

Chapter Two

Harvest, Consumption, and Availability of Woody Plant Resources

In this chapter, I assess the harvest and consumption of woody plant resources at a small (10 households) and relatively recent (~100 yrs) Sherpa settlement in the Temperate Sikkim-East Nepal Himalaya, and I investigate how these harvests have impacted availability of forest resources near the village. Households annually consume 12.2 metric tons of felled fuelwood, 1860 kg of tree fodder, 45 m³ of forest litter, and ~690 culms of bamboo. Consumption is sometimes correlated with household wealth, size, or number of livestock, but frequently not. Preferred fuelwoods are *Quercus lamellosa*, *Quercus oxyodon*, *Myrsine semiserrata*, and *Viburnum erubescens*, but average-ranked *Alnus nepalensis*, *Lyonia ovalifolia*, and *Rhododendron arboreum* account for 87.5% of fuelwood consumed. *Michelia kisopa* is the primary timber species. Preferred tree fodder species are *Schefflera impressa*, *Ficus neriifolia*, *Persea* spp., *Michelia kisopa*, and *Litsea elongata*. Woody plant species that regenerate quickly in relation to harvest rate are available closer to the village: pollarded stems are harvested at an average distance of <200 m, felled fuelwood 284 m, leaf litter 320 m, tree fodder 475 m, timber 550 m, and bamboo 1300 m. Felling of large late-successional trees for timber or fuelwood opens mature forest canopies, increasing the abundance of pioneer tree species. Harvesting selected size classes of trees distorts the natural age distribution of stands, compromising their future regenerative capacity. Livestock grazing exacerbates these impacts by limiting reestablishment of seedlings. I suggest ways to lessen the impact of woody plant harvest and increase the availability of high-value resources, but many economic, institutional, and cultural obstacles must be overcome to successfully implement them.