

Reviving drying springs in the Nibuwa–Tankhuwa watershed, Dhankuta

Springs are one of the main sources of drinking water in the Nibuwa–Tankhuwa watershed in Dhankuta, Nepal. However, these springs are drying up, so communities are following ICIMOD's six-step protocol for spring revival to:

- Improve water security
- Improve access to safe drinking water
- Reduce water-related conflicts among local communities
- Improve the wellbeing of women and girls (traditionally responsible for fetching water)
- Enhance ecosystem services
- Reduce climate risks

ADMINISTRATIVE AREAS

Dhankuta Municipality and Chhathar Jorpati Rural Municipality

VILLAGES

Hile, Guranse, Chhathar Jorpati, Bhirgau, Tankhuwa, and Thoka

TRIBUTARIES

Nibuwa, Tankhuwa, Madhuganga, Thapre, and Chyarchyare

POPULATION

33,349

AREA

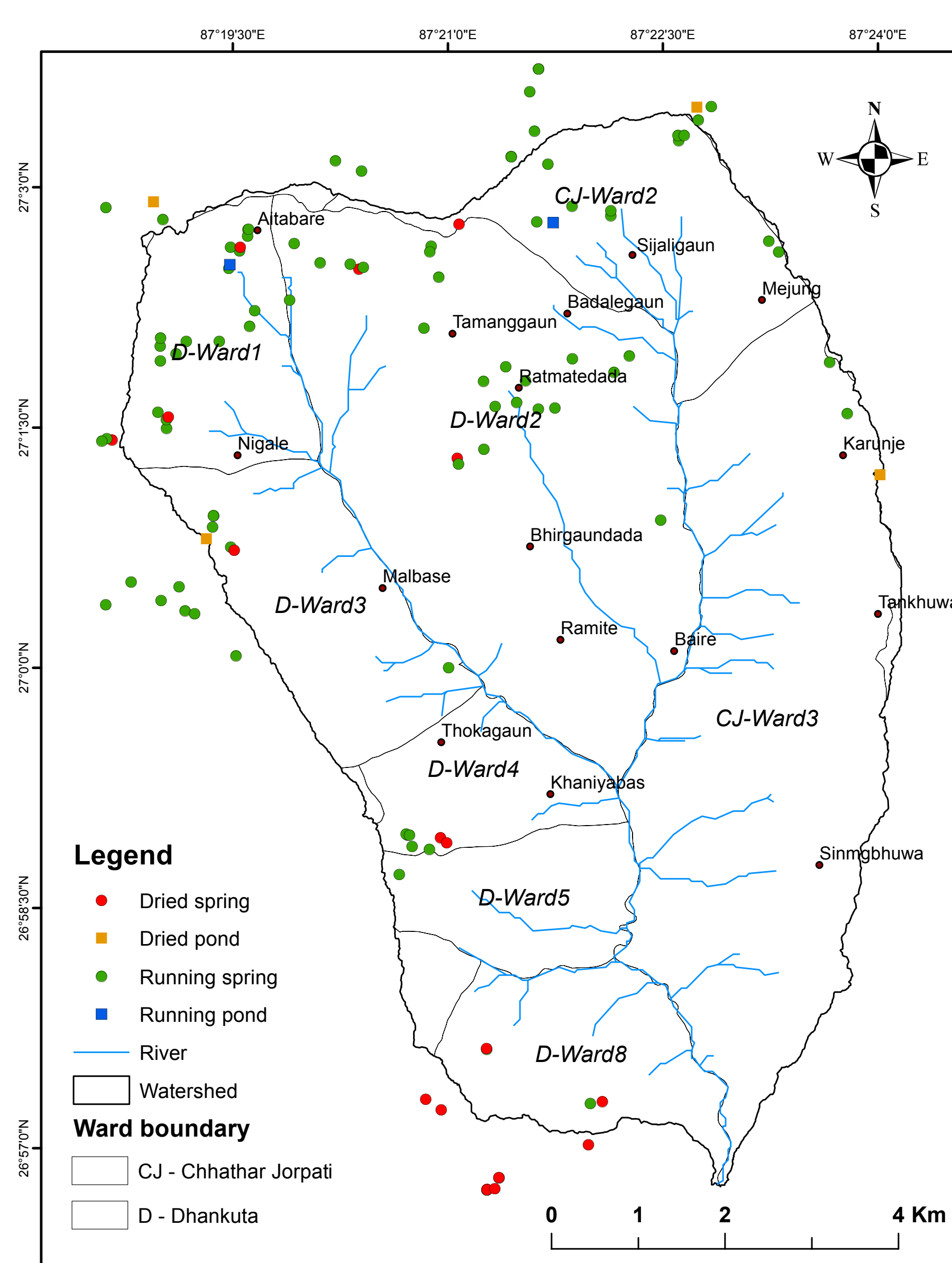
73 sq km

ELEVATION

243–2,239 masl

ANNUAL AVERAGE RAINFALL

960 mm



Water bodies mapped in and around the Nibuwa–Tankhuwa watershed

Field activities

COLLECTION OF FIELD DATA

Basic information on springs was collected, including notes on spring type and surrounding geology

In all, 6 ponds, 23 dried springs, and 74 running springs were mapped.

Spring discharge is highest in Thaapre Khola (300 lpm) and lowest in Biyesi Dhara (1.02 lpm).

Dhankuta Municipality and the Soil Conservation and Watershed Management Office practised measuring river/spring discharge and in situ water quality.

Next steps

Focus on the three identified springsheds and apply the six-step protocol.

HYDROGEOLOGY

General hydrogeological investigation was conducted.

Three locations were identified for springshed management on the basis of consultation with local authorities in: (i) Suke Pokhari, Shivalaya temple, and Dharabari Rupitar (Dhankuta), (ii) Dhoje Dada (Chhathar Jorpati), and (iii) Chuldhunga pond (Chhathar Jorpati)

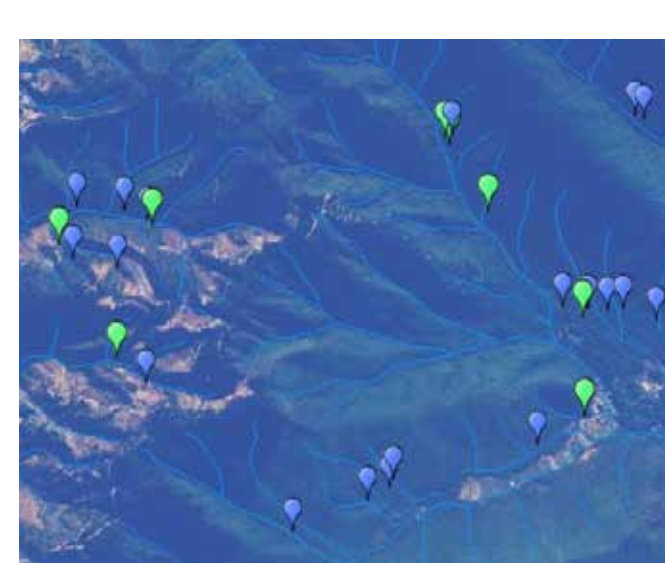
A joint field visit with local government representatives and observations in the three identified springshed areas indicated that the watershed area consists of weathered and fractured metamorphic rocks. In such rocks, water moves slowly from pores or cracks in soils and rocks to infiltrate and saturate a region depending on local climate and geology.

SOCIAL SURVEY

Various social surveys with locals and government representatives indicated that springs and traditional ponds are drying due to land use change, mining, and unplanned infrastructure development.

Twenty-nine springs were selected for seasonal monitoring in Dhankuta (wards 1, 2, and 3) and Chhathar Jorpati (wards 2 and 3), which provide drinking water for around 150 households from different ethnic groups.

ICIMOD's approach, the six-step protocol



Step 1

Comprehensive mapping of springs and springsheds



Step 2

Setting up a data monitoring system



Step 3

Understanding social and governance systems related to springs



Step 4

Hydrogeological mapping, development of conceptual layout, and identification of recharge area



Step 5

Developing springshed management and governance protocols



Step 6

Measuring impacts of spring revival activities

This activity is being jointly implemented by Dhankuta Municipality; Chhathar Jorpati Rural Municipality; Ward representatives; community members; Soil Conservation and Watershed Management Office, Dhankuta; Department of Forests and Soil Conservation, Kathmandu; District Forest Office, Dhankuta; and the Koshi Basin Initiative, ICIMOD