

## Risk factors Associated with Sheep Farming in UT of Jammu and Kashmir

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### ABSTRACT

Jammu and Kashmir ranks 6th highest in terms of the sheep population. The demand for mutton is high in Kashmir as the majority of the population are non vegetarians. The study was taken in the Ganderbal district of Jammu and Kashmir and a total of 360 respondents were chosen for the study. Among the various risk factors reported by the sheep farmers harsh winters, low growth rate, and disease outbreaks were the top risk factors, and non-availability of stock and road closure as low-risk factors. The majority of farmers reported that all the risk factors have a frequency of occurrence as sometimes except harsh winters that have being reported always as a risk factor by the majority (51.67%). The risk factors create a hindrance towards the sheep framing to sustain and to meet the current demand for sheep and sheep-based products. All the reported risk factors need to tackle immediately with proper and effective strategy so that Kashmir becomes self-sufficient in sheep and sheep production.

**Keywords:** Sheep farming, Risk factors, Harsh winters, Highway closure, Kashmir.

### INTRODUCTION

Sheep rearing contributes around 8.5 percent of total value of output from livestock agrarian economy especially in the arid and semi-arid and mountainous area where crops and dairy farming are not economical (Shilpa & Ravindranath, 2018). In arid and semi-arid areas sheep husbandry is the sustainable livelihood resource for the rural people (Naqvi et al. 2013). Small ruminant farming is integral part of Indian rural farming especially in the arid/semi-arid and mountainous areas (Kumar

& Roy, 2013). Sheep and goats are critical assets for poor rural households, providing protein, milk, fertilizer, wool and fibre, as well as often representing essential social capital and access to financial credit (FAO, 2018). Small ruminants have advantages over large ruminants but potential contribution of sheep is constrained by inefficient production systems, poor breeding strategies, weak marketing structure, and inadequate official support (Divendra, 2001).

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Jammu and Kashmir is having 4.2% of total sheep population of the country and is at top 6<sup>th</sup> position with respect to sheep population. In spite of a positive growth in sheep population in the country, Jammu and Kashmir has shown a negative growth of -4.19% with sheep population decreased from 3.4 million in 2012 to 3.2 million in 2019 (Anonymous, 2019). To meet the surging domestic need for mutton it is necessary to know the risk factors that will in turn become a torchbearer in improving production and productivity of small ruminants in Jammu and Kashmir.

### MATERIALS AND METHODS

Present study was carried out in Ganderbal district of Central Kashmir that consists of nine sheep development blocks viz., Haqnar, Naranag, Kangan, Lar, Haripur, Nunar, Wakura, Shuhama and Tullulamu. The area was divided into three Zones based on the altitude. The blocks included in Zone-I were Haqnar, Naranag and Kangan and in Zone-II were Lar, Haripur and Nunar while as Zone-III included block of Wakura, Shuhama and Tullulamu. From each block 40 sheep hence 120 farmers from each Zone were selected for the study. This made a total of 360 respondents for the study.

**Analysis:** The chi square test, ranking and standard deviation correlation were used for the analysis of the data.

### RESULTS AND DISCUSSION

The various risk factors associated with sheep farming in the study area are represented in table 1. The major risk factor in the study area was found to be harsh winters followed by the low growth rate and disease outbreaks. Knowing the geographical location of the study area the winters are very harsh and farmers had to face various challenges during this period. The whole Kashmir remains almost cut off by in terms of road connectivity that causes the shortage of concentrates and other feed sources etc. moreover the grazing areas are covered with snow and sheep can't move in that season from one place to another. Thus some of the major challenges in sheep

rearing are faced during this season of the year. The improvement in the road connectivity or the advance storage of the necessary feed can be a way out to overcome this factor. In table 1 it can also be seen that winter challenge is of always faced by the majority in the Zone-I i.e. in high altitude areas as they remain disconnected even from the local markets and areas of the district due to heavy snowfall. The low growth rate being at rank II is another risk factor for sheep rearing in Kashmir. If we analyse critically this factor is associated with the socio-economic condition and shortage of feed and fodders. This challenge is faced sometimes by the majority of the farmers of the study area highest number being from the Zone-I. The probable reason could be the low socio-economic profile of the farmers in this zone that remains a hindrance in sufficient feeding hence low growth rate. There is also low availability of the cultivable land in this Zone hence less home grown fodders. The outbreaks was the another risk faced by the farmers. As farmers reported that they sometimes face sudden outbreaks of some diseases like Sheep Pox, FMD etc. Even the department of sheep Husbandry runs routine vaccination programmes but sometime delayed vaccination or failed vaccination these outbreaks causes lot of financial losses to the farmers. All the factors were found to have medium risk by the majority except the risk factor of non-availability of stock and the high way closure during the adverse weather conditions. Since many farmers in the area has maintained their own high quality breeds and are having profitable flock size. These sheep farmers became the resource persons for availability of the breeding stock. The closure of highway doesn't have a major effect in terms of the marketing of sheep for the local farmers of the valley. Since the traditional farmers prefer not to sell their stock during winter due to weak flock at that time, even though there is high demand and shortage of the mutton during this period. As reported in table: 1 majority of the farmers (67.22%) reported that they sometimes face the risk due to migration of the flock to

high land pastures. Migration risk is the risk faced when animals are taken to the highland pastures of the area. The migration risk includes the death of animal due to natural conditions during migration including wild animal attack, cloud burst, disease outbreaks

etc. although a risk factor but migration plays an important role in sheep rearing as reported by Kumar et al. 2014 that migration of the sheep helps farmers in decreasing the cost of rearing hence increases the earning.

**Table 1: Distribution of the respondents as per the risk factors known to them about sheep farming**

Risk factors	Scale	Zone-I	Zone-II	Zone-III	Overall	Weighed mean score	Rank
High death rate	Chi square = 5.26				P value =.072		
	Never	18 (15.00)	20 (16.67)	28 (23.33)	66 (18.33)	2.02	IV
	Sometimes	69 (57.50)	78 (65.00)	72 (60.00)	219 (60.83)		
	Always	33 (27.50)	22 (18.33)	20 (16.67)	75 (20.83)		
Low growth rate	Chi square = 32.801				P value =<0.001		
	Never	25 (20.83)	16 (13.33)	6 (5.00)	47 (13.06)	2.18	II
	Sometimes	80 (66.67)	62 (51.67)	58 (48.33)	200 (55.56)		
	Always	15 (12.50)	42 (35.00)	56 (46.67)	113 (31.39)		
Harsh winters	Chi square =49.32				P value =<0.001		
	Never	0 (0.00)	26 (21.67)	42 (35.00)	68 (18.89)	2.32	I
	Sometimes	33 (27.50)	40 (33.33)	33 (27.50)	106 (29.44)		
	Always	87 (72.50)	54 (45.00)	45 (37.50)	186 (51.67)		
Outbreaks	Chi square =19.24				P value =<0.001		
	Never	10 (8.33)	29 (24.17)	36 (30.00)	75 (20.83)	2.03	III
	Sometimes	71 (59.17)	67 (55.83)	60 (50.00)	198 (55.00)		
	Always	39 (32.50)	24 (20.00)	24 (20.00)	87 (24.17)		
Natural disaster	Chi square=31.36				P value =<0.001		
	Never	19 (15.83)	50 (41.67)	60 (50.00)	129 (35.83)	1.70	VII
	Sometimes	91 (75.83)	64 (53.33)	52 (43.33)	207 (57.50)		
	Always	10 (8.33)	6 (5.00)	8 (6.67)	24 (6.67)		
Non availability of stock	Chi square =125.65				P value =<0.001		
	Never	120 (100)	44 (36.67)	48 (40.00)	212 (58.89)	1.46	VIII
	Sometimes	0 (0.00)	56 (46.67)	72 (60.00)	128 (35.56)		
	Always	0 (0.00)	20 (16.67)	0 (0.00)	20 (5.56)		
Migration risk	Chi square=13.760				P value=0.001		
	Never	12 (10.00)	22 (18.33)	26 (21.67)	60 (16.67)	1.99	V
	Sometimes	78 (65.00)	80 (66.67)	84 (70.00)	242 (67.22)		
	Always	30 (25.00)	18 (15.00)	10 (8.33)	58 (16.11)		
Fluctuating market	Chi square=32.12				P value=<0.001		
	Never	25 (20.83)	46 (38.33)	12 (10.00)	83 (23.06)	1.85	VI
	Sometimes	71 (59.17)	74 (61.67)	102 (85.00)	247 (68.61)		
	Always	24 (20.00)	0 (0.00)	6 (5.00)	30 (8.33)		
Highway closure	Chi square=49.78				P value=0.001		
	Never	120 (100)	92 (76.67)	70 (58.33)	282 (78.33)	1.21	IX
	Sometimes	0 (0.00)	28 (23.33)	50 (41.67)	78 (21.67)		
	Always	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)		

Table 2 shows the correlation between the socio-economic and the various risk factors associated with sheep farming in Kashmir. In the table 2 it is depicted that high death rate is positively correlated with age and negatively correlated with occupation and education. This probable reason can be as the age increases the farmers is not able to care more towards the animals while as education and occupation are the positive points towards proper management of the sheep. Non availability of

stock is negatively correlated with age and positively correlated with income and education. With age the farmers gets knowledge about the stock and its availability so there don't raise any problem regarding the same. While as the education and income makes farmers more aware about the quality and profitability so the farmers prefers to rear the best stock that most of the times creates the issues of non-availability of the same.

**Table 2: Correlation of the risk factors with the socio-economic profile of the respondents**

Socio-economic factors	Risk factor	Correlation
Age	High death rate	.119*
	Non availability of stock	-.115*
Occupation	High death rate	-.114*
	Low growth rate	.107*
	Outbreaks	-.141**

	Road closure	.181**
Income	Natural disasters	-.145*
	Non availability of stock	.145**
	Road closure	.126*
Education	High death rate	-.107*
	Non availability of stock	.244**
	Fluctuating market	-.187**
	Road closure	.160**
Land	Outbreaks	.132*
	Migration risk	.160*

### CONCLUSION

The sheep farming although is the suitable enterprise knowing the topographical position of the Kashmir but there are also various challenges associated with it at the same time. The biggest risk factor being the harsh winters that has its effect on the economics of sheep farming need to be tackled effectively. There is need of creating fodder banks that can decrease the harness of this challenge to farmers, also there should through review of the vaccination policy and know the effectiveness of the vaccines available to department. All the reported risk factors need to tackle accordingly with proper and effective strategy so that Kashmir becomes self-sufficient in sheep and sheep production.

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