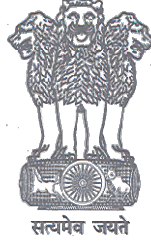


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Dr. K.H.V.DURGA RAO, Scientist/Engineer 'SG'
Head, Disaster Management Support Division

Date: Sep 14, 2018

No: 01-FL-2018-ASSAM/18

Dear Sir,

Sub: Assam Floods 2018- Near Real Time Flood Mapping using satellite data

Please refer to our earlier mail dated 12th Sep 2018 regarding 'Near Real Time Flood Mapping' project using satellite data. So far we have sent 17 flood maps covering floods in Assam State. Floods were reported due to heavy incessant rains in Assam state during last week of August 2018. We have analyzed Radarsat-2 SAR satellite data of 13th September 2018 (1800Hrs) and a flood map for part of Assam State is prepared. The flood map along with a brief report is enclosed herewith for your kind information. Since the image was acquired during/immediate to the rainfall event, large extents of wet areas were also observed.

Further, we request you to visit flood page in Bhuvan portal (bhuvan-noeda.nrs.gov.in/disaster/disaster/disaster.php) NDEM portal for better visualization of flood extent in Assam State.

In addition, the flood layer in GIS ready format and inundation statistics are transmitted to Assam State Remote Sensing Application Centre and North Eastern State Application Centre by e-mail for further value addition and dissemination to user departments.

We will continue to keep a watch on the flood 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,
(K H V Durga Rao)

As per the distribution list enclosed in the report.

Assam Floods – 2018

1.0 Background

Floods were reported in Assam due to heavy incessant rains in parts of Assam state during the first week of September, 2018. According to Central Water Commission (CWC) report, River Brahmaputra at Neamatighat in Jorhat district, and River Dhansiri(South) at Numaligarh in Golaghat district is flowing in severe flood Situation.

(Source: CWC, 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. RADARSAT-2 SAR satellite data of 13th September 2018 was analyzed. (Refer Table-1).

Table-1 Satellite Data acquired over Flood Affected Area

| S No | Date | Satellite / Sensor | Status |
|------|----------|--------------------|--|
| 1 | 08-06-18 | Sentinel-1 SAR | Analyzed and 1 flood map was sent. |
| 2 | 15-06-18 | RADARSAT-2 SAR | Analyzed and 1 flood map was sent. |
| 3 | 16-06-18 | RADARSAT-2 SAR | Analyzed and 1 flood map was sent. |
| 4 | 20-06-18 | RADARSAT-2 SAR | Analyzed and 1 flood map was sent. |
| 5 | 23-06-18 | RADARSAT-2 SAR | Analyzed and 1 flood map was sent. |
| 6 | 27-06-18 | RADARSAT-2 SAR | Analyzed and 1 flood map was sent |
| 7 | 01-07-18 | RADARSAT-2 SAR | Analyzed and 1 flood map was sent |
| 8 | 07-07-18 | RADARSAT-2 SAR | Analyzed and 1 flood map was sent. |
| 9 | 16-07-18 | RADARSAT-2 SAR | Analyzed and 1 flood map was sent. |
| 10 | 24-07-18 | RADARSAT-2 SAR | Analyzed and 1 flood map was sent |
| 11 | 31-07-18 | RADARSAT-2 SAR | Analyzed and 1 flood map was sent |
| 12 | 04-08-18 | RADARSAT-2 SAR | Analyzed and 1 flood map was sent |
| 13 | 07-08-18 | RADARSAT-2 SAR | Analyzed and 1 flood map was sent |
| 14 | 14-08-18 | RADARSAT-2 SAR | Analyzed and 1 flood map was sent |
| 15 | 01-09-18 | RADARSAT-2 SAR | Analyzed and 1 flood map was sent |
| 16 | 08-09-18 | RADARSAT-2 SAR | Analyzed and 1 flood map was sent |
| 17 | 12-09-18 | RADARSAT-2 SAR | Analyzed and 1 flood map was sent |
| 18 | 13-09-18 | RADARSAT-2 SAR | Analyzed and 1 flood map is being sent |

3.0 Data Analysis

Satellite data is rectified and flood inundation layer is extracted. Further, flood inundation map was composed for part of Assam state based on the analysis of RADARSAT-2 SAR satellite data of 13th September 2018. The flood inundation layer is integrated with district boundary layer, for extracting district-wise flood inundation statistics which are shown in the Table-2.

4.0 Observations

Based on the analysis of satellite data, the following points were observed.

- Satellite data covers part of Assam state.
- Inundation was observed in Dhubri, Bongaigaon, Kamrup, Goalpara and Barpeta districts.

Table-2:

| S.No. | DISTRICT | Flood Inundated Area (ha) |
|--------------|-----------------|----------------------------------|
| 1 | DHUBRI | 10737 |
| 2 | BONGAIGAON | 3875 |
| 3 | KAMRUP(R) | 2991 |
| 4 | GOALPARA | 2949 |
| 5 | BARPETA | 2672 |
| | TOTAL | 23224 |

Note:

- Flood inundation may include rain water accumulation / flood water in low lying areas.
- Districts with inundation less than 1000 ha are not included in the statistics.

Distribution List:

| | | |
|---|---------------------|---|
| 1 | MHA | <ol style="list-style-type: none">1. Joint Secretary, NDM, Ministry of Home Affairs, North Block, New Delhi - 110 001. (Through e-mail).2. NDM control Room, Ministry of Home Affairs, North Block, New Delhi - 110 001 (Through e-mail). |
| 2 | NODAL MINISTRIES | <ol style="list-style-type: none">1. Chairman, Central Water Commission, Sewa Bhavan, R K PURAM, New Delhi-1100662. ADGM (H & A), India Meteorological Department, Mausam Bhavan, New Delhi -110003 |
| 3 | STATE | <ol style="list-style-type: none">1. Additional Chief Secretary & Relief Commissioner, Govt. of Assam, Janatha Bhavan, Assam Secretariat, Dispur, GUWAHATI-781005. (Hard copy of the map through NESAC/ARSAC also).2. Scientific Officer, Assam State Remote Sensing Application Centre (ARSAC) Govt of Assam, Guwahati, Assam Fax: 0361-452455 (with a request to disseminate the information to the concerned user depts.) |
| 4 | ISRO/DOS | <ol style="list-style-type: none">1. Director, NESAC, Dept of Space, Umiam, Meghalaya pin: 793 103. (with a request to disseminate the information to the concerned user depts.)2. Director, EDPO, ISRO Head Quarters, Antariksha Bhavan, New BEL Road, Bangalore-560094. (e-mail)3. Programme Director, EDPO, ISRO Head Quarters, Antariksha Bhavan, New BEL Road, Bangalore-560094. (e-mail)4. Associate Director, EDPO, ISRO Head Quarters, Antariksha Bhavan, New BEL Road, Bangalore-560094. (e-mail) |
| 5 | NRSC | <ol style="list-style-type: none">1. Director, NRSC2. Associate Director, NRSC3. Deputy Director (RSA) & PD, DSC |
