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# What are flash floods, which have also led to landslides in parts of Himachal Pradesh and Haryana?

Flash floods refers to a flood situation, but one that occurs in a much shorter span of time, under six hours, and is a highly localised phenomenon.

By: [Explained Desk](#)

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Damaged vehicles after they got swept away in floodwater following heavy rainfall, in Kullu, Sunday, June 25, 2023. (PTI Photo)

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The Chandigarh-Manali highway was blocked on Monday (June 26) following flash floods and landslides since Sunday morning in parts of Haryana and Himachal Pradesh. Flash floods were witnessed in Khotinallah near Aut (in HP) on the Pandoh-Kullu stretch due to a heavy downpour and the commuters have been stranded as a result.

Moderate to heavy rains have also lashed several parts of Kangra, Mandi and Sirmour districts. The Indian Meteorological Department (IMD) on Monday added that there was no warning for flash floods until Tuesday morning. But flash floods are not simply a situation of excessive rains, there are certain criteria for terming rains as such.



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People try to get a vehicle out of debris after it got buried after heavy rainfall, in Shimla, Saturday, June 24, 2023. (PTI Photo)  
(PTI06\_24\_2023\_000069B)

## What are flash floods and how are they different from floods in general?

Excessive or continuous rainfall over a period of days, or during particular seasons, can lead to stagnation of water and cause flooding. Flash floods refer to such a situation, but occurring in a much shorter span of time, and are highly localised. For instance, the US's meteorological agency, the National Weather Service, says flash floods are caused when rainfall creates flooding in less than 6 hours. It adds that flash floods can also be caused by factors apart from rainfall, like when water goes beyond the levels of a dam.

In India, flash floods are often associated with cloudbursts – sudden, intense rainfall in a short period of time. Himalayan states further face the challenge of overflowing glacial lakes, formed due to the melting of glaciers, and their numbers have been increasing in the last few years.

Frequently, **flash floods are accompanied by landslides**, which are sudden movements of rock, boulders, earth or debris down a slope. It is common in



mountainous terrains, where there are conditions created for it in terms of the soil, rock, geology and slope. Natural causes that trigger landslides include heavy rainfall, earthquakes, snowmelting and undercutting of slopes due to flooding. Landslides can also be caused by human activities, such as excavation, cutting hills and trees, excessive infrastructure development, and overgrazing by cattle.

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India is one of the countries most likely to face landslides. For a statewise analysis of this phenomenon, do read our previous explainer.

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Flash flooding commonly happens more where rivers are narrow and steep, so they flow more quickly, as per the Met Office, UK's national weather service. They can occur in urban areas located near small rivers, since hard surfaces such as roads and concrete do not allow the water to absorb into the ground.

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### How common are flash floods and floods?

According to government data from a project by the Assam State Disaster Management Authority, India is the worst flood-affected country in the world, after Bangladesh, and accounts for one-fifth of the global death count due to floods. Flash floods have been commonly witnessed in cities like Chennai and Mumbai.

Depression and cyclonic storms in the coastal areas of Orissa, West Bengal, Andhra Pradesh, and others also cause flash floods.

Further, data from the National Disaster Management Authority (NDMA) states that one of the reasons for flood situations occurring so frequently is that nearly 75 per cent of the total Indian rainfall is concentrated over a short monsoon season of four months (June to September). As a result, the rivers witness a heavy discharge

during these months. About 40 million hectares of land in the country are liable to floods according to the National Flood Commission, and an average of 18.6 million hectares of land are affected annually.

Flash floods may in the future, begin to take place after wildfires that have been taking place more frequently. This is because wildfires destroy forests and other vegetation, which in turn weakens the soil and makes it less permeable for water to seep through.

Andrew Hoell, a meteorologist at the US's National Oceanic and Atmospheric Administration's Physical Sciences Lab, told The New York Times, "If heavy rains occur on land damaged by a fire, the water does not get absorbed by the land surface as effectively as it once did".

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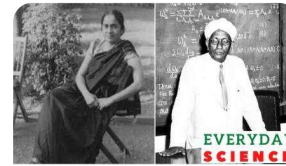
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Indian glaciologist Syed Iqbal Hasnain, [writing in \*The Indian Express\*](#), said one way of dealing with the current situation is a comprehensive strategy of monitoring on the ground in hilly areas, planning development works in a way that is sensitive to the region's ecology, and mitigation to reduce the extent of damages.

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