

COASTAL SHEEP FARMING AT THE VILLAGES OF NOAKHALI DISTRICT IN BANGLADESH

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ABSTRACT

A total of 86 coastal sheep keeping farmers were enumerated to know about the contribution of sheep farming through sheep sale return and acceptance pattern of sheep meat in the study region at the villages of Noakhali district in Bangladesh during April 2016 to May 2016. Many farmers were found sheep meat tastier than goat meat and they (89.50%) reported that acceptance of sheep meat at their community was increasing day by day. The highest number of sheep was noted in farms group A (277.31±1.91) while the lowest found in group D (19.71±0.78) similarly; the highest return from sheep sale per farm was reported for farm group A (BDT 83461.54±1.91 year⁻¹farm⁻¹), while the lowest was documented for farm group D (BDT 15128.5±0.78 year⁻¹farm⁻¹). Over all price of sheep meat was BDT 550.00±0.51 kg⁻¹.

Key words: Sheep sale return, sheep meat, Bangladesh

INTRODUCTION

Sheep are mainly kept for meat purpose in Bangladesh at char area, coastal belt and rural region of all over the country. Meat shortage in Bangladesh is 54.97 gm/head/day (MOFL, 2013). Sheep could easily be kept by rural farmers because these small ruminant animals have ability to adapt to harsh environment, poor management and feeding practices (Sultana *et al.*, 2011). During the last twelve Years, Sheep population increased 2.5 times, with annual growth rate of 5% (BBS, 2008). About 50% peoples are partly dependent and 20% of the total population is directly dependent on livestock sector in Bangladesh and Livestock contribute about 2.73% of Gross Domestic Products (Draft SFYP, 2010). Most of the sheep are indigenous, with few crossbreds and these animals are capable of bi-annual lambing and multiple births (Bhuiyan, 2006). Highest birth weight and wool production was in Coastal sheep but better reproductive performance was reported in Barind sheep (Hassan and Talukder, 2011). In three ecological zones like Barind, Jumna basin and Coastal areas in Bangladesh, about 32% of 2.7 million sheep are reared (BBS, 2008). Interestingly 25.32% of total number (920) of sheep breeds are found in Asia and majority (64.43%) of total sheep population in the world are found in Asia (FAO, 2003). Body weight of adult sheep, age of ewe at first lambing, ear length, body length, heart girth, wool production per year, litter size were 41.60 kg, 439.5 ± 58.3 days, 8.4 cm, 45.9 cm, 64.9 cm, 852.9± 33.1 g, 1.6 ± 0.2, respectively, while the coat color were white (70%) and white brown (30%) in Bangladeshi coastal sheep (Hassan and Talukder, 2011). Addressing specific sheep type for productive and reproductive performances of native sheep in Bangladesh, investigation on feeding system did not perform (Sultana *et al.*, 2011). Published information about coastal sheep farming return and sheep meat popularity is scanty but, to conserve and develop a livestock species, knowledge about contribution to the livelihood of target community and acceptance of that species to the said community could play the most important role. So, this study was designed and conducted to explore knowledge to define contribution of sheep

farming to the livelihood of target community through sheep sale return and acceptance of that species to the said community.

METHODOLOGY

Data like sheep farm size, sheep meat taste, sheep meat acceptance and sheep meat price t were collected from a total of 86 coastal sheep keeping farmers at four villages of Companigonj upazila under the district of Noakhali in Bangladesh during April 2016 to May 2016 to know about the contribution of sheep farming and acceptance pattern of sheep meat in the study regions. Farm sizes like below (Table A) were used to conduct the study.

Table A: Farm size studied

Farms groups	Number of farmers
200 to 350 sheep per farm	13 (15.12%)
150 to below 200 sheep per farm	18 (20.90%)
50 to below 100 sheep per farm	20 (23.26%)
below 50 sheep per farm	35 (40.70%)
Total	86

A pre prescribed questionnaire was used to collect data by doo door visit and the design of the study was unbalanced factorial in nature because the observation numbers of different traits were unequal. The recorded data were stored on to the excel spread sheet and edited for further analyses. Then data were analyzed for having frequency and percentages through descriptive statistics menu and Duncan’s Multiple Range Test (DMRT) were used for performing mean comparisons using the Statistical Package for the Social Sciences version 14.0 (SPSS, 2005).

RESULTS

Sheep farming

All participating farmers kept sheep, among the coastal sheep farmers many of them started sheep farming as their family tradition (79.10%) though some of them started sheep farming after the sheep development project of Bangladesh Livestock Research Institute (BLRI) launched at the study region (20.90%).

Table 1: Sheep Farming and Farmers training on sheep farming

Parameters	Farmers opinion	
Do you keep sheep?	Yes	86 (100.00%)
	No	0 (0.00%)
Sheep farming started	Family tradition	68 (79.10%)
	After launching the sheep development project of BLRI at the study area	18 (20.90%)
Training received on sheep farming	Yes	52 (60.50%)
	No	34 (39.50%)

Many of the sheep farmers received training but about 39.50% did not get training on sheep farming (Table 1).

Table 2: Taste and acceptance status of sheep meat

Parameters	Farmers opinion	
Is Sheep meat tastier than Goat meat?	Yes	59 (68.605)
	No	27 (31.40%)
Sheep meat acceptance to the community at present	Increasing	77 (89.50%)
	Not increasing	9 (10.50%)
Do you and your family eat sheep meat?	Yes	86 (100.00%)
	No	0 (0.00%)
From when did you start to eat sheep meat?	Family tradition	83 (96.50%)
	recent	3 (3.50%)

Table 3: Farms groups and number of sheep at different ages in sheep keeping family

Farms group	A	B	C	D	F
Starting stock	40.78 ^a ±1.91(13)	35.28 ^a ±1.04(18)	20.50 ^b ±0.99(20)	9.09 ^c ±0.78(35)	41.91
Present stock	277.31 ^a ±1.91(13)	130.83 ^b ±1.04(18)	69.85 ^c ±0.99(20)	19.71 ^d ±0.78(35)	459.41
Present stock per age groups					
Farms groups	A	B	C	D	F
Ram	56.54 ^a ±1.91(13)	24.39 ^b ±1.04(18)	14.05 ^c ±0.99(20)	3.46 ^d ±0.78(35)	150.27
Ewe	128.08 ^a ±1.91(13)	48.44 ^b ±1.04(18)	25.15 ^c ±0.99(20)	8.60 ^d ±0.78(35)	150.09
GL	51.54 ^a ±1.91(13)	31.11 ^b ±1.04(18)	16.15 ^c ±0.99(20)	3.74 ^d ±0.78(35)	178.67
Lambs	41.15 ^a ±1.91(13)	26.89 ^b ±1.04(18)	14.50 ^c ±0.99(20)	3.91 ^d ±0.78(35)	57.02

Note: Farms groups: A= 200 to 350 sheep per farm, B= 150 to below 200 sheep per farm, C= 50 to below 100 sheep per farm and D= below 50 sheep per farm, F= F value found in one way ANOVA in Post Hoc test for DMRT, ^{abcd} Means with the different superscripts differed significantly within the row (P<0.05). GL-growing lambs.

Taste and acceptance of sheep meat

Participating farmers found sheep meat tastier than goat meat in their observation but some of them (31.40%) found goat meat tastier than sheep meat. Most of the coastal sheep farmers (89.50%) reported that acceptance of sheep meat at their community was increasing day by day but a few of them gave contradictory opinion in their views.

All participating farmers and their family members used to take sheep meat and most of them started to eat sheep meat as their family tradition from (Table 2).

Farms groups and number of sheep in a farm

Starting stock: Though variation between farms groups A and B was not significant but among the groups significant variations were reported. The lowest mean number of sheep was documented in groups D (9.09±0.78) while the highest number of sheep found in group A (40.78±1.91).

Test stock: Test stock means, stock from which information was collected during survey work. Significant variations among the farms groups documented. The highest number of sheep was noted in farms group A (277.31±1.91) while the lowest found in group D (19.71±0.78).

Ram number in test stock: Significant variations for the numbers of ram, among the farms groups documented. The highest number of ram was noted in farms group A (56.54±1.91), while the lowest found in group D (3.46±0.78).

Ewe number in test stock: Significant variations for the numbers of ewe, among the farms groups documented. The highest number of ewe documented in farms group A (128.08±1.91), while the lowest found in group D (8.60±0.78).

GL number in test stock: Significant variations for the numbers of GL, among the farms groups documented. The highest number of GL documented in farms group A (51.54±1.91), while the lowest found in group D (3.74±0.78).

Lambs number in test stock: Significant variations for the numbers of lambs, among the farms groups documented. The highest number of lambs reported in farms group A (41.15±1.91), while the lowest found in group D (3.91±0.78).

Table 4: Yearly return from sheep sale in Bangladeshi Taka (BDT) per farm under different farms groups and in different villages

Farms group	Return from sheep sale per year per farm	Village	Return from sheep sale per year per farm
A	83461.54±1.91 ^a (13)	1	42000.00±1.04 (18)
B	53055.56±1.04 ^b (18)	2	38430.56±0.77 (36)
C	39500.00±0.99 ^b (20)	3	39722.22±0.87 (27)
D	15128.5±0.78 ^c (35)	4	29500.00±2.00 (5)
F value	37.22	F value	0.21

Note: Farms groups: A= 200 to 350 sheep per farm, B= 150 to below 200 sheep per farm, C= 50 to below 100 sheep per farm and D= below 50 sheep per farm. Village: 1=CharElahi, 2= Char fokira, 3= Musapur and 4= Rampur. ^{abcd}Means with the different superscripts differed significantly within the column ($P<0.05$), F= F value found in one way ANOVA in Post Hoc test for DMRT.

Return form Sheep sale

Yearly return from sheep sale varied significantly among farm groups but the same did not differ significantly for villages. The highest return from sheep sale per farm was reported for farm group A (83461.54±1.91BDT/year/farm), while the lowest was documented for farm group D (15128.5±0.78BDT/year/farm). Yearly return from sheep sale did not vary between farm group B and C (Table 4).

Sheep meat price

Sheep meat price did not vary among the villages significantly. Over all price per kg sheep meat was 550.00±0.51 BDT. At Char Elahi village sheep meat price was higher than other villages.

Table 5: Price of Sheep meat

Name of Village	BDT kg ⁻¹
Char Elahi	538.89±1.04
Char Fokira	562.50±0.77
Musapur	548.15±0.87
Rampur	510.00±2.00
Level of significance	NS
Overall mean	550.00±0.51

Note: NS= Not Significant ($P>0.05$).

DISCUSSIONS

Sheep farming

Most of the sheep farmers used to keep sheep as their family tradition and the sheep variety was Bangladeshi coastal sheep. But, all categories of farmers (landless, marginal, small, medium and large farm families) had higher number of sheep compared to goat and cattle in some selected sheep populated coastal areas (Companygonj, Subarnachar and Kobirhat upazilla) of Noakhali district in Bangladesh (Rahman et al., 2014).

Taste and acceptance of sheep meat

Majority of the studied sheep farmers reported that sheep meat is tastier than goat meat. Most of the respondents were taking sheep meat as family tradition. Younger sheep and goat meat is more tender, contains less fibrous tissue residue and the species flavour was less typical than that of older animals but with increasing fatness of carcasses, the tenderness and species flavour of the cooked cuts increased significantly (Schonfeldt et al., 1993). Sheep keepers also observed that, acceptance of sheep meat in their locality were increasing day by day, similarly, Dhaka

Tribune (2015) found sheep rearing a profitable business among the framers in four upazilas of Chuadanga district and sheep farming was gaining popularity. On the other hand sheep population increased from 2.7 to 3.14 million from 2008 to 2013 (BER, 2014).

Farms groups and number of sheep in a farm

Starting stock: Variation between farms groups A and B was not significant but among the groups significant variations were reported. The lowest mean number of sheep was documented in group D while the highest number of sheep found in group A.

Test stock: Significant variations among the farms groups documented. The highest number of sheep was noted in farms group A, while the lowest found in group D. However, Islam et al. (2016) reported that sheep farmers kept 20 to 200 sheep in their farm at coastal region in Bangladesh.

Ram, Ewe, GL and Lambs number at Test stock: Significant variations for the numbers of ram, ewe, GL and lambs among the farms groups documented. The highest number of ram, ewe, GL and lambs were noted in farms group A, while the lowest found in group D.

Return from sheep sale

Yearly return from sheep sale varied significantly among farm groups but the same did not varied significantly for villages. The highest return from sheep sale per farm was reported for farm group A, while the lowest was documented for farm group D. Yearly return from sheep sale did not vary between farm groups B and C. The above discussion might be indicative that the larger the farm sizes the higher the amount of sheep sale return. One sheep farmer, Azim Ali of Gaidghat village under sadar upazila in Chuadanga district earned a net profit of BDT 12,000 to 15,000 per month from a farm of 30 sheep (Dhaka Tribune, 2015).

Price of Sheep meat

Price of Sheep meat did not vary among the villages significantly. Over all price of sheep meat was 550.00±0.51 BDT kg⁻¹. However, goat and sheep meat price at Mymensingh municipality market were reported 700 & 650 BDT kg⁻¹ respectively (Hossain, 2017) but at Bashurhat municipality market of Noakhali district sheep and goat meat price was found same and this was 600 BDT kg⁻¹

(Liton, 2017). At Char Elahi village the price of sheep meat was higher than other villages.

CONCLUSIONS

Most of the sheep farmers used to keep Bangladeshi coastal sheep as their family tradition and more interestingly majority of the participating sheep farmers reported sheep meat tastier than goat meat. The highest numbers of sheep per farm were noted in farms group A while the lowest found in group D in the test stock. Moreover, the highest number of ram, ewe, growing lambs (GL) and lambs were noted in farms group A, while the lowest found in group D. The larger the farm size the higher the amount of sheep sale return was reported and sheep meat acceptance to the studied region was increasing day by day.

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