

# Goat sector in Uttarakhand: An Overview



Tata-ILRI Partnership Programme:  
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# Goat sector in Uttarakhand – An Overview

## 1. Uttarakhand - Geographic profile

Uttarakhand is the 27th state of India with an area of 51,125 sq km and a population of about 9.4 million (2007). Of the total geographical area, forests occupy 64%. About 92% are covered by mountains and hills, while 8% are Terai plains. The snow covered mountainous region is at an elevation of over 4000 m, the mid Himalayan region at a height of 1000 to 3500 m and the Terai plains are about 230 m above mean sea level. The State is comprised of two culturally distinct regions: the Garhwal and Kumaon Himalayas.



**Figure 1: State of Uttarakhand with 13 districts**

Uttarakhand comprises 13 districts (Figure 1), of which four have large areas in the plains (Nainital, Haridwar, Dehradun and Udham Singh Nagar), whereas, the other nine comprise the hill region of the state. It is reported<sup>i</sup> that districts in the plains are far ahead on various development indicators due to a number of structural problems.

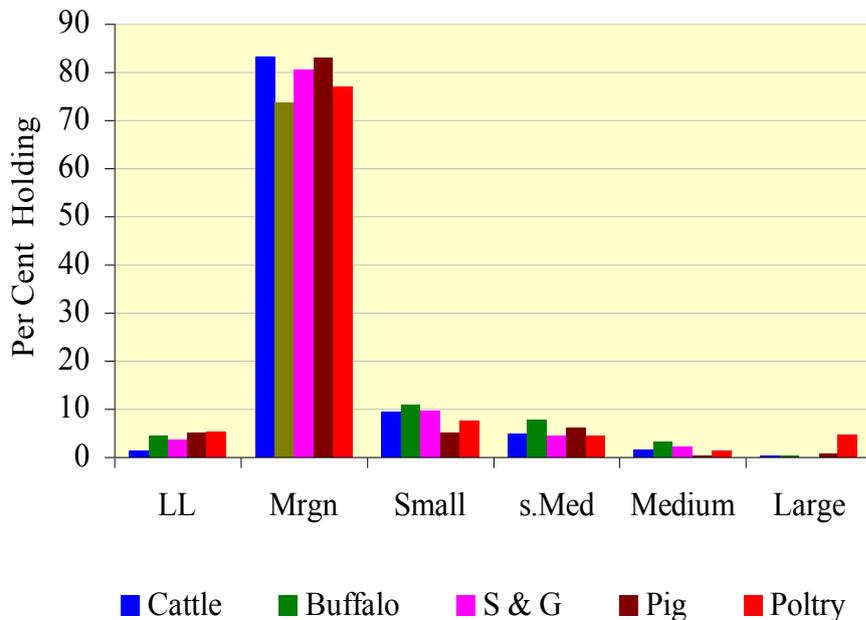
## 2. Agriculture

More than three-fourths of Uttarakhand total population depends on agriculture for their livelihood. In 2010 the agricultural sector in Uttarakhand (along with Forestry and Fisheries) contributed 35.19% to the State GDP. About 88% of the farmers in Uttarakhand are small and marginal land holders. They cultivate 52% of the cultivable land. The remaining 12% of farmers are in the medium and large landholder category, who cultivates 48% of the cultivable land<sup>ii</sup>. The medium-large farms are generally (but not exclusively) located in the plains. In the hill regions the scope for modern input-intensive agriculture is severely constrained due to physical, geographical and environmental reasons. As a result, the majority of the rural population in the hills survives on subsistence agriculture. The state faces the challenge of promoting livelihoods to retain people through local employment and income generation and to enhance their quality of life<sup>i</sup>.

## 3. Livestock sector and the poor

Uttarakhand has a wealth of livestock. As per 2007 livestock census the State had 2.24 million cattle, 1.22 million buffaloes, 1.34 million goats and 0.29 million sheep. In 1999-2000 the sector contributed 7.51% to the State Gross Domestic Product and in 2000-'01 the total value of output from the livestock sector was Rs 9182.88 million<sup>iii</sup>.

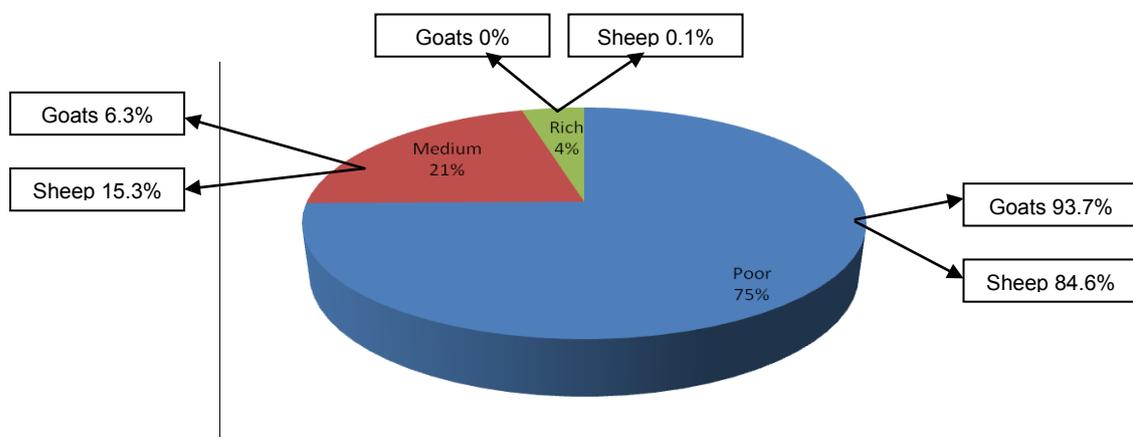
Across land holding categories of farmers, almost 80% of all species and types of livestock in Uttarakhand are owned by the marginal farmers (see Figure 2 below, sourced from "Livestock sector in Uttarakhand" by M P G Kurup, 2003).



**Figure 2: Species distribution across land holding categories**

LL (Landless)	<0.002 ha	Small	0.5-1.0 ha	Medium	2-4 ha
Mrgn (Marginal)	0.002-0.5 ha	s.Med (Small Medium)	1.0-2.0 ha	Large	>4 ha

An NSSO study (2004-05)<sup>iv</sup> reveals that about 75% of the people in Uttarakhand are poor (on the basis of consumption expenditure), whereas 21% are medium and 4% are rich (Figure 3). It is interesting to note that about 94% of the goat population and 85% of the sheep population are with the poor, whereas the figures for the medium are 6% and 15% respectively. The rich keep hardly any goats or sheep. It means goats and sheep serve as a livelihood option for the resource poor population in the state.



**Figure 3: Percentage of goats and sheep held by people of different wealth categories**

It is reported<sup>vii</sup> that the average size of sheep flock is 175 while the average number of goats per breeder is 60. It is also indicated that flocks of Uttarkashi and Pithoragarh have more sheep (70%) than other districts. The shepherds of Chamoli have nearly equal number of sheep and goats. Shepherds generally migrate (4-5 families together) from hills to the plains (downward migration) from September to March, every year. Compared to goats, sheep are kept by less number of farmers in Uttarakhand. The herders who keep sheep are slowly giving up this business, mainly due to limited social life, restricted forest grazing and low income per animal<sup>v</sup>. The sheep population is also getting reduced year by year. According to 2007 Census the sheep population got reduced by 20,000 between 1997 and 2007, whereas goat population grew by 2.6 million during the same period (Table 1).

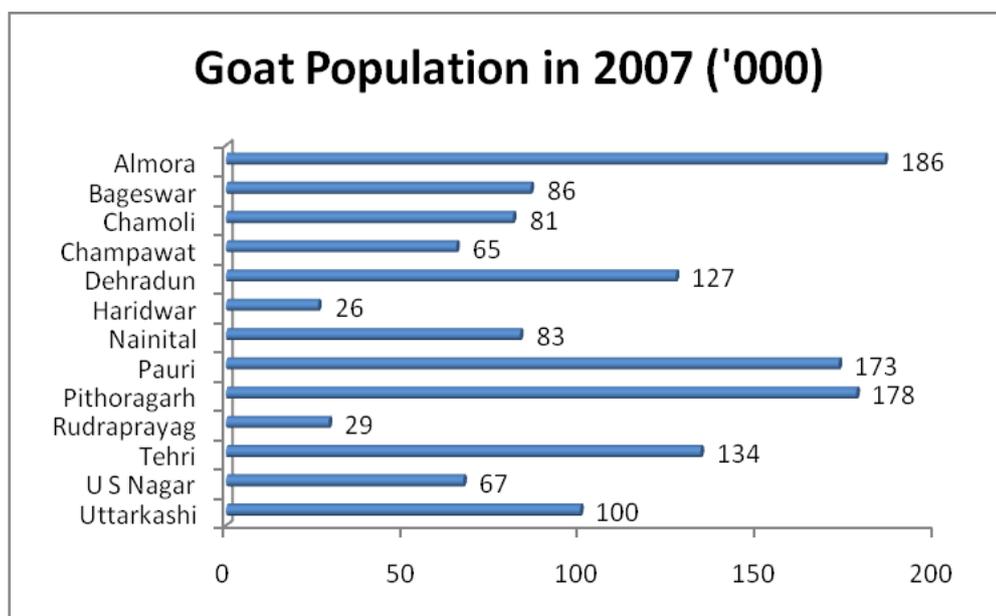
**Table 1: Goats and sheep –population trends**

	1997	2003	2007
Goat population	1.07 million	1.16 million	1.34 million
Sheep population	0.31 million	0.29 million	0.29 million

Source: Gol (Basic AH Statistics, 2006); Uttarakhand Livestock Census (2007)

### 3.1 Goat sub sector

Goats are found to be more widely distributed than sheep. It is reported that on free range grazing, goats are 2.5 times more profitable than sheep<sup>vi</sup>. In Uttarakhand the size of goat population is four times more than the sheep population. Out of a total of 1.34 million goats in the state (in 2007), more than half are present in four hilly districts (Figure 4), namely **Almora (13.93%)**, **Pithoragarh (13.33%)**, **Pauri (12.96%)** and **Tehri (10.04%)**. The study by Rajwar (2004)<sup>vii</sup> reported that goat rearing is more popular in the mid-Himalayan region where the land is unfertile and un-irrigated.



**Figure 4: District-wise goat population of Uttarakhand in 2007**

The human-goat population ratio in different districts of Uttarakhand (Table 2) indicates that the number of goats per hundred persons is higher in Pithoragarh, Bageshwar, Uttarkashi and Almora, showing how important is goats for the people there.

**Table 2: District-wise human-goat population ratio and no. of goats per km<sup>2</sup> in Uttarakhand in 2007**

Districts	Human population	Goat Population	Geographical area (Km <sup>2</sup> )	Goats per 100 persons	Goats /km <sup>2</sup>
Almora	625321	186391	3090	<b>30</b>	<b>60</b>
Bageshwar	255634	85769	2310	<b>34</b>	<b>37</b>
Chamoli	382196	80648	7692	21	10
Champawat	244767	65136	1781	27	<b>37</b>
Dehradun	1516380	126852	3088	8	<b>41</b>
Haridwar	1717060	26115	2360	2	11
Nainital	873025	83370	3853	10	22
Pauri	690638	172976	5438	25	<b>32</b>
Pithoragarh	476311	177529	7110	<b>37</b>	25
Rudraprayag	233053	28986	1896	12	15
Tehri	611661	134245	4085	22	<b>33</b>
Udhamsingh nagar	1468370	66838	2912	5	23
Uttarkashi	314996	100451	7951	<b>32</b>	13
	<b>9409412</b>	<b>1335306</b>	<b>53566</b>		

Source: Livestock Census, Population Census (2007), Gol

### 3.2 Goat production

In Uttarakhand goats are mainly reared for meat production. In the rural areas large number of animals (male) are kept for religious sacrifice (e.g. *Navaratri*) and slaughtered locally (during this period the demand for goats is also very high).

Uttarakhand has several breeds of goats such as Gaddi, Chaugarkha, Black Bengal, Beetal and Barbari, of which Chaugarkha is a new strain evolved in Kumaon region due to repeated cross breeding between different breeds of goats<sup>vii</sup>. The home tract of Chaugarkha is found to be parts of Almora district. 'Udaipuri' is another breed available in the district of Pauri. Generally, cross breeding in goats is not advised by goat breeders as (1) the local animals have higher adaptation capability (2) the F1 animals require improved nutrition to perform better (3) F1 animals need to be continuously produced (therefore a large number of bucks are required) as otherwise the hybrid vigour will be lost in subsequent generations and (4) through cross-breeding there is a chance of losing special characteristics (fecundity) of certain breeds (Dr S K Singh, CIRG, personal communication). Therefore cross breeding in goats has been discontinued by national agencies.

Generally, for breeding purpose rearers use local bucks, selected based on phenotypic characteristics. When goat units are purchased, under various schemes, the bucks come from unknown sources and hence the genetic superiority is not certain.

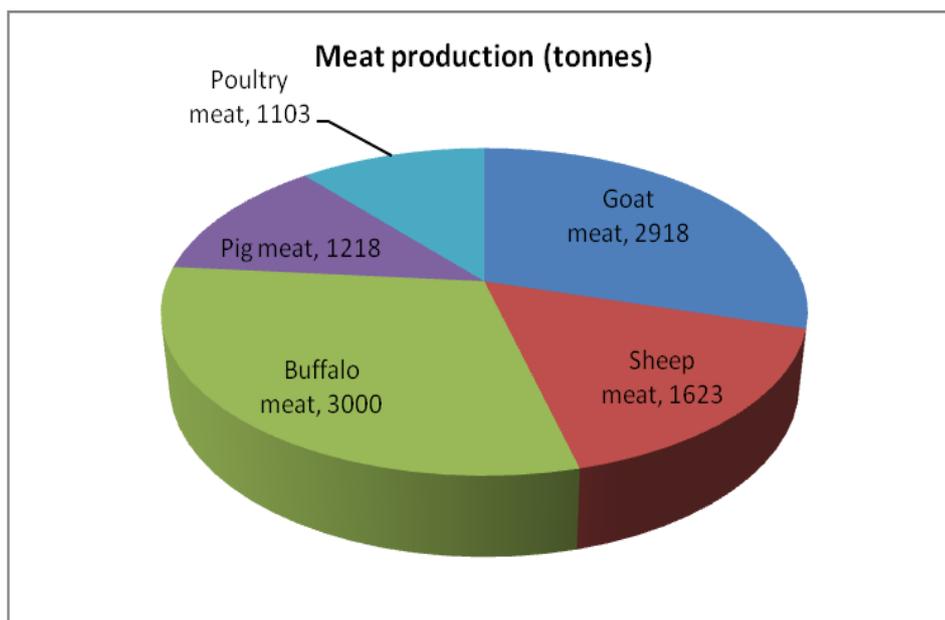
As far as nutrition is concerned, goats are generally reared under open grazing, mainly depending on forests and common lands. No other feed inputs are used. Main diseases reported in goats are PPR, Enterotoxaemia and goat pox.

Key constraints in goat production in Uttarakhand are: (1) difficulty in nutritional improvement and (2) lack of systematic effort for breed up gradation. Selective breeding is a long term process and the investments required are also high. Intensification of production is difficult in the case of goats as farmers prefer to send their animals for open grazing. The local breeds are kept at a low plane of nutrition and are reported to have low feed conversion efficiency<sup>vii</sup>. If feed supplements are used, those rearers will not be able to compete with the open grazed animals in the market.

### 3.3 Market

Goat meat (chevon) is the preferred meat in India, compared to mutton and lamb, possibly due to its 'chewability'<sup>vi</sup>. In Uttarakhand also the situation is not different (on the contrary in Jammu & Kashmir mutton is preferred compared to chevon).

The integrated sample survey (2009-10) of the Department of Animal Husbandry shows that about 1,98,000 goats (15% of the population) were slaughtered in the year 2009-10. This contributed about 30% (2918 tonnes) of the total meat of 9863 tonnes produced in the state, making it the second largest contributor after buffalo meat (see Figure 5).



**Figure 5: Percentage of meat contributed by different animals in Uttarakhand**

The districts where the largest percentage of animals was slaughtered are Pauri (60,251; 30%), Dehradun (40,180; 20%) and Uttarkashi (24,631; 12%). The average number of animals slaughtered every week in different districts is given in Table 3.

**Table 3: Goat slaughter 2009-10 (district-wise)**

Districts	No. of goats slaughtered per week
Almora	279
Bageswar	114
Chamoli	91
Champawat	83
<b>Dehradun</b>	<b>773</b>
Haridwar	60
Nainital	229
<b>Pauri</b>	<b>1159</b>
Pithoragarh	115
Rudraprayag	141
Tehri	72
U S Nagar	219
<b>Uttarkashi</b>	<b>474</b>

Source: Integrated sample survey, 2009-10

It is to be appreciated that the figures given above only include those animals slaughtered using formal slaughter facilities. Further, these do not give any idea whether the animals slaughtered are sourced from the same state or not. An analysis (carried out by the author) of the value chain terminating in Dehradun market revealed that out of 200 goats sold by wholesaler traders in one of the Mandis (Niranjanpur Mandi), 20% were sourced from Sharanpur villages in Uttar Pradesh and 80% were bought from big traders in Delhi, who procured the animals from different states including Rajasthan. This gives an indication that a large proportion of goats slaughtered in bigger cities in Uttarakhand are sourced from other states and those slaughtered in smaller towns and villages are reared in Uttarakhand.

### **3.4 Goats and environment**

Goats are often blamed for environmental degradation and hence goat promotion is generally discouraged by environmentalists<sup>vii</sup>. But this perception was challenged by the Hanumantha Rao Commission (1986) appointed by Government of India. Hanumantha Rao argued that goats help in improving soil condition mainly by manuring (pelleted dropping) and effective seeding (breaks hard seed coat in the digestive tract and distribute through droppings).

In Uttarakhand the number of goats per square kilometre is highest in Almora, followed by Dehradun, Bageshwar, Champawat, Pauri and Tehri (see Table 2) and lowest in Chamoli, Haridwar, Uttarkashi and Rudraprayag. It is worth mentioning that various agencies involved in goat promotion (see Section 4) supply goats to the rearers with limited interventions to develop the feed resource base.

### **4. Goat development programmes in the State and agencies involved**

The Uttarakhand Animal Husbandry Department and Uttarakhand Sheep and Wool Development Board are the two government agencies involved in, among other things, goat development work. Besides these agencies, BAIF and Himmatan (NGOs) are promoting goat development programmes in their project areas. NAABARD is supporting commercial goat development by providing loans with 25% subsidy. Besides these agencies, the Pant Nagar Agricultural University is involved in goat research, mainly in the area of characterisation and genetic improvement of goat breeds.

Under the government Animal Husbandry Department there are 13 farms of which one is a goat farm situated in Gwaldom. In another farm in Makku (sheep farm) situated in Rudraprayag, the Department, under the Rashtriya Krishi Vikas Yojana project (RKVYP) is planning to rear Gaddi goats of Himachal Pradesh. Under the same centrally-sponsored RKVY Project, the Department started implementing a goat project, in which 455 goat units (one unit=1 male+10 females; 35 units per district) will be supplied to rural house holds for additional income generation. The goats will be purchased and supplied to selected beneficiaries at 50% cost. Support will also be extended for goat sheds and for insurance. The total unit cost is Rs 70,000.

The Uttarakhand Sheep and Wool Development Board (SWDB) was constituted by the state government under the Societies Registration Act (1860) for the development of the sheep, goat and rabbit sectors in the state (SWDB's staff members are deputation candidates from the Animal Husbandry Department). Out of 13 farms of the state Animal Husbandry Department, SWDB is entrusted with 4 farms viz: Bengali, Chamoli, Dunda and Gwaldom. In the Gwaldom farm Angora and Barabari herds are maintained. SWDB is planning to supply Barabari bucks to farmers for breeding purpose. The Sheep and Wool Development Board, besides AH Department, separately availed funds from the RKVY project (indicated earlier) and implemented it for one year. SWDB also facilitates NABARD's "Integrated Development of Small Ruminants and Rabbits (IDSRR)" scheme, where NABARD provides loan with 25 % subsidy to farmers. Here the role of SWDB is limited to writing proposals for submission to NABARD's regional office..

BAIF, as part of goat promotion, has been implementing three projects in Uttarakhand:

- (i) NABARD's Tribal Development Fund Scheme, in which 50 goat units (1 unit=5 goats) are supplied to 50 families in Dehradun, Tehri and Champawat districts at 80% subsidy. The coverage is expected to increase to 175 families after three years.

- (ii) NAIP scheme, in which goat units are supplied to 90 families in Tehri and Champawat districts at 80% subsidy.
- (iii) Tata Trust supported Strengthening Development Niche Programme (SDP), in which saplings of fodder trees are supplied to farmers in Champawat and Rudraprayag districts. After one year, once the saplings are established goat units will be supplied to 50 families.

BAIF holds the view that goat promotion should be focused in the mid altitude regions as (a) the distance to main markets is less than from the hills (b) there is comparatively more land availability for planting trees and (c) the tree species grow faster in this region. They suggest promoting programmes in such a way that sufficient quantity of preferred animals (white /black coloured, uncastrated male) are produced when there is a large demand (festival season like Navaratri and tourist seasons). BAIF also suggests that for goat insurance, community insurance scheme will be a better option.

Himmotthan, through two NGOs (Chirag and Sankalp) formed goat interest groups and supplied 1 male + 2 female Totapari goat units to 6-7 group members at 50% cost. It is assumed that these members will pass one kid to another member of the group after first kidding.

The NABARD has two goat based promotion schemes, which started in October 2010:

- (i) Rearing scheme, in which a loan of Rs 1,00,000 is provided through identified banks for 2 male + 40 female goat units (in the case of hills, the unit size can be 1+10 and the loan amount is proportionately reduced). NABARD also provides subsidy. For instance, for the 2+40 unit Rs 10,000 is the margin money to be paid initially by the farmer. Out of the remaining Rs 90,000, subsidy is Rs 30,000 and loan is Rs 60,000.
- (ii) Breeder scheme, where the size of goat unit is 25+500 (in the case of hills 5+100). Here also NABARD provides subsidy.

At the moment there are 72 beneficiaries under the above two schemes. In each district NABARD has a facilitator (selected persons from NGOs) for promoting the above schemes. The facilitator provides training to the goat rearers who availed loan from NABARD, for which he is paid based on the number of trainings.

## 5. Conclusion

Goat rearing has been practiced by a large section of the resource poor farmers in the hilly areas. Considering the increasing demand for goat meat, there is great scope for using goats as an engine for poverty reduction. But currently there are only sporadic initiatives to support goat development in the State. However, while promoting goats one has to take care to see that it does not harm the environment particularly because these animals are mostly kept under open grazing. Therefore it is required to explore how sustainable mechanisms can be put in place to create a win-win situation where both the livelihood and environment are taken care of.

<sup>i</sup> Sabyasachikar, *Inclusive growth in the hilly regions: Priorities for the Uttarakhand economy*

<sup>ii</sup> Himmotthan. 2008. *Integrated Fodder and Livestock Development Project. Proposal-Phase I*

<sup>iii</sup> Kurup, M P G. 2003. *Livestock sector in Uttaranchal-Sector Analysis, Policy Perspectives and Integrated Development Plan*

<sup>iv</sup> Gol, NSSO. 2004-05. *Livestock Ownership Across Operational Landholding Categories in India*

<sup>v</sup> Himmotthan, 2011. *IFLDP Proposal*

<sup>vi</sup> Govt. of Uttarakhand, Animal Husbandry Department. <http://ahduk.org/default.aspx>

<sup>vii</sup> Rajwar, B.M.S. 2004. *Study of sheep, goat and angora rabbit husbandry in Uttaranchal*