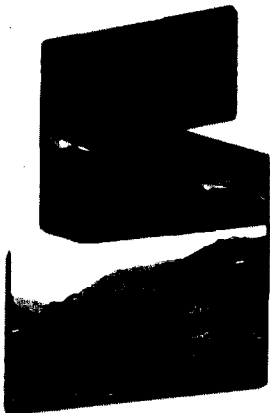


Yak production in central Asian highlands

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A probe into the pastoral production system in Hongyuan, eastern Qinghai–Tibetan Plateau

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Summary

This paper describes the pastoral production system and its problems in Hongyuan County, eastern Qinghai–Tibet Plateau. Three different pastoral production systems existed in 3 periods: the traditional period (up to 1958), the collective period (1958–1983), and the privatisation period (from 1983 onwards). Duration, facts and figures, the management system, tenure and tax, and gender-based labour division for each period are discussed. It has been indicated that:

1. Settlement is an inevitable trend of development, but livestock mobility is still required so that nomads do not feel increasingly marginalised and neglected by global progress;
2. Since rangeland was divided among individual households and fenced, nomads now have a stronger feeling of ownership than before, which usually leads to better rangeland management and reduces conflicts among people;
3. Livestock and rangeland management during the privatisation period raised new problems for nomads, including questions relating to optimal herd size and rotation on family pastures. To reduce tax amounts, nomads are unwilling to tell census representatives how many livestock they actually have, which prohibits decision-makers from acquiring accurate information pertaining to rangeland use, and as a result, far inadequate preventive medicine against some infectious diseases are ordered. Winter pastures of some households are overgrazed;
4. Gender-based labour division in pastoral areas is more obvious than in any other area of China. Women perform most productive and reproductive activities, but men are the household decision-makers. The gender gap has widened since the fencing of rangeland because men have more leisure time and are even tending to transfer their traditional duties to women.

Keywords: Gender, pastoral production system, Qinghai–Tibet Plateau

Introduction

Located between 75°–103°E and 25°–37°N, the Qinghai–Tibet Plateau occupies 143 administrative counties (cities) of the Tibetan Autonomous Region, Qinghai, Gansu,

Sichuan and Yunnan Provinces. The plateau has a total area of about 2 million km², which makes up about 21% of the country's territory. Owing to high altitude and related harsh environment, crop cultivation is not practical in most areas of the plateau, and livestock grazing offers the most feasible land use for hardy animal breeds such as those of yak and Tibetan sheep tolerant to the cold. Animal husbandry is the representative economic mainstay throughout the plateau, which has supported Tibetan nomadic pastoralists for thousands of years. The output value of animal husbandry approached 35.03% of the Gross Agricultural Output Value (GAOV) of the plateau in 1990, which was only 2.01% of the state GOAV in the same year (Su and Huang 1996). The area is vast and isolated in a very low economics, while the environment on the plateau has deteriorated. Nomads, at the same time, are feeling marginalised and neglected by global progress. The search for an optimal alpine socio-ecosystem requires that the production system and problems existing in pastoral Qinghai-Tibetan Plateau must be well understood. This paper is based on the authors' long-term working experience and recent intensive investigation in Hongyuan County (in Aba Tibetan and Qiang Autonomous Prefecture, Sichuan Province) of the eastern Qinghai-Tibet Plateau.

Major production systems

Traditional period

Duration, facts and figures

The traditional pastoral production system existed in Hongyuan until the Democratic Reform in 1958. With low population and livestock density, the traditional system had been able to retain its mobility and flexibility in adapting to the harsh environment, and no major changes occurred in the system for thousands of years. The total number of livestock in Hongyuan in 1959 was 130,120, among which 76.68% were yak, 7.03% horse and 15.98% sheep (Editing Committee 1996). The average survival rate of young livestock was about 50%, and it was not uncommon for all the livestock of a household to die in a natural disaster. Yak cow, the base to maintain herders' life, consisted the majority of smaller herds.

Management system

The tribal leader had unique decision-making privileges pertaining to rangeland use. Pastures were reallocated to subtribes every year in the spring based on subtribes' subordinating relationship with the tribe, and had little to do with the number of livestock. At the same time, the tribal leader also determined the grazing routes when rangeland was reallocated. Usually livestock would be moved to the summer pastures in late April and returned to winter pastures in late October. As a rule, the tribal leader's livestock would be moved ahead of the others, anybody else violating the rule would be fined. Specially assigned guards protected the private pastures, and free access was prohibited. In most cases,

5-6 movements in the summer pasture took place every year, and collective rites were performed for safety when returning to the winter area.

Tenure and tax

All of the rangeland in Hongyuan belonged to different tribes and the tribal areas had distinctive natural boundaries. Tribes were regional organisations, which functioned on the basis of blood relationship. Pastures within a tribe were used in common, except those areas owned by tribal leaders, pasture-lords and monasteries. Individuals held access rights and were obliged to protect the common pasture of the tribe. All livestock were privately owned, with about one-fifth of the households possessing enough livestock to meet their household consumption needs after being taxed. Tax was taken from adult milking yak cow only and the amount for each was about 1 kg butter/year. Most pastoral households in Hongyuan owned some livestock but not enough to maintain them and so they had to rent additional yak from pasture-lords or monasteries for survival. The rental for each yak cow was about 12 kg butter/year (about 60% of the total production). Other households survived by being hired by tribal leaders, pasture-lords and monasteries. All employees maintained their personal freedom and could pasture their salaried livestock, if any, together with their employers' herds.

Gender-based labour division

Gender-based labour division was obviously formed in the long pastoral history. Men were the household heads and dealt with important family affairs. They were responsible for grazing, transporting pack animals, moving tents and fighting. Women's main tasks were milking, cooking, butter churning, fuel collecting, wool spinning and weaving.

Collective period

Duration, facts and figures

The collective period lasted in Hongyuan for 25 years, from 1958 to 1983. Two types of collective production were set up during the Democratic Reform in 1958. One was 'Mutual Aid Artel' (1958-1973) followed by 'People's Commune' (1973-1983), and another was the State-Owned Farm. Production units were artel and farm of 'Mutual Aid Artel' and State-Owned Farm, respectively, whereas 'People's Commune' had two levels of production units as commune and brigade (under commune). All local people were forced to turn over their livestock and most of their property to the collective by shares. About 72.74%, 20.70% and 6.55% of Hongyuan's total 143,508 livestock in 1960 belonged to artel, state farms, and individual households, respectively. Livestock numbers kept increasing during this period and reached 486,500 by 1983 (Editing Committee 1996).

Management system

Livestock owned by collectives were usually divided into different groups, like milking cows and their calves, young yak (2-3 years old), bulls, non-milking cows, castrated and ready to offtake yak, breeding animals etc. Labour forces on the farm or artel were accordingly divided into different groups, each having its own target livestock group. The leadership group of a production unit decided the division of tasks and grazing routes.

Tenure and tax

Most livestock and pasture during the collective period belonged to the state or the collective. The collective owned all the means of production, and people accomplished their assigned tasks to earn work-points. Payment was given to individual households once a year according to the share and total work-points of family members.

Gender-based labour division

From the 1950s to the 1970s, women in China were highly encouraged to do the same activities done by men. In pastoral Hongyuan, however, traditionally formed gender division of tasks still existed during this period. Five or six women and one man formed one grazing group, and were responsible for about 100 milking cows and their calves. Women in the group were responsible for milking, butter churning, and calf herding, whereas the man herded the cows. Three to four men formed a grazing group for non-milking cows. The rest of the men and unmarried girls (women would not be assigned into a grazing group until they were married) were assigned tasks like guarding artificial grassland, cutting grass, collecting herbal medicine, and so on.

Privatisation period

Duration, facts and figures

Since 1983, the privatised pastoral production system in Hongyuan is still seeking a way to achieve sustainable development. All livestock owned by collectives were equally distributed to individual households according to the number of family members regardless of their age and sex. The introduction of household livestock contracts stimulated pastoral productivity greatly, but most households tried to raise as many livestock on common pasture as they could. In 1995, as one of the 25 selected pastoral demonstration counties, 'Integrated Socio-Economic Development' was initiated in Hongyuan. Rangeland was divided among individual households or household groups (from 10-20 households). Each household was required to build a house, an animal shed, and a hay storage barn as well.

Management system

Herders no longer need to work together in groups as they used to in past decades. About 40% of nomad households have settled down in one plot of pasture all year round, while the remaining 60% have one plot of winter pasture near the township or village office and share one faraway large plot of summer pasture with others in the household group. Each household can decide its own livestock number and composition, as well as when and where to graze within its pasture holding. Most households herd their livestock from November to next June on their winter pasture and keep moving on summer pasture from July to the end of October. Some households who have only two plots of pasture take non-milking cows to their summer pastures, while a few without much livestock are reluctant to move to their summer pasture at all, regardless of the time of a year.

Tenure and tax

Herders have to sell at least 1.25 kg meat/yak per year to the county slaughterhouse, pay 2.0 RMB Yuan/yak per year (US\$ 1 = 8.2 RMB Yuan during this survey) and 1.5 RMB Yuan/hectare per year to the collective after livestock and rangeland are ranches to individual households. Rangeland tenure of state farms still belongs to the state. The tax for livestock contracted to individual households on state farms is: 12.5 kg milk and 2.25 kg meat/cattle per year; 0.5 kg meat and 0.35 kg wool/sheep per year. Certain herd increasing rate on state farm is also required.

Gender-based labour division

Because most of the winter pasture and some of the summer pasture of individual households are fenced, many men were freed from their traditional grazing duty. Now men have more leisure time and are more involved in commercial activities than before, whereas women are still busy with milking, collecting yak dung, making butter and even grazing. The daily working hour of most pastoral women in Hongyuan exceeds 16 hours.

Issues identified

Settlement

The settlement of nomads does not mean that livestock grazing occurs in small areas all the time. Most nomads stay at their winter house during the long winter, but arrange to herd their livestock in different parts of their pasture on a rotational basis, whether or not they have joint or separated pastures. Without exception, nomads in Hongyuan set up their tents and move 3–6 times during the summer. Some nomads are even thinking of fencing their pastures into small plots for rotation every 7–10 days. In that way, they say, pasture can be used most effectively and in such a way that damage is minimised.

The settlement of nomads is undoubtedly an inevitable trend of development, though it seems impractical at the present time to let nomads settle down completely as some officials

suggested. Nomads' own perspectives as developing partners should be considered and strengthened by researchers and decision makers. It will be very hard for nomads to have access to public services like medicine, education and markets, if they do not settle down. Settlement of nomads, local officials say, can also help to seek gender equality and equity through policy and training courses to both men and women, otherwise women have little chance to access. It is also difficult to improve infrastructures, like roads, electricity, water and shelter, without settled dwelling places.

Land tenure

Most pastures in Hongyuan have been divided among individual households or household groups (state farm pasture and parts of the summer pasture) with leasehold of 50 years. A 30 m wide land (pasture) along the main road, 5 m wide migration routes, some water resource areas and unusable rangelands have been left for common use. Many households have their own pastures fenced and have made them inaccessible to others' livestock. Pasture use between households is regulated by renting, at the rate of 30 RMB Yuan/ha per year for common natural pasture. Some nomads rent other's pasture to protect or fallow their own even though they have enough pasture for their livestock. Very few pasture hosts care how many or how long livestock graze on their pasture within a year. Since rangeland was divided among individual households, nomads now have a stronger feeling of ownership than before, which usually leads to better management.

Most pastures divided among household groups are not fenced yet. The household group determines the grazing schedule and migration routes. The decision as to where each household will set up tent in the common pasture is made through discussion or drawing lots. The livestock of each household group can graze freely within the boundary, which is usually unseen by outsiders. However, when livestock graze in other administrative pasture, conflicts, including quarrels, fights, and theft of livestock, frequently occur. The fencing of pasture actually considerably reduced such conflicts.

Livestock and pasture management

The total number of livestock in Hongyuan was 486,500 in 1983, but the number dropped to 387,000 in 1999—16 years after livestock had been contracted to individual households (Editing Committee 1996). County governors and professionals estimated that the real number of livestock in Hongyuan in 1999 was approximately double the statistical number. In most cases, for tax reasons, the nomads are unwilling to tell census representatives how many livestock they actually have. This not only prohibits decision makers from getting accurate information on rangeland use, but also creates other problems. For example, far inadequate preventive medicine for some infectious diseases are ordered and distributed every year by the county animal husbandry bureau because of inaccurate statistical data. Keeping a large herd of livestock is actually an effective way to compensate for the low productivity of individual livestock in the harsh environment. In recent years, nomads tend to sell more male yak than they did before in order to maintain an optimal herd size. Proper livestock improvement should be considered to ameliorate livestock quality and limit

overall quantity. Livestock mortality was high when grazing within fenced pastures was first introduced, but now it has been reduced considerably.

Generally speaking, rich families with more livestock were reluctant to accept rangeland division before it was carried out. However, of over 30 interviewees, no one complained about fencing pasture for individual households after it was conducted. Nomads have their own indigenous knowledge about sustainable rangeland use. Most of them are thinking about sustainable use of their own pasture while they simultaneously try to develop and maximise livestock numbers by drawing on techniques such as fallow periods, rotational grazing, grass cultivation, fertilising, weed extermination, hay storage, and the sale of livestock. Though we cannot parry to say some households keeping their herds on winter pasture near main road year round to easily sale milk during summer, which lead to rangeland degradation. As for weed extermination, nomads consider that edible grasses still make up a high ratio on the hills but weeds have increased on the plain and in the valley area. They are encouraged to use herbicides to exterminate weeds, but more scientific research should be conducted on the ecological effects of this practice.

Gender

Gender-based labour division in pastoral areas is more obvious than in any other area of China. Men do not milk animals, weave, dry yak dung, cook or collect water. Once, in 1995, the Hongyuan county governor refused a strong request from the Vice Director of All China Women's Federation to pose for the media in a milking posture because he thought he would lose prestige among his people. Women's strenuous hard work often exceeds 16 hours a day, and in some cases even reaches 21 hours a day. Women carry milk to milk stations to sell every day, but it is men who collect the money from the station at the end of the year. Men mostly control other commercial activities like selling the variety of livestock products and buying things. Men are considered the household head and decision-makers in pastoral families.

After the rangeland was divided among individual households and fenced, the labour of both men and women was reduced but the gender gap widened. Men's traditional task was to graze animals, but now they only need to take livestock out every morning and then drive them back every evening within the fenced pastures, as watching livestock all day long is no longer required. More leisure time has made it possible for men to go to the city and benefit from entertainment activities outside. So, even grazing is now becoming women's work.

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