

The Watersheds

The Jhikhu Khola is located about 45 km east of Kathmandu on the Arniko Highway and covers an area of 111.4 sq. km, the Yarsha Khola watershed is located about 190 km east of Kathmandu on the Lamosangu-Jiri Road in Dholaka district and covers an area of about 53.4 sq.km (Figure 1). The two watersheds differ not only in size and altitudinal range (Jhikhu Khola watershed 800 to 2200 masl, Yarsha Khola watershed 990 to 3030 masl) but also in physiography. The Jhikhu Khola has a main valley with a large flat valley bottom of alluvial origin where the major land use is irrigated agriculture. Moderately steep slopes confine the watershed on the southern and northern sides and there are many pocket-like valleys on the flanks which make the watershed very heterogeneous. The general aspect of the watershed is south-east. The Yarsha Khola watershed has a general south-west aspect with a south and a north facing slope and a small middle ridge in between. There is no extensive valley bottom and irrigated areas are limited in comparison with the Jhikhu Khola. Overall the Yarsha Khola watershed appears more homogenous than the Jhikhu Khola watershed.

There is a major difference between the two watersheds in terms of access to markets for agricultural products. With the exception of staple food crops, most of the agricultural production from the Jhikhu Khola watershed is sold to Kathmandu. The products include potatoes, tomatoes, and increasingly other vegetables. Agricultural production is intense



Figure 1: Location of the Jhikhu and Yarsha Khola watersheds

with high fertiliser and pesticide inputs. The two main cash crops in the Yarsha Khola are seed potatoes and garlic, but there are no good markets for them in the area and agricultural production remains more traditional with two and up to three crops on the irrigated land.

Between 1998 and 2000, the average annual rainfall in the Jhikhu Khola varied from about 1100 mm to 1700 mm at sites located between 830m and 1700 masl; at the main meteorological station in Panchkhal (865 masl) it varied from 1167 mm to 1418 mm (Figure 2a). The average annual rainfall in the Yarsha Khola varied from 1600 to 3000 mm at sites located from 1005 to 2640 masl; at the main meteorological station in Bagar (1690 masl) it varied from 2018 to 2469 mm (Figure 2b). The temperature in the Jhikhu Khola (at Panchkhal) varied from a (night-time) low of 0°C in January and December to a (daytime) high of to 39°C in April (1997 to 2000) and in the Yarsha Khola at Bagar from a low of 0°C in January to a high of 31°C in June.

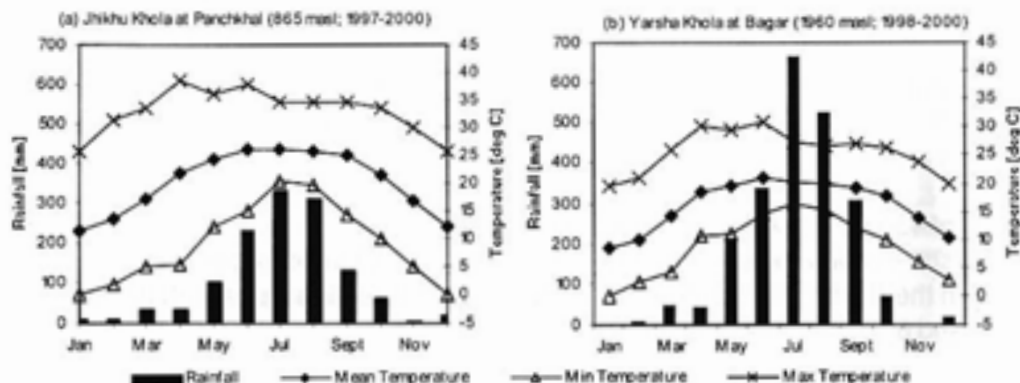


Figure 2: Average annual rainfall and temperature in the Yarsha Khola (a) and Jhikhu Khola (b) watersheds