemaji etc. causing severe damage to standing *Sali* paddy crop.

The ZPD (Zone-III) has suggested the KVKs to disseminate effective contingency measures to save the standing crop in the face of looming water deficit in their respective districts. Few salient measures to be taken up at the field level are:

1. Proper bunding of rice fields to avoid wastage of standing water
2. Supplemental irrigation from rainwater harvesting ponds to crop, if it is in critical stage
3. Weeding to avoid excess transpirational loss of water
4. Keep an watch on outbreak of any pest/disease
5. Spray 2% urea solution to impart tolerance against drought like situation
6. Sowing/transplanting with short duration HYV if sowing is delayed due to unavailability of water or damaged by flood water

The KVKs of NE Region should visit the website (<http://crida.ernet.in/Pubs/index.html>) to download (35MB) the book entitled '**District Level Contingency Plans for Weather Aberrations in India**' and follow the detailed plans and disseminate the same to farmers' level as advisory according to the contingency situation arising out at their respective districts.