



# An Initial Assessment of the Opportunities and Challenges Associated with Expanding Nepal's Goat Market

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## Research Brief

Feed the Future Innovation Lab for Collaborative Research on Adapting Livestock Systems to Climate Change

### Abstract

*Global goat markets are expanding. Most of the growth is occurring in Asia and Sub-Saharan Africa. In Nepal, as the economy improves, so does the demand for goat meat. However, Nepal's geographic location is sandwiched between the two largest world goat producers – India and China. The national goat herd in Nepal is growing at a modest rate, but Nepal can't keep up with the productivity of their neighbors, especially India. Past studies indicate goat producers in Nepal suffer from a lack of timely market information and inadequate infrastructure. Our results suggest that research and outreach activities related to Nepal's goat markets should focus on improving production efficiency and animal husbandry.* 

### Goats Favored in the Face of Climate Change

Goats have always been an important livestock species for the world; but in the past 10 years the global goat population has grown faster than other livestock such as buffalo, cattle, and sheep. As a result, the World Bank reports that human dietary consumption patterns concerning small ruminants have slowly shifted from mutton to goat meat in the same time period.

Influences leading to the growth in global goat meat consumption, especially in the developing world, include both increases in the world's goat population and climate change factors such as increasing temperatures and greater variability in monsoonal precipitation. The climate-related factors have resulted in a retraction of high quality grazing lands in critical grazing locations such as Sub-Saharan Africa and Central Asia. With less preferred grazing land available, herders in these locations have shifted to smaller-bodied animals with a greater diversity of feeding habits—goats thus fit this need very well. This allows producers to still raise livestock under new resource limitations. Goats are a more suitable livestock species for adapting to climate change because they have much lower nutritional requirements than cattle and are better able to withstand climate variability such as droughts. Goats can consume browse forage (leaves from bushes and trees) to a greater extent than most other livestock species. Cattle and buffalo feed on grass, for example, which is more vulnerable than woody plants to drought conditions. This means that goats are often more productive than cattle in dry climates having sparse forage supplies.



Goats feeding in a riparian zone in Bajura. (Photo credit: Divakar Duwal)



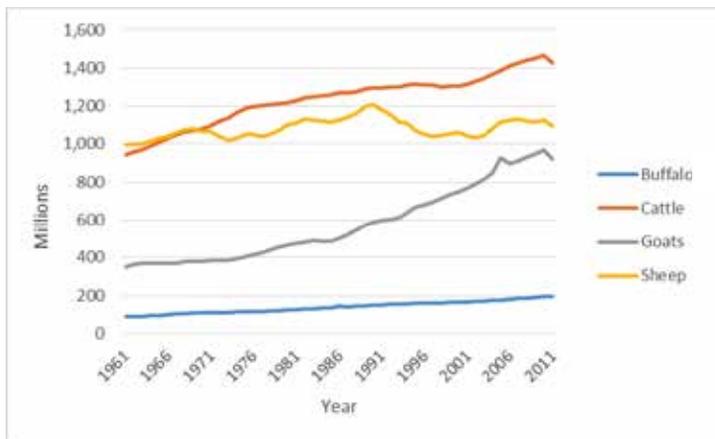


Figure 1. Numbers of Grazing Livestock in the World. Source: FAO, 2013.

### Nepal's Goat Herd

The vast majority of goats in the world (94%) are found in Asia and Africa. However, Asia dominates in terms of goat numbers with India (157 million), China (142 million), Pakistan (61 million), and Bangladesh (53 million) having the four largest national goat herds worldwide. Nepal is currently ranked eighth in Asia and 19th worldwide in the size of its goat herd with 9.2 million as of 2011.

Nepal has one of the highest ratios of livestock per unit of cultivable land in southern Asia. The majority of goats in Nepal are found in the eastern and central regions of the country. However, the number of households with goats has increased in the western half of Nepal over the last 10 years. While the number of goats per household in Nepal has also increased slightly in recent years, it is still a relatively small number—the majority of households possess five goats or less.

### Seasonality of Goat Demand in Nepal

One of the main marketing challenges goat producers face in Nepal is the high degree of seasonality in market demand. The months of festivals and marriages—usually September and October—are when the demand for goat meat is abnormally high. This causes a strain on the domestic goat marketing channel and is a major reason for the large number of goats imported from India and China (Tibet) during this time of year. It has been estimated that approximately 20-25 truckloads consisting of 200-250 goats each arrive in Kathmandu from India every week during this time. This indicates that of the 260,000 goats sold in Kathmandu each year, as many as 230,000 are imported.

While per capita gross national income (GNI) in Nepal was only \$700 as of 2012 and placed Nepal in the World Bank's "low income" category, GNI in 2012 was still more than double what it was in 2005. As income grows, the demand for animal-protein-based food products also grows. This suggests that meat consumption, including goat meat consumption, should continue to increase in Nepal as economic conditions improve.

Two methods have been suggested by the FAO (Food and Agriculture Organization), the World Bank, and Nepalese Ministry of Finance for goat producers in Nepal to address both the issue of seasonality in goat markets and competition from imports. The first is to diversify into

different goat breeds that produce more weight and have better feed conversion ratios than current breeds. This would result in more meat production per goat and possibly reduce the level of goat imports. The breed most frequently suggested for this purpose is the African Boer goat, which reaches a weight of 40-50 kg in about seven months and matures at a live weight of 90-130 kg. The African Boer goat also has an average daily live weight gain of 200 g which is four times faster than the 50-60 g observed for the local Khari goat. One of the main reasons for the prominence of the Khari goat in Nepal is its high percentages of twins and triplets as well as shorter kidding intervals compared to other breeds.

The second suggestion is to invest in confined feeding programs to increase goat productivity. Doing so might allow supply to be better planned and hence more likely to meet high demand during holiday periods. How might such programs be initiated? The Government of Nepal (GON) recently announced an ambitious program to help finance projects that create jobs for the unemployed. The program is in the process of lending up to 200,000 Nepali Rupees (NR; or US \$2,000) to one million young Nepali citizens. Of those who applied to this program, more than half requested loans for livestock enterprises. This may demonstrate willingness on the part of Nepal's rural poor to engage in livestock activities that include confined livestock feeding operations.

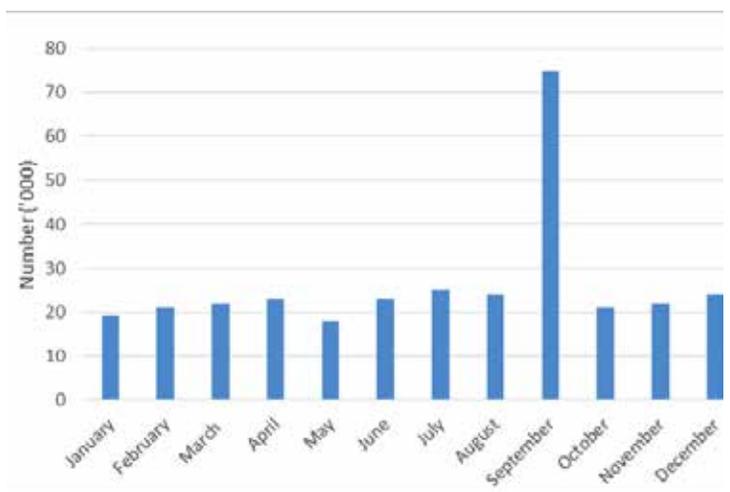


Figure 2. Seasonality of Live Goat Supply for Slaughter in Kathmandu. Source: Parajuli (2008).

### Competitiveness and Other Potential Barriers

The FAO cites Lotus Intellect, who in a 2006 study reported the average price margin for Indian wholesalers of goats operating in Nepal was 1,115 NR per head. The FAO also cited a CLDP Consultant's 2007 study which stated the price per kilogram (kg) of live weight for Nepali goats when traders bought them from local farmers or pastoralists varied from 70-110 NR/kg depending on region and time of year. One would expect in competitive markets that competitor's market shares depend on relative costs. That is, lower-cost competitors will eventually increase market share over time compared to higher-cost competitors because the former are more able to survive when prices are low. It is likely that goat traders demand similar margins



*Local goat breed in Bajura district eating cut-and-carry browse fodder. (Photo credit: Keshav Bhatta)*

whether they are handling Indian or Nepali goats. This is evidenced by an FAO report that indicated there is no noticeable price difference between Nepali and Indian goats in central (national) markets. However, given that the level of goat imports into Nepal has been rising over time, it is probable that traders who deal with Nepali goats currently have no comparative advantage over goat importers. This is almost certainly connected to higher costs of production for goats in Nepal as compared to that for India.

An important barrier to efficiency in Nepal's goat marketing channel is price transparency and available information about how price is determined. Nepali and Subedi (2007) examined the goat marketing channel in Nepal's western hills. They found that 100% of farmers sell goats based on a visual approximation of weight (goats are not actually weighed prior to sale), with only 4% of farmers having knowledge of what the national price was when they sold their goats in local market. This seeming lack of effort to obtain national prices for efficient price discovery is constrained by the lack of basic market information.

There may also be other reasons or biases that could be barriers to expanding goat production in Nepal. For example, it has been reported that goats are highly susceptible to disease. Some past development projects have reported high death losses due to disease and thus such projects had a low willingness to promote goats. Another factor likely related to losses due to disease is the unfamiliarity of many farmers with goat husbandry. As a result, some farmers may not fully consider goats when developing their livestock inventory.

### **Summary and Conclusions**

There appears to be strong evidence that demand for goat meat in Nepal is growing, especially during certain times of the year. This should provide opportunities for goat producers in Nepal to expand their herds and increase their income at the margins via increased goat sales. However, goat production in Nepal does not appear to have a comparative advantage over goat imports from large goat-producing nations (China and India) who are Nepal's neighbors. Local bias

against producing goats may also exist among some Nepali farmers.

This suggests development programs that are considering encouraging goat production in Nepal need to target at least two things: Price competitiveness and husbandry. For example, issues relating to seasonality and reducing costs of production need to be considered. Surveys might determine barriers to confined feeding operations for goats. Interviews and surveys with veterinarians, goat producers, and other farmers may reveal the types of training in husbandry and disease prevention that must be incorporated into educational programs for farmers considering adopting goats or expanding their goat herds. Problems with market infrastructure such as the lack of market information, inaccurate weighing (lack of accurate scales in market locations), and problems with transportation should also be examined. In general, one would expect that goat producers in Nepal should be able to improve their market position if methods designed to reduce production costs and death losses as a result of disease are implemented.



*Mountain landscape of Bajura District. Goats will tend to feed in the forest and riparian zones. (Photo credit: Mahesh Shrestha)*

## Further Reading

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### *Improving the Resilience of Mixed Farm Systems to Pending Climate Change in Far Western Nepal*

*Principal Investigator: Robert Gillies, Utah State University*

*We propose a transdisciplinary research program on adapting livestock systems and community organizations to climate change in the Far Western hill and terai regions of Nepal. Partnerships between Utah State University, the Government of Nepal – Ministry of Agriculture and Cooperatives, the U.N. World Food Program (UNWFP) and Helen Keller International (HKI) in Nepal will link our climate assessments with data on food security, agriculture, and markets in all districts of the Far Western regions. Our major objectives are to: (1) Analyze patterns of climate change with a focus on prediction of future droughts and floods caused by changing patterns of monsoonal and winter rains; (2) Analyze levels of food insecurity and malnutrition and coping strategies used in response to the 2008-2009 drought in all districts in the Far Western regions; (3) conduct community-based participatory rural appraisals (PRAs) in sample communities that include women-led Village Model Farms (VMFs) established by HKI and determined to be at high risk for future drought and food insecurity in order to elucidate innovative local risk-management strategies to adapt livestock systems and community organizations; (4) extend our capacity building efforts in microclimate monitoring and agricultural extension activities in high-risk VMFs; (5) evaluate the outcomes of the PRAs and community based action plans by comparing the levels of knowledge of weather, agricultural changes induced by climate change, food security indicators, and action plans for resilience in the intervention communities versus comparison communities without PRAs or VMFs by applying case-control epidemiologic study design and statistical analyses.*



**Feed the Future Innovation Lab for Collaborative Research on Adapting Livestock Systems to Climate Change** is dedicated to catalyzing and coordinating research that improves the livelihoods of livestock producers affected by climate change by reducing vulnerability and increasing adaptive capacity.

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