

# Modern Approaches of Land Parcel Frequent Demarcation of Highly Flooded Prone Zone of Koshi River Basin

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**Key words:** Cadastre; Land distribution; Land management; Land readjustment; Low cost technology; Risk management; Demarcation; Conflict reduction; Frequently flooded areas; Sustainable land practices; Food security; Community resilience; Land use planning; Budget saving

## SUMMARY

This study aims to develop a systematic approach for frequent demarcation of land parcels that are highly prone to flooding in the Koshi River basins. The objectives are to demarcate agricultural and residential parcels that flood frequently, reduce the cost and conflicts associated with existing demarcation techniques, and create a spatial database of land parcels based on the local coordinate system (MUTM-87) for future reference.

The study focuses on Hanuman-Nagar municipality in Saptari district. The methodology involves analyzing satellite imagery from SAS Planet, comparing Cadastral map (free-sheet) of the same location taken at different time intervals (2 months, 6 months, and 1 year) to identify frequently flooded areas.

The expected outcomes of this study include:

- Saving budget and manpower for the District Survey Office and Local Level Government in frequent demarcation of land.
- Promoting seasonal fruit and vegetable cultivation, especially during the dry season (November-May), through effective and efficient demarcation in a short span of time.
- Implementing systematic and scientific distribution and use of land and the principles of land use planning at the local level.
- Minimizing conflicts related to the boundary area of

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parcels.

By adopting this approach, the study aims to provide a cost-effective and efficient solution for demarcating frequently flooded land parcels, enabling local governments and landowners to better manage and utilize these areas for productive purposes, such as seasonal agriculture. The creation of a spatial database using the local coordinate system will also serve as a valuable resource for future reference and decision-making processes related to land management in flood-prone regions.

The study aims to create a systematic method for identifying frequently flooded land parcels in the Koshi River basins. It focuses on Hanuman-Nagar municipality and uses satellite imagery and cadastral maps to pinpoint flood-prone areas. The goal is to reduce costs and conflicts of current demarcation methods and to create a spatial database using the local coordinate system (MUTM-87). Expected benefits include saving budget and manpower, promoting seasonal agriculture, systematic land use planning, and minimizing boundary disputes. Improved drainage, flood-resistant crops, and sustainable land practices will help farmers adapt to flood patterns, ensuring their livelihoods and food security while enhancing community resilience.

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