

**Respon Tanggap Darurat  
Bencana Berbasis Data Satelit**  
*Space-based Disaster Emergency Response*

**BANJIR**

I10

Kota Sibolga, Tapanuli Tengah, Tapanuli Utara, Tapanuli Selatan  
Provinsi Sumatera Utara, Indonesia

**Flood**

Kota Sibolga, Tapanuli Tengah, Tapanuli Utara, Tapanuli Selatan  
North Sumatra Province, Indonesia



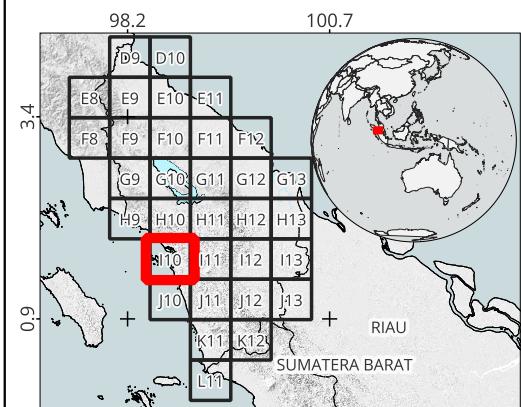
5 km  
1:200,000  
Map scale for A3  
CRS: WGS84 (EPSG:4326)

Legenda:

- |                        |  |                    |                                       |
|------------------------|--|--------------------|---------------------------------------|
| [Dashed line icon]     | Batas kabupaten<br>District border                       | [Red line icon]    | Jaringan jalan primer<br>Primary road |
| [Blue line icon]       | Danau<br>Lake  | [Yellow line icon] | Jaringan jalan<br>Road                |
| [Solid blue area icon] | Estimasi area terdampak banjir<br>Estimated flooded area |                    |                                       |

Sumber Data:  
Data source:

1. Batas administrasi dari Badan Informasi Geospasial  
*Administrative boundary courtesy of Geospatial Information Agency (BIG)*
2. Jaringan jalan dan nama tempat dari Open Street Map  
*Road networks and nameplace courtesy of the Open Street Map (OSM)*



**Deskripsi:**  
Estimasi genangan banjir dilakukan dengan menganalisis perubahan nilai backscatter ( $\Delta dB$ ) pada citra SAR Sentinel-1 sebelum (22 November 2025) dan sesudah kejadian (28 November 2025). Penurunan backscatter yang melampaui ambang batas yang ditetapkan, diidentifikasi sebagai genangan banjir. Hasil estimasi masih memerlukan validasi lapangan.

**Description:**  
Flood inundation was estimated by analyzing changes in backscatter ( $\Delta dB$ ) in Sentinel-1 SAR imagery acquired before (22nd November 2025) and after the event (28th November 2025). A decrease in backscatter exceeding the predefined threshold was classified as flooded area. Estimated flood still needed to be verified further.

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