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Using Open Data and Citizen Science in Understanding Disaster Risk: Experience from Western parts of Nepal

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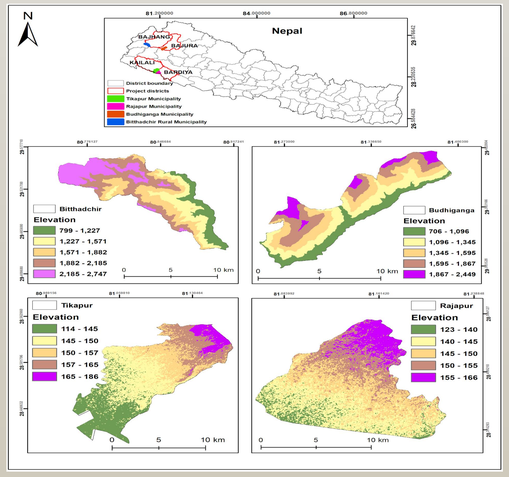
Background

- Nepal - highly vulnerable to multiple disasters due to its topography and geographic conditions.
- Suffers with data deficiency in better understanding the impacts of disasters and existing capacities to cope with such disasters.
- Information scarcity severely hinders understanding the disasters and their associated risks in the areas.
- Hampers local and regional risk reduction, preparedness and response, limiting rigorous and robust disaster risk modelling and assessment.
- A strong need of more integrated and proactive perspective into the management of disaster risks and innovations.

Objectives

- To explore and identify use of the available open data sources (including open geospatial mapping), analytical models and open computing resources for disaster risk assessment in Nepal.
- To set a guidance and recommend for developing a risk assessment platform, which could be significantly helpful for disaster risk assessments and preparedness strategies in three selected sites in Nepal.
- To Identify challenges and opportunities of open data and citizen science in disaster risk reduction

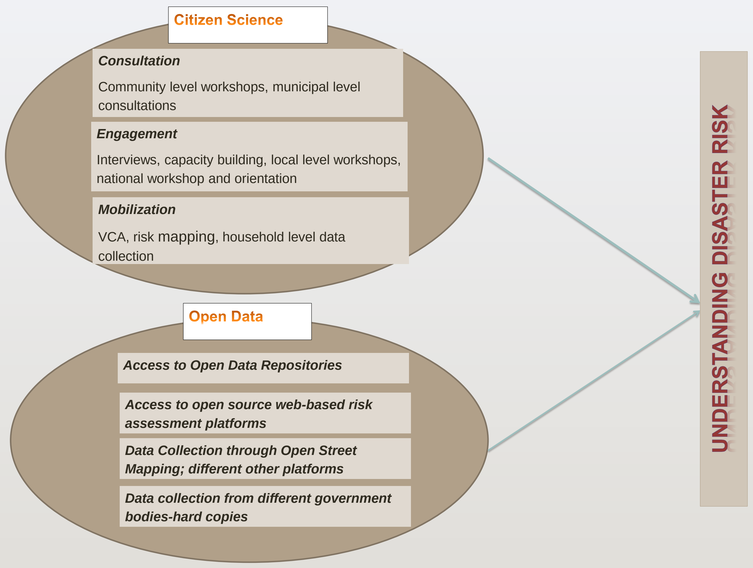
Study Area



Map by Naxa Pvt. Ltd.

- Nepal located in the Himalayan arc
- Floods and landslides- the most recurrent nature-induced disaster phenomenon
- Natural features such as steep slopes, fragile geology and the high intensity of rainfall, together with deforestation, on-slope irrigation and non-engineered road construction, magnify landslide risk.
- Ganga flood plains in the south- the recipient of all the water that flows through these mountain corridors

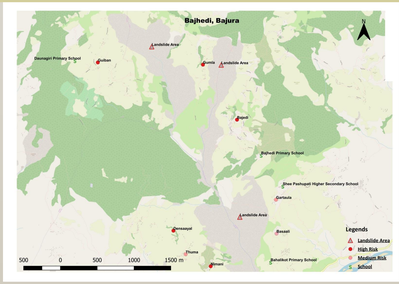
Our Approach for Using Open Data and Citizen Science in Understanding the Disaster Risk



Citizen Science in Schools

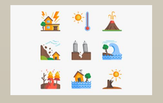
- Data Collection
- Knowledge transfer
- Use of Scientific Knowledge into Practice

Community People in Risk Mapping of the Landslide Sites



Potential Sectors to Use Open Data and Citizen Science

Agriculture - Climate Services and Agro Advisories



Disaster Risk Reduction and Climate Change Adaptation

Health and Sanitation

Socio- Economic

Current Challenges of Using Open Data In Nepal

- Lack of Open Data Policy
- Data format, Temporal resolution, Data accuracy
- Project and Program Centric Data Availability
- Data Control by Government – Cost covering strategies
- Unaware of value of using open data

Current Challenges of Using Citizen Science In Nepal

- Lack of Awareness on Citizen Science and its importance
- Reliability issues – data collected
- Rural Context
- Citizen – who? Students? Local People?
- Data collection by Citizen – not in priority

Opportunities of Using Open Data and Citizen Science in Understanding Disaster Risk in Nepal

- Recent advances on digital and spatial technologies, citizen science and open data - prompt data collection, analysis and visualization of locally relevant spatial data.
- Data from open sources and collected from citizen science - used as evidence in local development planning as well as linking in different services of the areas.
- Sustained investment in disaster risk management and resilience building.
- Current federal structure of Nepal - an acute data deficiency at the local government level in terms of data about situation analysis, demographics, and statistics, disaster impacts (hazard, exposure and vulnerability) etc.

Way Forward

- Promote and encourage of openly available data sources
- Linking open data sources in different Services
- Use of Open data for Risk Assessment, Reduction and Preparedness
- Citizen Science Use to fill the data gap- more ownership of the projects by local people
- Development of open source data platform, using it for risk assessment and preparedness actions.

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