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# Why do Tibetan pastoralists hunt?

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ABSTRACT

The Tibetan nomads in the Aru Basin have until recently relied on hunting as an additional source for subsistence. They hunted the endangered Tibetan antelope or chiru (*Pantholops hodgsoni*), blue sheep (*Pseudois nayaur*), Tibetan gazelle (*Procapra picticaudata*), wild yak (*Bos grunniens*), and kiang or Tibetan wild ass (*Equus Kiang*) both for extra meat, pelts, and for cash. However, in the 1993 a general ban on hunting wildlife was declared, due to the recent dramatic decline in wildlife populations on the Tibetan Plateau. This paper argues that the repeal of traditional hunting, which was an integral part of the pastoral economy, has created an unbalance in the nomads' economic system that needs to be addressed if nomadic pastoralists and wildlife in the region are to coexist in the future.



## 1. Introduction

Additional sources for subsistence, like hunting, can work as risk management strategies in variable and unpredictable environments. Following Cashdan (1990), risk can be seen to have two different aspects. First, risk may be defined as unpredictable variation in ecological or economic variables, and outcomes are viewed as riskier depending on their degree of variability. Second, risk may be related to the probability of loss, i.e., situations when falling below a minimum level of income or food intake is likely. Empirically speaking, the two aspects are not that different, like in the Aru Basin in North-Western Tibet, where unpredictable variations in ecological conditions, especially snow (Yeh et al., 2014), may increase the probability of falling below a minimum subsistence level (Næss, 2003).

Halstead and O'Shea (1989) argues that societies, in general, employ a wide range of strategies, called 'buffering mechanism', to counteract scarcities, including everything from myths to alternative modes of subsistence. Following Halstead and O'Shea (1989), strategies for countering risk can be grouped into 4 major categories: (1) *diversification*, ranging from the keeping of multiple livestock species (e.g., Khazanov, 1994; White, 1997) to investing in non-pastoral activities (e.g., Bayer and Waters-Bayer, 1990; Berzborn, 2007; Lesorogol, 2008; Mearns, 2004; Sperling, 1987; Thornton et al., 2007); (2) *livestock exchange networks*, such as stock-friendship (e.g., Bollig, 2006, p. 287; Göbel, 1997; White, 1997); (3) *mobility*, e.g., taking advantage of spatiotemporal heterogeneity in available forage (e.g., Behnke et al., 1993; Bollig and Göbel, 1997; McCabe, 1997; Næss, 2013; Thompson et al., 2008); and (4) *storage*, e.g., large herd size (Bollig and Göbel, 1997; Hjort, 1981; Næss and Bårdsen, 2010,2013; Næss et al., 2011; see e.g., Colson, 1979 for other categories). The underlying logic of these strategies is to minimize the impacts of risks and to reduce uncertainties[1] (Bollig and Göbel, 1997). The strategies usefulness depends on the social and environmental context, including both the structural characteristics of the society at large and the structure of resource failure the society is likely to experience (for a short review of other buffering mechanisms, see Bollig, 2006, p. 13–4).

This paper will show that for Tibetan nomads hunting, especially of the Tibetan antelope or chiru[2] (*Pantholops hodgsoni*, Tib.: *gtsod*[3]), can be understood as a risk management strategy where

[1] Risk and uncertainty are fundamentally different, e.g., uncertainty (or incomplete knowledge) can by definition be overcome by acquiring more information (Winterhalder, 2007).

[2] Because it is not an antelope (Gatesy and Arctander, 2000; Vrba and Schaller, 2000), the commonly used derivation from what is supposedly a local Tibetan name, "chiru", is used in the present study. However, the common name used in Tibetan is "*tso*" and not chiru, but chiru will be used here for simplicity (see Huber, 2005 for detailed discussion).

[3] Tibetan names are given both in simple phonetic form and proper Tibetan spellings when known, according to the Wylie (1959) system of transliteration. The Wylie form is written in italic.

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hunting must be understood as a category of diversification. While diversification includes a broad range of both passive and active practices, the underlying principle is that broadening the base of the subsistence system, either by using a wider range of plant and animal species or by exploiting broader and more varied areas (i.e., niches), reduces the risk of catastrophic shortages (Halstead and O'Shea, 1989).

## 2. Methods

The research reported here is based on three 2–6 week visits to the Aru Basin (Fig. 1), in June 2000, September/October 2000, and May/June 2001. Information was gathered primarily through in-depth interviews with 10 out of 35 households in June 2000, 15 out of 28 households in September/October 2000, and 15 out of 23 households in May–June 2001. Informal interviews were made with all households present in the basin during one of our three trips, and interviews with local leaders and Tibet Autonomous Region (TAR) Forestry Bureau officials was also undertaken (for details, see Næss, 2003; Næss et al., 2004).

### 2.1. The Aru Basin and the Chang Tang Nature Reserve

The Qinghai–Tibetan Plateau (QTP) reaches around 1500 km North-South and around 3000 km East-West, and is around 2.5 million km$^2$. Over 80% of the plateau is located above 3000 m in elevation, and about 50% is >4500 m (Miller, 1998; Schaller, 1998b). The Tibetan nomadic pastoral area encompasses a sub-region where the rangelands of the QTP includes all of TAR and Qinghai, most of the rangeland areas of Gansu and Sichuan, and parts of southern Xinjiang; an estimated 1.6 million km$^2$ (Miller, 2000). During winter, temperatures around −30 °C are not uncommon and snowstorms occur even during summer (Schaller, 1996), and might have severe negative effects on both livestock (Goldstein et al., 1990; Nori, 2004; Næss, 2003, 2013; Yeh et al., 2014) and wildlife (Schaller and Ren, 1988). Annual precipitation varies from 700 mm in the east to less than 100 mm in the west, mostly falling as snow and hail during summer (Miller, 1998). An estimated 12 million yaks and 30 million sheep and goats inhabit the Tibetan Plateau supporting around 5 million pastoralists and agropastoralists (Harris, 2010, p. 3; Sheehy et al., 2006, p. 143). Tibetan pastoralism is found at elevations of 3500–5400 m, in environments too cold for crop cultivation but which supports extensive, productive rangelands where nomads continue to thrive (Barfield, 1993; Goldstein and Beall, 1990; Næss, 2003; Næss et al., 2004).

The ca. 300,000 km$^2$ Chang Tang Nature Reserve (Fig. 1) was established in 1993 (Miller and Schaller, 1996) to protect the endangered chiru, and other wildlife inhabiting the Tibetan Plateau (Schaller, 1998b). The Aru Basin is approximately 2300-km$^2$ with most of its area lying >5000 m. The basin is northwest-southeast trending, encompassing two lakes, Aru Co (4960 m) and Memar Co or Di-Ngorok Co (4940 m). The 6000 permanently snow-covered mountains along the western edge of the basin create a moist and productive environment compared to other areas on the Chang Tang Plateau (meaning "the Northern Plateau"), and consequently the basin is an attractive place for both wild herbivores and nomadic pastoralists. The Aru Basin is an important wildlife area in the Chang Tang Nature Reserve (Schaller and Gu, 1994), and parts of it have therefore been designated as a core area for wildlife protection within the reserve (Bårdsen and Fox, 2006; Fox and Bårdsen, 2005; Fox et al., 2009; Fox and Dorji, 2009; Fox et al., 2004).

### 2.2. The Aru nomads

While the Aru Basin have probably used for several thousands of years by nomadic hunters and by nomadic pastoralists for perhaps the past thousand years, little is known regarding this early phase of use (but see Fox and Dorji, 2009; Huber, 2005 for the surrounding area). Hedin (1903) met nomads in a valley southeast of the Aru Basin, in the beginning of the 20th century. At this time the basin had a reputation of being inhabited by bandits and robbers. According to Rawling (1905) 5 bandits were caught and beheaded in this area by Tibetan officials at the beginning of the 20th century. Deasy (1901) also reports that his camp was attacked and looted for baggage and animals in this area at the end of the 19th century. One of the Aru nomads actually claimed that his grandfather had played a part in the robbing of "a few foreigners" at this time. It is thus likely that these "bandits" were in fact nomads that raided a camp of foreigners because the opportunity for extra income presented itself.

According to the old Aru nomads, their forefathers used the basin seasonally. The exact timeframe for this use is somewhat uncertain, but present inhabitants claim that their ancestors have used the basin for at least the last 200 years. Although they were nomadic pastoralists, the main reason for using the basin was its great hunting opportunities; wildlife was abundant. Accordingly, the basin was used mainly during winter, when hunting was at its peak. However, the extent of the use of the basin is unknown, local estimates ranges from 10 families to 200 families (Næss, 2003). Human presence in the Aru Basin for a substantial amount of time is further witnessed by the fact that one of the oldest nomads claimed that the basin was under the jurisdiction of the Sera monastery in Lhasa prior to the Chinese occupation in 1959[4]. This area was formally recognized by the authorities since as subjects of the Sera monastery in Lhasa the Aru nomads were obligated to pay a part of their production to the monastery as annual taxes[5].

Although a small number pastoralists and hunters have used the Aru Basin for several thousand years, its use has changed in recent time. During the Cultural Revolution[6] in western Tibet, nomads in the Aru Basin were relocated and the area was left uninhabited for around 15–20 years. During this period private ownership of animals was banned and nomads were settled in communes close to already existing government centers (Næss, 2013; Næss et al., 2004). From the early 1990's and onwards, pastoralists moved back into the basin, and today administrative responsibilities for the basin is divided between two counties (Chin.: *xian*), namely Rutok and Gertse (Fig. 1). During the summer of 2000, counts and interviews indicate that the basin is inhabited by around 222 nomads with 10,000 sheep and goats and 500 yaks. During autumn and winter[7] in 2000, there were 127 nomads in the basin, with 7000 sheep and goats, and 330 yaks (Næss, 2003; Næss et al., 2004). The use of the basin changes seasonally, with the highest density of both livestock and people during the summer (see Fig. 2 for distribution of livestock numbers across households).

[4] In 1950 the People's Liberation Army (PLA) embarked upon what has been termed the 'Liberation' of Tibet from imperialistic and feudal influences. They quickly succeeded in making the Tibetan government to accept a '17 Point Agreement for the Peaceful Liberation of Tibet'. This agreement left the old politico-economic system intact, in exchange for Tibet's acknowledgement of Chinese sovereignty over Tibet. This agreement was more or less intact until 1959, when the Dalai Lama, fearing that the autonomy guarantied in the 17 Point Agreement would not be kept by the Chinese, fled into exile in India. From then on, PRC assumed direct and complete control, and the old political system in Tibet came to an end (Goldstein et al., 1990; Shakya, 1999).

[5] A household owning 100 heads of livestock could choose to pay in live animals (1 yak or 6 sheep or 7 goats), butter and cheese (around 2.5 kg of cheese or 5 kg butter), or one bag of goat cashmere wool (see Næss, 2003).

[6] A campaign to destroy the four olds, i.e., old ideas, old culture, old customs and old habits (see Shakya, 1999), lasting from around 1972 to 1983 in this area (Næss, 2003).

[7] However, the number of people and animals within the basin during winter is extrapolated from the numbers from autumn since no data is currently available for that season.