

Empowering Communities and Local Government through Citizen Science and Climate-Induced Disaster Risk Awareness

A Case Study from the Nepal Himalayas

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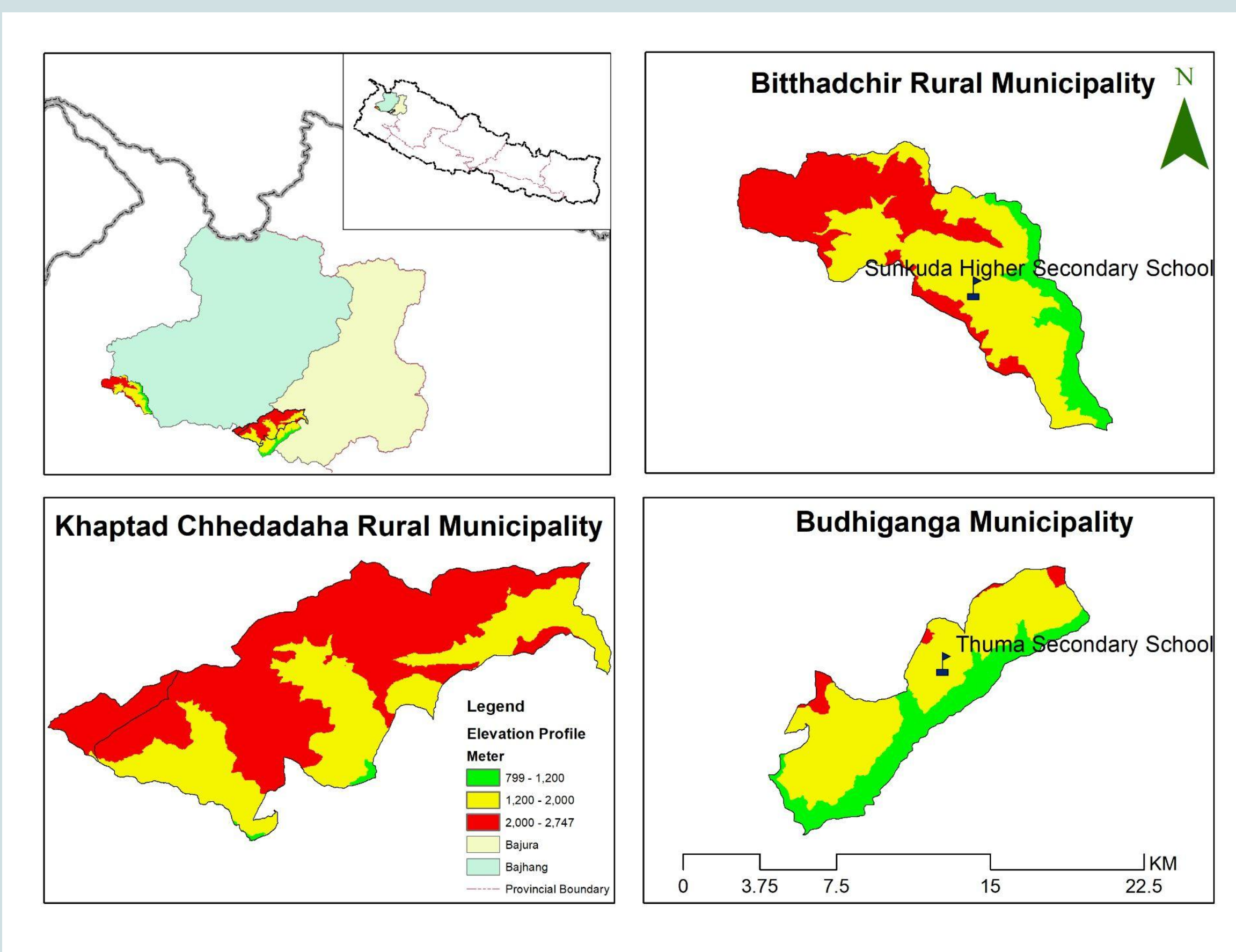
Introduction

- Climate-induced disasters like landslides pose formidable challenges to communities and stakeholders, particularly in the Nepal Himalayas.
- Complex topography, coupled with limited hydrometeorological monitoring networks, and lack of awareness among rural populations exacerbate these risks.

Landslide Environmental Virtual Observatories (LEVO) Project

- The Karnali River Basin (KRB)'s complex geological features and sparse monitoring network make it difficult to accurately assess and predict climate-induced disasters.
- Rural communities often lack knowledge about climate-induced risks, hindering their ability to prepare and respond effectively.
- To address these issues, UNESCO and The Small Earth Nepal (SEN), implemented a Citizen Science approach KRB.

Karnali River Basin (KRB)



Photographs



Landslide of Bajura



River Level Sensor



Student Exploring Landslide on VR



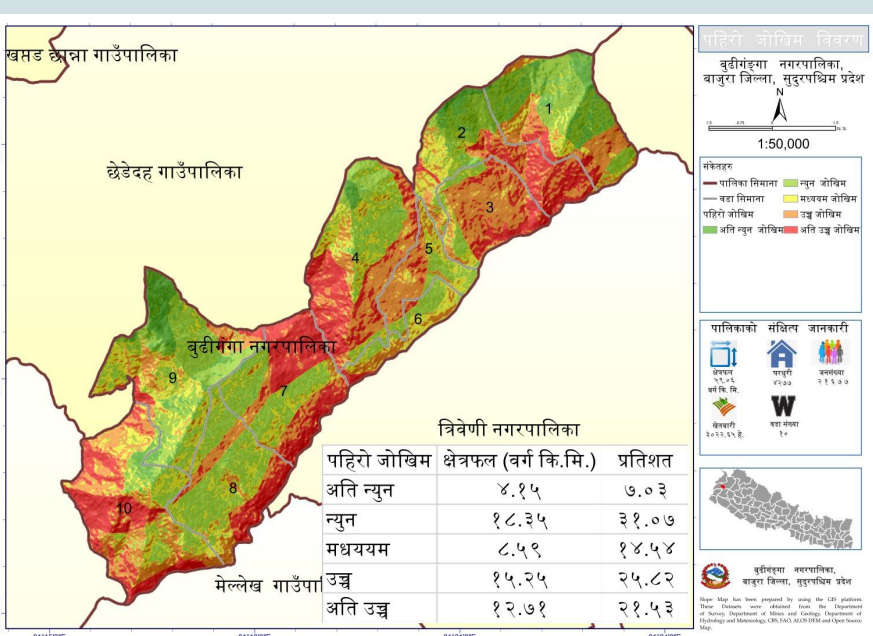
Raingauge Station

LEVO's Citizen Science Approach

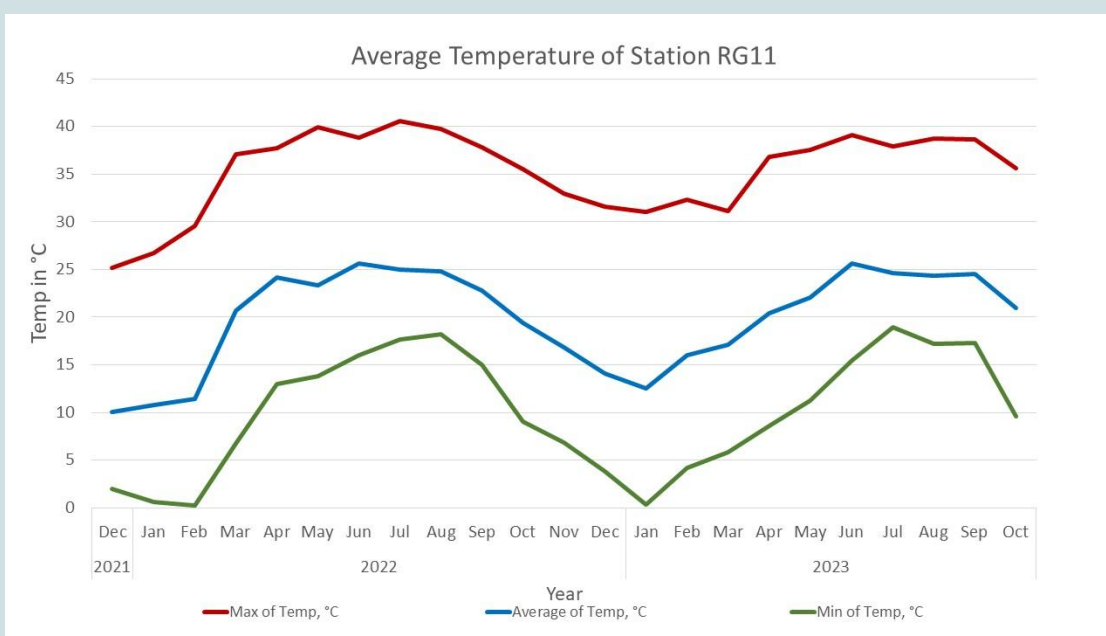
Data Co-creation: LEVO deployed low-cost rain gauges and river level sensors, collaborating with local communities to collect data and co-create solutions.

Enhanced Decision-Making: Hydrometeorological data used to improve local government's understanding of disaster risks and support informed decisions in disaster management.

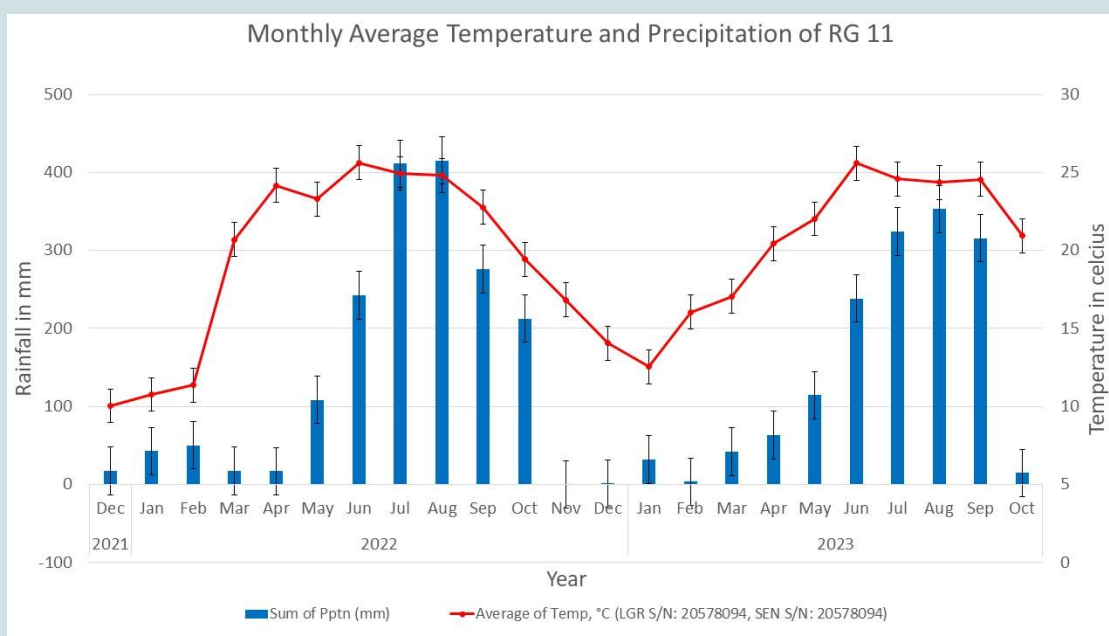
Community Awareness: School Eco-clubs, awareness workshops, radio broadcasts, newspapers, and virtual reality videos were used to raise awareness about climate-induced disasters and empower communities to make informed decisions.



Disaster Risk Maps



Data Collected by Citizen Scientists



Outcomes and Impact

- **Increased public engagement:** LEVO fostered scientific engagement and empowered communities that led them to their ownership of disaster preparedness.
- **Sustainable impact:** Local governments allocated budgets to continue LEVO activities within their planning processes, demonstrating the project's long-term impact.
- **Empowered communities:** LEVO demonstrated the potential of citizen science to empower communities and local governments to effectively address climate-induced disaster risks in the Nepal Himalayas.



Consultation with Stakeholders



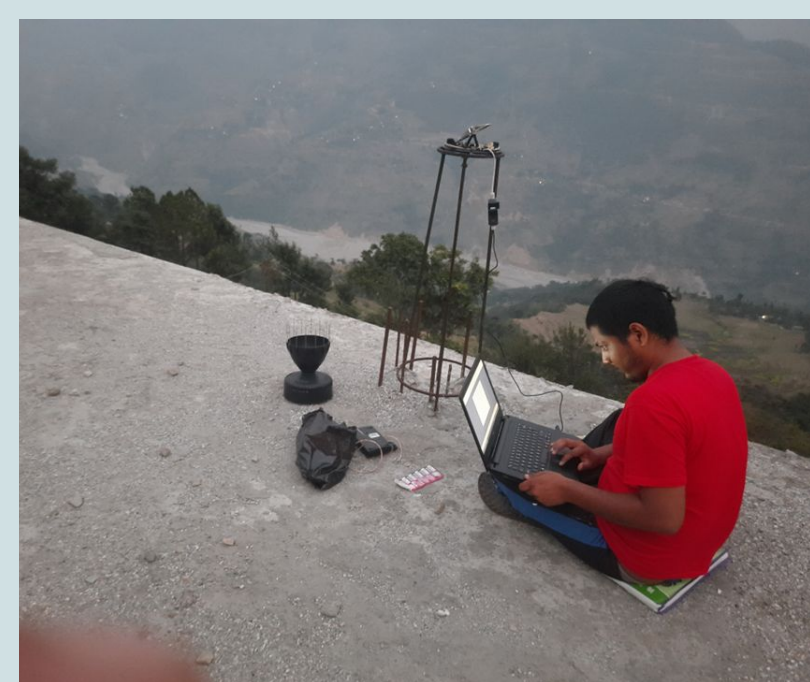
Landslide Demonstration in VR

Conclusion

- LEVO model has a great potential of replicability in the Himalayas, in the data scarce regions to minimize loss and damage due to climate induced disasters.
- Engagement of citizen scientists in data generation and local consultations have informed and influenced the planners and decision makers in climate induced disaster risk management.



Demonstrating Vetiver System and Establishing Nursery



Data Collection from Hydromet Station by Citizen Scientist