

RECENT RAINFALL UPDATE FOR MONSOON 2014: MIZORAM FACING DROUGHT

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Drought is a normal, recurrent feature of climate. It occurs almost everywhere, although its features vary from region to region. Defining drought is therefore difficult; it depends on differences in regions, needs, and disciplinary perspectives. Drought should not be viewed as merely a physical phenomenon or natural event. Its impacts on society result from the interplay between a natural event (less precipitation than expected resulting from natural climatic variability) and the demand people place on water supply. Human beings often exacerbate the impact of drought. In India erratic monsoonal rainfall often leads to increase the frequency and magnitude of dry spell at various spatio-temporal scale which causes meteorological drought, hydrological drought, agricultural drought and finally socio-economic drought.

The North eastern state of Mizoram is presently facing the problem of creeping drought occurrence in the recent monsoon months of 2014. We have calculated the seasonal rainfall deficit (up to August 2014) for the different crop seasons viz Cumulative (January to August), *Jhum* (April-August) and *Kharif* season (June to August) at different rain-gauge stations of Mizoram. The spatial variability accounted the severe rainfall deficit at Darlawn (Aizawl district), Bilkhawthlir (Kolasib district), Lawngtlai (Lawngtlai district), Mamit (Mamit district) and N.Vanlaiphai (Serchhip district) of the Mizoram state (Table 1).

Additionally, Standardized Precipitation Index (SPI) was computed for different timescales (1 month, 3 months, and 6 months), as a potential indicator of drought occurrence and its intensity (McKee *et al.*, 1993). The site specific short-term agricultural drought event was characterized based on its corresponding SPI values for different rain-gauge station and further classified based on the USDA classification of drought (<http://droughtmonitor.unl.edu/AboutUs/ClassificationScheme.aspx> accessed on 20th September 2014). The calculated 3-SPI and 6--SPI values signifies the advent of agricultural drought for the different patches of Mizoram likely Aizawl, Champhai, Bilkhawthlir, Saiha, Serchhip, Lawngtlai, Lunglei, Tlabung and Hnahthial. No drought like situation prevails for Sialsuk and Kolasib (Table 2). The highest magnitude of the drought event was observed for Lawngtlai, followed by Bilkhawthlir.

Table 1: Rainfall Deficit Statistics (% Deviation) for different rain-gauge stations of Mizoram

Site	Cumulative	Jhum	Kharif	Site	Cumulative	Jhum	Kharif
AIZAWL DISTRICT	-15.22	-13.67	-20.81	MAMIT DISTRICT	-32.38	-	-35.16
Aizawl	-28.01	-23.97	-27.54	Mamit	-39.55	29.54	-51.43
Sialsuk	-8.97	-6.45	-5.03	Kawrtethawveng	-32.75	-	-35.92
Neihbawi	-12.16	-10.30	-31.04	Zawlnuam	-24.42	28.86	-17.85
Darlawn	-54.02	-54.54	-58.73	LUNGLEI DISTRICT	-33.32	-	-32.11
Khawruhlian	-8.55	-9.73	-9.51	Lunglei	-38.17	32.63	-37.30
Sairang	19.29	20.97	5.22	Tlabung	-34.26	-	-30.14
CHAMPHAI DISTRICT	-24.93	-24.09	-27.85	Hnahthial	-26.17	31.77	-29.11
Champhai	-22.06	-21.16	-30.20	S.Vanlaiphai	-24.51	-	-27.42
Vaphai	-29.01	-27.89	-23.34	Haulawng	-39.62	25.72	-33.45
Ngopa	-33.18	-32.06	-28.72	SERCHHIP DISTRICT	-37.11	-	-32.89
Khawzawl	-13.15	-13.21	-28.61	Serchhip	-36.39	35.99	-31.20
KOLASIB DISTRICT	-31.40	-29.93	-22.89	N.Vanlaiphai	-44.30	-	-44.25
Kolasib	-7.41	-2.24	3.82	SAIHA DISTRICT (Saiha)	-37.09	45.95	-39.16
Bilkhawthlir	-51.39	-49.65	-45.13	Cumulative Deficit=> (January-August)			
N.Bukpui	-36.51	-38.28	-27.60	Jhum Season => (April-August)			
LAWNGTLAI DISTRICT	-54.56	-54.01	-55.83	Kharif Season => (June - August)			

Table 2: SPI Values for 1 month, 3 months and 6 months scale for specific rain-gauge stations of Mizoram

Site	1-SPI			3-SPI			6-SPI			Comments*
	June	July	August	June	July	August	June	July	August	
AIZAWL DISTRICT										
Aizawl	-0.47	-0.62	-0.83	-0.59	-0.47	-1.22	-0.98	-1.17	-1.49	Extreme Drought
Sialsuk	0.40	-0.43	-0.21	0.10	0.05	-0.17	-0.14	-0.33	-0.45	Normal
Neihbawiah	-0.81	-0.56	-1.20	-0.13	-0.15	-1.12	-0.42	-0.54	-0.70	Abnormally Dry
CHAMPHAI DISTRICT										
Champhai	-0.03	-1.84	-0.74	0.07	-0.40	-1.62	-0.17	-1.12	-1.72	Extreme Drought
KOLASIB DISTRICT										
Kolasib	-0.34	1.41	-0.76	-0.70	0.81	0.24	-1.00	0.04	-0.29	Normal
Bilkhawthlir	-1.90	-0.33	-2.47	-1.93	-1.27	-1.87	-2.17	-1.72	-2.09	Exceptional Drought
SAIHA DISTRICT										
Saiha	-0.22	-1.32	-1.76	-0.80	-1.13	-1.79	-0.89	-1.35	-2.18	Exceptional Drought
SERCHHIP DISTRICT										
Serchhip	0.09	-0.81	-2.53	-0.62	-0.57	-1.64	-0.94	-1.14	-1.96	Extreme Drought
LUNGLEI DISTRICT										
Lunglei	-1.04	-1.20	-0.52	-1.24	-1.17	-1.28	-1.32	-1.43	-1.41	Severe Drought
Tlabung	0.01	-1.36	-0.40	-0.34	-0.50	-1.09	-0.57	-0.63	-1.10	Severe Drought
Hnahthial	-0.51	-0.67	-1.01	-0.69	-0.65	-1.12	-0.74	-0.93	-1.38	Severe Drought
LAWNGTLAI DISTRICT										
Lawngtlai	-0.93	-2.24	-2.99	-1.24	-1.83	-3.25	-1.63	-2.22	-2.91	Exceptional Drought

*Source: <http://droughtmonitor.unl.edu/AboutUs/ClassificationScheme.aspx>

REFERENCE:

McKee, T. B., Doesken N. J., Kleist, J. (1993) Drought monitoring with multiple timescales.-Paper presented at the Preprints, Eighth Conference on Applied Climatology, Anaheim, California 179-184.

United States Drought Monitor - <http://droughtmonitor.unl.edu/AboutUs/ClassificationScheme.aspx>