ASSAM UNIVERSITY, SILCHAR

2026 ASSAM FLOODS

A Comprehensive Situation Assessment and Roadmap for Resilient Recovery

Report Prepared by

ASSAM UNIVERSITY, SILCHAR

August 2026

ASSAM UNIVERSITY, SILCHAR

2026 ASSAM FLOODS

A Comprehensive Situation Assessment and Roadmap for Resilient Recovery

Report Prepared by

ASSAM UNIVERSITY, SILCHAR

August 2026

CONTRIBUTED BY

Arun Jyoti Nath[1], Surajit Ghosh[2], Sneha Kour[3], Anuva Chowdhury[3], Ushasi Sarkar[4], Animekh Hazarika[1], Aditi Nath[1] and Arnab Paul[1]

[1]Assam University, Silchar, India
[2]International Water Management Institute, Colombo, Sri Lanka
[3]Birla Institute of Technology Mesra, Ranchi, India
[4]Adamas University, Kolkata, India

Contents

Abbreviations and acronyms

ASDMA	Assam State Disaster Management Authority
DDMA	District Disaster Management Authority
SDRF/NDRF	State Disaster Response Fund / National Disaster Response Fund
CWC	Central Water Commission
IMD	India Meteorological Department
NESAC	North Eastern Space Applications Centre
FLEWS	Flood Early Warning System
EO	Earth Observation
RS	Remote Sensing
SAR	Synthetic Aperture Radar
GIS	Geographic Information System
DEM	Digital Elevation Model
LULC	Land Use / Land Cover
NDWI	Normalised Difference Water Index
NDTI	Normalised Difference Turbidity Index
FDI	Flood Damage Index
FVI	Flood Vulnerability Index
FRI	Flood Risk Index
PDNA	Post-Disaster Needs Assessment
DALA	Damage and Loss Assessment
IBF	Impact-Based Forecasting
DSS	Decision Support System
AI/ML	Artificial Intelligence / Machine Learning
NISAR	NASA–ISRO Synthetic Aperture Radar Mission

Executive Summary

The July 2026 floods in Upper Assam were among the most damaging in recent decades, displacing roughly 2.12 lakh people across eight districts, claiming more than 80 lives, submerging some 21,000 ha of cropland and killing more than 11,000 livestock.[1] Unlike many previous flood events in Assam, which are primarily associated with the gradual rise of the Brahmaputra mainstem, the 2026 floods were characterised by a rapid-onset, upstream-driven flood mechanism. The event was driven by extreme orographic rainfall over the Naga Hills (Nagaland) and Arunachal Pradesh,[2] which forced the south-bank tributaries Dikhow, Disang, Jhanji and Dhansiri to exceed their danger levels and breach ageing embankments before the mainstem itself peaked; the central government released a ₹379.35-crore State Disaster Response Fund (SDRF) advance in immediate response.[3] This inversion of the usual sequence also points to a critical, replicable failure mode, in which extreme rainfall compounds with reservoir operations at capacity limits within structurally confined valleys. This reservoir–discharge interaction represents a critical and replicable failure mode in which extreme rainfall, combined with infrastructure operating near capacity within structurally confined valleys, resulted in severe downstream flooding in Golaghat.

Assam's flood geography is shaped by an often-overlooked structural asymmetry: the Barak valley drains into the Meghna basin, while the rest of the state's rivers belong to the Brahmaputra system. This means flood dynamics, hydrological forcing, and management protocols cannot be treated uniformly across the state. Similarly, the Eastern Himalaya presents an abrupt, near-single-step transition from high-altitude terrain to the foothills and valley floor in contrast to the Western Himalaya's more gradual descent. This structural steepness compresses the time available for runoff attenuation, making Upper Assam's south-bank catchments inherently more flash-flood-prone than the classical fluvial systems. Moreover, the districts viz. Golaghat, Jorhat, and Sivasagar, which were among the hardest hit, host ecologically critical protected areas, including Kaziranga National Park and the Hoollongapar Gibbon Sanctuary. As of current reporting, only human and livestock casualties have been documented, official wildlife casualty figures remain unavailable. This stands in stark contrast to 2024, when 159 wild animals died in Kaziranga alone, and 2025, which brought post-flood water crises. The lack of current data may reflect genuinely improved flood rescue infrastructure and park management, or it may be that reporting is delayed as resources are concentrated on the human emergency. Until systematic wildlife surveys are completed, the true impact on species such as elephants and sloth bears, whose breeding seasons overlap with the flood window, remains unknown. The absence of official wildlife casualty data may indicate improved flood preparedness and rescue operations within protected areas, but it could also reflect delayed ecological assessments as response efforts have understandably prioritised human life and livelihoods. This uncertainty highlights the need for systematic post-disaster ecological assessments to ensure that wildlife impacts are adequately documented and integrated into future disaster risk management and recovery planning.

The districts of Charaideo, Sivasagar, and Jorhat were the worst affected, experiencing the highest flood intensity and the greatest extent of human displacement, agricultural losses, infrastructure damage, and disruption to livelihoods. This report provides a comprehensive, rapid evidence-based assessment of the event and of Assam's wider flood risk, integrating field observations, official Assam State Disaster Management Authority (ASDMA), India Meteorological Department (IMD) and Central Water Commission (CWC) records, and multi-sensor

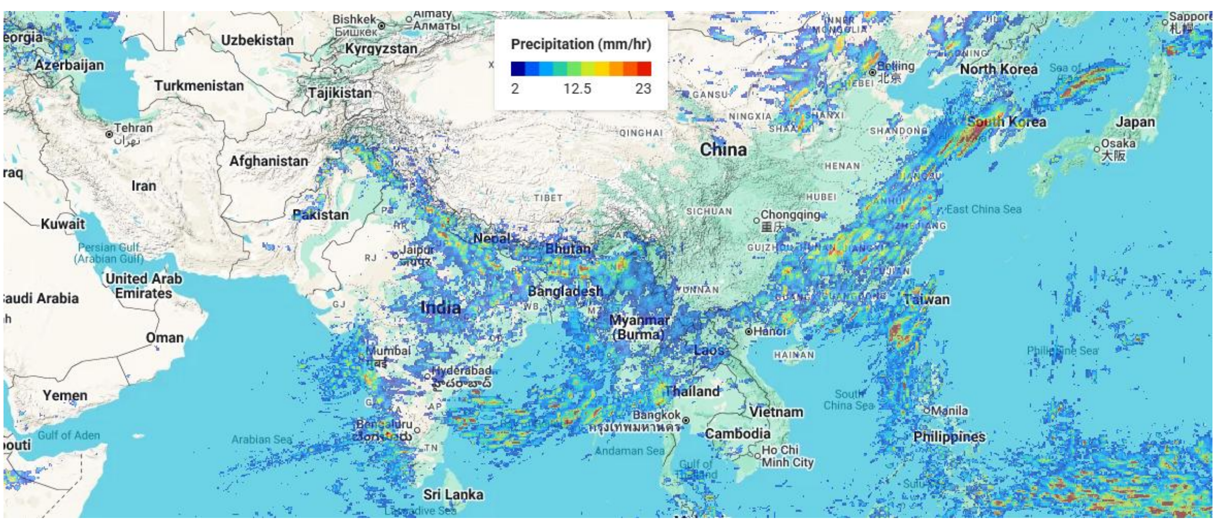
[1] Impact figures from Assam State Disaster Management Authority (ASDMA) daily flood situation reports, as of 1 August 2026; figures are provisional and subject to revision as re-assessment proceeds.

[2] India Meteorological Department rainfall bulletins, July 2026. The IMD attributed the floods to extreme upstream rainfall (Aboi station, Mon district, 137 mm on 19 July 2026) and clarified that the event did not meet the cloudburst threshold (≥100 mm h^{-1}).

[3] Ministry of Home Affairs / Press Information Bureau, State Disaster Response Fund advance release, 1 August 2026 (₹379.35 crore to Assam, within ₹2,117.85 crore released to seven flood-affected states).

Earth-observation (EO) analysis. It reconstructs the meteorological and hydrological evolution of the flood; identifies the climatic, hydrological, geomorphological and anthropogenic drivers and their compound interactions; contrasts flood behaviour across the state's five physiographic divisions; quantifies impacts through a Post-Disaster Needs Assessment (PDNA) spanning population, agriculture, livestock, wildlife, infrastructure and public health; evaluates the performance of the disaster-management system; and sets out a costed, phased roadmap for resilience. Its central conclusion is that the disaster resulted not from extreme rainfall alone, but from the interaction of rainfall with sediment-driven channel aggradation, an ageing embankment network, wetland loss, and socio-institutional vulnerability. Durable risk reduction therefore depends on managing these amplifying factors through spatially differentiated, EO-enabled, and community-centred interventions rather than relying solely on structural flood control.

The findings from the study highlighted that the 2026 event cannot be reduced to an extreme rainfall event, since damage severity emerged from the compounding of extreme, geographically concentrated precipitation; already-saturated antecedent soil moisture; a steep-to-flat topographic transition that minimised warning lead time; mining- and deforestation-driven slope instability and landslides; reservoir operation at capacity during peak rainfall; sediment-driven channel aggradation and embankment fragility; wetland loss that reduced natural attenuation capacity; and underlying socio-institutional vulnerability that shaped who was exposed and how effectively communities could respond. This event demonstrates that a compound-causation framework is essential for developing targeted mitigation policies, as interventions focused solely on rainfall forecasting are likely to be structurally insufficient. Addressing future flood risk will therefore require moving beyond rainfall-centric forecasting towards an integrated, multi-source, EO-enabled, regionalised, and community-grounded resilience framework.



Regional rainfall/precipitation patterns of 19th July 2026

1. Understanding flood risk in Assam

Assam's geographical setting within the Brahmaputra and Barak River basins—two of India's most dynamic fluvial systems—exposes the state to flood hazards from two distinct yet hydrologically interconnected river systems **(Figure 1).** Assam is surrounded by mountainous terrain in the north, east, and south, which funnels runoff toward the central alluvial plains where the Brahmaputra and Barak rivers flow. This unique topographic configuration amplifies flood magnitude by concentrating large volumes of water and sediment into relatively narrow valley systems. Approximately 40% of Assam's land is classified as flood-prone, representing one of the highest levels of flood exposure among Indian states (Hazarika et al., 2026). The state is divided into five regional divisions: Lower Assam, North Assam (north-bank), Central Assam, Upper Assam, and the Barak Valley. These regions differ markedly in their physiography, river systems, and flood behaviour, highlighting the need for region-specific approaches to flood risk management.

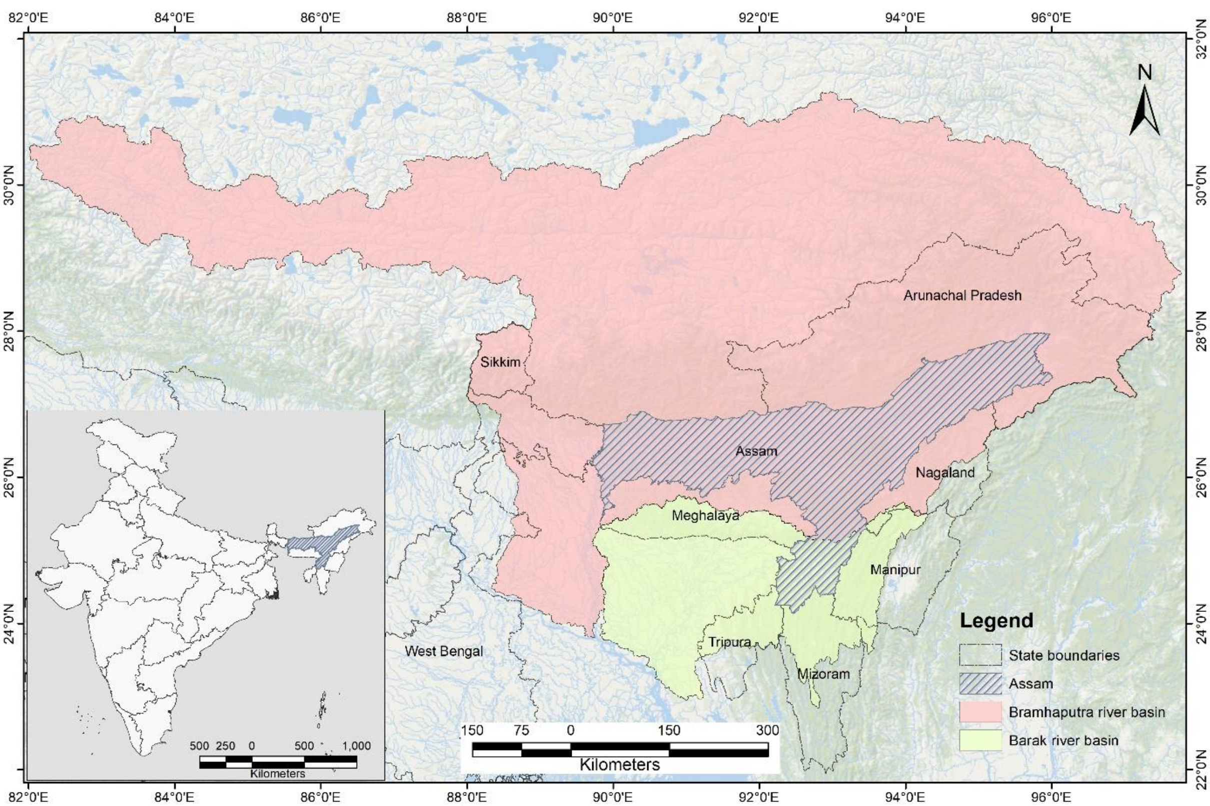


Figure 1. *Study area and Assam's five regional divisions (FAO GAUL boundaries)*

1.1 River systems

Assam is drained by two major river basins—the Brahmaputra and Barak—along with their numerous tributaries. The Brahmaputra, one of the world's largest rivers by discharge, dominates the state, joined by numerous north-bank tributaries (Subansiri, Ranganadi, Jia Bharali, Dhansiri) and south-bank tributaries (Dikhow, Disang, Jhanji, Burhidehing). The Barak Valley in the south drains a wholly separate basin, the Barak, along with its Mizoram and Manipur hill tributaries (Sarma & Acharjee, 2012). The north-bank tributaries are steep and flashy, descending from the Himalaya and Bhutan; the south-bank tributaries drain the Naga Hills. This dual-tributary configuration underlies the tributary-synchronisation effect central to Assam flooding (**Figure 2**).

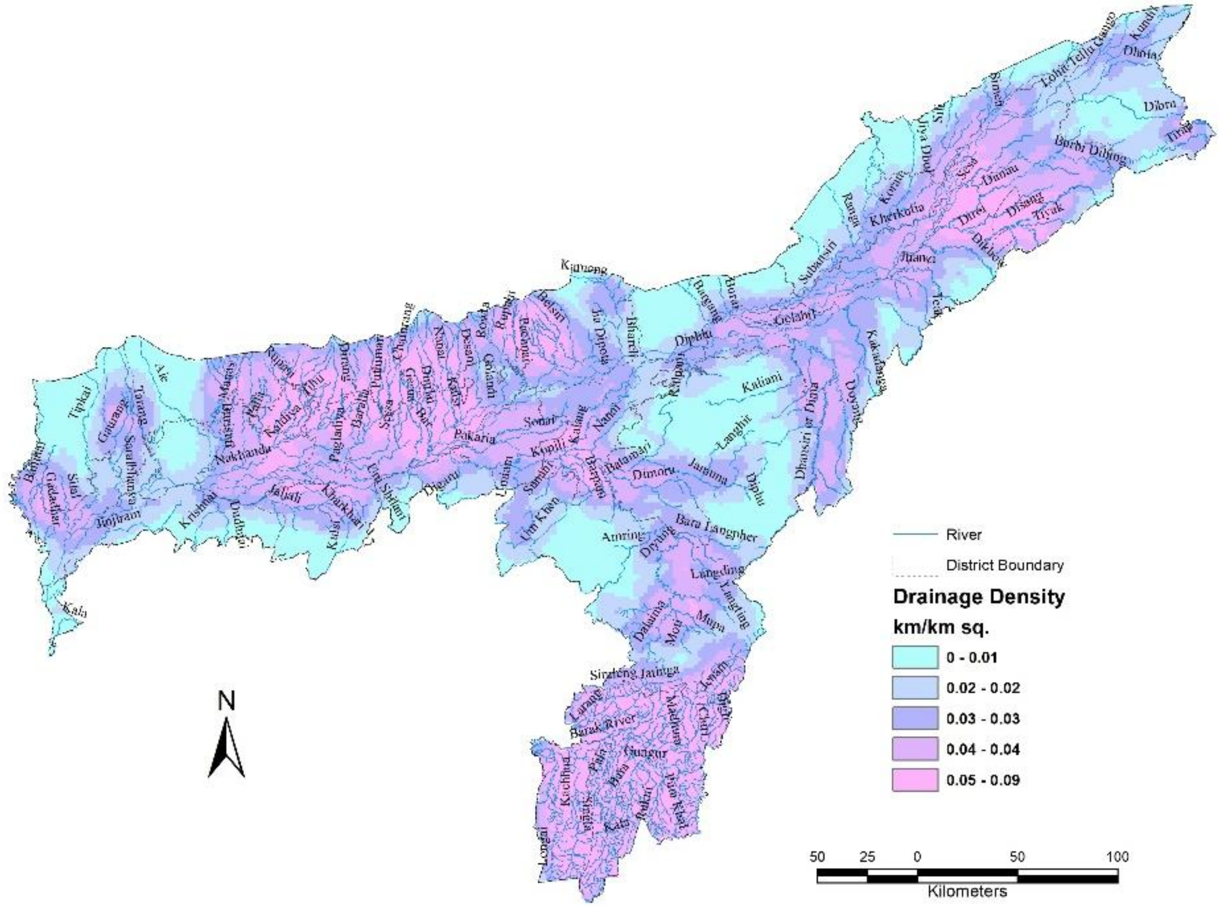


Figure 2. *River network and drainage density map*

1.2 Physiography and Geotectonics

Upper Assam is located in a narrow, low-gradient intermontane valley where the Brahmaputra makes the steep-to-flat transition into the plains, losing carrying capacity and depositing sediment. The basin drains the tectonically active, rapidly eroding Namche Barwa syntaxis, giving the river one of the highest sediment loads on Earth (Singh & France-Lanord, 2002). The 1950 M8.6 Assam earthquake injected vast sediment, raising the bed by up to ~3 m at Dibrugarh and widening the channel from ~5.9 km (1912–28) to ~9 km (2009) (Sarma & Acharjee, 2012). Seismic activity also triggers landslides that form temporary landslide-dams upstream, whose failure produces compounding downstream surges (**Figure 3**).

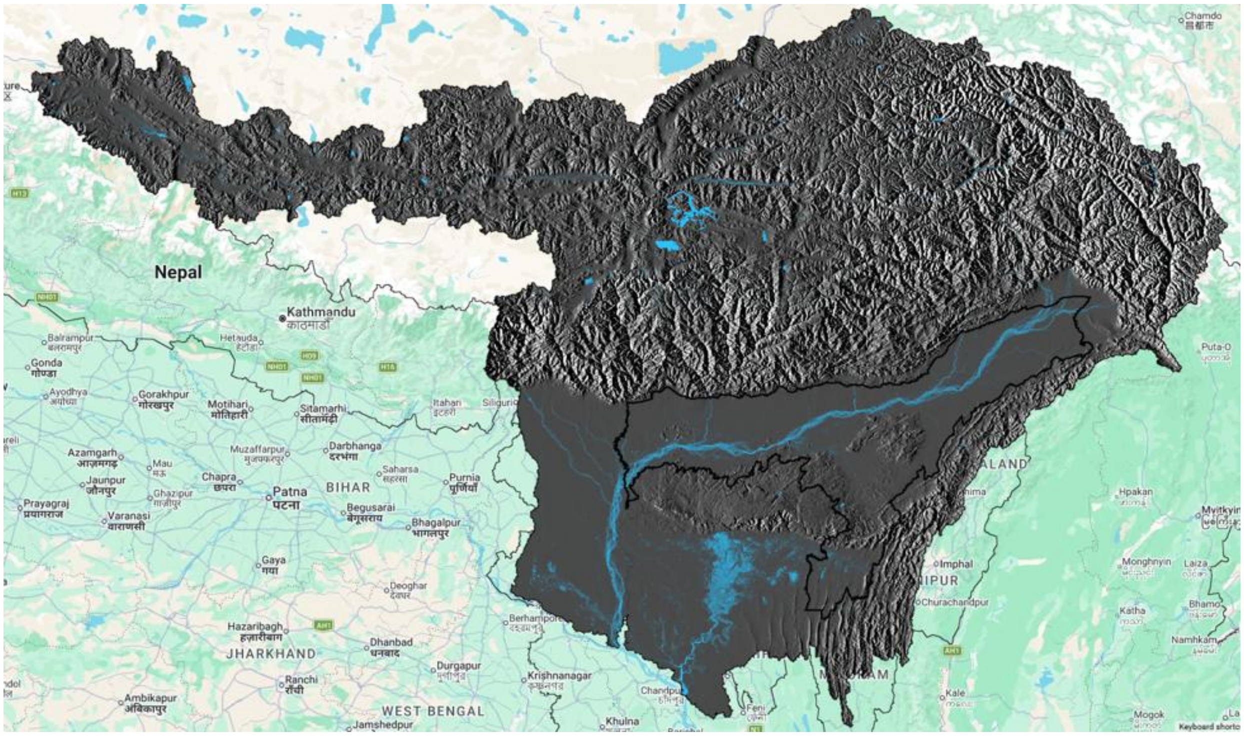


Figure 3. *Hillshade map of Assam (map not to scale; blue indicates permanent water bodies)*

1.3 Climate and Monsoon characteristics

Assam has a humid subtropical climate characterised by hot, wet summers and cool, relatively dry winters. Temperatures typically range from 8–24°C during winter (December–February) to 24–35°C during the pre-monsoon and summer months (April–June), with high humidity prevailing throughout much of the year. Annual rainfall is exceptionally high, varying from approximately 1,800 mm to more than 3,000 mm, depending on location. The South-West monsoon (June–September) accounts for the majority of this rainfall, delivering intense and often orographically enhanced precipitation across the Brahmaputra basin and its surrounding hill catchments. A substantial proportion of the Brahmaputra's discharge originates outside Assam. Consequently, floodplain districts can experience severe flooding even under moderate local rainfall when upstream runoff coincides with peak flows from multiple tributaries (Banerjee et al., 2026). Climate change is further increasing flood risk by intensifying short-duration extreme rainfall events and reducing the return intervals between damaging floods. From a flood-risk perspective, the most significant trend is the increasing frequency and intensity of extreme rainfall over the bordering hill catchments, which amplifies peak tributary discharge for a given seasonal rainfall total and reinforces the compound flooding mechanism identified in this assessment (IMD, 2026).

1.4 Historical flood profile

Flooding in Assam is chronic. Analysis of the EM-DAT record identifies 51 flood events involving Assam over 2000–2026, with riverine floods accounting for 26 events and approximately 75% of the total number of people affected (CRED/EM-DAT, 2026) (**Figure 4**). Major historical years include 1988, 1998, 2004, 2012, 2019 and 2022, with the 2022 Silchar catastrophe marking a distinct urban-flash-flood mode in the Barak Valley.

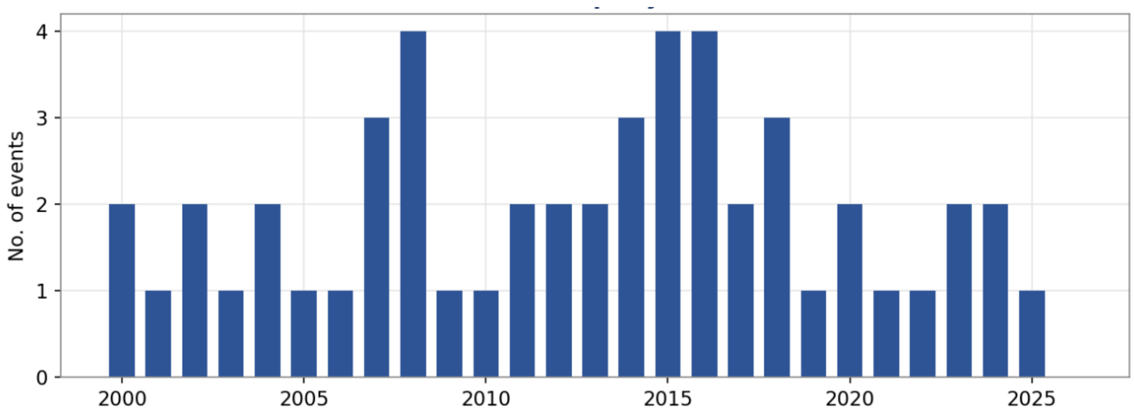


Figure 4. *Recorded Assam flood events per year, 2000–2026, with linear trend (EM-DAT)*

1.5 Exposure and socio-economic context

Assam's flood risk is magnified by high and rising exposure. Roughly 40% of the state's area is flood-prone, and a large share of its population lives and farms on the floodplain (Hazarika et al., 2026). An estimated 2.5 million people inhabit the Brahmaputra's shifting char (river-island) lands, where poverty, insecure land tenure and dependence on flood-sensitive agriculture and livestock concentrate vulnerability. Household economies are predominantly agrarian, with low incomes and large family sizes, so a single flood can erase savings, food stocks and productive assets simultaneously—demonstrating how physical exposure translates into deep, persistent socio-economic loss (Hazarika et al., 2026).

2. Drivers of flooding

Assam's flood drivers rarely act alone; they combine simultaneously or in sequence, so each raises the damage yield of the others (**Figure 5**). The drivers are grouped into climatic, hydrological, geomorphological and anthropogenic types.

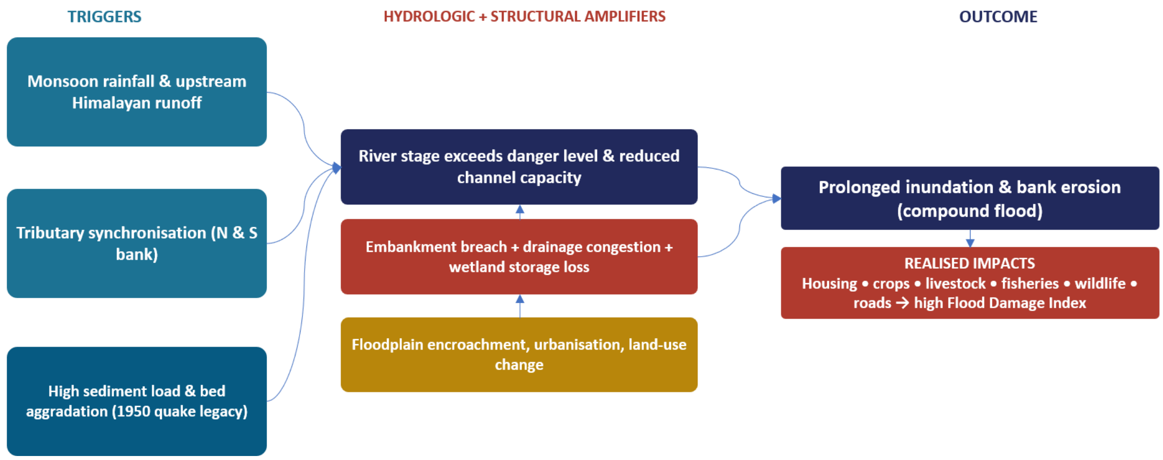


Figure 5. *Conceptual compound flood mechanism showing the sequential and simultaneous interactions among triggers, amplifiers, and outcomes*

2.1 Climatic drivers

Extreme, concentrated monsoon rainfall over the hill catchments is the proximate trigger. In 2026 the India Meteorological Department (IMD) attributed the floods to heavy upstream rainfall rather than cloudbursts, noting Mon district's Aboi station recorded 137 mm on 19 July the season's highest but below the ≥100 mm/hour cloudburst threshold (IMD, 2026; Assam Tribune, 2026). Climate change is a background amplifier whose relative weight varies year to year (Banerjee et al., 2026).

2.2 Hydrological drivers

Upstream Himalayan/hill runoff and the synchronisation of multiple tributaries raise river stage rapidly. Anthropogenic releases add a further hydrological driver. Banerjee et al. (2026) document a sharp 2023 damage spike in Lakhimpur linked to NEEPCO's Ranganadi hydro-release, and in 2026 the opening of the Doyang dam (Nagaland) compounded flooding in Golaghat (~31,000 affected) via the Dhansiri (Assam Tribune, 2026).

2.3 Geomorphological drivers

The state's geomorphology and major landforms provide the physical stage on which these drivers operate (**Figure 6**). Assam's flood vulnerability is rooted in its distinctive fluvial geomorphology as the Brahmaputra flows through a narrow, tectonically bounded intermontane valley. The region is bounded by the Eastern Himalayas to the north, the Patkai and Naga Hills to the east and southeast, and the Mikir Hills and Shillong (Meghalaya) Plateau to the south. The large, braided river, characterised by a very low channel gradient (Sarma, 2005), together with steep, sediment-rich source catchments feeding an abruptly low-gradient valley, acts as a primary geomorphic driver of flooding. As the river's slope decreases sharply on entering Assam, its capacity to transport sediment drops correspondingly, forcing deposition and giving rise to the classic braided channel pattern of multiple, shifting sub-channels separated by bars and islands. The Brahmaputra carries one of the highest sediments loads globally, the continuous influx of sediment drives long-term riverbed aggradation, progressively reducing the channel's flood-carrying capacity and raising the bed relative to the surrounding floodplain. The geomorphic instability extends to chronic bank erosion which continually reworks the boundary between channel and floodplain and undermines embankments built to fix that boundary in place. However, July 2026 event demonstrated a partial departure from this classic Brahmaputra-driven pattern: rather than the mainstem channel overtopping its banks, flooding was generated primarily by flash floods in the steep, high-drainage-density south-bank tributaries, the Dikhow, Disang, Jhanji, and Dhansiri, that were descending rapidly from the Naga Hills onto the low-gradient Assam plains, a geomorphic setting that compresses lag time between upstream rainfall and downstream inundation and leaves little buffer for warning or drainage. The high sediment load and continuous bed aggradation reduce channel capacity over time, so a given discharge floods more land each decade and drives chronic bank erosion over 3,800 km² of land lost since 1954 (Sarma, 2015). Erosion is both a hazard (land loss) and a vulnerability multiplier (displacement, char formation).

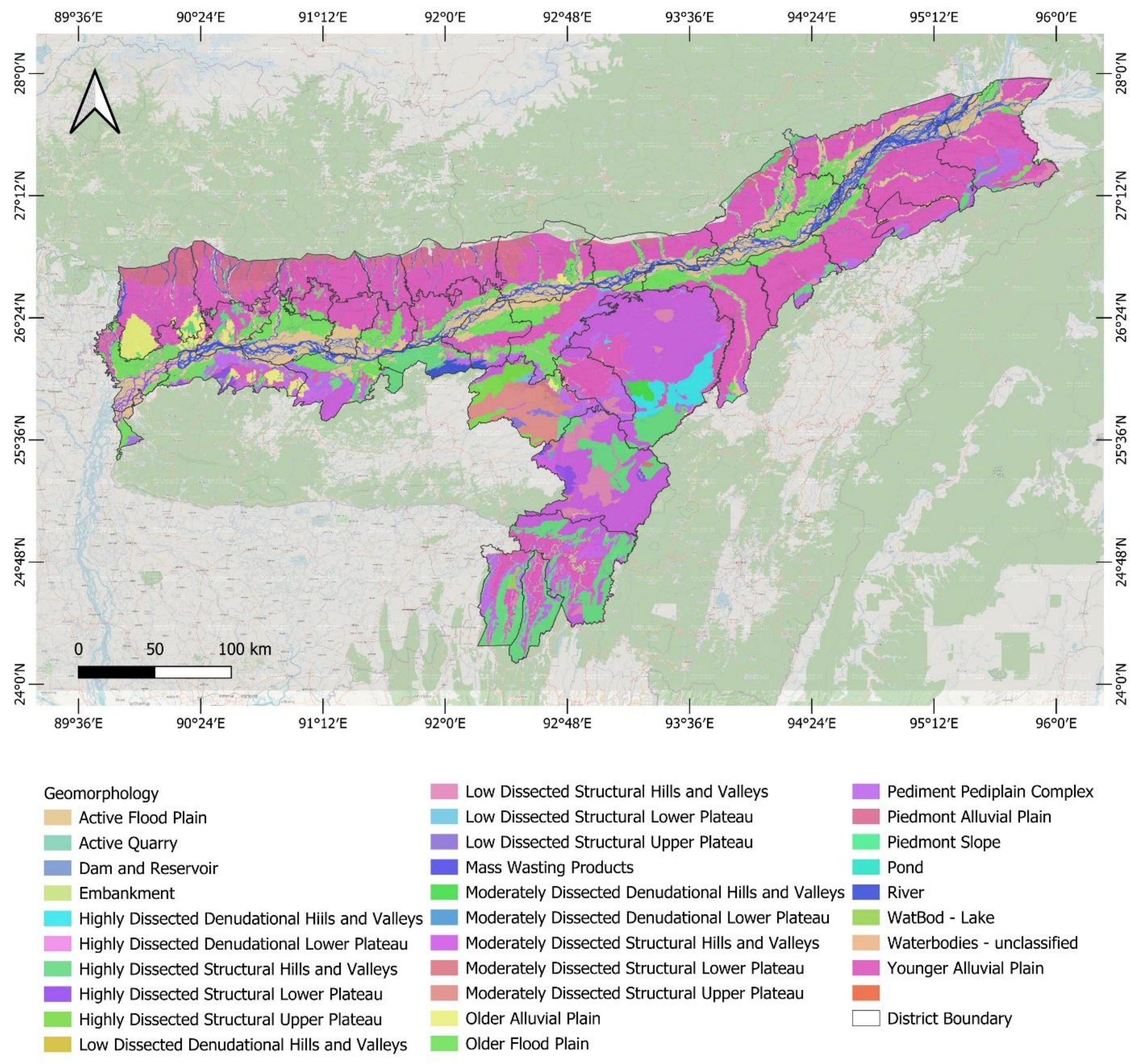


Figure 6. *Geomorphology and major landforms of the study area (active flood plain, alluvial plains, piedmont, dissected plateaus and hills), providing the physical stage for flooding*

2.4 Anthropogenic drivers (LULC)

Land-use/land-cover change compounds the natural drivers. ESA WorldCover mapping (**Figure 7**) shows extensive cropland and settlement on the floodplain alongside shrinking wetlands and tree cover. Wetland (beel) degradation removes natural flood storage. For instance, the Panidihing Bird Sanctuary in Sivasagar retained only 0.82 km² of wetland across 15 water bodies by 2021, and the water extent fell from 18.9 km² (2001) to 5.9 km² (2021) (The Assam Tribune, 2025). Ageing embankments (a 1950s–70s network past design life), drainage congestion, floodplain encroachment and urbanisation convert manageable high water into prolonged, damaging inundation (Banerjee et al., 2026). Deforestation and the removal of natural vegetation from hill slopes increases runoff and sediment transport reducing the land's capacity to retain and infiltrate rainfall, thereby increasing surface runoff and exacerbating flood impacts.

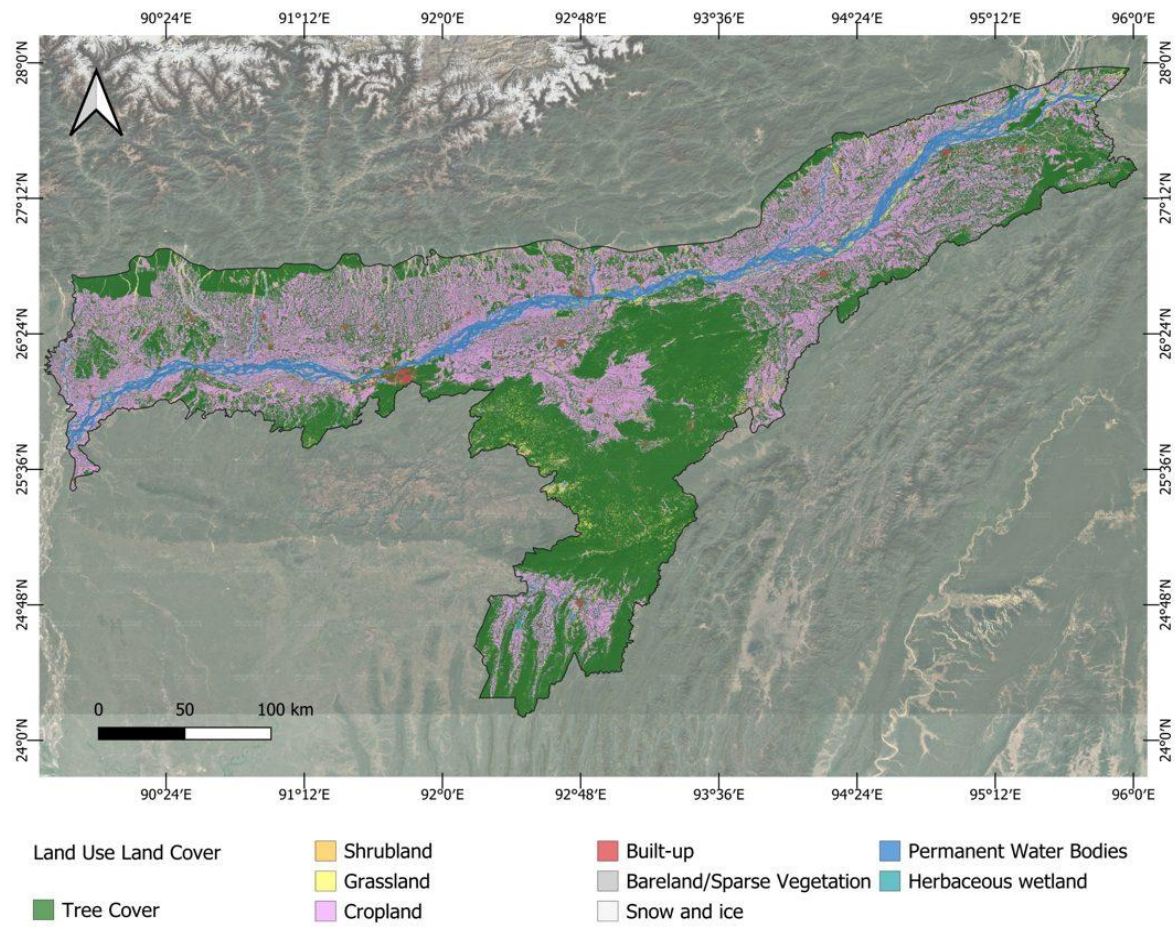


Figure 7. *Land Use/Land Cover of the study area (ESA WorldCover 2022), showing cropland, tree cover, permanent water, wetland, and built-up areas*

Forest stability, deforestation, degradation, and regrowth in the upper catchments of Arunachal Pradesh and Nagaland were analysed for the period 2015–2025. The initial analysis reveals that, although forest regrowth has occurred in several areas, it is frequently accompanied by forest conversion and fragmentation, leading to ecological disturbance and reduced ecosystem functionality (**Figure 8**). Compared with mature forests, regenerating forests exhibit lower canopy complexity, shallower root systems, reduced litter accumulation, and weaker soil cohesion. Consequently, their capacity to intercept rainfall, enhance infiltration, stabilize slopes, and retain soil moisture is substantially diminished, increasing the susceptibility of these catchments to surface runoff, soil erosion, sediment transport, and downstream flooding during intense monsoonal precipitation. The widespread occurrence of disturbed and fragmented forest patches across the upper catchments of Arunachal Pradesh and Nagaland highlights the critical importance of conserving the remaining intact forests. The concentration of disturbed forest patches in the upper catchments of Nagaland and Arunachal Pradesh shows the importance of conserving remaining intact forests, as replacement by young regenerating stands alone is insufficient to recover the hydrological and ecological services provided by mature forest ecosystems.

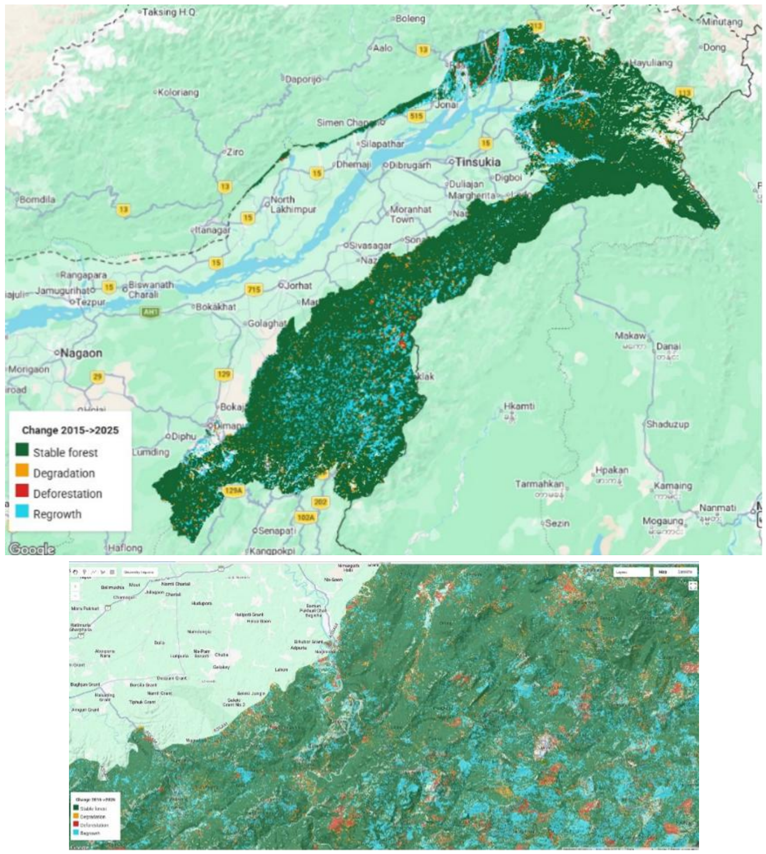


Figure 8. *Forest cover dynamics (2015–2025) in the upper catchments of the Brahmaputra Basin across Arunachal Pradesh and Nagaland.* (Map not to Scale)

The Upper Assam coal belt has experienced rapid expansion of open-cast coal mining between 1985 and 2026, resulting in a transformation of the landscape and its hydrological functioning. Multi-temporal satellite observations show a clear transition from predominantly intact forest cover in 1985 to extensive open excavation pits, overburden dumps, and exposed mining surfaces, followed by the development of numerous water-filled mine voids by 2026 (**Figure 9**). This large-scale land-use conversion has substantially modified the natural terrain by removing vegetation. The loss of forest cover and topsoil reduces rainfall interception, infiltration, and soil water storage, while increasing the generation of surface runoff during monsoonal rainfall events. Simultaneously, excavation activities, slope modification, and overburden disposal accelerate soil erosion and sediment mobilisation, resulting in enhanced sediment transport to downstream river systems. The increased sediment load contributes to channel aggradation, reduces river conveyance capacity, and elevates the likelihood of overbank flooding during periods of high discharge. Although some abandoned mine pits have evolved into water-filled voids, these isolated water bodies do not compensate for the hydrological and ecological functions previously provided by natural forest ecosystems. Instead, they alter local drainage patterns and may further disrupt catchment-scale hydrological connectivity. Collectively, these observations demonstrate that extensive open-cast mining has become a significant anthropogenic driver of landscape degradation in the Upper Assam coal belt. By altering land cover, modifying terrain morphology, and disrupting natural hydrological processes, mining activities compound the inherent geomorphological and climatic drivers of flooding, thereby increasing downstream flood susceptibility and exacerbating the impacts of extreme monsoonal rainfall events. (Banerjee et al., 2026).

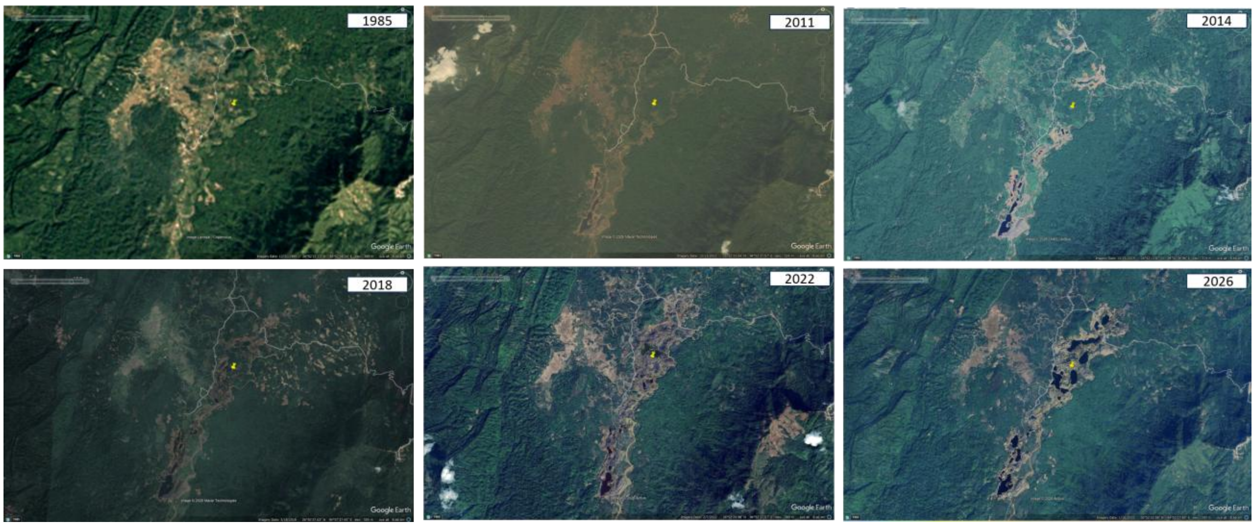


Figure 9. *Expansion of open-cast coal mining (1985–2026)*

3. Regional flood characteristics

Flood risk differs systematically across the five divisions because basin physics, drivers and vulnerability differ (**Figure 10**; **Table 1**). Lower Assam is the damage epicentre (char belts, erosion, breaches); North Assam is the erosion frontier with hydropower-release surges; Central Assam splits between riverine plains and hill flash-flood/landslide zones and contains the state's most vulnerable district (Morigaon); Upper Assam experiences multi-wave south-bank flash floods and the erosion of Majuli; and the Barak Valley is a separate basin dominated by hill flash floods and urban drainage flooding (Banerjee et al., 2026; Hazarika et al., 2026).

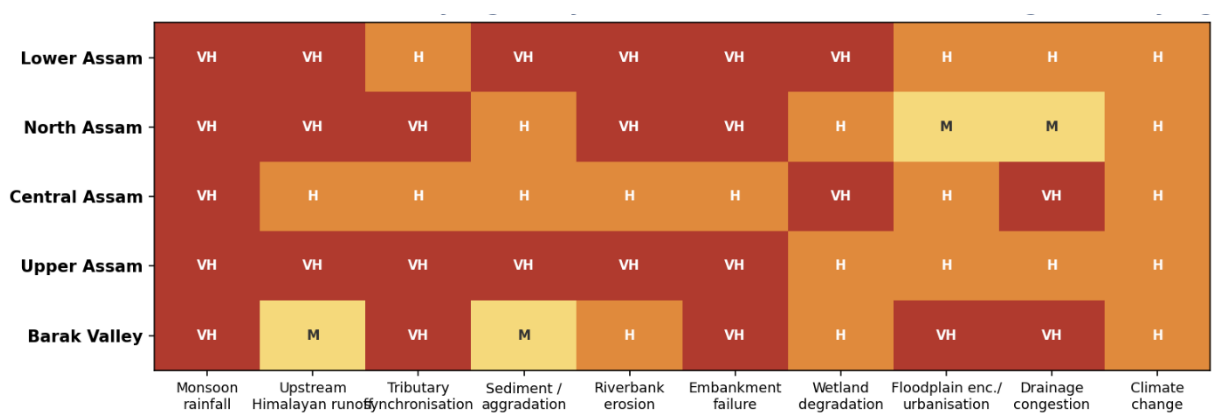


Figure 10. *Dominant flood drivers by region (synthesis matrix): L=low, M=medium, H=high, VH=very high*

Table 1. *Regional flood characteristics (historical) across Assam's five divisions*

Region	Dominant process	Season/recurrence	Hotspots
Lower Assam	Overflow, char submergence, erosion, breaches	May–Sep; annual, multi-wave	Barpeta, Goalpara, Nalbari, Dhubri
North Assam	Flash tributary flood, erosion, dam release	Jun–Sep; annual	Dhemaji, Lakhimpur, Darrang
Central Assam	Riverine, urban, and flash floods	Jun–Sep; annual	Morigaon, Nagaon; Karbi Anglong
Upper Assam	Flash floods, erosion	May–Sep; 2–4 waves/yr	Majuli, Dibrugarh, Charaideo, Sivasagar
Barak Valley	Flash flood, urban drainage	May–Sep; episodic, severe	Silchar (Cachar), Hailakandi

3.1 Hazard versus Vulnerability across regions

Hazard, vulnerability and realised damage do not rank the regions identically. The districts with the highest realised damage, Barpeta and Goalpara, (Banerjee et al., 2026) are not those with the highest household vulnerability, such as Morigaon (Hazarika et al., 2026), because damage reflects the interaction of hazard, exposure and infrastructure, whereas vulnerability reflects susceptibility and adaptive capacity. Effective targeting therefore requires both lenses: damage indices to identify where losses concentrate, and vulnerability indices to identify who is least able to cope and recover.

4. Evolution of the 2026 Assam floods

The event was preceded by roughly 72 hours of sustained rainfall that had already saturated catchment soils. Rainfall intensity in the immediate trigger phase was extreme: Mon district recorded 45% above-normal rainfall, while catchments across neighbouring Nagaland and Arunachal Pradesh recorded rainfall up to 493% above normal (with Nagaland averaging 181% above normal on 19 July), rapidly swelling the Dikhow, Disang and Jhanji rivers. With antecedent soil moisture already near saturation, infiltration capacity collapsed and runoff generation spiked. The Eastern Himalaya's characteristic steep-slope-to-flat-valley transition then compressed the time lag between runoff generation upstream and discharge peaking downstream, converting a meteorological extreme into a hydrological shock with a minimal warning window (**Table 2**).

Table 2. *Cascading impact during Assam floods 2026*

Date (2026)	Phase	Description
13–15 Jul	Moisture build-up	Low-pressure system builds moisture over the Bay of Bengal.
16–18 Jul	Extreme hill rainfall	Extreme rainfall in the Naga Hills & Arunachal; many places >200 mm/day.
17–19 Jul	High runoff	High runoff generated in the hill catchments.
19–20 Jul	Tributaries surge	South-bank tributaries (Dikhow, Disang, Jhanji, Dhansiri) rise sharply.
20–21 Jul	Embankment failures	Embankments overtop and breaches are reported.
21–23 Jul	Peak flooding	Widespread flooding across Upper Assam.
24 Jul onwards	Recession & recovery	Water levels recede slowly; recovery begins.

4.1 Rainfall distribution

The July 2026 flood event occurred despite an overall seasonal rainfall deficit in Assam itself (**Figure 11**). The trigger was concentrated hill-catchment rainfall from the early hours of 19 July 2026. Notably, GPM/observed rainfall anomaly mapping shows much of Assam at or below normal for the period, reinforcing that the event was driven by upstream/orographic rainfall over Nagaland and Arunachal rather than uniform in-state excess consistent with the IMD's no-cloudburst assessment (IMD, 2026). The short, intense rainfall spike over the upstream Naga Hills catchment on 19 July 2026. The state recorded 181% above-normal rainfall, with Mokokchung district registering 493% above normal, followed by Wokha (108% above normal) and Mon (45% above normal) (Kumar & Goswami, 2026). This concentrated anomaly, superimposed on already saturated catchments and combined with highly localised extreme rainfall in Charaideo and Sivasagar districts, generated the runoff that produced the floods (Kumar & Goswami, 2026).

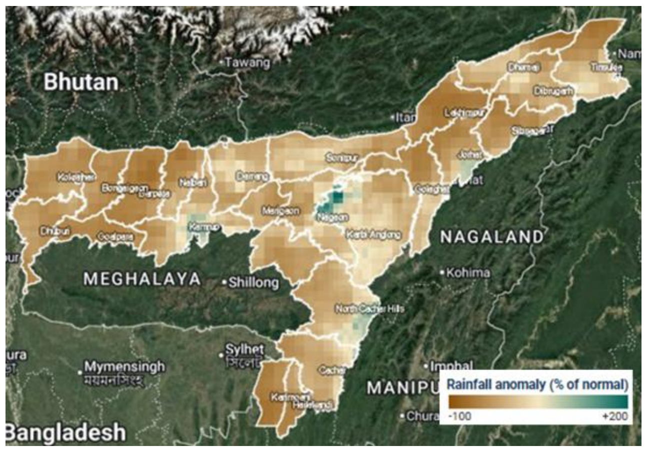


Figure 11. *Rainfall anomaly (% of normal) across Assam of 1-15 July 2026 (Source: GPM), largely at or below normal within the state, indicating an upstream-driven event.* (Map not to Scale)

On the other hand, IMD's bulletins corroborate the intensity of rainfall in the wider region on and around 19 July. The Nagpur/Delhi daily weather report for that date recorded extremely heavy rainfall (≥21 cm in 24 hours) over Meghalaya, and very heavy rainfall (12–20 cm) over Arunachal Pradesh and Nagaland, alongside Jammu & Kashmir, Sub-Himalayan West Bengal, and other regions (IMD, 2026a). The IMD's regional forecast issued three days earlier had already flagged the risk, forecasting "very heavy rainfall" over Arunachal Pradesh (17–19 July) and Assam & Meghalaya (16–19 July), with isolated very heavy rainfall specifically flagged for Arunachal Pradesh and Assam & Meghalaya on 19-21 July 2026 (IMD, 2026b, 2026c) (**Figure 12** and **13**). Rainfall over these districts was not particularly heavy, but their downstream position relative to the upper catchments made them highly susceptible to flooding. The inflow from tributaries originating in Arunachal Pradesh and Nagaland with intense rainfall and reduced infiltration capacity resulting from widespread forest disturbance in the upper catchments accelerated the rise in river water levels and overbank flooding.

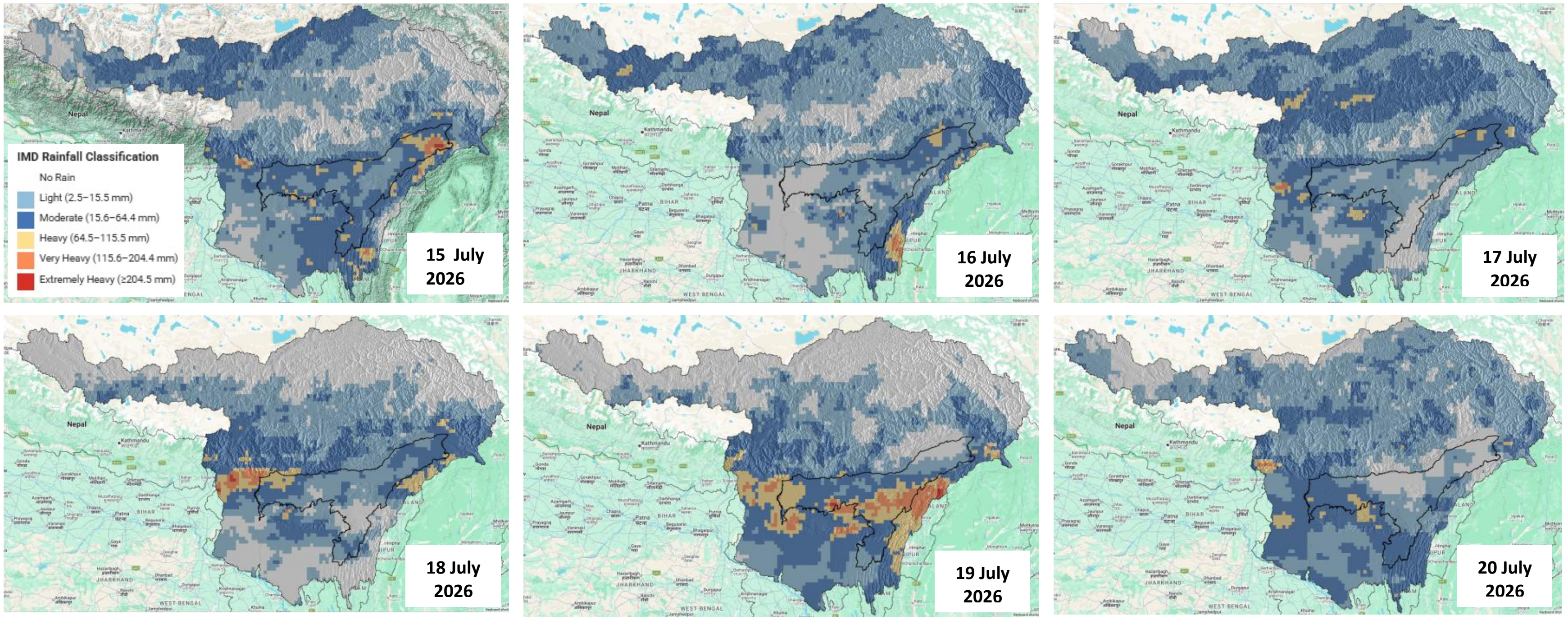


Figure 12. *Cumulative rainfall (17–19 July 2026) across the Brahmaputra River Basin showing the initiation of flooding in Upper Assam.* (Map not to Scale)

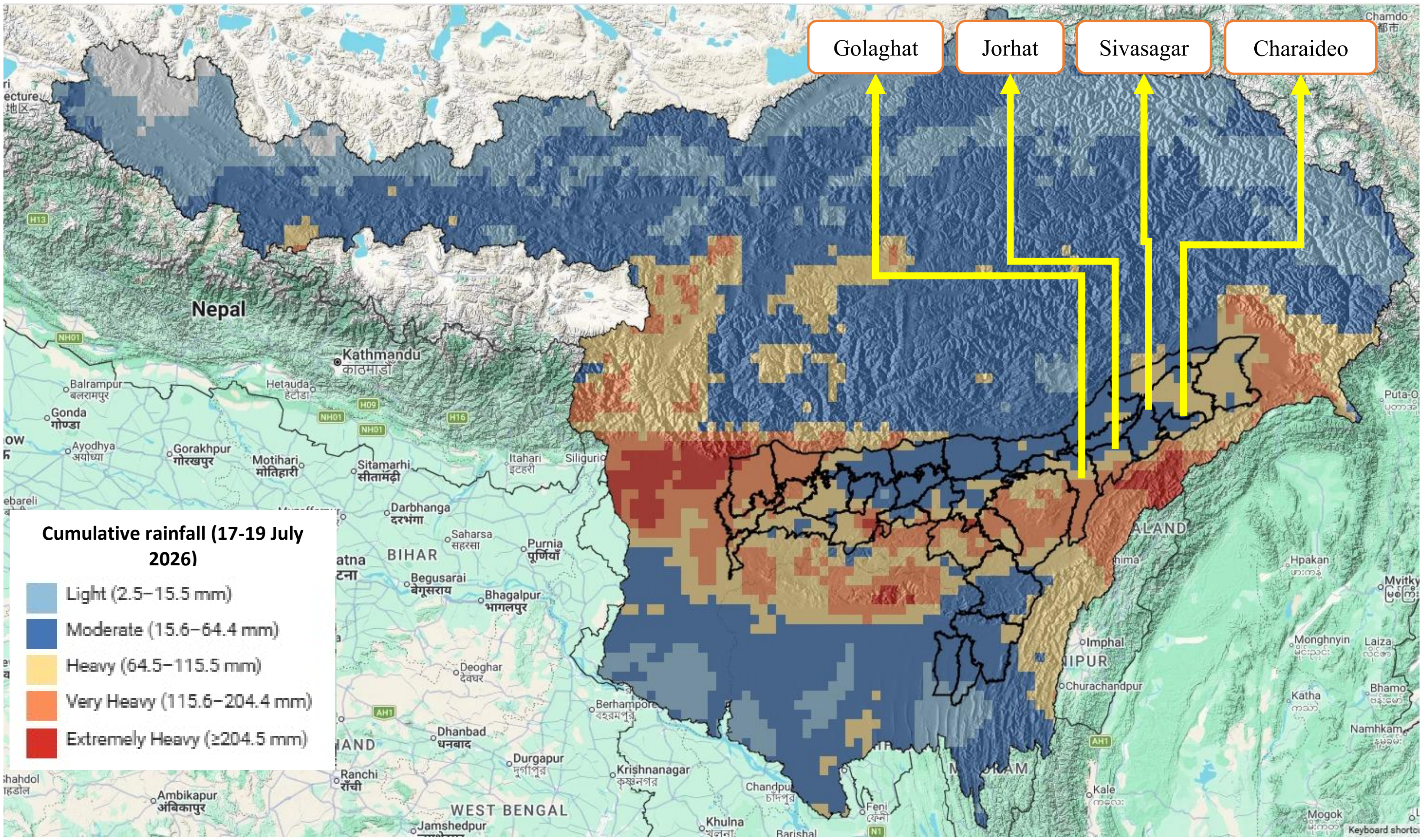


Figure 13. *Cumulative rainfall (17–19 July 2026) across the Brahmaputra River Basin showing the initiation of flooding in Upper Assam* (Map not to Scale)

4.2 Flood map

Flood extent maps were generated for five districts of Upper Assam (Golaghat, Jorhat, Majuli, Sivasagar and Charaideo) using NISAR Level-2 Geocoded Polarimetric Covariance (GCOV) products (L-Band) (NASA/JPL/NISAR, 2026), specifically the HVHV (cross-polarized) backscatter term acquired on 22 July 2026 (for Golaghat, Jorhat, Majuli and Sivasagar) and 24 July 2026 (for Charaideo), both of which fall within the flood period and together capture the inundation across the two dates based on the available spatial extent of the data (**Figure 14**). The HVHV channel was chosen because volume and surface scattering over vegetated and bare land produce relatively high returns, whereas calm, open floodwater acts as a specular reflector and yields a pronounced drop in backscatter, making inundated areas appear as dark, low-intensity regions. Each acquisition was radiometrically calibrated, converted to decibels, and speckle-filtered using a refined Lee filter. Flood pixels were then delineated separately for each date using Otsu's automatic thresholding method, applied to the histogram of the backscatter image; Otsu's algorithm determines the optimal threshold by maximizing the between-class variance (equivalently minimizing the intra-class variance) between the two-pixel populations of non-water (higher backscatter) and floodwater (lower backscatter); thereby separating inundated from non-inundated surfaces without manual tuning. Pixels falling below the Otsu-derived threshold were classified as flooded on each date, and the resulting flood masks were refined with morphological operations and a permanent-water mask (from ESA WorldCover v200) to isolate transient flooding along the Brahmaputra and its tributaries.

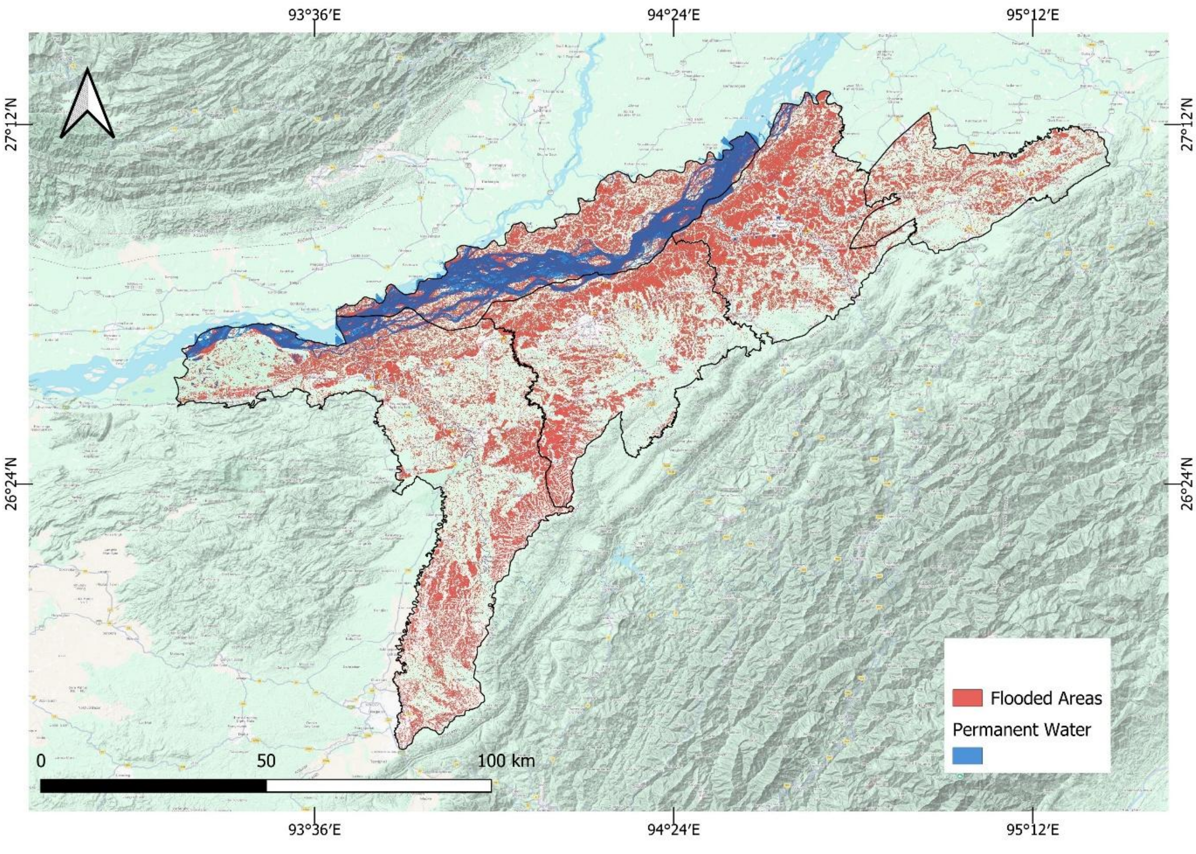


Figure 14. *Flood maps generated from NISAR*

4.3 River water level

The south-bank tributaries, such as Dikhow, Disang, Jhanji and Dhansiri, swelled rapidly and crossed their danger marks, producing high discharge in high-drainage-density terrain. Water overflowed embankments before the Brahmaputra reached its own peak discharge, an inversion of the usual sequence (The Hindu, 2026). The rapid rainfall–runoff–discharge response was strongly influenced by extreme rainfall over Mon district in Nagaland, which recorded 181% above-normal rainfall on 19 July, while Mokokchung recorded 493% above-normal rainfall (Kumar & Goswami, 2026). These extreme rainfall conditions caused a sudden and steep rise in the water levels of the Dikhow, Disang, and Jhanji rivers as they descended from the Naga Hills into Upper Assam. These rivers originate in the steep, high-relief terrain of Nagaland before entering the low-gradient plains of Assam. The combination of intense upstream rainfall and short, steep flow paths from the Naga Hills to the Brahmaputra floodplain compresses rainfall-to-discharge lag times, giving downstream districts little warning between an upstream rainfall spike and the corresponding surge in river levels. (**Figure 15**).

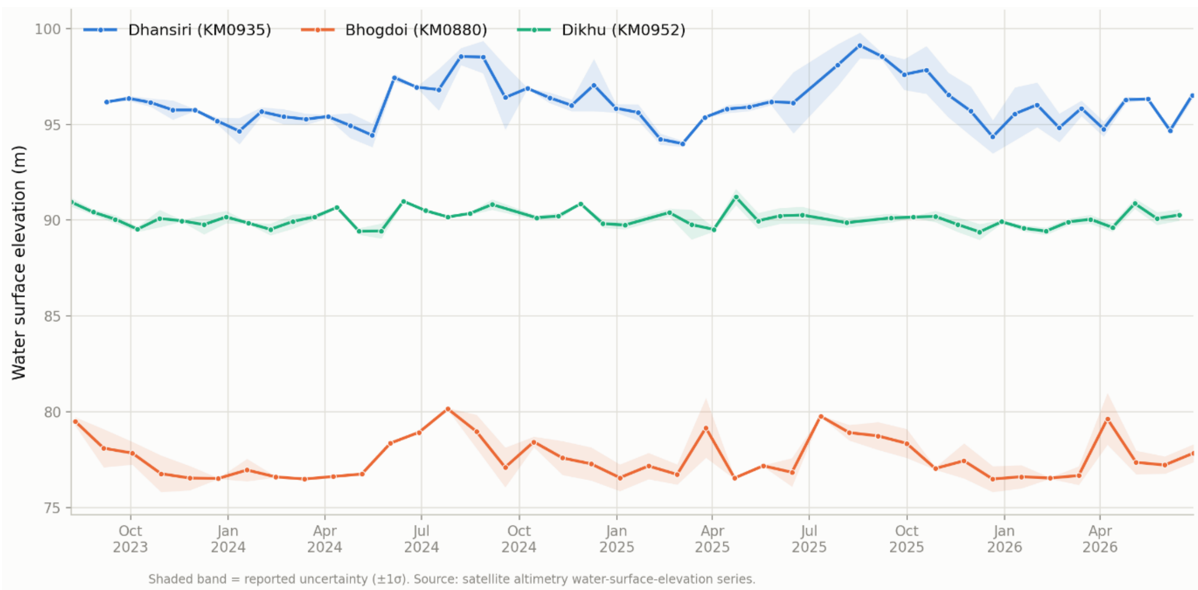


Figure 15. *Water surface elevation derived from satellite altimetry (Sentinel-3/Hydroweb[4])*

4.4 Mapping of rainfall-triggered landslides in Mon District, Nagaland

In mid-July 2026, an intense cloudburst delivering approximately 137 mm of rainfall triggered widespread slope failures across Mon district in eastern Nagaland, India, with more than 60 landslides reported across at least ten localities from around 19 July 2026 (**Figure 16**). The affected terrain is steep, deeply dissected, and blanketed by dense monsoon forest conditions that both predispose the landscape to shallow rainfall-triggered failures and, through persistent cloud cover, render conventional optical satellite mapping unreliable in the critical days immediately following an event. Synthetic aperture radar (SAR), which images through cloud and operates day or night, is therefore the natural instrument for a first rapid assessment. This short communication reports a cloud-independent screening of the disturbance using Copernicus Sentinel-1 C-band SAR.

[4] https://www.legos.omp.eu/en/hydroweb-2/

Figure 16. *Occurrence of landslide events in Mon District, Nagaland (Photo Credit: Debajit Buragohain)*

The workflow adapts a coherence-based damage-mapping method originally developed for co-seismic (earthquake) InSAR analysis. Three Single-Look-Complex scenes on a single relative orbit (Path 4) were processed to derive interferometric coherence and radiometrically terrain-corrected (RTC) backscatter through the Alaska Satellite Facility HyP3 service. A baseline pair (5 and 17 July 2026) established normal pre-event coherence, while a co-event pair (17 and 29 July 2026) spanned the storm. The primary detection signal is coherence loss: where a slide destroys or reworks the ground surface, the radar phase decorrelates and coherence drops. A pixel was flagged as a candidate where it lost more than 0.30 in coherence, was itself incoherent after the event (co-event coherence below 0.40), and sat on a slope steeper than 10° derived from a digital elevation model, which suppresses flat-terrain false positives. Contiguous candidates were vectorised and filtered to a minimum area of 2,000 m², with VV backscatter change (log-ratio) used as a supporting bare-earth indicator.

Across an area of interest of 5,190 km², the analysis detected 849 candidate landslide polygons covering approximately 754 ha, or roughly 0.15% of the analysed area. Individual candidates reached 8.5 ha, with a median size of just 0.64 ha, a distribution consistent with numerous small, shallow failures rather than a few large mass movements. Detections concentrated on the steep, dissected valley slopes surrounding Mon town. Median coherence was low in both epochs (near 0.24), and the near-zero mean coherence change across the full scene confirms that the disturbance signal is local and subtle rather than scene-wide (**Figure 17**)

These results are best interpreted as a rapid screening of where slope disturbance is most probable, not as a validated landslide inventory. Two constraints dominate: Sentinel-1's C-band wavelength maintains only weak coherence over dense monsoon forest even before an event, adding noise to the loss signal; and the very small median candidate size approaches the method's resolution limit, so both omission and commission errors are expected. Confidence would be substantially improved by L-band radar (NISAR or ALOS-2), which penetrates vegetation, by optical Sentinel-2 NDVI change once skies clear, and by targeted field validation at the highest-priority candidate clusters. The study nonetheless demonstrates that an earthquake-derived coherence-change approach transfers effectively to rapid, cloud-independent landslide screening.

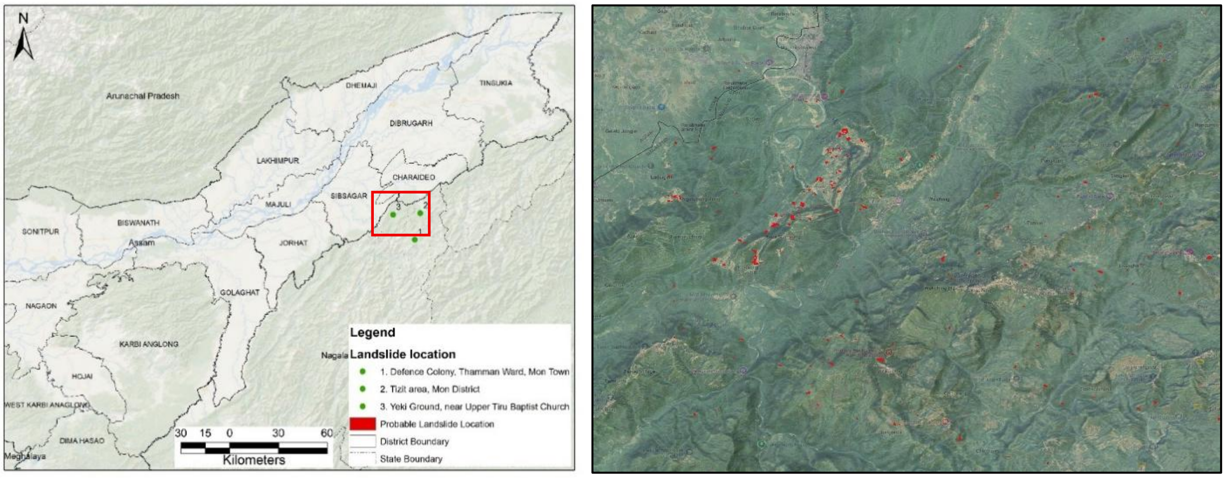


Figure 17. *Landslide locations over the Brahmaputra–Meghna Basin induced by extreme rainfall*

4.5 Embankment breaches

Rapid discharge generated hydro-structural pressure that breached major earthen dykes, including the Jhanji embankment at Jamuguri and parts of the Betbari–Barpatra Disang embankment (Assam Tribune, 2026). This illustrates the "levee effect": populations protected by embankments may face unexpectedly severe consequences when those embankments fail. Banerjee et al. (2026) show breaching is a decisive damage driver, and that even unbreached but unrepaired embankments (e.g., Goalpara in 2020) can produce anomalous damage (**Figure 18**).

The prolonged high river discharge and continuous inflow from upstream catchments subjected several flood-control embankments to severe hydraulic stress, resulting in multiple failures across Upper Assam. On 20 July 2026, the Bhogdoi River embankment breached at several locations in Jorhat, rapidly inundating at least 16 villages, damaging agricultural land and settlements, and disrupting connectivity with Majuli after ferry services were suspended. Subsequently, on 2 August 2026, fresh erosion weakened the Disang embankment at Betbari Barpatra in Sivasagar, creating renewed flood concerns even as water levels in some rivers had begun to recede. Authorities warned that continued rainfall over the Nagaland catchments could further increase pressure on the embankment, highlighting the cascading impact of upstream hydrological conditions on downstream flood risk. These events demonstrate how embankment breaches and erosion transformed high river stages into extensive inundation, prolonging the flood disaster and delaying recovery in affected districts.

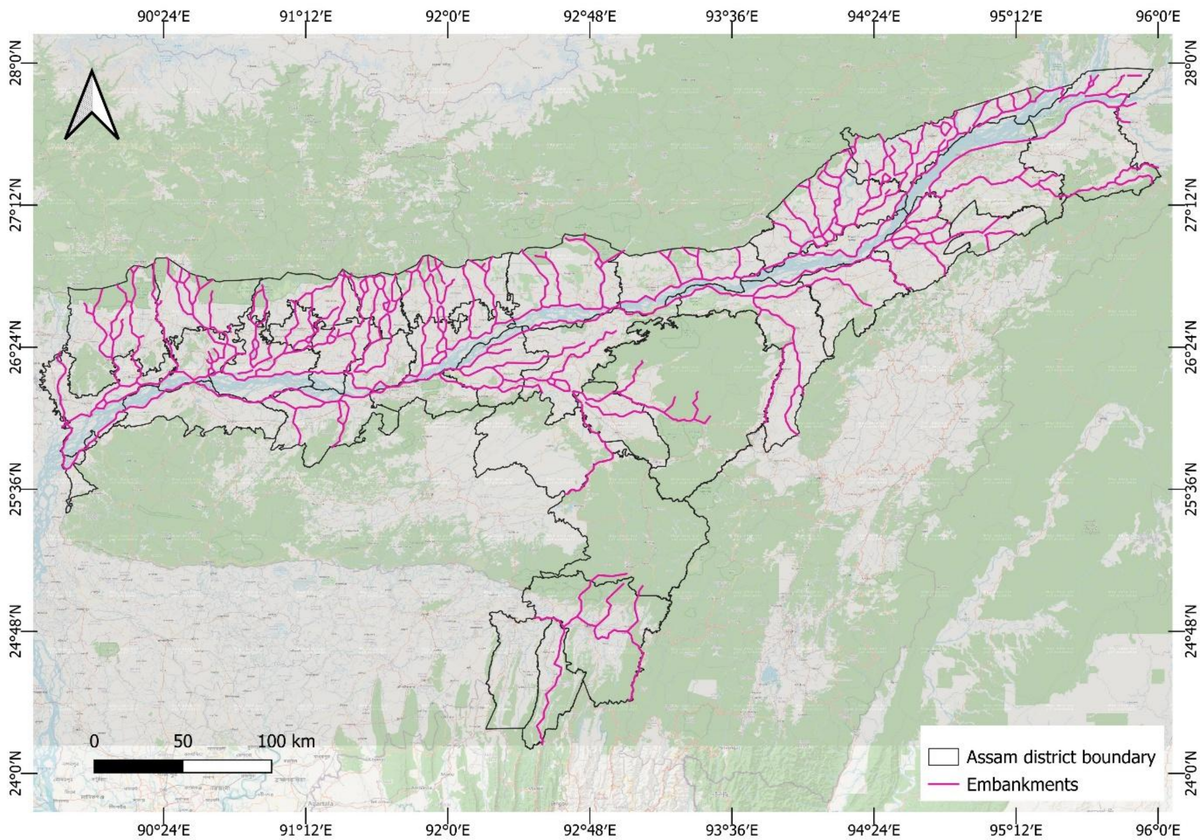


Figure 18. *Embankment Network of Brahmaputra and Meghna basins (Adapted from NESAC[5])*

With the embankment failures established, the resulting district-level inundation can be quantified from satellite mapping. Sentinel-1 SAR imagery for 22 July 2026 maps extensive cropland inundation across the Jorhat–Majuli reach, concentrated along the Brahmaputra and its south-bank tributaries (**Table 3**). Charaideo was worst-hit (~1.38 lakh affected), followed by Sivasagar (~85,000) and Jorhat (~50,000) (ASDMA, 2026).

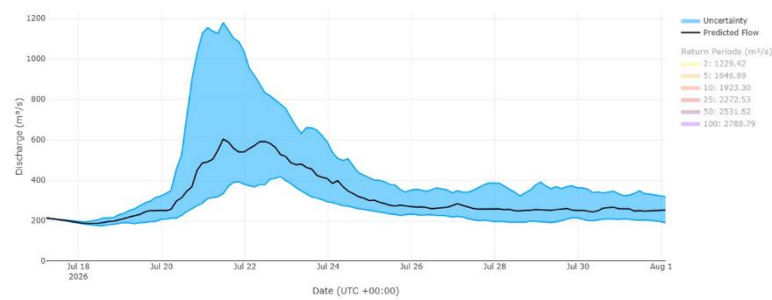
Table 3. *District-wise 2026 flood impact snapshot (ASDMA situation reports, late July–1 Aug 2026)*

District	People affected	Region	Note
Charaideo	~1,37,561	Upper Assam	Worst-hit; Dikhow/Disang
Sivasagar	~84,600	Upper Assam	Urban waterlogging (Cherekapar/Arjunguri)
Jorhat	~49,911	Upper Assam	Extensive cropland inundation
Golaghat	~31,000	Upper Assam	Doyang dam release via Dhansiri
State (peak)	~2.12 lakh / 8 districts	-	~80 deaths; ~21,000 ha crops; 11,000+ livestock

[5] https://www.nesdr.gov.in/dataset/assam-flood-embankment-map

4.6 Streamflow forecasting

Continuous heavy rainfall in the upstream catchments of Nagaland caused the Doyang Hydroelectric Project reservoir to approach its full storage capacity, forcing authorities to progressively increase spillway releases. By 24 July 2026, all four spillway gates were opened, releasing approximately 209 m³/s of water through the spillway gates, with officials warning that releases could be increased further as reservoir levels continued to rise. The additional discharge coincided with the Dhansiri and Kakodonga rivers already flowing above their danger levels, increasing flood risk across downstream areas such as Sarupathar and Golaghat (**Figures 19** and **20**). These controlled reservoir releases, superimposed on an already high monsoon river stage, amplified downstream inundation and prolonged flooding in Upper Assam. Consistent with the hydrological drivers, this release represented a compounding reservoir-management response to extreme upstream rainfall rather than the root cause of the flood. Its downstream effects were concentrated in Golaghat through the Dhansiri River (Assam Tribune, 2026).



Return Periods Jul 17, Jul 18, Jul 19, Jul 20, Jul 21, Jul 22, Jul 23, Jul 24, Jul 25, Jul 26, Jul 27, Jul 28, Jul 29, Jul 30, Jul 31,

Return Periods (m³/s)	Jul 17, 2026	Jul 18, 2026	Jul 19, 2026	Jul 20, 2026	Jul 21, 2026	Jul 22, 2026	Jul 23, 2026	Jul 24, 2026	Jul 25, 2026	Jul 26, 2026	Jul 27, 2026	Jul 28, 2026	Jul 29, 2026	Jul 30, 2026	Jul 31, 2026
2 (1229)	0%	0%	0%	18%	22%	12%	2%	0%	0%	0%	0%	0%	0%	2%	2%
5 (1647)	0%	0%	0%	6%	8%	6%	0%	0%	0%	0%	0%	0%	0%	2%	2%
10 (1923)	0%	0%	0%	4%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
25 (2273)	0%	0%	0%	4%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
50 (2532)	0%	0%	0%	4%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
100 (2789)	0%	0%	0%	2%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

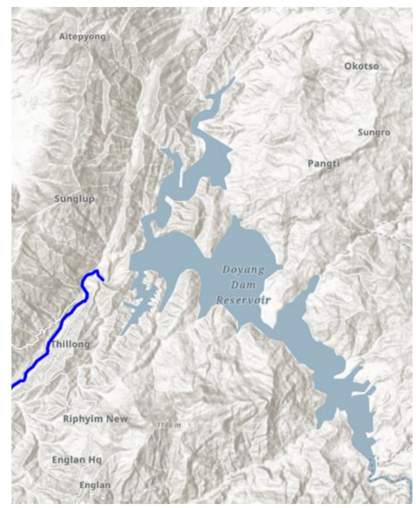


Figure 19. *Streamflow forecast (River ID 441057247) during flood period at the Doyang River (GEOGLOWS ECMWF Streamflow Service[6])*

[6] https://geoglows.ecmwf.int/about

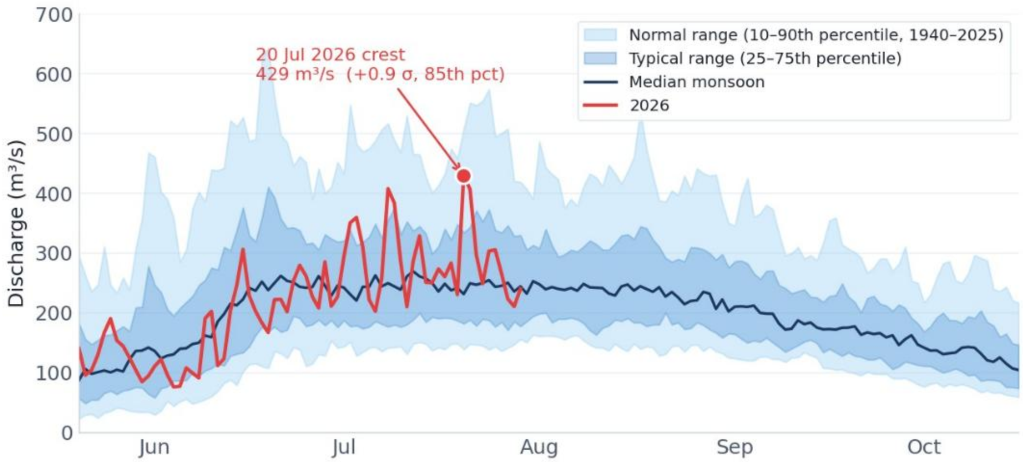


Figure 20. *Long-term river discharge at the Doyang River (GeoGlows)*

4.7 Regional differences

The 2026 event was concentrated in Upper Assam's south-bank belt, a departure from the Lower-Assam/north-bank geography of many historical floods. This underscores that no single flood template fits the state: the same monsoon can produce a char-submergence flood in Lower Assam, an erosion-and-dam-release flood on the north-bank, and a flashy south-bank event in Upper Assam within one season (**Table 4**).

Table 4. *Regional differences in the 2026 Assam flood impacts*

Region	Zone/Setting	Majorly affected districts	What happened	Key drivers	Flood extent peak (Jul 2026)	Major issues	Relative severity
Lower Assam	Brahmaputra Mainstem Plains	Dhubri, Goalpara, Barpeta, Bongaigaon, Nalbari, Kamrup (R), Kamrup (M), Baksa	Brahmaputra mainstem levels rose late (after 21 Jul). Extensive inundation in low-lying floodplains and char areas. Prolonged waterlogging in agricultural fields.	Backwater effect from high Brahmaputra discharge; silted channels and reduced conveyance; encroachment of wetlands & chars; heavy rainfall in upstream catchments (Arunachal).	Very High along mainstem; High in char belt	Crop loss, embankment stress, erosion, displacement in chars	**High**
North Assam	North Bank of Brahmaputra	Sonitpur, Lakhimpur, Biswanath, Dhemaji, Majuli	Flooding mainly from rise in Brahmaputra levels and north-bank tributaries. Majuli saw partial submergence of satras and villages. Riverbank erosion worsened.	High discharge in Brahmaputra; sedimentation and aggradation; erosion of vulnerable riverbanks; wetland shrinkage reducing storage.	High; Very High around Majuli	Erosion, cultural heritage at risk, loss of agricultural land, prolonged inundation	**High**

Central Assam	Middle Floodplains	Morigaon, Nagaon, Hojai, Golaghat, Karbi Anglong	Flash floods in tributaries caused localised but intense flooding. River overflow and embankment breaches submerged villages and farmland. Transport and connectivity hit.	Flashy tributaries (Bhoroli, Kopili, Dikhow); heavy rainfall concentration; breaches in old/vulnerable embankments; poor drainage in low-lying areas.	High to Very High in breach zones	Road/rail disruption, embankment breaches, cropland & homestead loss	**High**
Upper Assam	South-Bank Tributary Basin (worst-hit)	Sivasagar, Jorhat, Charaideo, Dibrugarh, Tinsukia	Worst-hit region in 2026. Flash floods triggered by extreme rainfall in Naga Hills & Arunachal. Rivers (Dikhow, Disang, Jhanji, Dhansiri) peaked together causing sudden inundation.	Extreme rainfall in hill catchments (>200 mm/day); steep slopes + rapid runoff; silted channels & reduced river capacity; multiple embankments overtopping & breaches.	Very High across south-bank basin	Highest deaths, flash floods, infrastructure damage, large-scale displacement	**Very High**
Barak Valley	Southern Assam	Cachar, Hailakandi, Sribhumi	Flooding from heavy rainfall in the hills of Mizoram and Manipur. Barak and its tributaries overflowed. Waterlogging in urban and rural areas.	Extreme rainfall in upstream hills; hill torrents with short lag time; siltation and encroachment of wetlands; drainage congestion in towns.	Moderate to High; urban waterlogging	Urban flooding, transport disruption, agriculture & fisheries loss	**Moderate**

4.8 Aftermath and cascading impacts

The event's severity extended well beyond peak inundation. Because degraded wetlands could no longer drain floodwaters, back-end water-logging trapped populations in the urban lowlands of Sivasagar and Jorhat for nearly a week (**Figure 21**). As waters receded, they left a thick silt-and-mud deluge that buried homes and fields cleared with excavators rather than brooms and knocked out electricity to nearly 13,000 households for more than ten days (India Today NE, 2026). These cascading impacts on water, sanitation, power and mobility lengthened recovery far beyond the flood itself and illustrate how ecological degradation and infrastructure fragility convert a hydrological event into a prolonged humanitarian and economic crisis. Around 2.12 lakh people across eight districts were affected on the peak reporting day, with the cumulative number affected over the event estimated at about 7 lakhs in late July before waters receded (ASDMA, 2026). About 80 deaths were confirmed and tens of thousands of people were displaced, many to embankment-top and roadside shelters. District administrations operated relief camps and distribution centres; Assam State Disaster Management Authority (ASDMA) reporting noted attention to pregnant/lactating women and persons with disabilities. Housing damage is the single largest component of realised loss though affected districts are not historically showing low flood damage index (Banerjee et al., 2026). This scale of compound impact represented a new challenge for the communities and administrators managing the 2026 Assam floods.

A 35-year-old informant from Sonari Town in Charaideo District stated:

"*We had never experienced such a devastating catastrophe before. Most houses in Sonari were submerged under floodwater. My family and I took shelter on the roof of an RCC building for three days. The floodwaters rose to nearly eight feet inside our home, destroying most of our belongings. Although we survived, we now live in constant fear that such a disaster could happen again and wash away the generational wealth and home that our family has built over decades.*"
"আমি পূৰ্বে কেতিয়াও এনে ভয়াবহ দুৰ্যোগৰ সন্মুখীন হোৱা নাছিলোঁ। সোণাৰিৰ বেছিভাগ ঘৰেই বানপানীত উপচি পৰিছিল। মই আৰু মোৰ পৰিয়ালটোৱে এটা আৰ চি চি (RCC) ভৱনৰ ছাদত তিনিদিন ধৰি আশ্ৰয় লৈছিলোঁ। আমাৰ ঘৰৰ ভিতৰত বানপানী প্ৰায় আঠ ফুটলৈকে বৃদ্ধি পাইছিল, যিয়ে আমাৰ বেছিভাগ বয়-বস্তু ধ্বংস কৰি পেলাইছিল। যদিও আমি জীৱাই থাকিলোঁ, কিন্তু এতিয়া আমি এই প্ৰবল আশংকাত দিন কাটাবলগীয়া হৈছে যে এনে দুৰ্যোগ পুনৰ ঘটিব পাৰে আৰু আমাৰ পৰিয়ালে কেইবা দশক ধৰি গঢ়ি তোলা প্ৰজন্মৰ সম্পত্তি আৰু ঘৰখন উটুৱাই লৈ যাব পাৰে।"

Similarly, a 54-year-old informant from Tengapukhuri in Charaideo District stated:

"*The flood in Tengapukhuri, Charaideo has brought unimaginable devastation. For the first time in our lives, we witnessed our entire locality submerged under water—something even our grandparents had never seen. In just a few hours, lives have been lost, homes and livelihoods destroyed, and families left with nothing. Lifetimes of hard work, ancestral homes, cherished memories and dreams built over generations were washed away.*"
"টেঙাপুখুৰী, চৰাইদেউৰ বানপানীয়ে অকল্পনীয় ধ্বংসলীলা কঢ়িয়াই আনিছে। আমাৰ জীৱনত প্ৰথমবাৰৰ বাবে আমি সমগ্ৰ অঞ্চলটো পানীৰ তলত ডুব যোৱা প্ৰত্যক্ষ কৰিলোঁ—যি দৃশ্য আনকি আমাৰ ককা-আইতাইও কেতিয়াও দেখা নাছিল। মাত্ৰ কেইটামান ঘণ্টাত কেইবাটাও জীৱন হেৰাই গ'ল, ঘৰ-দুৱাৰ আৰু জীৱিকা ধ্বংস হ'ল, আৰু পৰিয়ালসমূহ সৰ্বস্বান্ত হৈ পৰিল। সমগ্ৰ জীৱনৰ কষ্টৰ উপাৰ্জন, পূৰ্বপুৰুষৰ ভেটি, মৰমৰ স্মৃতি আৰু কেইবাটা প্ৰজন্ম ধৰি গঢ়ি তোলা সপোনবোৰ মুহূৰ্ততে উটুৱাই লৈ গ'ল।"

Figure 21. *Inundation of houses due to severe flood in Charaideo District (Photo Credit: Bhaskar Hazarika, Deepjyoti Borah, Pankaj Bordoloi*)

4.8.1. Agriculture

The subsections that follow disaggregate these cascading impacts by sector, beginning with agriculture. Cropland inundation mapped from Sentinel-1 SAR was extensive across Upper Assam (**Figure 22**); ASDMA reported ~21,000 ha of crops damaged. Crop damage was severe in agrarian districts. Hazarika et al. (2026) record 45.7% of Dhemaji households with crop damage and 52.9% reporting full crop loss. Horticulture and tea gardens, concentrated in Upper Assam (Dibrugarh, Sivasagar, Jorhat), suffered waterlogging and access disruption, with implications for the regional economy.

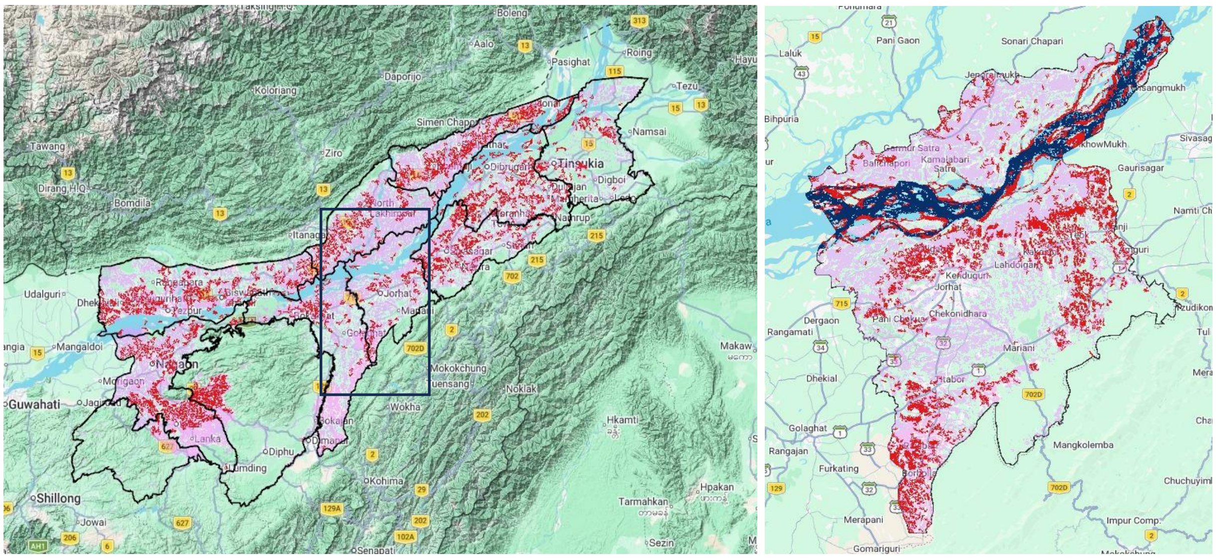


Figure 22. *Cropland inundation from Sentinel-1 SAR, 22 July 2026 (Jorhat–Majuli reach); red = flooded cropland, dark blue = river/permanent water (Map not to scale)*

4.8.2 Infrastructure Damage

Floodwaters damaged roads, railway lines, bridges and embankments; receding water left a thick silt/mud deluge that buried homes and knocked out power to ~13,000 households for over a week (India Today NE, 2026). Infrastructure exposure can be quantified by intersecting the SAR-derived flood extent with road and settlement layers. Additionally, roads exposed to floods also help understand the alternate route planning for relief and recovery measures (**Figure 23**).

Figure 23. *Flooded roads (red) in Sivasagar showing the need for alternative route planning* (Map not to Scale)

4.8.3. Livestock

The livestock sector bore a comparably heavy burden. At the flood's peak (~28 July 2026), 88,240 livestock were affected across six Upper Assam districts: 45,895 large animals (cattle/buffalo), 26,335 small animals (goats/pigs) and 16,010 poultry. As waters receded, the caseload fell to ~24,460 animals across four districts by 2 August, with roughly 23,000 sheltered in relief camps (**Figure 24**). Livestock impacts broadly tracked the human flood footprint: the three worst-affected districts in terms of livestock—Golaghat (24,723), Jorhat (23,163), and Nagaon (19,738)—were the same agrarian, riverine areas that experienced the heaviest overall flood burden[7].

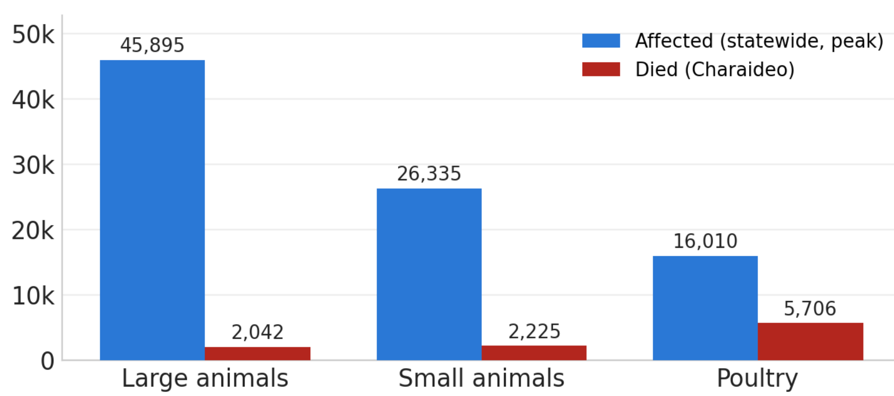


Figure 24. *Impact on Livestock*

[7] https://www.indiatodayne.in/assam/story/assam-floods-affect-over-88000-animals-golaghat-jorhat-among-worst-hit-districts-1430407-2026-07-27

4.8.4. Wildlife and biodiversity

Assam's floodplain protected areas notably Kaziranga and Pobitora (Central/North Assam) and wetland sanctuaries such as Panidihing (Sivasagar) are periodically inundated; wetland shrinkage has degraded the river–floodplain connectivity on which these ecosystems depend (The Assam Tribune, 2025). Wildlife rescue operations and highland provision are recurring monsoon needs in these landscapes.

The flood-hit districts sit on top of Assam's protected-area belt. Golaghat, Jorhat and Sivasagar together hold Kaziranga National Park, the Hoollongapar Gibbon Sanctuary, Nambor / Nambor-Doigrung sanctuaries and numerous Reserved Forests (**Figure 25**). Kaziranga (Golaghat), a UNESCO World Heritage site and a stronghold of the one-horned rhino floods almost every monsoon. Rising water pushes rhinos, elephants, tigers and hog deer onto higher ground and across NH-715, raising drowning, vehicle-collision and poaching risks (**Figure 26**). Hoollongapar Gibbon Sanctuary in Jorhat, home to India's only ape, the western hoolock gibbon, along with the surrounding floodplain Reserved Forests, faces risks of habitat inundation and fragmentation.

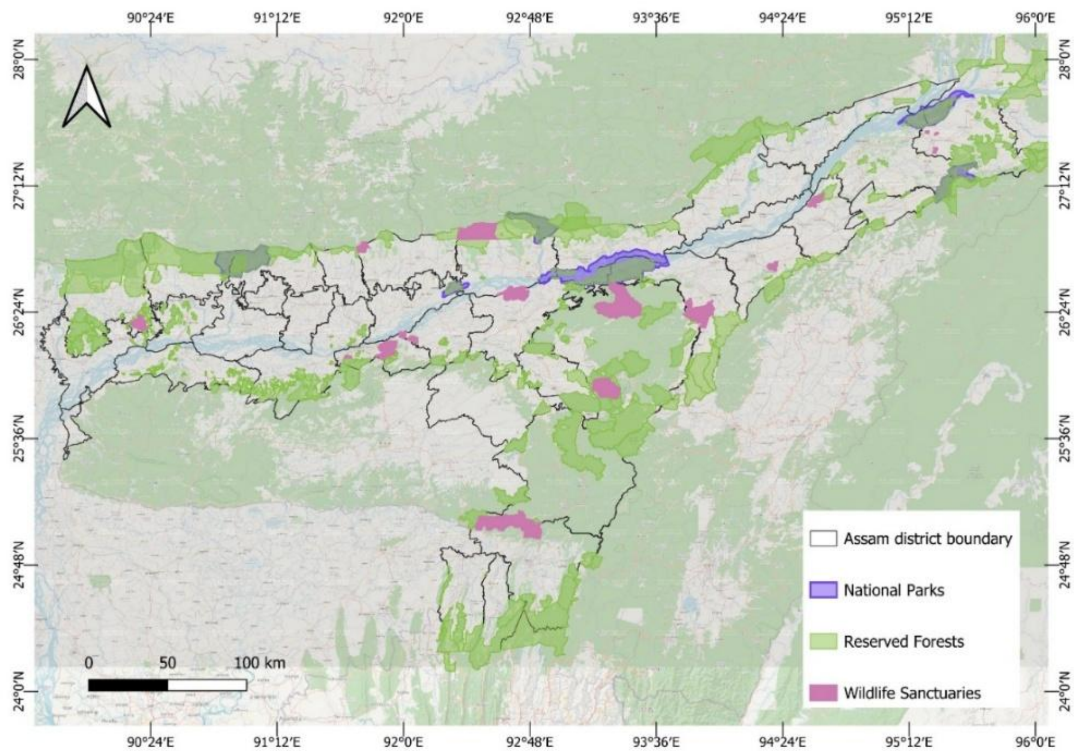


Figure 25. *Distribution of Reserved Forest (RF), National Parks (NP) and Wildlife Sanctuary (WLS) (Source Assam Forest Department)*

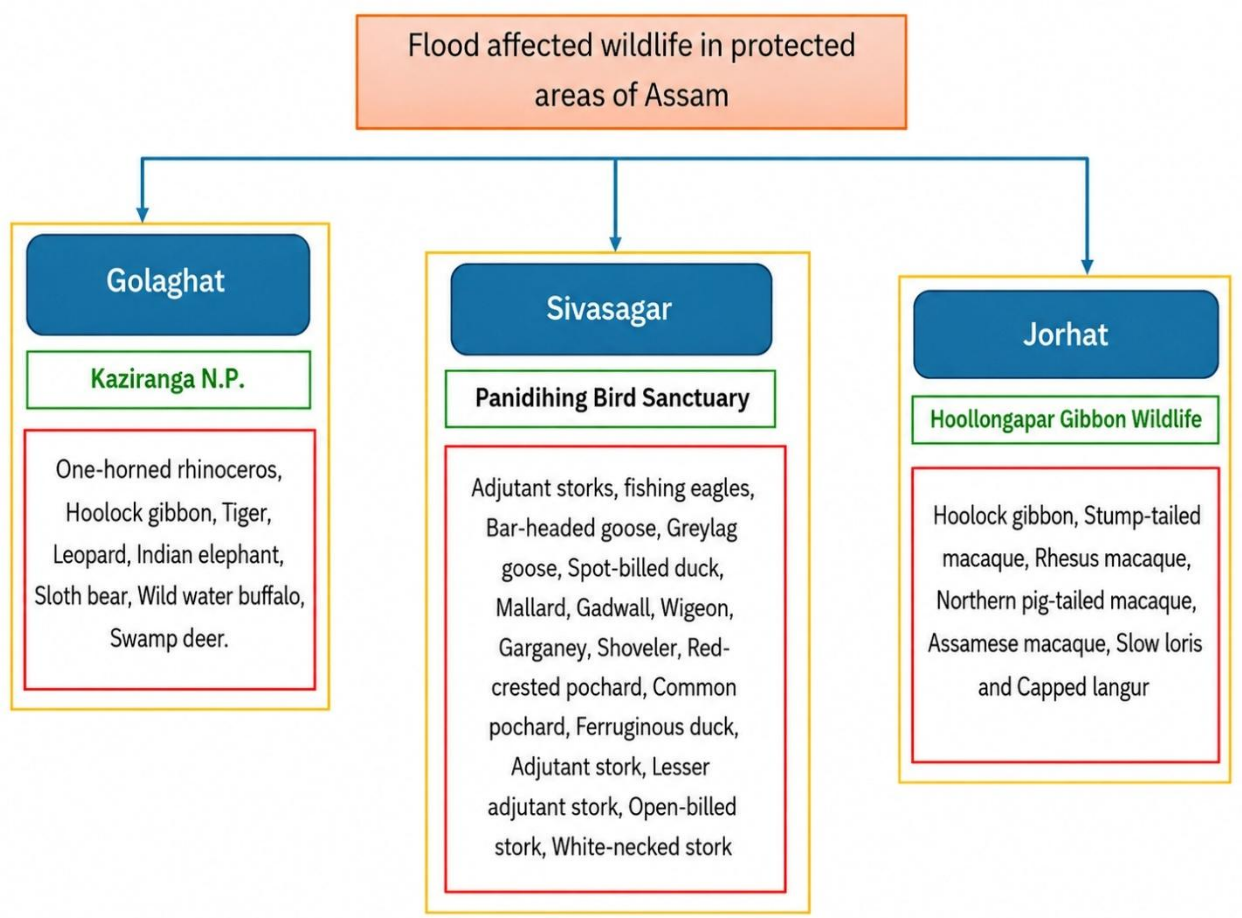


Figure 26. *Major wildlife species affected by the 2026 Assam floods in selected protected areas*

4.8.5 Water, health and sanitation

Beyond assets and livelihoods, the floods carried a direct public-health burden. Prolonged inundation and wetland bottlenecking raised water-borne health risks; Hazarika et al. (2026) report illness prevalence rising to ~70% in the post-flood period in the most exposed communities, compounded by poor sanitation, contaminated water and limited healthcare access.

4.8.6 Economic impact, fisheries and the regional economy

Beyond the directly measured sectors, the floods imposed wider economic costs. Beel (wetland) fisheries, a key livelihood and protein source in Central and Lower Assam, are disrupted by both flooding and long-term wetland shrinkage, eroding a renewable resource base. Assam's tea and horticulture economy, concentrated in Upper Assam (Dibrugarh, Sivasagar, Jorhat), suffered waterlogging, access disruption and labour displacement, with implications for exports and rural employment. Compounded across housing, agriculture, livestock, fisheries, infrastructure and lost working days, the cumulative economic loss substantially exceeds the immediate relief outlay; a full valuation requires the field-based Damage and Loss Assessment recommended in the following section. Recurrent erosion causes permanent capital losses when farmland and homesteads are removed from the productive economy entirely, a form of loss that conventional flood-damage accounting often omits.

5. Conclusions and way forward

The July 2026 flood event took place despite an overall seasonal rainfall deficit in Assam. According to IMD district rainfall data, Assam received only 594.4 mm of rainfall between 1 June and 29 July 2026, compared with the normal 839.6 mm, representing a 29% deficit that placed the state in the "Deficient" rainfall category (Kumar and Goswami 2026). District-wise analyses indicate that only Charaideo recorded excess rainfall during the period, while districts such as Cachar, Dhemaji, Dibrugarh, Kokrajhar, Lakhimpur, Majuli, Tinsukia, and West Karbi Anglong experienced normal rainfall. Most of the remaining districts fell within the "Deficient" or "Large Deficient" categories (Kumar and Goswami, 2026). This apparent paradox is central to the present assessment. It demonstrates that the 2026 flood event was driven primarily by concentrated upstream orographic rainfall and the synchronisation of major tributary flows, rather than by uniformly excessive rainfall across Assam. This interpretation is consistent with the observed rainfall anomaly patterns and the IMD's assessment that no cloudburst event occurred during the period (IMD, 2026).

- **Rainfall triggers flooding, but infrastructure and vulnerability determine its impacts**. Investment should therefore focus not only on rainfall forecasting but also on strengthening embankments, drainage systems, wetlands, and institutional capacity for impact-based forecasting.
- **A single approach does not fit Assam**. Flood risk management should adopt region-specific strategies tailored to the state's five regional administrative divisions.
- **Riverbank erosion represents the most permanent form of flood-related loss**. It should be recognised as a notified disaster and supported by a mapping-based relief and compensation mechanism.
- **Institutional performance is one of the strongest amplifiers of vulnerability**. Reforms should prioritise equitable relief distribution, adequate shelter provision, and effective risk communication.

Assam's disaster management system operates under the Disaster Management Act, 2005 through the ASDMA and the District Disaster Management Authorities (DDMAs), chaired by the Deputy Commissioners. Emergency response is coordinated through the Incident Response System (IRS) and District Emergency Operations Centres (DEOCs), with disaster response financed through the State Disaster Response Fund (SDRF) and the National Disaster Response Fund (NDRF) under the 90:10 Centre–State funding pattern applicable to the north-eastern states (ASDMA, 2022). Flood mitigation has historically been embankment-centric, supplemented by river-training works, relief operations, and, increasingly, Earth observation (EO)-based early warning systems such as the NESAC Flood Early Warning System (FLEWS). Recent studies advocate a transition from predominantly top-down structural interventions to community-centred, spatially differentiated adaptation strategies (Banerjee et al., 2026; Hazarika et al., 2026). The strongest district-level disaster management plans integrate multiple data streams, including NESAC, IMD, and CWC information, whereas flashy south-bank and hill catchments often provide lead times too short for gauge-based warning alone. Nevertheless, several areas require further strengthening to improve the effectiveness of flood risk management in Assam.

5.1. Warning dissemination

Dissemination of flood warnings and advisories reaches communities through ASDMA bulletins, SMS alerts, revenue-circle officials, village heads, and, in better-performing districts, volunteer networks and WhatsApp groups. However, coverage of remote char areas and hill communities remains limited, highlighting the need for more inclusive last-mile communication systems.

5.2. Community response

Household-level evidence indicates that community response is constrained less by the availability of hazard information than by limited resources and trust. Approximately 57.9% of surveyed households reported difficulty in identifying safe evacuation sites, while dissatisfaction with rehabilitation and relief measures was widespread (Hazarika et al., 2026). This highlights that technology alone is insufficient unless it reaches the last mile. Multi-hazard early warning systems should therefore be extended to the village level through redundant communication channels, including SMS alerts, community radio, youth volunteer networks, and WhatsApp groups, with particular attention to short-lead flash-flood zones. These measures should be complemented by women-led and community-based preparedness initiatives, which both foundational studies identify as critical for reducing realised flood impacts (Banerjee et al., 2026; Hazarika et al., 2026).

5.3. District Disaster Management Plans (DDMPs)

A comparative analysis of District Disaster Management Plans (DDMPs) across all 35 districts of Assam, representing the state's five administrative divisions, reveals a uniform institutional framework but considerable variation in plan currency and quality. While many districts have updated plans for 2025–26 or 2026–27, the DDMP for Dima Hasao remains from 2012–13. The highest-quality plans, such as those of Kokrajhar, Nalbari, and Morigaon, include quantified risk assessments and geo-referenced relief-camp inventories, whereas several others consist only of scanned documents or excerpted content. Across the DDMPs, two capability gaps are evident. First, the integration of climate change projections into district-level planning remains limited. Second, the operational use of EO and Geographic Information System (GIS) technologies is generally weak. Hazard and floodplain maps are frequently identified as future tasks rather than incorporated as dynamic, regularly updated planning layers. In addition, riverbank erosion is not recognised as a notified disaster, leaving the most erosion-prone districts without a statutory framework for mitigation, compensation, and relief.

5.4. Embankments

Recurring implementation challenges include ageing embankments that have exceeded their design life, riverbank erosion that outpaces protection measures, dependence on upstream infrastructure beyond district control (e.g., reservoir releases from Bhutan and the Ranganadi, Subansiri, and Doyang hydropower projects), and persistent communication gaps reported by district authorities, including the need for VHF radio sets and satellite phones.

5.5. Post-Disaster Needs Assessment (PDNA)

Following PDNA convention (damage, loss and recovery needs across social, productive, infrastructure and cross-cutting sectors), recovery needs are disaggregated by region and sector (**Figure 26**). Because field valuation is ongoing, the sectoral severity assessments presented below are screening-level estimates anchored to verified impact figures were available.

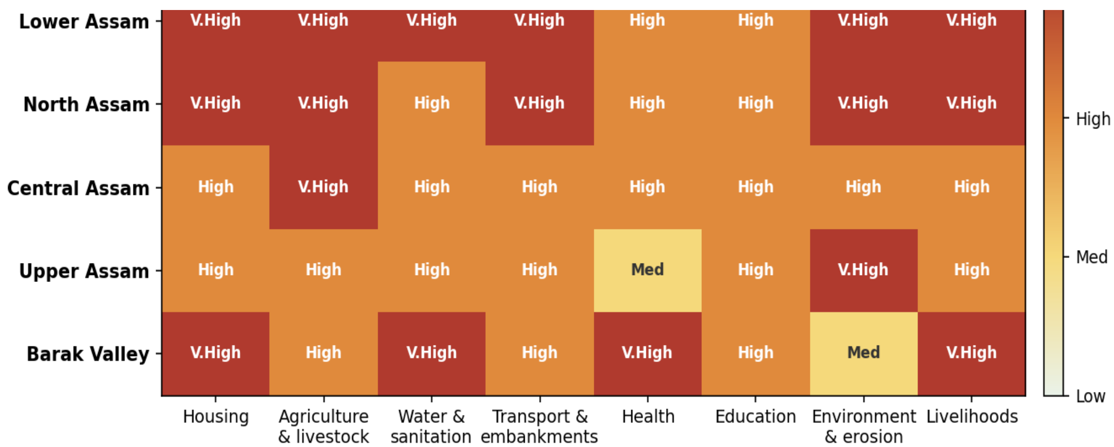


Figure 26. *Indicative recovery-need severity by region and sector (PDNA screening)*

5.6 Future earth observation and technology integration

The highest-impact enhancement to Assam's flood management framework is the transition from event-specific, descriptive flood mapping to a comprehensive, operational, decision-ready geospatial products that support the entire disaster management cycle from preparedness and response to recovery and long-term risk reduction. These products should be developed using multi-source EO data and delivered through a centralized geospatial platform coordinated by the ASDMA and North Eastern Space Applications Centre (NESAC), ensuring standardized, timely, and district-specific decision support across the state (**Table 5**). These products directly operationalize the analyses proposed in the accompanying geospatial framework and provide actionable intelligence for evidence-based flood governance.

Table 5. *Recommended advanced geospatial products for Assam flood management*

Geospatial product	Purpose and method
Riverbank Erosion Maps	Multi-date optical/SAR shoreline-change tracking to quantify land loss (Majuli, Dhubri, Dhemaji, Lakhimpur) and prioritise protection.
Embankment Breach Mapping	SAR change detection, embankment layer overlay to locate and monitor breaches in near-real time (levee-effect early action).
Relief Camp Suitability Maps	Multi-criteria GIS (flood-safe elevation, road access, WASH, population) to pre-site and geo-reference shelters.
Infrastructure Exposure Maps	Flood extent with roads/rail/bridges/settlements (WorldPop, GRIP, OSM) for quantified exposure and rapid access-loss assessment.
Flood Hotspot Maps	Multi-year flood-frequency and damage-index compositing to target chronic hotspots.
Recovery Priority Maps	Overlay of damage, vulnerability and access to sequence recovery financing spatially.
Flood Susceptibility & Future Risk Maps	ML/AI susceptibility modelling, climate projections, land-use scenarios to map current and future risk for planning.

These products should be underpinned by an integrated Earth-observation and analytics stack:

- **Earth observation & remote sensing:** An operational all-weather framework (Sentinel-1 SAR, ICEYE, and NISAR L/S-band) that maps monsoon floods through cloud, with Sentinel-2/Landsat and GPM/IMERG for land-cover, and rainfall context.

- **GIS & cloud computing:** Google Earth Engine / cloud-based pipeline producing auto-updating flood, erosion and exposure layers feeding a live state dashboard, replacing annual static maps.
- **Artificial Intelligence and Machine Learning:** Flood-susceptibility modelling, rainfall-threshold nowcasting for flashy south-bank and hill catchments, and SAR change-detection automation.
- **Impact-based flood forecasting (IBF):** Couple River/rainfall forecasts with exposure and vulnerability layers so warnings state who and what will be affected, not just river stage; pilot the approach in the highest-risk districts.
- **Digital Twins:** High-fidelity models of the most complex, high-value systems (Majuli Island; Guwahati and Silchar urban catchments) to simulate embankment, drainage and land-use interventions before capital commitment.
- **Real-time decision support systems (DSS):** Integrate the above into a single ASDMA operations platform linking forecasts, live inundation, exposure and resources to guide preparedness, response and resource allocation.

5.7 Policy recommendations for flood resilience in Assam

Anchored in the Sendai Framework's four priorities and the Prime Minister's 10-Point Agenda on Disaster Risk Reduction, and differentiated by region:

- **Adopt a region-differentiated flood management strategy** (Sendai Priorities 2 and 3; Prime Minister's Agenda Point 1), with a clearly defined lead intervention for each division based on its dominant flood driver.
- **Strengthen risk understanding through a shared EO/GIS platform** (Sendai Priority 1; Prime Minister's Agenda Points 4 and 5), developed centrally and made operational across all districts.
- **Recognise riverbank erosion as a notified disaster**, representing the single highest-impact policy reform for the north-bank, Majuli, and the char areas by enabling statutory mitigation, compensation, and relief.
- **Reform relief delivery and strengthen financial protection** (Sendai Priority 4; Prime Minister's Agenda Point 2) by ensuring equitable relief distribution, adequate shelter facilities, and piloting flood and erosion insurance for households in char areas and urban centres of the Barak Valley.
- **Restore wetlands and modernise embankments and drainage systems** (Sendai Priority 3) to enhance natural flood storage, improve drainage, and reduce embankment breach risk.
- **Institutionalise learning from disasters through a recurring EO-driven PDNA** (Prime Minister's Agenda Point 9), conducted after each monsoon using a common geospatial framework to support evidence-based recovery and long-term resilience planning.

5.8 Implementation roadmap and financing

Delivering this roadmap requires a phased approach, clear institutional ownership, and blended financing mechanisms.

- **Short-term (0–1 year):** Establish a shared EO/GIS platform through ASDMA and NESAC; standardise DDMP data; develop and publish baseline hazard, erosion, and exposure layers; and prioritise preparedness for the critical mid-July to mid-August flood damage-escalation period.

- **Medium-term (1–3 years):** Operationalise impact-based forecasting and advanced geospatial products; modernise priority embankments; restore key wetlands; and geo-reference all relief camps, evacuation routes, and critical infrastructure.
- **Long-term (3–5 years):** Deploy AI-based nowcasting, cloud-based auto-updating flood mapping, Digital Twins for Majuli and the urban catchments of Guwahati and Silchar, and an integrated real-time DSS for flood forecasting, response, and recovery.

Financing should combine SDRF and NDRF allocations with convergence across flood control, rural development, and climate adaptation programmes. In addition, pilot risk-transfer mechanisms, such as flood and riverbank erosion insurance, should be introduced for the most vulnerable communities to strengthen long-term resilience (Government of India, 2016).

5.9 Monitoring, evaluation and knowledge management

Progress should be monitored using measurable resilience indicators aligned with the Sendai Framework global targets, including reductions in disaster mortality, the number of affected people, economic losses, and damage to critical infrastructure, together with increased coverage and effectiveness of multi-hazard early warning systems (UNDRR, 2015). A recurrent, EO-driven PDNA, conducted after each monsoon using a common geospatial framework, would institutionalise learning from disasters (Government of India, 2016) and provide a continuous evidence base for adaptive and accountable flood governance. Linking these indicators to the EO-driven PDNA would further close the evidence loop between monitoring, impact assessment, and the recovery-prioritisation framework outlined in Section 5.5 (UNDRR, 2015).

This report is intended not merely to document the 2026 event but to provide a strategic assessment supporting evidence-based flood-risk policy in Assam. The recommendations move from lessons learned to a concrete geospatial and technological roadmap for preparedness, response, recovery and long-term resilience (**Figure 27**).

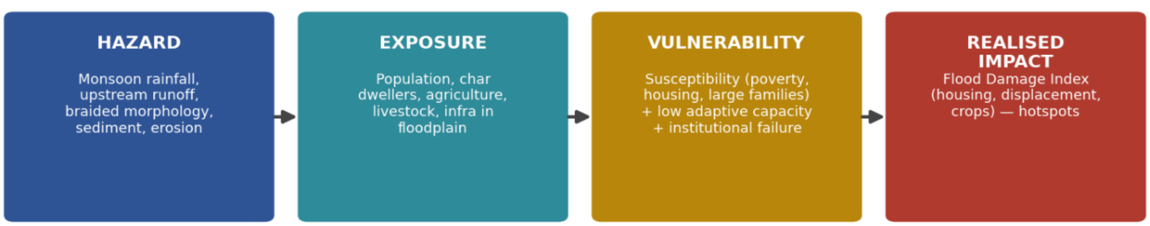


Figure 27. *Hazard–exposure–vulnerability–impact framework integrating the Flood Vulnerability Index and Flood Damage Index approaches is the analytical basis for the recommendations*

The 2026 Assam floods were hydrologically distinctive—an upstream-driven, south-bank flash-flood event—yet their human and economic impacts were shaped by the same enduring conditions that have long made Assam chronically flood-prone: sediment-driven channel aggradation, an ageing and inadequately maintained embankment network, wetland degradation, and, above all, socio-institutional vulnerability. Reducing future flood losses will depend far less on controlling the monsoon than on managing these underlying risk amplifiers through a spatially differentiated, EO-enabled, and community-centred strategy. By reframing flooding not as a recurring emergency but as a manageable and quantifiable risk, Assam can adopt the evidence-based, resilience-oriented policy and planning framework advanced in this report to strengthen long-term disaster resilience and sustainable flood governance.

Limitations

The 2026 impact figures are provisional ASDMA situation-report values and remain subject to revision; where EM-DAT records are multi-state, event totals are not Assam-specific. Satellite-derived flood extent and screening-level severities carry classification and threshold uncertainty, and the 30 m SRTM DEM limits urban- and embankment-scale analysis. Household evidence is drawn from a limited set of districts and is largely cross-sectional. These limitations are directly addressed by the Additional Data Requirements above and should be borne in mind when using specific figures.

Acknowledgements

The authors acknowledge the Assam State Disaster Management Authority (ASDMA), the India Meteorological Department (IMD), the North Eastern Space Applications Centre (NESAC), and the Government of Assam for making information available in the public domain. The authors also acknowledge the open Earth observation programmes of the European Space Agency (Copernicus), the National Aeronautics and Space Administration (NASA), the United States Geological Survey (USGS), the Food and Agriculture Organization (FAO), the European Centre for Medium-Range Weather Forecasts (ECMWF) and the European Commission Joint Research Centre (EC JRC), whose datasets underpin this analysis.

Disclaimer

This report was prepared by Assam University for the Government of Assam as a technical situation assessment and strategic roadmap. It synthesises the authors' analyses with publicly available official reports, datasets, and open Earth-observation information, including sources from ASDMA, IMD, MHA/PIB, and other relevant data providers, available up to early August 2026. The findings presented in this report are intended as initial and indicative assessments to support disaster management authorities, researchers, and other stakeholders in developing a holistic understanding of the situation and informing planning and preparedness. The 2026 impact figures and other estimates should be treated as provisional and may be revised as additional information and official assessments become available. Users are encouraged to consult the respective data providers' official documentation and metadata for information on data quality, accuracy, methodology, uncertainty, limitations, and intended use. For operational planning, resource allocation, financial decisions, or intervention, the findings should be validated and triangulated with ground observations, local information, official assessments, expert judgement, and the latest verified information. The views, analyses, and interpretations expressed in this report are those of the authors and do not necessarily represent the official position of the Government of Assam or of the agencies and organisations cited. While reasonable care has been taken to ensure the accuracy of the information presented, Assam University and the authors accept no liability for decisions or actions taken solely on the basis of this document. Critical figures and findings should be independently verified against primary and authoritative sources before operational or financial action. Mention of specific datasets, technologies, organisations, or agencies does not imply endorsement.

Bibliography

Assam State Disaster Management Authority. (2022). Assam State Disaster Management Plan (Vol. I). Government of Assam.

Assam State Disaster Management Authority. (2026). Daily flood situation reports, July–August 2026. Government of Assam.

Assam Tribune. (2026a). IMD debunks cloudburst claims as Assam floods expose infrastructure gaps; and related flood coverage (Doyang release; ₹90-crore erosion plan). Guwahati. (23 July, 2026). https://assamtribune.com/assam/imd-debunks-cloudburst-claims-as-assam-floods-expose-infrastructure-gaps-1614623

Assam Tribune. (2026b). Doyang reservoir swells, more water release creates fresh flood threat. Guwahati. (24 July, 2026). https://assamtribune.com/assam/doyang-reservoir-swells-more-water-release-creates-fresh-flood-threat-1614684

Assam Tribune. (2026c). Bhogdoi embankment breach inundates Jorhat, Majuli ferry link snapped. Guwahati. (20 July, 2026). https://assamtribune.com/assam/bhogdoi-embankment-breach-inundates-jorhat-majuli-ferry-link-snapped-1614502

Assam Tribune. (2026d). Sivasagar faces fresh flood threat as erosion damages Disang embankment. Guwahati. (2 August, 2026). https://assamtribune.com/amp/assam/sivasagar-faces-fresh-flood-threat-as-erosion-damages-disang-embankment-1615070

Banerjee, A., Pasupuleti, S., & Pradhan, B. (2026). Hotspots and drivers of flood damage in Assam, India: A spatio-temporal assessment of flood-induced damage and their driving factors. International Journal of Disaster Risk Reduction, 143, 106266.

Barpujari, U. (2026). Assam flood remains grim; IMD predicts heavy rainfall in Arunachal, Nagaland. Arunachal Observer. https://arunachalobserver.org/2026/07/31/assam-flood-remains-grim-imd-predicts-heavy-rainfall-in-arunachal-nagaland/

Centre for Research on the Epidemiology of Disasters. (2026). EM-DAT: The International Disaster Database—India flood records, 2000–2026. Université catholique de Louvain.

European Space Agency (ESA). (2022). WorldCover 10 m land-cover product; and Copernicus Sentinel-1/Sentinel-2 imagery. NASA GPM IMERG precipitation; USGS SRTM DEM (data sources for the geospatial analysis).

Government of India. (2016). Prime Minister's Ten-Point Agenda on Disaster Risk Reduction. Presented at the Asian Ministerial Conference on Disaster Risk Reduction (AMCDRR), New Delhi.

Hazarika, D., Saikia, M., Choudhury, H. K., & Baruah, N. B. (2026). Assessing flood vulnerability in the Brahmaputra Valley of Assam using a mixed methods approach. Discover Environment, 4, 294.

India Meteorological Department. (2026a, July 19). Daily weather report, 19 July 2026, 1340 hours IST (Press Release). https://internal.imd.gov.in/press_release/20260719_pr_5169.pdf

India Meteorological Department. (2026b, July 16). Extended range forecast bulletin. https://mausam.imd.gov.in/Forecast/marquee_data/ERF%2016.07.26.pdf

India Meteorological Department. (2026c, July 19). All India weather forecast bulletin, 08:08 hours IST. https://mausam.imd.gov.in/backend/assets/aiwfb_pdf/b38b3246433c88f4245a5ee0d87a3d3b.pdf

India Meteorological Department, Regional Meteorological Centre Guwahati. (2026d). Rainfall distribution for the week ending 1 July 2026 (Northeast India rainfall report). https://mausam.imd.gov.in/guwahati/mcdata/nerainfallreport.pdf

India Today North East. (2026). Nearly 13,000 Assam households still without power 11 days after floods. (30 July 2026). https://www.indiatodayne.in/assam/story/nearly-13000-assam-households-still-without-power-11-days-after-floods-1431570-2026-07-30

Kumar, A., & Goswami, R. (2026). Monsoon paradox: Why Assam flooded despite a 29% rainfall deficit. EastMojo. (30 July 2026). https://eastmojo.com/assam/2026/07/30/monsoon-paradox-why-assam-flooded-despite-a-29-rainfall-deficit/

Ministry of Home Affairs. (2026). SDRF advance release to flood-hit states; High-Level Committee decisions. Government of India.

NASA/JPL/NISAR. (2026). *NISAR Beta Geocoded Polarimetric Covariance Product (Version 1)* [GCOV]. NASA Alaska Satellite Facility Distributed Active Archive Center. https://doi.org/10.5067/NIL2GCOV-B1 Date Accessed: 2026-08-07

Sarma, J. N. (2005). Fluvial process and morphology of the Brahmaputra River in Assam, India. Geomorphology, 70(3–4), 226–256.

Sarma, J. N., & Acharjee, S. (2012). Bank erosion of the Brahmaputra River and neotectonic activity around Rohmoria, Assam, India. Comunicações Geológicas, 99(1), 33–46.

Singh, S. K., & France-Lanord, C. (2002). Tracing the distribution of erosion in the Brahmaputra watershed from isotopic compositions of stream sediments. Earth and Planetary Science Letters, 202(3-4), 645-662.

The Hindu. (2026). Why have three Assam districts borne the brunt of floods? Explained. (28 July 2026). https://www.thehindu.com/news/national/assam/why-have-three-assam-districts-borne-the-brunt-of-floods-explained/article71271472.ece

United Nations Office for Disaster Risk Reduction. (2015). Sendai Framework for Disaster Risk Reduction 2015–2030. UNDRR.

Annexures

Supplementary figure

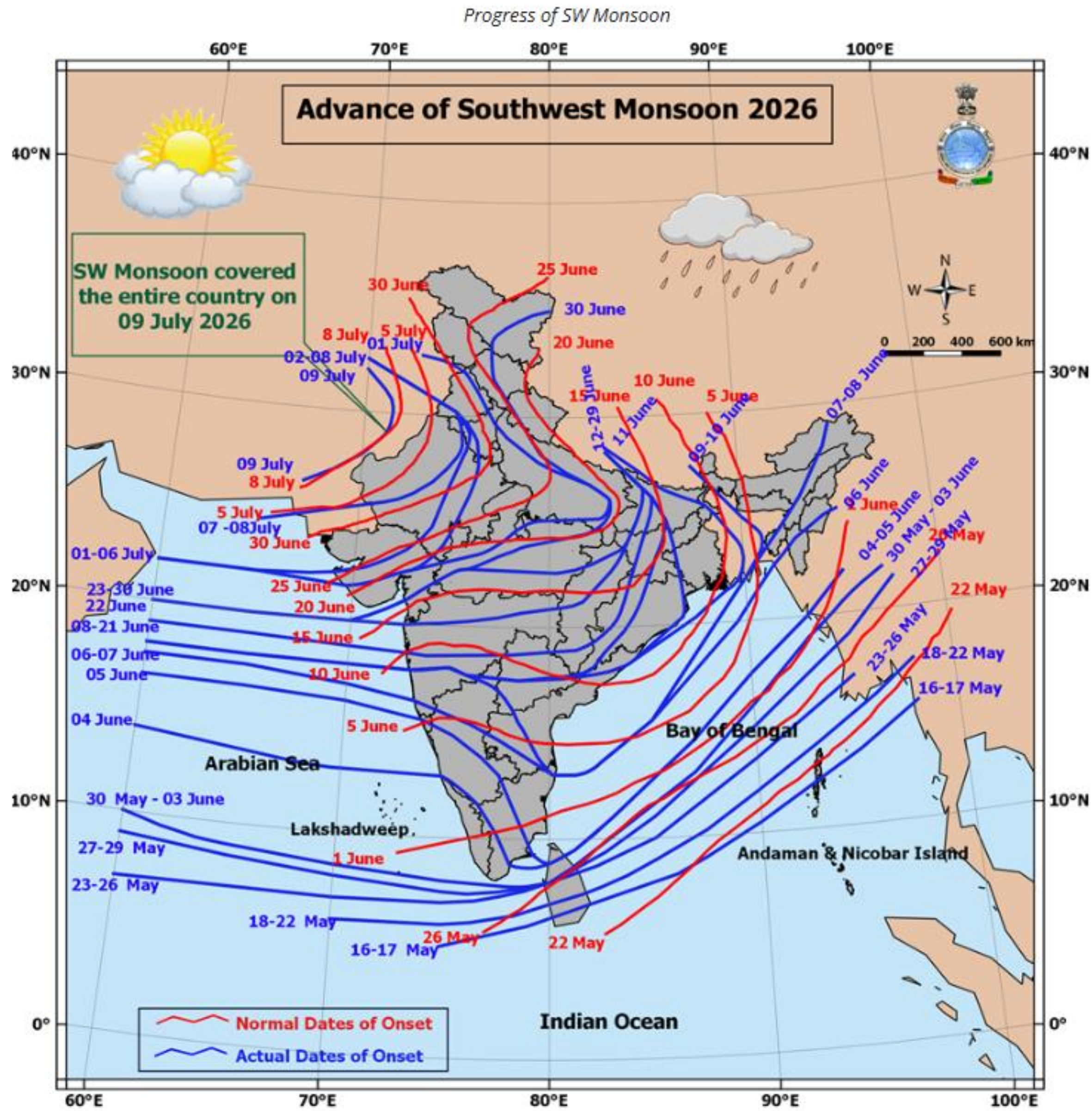


Figure S1. *Onset date of the 2026 monsoon (source: IMD[8])*

[8] https://mausam.imd.gov.in/responsive/monsooninformation.php

Supplementary data tables

The tables below consolidate the quantitative data underlying the assessment. All 2026 figures are provisional (ASDMA); EM-DAT event totals may span multiple states.

Table A1. *District-wise 2026 flood impact (ASDMA situation reports, late July–1 August 2026)*

District	People affected	Region	Note
Charaideo	~1,37,561	Upper Assam	Worst-hit; Dikhow/Disang
Sivasagar	~84,600	Upper Assam	Urban waterlogging
Jorhat	~49,911	Upper Assam	Cropland inundation (SAR)
Golaghat	~31,000	Upper Assam	Doyang dam release via Dhansiri
State (peak)	~2.12 lakh (8 districts)		~80 deaths; ~21,000 ha crops; 11,000+ livestock

Table A2. *Assam flood events by five-year period, 2000–2026 (EM-DAT). Deaths and affected are event-level and may include other states*

Period	Events	Deaths (event-level)	Total affected (million)
2000–2004	8	2,676	105.4
2005–2009	10	3,549	45.1
2010–2014	10	721	13.0
2015–2019	14	3,019	44.8
2020–2024	8	5,660	16.5
2025–2026	1	50	1.4

Table A3. *Geospatial datasets used in the assessment*

Dataset	Provider	Resolution	Use in this report
SRTM DEM	USGS/NASA	30 m	Elevation, slope, terrain
ESA WorldCover	ESA	10 m	Land use/land cover (LULC), exposure
Sentinel-1	ESA Copernicus	10 m	Flood mapping
Sentinel-2	ESA Copernicus	10–20 m	NDWI channel change, turbidity
GPM IMERG	NASA	10 km	Rainfall totals and anomaly
FAO GAUL	FAO	Admin units	State/district boundaries
WorldPop	WorldPop	100 m	Population exposure
GRIP4	GRIP/Sat-io	Not Applicable	Road exposure
Hansen GFC	UMD	30 m	Upstream forest loss
JRC Global Surface Water	EC JRC	30 m	Permanent water, change
NISAR GCOV	NASA/ISRO	10 m	Flood mapping

Additional data requirements

Converting this assessment into an operational, quantified flood-risk system requires the following additional data, prioritised by leverage:

1. **Field-based Damage and Loss Assessment (DALA):** Sector- and district-wise monetary valuation of damage and losses to replace screening-level severity assessments.
2. **High-resolution DEM / LiDAR:** For accurate floodplain, drainage, and embankment modelling, as SRTM (30 m) is too coarse for urban and structural analysis.
3. **Real-time gauge and rainfall telemetry:** Open, machine-readable CWC river-stage and IMD rainfall data feeds to support impact-based forecasting.
4. **Embankment condition and breach inventory:** Geolocated information on embankment age, design, maintenance status, and historical breaches.
5. **Cadastral and land records:** To quantify erosion-driven land loss and support char resettlement and compensation.
6. **River bathymetry and sediment-load monitoring:** For aggradation and bank-erosion modelling.
7. **Longitudinal household vulnerability panels:** Repeated household surveys extending beyond the current cross-sectional, char-focused evidence.
8. **Transboundary and reservoir-operation data:** Bhutan inflows and Ranganadi, Subansiri, and Doyang reservoir release schedules for downstream warning.
9. **Health, WASH, livestock and fisheries records:** Event and post-event data for these under-documented sectors.
10. **High-frequency / NISAR and commercial SAR imagery:** For cloud-free, frequent flood and erosion mapping.

This report may be cited as follows

Nath, A. J., Ghosh, S., Kour, S., Chowdhury, A., Sarkar, U., Hazarika, A., Nath, A. and Paul, A. (2026). Assam floods: A comprehensive situation assessment and roadmap for resilient recovery. Assam University, Silchar, India.

Contact Information: Prof. Arun Jyoti Nath (Email Id: arun.jyoti.nath@aus.ac.in)