

भारत सरकार  
अन्तरिक्ष विभाग  
**राष्ट्रीय सुदूर संवेदन केन्द्र**  
बालानगर, हैदराबाद-500 625, आं.प्र. भारत  
टेलिफोन : +040-23879572-76  
+040-23879261-65  
फैक्स : +040-23878648



Government of India  
Department of Space  
**National Remote Sensing Centre**  
Balanagar, Hyderabad-500 625, AP, India  
Telephone : +040-23879572-76  
+040-23879261-65  
Fax : +040-23878648

**Dr. K H V Durga Rao**  
**Head, Disaster Management Support Division**

Phone: 040-23884541, Fax: 040-23870445  
e-mail: [durgarao\\_khv@nrsc.gov.in](mailto:durgarao_khv@nrsc.gov.in)

Date: July 20, 2018

No: 05-FL-2018-KL/01

Dear Sir,

Sub: Kerala Floods 2018- Near Real Time Inundation Mapping using satellite data

As you are aware, National Remote Sensing Centre is carrying out 'Near Real Time Flood Mapping' project using satellite data. Inundation is reported in parts of Kerala State due to heavy incessant rains during second week of July. We have analyzed Sentinel 1A SAR data of 16<sup>th</sup> July 2018 and a flood map for Kerala state is prepared. The flood map along with a brief report is enclosed herewith for your information. Since the image was acquired during/immediate to the rainfall event, extents of wet areas were also observed.

Further, we request you to visit flood page in Bhuvan portal ([bhuvan-noeda.nrsc.gov.in/disaster/disaster.php](http://bhuvan-noeda.nrsc.gov.in/disaster/disaster.php)) NDEM portal for better visualization of flood extent in Kerala State.

In addition, the flood layer in GIS ready format and inundation statistics are transmitted to KSDMA by e-mail for further value addition and dissemination to concerned user departments.

We will continue to keep a watch on the inundation situation and update the information as and when required. Your support and active interaction is highly appreciated. Please provide feedback on the information being provided.

With kind regards

Yours sincerely,

(Dr. KHV Durga Rao)

As per the distribution list enclosed in the report.

# Kerala Heavy Rains – 2018

## 1.0 Background

Heavy incessant rains were reported in Kerala state during the second and third week of July 2018 inundating many low lying areas. Several districts are reported to be affected. (Source: News Media)

## 2.0 Satellite Data

Flood Disaster Team is keeping a constant watch on the flood situation and checked the satellite data coverage over the flood affected areas. Sentinel 1A SAR satellite data of 16<sup>th</sup> July 2018 was analyzed. (Refer Table-1).

**Table-1 Satellite Data acquired over Flood Affected Area**

S No	Date	Satellite/Sensor	Status
1	16-07-18	Sentinel 1A SAR	Analyzed and 1 flood map is being sent

## 3.0 Data Analysis

Satellite data is rectified and inundation layer is extracted. Further, flood inundation map was composed for Kerala state based on the analysis of Sentinel 1A satellite data of 16<sup>th</sup> July 2018. The inundation layer is integrated with District and Taluk boundaries layer, for extracting district-wise and taluk-wise inundation statistics shown in the Table-2.

## 4.0 Observations

- Satellite data covers part Kerala state.
- Major Flood inundation is observed in Alleppey, Ernakulam, Kottayam, Pattanam districts.

**Table-2**

District	Taluk	Flooded Area (Hectare)
ALLEPPEY	AMBALAPULAI	2004
	CHENGANNUR	935
	KARTIKAPALLI	2525
	KUTTANAD	14776
	MAVELIKARA	1559
ERNAKULAM	ALWAYE	367
	KANAYANNUR	359
	KUNNATNAD	511
	MUVATTUPULA	480
	PARUR	339

KOTTAYAM	CHANGANACHERI	2409
	KOTTAYAM	6731
	MINACHIL	186
	VAIKAM	2975
MALAPPURAM	PONNANI	1338
PATTANAMTITTA	ADUR	336
	KOZHANCHERY	247
	MALLAPALLI	190
	TIRUVALLA	1549
QUILON	KARUNAGAPALLI	224
	KUNNATTUR	344
	QUILON	935
TRICHUR	CHAVAKKAD	1814
	KODUNGALLUR	135
	MUKUNDAPURAM	3051
	TALAPPALLI	1276
	TRICHUR	7412
	<b>TOTAL</b>	<b>55007</b>

Disclaimer :

-Inundation may include rain water accumulation / water in low lying areas.

**Distribution List (through e-mail):**

1	MHA	1. Joint Secretary, NDM, Ministry of Home Affairs, North Block, New Delhi. 2. NDM control Room, Ministry of Home Affairs, North Block, New Delhi 3. Director, DM-III, NDM, Ministry of Home Affairs, North Block, New Delhi.
2	NDMA	1. Vice Chairman, National Disaster Management Authority (NDMA), New Delhi 2. Control Room, National Disaster Management Authority (NDMA), New Delhi
3	NODAL MINISTRIES	1. Chairman, Central Water Commission, Sewa Bhavan, R K PURAM, New Delhi 2. ADGM (H & A), India Meteorological Department, Mausam Bhavan, New Delhi
4	STATE	1. State Remote Sensing Center. 2. Member Secretary State Disaster Management Authority
5	ISRO/DOS	1. Programme Manager, Disaster Management Support Programme, ISRO Head Quarters, Antariksha Bhavan, New BEL Road, Bangalore. 2. Programme Director, Disaster Management Support Programme, ISRO Head Quarters, Antariksha Bhavan, New BEL Road, Bangalore.
6	NRSC	1. Deputy Director (RSA) & Project Director, DSC 2. Associate Director, NRSC 3. Director, NRSC

-----