

Chapter 18

CO-MANAGEMENT PROCESSES TO MAINTAIN LIVESTOCK MOBILITY AND BIODIVERSITY IN ALPINE RANGELANDS OF THE TIBETAN PLATEAU

Camille E. Richard

International Centre for Integrated Mountain Development, G.P.O. Box 3226, Kathmandu, Nepal; email crichard@icimod.org.np

1. INTRODUCTION

The Tibetan Plateau is an uplifted geographical region that is encircled by the western Karakorum massif, the northern Kunlun mountains, the southern Himalayas, and a multitude of deeply incised mountain ranges that drain the Plateau to the east (Gurung 1999). The plateau is primarily located in western China (Tibetan Autonomous Region, Qinghai, Gansu, Sichuan and Yunnan Provinces), but also extends into parts of northern Pakistan, northwest and northeast India, northern Nepal and northern Bhutan. Encompassing about 1.65 million sq. km. and with an average elevation exceeding 4000m, it is the world's highest, and certainly one of the most important rangeland landscapes, possessing distinct cultural and biological resources (Miller in press). Vegetation types range from cold deserts to semiarid steppe and shrublands to alpine steppe and moist alpine meadows and forests, which support a rich array of unique floral and faunal assemblages. Given its conservation significance as one of the most outstanding and diverse alpine ecosystems, WWF has identified the Tibetan Plateau as a site of "global significance" and nominated it to be one of its Global 200 Ecoregions (Olson and Dinerstein 1998, Sherpa 2000).

Despite the dry and cold climate, these rangelands are also quite productive and provide forage for an estimated 12 million yaks and 30

million sheep and goats, which in turn support the livelihoods for about five million Tibetan pastoralists and agropastoralists (Miller *in press*). The people of this region have sustained themselves in one of the harshest landscapes on earth, relying on extensive and opportunistic mobility of livestock to procure forage from native grasslands and shrublands and through cultivation of a rich knowledge base, including elaborate mechanisms to collectively manage resources.

These “Common Property Regimes” (CPR’s), where a select group of people possess either formal or informal rights to access and manage a particular set of resources, have been documented as an effective institutional means to manage common pool resources such as forests, pastures and water (Agrawal 2001). These indigenous systems are especially apparent across marginal dryland regions of the world as an adaptive strategy to survive a harsh and uncertain environment. Despite rhetoric to the contrary, extensive livestock grazing and the diverse array of CPR’s to manage human and livestock movement have been shown to help maintain floral and faunal diversity in rangeland environments, especially if pastoralists can maintain a degree of mobility that fosters optimal use of pasture resources (Steinfeld *et al.* 1997, Naimen–Fuller and Turner 1999). Fortunately, many local institutions are still in place that regulate spatial and seasonal access to pasture resources in the remote rangeland regions of the Himalaya and Tibetan Plateau (Goldstein and Beall 1990, Rai and Thapa 1993, Ura 1993, Richard 1994, McVeigh 1994, Saberwal 1996, Wu 1997).

Despite their skills, pastoralists of the Tibetan Plateau, like those throughout the world, face a number of growing challenges that constrain them from exercising their full traditional rights and practices (Miller 1995, Wu and Richard 1999, Naimen–Fuller and Turner 1999). These include natural factors such as desiccation of pastures due to changing climate, and significant loss of livestock during severe drought or excessive snowfall events. In addition, livestock mobility is increasingly becoming restricted due to a number of socioeconomic factors, such as regional population increase, generally poor infrastructure, social services, market access for mobile communities, increasing education and employment opportunities outside the pastoral sector, and a shift to a more monetary economy.

Government policies and development programs also impact the way local pastoral communities access and manage rangeland resources. Although often well-meaning, these programs are driven by a general disdain for “backward” and “irrational” nomads and a poor understanding of the efficacy of pastoral production systems amongst policy makers who hail from agricultural areas (Zhang 1989, Wu and Richard 1999). Such actions, depending on the geopolitical environment, include (Naimen–Fuller and Turner 1999): (1) appropriation of the more productive pastures by the state