

Original Research Article

Economics of Sheep Farming in Pulwama District of Jammu and Kashmir

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ABSTRACT

A study was conducted to evaluate the economics of sheep farming in Pulwama district (south Kashmir) of Jammu and Kashmir. All the 4 tehsils (Pulwama, Pampore, Awantipora and Tral), were surveyed during the proposed work, wherein 10% of the villages from each tehsil and 10 respondents from each village were considered for the survey. Proportionate random sampling was followed for selection of villages. A total of 34 villages and 340 respondents were selected. Results revealed that the contributing factors to the gross expenditure were feeding costs (concentrate + dry fodder costs), annual depreciation on adult breedable stock, labour component, miscellaneous charges and depreciation on building with expenses of 70-74%, 12-15%, 9-11%, 1-2%, and 1%, respectively, while the contributing factors towards the gross income comprises of sale of lamb, retention of the additional lambs, sale of culled stock, wool and dung the with contribution of 62-64%, 13-20%, 13-16%, 2-4%, and 2-3%, respectively. Net income/year and net income/ animal/ year in district Pulwama was highest in Pampore (30 ewes + 1 ram) amounting to Rs. 82002.7 and Rs. 2645.24 followed by Awantipora (32 ewes + 1 ram) amounting to Rs. 77704.99 and Rs. 2354.69, Pulwama (28 ewes + 1 ram) amounting to Rs. 74190.72 and Rs. 2558.30 and Tral tehsil (29 ewes + 1 ram) amounting to Rs. 59596.75 and Rs. 1986.55, respectively. Net income/month was highest in Pampore tehsil (30 ewes + 1 ram) amounting to Rs. 6833.55 followed by Awantipora (32 ewes + 1 ram) amounting to Rs. 6475.41 and Pulwama (28 ewes + 1 ram) amounting to Rs. 6182.56 and Tral tehsil (29 ewes + 1 ram) amounting to Rs. 4966.39, respectively. Benefit: cost ratio in district Pulwama was highest in Pampore tehsil (1.75) followed by Pulwama (1.74), Awantipora (1.65) and Tral tehsil (1.56).

Keywords

Income, Benefit
Cost ratio,
Pulwama

Introduction

Livestock sector alone contributes nearly 28 and 11 percent to agricultural GDP and total GDP, respectively, at current prices during 2015-2016 in Jammu and Kashmir

(Anonymous, 2015-2016). Sheep population of the state (3.24 million) represents approximately 4.38 percent of the sheep population of India (74.26 million) and approximately 39 percent of the total livestock population (8.31 million) of the

state, standing at rank 6th in country (Anonymous, 2019a). The Jammu and Kashmir in general and districts Pulwama in particular is ideally suited for sheep and goat rearing owing to its agro-climatic conditions and plenty of grasslands, lush pastures and orchards available (Ashaq Manzoor *et al.*, 2019).

Sheep and goat rearing as secondary occupation has plays an important role in boosting the economy of the rural people. Pulwama has sheep population of 1.58 lac comprising of 1.56 crossbred and 0.02 lac local sheep (Anonymous, 2019b). Sheep rearers meet most of the requirements for the enterprise from the available resources except winter feeding. Economic evaluation of sheep farming in field conditions will help in providing a blueprint for identifying the critical points warranting specific interventions for improving sustainability of the sector most sought by the commercial sector.

Materials ad Methods

A survey of sheep rearers was conducted through questionnaire and personal visit of sheep sheds/ shelters in Pulwama district. All the 4 tehsils (Pulwama, Pampore, Awantipora and Tral), were surveyed during the proposed work, wherein, 10% of the villages from each tehsil and 10 respondents from each village were considered for the survey. Proportionate random sampling was followed for selection of villages.

Information on various aspects of sheep rearing was obtained on the basis of a questionnaire. The economics of sheep farming was evaluated by analyzing the expenditure and income components. However, only those components were taken into consideration which was actually involved in the prevailing production system.

Statistical analysis

The data collected during the period of study was coded, compiled systematically, tabulated and subjected to statistical analysis as per Snedecor and Cochran (1994) using Statistical Package for Social Sciences (SPSS-20) computer programme.

Results ad Discussion

The results of survey about economic analysis (annual expenditure and income) in Pulwama district have been presented in table-1. The average flock strength of sheep was 28 ewes + 1 ram in tehsil Pulwama, 30 ewes + 1 ram in Pampore, 32 ewes + 1 ram in Awantipora, 29 ewes + 1 ram in Tral tehsils of Pulwama district. The details of economic analysis have been discussed as annual expenditure, annual income, net annual income and benefit cost ratio.

Annual expenditure

Results revealed that in district Pulwama total annual expenditure for sheep unit in Pulwama tehsil (28 ewes + 1 ram), Pampore (30 ewes + 1 ram), Awantipora (32 ewes + 1 ram) and Tral (29 ewes + 1 ram) tehsils of Pulwama district was Rs. 99295.32, Rs. 108792.91, Rs. 118653.79 and Rs. 105893.68, respectively (table-1). The results infer that Awantipora (32 ewes + 1 ram) has maximum expenditure incurred because of larger flock size. The first contributing factor to the gross expenditure was feeding cost of concentrate, dry fodders and total feeding costs (concentrate + dry fodder costs) with expenses of Rs. 32070.90, Rs. 40517.14 and Rs. 72588.04 in Pulwama, Rs. 34565, Rs 41850 and Rs. 76415 in Pampore, Rs. 33067.03, Rs. 54511.87 and Rs. 87578.9 in Awantipora and Rs. 28430.77, Rs. 50815.38 and Rs. 79246.15 in Tral, respectively (Table-1). Expenditure on feeding of

concentrates, fodders and total feeding (concentrate+ dry fodders) comprises 32.30%, 40.81% and 73.11% of total annual expenditure in Pulwama 31.78%, 38.47% and 70.25% in Pampore, 27.87%, 45.95% and 73.82% in Awantipora and 26.85%, 47.99% and 74.84% in Tral tehsil sheep units, respectively (Table-1). Similar findings were observed by Tolone *et al.*, (2011). The second major component of annual expenditure was the annual depreciation on adult breedable stock with amount of Rs. 14225.73 in Pulwama, Rs. 16010.86 in Pampore, Rs. 16435.11 in Awantipora and Rs. 14697.13 in Tral, comprising 14.33%, 14.72%, 13.86% and 13.88% of gross income, respectively. The third component of annual expenditure was the labour component with worth of Rs. 9280 in Pulwama, Rs. 13020 in Pampore, Rs. 11220 in Awantipora and Rs. 9000 in Tral, comprising 9.35%, 11.97%, 9.46% and 8.50% of gross income, respectively. The fourth contributing factor to annual expenditure was the miscellaneous charges with amount of Rs. 1972 in Pulwama, Rs. 2015 in Pampore, Rs. 2079 in Awantipora and Rs. 1800 in Tral, comprising 1.99%, 1.86%, 1.76% and 1.70% of gross income, respectively. The fifth and last contributing factor was depreciation on building amounted to Rs. 1229.55 in Pulwama, Rs. 1332.05 in Pampore, Rs. 1340.78 in Awantipora and Rs. 1150.40 in Tral, comprising 1.24%, 1.23%, 1.13% and 1.09% of gross income, respectively (table-1).

Annual income

Regarding annual gross income, results indicate that gross income/year in Pulwama tehsil (28 ewes + 1 ram), Pampore (30 ewes + 1 ram), Awantipora (32 ewes + 1 ram) and Tral (29 ewes + 1 ram) tehsils of Pulwama district was Rs. 173486.04, Rs. 190795.61, Rs. 196358.78 and Rs. 165490.43, respectively. The components of annual income in sheep units of Pulwama tehsil (28

ewes + 1 ram), Pampore (30 ewes + 1 ram), Awantipora (32 ewes + 1 ram) and Tral (29 ewes + 1 ram) tehsils of Pulwama district were the sale of lamb, retention of the additional lambs, culled stock, dung and wool with average annual contribution around 62-64%, 13-20%, 13-16%, 2-4%, and 2-3%, respectively (Table-1). Similar findings were observed in earlier studies elsewhere (Suresh *et al.*, 2008; Prabu *et al.*, 2009 and Chandran *et al.*, 2013).

Net income/year and net income/ animal/ year and benefit: cost ratio

Net income/year and net income/ animal/ year and benefit: cost ratio in district Pulwama was highest in Pampore (30 ewes + 1 ram) amounting to Rs. 82002.7 and Rs. 2645.24 and 1.75 followed by Awantipora (32 ewes + 1 ram) amounting to Rs. 77704.99 and Rs. 2354.69 and 1.65, Pulwama (28 ewes + 1 ram) amounting to Rs. 74190.72 and Rs. 2558.30 and 1.74 and Tral tehsil (29 ewes + 1 ram) amounting to Rs. 59596.75 and Rs. 1986.55 and 1.56, respectively (Table-1).

Though Awantipora has comparatively larger flock size than Pampore; and Tral has higher flock size than that of Pulwama, but its income and benefit cost ratio was smaller than that of Pampore and Pulwama, respectively, because higher mortality factor in Awantipora and Tral tehsils proved antagonistic to the desired results. Mortality factor has caused the results little different from what Singh *et al.*, (2011) reported in his study on goat farming in Agra district of Utter Pradesh (India), where large flock size group of goat keepers achieved higher profits than in medium and small flock size groups.

Possible interventions

High costs of feeds/ fodders being one of the major constraints should be addressed through

Table.1 Economics of sheep rearing in district Pulwama ((Jammu and Kashmir)

Parameter	Category	Pulwama (28+1)	Pampore (30+1)	Awantipora (32+1)	Tral (29+1)
Housing cost	Construction cost	24591.11	26640.98	26815.64	23008.11
	Depreciation (A)	1229.55(1.24)	1332.05(1.23)	1340.78(1.13)	1150.40(1.09)
Animal cost	Cost of animals	227611.72	256173.77	262961.82	235154.10
	Depreciation (B)	14225.73(14.33)	16010.86(14.72)	16435.11(13.86)	14697.13(13.88)
Recurring cost	Concentrate (C)	32070.90(32.30)	34565(31.78)	33067.03(27.87)	28430.77(26.85)
	Dry fodder	40517.14(40.81)	41850(38.47)	54511.87(45.95)	50815.38(47.99)
	Labour (E)	9280(9.35)	13020(11.97)	11220(9.46)	9000(8.50)
	Miscellaneous (F)	1972(1.99)	2015(1.86)	2079(1.76)	1800(1.70)
Total cost	X=A+B+C+D+E+F	99295.32	108792.91	118653.79	105893.68
Income (Rs.)	Sale of lambs (G)	110820.16(63.88)	120296.76(63.05)	127156.17(64.76)	102983.02(62.23)
	Sale of culled stock (H)	23506.6(13.55)	29696.15(15.57)	23057.68(11.75)	23309.36(14.09)
	Sale of wool (I)	5432.86(3.14)	5172.9(2.72)	6247.04(3.19)	5374.20(3.25)
	Value of lamb retained (K)	26781.84(15.44)	26897.12(14.10)	32647.2(16.63)	26593.08(16.07)
	Sale of dung (L)	6944.58(4.01)	8732.68(4.58)	7250.69(3.70)	7230.76(4.37)
Gross income	Y=G+H+I+J+K+ L	173486.04	190795.61	196358.78	165490.43
Net income	Y-X	74190.72	82002.7	77704.99	59596.75
Net income per animal/Year		2558.30	2645.24	2354.69	1986.55
Net income /month		6182.56	6833.55	6475.41	4966.39
Benefit cost ratio		1.74	1.75	1.65	1.56

Establishing fodder banks, fodder preservation, fodder enrichment and its availability at reasonable rates.

Provision of subsidized loans

Control on market prices

Intervention in safeguarding and prevention of encroachments of Common Property Resources (CPR's).

Checking mortality rate by regular deworming and vaccination protocols.

Awareness camps addressing health and sanitation measures for checking infectious diseases and thereby mortality.

Shifting the policy of wool-oriented breeds to meat producing ones through introduction of elite germplasm.

Developing mutton villages in the resource rich areas. Harnessing opportunities for entrepreneurship in sheep development.

Feed and fodder, annual depreciation on adult breedable stock, labour, miscellaneous charges and depreciation on shelter amounts around 70-74%, 12-15%, 9-11%, 1-2%, and 1% of the total annual expenditure, respectively, while the contributing factors towards the gross income comprises of sale of lamb, retention of the additional lambs, sale of culled stock, wool and dung the with

contribution of 62-64%, 13-20%, 13-16%, 2-4%, and 2-3%, respectively. Net income/year, net income/ animal/ year and benefit: cost ratio increases with increases in flock size.

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Conflict of Interest

The authors declare that there is no conflict of interest.

References

Anonymous, 2015-2016. National Accounts Statistics, Central Statistical Organization, Government of India.

Anonymous, 2019a. 20th Livestock census, All India report, Government of India, Directorate of Economics and Statistics. Ministry of Agriculture, department of Animal Husbandry, Dairying and Fisheries Krishi Bhawan, New Delhi.

Anonymous, 2019b. District Sheep Husbandry Office, Department of sheep husbandry Pulwama, Government of Jammu and Kashmir.

Ashaq Manzoor, Khan, H. M., Patoo R. A., Ganai, A. M., Sheikh, F. D., Parrah,

J. D., Shah, A. A. and Banday, M. T. 2019. Physical traits of sheep in Anantnag and Pulwama districts of Jammu and Kashmir. *International Journal of Veterinary Sciences and Animal Husbandry*, 4: 45-50

Chandran, P. C., Verma, S. B., Mandal, K. G., Kumar, B. and Singh, R. K. 2013. Distribution and management practices of Shahabadi sheep in its breeding tract of Bihar. *Indian Journal of animal sciences*, 83(2): 190-193.

Prabu, M., Selvakumar, K. N., Pandian, A. S. S. and Meganathan, N. 2009. Economic analysis of sheep farming in Tamil Nadu. *Indian Journal of Small Ruminants*, 15(2): 224-230.

Singh, S. P., Singh, K. A. and Prasad, R. 2011. Economics of goat farming in Agra district of Uttar Pradesh. *Indian Research Journal of Extension Education*, 11(3): 37-40.

Snedecor, G. W. and Cockran, W. G. 1994. Statistical Methods, 8thEd. The Iowa State University Press, Ames, Iowa, USA.

Suresh, A., Gupta, D. C. and Mann, J. S. 2008. Returns and economic efficiency of sheep farming in Semi-arid regions: A study in Rajasthan. *Agricultural Economics Research Review*, 21: 227-234

Tolone, M., Riggio, V., Maizon, D. O. and Portolano, B. 2011. Economic values for production and functional traits in Valle del Belice dairy sheep using profit functions. *Small Ruminant Research*, 97: 41-47.