

## **Sundarban as a Buffer against Storm Surge Flooding**

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**Abstract :** Sundarban, the largest mangrove forest in the world, is known to act as a buffer against the cyclone and storm surge. Theoretically, Sundarban absorbs the initial thrust of the wind and acts to 'resist' the storm surge flooding. The role of Sundarban was evident during the cyclone Sidr when the Sundarban solely defended the initial thrust of the cyclonic wind and the resulting storm surge inundation. In doing this, Sundarban sacrificed 30% of its plant habitats. Although no scientific study has yet been conducted, it is generally believed that Sundarban will continuously play its role as a buffer against the cyclone when landfall of the cyclone is at or close to the Sundarban. Considering these facts, the present study mainly focused on a scientific insight into the role of Sundarban as a buffer against the present-day cyclone and storm surge and also its probable role on the impacts of future storms of similar nature but with different landfall locations. The Delft 3D dashboard and flow model are applied to compute the resulting inundation due to cyclone induced storm surge. The results show that Sundarban indeed acts as a buffer against the storm surge inundation when cyclone landfall is at or close to Sundarban.

**Keywords :** buffer, Mangrove forest, Sidr, landfall, roughness

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