



भारत मौसम विज्ञान विभाग India Meteorological Department

Dated: 30 May, 2011

Subject: Monsoon 2011 onset over Kerala - A Meteorological analysis

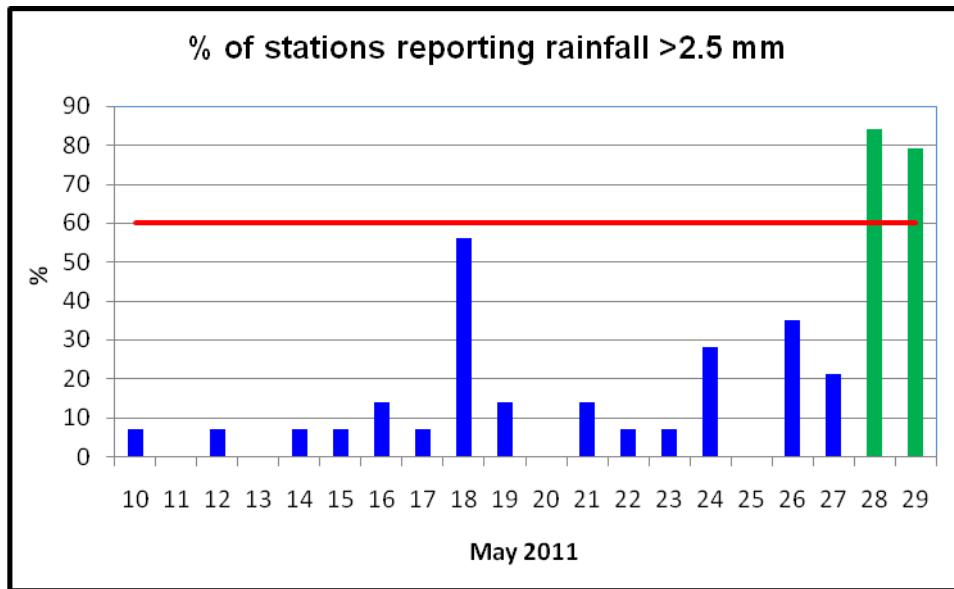
India Meteorological Department has objective criteria for declaring the onset of monsoon over Kerala. The Meteorological analysis of various features of Monsoon 2011 vis-a-vis the criteria is given below.

1. RAINFALL

If after 10th May, 60% of the available 14 stations enlisted, viz. Minicoy, Amini, Thiruvananthapuram, Punalur, Kollam, Allapuzha, Kottayam, Kochi, Thrissur, Kozhikode, Thalassery, Kannur, Kudulu and Mangalore report rainfall of 2.5 mm or more for two consecutive days, the onset over Kerala be declared on the 2nd day.

Rainfall recorded during May 2011

Station	May 2011							
	22	23	24	25	26	27	28	29
Minicoy	0.0	3.6	6.8	0.0	0.7	1.0	2.6	24.9
Amini Divi	0.0	0.0	0.0	0.0	11.4	0.0	Light	30.9
Thiruvananthapuram	0.0	0.0	0.7	0.0	7.7	0.2	4.1	1.8
Punalur	0.0	0.0	0.0	0.0	7.8	10.0	17.0	12.0
Kollam	0.0	0.0	8.8	0.0	38.8	2.2	22.0	6.4
Allapuzha	0.0	0.0	15.8	0.0	4.0	22.2	10.8	24.0
Kottayam	0.0	0.0	2.4	0.0	0.0	0.0	6.4	99.4
Kochi	0.0	0.0	3.8	0.0	0.7	6.1	21.7	77.0
Trissur	0.0	0.0	0.0	0.0	0.0	0.0	28.0	9.0
Kozhikode	4.5	0.0	0.0	0.0	0.0	0.0	20.8	65.6
Talassery	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kannur	0.0	0.0	0.0	0.0	0.0	0.0	5.8	18.4
Kudulu	0.0	0.4	0.0	0.0	0.0	0.0	33.0	0.0
Mangalore	0.0	0.0	0.2	0.0	0.4	0.0	24.8	9.0
% Stations reporting rainfall	7	7	28	00	35	21	84	79



2. WIND FIELD

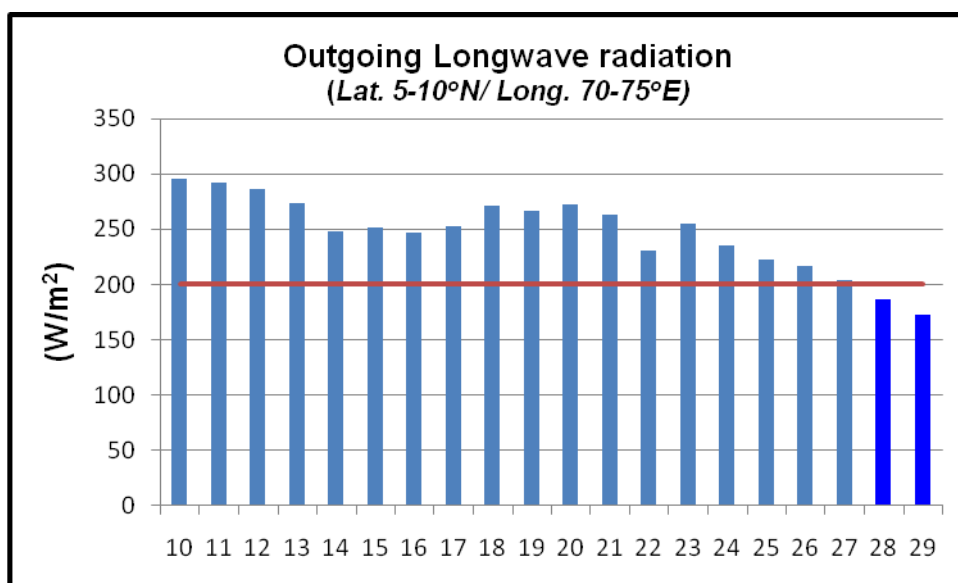
Depth of westerlies should be maintained upto 600 hPa, in the box equator to Lat. 10°N and Long. 55 °E to 80°E. The zonal wind speed over the area bounded by Lat. 5-10°N, Long. 70-80°E should be of the order of 15 – 20 Kts. at 925 hPa.

3. OUTGOING LONG WAVE RADIATION (OLR)

INSAT derived OLR value should be below 200 wm^{-2} in the box confined by Lat. 5 -10°N and Long. 70- 75°E.

Observed wind and OLR values during May, 2011

May, 2010	Winds		Satellite information
	Wind (925 hPa)	Depth (hPa)	OLR (200wm^{-2})
22	West-Southwesterly 10-15 Knots	850	231
23	Westerly 5-10 Knots	850	255
24	Westerly 10-15 Knots	925	235
25	West-Northwesterly 10-15 Knots	-	222
26	West-Northwesterly 10 Knots	-	217
27	Westerly 15 Knots	850	204
28	West-Southwesterly 20 Knots	600	187
29	West-Southwesterly 20 Knots	600	173

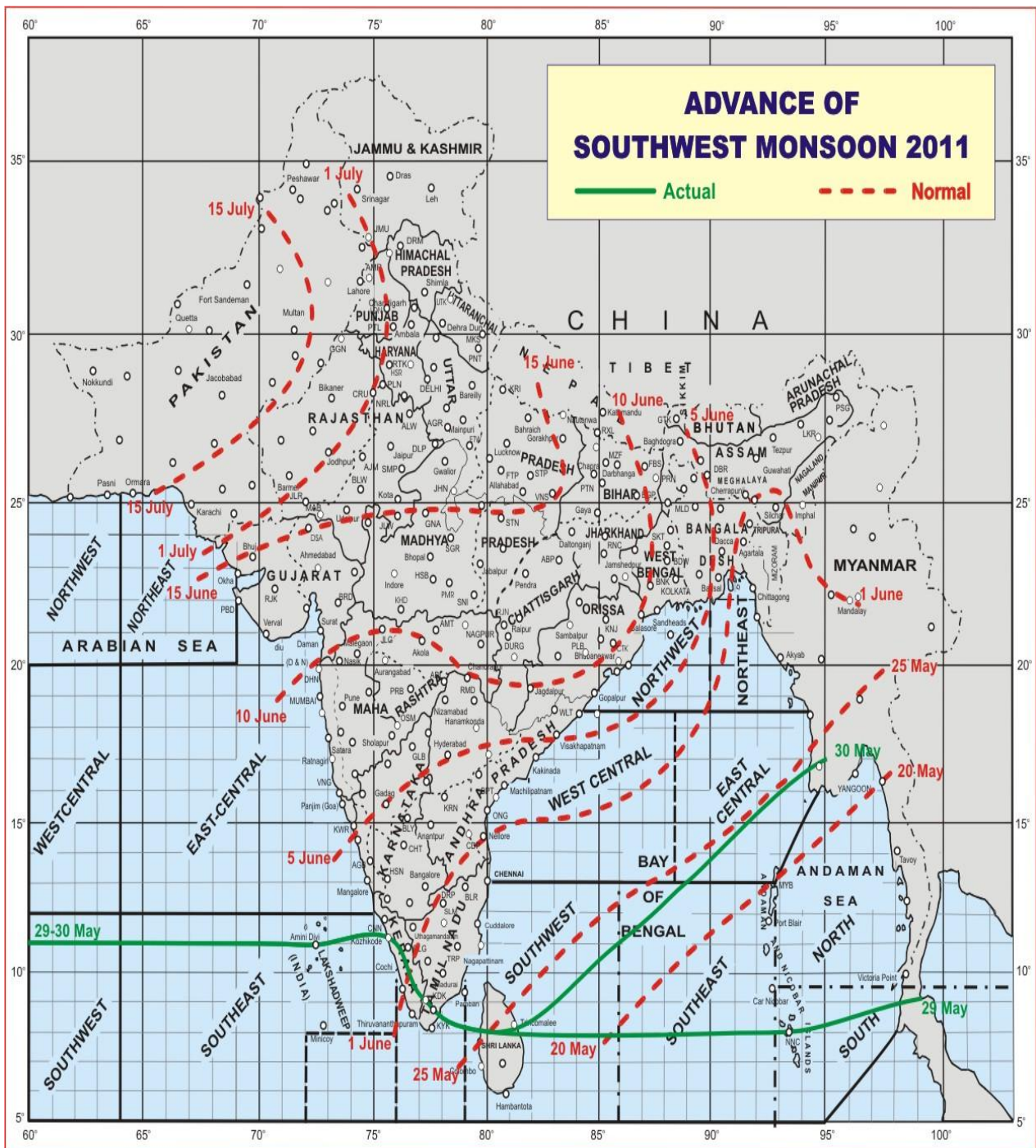


Summary of Meteorological analysis

- The rainfall monitoring stations reported widespread rainfall with isolated heavy falls and 84% & 79 % of these stations reported rainfall on 28th & 29th May, respectively.
- Westerlies/ West-southwesterlies of the order of 20 knots were seen upto 600 hPa in the box equator to Lat. 10°N and Long. 55°E to 80°E.
- The KALPANA derived OLR value in the box confined by Lat. 5-10°N, Long. 70-80°E was 187 and 173 w/m⁻² on 28th & 29th May, respectively.
- A shear line at around 11° N with an embedded upper air cyclonic circulation over southeast Arabian Sea.

Declaration of Onset of monsoon over Kerala

- With above favourable conditions, onset of southwest monsoon over Kerala was declared by IMD on 29th May.
- The northern limit of monsoon passed through 11° N / 60° E, 11° N / 70°E, Aminidivi, Kozhikode, Kodaikanal, 8°N / 80°E, 8° N / 90°E , Nancowry and 9° N / 99° E on 29th. The monsoon further advanced into some more parts of Bay of Bengal and remaining Andaman Sea on 30th May. The map showing NLM is given below.



Compiled by B.P.Yadav, S.K. Arora and Davinder Sharma