

# Preliminary Memorandum

## Pre-monsoon Calamity Losses

1<sup>st</sup> April to 8<sup>th</sup> May 2014



Submitted by  
Principal Secretary, Revenue & Disaster Management  
(State Relief Commissioner)  
Government of Kerala

16 May 2014

## Contents

1. Situation Assessment .....	3
1.1. Introduction.....	3
1.2. Pre-monsoon rainfall situation assessment .....	4
2. Losses.....	15
2.1. Human Fatalities.....	15
2.2. Houses damages.....	15
2.3. Agriculture damages.....	17
2.4. Damages to fisheries .....	19
2.5. Damages to animal husbandry and dairy sector .....	19
2.6. Repair/restoration of damaged infrastructure .....	20

# 1. Situation Assessment

## 1.1. Introduction

The pre-monsoon season (1<sup>st</sup> March to 31<sup>st</sup> May) started-off calmly. Considering the available climatic record of the state, the pre-monsoon season in Kerala was expected to experience only convective rainfall and thunder storms in pockets. The season is traditionally a relatively calm and rain free one during which much of the construction and monsoon preparedness activates in the state takes place.

In the early days of the season, the temperature soared to extremes (>36°C) and many parts of the state started experiencing severe drinking water shortage. While the Government was prepared for facing the summer season with focus on ensuring clean drinking water to every one as early as from February onwards (Summer Season Preparedness Circular: Ltr. No. 11050/K3/2014/DMD dated 18/2/2014), rains started lashing almost all districts causing floods and flash floods causing substantial damage to life and property.

It may be noted that Kerala has been ravaged by a severe drought in 2012-13 and major monsoon calamity damages in 2013 (June to December). The cumulative committed expenditure from these calamities has stretched the State Disaster Response Fund to its limits. Government of Kerala approached the Government of India for assistance in the events of these calamities. However, funds provided are not enough for meeting the commitments, the on-going calamities, the monsoon season (June to December 2014) and the following summer season (January to March 2015) in this financial year. It is also brought to the kind notice of Govt. of India that this being the last year of the 13<sup>th</sup> Finance Commission period, the SDRF/NDRF pending claims cumulated over a period of 2010-2014 needs to be completely settled.

The SDRF has a deficit of Rs. 147 crs which has forced the Government from not clearing many of the bills that were incurred for dealing with drought (2012-13) & floods works (2013-14) and agricultural losses (2012-14). This situation has further aggravated given the claims from various districts due to the recent pre-monsoon rainfall related calamity. The situation will worsen once the monsoon strikes Kerala which brings along calamities such as floods and landslides. Further, given the IMD prediction for 2014

Monsoon “quantitatively, the monsoon seasonal rainfall is likely to be 95% of the Long Period Average (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. IMD expects that there is 33 to 23% probability for the seasonal rainfall (June to September) to be below normal to deficient” Kerala may face drinking water shortage and in the worst-case may face a drought from January to March 2015 which will further stretch the state beyond its financial limits.

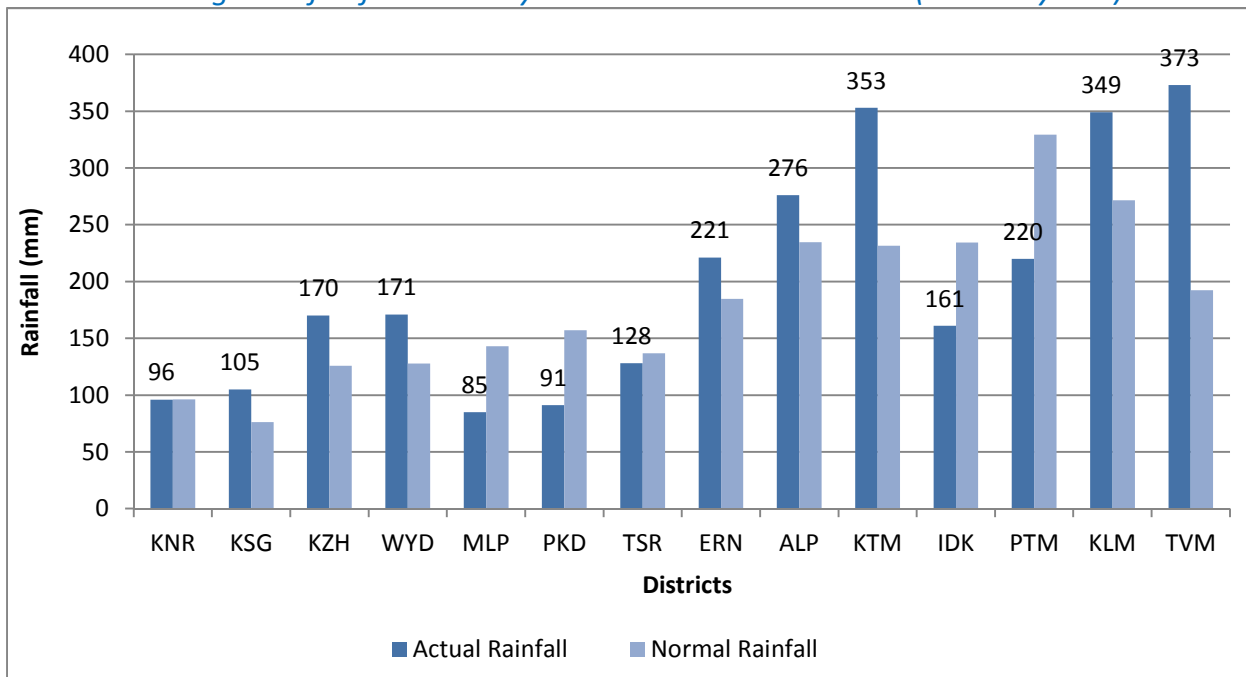
Hence, Government of Kerala is forced to approach Government of India with a memorandum for additional assistance from the National Disaster Response Fund. The rainfall situation assessment and the losses incurred during the period 1<sup>st</sup> April to 8<sup>th</sup> May 2014 is given below for kind perusal.

## **1.2. Pre-monsoon rainfall situation assessment**

Figure 1 shows the comparison of average actual and normal (long period average) rainfall of the districts for the season. From the figure it is evident that the state received almost 48% less rainfall than expected. This necessitates drinking water supply in many parts, particularly the islands and villages that adjoin brackish water. However, the intra-state variability of rainfall in Kerala is very high; instantaneous rainfall at 1000 m above mean sea level can be 150% higher than at 40 m above MSL. Several instances of such peak rainfall occurred in almost all parts of Kerala as evident from the district wise rainfall graphs shown in Figure 2.

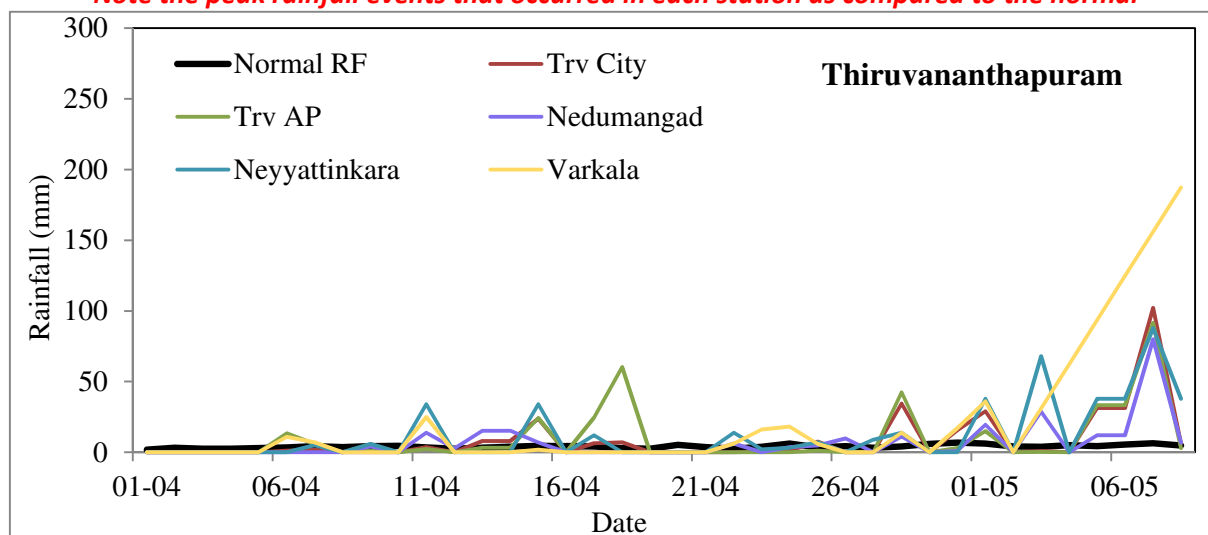
Figure 3 shows the spatial distribution of the rainfall over Kerala. Figure 4 shows the cloud cover (INSAT Satellite Images) over Kerala from 1 April to 8 May 2014. The thick clouds covering the entire state indicate the intense nature of Pre-Monsoon showers. It is evident from Figure 2 and 4 that Kerala is experiencing intense rainfall in all pockets which is the reason for the high rate of calamity reported from the State during this pre-monsoon.

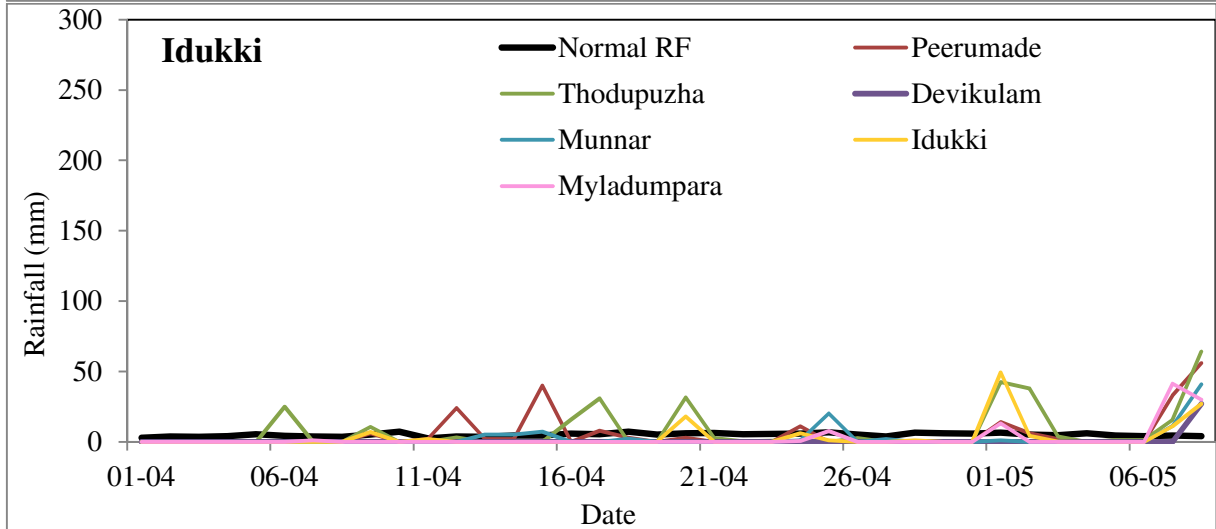
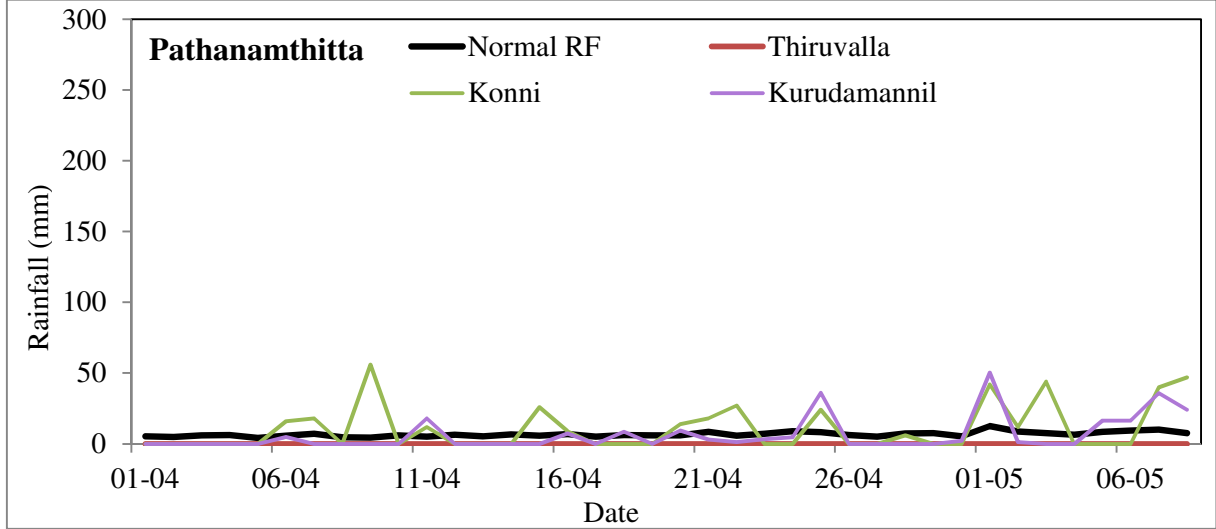
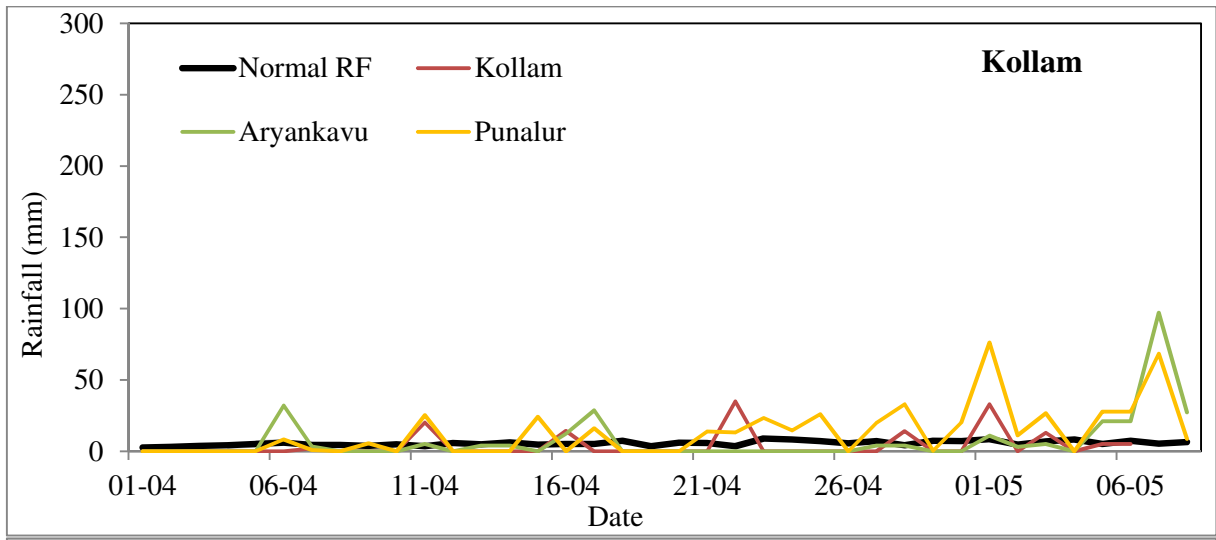
Note: Normal (expected) rainfall - The Indian Meteorology Department derives long period average rainfall for each day based on the historic data (over 60 years).

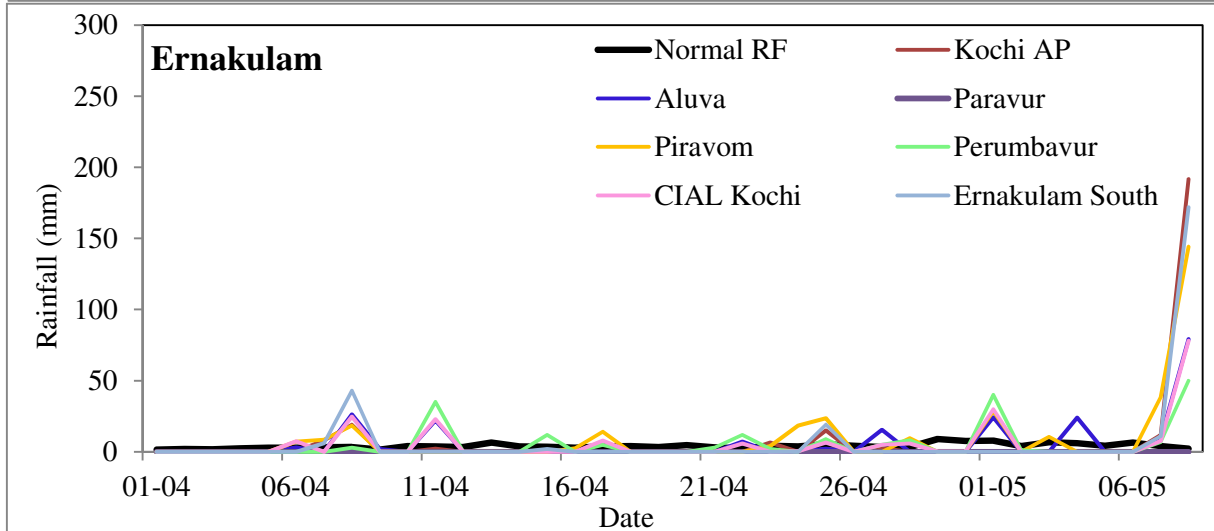
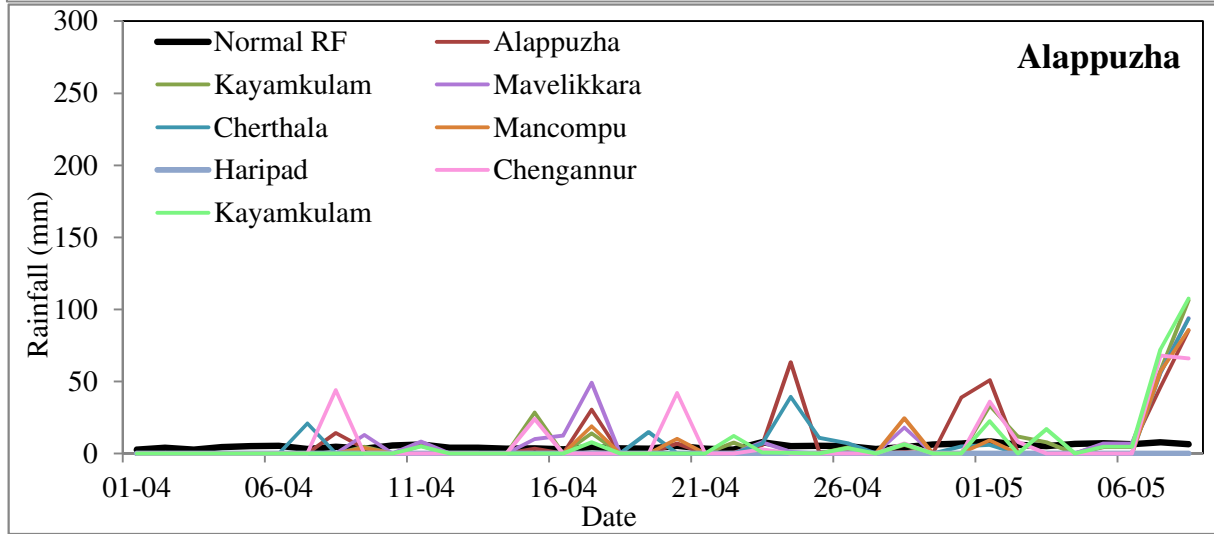
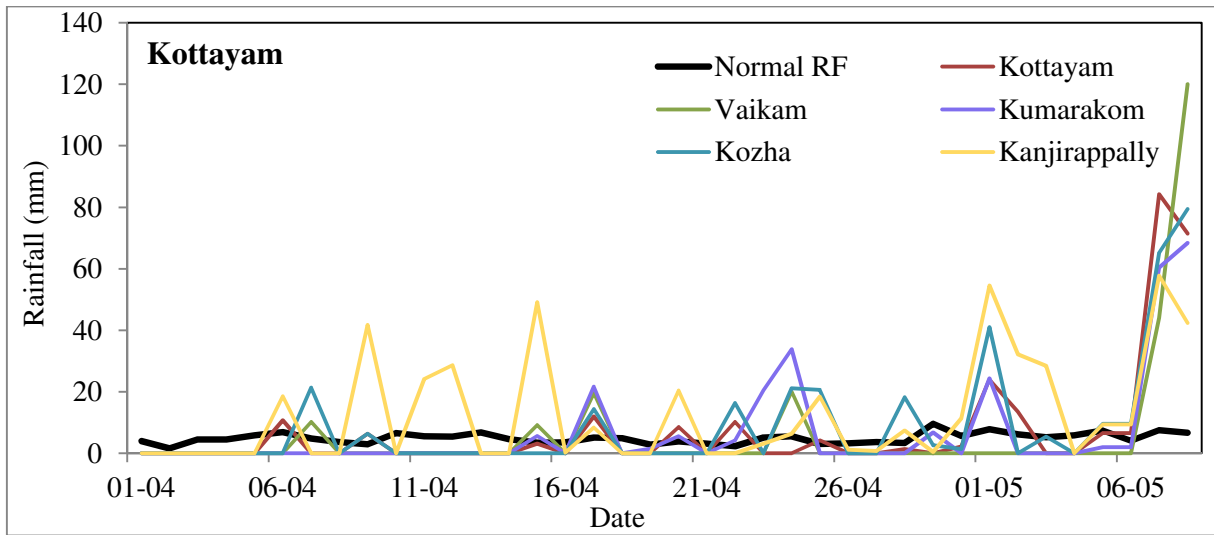


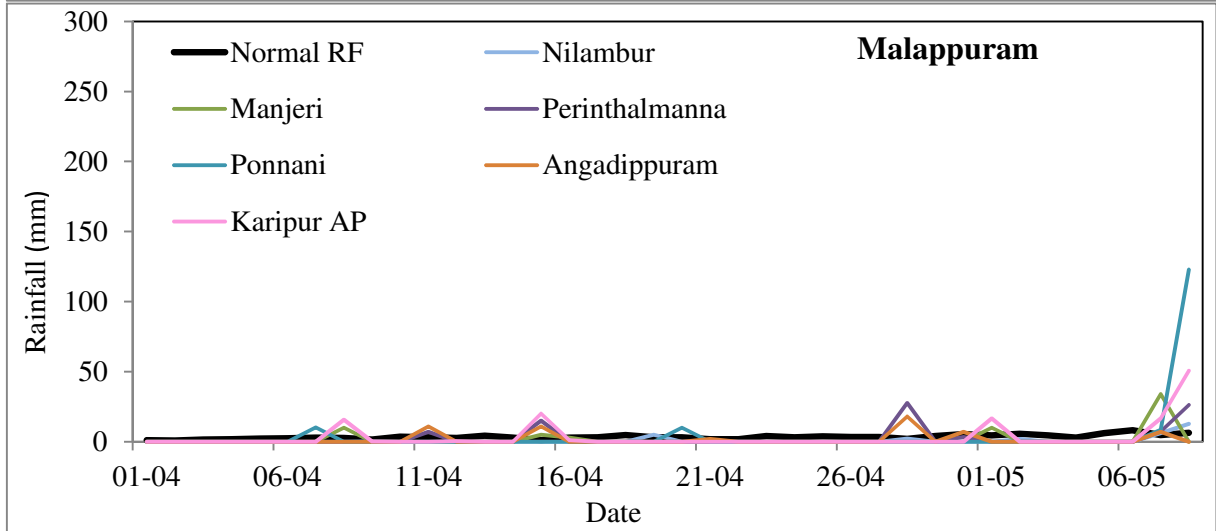
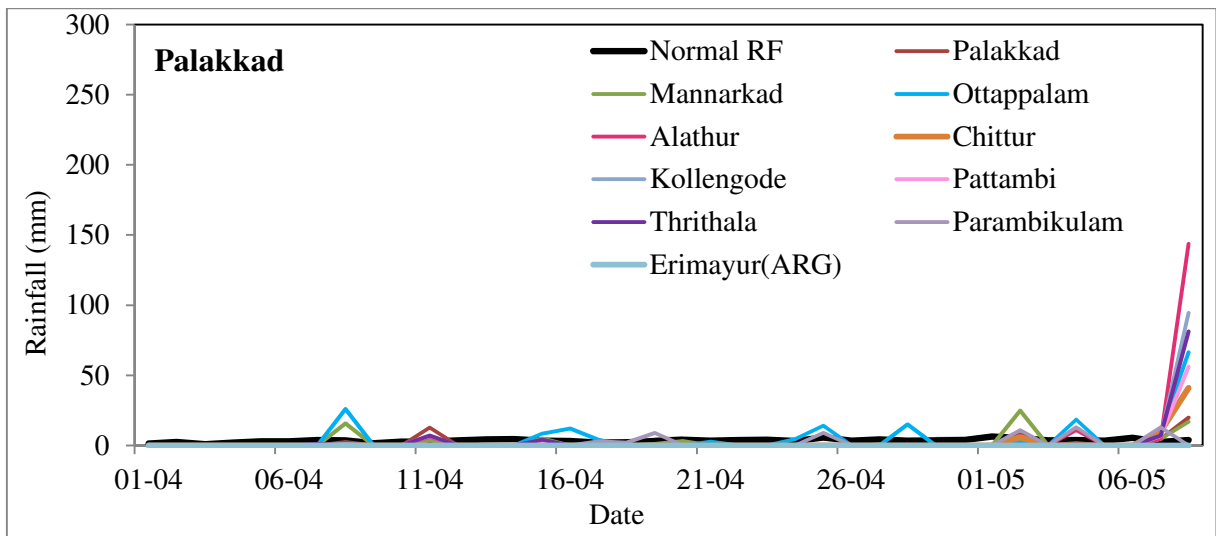
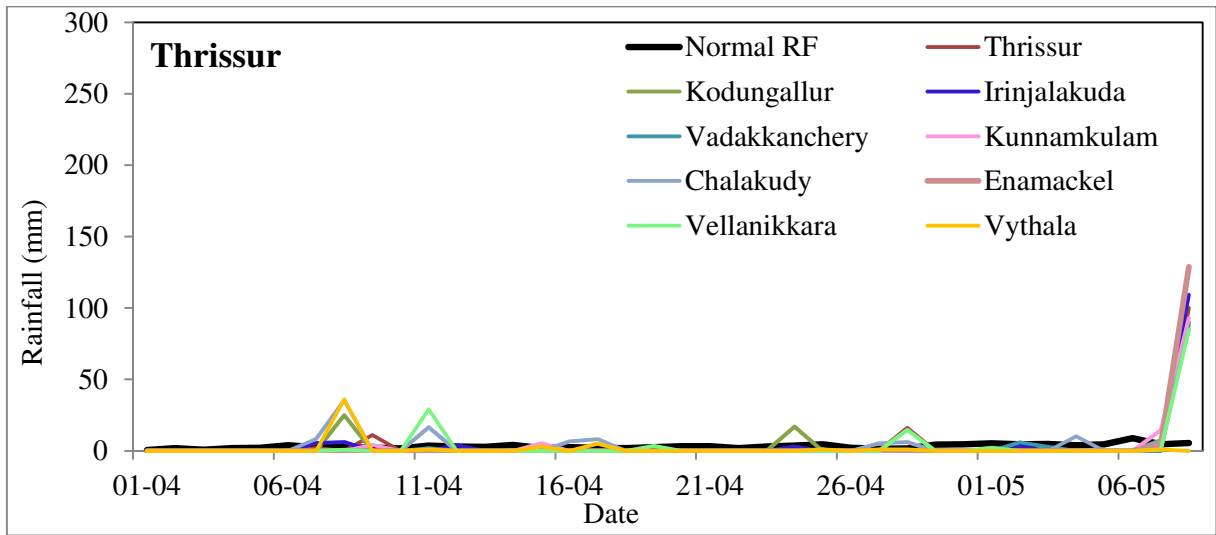
**Figure 1: District wise actual and expected rainfall of 2014 (1 March to 8 May) (Data source: IMD)**  
 Note that the amount of rainfall is below the expected value (In brackets % rainfall departure)

**Figure 2: Station wise actual and expected rainfall of 2014 (1<sup>st</sup> to 30<sup>th</sup> April) (Data source: IMD)**  
 Note the peak rainfall events that occurred in each station as compared to the normal

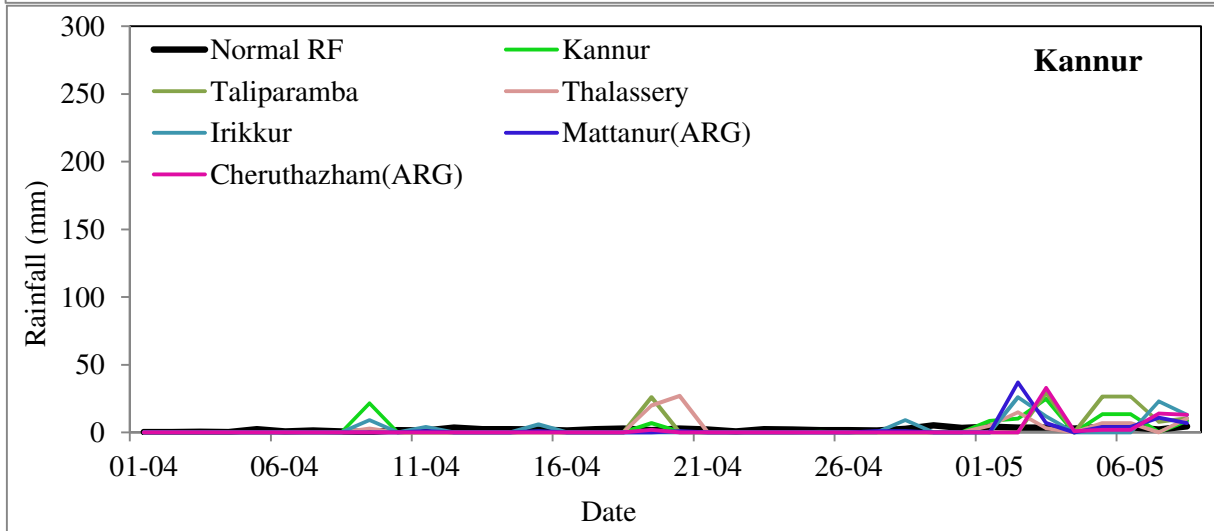
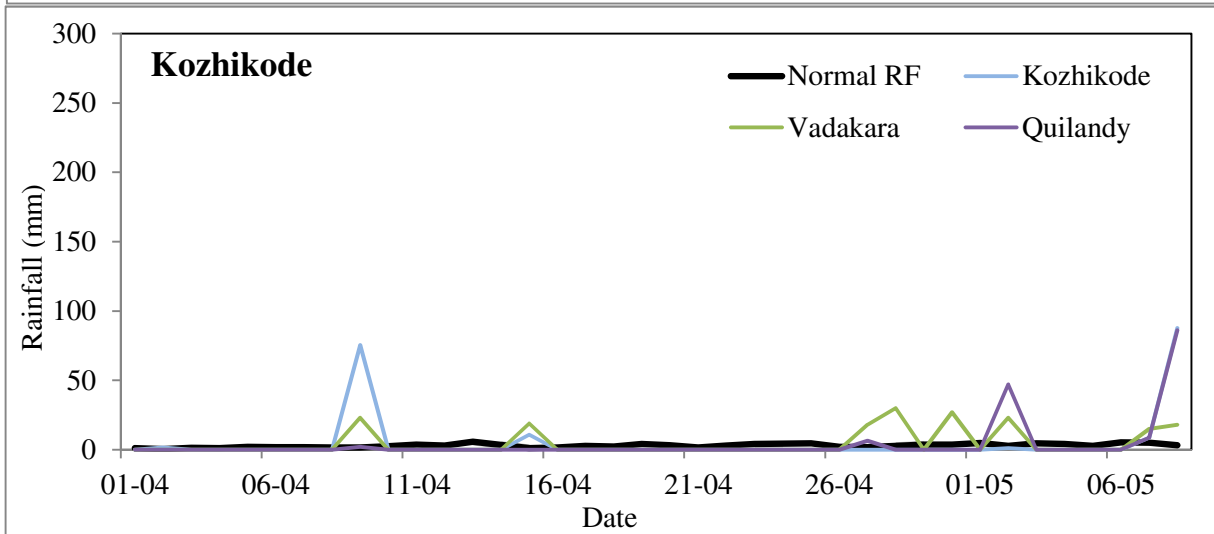
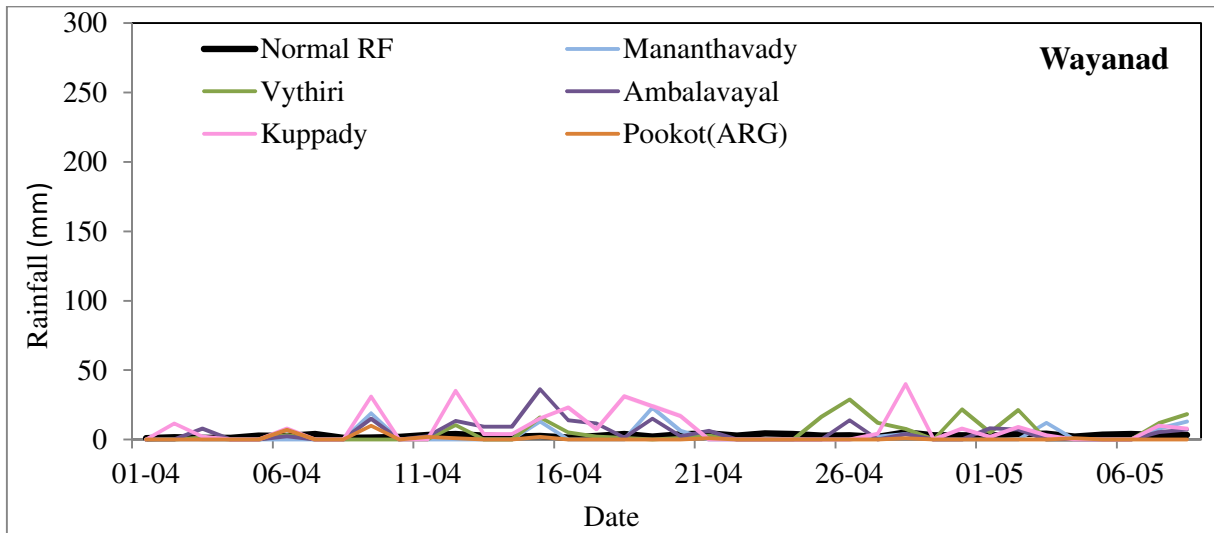


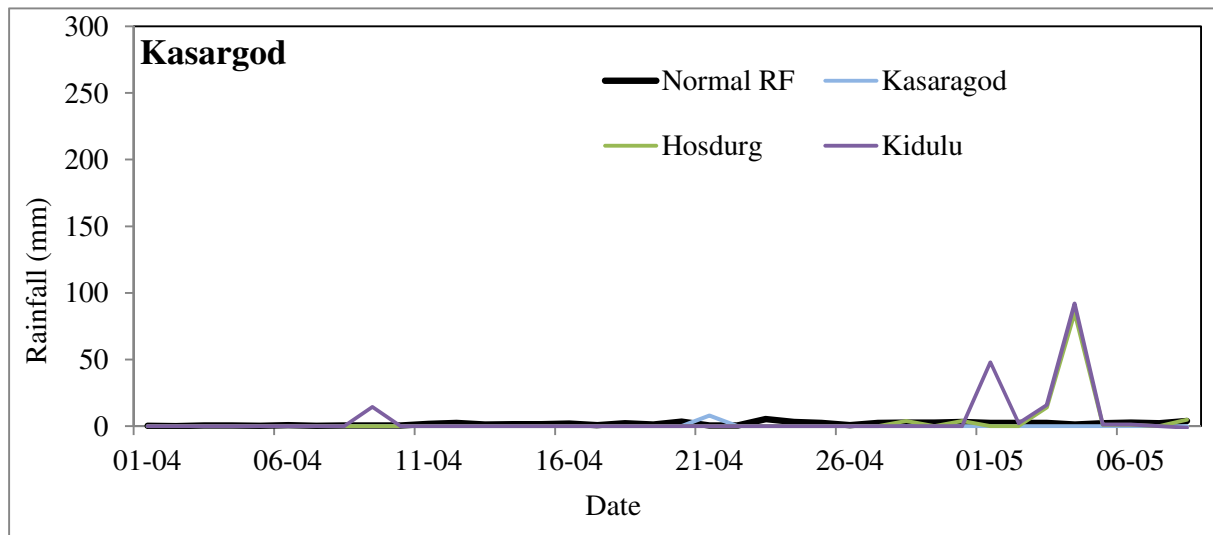




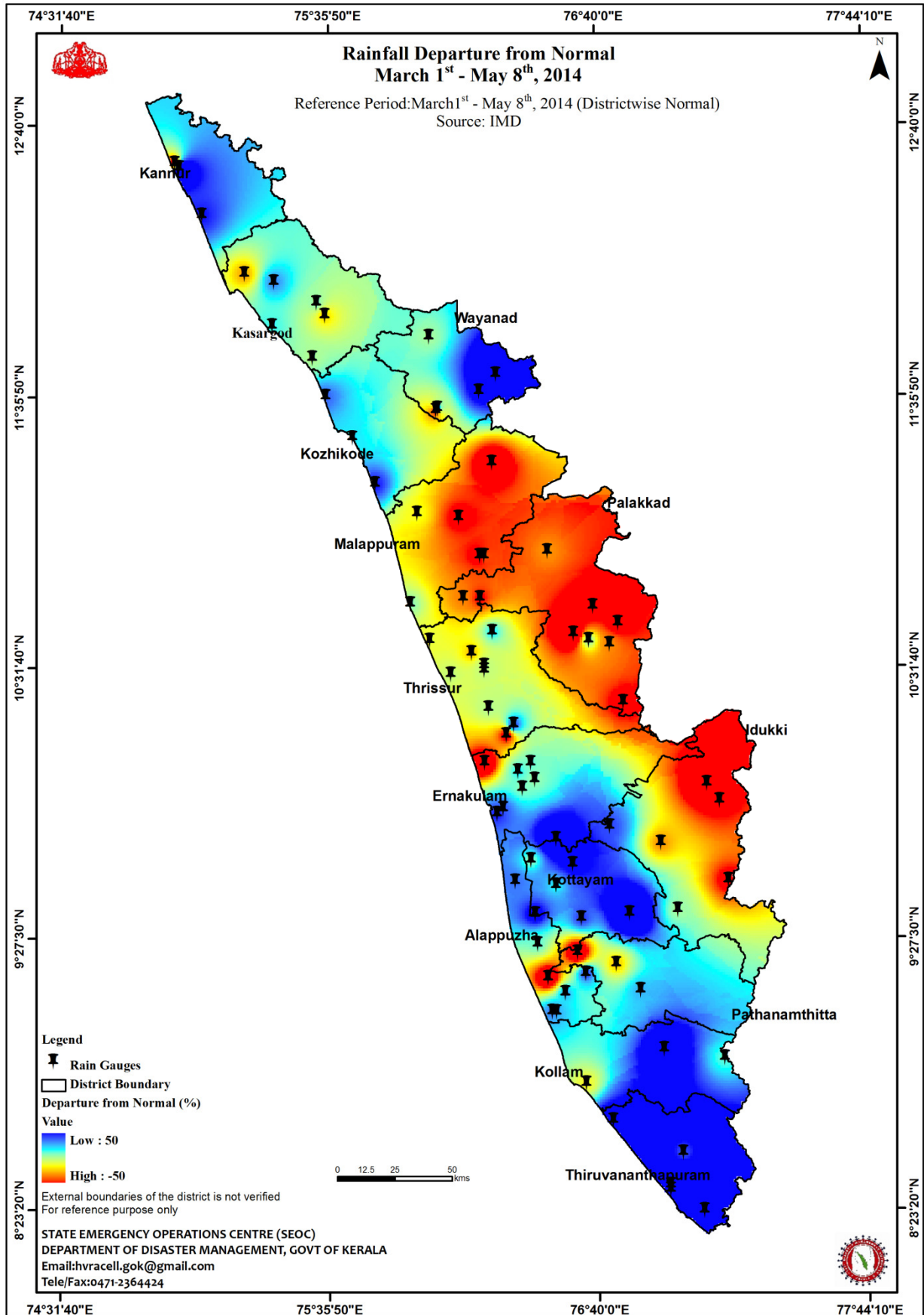




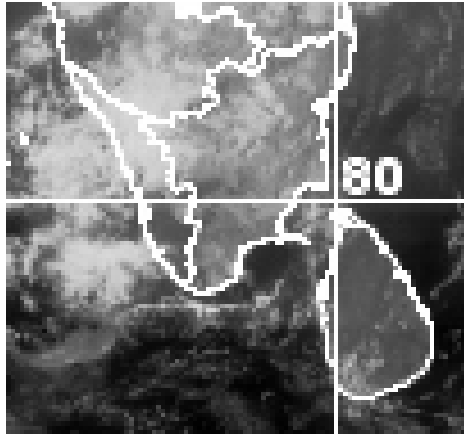




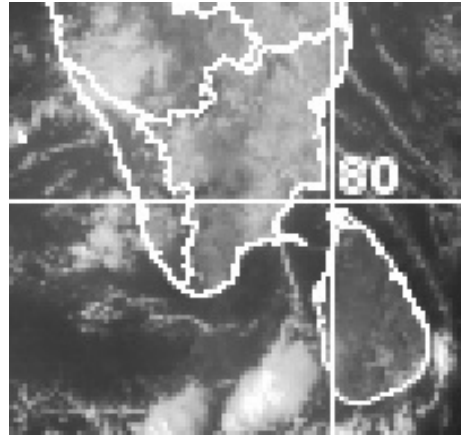
This intense rainfall spells have caused significant damage to life and property, the details of which is given in the subsequent chapters. Table 1 compiles the actual and expected (normal) rainfall received from 1<sup>st</sup> March to 30 April 2014 in the rainfall stations monitored by IMD. It is evident from the available rainfall figures that the monsoon rainfall has saturated the soil column of Kerala during the pre-monsoon rainfall itself. Given this heavy pre-monsoon showers the figures of natural calamity particularly landslides are expected to increase significantly, especially during the South West Monsoon season as the soils are significantly saturated. The losses presented below are preliminary and the losses estimation is ongoing.



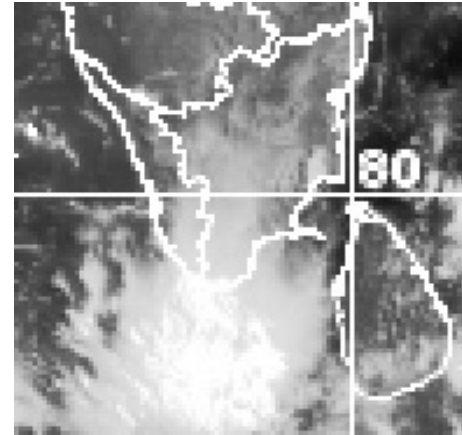
**Figure 3: Rainfall departure 2014 (1 March to 8 May) (Data source: IMD)**



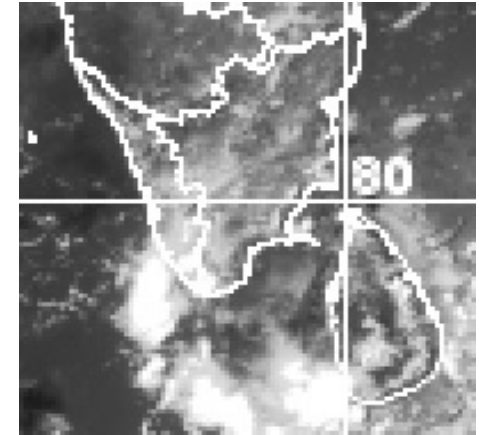
09 April 2014



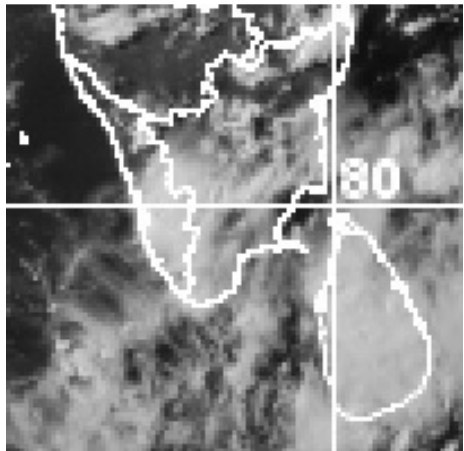
14 April 2014



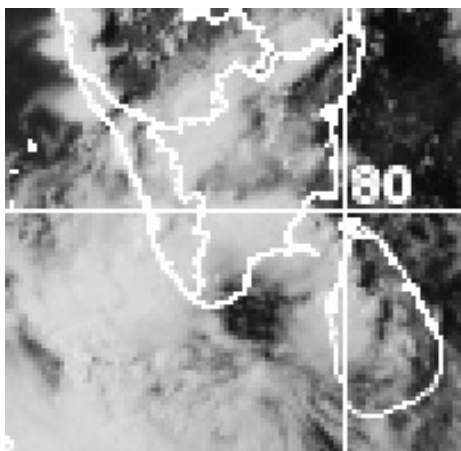
29 April 2014



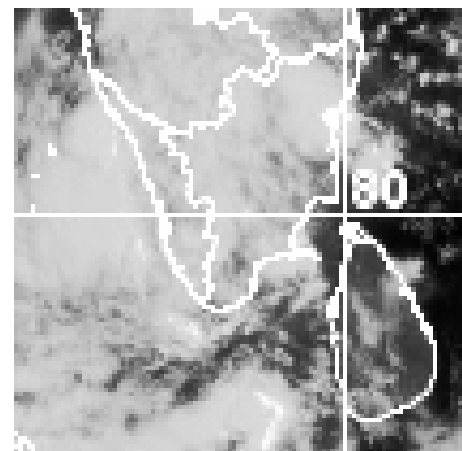
30 April 2014



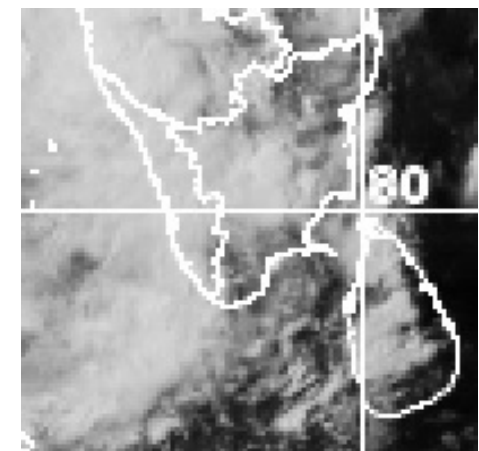
03 May 2014



06 May 2014



07 May 2014



08 May 2014

Figure 4: INSAT pictures from 1<sup>st</sup> April to 8<sup>th</sup> May 2014 (Source: IMD)

*Note that Kerala was covered with intense cloud all through April & May which is extremely rare*

**Table 1: Actual and expected rainfall (mm) in the rain gauges across Kerala – 1 March to 8 May 2014 (Source: IMD)**

ID	Station	District	Actual RF	Normal RF	Departure %
1	Kannur	Kannur	110.2	96.3	14.4
2	Taliparamba	Kannur	127.3	96.3	32.2
3	Thalasserry	Kannur	97.4	96.3	1.1
4	Irikkur	Kannur	102	96.3	5.9
5	Mattanur	Kannur	75	96.3	-22.1
6	Cheruthazham	Kannur	67	96.3	-30.4
7	Kasargod	Kasargod	8	76.3	-89.5
8	Hosdurg	Kasaragod	114	76.3	49.4
9	Kudulu	Kasaragod	192	76.3	151.6
10	Kozhikode	Kozhikode	188	125.7	49.6
11	Vadakara	Kozhikode	173	125.7	37.6
12	Quilandy	Kozhikode	150.1	125.7	19.4
13	Mananthavady	Wayanad	131.4	127.8	2.8
14	Vythiri	Wayanad	187.3	127.8	46.5
15	Ambalavayal	Wayanad	199.2	127.8	55.8
16	Kuppady	Wayanad	310.6	127.8	143
17	Pookot	Wayanad	25	127.8	-80.4
18	Nilambur	Malappuram	28.7	143.1	-79.9
19	Manjeri	Malappuram	62	143.1	-56.7
20	Perinthalmanna	Malappuram	86.9	143.1	-39.3
21	Ponnani	Malappuram	151.9	143.1	6.1
22	Angadippuram	Malappuram	56	143.1	-60.9
23	Karipur AP	Malappuram	121.9	143.1	-14.8
24	Palakkad	Palakkad	49.9	157	-68.2
25	Mannarkad	Palakkad	104.6	157	-33.4
26	Ottappalam	Palakkad	185.2	157	17.9
27	Alathur	Palakkad	167.3	157	6.6
28	Chittur	Palakkad	57	157	-63.7
29	Kollengode	Palakkad	102.4	157	-34.8
30	Pattambi	Palakkad	73.6	157	-53.1
31	Thrithala	Palakkad	100.8	157	-35.8
32	Parambikulam	Palakkad	68	157	-56.7
33	Erimayur	Palakkad	0	157	-100
34	Thrissur	Thrissur	133	136.9	-2.8
35	Kodungallur	Thrissur	146.5	136.9	7
36	Irinjalakuda	Thrissur	137	136.9	0.07
37	Vadakkancherry	Thrissur	100.8	136.9	-26.4
38	Kunnamkulam	Thrissur	120	136.9	-12.4
39	Chalakydy	Thrissur	198.1	136.9	44.7
40	Enamackel	Thrissur	132.4	136.9	-3.3
41	Vellanikkara	Thrissur	135.9	136.9	-0.7

42	Vynthala	Thrissur	49	136.9	-64.2
43	Kochi AP	Ernakulam	278.1	184.7	50.6
44	Aluva	Ernakulam	216.9	184.7	17.4
45	Paravur	Ernakulam	0	184.7	-
46	Piravom	Ernakulam	401.7	184.7	117.4
47	Perumbavur	Ernakulam	193	184.7	4.5
48	CIAL Kochi	Ernakulam	203.2	184.7	10
49	Ernakulam South	Ernakulam	257	184.7	39.1
50	Alappuzha	Alappuzha	382.1	234.5	62.9
51	Kayamkulam	Alappuzha	324.8	234.5	38.5
52	Mavelikkara	Alappuzha	299	234.5	27.5
53	Cherthala	Alappuzha	318.8	234.5	35.9
54	Mancompu	Alappuzha	258.6	234.5	10.3
55	Haripad	Alappuzha	0	234.5	-
56	Chengannur	Alappuzha	336	234.5	43.3
57	Kayamkulam	Alappuzha	292.1	234.5	24.6
58	Kottayam	Kottayam	334.6	231.5	44.5
59	Vaikom	Kottayam	244.7	231.5	5.7
60	Kumarakom	Kottayam	271.2	231.5	17.1
61	Kozha	Kottayam	363.8	231.5	57.1
62	Kanjirappally	Kottayam	555.4	231.5	139.9
63	Peermade	Idukki	241	234.2	2.9
64	Thodupuzha	Idukki	332.7	234.2	42.1
65	Devikulam	Idukki	27	234.2	-88.5
66	Munnar	Idukki	108.9	234.2	-53.5
67	Idukki	Idukki	157.4	234.2	-32.8
68	Myladumpara	Idukki	100.8	234.2	-56.9
69	Thiruvalla	Pathanamthitta	0	329.2	-
70	Konni	Pathanamthitta	416	329.2	26.4
71	Kurudamannil	Pathanamthitta	245.2	329.2	-25.5
72	Kollam	Kollam	231.2	271.4	-14.8
73	Aryankavu	Kollam	302.8	271.4	11.6
74	Punalur	Kollam	514.3	271.4	89.5
75	Trv City	Thiruvananthapuram	355.5	192.3	84.9
76	Trv AP	Thiruvananthapuram	445.1	192.3	131.5
77	Nedumangad	Thiruvananthapuram	271.8	192.3	41.3
78	Neyyattinkara	Thiruvananthapuram	464.5	192.3	141.5
79	Varkala	Thiruvananthapuram	332.2	192.3	72.8

## 2. Losses

### 2.1. Human Fatalities

Twenty four (24) lives were lost during the period from 1<sup>st</sup> April to 8<sup>th</sup> May 2014.

Table 2 shows the district wise human fatalities and injuries reported.

**Table 2: District wise human fatalities and injuries (Details: Annexure 1)**

District	Fatalities		Injuries		Total in Lakhs
	No	Amount In Lakhs	No	Amount in Lakhs	
Thiruvananthapuram	7	10.5	0	0	10.5
Kollam	1	1.5	6	2.61	4.11
Pathanamthitta	1	1.5	0	0	1.5
Alappuzha	2	3	0	0	3
Kottayam	0	0	0	0	0
Idukki	1	1.5	0	0	1.5
Ernakulam	1	1.5	0	0	1.5
Thrissur	0	0	0	0	0
Palakkad	0	0	0	0	0
Malappuram	1	1.5	1	0.435	1.935
Kozhikode	5	7.5	1	0.435	7.935
Wayanad	0	0	0	0	0
Kannur	2	3	1	0.435	3.435
Kasargode	3	4.5	0	0	4.5
<b>Total</b>	<b>24</b>	<b>36</b>	<b>9</b>	<b>3.915</b>	<b>39.9</b>

### 2.2. Houses damages

A large number of houses were completely or severely damaged. The actual loss to housing sector due to this is inestimable. Figure 5 shows some photographs of the calamity damages incurred in the state. District wise details of number of houses damaged (fully and partially) with estimated loss is given in Table 3, 4 and 5:

**Table 3: District wise house damage estimates – Pucca**

District	Pucca houses						Total (in Lakhs)
	FD		SD		PD		
	No	Amount	No	Amount	No	Amount	
Thiruvananthapuram	85	170	518	486.5	812	460	1116.5
Kollam	9	6.30	53	6.6780	235	9.9040	22.8820
Pathanamthitta	0	0	10	1.9800	121	21.6767	23.6567
Alappuzha	0	0	0	0	272	32.7147	32.7147
Kottayam	6	6.60	280	106.0000	113	18.8600	126.0600
Idukki	1	.60	0	0	112	10.4820	11.082
Ernakulam	15	15.15	2	0.2500	353	49.4672	64.867
Thrissur	3	4.80	3	.4000	49	4.13765	9.338

Palakkad	0	0.00	0	0.000	129	10.6939	10.6939
Malappuram	0	0.00	0	0.0000	138	13.46805	13.468
Kozhikode	0	0.00	2	1.5000	135	27.44000	28.940
Wayanad	10	7.00	0	0	702	44.2260	51.226
Kannur	1	1.10	0	0.0000	25	7.0685	8.169
Kasargode	1	2.0	0	0.0000	85	8.89	10.89
<b>Total</b>	<b>131</b>	<b>213.55</b>	<b>868</b>	<b>603.3080</b>	<b>3281</b>	<b>719.0286</b>	<b>1535.8866</b>

**Table 4: District wise house damage estimates – Kutcha**

District	Kutcha						Total loss in Lakhs
	FD		SD		PD		
Thiruvananthapuram	110	19.36	156	5.9280	407	9.3610	34.6490
Kollam	18	3.1680	115	4.3700	304	6.9920	14.5300
Pathanamthitta	3	0.85500	0	0	77	7.2336	8.0886
Alappuzha	7	3.4500	0	0	0	0	3.4500
Kottayam	3	1.7000	103	12.2500	0	0.0000	13.9500
Idukki	0	0	0	0	0	0.0000	0.0000
Ernakulam	1	0.3000	0	0	24	0.9600	1.2600
Thrissur	0	0.0000	0	0.0000	0	0.0000	0.0000
Palakkad	0	0	0	0	0	0	0.0000
Malappuram	6	2.4700	0	0	23	3.2450	5.7150
Kozhikode	0	0.0000	0	0.0000	55	11.7000	11.7000
Wayanad	2	1.4000	0	0	60	9.0000	10.4000
Kannur	2	2.4000	0	0	119	28.4705	30.8705
Kasargode	0	0.0000	0	0.0000	0	0.0000	0.0000
<b>Total</b>	<b>152</b>	<b>35.1030</b>	<b>374</b>	<b>22.5480</b>	<b>1069</b>	<b>76.9621</b>	<b>134.6131</b>



**Table 5: District wise house damage estimates – Huts**

District	Number	Amount (In Lakhs)
Thiruvananthapuram	62	3.1
Kollam	4	0.1200
Pathanamthitta	0	0.2955
Alappuzha	0	0.0000
Kottayam	0	0.0000
Idukki	0	0.0000
Ernakulam	2	0.32
Thrissur	0	0.0000
Palakkad	0	0
Malappuram	0	0
Kozhikode	0	0.0000
Wayanad	0	0.0000
Kannur	0	0.0000
Kasargode	0	0.0000
<b>Total</b>	<b>72</b>	<b>3.8355</b>

**Table 6: District wise house damage estimates – Total**

District	Total loss (in Lakhs)
Thiruvananthapuram	1154.249
Kollam	37.5320
Pathanamthitta	32.0408
Alappuzha	36.1647
Kottayam	145.41
Idukki	11.0820
Ernakulam	66.4472
Thrissur	9.3377
Palakkad	10.6939
Malappuram	19.1831
Kozhikode	40.64
Wayanad	61.626
Kannur	39.039
Kasargode	10.89
<b>Total</b>	<b>1674.3351</b>

### 2.3. Agriculture damages

The floods, windfall, heavy rainfall and cyclonic thunder storms have caused severe damages to crops in the affected areas. The details of district wise crop losses are given in Table 7. Table 8 shows the district wise cost of bund protection of agricultural land using sand bags for preventing agricultural inundation. Table 9 shows the cost incurred for draining of flood waters from agricultural land.

**Table 7: District wise agricultural damages (Details: Annexure 2)**

District	>50% crop loss (ha)	Loss (in Lakhs Rs.)
Thiruvananthapuram	10026	800.580
Kollam	98	30.9
Pathanamthitta	80.39	7.34325
Alappuzha	0	0
Kottayam	494	50.94
Idukki	41.8	2.6798
Ernakulam	160.711	9.11787
Thrissur	465.39	408.17237
Palakkad	125.4	11.70196
Malappuram	280.15	22.20375
Kozhikode	109.42	9.43088
Wayanad	471.86	43.3694
Kannur	56.74	5.61285
Kasargode	361.7	152.0322
<b>Total</b>	<b>12610.79</b>	<b>1527.0842</b>

**Table 8: District wise cost of bund protection of agricultural lands using sand bags**

District	Distance in kms	Costs (in lakhs)
Thiruvananthapuram	25	104
Kollam	45	255
Pathanamthitta	0	0
Alappuzha	72.48	562
Kottayam	35	155
Idukki	0	0
Ernakulam	0	0
Thrissur	65	478
Palakkad	0	0
Malappuram	30	140
Kozhikode	0	0
Wayanad	35	115
Kannur	0	0
Kasargode	18	95
<b>Total</b>	<b>325.48</b>	<b>1904</b>

**Table 9: District wise cost of draining flood water**

District	Number of pump sets operated (No. of days)	Costs (in lakhs)
Thiruvananthapuram	6(4days)	80
Kollam	10 (4 days)	78
Pathanamthitta	0	0
Alappuzha	45 (5days)	220
Kottayam	12 (3 days)	95
Idukki	0	0
Ernakulam	65 (3 days)	320
Thrissur	48 (4 days)	115

Palakkad	0	0
Malappuram	0	0
Kozhikode	0	0
Wayanad	35 (4 days)	220
Kannur	0	0
Kasargode	0	0
<b>Total</b>	<b>217</b>	<b>1128</b>

#### 2.4. Damages to fisheries

The cyclonic storms (deep depression), wind and rainfall have caused severe damages to the fisheries sector of the state. The details of district wise damages are given in Table 10:

**Table 10: District wise damages to fisheries sector (Details: Annexure 3)**

District	Fully damaged boats	Partially damaged boats	Fully damaged nets	Partially damaged nets
Thiruvananthapuram	25	138	110	168
Kollam	0	0	2	0
Pathanamthitta	Nil	0	00	0
Alappuzha	0	0	6	0
Kottayam	0	0	0	0
Idukki	0	0	0	0
Ernakulam	0	0	0	0
Thrissur	2	5	5	1
Palakkad	0	0	0	0
Malappuram	0	0	0	0
Kozhikode	0	0	0	0
Wayanad	0	0	0	0
Kannur	0	0	0	0
Kasargode	0	0	00	0
<b>Total</b>	<b>27</b>	<b>143</b>	<b>123</b>	<b>169</b>

#### 2.5. Damages to animal husbandry and dairy sector

The intense rainfall and wind have caused severe damages to animal husbandry and dairy development sector of the state. The details of item wise damages are given in Table 11 and annexure 4.

**Table 11: District wise damages to animal husbandry and dairy development sector**

Item	Cost In Lakhs (Rs)
Animal & poultry fatality	13.9604
Provision for feed and concentrate	0.4
Damage to straw	7.5
Additional cost of medicines	0

Transportation of fodder	0
Damage to cattle sheds	32.3
<b>Total</b>	<b>54.1604</b>

## 2.6 Repair/restoration of damaged infrastructure

Losses were incurred to roads, irrigation canals, water supply schemes and community owned open wells. Many roads had to be restored to motor-able condition. The breach of canals resulted in flooding of several localities and hence the bunds had to be restored and reinforced. Open wells are the only source of drinking water in many of the rural hilly regions of the state and hence, those wells of which the walls collapsed and got silted had to be restored with immediate effect. Table 12 shows the district wise irrigation sector damages and water supply scheme damages (Details are provided as annexure). Table 13 shows the district wise details of power sector losses (details are provided as annexure). Table 14 shows the length of PWD roads that were damaged and the cost that had to be incurred for repairing them. Table 15 shows the number of bridges that got damaged and the cost of replacing them. Table 16 shows the community owned assets such as length of village roads, number of damaged water tanks and the number of open wells that had to be repaired in each district.

**Table 12: Cost (in Lakhs Rs.) incurred/committed for repair of irrigation and water supply schemes (Details: Annexure 5)**

District	Irrigation sector - Cost (Rs.)	Water Supply sector – Cost (Rs.)
Thiruvananthapuram	24	0
Kollam	0	23.4
Pathanamthitta	0	36.5
Alappuzha	0	254.875
Kottayam	0	0.8
Idukki	0	43
Ernakulam	7	200
Thrissur	0	1.38
Palakkad	0	0
Malappuram	0	0
Kozhikode	0	0
Wayanad	0	0
Kannur	0	38.23
Kasargode	0	0
<b>Total</b>	<b>31</b>	<b>598</b>

**Table 13: Cost (in Lakhs Rs.) incurred/committed for repair of power sector (Details: Annexure 6)**

District	Cost (Rs)
Thiruvananthapuram	224.25
Kollam	149
Pathanamthitta	31.066
Alappuzha	39.33
Kottayam	38.61
Idukki	18.24
Ernakulam	0
Thrissur	20.15
Palakkad	26.29
Malappuram	42.04
Kozhikode	0
Wayanad	24.59
Kannur	13.696
Kasargode	0
<b>Total</b>	<b>627.29</b>

**Table 14: Loss to PWD roads in Lakhs (Details: Annexure 7)**

District	Length (km)	Cost (Rs.) in Lakhs
Thiruvananthapuram	28	1225
Kollam	144.25	171
Pathanamthitta	33.078	247.5
Alappuzha	Nil	50
Kottayam	Nil	Nil
Idukki	17	356
Ernakulam	Nil	Nil
Thrissur	Nil	Nil
Palakkad	46	50
Malappuram	Nil	Nil
Kozhikode	Nil	Nil
Wayanad	222.233	540.4
Kannur	60.55	123
Kasargode	Nil	Nil
<b>Total</b>	<b>551.108</b>	<b>2762.9</b>

**Table 15: Loss to bridges in Lakhs (Details: Annexure 8)**

District	Length (km)	Cost (Rs.)
Thiruvananthapuram	Nil	Nil
Kollam	Nil	Nil
Pathanamthitta	2	20
Alappuzha	Nil	Nil
Kottayam	Nil	Nil
Idukki	Nil	Nil
Ernakulam	Nil	Nil

Thrissur	Nil	Nil
Palakkad	Nil	Nil
Malappuram	Nil	Nil
Kozhikode	Nil	Nil
Wayanad	Nil	Nil
Kannur	1	500
Kasargode	Nil	Nil
<b>Total</b>	<b>3</b>	<b>520</b>

**Table 16: Cost incurred for immediate restoration of community owned infrastructure**

District	Number of open wells	Cost (Rs.)	No. of damaged pumps	Cost (Rs)	No. of damaged water supply tanks	Cost (Rs)	Length of damaged village roads (Km)	Cost (Rs)	Total
Tvm	28	1.96	38	13.3	18	2.7	318	1454.34	1472.3
Klm	10	0.5000	-	-	-	-	179.25	189.5	190
Ptn	-	-	-	-	-	-	190	540.4	540.4
Alp	-	-	-	-	-	-	-	-	-
Ktm	-	-	-	-	-	-	-	-	-
Idu	-	-	-	-	-	-	25	50	50
Ekm	36	15.3	52	60	45	10	210	626.65	711.8
Tsr	-	-	-	-	12	0.15	-	-	0.15
Pkd	-	-	-	-	-	-	-	-	-
Mal	-	-	-	-	-	-	-	-	-
Koz	-	-	-	-	-	-	-	-	-
Way	-	-	-	-	-	-	-	-	-
Kan	25	11.2500	57	4.788	-	-	-	-	16.03
Ksg	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>99</b>	<b>29.01</b>	<b>147</b>	<b>78.088</b>	<b>75</b>	<b>12.85</b>	<b>922.25</b>	<b>2860.7</b>	<b>2980.688</b>

Annexures are given as a separate volume attached to this memorandum.

Figure 5: Photographs of damages due to the pre-monsoon rainfall



കനത്ത കാറ്റിൽ തെങ്ങ് വീണു; നെൽച്ചെടികളിൽ തോട്ടത്തിൽ ശങ്കരന്റെ വീട് തകർന്ന നിലയിൽ



കൃഷിയാലിൽ ജയിംസിന്റെ റബ്ബർ മരങ്ങൾ കാറ്റിൽ നിലപൊത്തിയപ്പോൾ.

(up)Uprooted tree damages house, Kollam 02.05.2014 (down) Uprooted rubber trees



കാറ്റിൽ നശിച്ച തോട്ടത്തിൽനിന്നും മോഹൻ ഹെമാവർത്തുന്റെ വീട്.



കാറ്റിൽ നശിച്ച വെളിച്ചംവീട്ടിൽ മണിക്കാട്ടിലൂടെ വീട്.



കാറ്റിൽ നശിച്ച വാതിൽ തുറന്നിടലൂടെ വീട്.



കാറ്റിലും മഴയിലും നശിച്ച കൃഷിയിലെ പ.മ.ശബരീയുടെ വാടകത്തറ.

Agricultural losses in Alappuzha 29.04.2014



ശക്തമായ കാറ്റിൽ തെങ്ങു വീണു; തകർന്ന മനപ്പൂർവ്വൻ തടവിലിടലൂടെ വീട്.



ക. വീണു നശിച്ച കോലാശ്ശേരിയിൽ വീട്.



ക. വീണു നശിച്ച പെരുമ്പള്ളിയിൽ വീട്.



കാറ്റിലും മഴയിലും മോശമായ തകർന്ന കൃഷിയിലെ കാൽപ്പുരയുടെ വീട്.

Houses partially and fully damaged, Trivandrum 27.04.2014





ഇരുമ്പാട്ടൂർ പാലാഴി ബയോ ഡയറി ഫാമിന്റെ തകർന്നു പരിസ്ഥിതി കാറ്റിൽ തകർന്ന നിലയിൽ.

Collapsed roof Bio dairy farm, Kozhikode 01.05.2014



ജനതാദൾ നേതാവ് എ.കെ. പ്രസന്നാദിന്റെ ഓഫീസ് കെട്ടിടം തെങ്ങു വീണു തരിച്ച നിലയിൽ

Collapsed roof, Pathanamthitta, 06.05.2014



തെങ്ങു വീണു തകർന്ന പനയാർകുന്നിലെ കൊട്ടന്റെ വീട്.

Uprooted roof damages house, Kasargode 05.05.2014



എണ്ണപ്പുറം ഘാണിൽ കാറ്റിൽ മരം വീണതിനെ തുടർന്നു തകർന്നു പൊങ്ങുത തൂപ്പ്.

Collapsed electric pole, Kasargode, 05.05.2014



കനത്തമഴയിൽ നശിച്ച തൊണ്ടർനാട് പഞ്ചായത്തിലെ വെള്ളാളി പത്തംശാക്കൽ ലോർജിന്റെയും, ബിന്ദുനിവാസിൻ പ്രജാകരന്റെയും വാടത്തോട്ടം.



വേനൽമഴയിൽ നശിച്ച വെള്ളാട്ടുണ്ട കുറ്റിഞ്ഞിക്കൽ സ്റ്റീഫന്റെ വാടത്തോട്ടം.



കനത്ത കാറ്റിൽ ദോർമിഷണല പഞ്ചായത്ത് കോളനിയിലെ വീടുകളിലൂടെ മേൽക്കൂര തകർന്നപ്പോൾ.

Agricultural damages in Wayanad,  
06.05.2014



കാറ്റിൽ തകർന്ന താഴെ അറിവയൽ തെന്നെരി ഖദീലയുടെ വീട്.



തൊട്ടിൻപാലം വട്ടക്കൈത പിലാക്കണി കുമാരന്റെ വീടിന്റെ ചുമർ ഇടിമിന്നലിൽ തകർന്ന തിലയിൽ.



കടുലനി പട്ടുങ്ങാനത്ത് കാറ്റിൽ തകർന്ന കുലേരി വിനോദിന്റെ വീട്.



കടുലനി പട്ടുങ്ങാനത്ത് കാറ്റിൽ തകർന്ന കുറുവാപ്പുരി കല്ലെ ക്ഷിത്യുടെ വീട്.

Damage to houses due to heavy rains and lightning from various parts of the state, 07.05.2014



കൊല്ലം - തിരുവനന്തപുരം റോഡിലെ 214-ൽ പുഴപ്പുഴിയിൽ തകർന്നതിൽ കണ്ടുപിടിച്ചു മാർ അടങ്ങാതി തടയുവാൻ തൊട്ടിൽ വെള്ളം കയറിയപ്പോൾ.

Flooded National highway, Kollam 27.04.2014



ഇടിമിന്നലിൽ തകർന്ന ആലംകോട് മേമ്പാട് കമീസറററിയിൽ പ്രദർശനയുടെ വീട്.

House damaged in lightning, Trivandrum 02.05.2014



മേൽപ്പറ്റാ പുഴിമുക്കം, തകർന്ന താഴെ അവിസർവ് കാര്യങ്ങൾ വെളുപ്പിന്റെ വീട്.



കാറ്റിലേ, മേമ്പാട്, തകർന്ന താഴെ അവിസർവ് മേമ്പാട് കുന്നോ തമ്പുവീട്ടിന്റെ വീട്.

Damaged houses in Trivandrum, 27.04.2014



1. കൊമ്പളം പ്രദേശത്ത് വീശിയടിച്ചു ശക്തമായ കാറ്റ് 2. കൊമ്പളം മറിച്ച് റോഡിൽ മാ. വീശി ശതമാനം തടസ്സപ്പെട്ടു വീശിയിൽ

Uprooted trees disrupt traffic, Kovalam Beach road, 23.04.2014





Completely destroyed at Kalarithara, Kottayam 15.04.2014



Damaged Rubber plantation at Kuravilangadu, Kottayam  
16.04.2014



Flooded beach road at Shangumughom, Trivandrum 24.04.2014



Damaged house due to tree collapse at Kulasekaram, Trivandrum  
16.04.2014



മി. ഹാരി സുഗ്രീവ് പെയ്ത മഴ, വെള്ളം.



പാതയിൽ പാടിയത് തടസ്സം സൃഷ്ടിച്ചു.



പാതയിൽ പാടിയത് തടസ്സം സൃഷ്ടിച്ചു.



കൊടുങ്കാറ്റിൽ കോഴം-പാലാ നോഡിൽ താങ്ങുപുണ് ഭാഗത്ത് തടം നീന്ത് അടഞ്ഞ വെള്ളപ്പുഴി പോയിട്ടുണ്ട്.



താഴ്ന്നു, കടന്നു, തോങ്ങിയ നാശം കടുത്തു കടന്നു, നീന്ത് തടസ്സം.



കുറ്റിപ്പാലം മുറ്റംതൊട്ടി തടസ്സം സൃഷ്ടിച്ചു. പാതയിൽ പാടിയത് തടസ്സം സൃഷ്ടിച്ചു.



വാട്ടിൽ വെള്ളം കടന്നു കടന്നു, സൗത്ത് തിരിയെ തടസ്സം സൃഷ്ടിച്ചു. പാതയിൽ പാടിയത് തടസ്സം സൃഷ്ടിച്ചു. പാതയിൽ പാടിയത് തടസ്സം സൃഷ്ടിച്ചു. പാതയിൽ പാടിയത് തടസ്സം സൃഷ്ടിച്ചു.

Uprooted trees, damaged houses and collapsed electric poles, incidents from various parts of the state from 25<sup>th</sup> April to 8<sup>th</sup> May 2014

Flooded railway track disrupts railway service, Ernakulam South 08.05.2014



വനീയശാല-കൊച്ചിൻ റോഡിൽ വീണ മരം കെട്ടിടം ഇണി ഉദ്യോഗസ്ഥർ മാറ്റുന്നു.



വഴുതക്കാട് ഉപഭോക്തൃ കോടതിയിലെ സമീപം മരവീണത് അഗ്നീശക്തനായ ഇടപെട്ടു മാറ്റാൻ ശ്രമിക്കുന്നു. എൻ. ഇ. സിറ്റിംഗ് അയച്ചു ചിത്രം.



വഴുതക്കാട് മരം റോഡിനു കുറുകെ വീണപ്പോൾ. എൻ.എസ്. മെന്റൽമാർ, മരവീണകൾ അയച്ചു ചിത്രം.

Uprooted trees in Heavy rain and windfall, Trivandrum 26.04.2014



അരിവയലിൽ നാശനഷ്ടങ്ങളുണ്ടായ സിറോം കെ.സി. ബാലകൃഷ്ണൻ എ.എസ്.എ സന്ദർശിക്കുന്നു.



പാലം നഗരീയ കെട്ടുവണ പഞ്ചായത്തിൽ ലോയിയുടെ നഷ്ടം തോട്ടം.



കാറ്റിൽ നശിച്ച അരിവയൽ നെല്ലും തടത്തിൽ അരി.സിറ്റിംഗ് സമർപ്പിക്കുന്നു.

Agricultural losses and house damages, Kannur 16.04.2014



ബോയറാഴ്ച കെട്ടുവണിയിൽ നഗരത്തിൽ അടയാളമിടുന്നോളമുള്ള നൂറു കണക്കിനു പാസേജ് റോഡുകളിലെ ഏകദേശം ബാഹ്യകളാണു കടി വിട്ടിരിക്കുന്നത്. പൊതുക്കട അമ്പലമുക്ക് അമ്പലം, അയ്യപ്പനന്തൻ മെന്റൽ അയച്ചു ചിത്രം.



പോയർ പള്ളിയിൽ പാലക്കാട് റോഡിൽ ബോയറാഴ്ച കെട്ടുവണിയിൽ പൊതു സിറ്റിംഗ് വീണു കെട്ടുവണിയിലേക്ക് തകർന്നപ്പോൾ. സിറ്റിംഗ് അയച്ചു ചിത്രം.



ബോയറാഴ്ച കെട്ടുവണിയിൽ വീണു കെട്ടുവണിയിൽ വനീയശാല റോഡിൽ വീണു പാലത്തിലേക്കു മരം വീണു ഗതാഗതം തടസ്സപ്പെട്ടപ്പോൾ. ബോയർ അയച്ചു ചിത്രം.

Uprooted trees and Collapsed Electric poles, Trivandrum, 25.04.2014

## Abstract

<b>STATEMENT OF LOSSES DUE TO PRE-MONSOON CALAMITY FROM 1<sup>st</sup> TO 30<sup>th</sup> APRIL 2014</b>			
Code No.	Item	Loss as per SDRF norms (lakhs)	Estimated actual loss (lakhs)
1	2	3	4
1	<b>Gratuitous Relief</b>		
a	Ex-gratia payment to families of deceased persons	39.9	39.9
b	Ex-gratia payment for loss of a limb or eyes	0	0
c.i	Grievous injury requiring hospitalization for more than a week	3.915	10
c.ii	Grievous injury requiring hospitalization for less than a week	0	0
d	Clothing and Utensils	0	0
e	Gratuitous Relief for families in dire need (Free Ration)	0	0
2	<b>Search and Rescue</b>	6.58	6.58
3	<b>Relief Measures</b>		
a	Provision for temporary accommodation, food, clothing, medical care etc. for people affected/evacuated and sheltered in relief camps	0	0
b	Air dropping	0	0
c	Provision of emergency supply of drinking water in rural areas and urban areas	0	0
4	<b>Clearance of affected areas</b>		
a	Clearance of debris in households and public area	0	0
b	Draining of flood waters in affected areas	1128	1128
c	Funeral and burial of dead bodies	0	0
5	<b>Agriculture</b>		
i	<b>Assistance to small and marginal farmers</b>		
A	<b>Assistance for land and other loss</b>		
a	Removal of debris on agricultural land	296.57	296.57
b	De-silting/restoration/repair of fish farms	0	0
c	Loss of substantial portion of land caused by landslide & change of course of rivers	0	0
d	Repair of bunds of agricultural land	1904	1904
B	<b>Input subsidy (where crop loss is &gt;50%)</b>		
a	For agricultural crops – rain-fed, irrigated and perennial	1527.0842	4192.754
6	<b>Animal husbandry &amp; dairy</b>		
i	Replacement of milch animals & poultry	13.9604	82.98
ii	Provision of fodder/feed concentrate in cattle camps	0.4	5
iii	Additional cost of Medicines and Vaccines	0	0

iv	Damage to straw	7.5	7.5
7	<b>Fishery</b>		
i	Assistance to Fishermen for repair/replacement of boats, net – damaged or lost	10.9795	54.8975
9	<b>Housing</b>		
a	<b>Fully damaged/Destroyed houses</b>		
I	Pucca Houses	213.55	1057.75
ii	Kutchra Houses	35.1030	175.515
b	<b>Severely Damaged Houses</b>		
i	Pucca Houses	603.3080	3016.54
ii	Kutchra Houses	22.5480	112.74
c	<b>Partially damaged houses</b>		
i	Pucca Houses	719.0286	3570.488
ii	Kutchra Houses	76.9621	384.8105
d	<b>Damaged/Destroyed huts</b>	3.8355	19.1775
e	<b>Cattle shed adjoining house</b>	32.3	96.15
10	<b>Infrastructure - Repair/restoration (of immediate nature) of damaged infrastructure</b>		
i)	Road & bridges	3282.9	3301.9
ii)	Community owned assets	2980.688	2980.688
lii)	Drinking water supply works (Kerala Water Authority and District Administration)	598	598
iv)	Irrigation (Dept. of Irrigation)	31	31
v)	Power (KSEB)	627.29	627.29
<b>Grand Total</b>		<b>14165.332</b>	<b>23700.231</b>
<b>Estimated actual loss: Two hundred and thirty seven crores twenty three thousand one hundred only</b>			
<b>Estimated loss as per SDRF Norms: One hundred and forty one crores sixty five lakhs thirty three thousand two hundred only</b>			

Sd/-  
Satyajeet Rajan IAS  
State Relief Commissioner

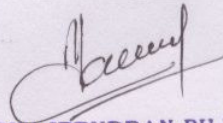


## (A) Statement of earlier released amounts to the State Disaster Response Fund (SDRF/NDRF) (In Lakhs) 2013-14.

1	Opening Balance as on 1.04.2013	11734.56
2	Centre share including advance release credited to SDRF	11381.00
3	Corresponding share of State	3793.00
4	Corresponding share of State credited to SDRF	3793.00
5	Amount received under NDRF	6174.00
6	Cumulative Expenditure as on 31 <sup>st</sup> March 2014 (including pending claims to be settled)	43894.10
7	Amount transferred to investment account	0.00
8	Amount received from investment account	0.00
9	Closing Balance (1+2+4+5+8)-(6+7)31 <sup>st</sup> March 2014	-10811.54
B	I. Opening Balance: 1 <sup>st</sup> April 2014	-10811.54

## 2 Receipt during the current financial year 2014-15

i.	Centre Share	0.00
ii.	State's Share	0.00
iii.	Assistance under NDRF	0.00
iv.	Interest earned (including investment made out of SDRF)	0 (yet to be credited)
v.	Others	0.00
vi.	Arrears of Centre's/State's share if any to be credited to SDRF	0.00
vii.	Total ( I ) to (VI)	0.00
viii.	Of which amounts credited to SDRF	0.00
3	Total amount available in the SDRF as on 1 <sup>st</sup> April 2014	-10811.54
4	Total allotment incurred in conformity with items & norms of SDRF during the year out of the fund	
	i. As on 3 <sup>rd</sup> May 2014	3970.00
	Balance available in the fund(3-4)	-14781.54

  
**SHAJEENDRAN PILLAI**  
 Deputy Secretary  
 Revenue Department  
 Govt. Secretariat, Tvpam