

# Mapping of springs and springsheds in Dailekh and Bajura

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## Introduction

Springs are vital for Nepal's mountain communities, with 80% of residents relying on them. Climate change and human activities threaten these resources, leading to significant water scarcity. This research offers crucial insights for policy improvement and strategic interventions to revive springs and ensure sustainable water use in the region.

## Research questions

- What is the current condition of springs in the selected area?
- What percentage of the total area exhibits high groundwater recharge potential, and what factors influence this potential?

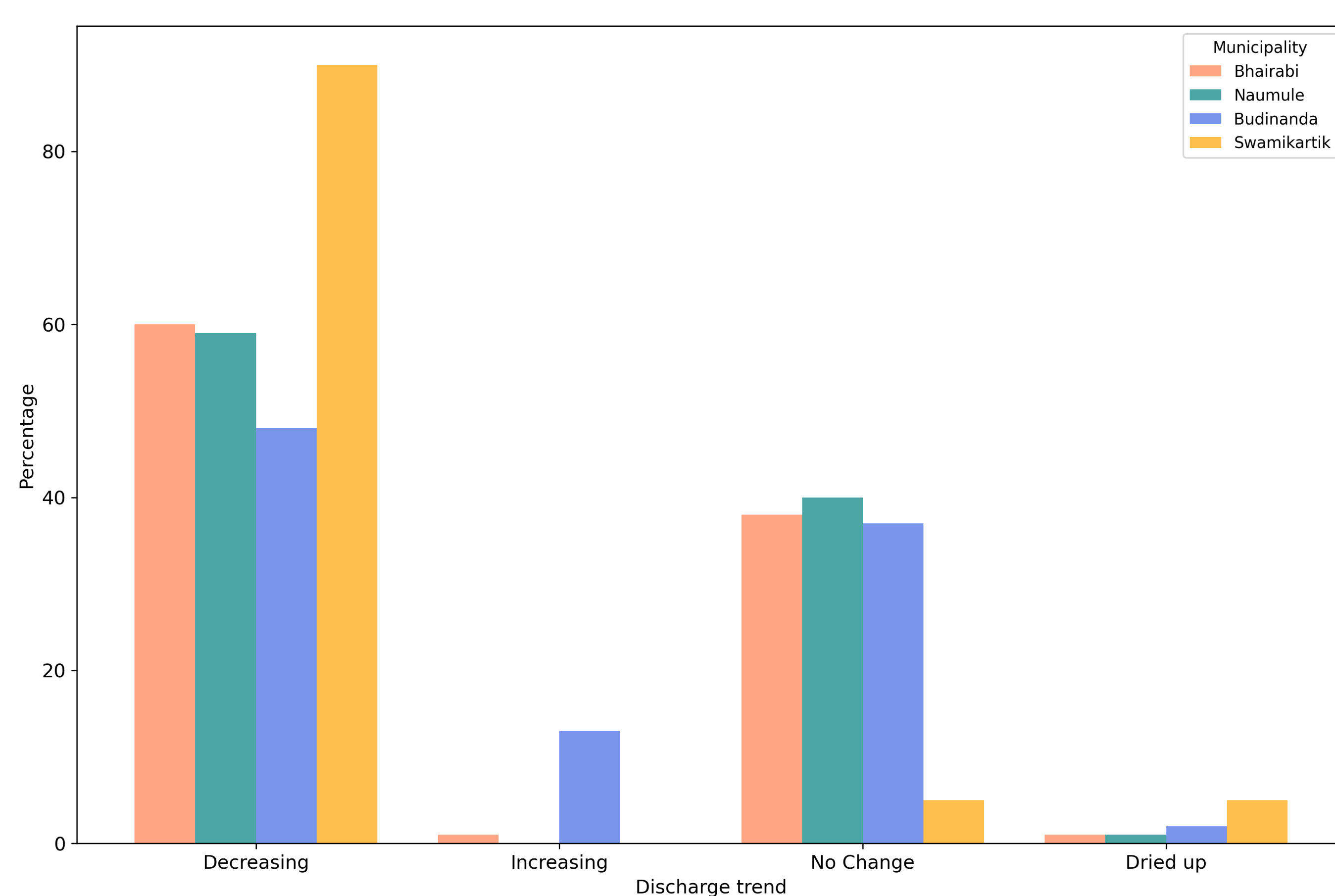
## Methodology

Community and ward-level consultations were carried out to document spring characteristics, usage, and trends over the past decade. Key informant interviews were conducted to gather information on spring management, the impacts of human activities, and climate change. Groundwater recharge potential was modeled using a Random Forest algorithm in Google Earth Engine.

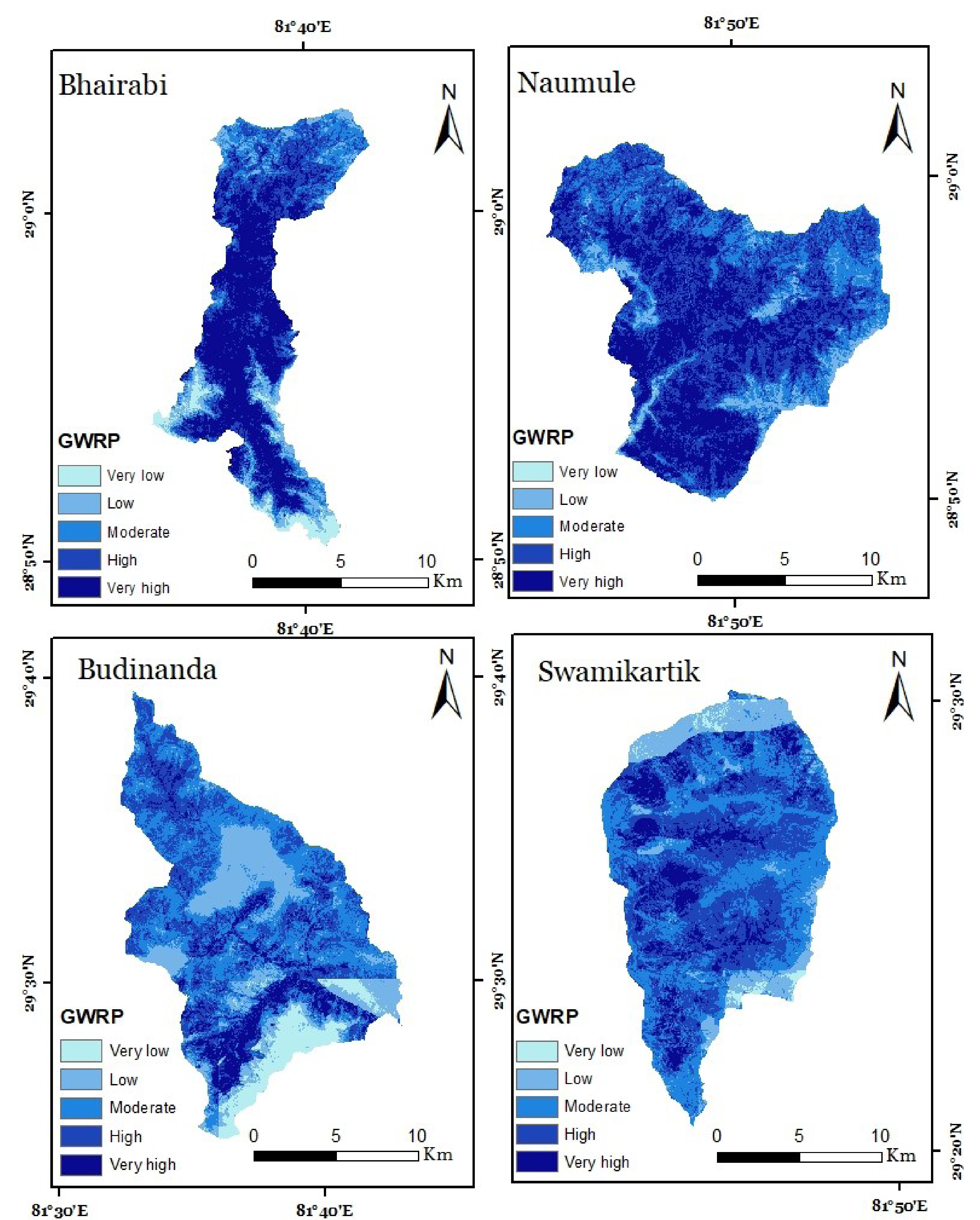
## Key findings

The study reveals that 59.8% of the total surveyed springs (60% in Bhairabi, 58% in Naumule, 48% in Budinanda, and 90% in Swami Kartik) have witnessed reduced flow in the past decade (Figure 1). Key factors include climate change and anthropogenic activities. The Random Forest Model identified 24.21% of the area as highly suitable for groundwater recharge (Figure 2).

**Figure 1** Figure showing discharge trend of springs in the study area



**Figure 2** Groundwater recharge potential map.



## Conclusion

The study found a significant decline in spring discharge due to climate change and human activities, impacting water security and socio-economic conditions. It calls for targeted policy and strategic interventions to revive drying springs and enhance groundwater recharge and sustainability.

