

Physiography

The Middle Hills region of Nepal is situated immediately south of the world's tallest peaks --the Himalaya. This zone, which averages 60-100 km in width, ranges in altitude from 600-2000 m (using the limits set by Nield 1985), and much of the area is dissected by large north-south drainage systems.

Climate

The region experiences a summer monsoon from June to September when 60 to 90 percent of the annual precipitation occurs. A small amount of winter rain in November and February is followed by pre-monsoon storms from March to May (Nayava 1980). The large altitudinal variation results in not only a range of forest types, and agricultural and pastoral practices, but also a spectrum of ethnic communities (Hagen 1980).

Forests

The Middle Hills region once supported substantial forests with a large variety of plant species (Stainton 1972). Many of these forests are now reduced to small remnant stands or individual trees on agricultural land. These remnant forests often have little left that is undestroyed due to browsing and are frequently degraded by heavy lopping and coppicing (Plates 1 and 2). This loss of forest cover is not a recent phenomenon. There is evidence that the reduction in tree cover and forest area has been in progress for several centuries (Mahat, Griffin, and Shepherd 1986a,b, 1987a,b).

Agricultural Land Use and Settlement

Nepal is mainly an agricultural country, 83 per cent of the population are rural dwellers farming small areas of land at near sub-

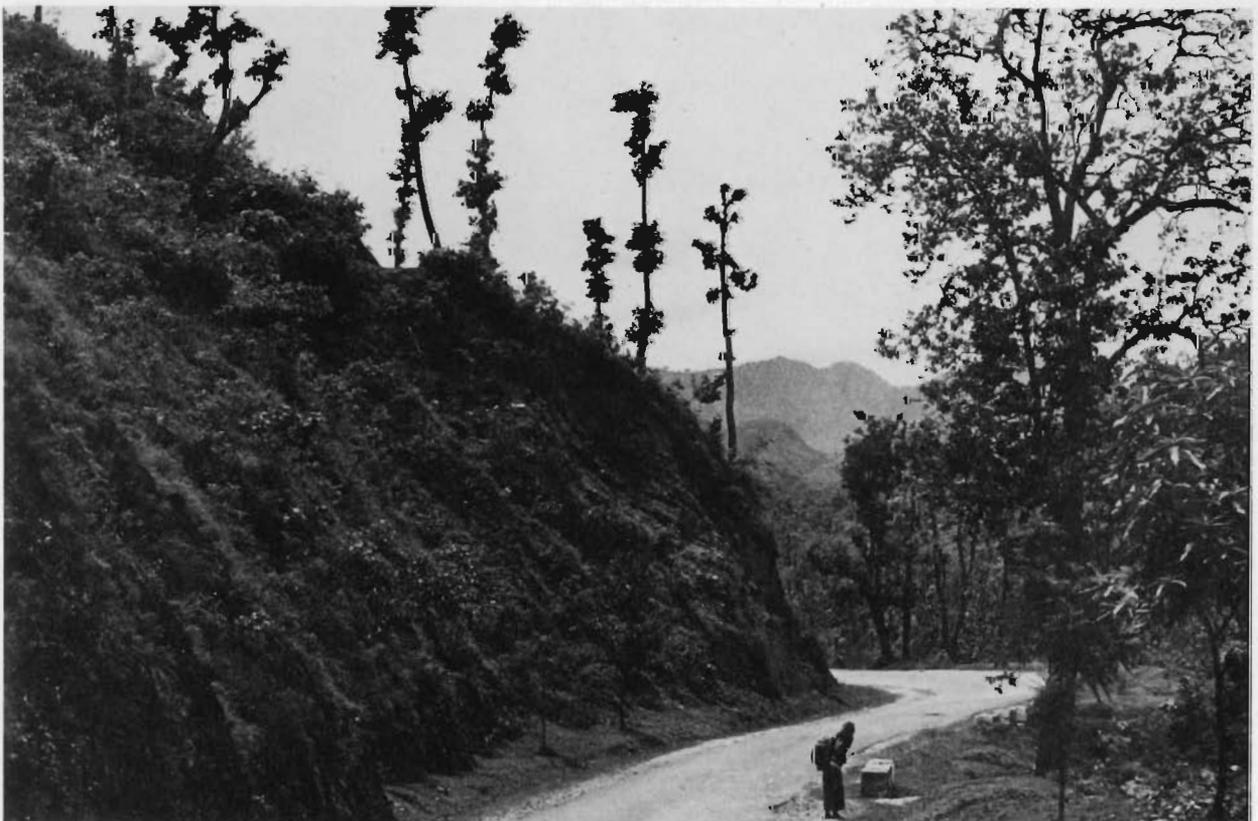


Plate 1. Remnant broadleaf forest, that has been heavily lopped for animal fodder.



Plate 2. Remnant stand of *Pinus roxburghii* with little understorey development and degraded shrub forest in the background.

sistence levels. The amount of agricultural land in the Middle Hills is only 27.5 per cent, (Table 1). Most capable land is already being cultivated. The remaining land is incapable of supporting cultivation due to limiting factors such as soil type and depth, aspect, slope and altitude.

Heavy land-use pressure has resulted in extreme terraced agriculture. Abandoned terraces are common in many areas, indicating the farmers' inability to maintain productivity at acceptable levels. There is very high and increasing pressure on a limited, almost completely utilized area of arable land.

The World Bank (1979) estimated that the ratio of persons/ha of arable land varied from 15.76 in the Middle Hills to 3.79 in the Terai, and that the average farm size per family is

less than 0.4 ha.

Most arable land up to 2000 m is used for growing grain on irrigated or rainfed terraces. The majority of farmers also keep livestock. Studies in the central Middle Hills have estimated the number of large animals, cow and buffalo, per household to be between 3.7 - 9.4 (Table 2). Wyatt-Smith (1982), quoting studies in west-central Nepal, estimated there to be about one large animal per person (5-6 per household) in hill regions. Most households also keep about four small animals each, generally goats but sometimes sheep, (Mahat 1985). Large animals provide milk, manure and draught power for ploughing, while small animals are kept for meat and wool. Manure is very important as it is frequently the only form of fertiliser applied to agricultural land.