



INCREASE IN GLOBAL FLOODING INCIDENCE - ENVIRONMENT

News: *A new study has predicted that global flooding incidence could increase by 49 per cent between 2020 and 2100 if the world continues to follow the ominous path of emitting greenhouse gases en route development.*

WHAT'S IN THE NEWS?

- Researchers created a high-resolution Global Flood Map (GFM) using updated techniques to better simulate flood behaviors and adjust probabilities based on factors like rainfall, river discharge, and sea level rise.

Key findings of study

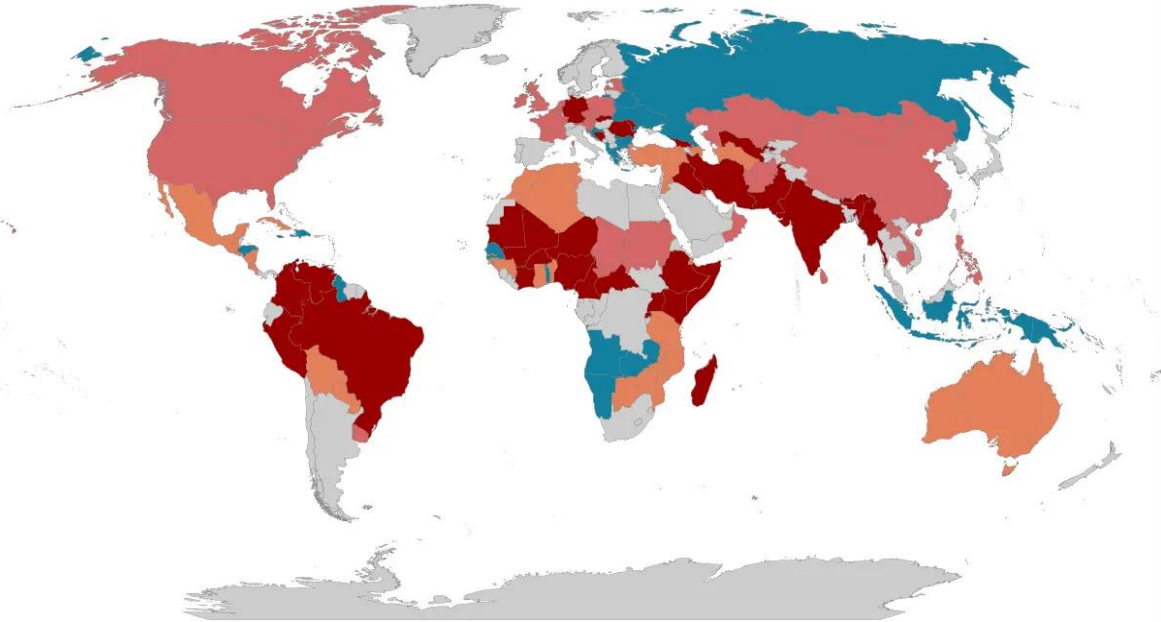
- **Geographical Variations:** Flood risk will vary significantly; some areas may experience a decrease in risk, while others may face increases far exceeding the global average.
- **Region :** The greatest increases in flooding are expected around coastlines in tropical Africa and Asia, and in arid North Africa.
 - The North Atlantic and Indian Ocean coasts, southeastern Asia, and Pacific Islands will also be notably affected.
- **Risk Assessment for 2050:** Flood risk is projected to be 7% under low emissions and 15% under high emissions.
- **Coastal Flood Hazard:** Coastal flooding risk is expected to almost double (99% increase) by 2100, even under a low emissions scenario, due to rising mean ocean temperatures and expanding sea levels.
- **River-Triggered Flooding:** Increased risk of river-triggered flooding is projected for sub-Saharan Africa, parts of Asia, and South America.
- **Rainfall-Induced Flooding:** Flooding due to rainfall is likely to increase by 6% under low emissions and 44% under high emissions scenarios by 2100.

SINCE 2006



Flood risk will continue for Southern Asia and sub-Saharan Africa

Change in proportion of population exposed to floods



- Increasing in future (2010-2030)
- Increases already observed (2000-2030)
- Increasing and already observed
- Little change or decreasing
- Insufficient data/high uncertainty

Source: Global Flood Database

BBC

Causes of Global Flooding

- **Climate Change:** One of the primary drivers of increased flooding is climate change.
 - Rising global temperatures lead to more intense and frequent precipitation events. Warmer air holds more moisture, which can result in heavier rainfall.
- **Urbanization:** Rapid urban development often leads to increased impervious surfaces, such as roads and buildings, which reduce the land's ability to absorb rainwater.
 - This can overwhelm drainage systems and result in localized flooding.
- **Deforestation :** The destruction of forests for agriculture and development reduces the land's ability to absorb water. Deforestation increases runoff and can lead to more severe and frequent flooding.
- **Infrastructure Failures:** Aging or inadequate infrastructure, such as levees, dams, and stormwater management systems, can fail under extreme weather conditions.

Impacts of Global Flooding



- **Displacement:** Communities affected by severe flooding often face displacement and loss of homes.
- **Health:** Flooding poses significant health risks, including waterborne diseases, injuries, and fatalities.
 - Displaced populations often face challenges accessing medical care and clean water, exacerbating health issues.
- **Economic Losses:** Floods can cause extensive damage to property, infrastructure, and agriculture. The economic cost includes repair and rebuilding expenses, loss of business, and disruption of economic activities.
- **Environmental Damage:** Floods can have detrimental effects on ecosystems, including soil erosion, habitat destruction, and pollution of waterways.
 - The introduction of pollutants from industrial sites and sewage can degrade water quality and harm wildlife.

Mitigation and Adaptation Strategies

- **Improved Infrastructure:** Investing in resilient infrastructure is crucial for flood management.
 - This includes upgrading drainage systems, building flood barriers, and maintaining and improving existing flood defenses.
- **Sustainable Urban Planning:** Adopting sustainable urban planning practices can mitigate flooding risks.
 - This involves integrating green spaces, improving land use practices, and ensuring that development does not exacerbate flood risks.
- **Early Warning Systems:** Advancing early warning systems and emergency response mechanisms can help communities prepare for and respond to flooding more effectively.
- **Restoration of Natural Ecosystems:** Restoring wetlands, forests, and other natural landscapes can enhance water absorption and reduce flood risks.
- **Climate Change Mitigation:** Addressing the root cause of increased flooding requires global efforts to combat climate change. Reducing greenhouse gas emissions, transitioning to renewable energy sources, and adopting climate-resilient practices are essential steps.

Source: <https://www.downtoearth.org.in/climate-change/global-flooding-hazards-to-increase-by-49-by-end-of-century-study-warns#:~:text=A%20new%20study%20has%20predicted,greenhouse%20gases%20en%20route%20development.>