Mangroves reduce Tsunami impacts

An analysis of earthquake and tsunami risks presented this month in the Pertanika Journal of Science & Technology suggests that mangrove forests have a protective role in the event of a tsunami. The researchers, from the newly formed Disaster Research Nexus (DRN) at Universiti Sains Malaysia, hope that their work will encourage the development of better prepared communities.

The 2004 Banda Aceh earthquake and ensuing Andaman mega tsunami that Caused widespread devastation and killed over a quarter of a million people worldwide was a wake-up call to many. Immediately afterwards, work was initiated to help develop human capacity and resources, and to mitigate future events. Koh Hock Lye and colleagues at the DRN developed a tsunami simulation model to investigate the role of coastal vegetation in reducing the impact of such events.

Using the model, the team analysed the earthquake risk for the Upper Padas Dam in Sabah, and found that the presence of mangroves appeared to reduce the impact of tsunamis. The research also showed that tsunamis can affect the salinity of water and soil and induce vegetative changes in affected regions.

Mangrove forests are one of the world's most threatened ecosystems, with a fifth of the world's mangroves having been destroyed over the last few decades. This research highlights the need to conserve them in areas where the risk of earthquakes and tsunamis are high.

The team hope that their work will improve research collaboration and allow better preparedness for seismic events worldwide.

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