Understanding Flooding in Sri Lanka: Long-Term Risk and the November 2025 Flood Experience

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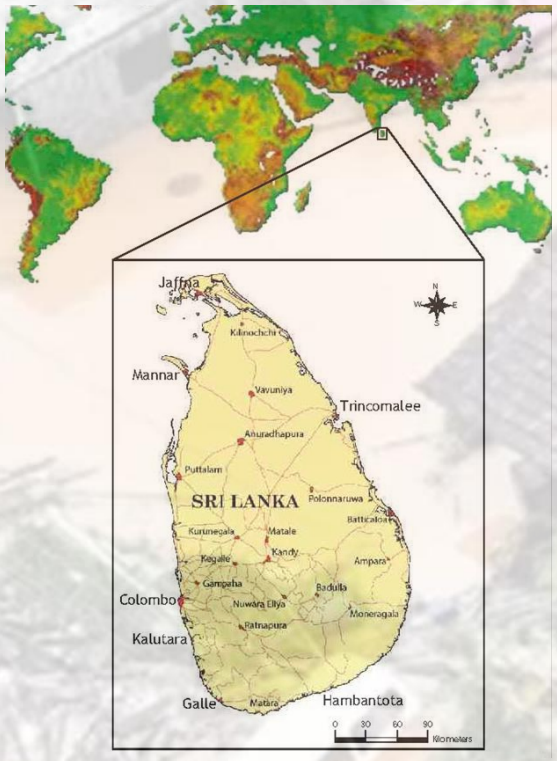
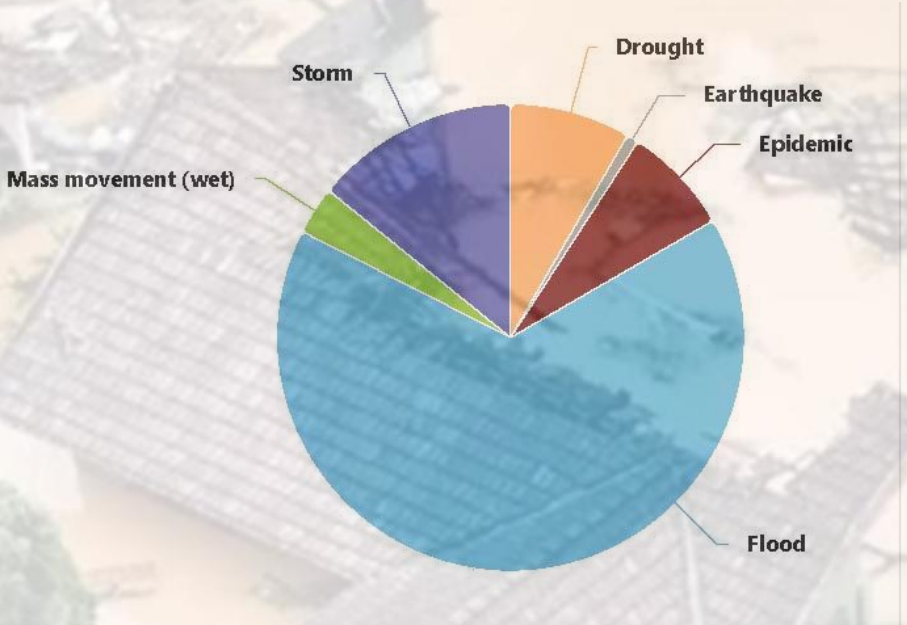


Flooding is one of the most frequent and widespread natural disasters in Sri Lanka

Occurs almost every year across multiple river basins

Total Natural Disasters (1980-2024)



(Ref. Climate Change Knowledge Portal, World Bank Group

- Flooding as a recurrent national disaster

- Increasing frequency/severity in recent decades

- Why November 2025 matters

Basins account for most of the recurrent and high-impact flood events

Kelani River Basin – highly flood-prone due to intense rainfall and urbanization

Kalu River Basin – frequent and severe floods, especially in the lower basin

Mahaweli River Basin – large basin; flooding occurs mainly in middle and lower reaches

Gin River Basin – rapid response to heavy rainfall; frequent flash floods

Nilwala River Basin – recurrent flooding in the lower basin

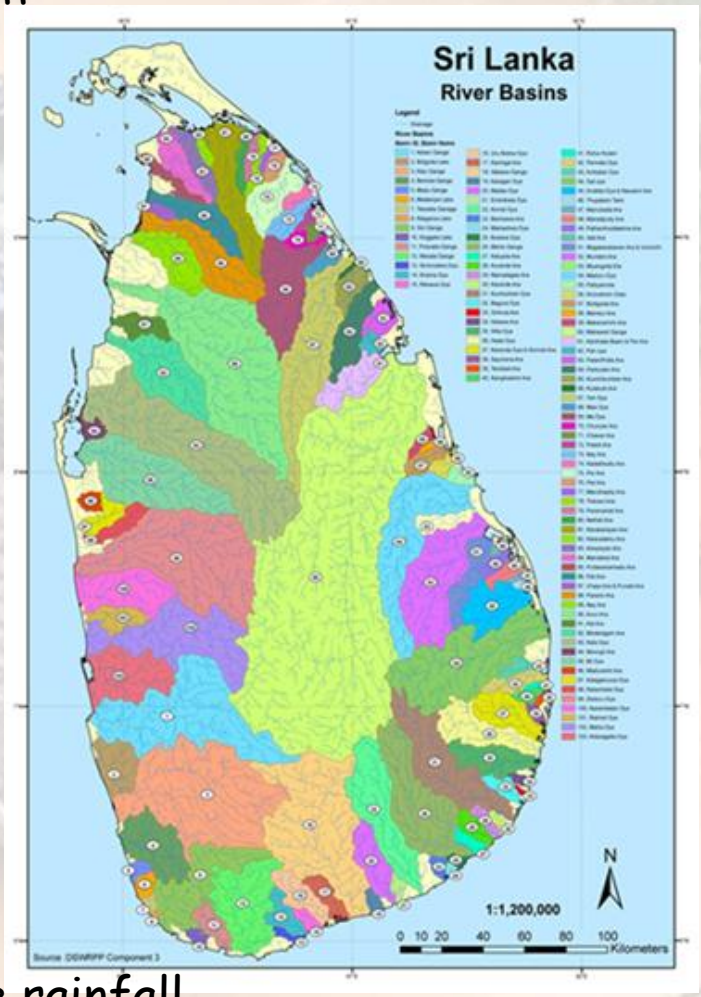
Kumbukkan Oya Basin – major floods during intense monsoonal rainfall

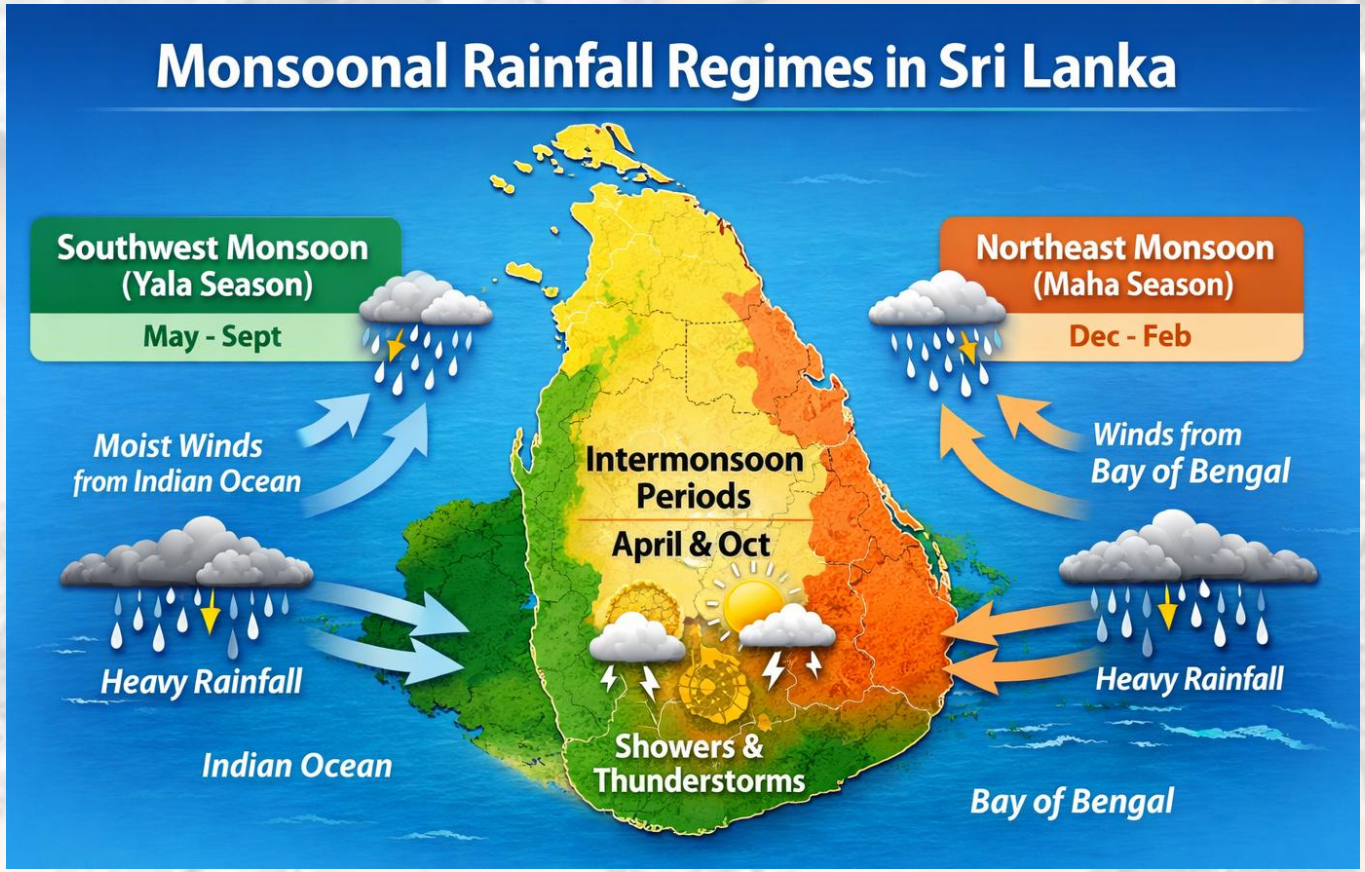
Deduru Oya Basin – flooding in downstream areas during heavy rains

Attanagalu Oya Basin – highly flood-prone, influenced by urban growth

Maha Oya Basin – lower basin subject to frequent flooding

Malwathu Oya Basin – flooding in downstream dry-zone areas during extreme rainfall





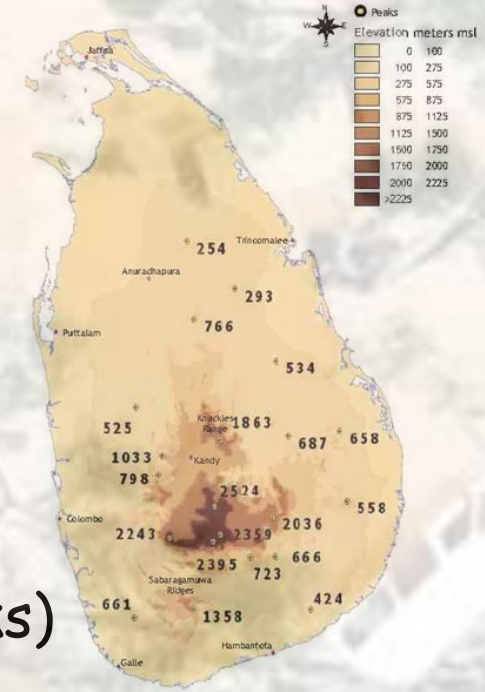
Southwest Monsoon
May - September
(High Intensity Long Duration Rainfall)

Northeast Monsoon
December - February
(Widespread seasonal Rainfall)

Inter-monsoon Periods
March-April and October-November
(Convective storms and extreme short-duration rainfall)
Often responsible for severe floods and landslides

Extreme rainfall during inter-monsoons is a key driver of major flood events

Role of Topography and River Systems



- **Central Highlands as rainfall source**
(Main interception zone; rivers radiate to the coast)

- **Fast hydrological response**
(Short, steep catchments → high runoff, quick flood peaks)

- **Downstream flood amplification**
(Wider floodplains, sedimentation, reduced channel capacity)

- **Drainage constraints at river mouths**
(Tidal influence delays flood outflow)

Long-Term Flood Risk Drivers

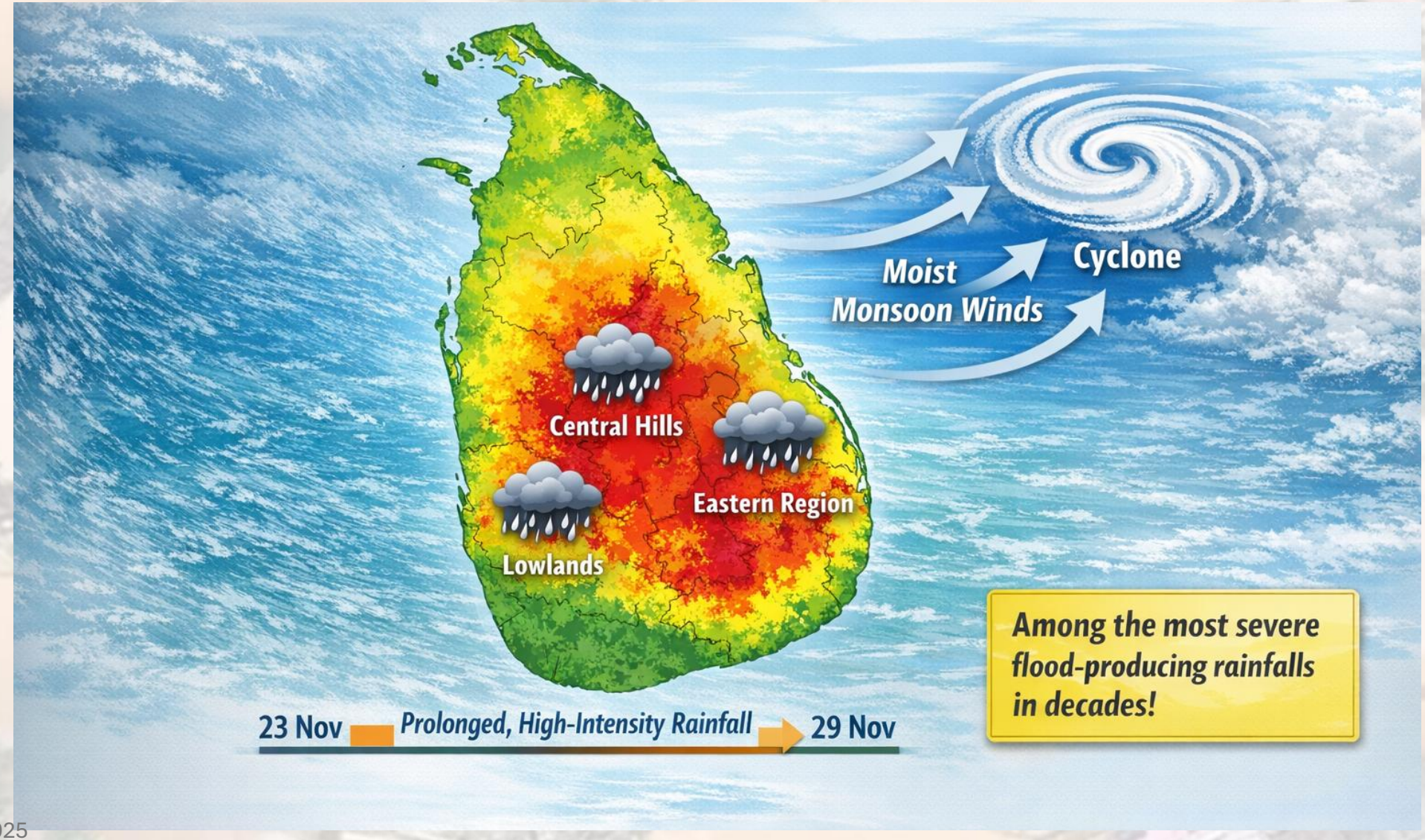
- Extreme rainfall and climate variability/change
- Land-use change, urbanization, deforestation
- River regulation and floodplain encroachment

Hydrological Characteristics of Floods

- Rainfall–runoff response
- Antecedent soil moisture
- Basin response times and peak flows

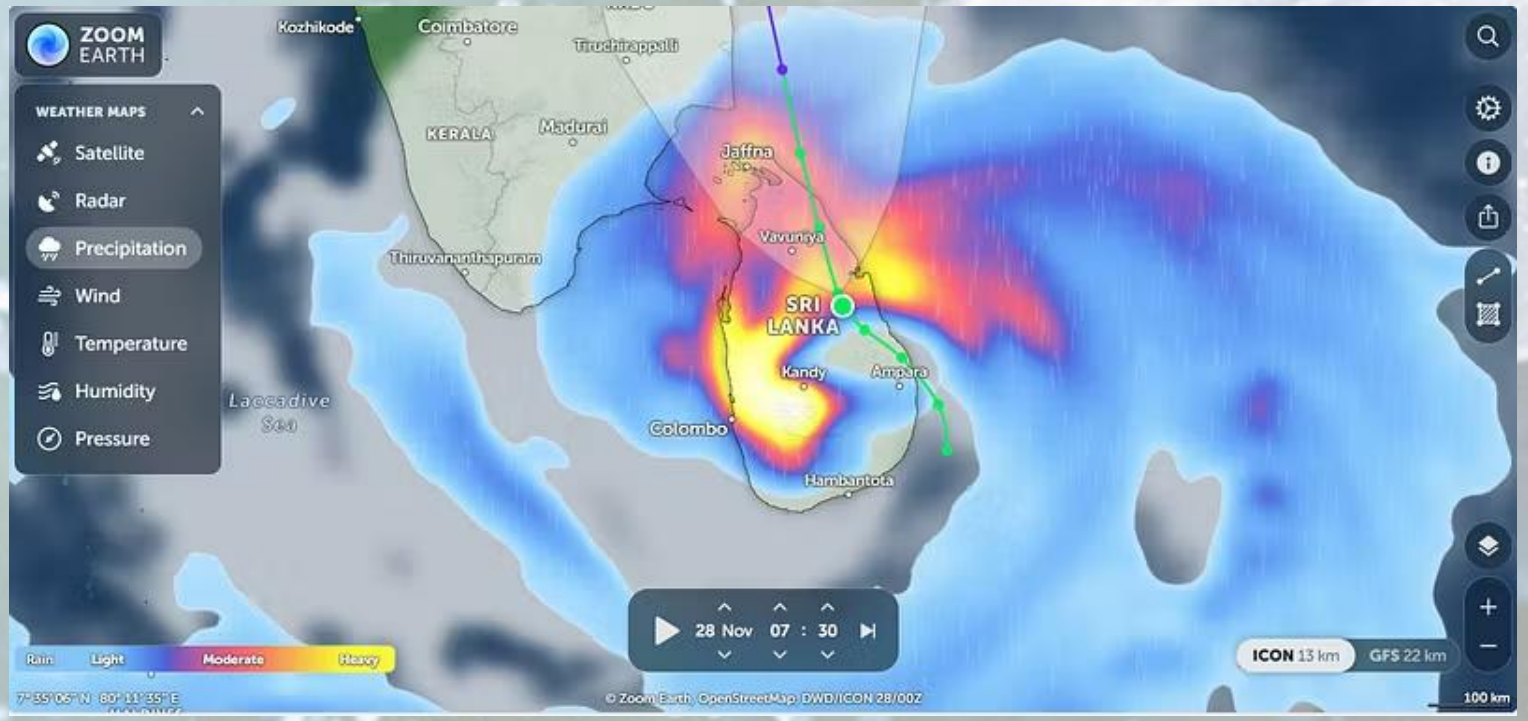
November 2025 Flood Event in Sri Lanka

The worst flooding disasters in the country in decades, affecting all 25 districts



Cyclone Ditwah made landfall on November 28

It made landfall along the eastern coast before moving inland, inundating low-lying areas and overwhelming rivers across the central, north-central and northwestern provinces



Satellite image from Zoom Earth, captured at 07.30 am, November 28, showing Cyclone Ditwah moving across Sri Lanka with dense cloud bands indicating heavy rainfall concentrations over north-central, northern, north-western and western provinces. Graphic: Zoom Earth

Highest rainfall recorded in the 24 hours ending at 6 am, November 28, 2025

Station	District	Rainfall (mm)
Gammaduwa	Matale	540.60
Elkaduwa	Matale	442.80
Kotmale	Nuwara Eliya	421.00
Kandenuwara	Matale	419.20
Doteloya Estate	Kegalle	410.20
Nilambe	Kandy	404.80
Marassana	Kandy	403.60

Flood Extent / Affected Regions and Basins

Nationwide impact across all 25 districts — unprecedented scale of flooding and landslides across the country

Central Province (hill country) — Kandy, Badulla, Nuwara Eliya heavily hit by floods and landslides

Western Province — Colombo and Gampaha districts experienced severe urban and river flooding

Northwestern & Northern regions — Puttalam, Mannar, and surrounding areas affected by floodwaters

Eastern regions — Trincomalee and Batticaloa faced widespread rain impacts and inundation

Flood Impacts

Economic loss was estimated at between 6 and 7 billion US dollars

Agriculture loss: Over 510,000 ha of rice fields have been affected

Affected Population: More than 2.2 million

Fatalities and Missing: At least 643 deaths and over 183 missing

Displacement: Over 230,000 were displaced at the peak of emergency

Housing Damage: Over 6,200 houses were destroyed, and about 96,545 were partially damaged

Infrastructure & Land: More than 1.1 million hectares inundated (nearly 20% of the country's land area)
Nearly 720,000 buildings were exposed to floodwaters, and over 16,000 km of roads and 278 km of railways were affected

Peradeniya Railway Bridge

Peradeniya University Flooding

Reservoir Spilling during Nov 2025

Victoria Dam

Kalawewa Dam

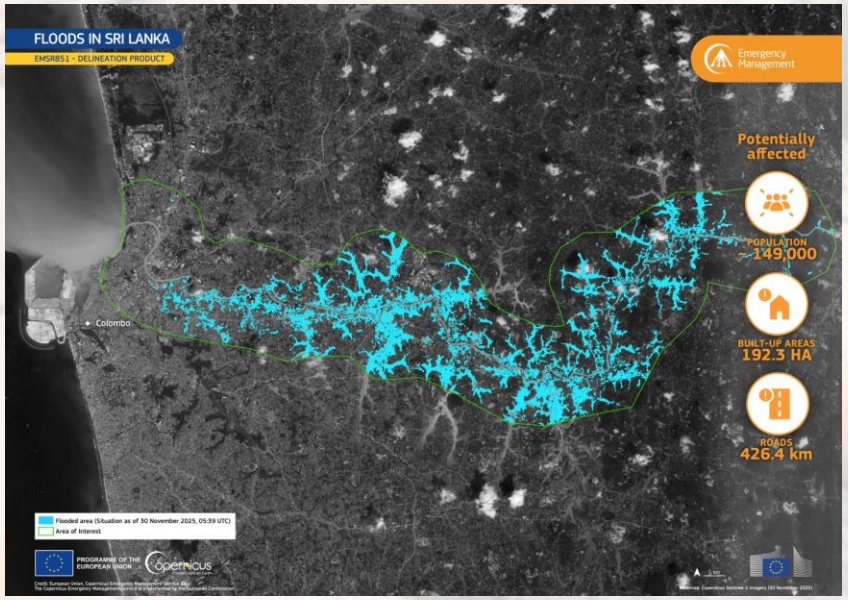
Deduru Oya Dam

Rajanganaya Dam

Huruluwewa Dam

Kotmale Dam

Kelani River



https://mapping.emergency.copernicus.eu/news/flood-in-sri-lanka-emsr851/

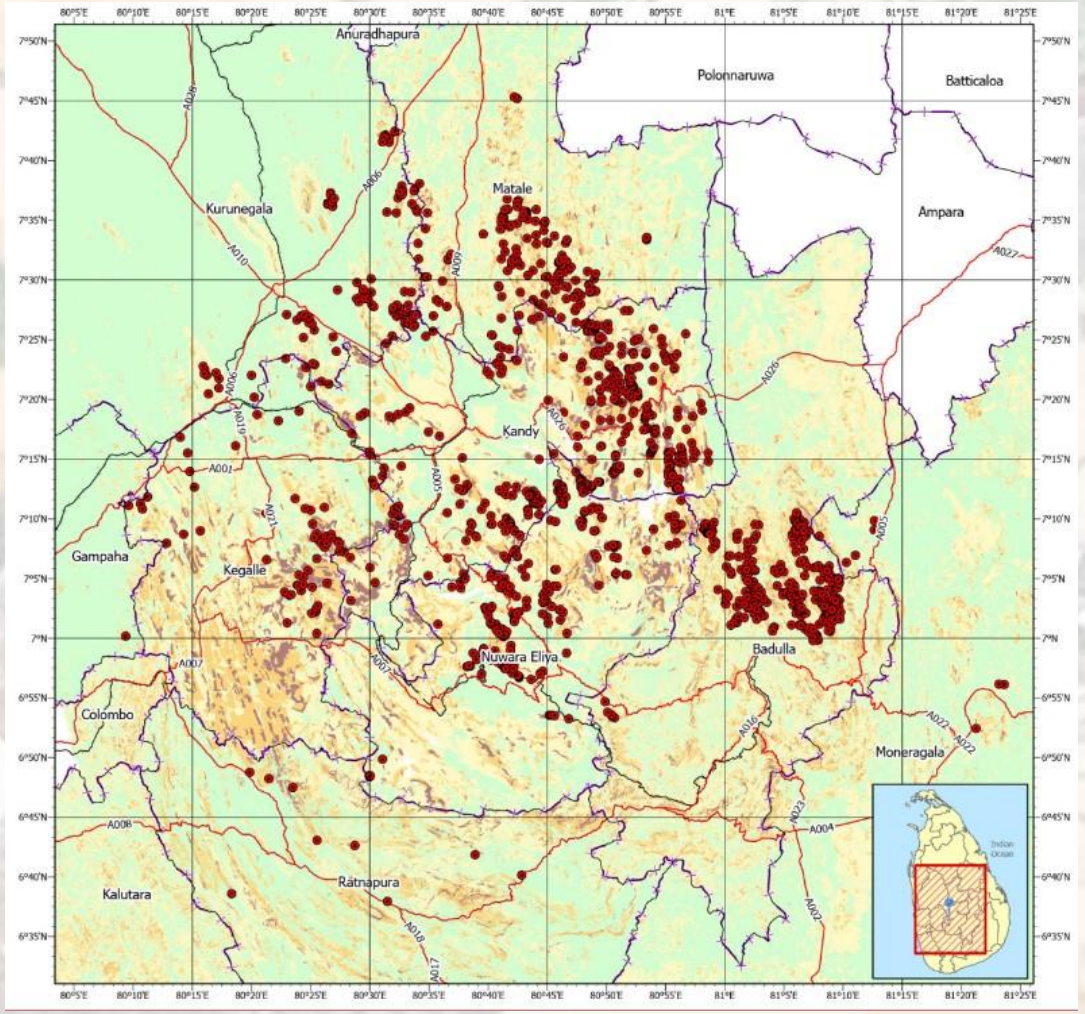
Puttalam Area

Flood in Sri Lanka - Image captured by Sentinel-2 on 30 November 2025 near the city of Chilaw. Image credit: Copernicus Sentinel data (2025)

Puttalam Hospital

Road Damages during Nov 2025

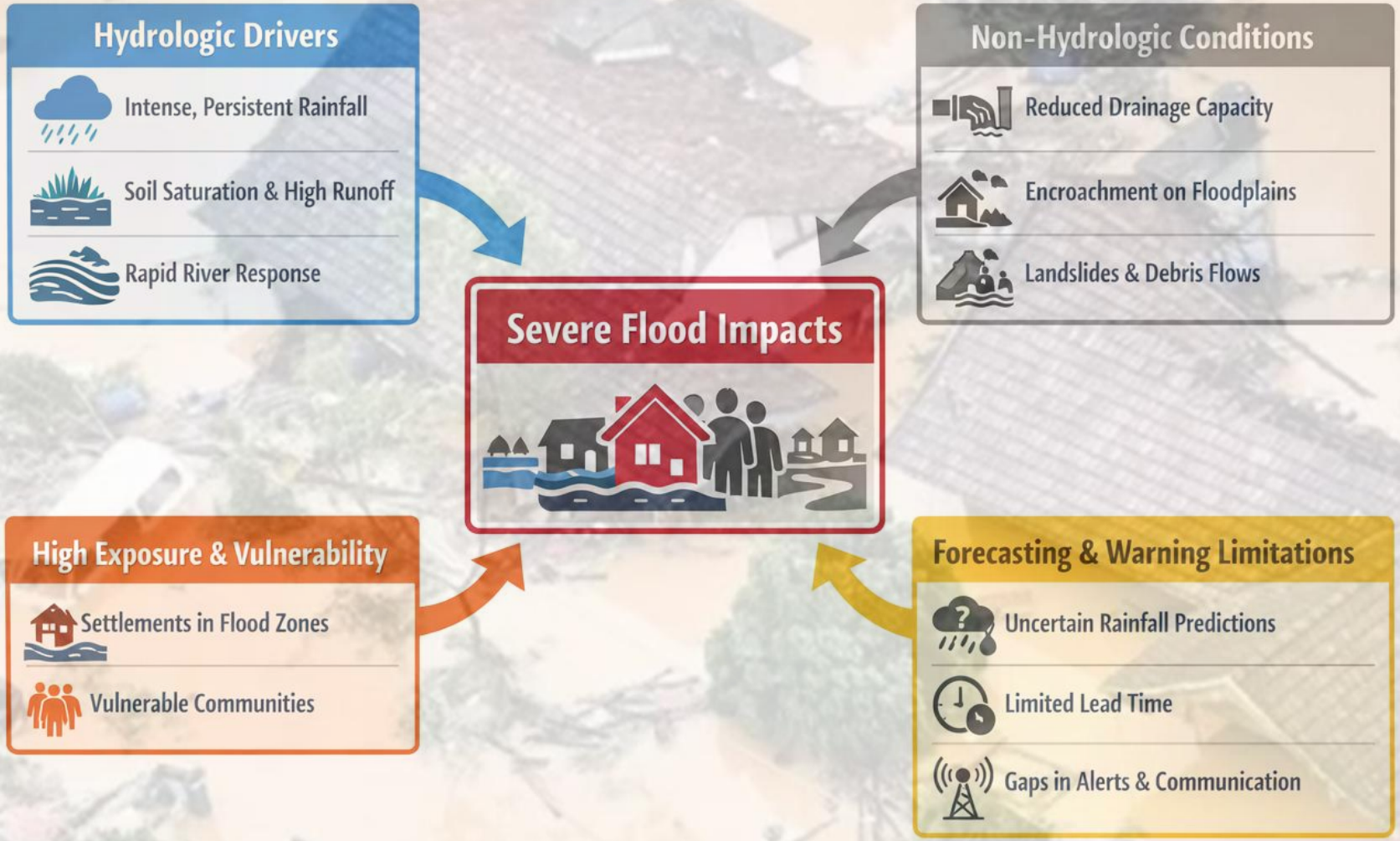
Land Slides during Nov 2025



National Building Research Organization recorded 1,991 landslides across Sri Lanka, where the majority, 1,223 landslides, or 60% of the total, occurred in the Central Highlands

Rescuing Flood Victims

Why were the Impacts So Severe?



Lessons Learnt from Sri Lanka's November 2025 Flooding & Cyclone Ditwah

Way Forward for Flood Risk Management in Sri Lanka

Thank You