

**PRELIMINARY STUDY OF THE HYDROGEOLOGICAL CHARACTERISTICS OF
WATER SOURCE AND DRINKING WATER SUPPLY SYSTEM OF KYANGJING
VILLAGE, LANGTANG, NEPAL**

Srijana LAMA*, Rijan Bhakta KAYASTHA and Kumud Raj KAFLE

Himalayan Cryosphere, Climate Change and Disaster Research Center (HiCCDRC)

Kathmandu University, Dhulikhel, Kavre, Nepal

*Corresponding Author: sreejanalama@gmail.com

ABSTRACT

Spring water is a dominant source of water in the mountain region and used for household purposes widely. It is necessary to understand the characteristics and availability of spring water to make better use of water. Rainfall, land use, vegetation, grazing incidence and geomorphology of the recharge zone in the mountain watershed controls the spring discharge. Limited knowledge is present about the nature of the spring in response to rainfall, recharge zone, role of the vegetation, and land use in spring recharge. The study focus on the understanding and analysis of hydrogeological characteristics of water sources and drinking water supply system in the Kyangjing village, Langtang. Hydrological analysis of the study area using volumetric gauging method shows the discharge of the 3 different springs is 0.0243 lps, 0.0133 lps, 0.255 lps, respectively. Spring inventory has been done to study the hydrogeological characteristics of the water source. Quartzite and Gneiss are most dominant rock present in the study area. Feldspar as a dominant mineral and sand, silt, clay are also found in the springs. Among 5 springs 4 of them are identified as contact spring and remaining as the depression spring. Hydrogeological mapping has been done by using Arc GIS 9.3 to identify the recharge area of the water sources and its area. Questionnaire survey is also done to identify the water consumption pattern in the study area. The comparative study of the water consumption pattern in the tourist season and off season has been done. The average water consumed is 211 liters and 1117 liters per a household during off and tourist season, respectively. Water scarcity problem is observed during the winter season.

KEYWORDS: Hydro geological characteristics, Spring, Water consumption pattern