

# Multi-Hazard Early Warning System(MHEWS) in Janaki Rural Municipality: A GIS Perspective

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## SUMMARY

Addressing the increasing harshness of Climate change, disasters like floods, heat waves, fires, lightning, and storms have been common in Janaki Rural Municipality of Kailali district in the far western region of Nepal. Strong heat waves for a longer period and floods being more frequent and with high volume in a short time resulting in inundation have worsened the lives of people residing in Janaki. In the past decade, the Bipad portal has documented 23 incidents resulting in 3 casualties, 3 injuries, and 1 person reported missing. These disasters have also caused 7 million Rupees in losses, affected 24 livestock, and damaged 3 physical infrastructures (Bipad portal, 2024). Early warning system with multi-purpose sirens effective in different wards of Janaki municipality have reduced the effects of disasters. The sirens can be sounded up to 2 km radius of its place. This paper utilizes Geographic Information System (GIS) technology to create detailed hazard maps and risk assessments. GIS-based analysis of safe spaces, high shelter houses, roads, and households is performed to determine the average evacuation time based on road conditions. The integrated GIS and Early warning system significantly enhance disaster preparedness and resilience, providing a robust framework to mitigate the escalating impacts of climate change and create sustainable communities, decision-making, and infrastructure planning in Janaki Rural Municipality.

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