

## SIMULASI PENJALARAN GELOMBANG TSUNAMI DI PESISIR SELATAN LUNYUK KABUPATEN SUMBAWA

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<b>Abstract</b>	<p>An earthquake accompanied by a tsunami disaster occurred along the southern coast of Sumbawa, Lombok, and Bali on August 19, 1977. The potential for future earthquakes and tsunamis in the region warrants significant attention. This study aims to determine the tsunami wave travel time, wave height, tsunami run-up, and inundation distance. The research was conducted at Lunyuk Beach in Sumbawa, specifically at Teluk Lampui. The methodology involved in-depth interviews with survivors of the 1977 Sumba earthquake and tsunami, as well as field measurements. Research data included earthquake fault parameters, bathymetric maps, and coastal slopes. Tsunami propagation simulations were performed using COMCOT V1.6 software. The simulation results were validated against field observation data. Based on interviews and field measurements, it was found that the tsunami run-up height reached the roofs of houses, estimated at 6.30 meters based on similar house heights during the event. The simulation analysis of layer 01, using earthquake fault data, indicated that the tsunami reached the Lunyuk coast after 15 minutes. Layer 02 analysis aimed to determine tsunami run-up heights with wave scenarios of 7 meters, 8 meters, and 9 meters, resulting in run-up depths of 6.85 meters, 7.48 meters, and 7.92 meters respectively. The corresponding wave heights were measured at 14.38 meters, 16.35 meters, and 17.70 meters. The tsunami inundation distances for each scenario were 1,513 meters, 1,528 meters, and 1,532 meters respectively. This demonstrates that higher tsunami waves lead to greater run-up heights and longer inundation distances on land. Validation results showed that a 7-meter wave height closely matched the conditions during the 1977 Sumba earthquake tsunami event.</p>
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