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## Report on natural hazard risk to global port infrastructure published in 'Nature'

This global analysis of risks to port infrastructure from multiple natural hazards, looks at 50 ports. It quantifies the risk of cyclone, fluvial, pluvial, coastal and earthquake hazards to physical assets and services (port-specific risk) and maritime trade flows (trade risk), finding that 86% of the ports considered are exposed to more than three natural hazards.

The results also indicate that port risk analysis should take a multi-hazard perspective and consider how these hazards may combine into compound and/or consecutive disasters or how multiple ports can be disrupted simultaneously, in particular when multiple hazards are driven by the same large-scale synoptic weather systems (e.g. winter storms in Europe).

Globally, port-specific risks are found to total 7.5 USD bn per year (32% of the risk attributed to tropical cyclones). In addition, 63.1 USD bn of trade is argued to be at-risk every year. Risk as a fraction of total trade is particularly high in Small Island Developing States.

Results underline that port resilience is determined by various critical factors, such as engineering standards, operational thresholds and recovery duration, that vary widely across ports, requiring tailored solutions to improve port resilience.

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### Example Natural Hazards

**Cyclones:** potentially give rise to storm surge, flooding, extreme winds, tornadoes and lightning

**Fluvial flood:** water level in a river, lake or stream rises and overflows neighbouring land

**Pluvial flood:** extreme rainfall creates flooding independent of an overflowing water body

**Coastal flood:** extreme tides (gravity); wave action (wind); surge (low atmospheric pressure)

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PORT SPECIFIC  
RISK  
\$75 bn

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TRADE RISK  
\$63.1 bn

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### Link:

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