

Comparing transhumance in Xinjiang, China and California, USA

Li W., Talinbayi S., Huntsinger L.

in

Casasús I. (ed.), Lombardi G. (ed.).
Mountain pastures and livestock farming facing uncertainty: environmental, technical and socio-economic challenges

Zaragoza : CIHEAM

Options Méditerranéennes : Série A. Séminaires Méditerranéens; n. 116

2016

pages 69-73

Article available on line / Article disponible en ligne à l'adresse :

<http://om.ciheam.org/article.php?IDPDF=00007423>

To cite this article / Pour citer cet article

Li W., Talinbayi S., Huntsinger L. **Comparing transhumance in Xinjiang, China and California, USA.** In : Casasús I. (ed.), Lombardi G. (ed.). *Mountain pastures and livestock farming facing uncertainty: environmental, technical and socio-economic challenges.* Zaragoza : CIHEAM, 2016. p. 69-73 (Options Méditerranéennes : Série A. Séminaires Méditerranéens; n. 116)



<http://www.ciheam.org/>
<http://om.ciheam.org/>

Comparing transhumance in Xinjiang, China and California, USA

W. Li^{1,*}, S. Talinbayi¹ and L. Huntsinger²

¹Peking University, Beijing (China)

²University of California, Berkeley (USA)

*e-mail: wjee@pku.edu.cn

Abstract. Comparing transhumance in China and the United States is challenging because of vast social and economic differences, but here we make a first attempt. Globally, rangeland livestock producers share many challenges, practices and even social relations because of the ecological dynamics of rangeland grazing. In Xinjiang, China and California, USA, pastoralists move their herds to mountain pastures in summer. However, there are major differences in animal husbandry affecting the costs of transhumance. Costs are lower in the US because ranchers raise only cattle and sell most of the calves produced each year. Most montane rangeland is owned by the government. In Xinjiang, herders keep mixed herds of diverse ages, which increases the need for skilled labor in the mountains, and means they must keep most of the herd through the winter. Rangeland grazing areas are fragmented by division and privatization of grazing rights. In California, ranchers participate directly in the market, selling directly to buyers. Most have outside income to buffer variability in markets and forage, and a spectrum of investment opportunities for cash. Xinjiang herders do not have the same opportunities for outside employment, or lucrative investment opportunities as yet, and usually sell to middlemen because they are isolated from and unfamiliar with markets. Historical, land tenure, market, and cultural differences are reviewed to help explain the constraints and current decline of the different systems. This may offer insights for Xinjiang policy development during the transition from traditional subsistence pastoralism to commercial animal husbandry.

Keywords. Pastoralism – Costs – Animal husbandry – Rangelands – Mobility.

Comparaison de la transhumance au Xinjiang, Chine, et en Californie, USA

Résumé. C'est un grand défi de comparer la transhumance en Chine et aux États-Unis en raison de vastes différences sociales et économiques, mais il s'agit ici d'un premier essai. Globalement, les producteurs sur parcours ont en commun de nombreux défis, pratiques, et même relations sociales en raison de la dynamique écologique de la paissance sur parcours. Au Xinjiang, Chine, et en Californie, USA, les pastoralistes emmènent leurs troupeaux aux pâturages de montagne en été. Toutefois, il y a des différences majeures en élevage concernant les coûts de transhumance. Les coûts sont plus faibles aux États-Unis car les éleveurs produisent uniquement des bovins et vendent la plupart des veaux produits chaque année. La plupart des parcours de montagne sont la propriété du gouvernement. Au Xinjiang, les bergers ont des troupeaux mixtes d'âge divers, ce qui augmente les besoins en main-d'œuvre qualifiée dans les montagnes, et signifie qu'ils doivent garder la plupart du troupeau pendant l'hiver. Les zones de pâturages de parcours sont fragmentées par la division et la privatisation des droits de paissance. En Californie, les éleveurs participent directement au marché, vendant directement aux acheteurs. La plupart ont un revenu supplémentaire pour atténuer la variabilité des marchés et du fourrage, et une gamme d'opportunités d'investissement pour l'argent liquide. Les bergers du Xinjiang n'ont pas encore les mêmes opportunités d'emploi externe, ou d'investissement lucratif, et vendent généralement aux intermédiaires car ils sont isolés des marchés, avec lesquels ils ne sont d'ailleurs pas familiarisés. Les différences historiques, de propriété foncière, de marché, et de culture sont examinées pour contribuer à expliquer les contraintes et le déclin actuel des différents systèmes. Ceci constitue un aperçu sur le développement de politiques au Xinjiang durant la transition du pastoralisme traditionnel de subsistance à l'élevage commercial.

Mots-clés. Pastoralisme – Coûts – Élevage – Parcours – Mobilité.

I – Introduction

Comparing range livestock production patterns using transhumance in China and the United States is challenging because of the vast social and economic differences between the two countries. However, globally, pastoral people, those who raise livestock on rangelands, share many of the same challenges, practices and even social relations because of the ecological dynamics of livestock grazing and rangelands (Huntsinger *et al.*, 2010a). Transhumance is a common pattern of rangeland use. Pastoralism generally occurs at the political, economic, and ecological margins (Sayre *et al.*, 2013). Regardless of their location, pastoral peoples and rangelands face growing political, economic, and climatic stresses that challenge their coupled resilience and ability to adapt (Reid *et al.*, 2014). In this paper we make a first attempt at comparing transhumance for summer pastures in Xinjiang, China, and California, USA. Our goal is to lay the groundwork for a more detailed comparison that will offer insights for pastoral development in Xinjiang. While there is no reason that Xinjiang animal husbandry should develop in exactly the same way as US pastoralism, it is likely that elements of the two pastoral system can be identified as potentially transferable.

II – Study area and methods

Our results are based on interviews with herders, outreach professionals, and officials in both places, conducted at various times over many years. In Xinjiang, the case study area is in the Ili Valley of the northwestern part of the province. The area borders on Kazakhstan, and the Mongol and Kazakh herders studied are part of small pastoral communities that have relied on transhumance for centuries and more. Fall through Spring pastures are in the valley, at elevations of around 1000 meters, average precipitation between 200 and 500 mm, and average temperatures of around 9 c. Summer pastures are in the Tian Shan Mountains, ranging up to 4000 meters, with warm summers and snowy winters and average precipitation as high as 800 mm. The area is in a temperate semi-arid continental climate zone. In California, the case study area is the westside central Sierra Nevada foothills. Transhumance began in the mid-nineteenth century. Fall through spring pastures are in the foothills at elevations ranging from 20 to 1,000 meters with an average precipitation of around 900 mm and average temperatures of around 16°C. Winter pastures are at higher elevations, ranging to 3,000 meters, with warm summers and snowy conditions in the winter. The area is in the Mediterranean climate zone.

III – Findings

Although in both countries livestock producers face the challenge of moving animals up to the mountains, and of taking care of the herds, differences in production practices affect costs.

1. Xinjiang

In Xinjiang, sheep, cattle and horses of diverse ages may be kept by one household. Livestock are born in early spring, mostly from February to April, when the herders are at winter camps. Winter settlements usually have infrastructure such as covered pens, veterinary services, and so forth. Around the mid-May, the herds move to spring camps for about a month, then leave for summer camps around the middle of June where they spend around 3 months to the end of September. They then move to fall camps for one month, and come back to their winter camps at the end of October. Herders only sell some of their one year old male livestock in the autumn, and keep all the female livestock for reproduction. For this reason they wind up keeping most of the livestock all year round. Because herders tend to have mixed herds, including dairy animals for the household, labor must be skilled in the husbandry of diverse animals.

In Xinjiang, because of the complex labor needs and the culture of summer pasture life, under traditional community organization families followed the herds as they moved among different pastures, using shared labor and land to move and husband the herds. But in the last 30 years with the government encouraging pastoralist settlement and particularly with the division of pastures to households, along with collective actions being replaced by individual household production, labor shortages and high production costs have changed transhumance. Summer is the busiest time because herders must herd sheep in higher summer pastures as well as cut grass in lower winter/spring pastures for winter. Household labor is in short supply, so families cannot move with herds like in the old days – many have to hire someone to take care of the herds in summer, increasing costs. Herds are beginning to be simplified. Division of land to households has also increased costs. Transhumance distances are as long as 100 km, so households need to rent vehicles to transport animals because they have to cross large areas of once shared rangeland that is now controlled by individual households. Given these cost increases, the number of livestock moving to summer pastures is decreasing and the time herds stay in fall-spring pasture is increasing, leading to the visible degradation of fall-spring pastures.

2. California

Most ranchers raise only cattle. Calves are generally born in late fall in California, earlier than in the rest of the western U.S. because the annual time of peak forage availability is spring. Before the herd goes to the mountains, the calves are weaned and sold, and only cows go up. In most of the rest of the arid west, calves are born in spring, go up to summer pasture with the cows, and are weaned and sold in fall, aside from a few replacement females. Weaned calves are sold to enterprises that use high quality lowland pastures or feed to encourage rapid growth. Eventually calves are slaughtered at 14-18 months of age, often after passing through a third enterprise, the feedlot. In a feedlot, cattle are fed high quality feeds for a month or so preparatory to slaughter, and they are often located in regions where grain is grown. Much of pastoral mobility is in transferring animals to enterprises in different regions with different feed sources and husbandry practices. This is the typical U.S. commercial pattern, but there are many variations.

At each strata labor needs are focused on a narrow part of the production stream. «Cow-calf» ranchers, with a fairly uniform herd, can limit labor needs by, for example, attending to the standard veterinary needs of the entire herd at the same time. Summer husbandry needs are to keep the animals safe and in the right grazing area, and to watch out for illness, accidents, and predation. In many cases one member of the family or a hired herder can take care of the entire herd, and the rest of the family farms or works at home. Herds can be left untended for short periods of time. During the fall, when rangeland forage is most constrained in California, the herd is at its smallest size and animal demand is low because calves have been sold. Animal demand peaks in spring, when the most forage is available in this climate zone. While ranchers have traditionally often moved up to summer pastures and enjoy it, since most households now have obligations in town it is rare to stay for long periods if at all. Fragmentation due to land development and conversion have also increased transportation and management costs. The majority of transhumant ranchers in one survey said that their operations had been impacted by land fragmentation, vegetation change, and changes in government priorities for the land, such that transhumance is declining (Huntsinger *et al.*, 2010a).

IV – Discussion: Historical and cultural context

The history, land tenure, market relations, and cultures differ in each place, and explain some differences in practices. While ranchers often are from multigenerational ranching families, U.S. ranching has from the start has been oriented to producing livestock for the market. Herders in the Ili Valley are not generally part of the majority culture, including the market culture of the majority popu-

lation of China. Their cultures have developed in the context of thousands of years of subsistence herding, and husbandry practices have deep cultural meaning.

In California, most summer pastures are owned by the government and leased to ranchers, while the base ranch and much of the winter range is privately owned. Leases for government land, or permits as they are known, were allocated early in the twentieth century, mostly to ranches adjacent to federal lands. They tend to remain with a ranch, but can be adjusted or even canceled by the government. Permits specify a number of livestock equivalents that can be grazed over a specified period of time. The number of equivalents allowed has declined regularly since allocation, because of policy change and fire suppression, as there is growing public demand for recreation land and protected preserves, and without the traditional burning of ranchers and native peoples many California ranges convert to trees and shrubs.

In Xinjiang land tenure has gone through three comparatively recent phases: tribal ownership, collective ownership and long term government contracting of grazing areas to individual households. From 1978 to 2000s, herders gradually went through different stages of privatization: livestock privatization, pasture use right privatization, and then fencing to clarify boundaries between pastures. Today, a household may have rights to several widely scattered parcels of land, representing the different seasonal ranges. They are small by U.S. standards. Land has also been lost to development, tree planting, and grazing bans.

The markets that each group must rely on are structurally different. U.S. livestock producers negotiate directly with the owners of the next part of the production chain. Auctions, video marketing, and online selling facilitate communication between those needing calves and those selling them. In Xinjiang, herders are more isolated and have less access to technology, and less knowledge of the process of competitive marketing. They usually rely on middlemen who come out to distant villages and pastures to negotiate for buying stock. The middlemen then sell to the slaughterhouse or other buyers. Investment opportunities are also limited in Xinjiang, and most herders believe they get a higher return from keeping their capital in animals.

In both places, livestock are more than commodities to the producer and have social meaning. (Eillis 2013), and there is a network of social relationships that facilitates livestock herding on rangelands (Li and Huntsinger 2011; Ellickson 1986; Bennett 1968). While «being a rancher» confers an identity and status to ranchers in the United States, livestock have deeper and more complex meaning to the ancient Mongol and Kazakh cultures. Livestock are considered as family insurance, a symbol of family status, and are the media of gift economy. The number and kinds of animals kept by a family is key, as they must be gifted at certain times to maintain critical cultural practices and rituals, and the family's stature in the community.

Finally, despite the advanced commercialism of U.S. rangeland production, the majority of ranching households in the U.S. rely on outside income to support their ranch, with less than 14% of California foothill ranchers earning most of their income from livestock production (Huntsinger *et al.*, 2010b). On a per hectare basis, rangeland production is low, and the benefit is producing food from land that is otherwise not useful for production. Interviews in Xinjiang indicate that most households also seek outside income but there are limited opportunities.

IV – Conclusions

Transhumance costs in California are likely lower than in Xinjiang, because of the different patterns of animal husbandry. However, the cultural meaning of various aspects of animal husbandry, and current conditions for employment, marketing and investment, make it difficult for Xinjiang herders to transition to a more efficient system of producing livestock.

Costs to U.S. producers are increasing due to land fragmentation, just as they have done in Xinjiang. Trailing to the mountains has become more difficult. Shifts in policy land, and land tenure and use are also an impact. Herders in Northern Xinjiang are transitioning from subsistence to commercial production, but it is difficult for them to give up traditional husbandry, for cultural and financial reasons. This includes raising livestock for their entire life cycle, keeping most animals all year, and carrying out other practices with social and cultural meaning. The collective management that once helped reduce labor needs for each household has largely been lost (Li and Huntsinger, 2011). We suspect that in both places transhumance will further decline, with unknown impacts on rangeland vegetation, and reducing the available rangeland for Xinjiang herder households and California ranches. Given the positive impacts grazing has been shown to have on some rangelands, and the cultural values of transhumant grazing, can, and should, this trend be reversed?

References

- Bennett J.W., 1968.** Reciprocal economic exchanges among North American agricultural operators. *Southwestern Journal of Anthropology*, 24(3), 276-309.
- Ellickson R.C., 1986.** Of Coase and cattle: Dispute resolution among neighbors in Shasta County. *Stanford Law Review*, 38(3), 623-687.
- Ellis C., 2013.** The symbiotic ideology: Stewardship, husbandry, and dominion in beef production. *Rural Sociology*, 78(4), 429-449.
- Huntsinger L., Forero L. and Sulak A., 2010a.** Transhumance and pastoralist resilience in the western United States. *Pastoralism: Research, Policy and Practice*, 1(1), 1-15.
- Huntsinger L., Johnson M., Stafford M. and Fried J., 2010b.** Hardwood rangeland landowners in California from 1985 to 2004: Production, ecosystem services, and permanence. *Rangeland Ecology & Management*, 63(3), 324-334.
- Li W.J. and Huntsinger L., 2011.** China's grassland contract policy and its impacts on herder ability to benefit in Inner Mongolia: tragic feedbacks. *Ecology and Society*, 16(2), 1.
- Reid R.S., Fernandez-Gimenez M.E. and Galvin K.A., 2014.** Dynamics and resilience of rangelands and pastoral peoples around the globe. *Annual Review of Environment and Resources*, 39, 217-42.
- Sayre N.F., McAllister R.R.J., Bestelmeyer B.T., Moritz M. and Turner M.D., 2013.** Earth Stewardship of rangelands: coping with ecological, economic, and political marginality. *Frontiers in Ecology and the Environment*, 11(7), 348-354.