Prospects and Constrains of Household Sheep Rearing at Subarnachar, Noakhali

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A production report submitted by as per approved style and content

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Contents

Abstract

The experiment was conducted to investigate theprospects and constrains of household sheep rearing at Subarnochar,Noakhali. Data were collected through an interview schedule personally from 35 respondents in 8 unions of SubarnacharUpazila who were involved in sheep rearing. Parameters studied were farmer's demographic information,farm demographic information, animal level information,feeds and fodder,health care, living condition of livestock and factors related to household sheep production. Among the farmers a total of 77.14% of the farmer was male and 22.85% was female. Most of the farmers were illiterate (71.42%) education level of farmers of primary, secondary were22.85% and 5.71%, respectively.Sheep rearing has been taken as a primary source of income of about 45.71% farmers. Out of total farmers 48.57% were trained up on sheep farming and 51.42%were non-trained. Based on experience about 54.28% farmers have atleast 10 years farming experience. Farmers have average 13.23 decimal grazing lands and94.28% farmerused roadside grass and 91.42% tree leaves and roadside grass for sheep rearing. About 31.42%, 85.71% and 82.85% farmers practiced vaccination, de-worming and shearing, respectively. About 22.85% farmers treat their sheep by veterinary doctor and 82.85% farmers practice dipping.57.14% farmer rely on only scavenging for fed their sheep and 42.85% farmer give concentrate with scavenging feeding. Agriculture was the main occupation of 51.42% and 28.57% farmer belongs to lower class before farming. On an average, 71.42% sheep suffer diarrhea while respiratory diseases found in 62.85% sheep. Age at first lambing (days) was 309 days whereasgestation period, lambing interval, lactation period, litter size were 142.20, 208.86,60.10 days and , 1.86 in numbers, respectively

Key Words: Prospects, constraints, productive, reproductive, traits, sheep rearing, Subarnochor.

Chapter 1

Introduction

Bangladesh is an agricultural country and livestock is a most crucial sub-sectors of agriculture which contributes a vital role in enhancing human nutrition and national economy of the country (Sharma et al., 2014). Nearly 80 to 85% of marginal, landless and small farmer keep livestock as a cash income generation (Hossain et al., 2016).Cattle, buffalo, sheep,goat and poultry are the main livestock resources of Bangladesh where sheep holding third position which is account for 3.607 million (DLS,2019-2020).The livestock sector contributes about 1.43% in GDP and it's annual growth rate about 3.04% (DLS,2019-2020). Small ruminant specially Sheep have great impact in livestock and increase the popularity of rearing day by day among the costal farmer. Sheep are found throughout the country but mostly reared at Barind, Jamuna basin and coastal belt area. Significant number of sheep are rear in coastal belt such as in Barisal, Bhola and Noakhali district (Hassan and Talukdar,2011; Hossain et al., 2019).Subarnachar is one of the important and livestock richedUpazila of Noakhali district which has total land area 575.47sq.km, total population 2,90,000 (District Statistics, 2011).In eight unions of SubarnacharUpazila marginal farmers are reared sheep along with other livestock for supplementary income generation. In this area, household sheep are reared in free range in pasture land with or without supplementary feed. Separate Night shelter and supplementary feed are provided for household farming (Huque and Khan,2017) Mostly sheep don't have specific feed habit and needed small quantity of feed. They can survive by consuming strover, pasture, weeds, road site grass that why no need of special fodder cultivation. Generally, sheep are reared in roadsides, bank of cannels fallow land with minimum investment (Sultana et al., 2010). Sheep are docile animal and grazing in flock,no special maintenance and labor needed so illiterate men, women, children can look after a sheep flock easily. Special characterized muzzle and split upper lip help them to graze small size grasses which are not generally utilized for other livestock. Sheep are adapted with hot humid, sub humid tropics and are capable to produce offspring every six months interval with multiple litter size. Bangladesh's farmers rear mostly non-descriptive indigenous sheep breed which have good genetic properties but cross breed are also found in many area. Sheep are reared mainly for meat purpose, however wool, manure are found from sheep. Sheep meat(mutton) is soft than chevon which is easily digestible and become good

source of animal protein for the people. Sheep farming becomes popular due to their high prolificacy, hard diseases resistance, early maturity and wide range of environment adaptability (Sultana et al., 2011)30.18% of total requirement of meat is produced by livestock sector and needed to increase production of animal protein many folds (Huque, 2012). To minimize this gap between needs and production of animal meat many species can contribute where sheep can be another good option for the country. Although sheep farming havelot of advantages and possibility in Bangladesh it is not free of constrains. Many investigations were conducted in coastal area with sheep farming most of these was about large scale sheep farming but very limited study was found about small and household sheep farming.

Therefore, in this study we want to reveal out the inside of household sheep farming and want to investigate about the prospects and constrains of household sheep farming at Subarnachar, Noakhali.

Chapter 2

Materials and Methods

Study area and time period

The study was carried out at eight unions in SubarnacharUpazila of Noakhali district during 1st February 2021 to 30th April 2021. Study area is selected based on large number of sheep population, sheep farming and potentiality of sheep farming.

Selection of farmers and interview schedule

A total of 35 sheep farmers were randomly selected from eight unionsin SubarnacharUpazila. The survey data were collected through the face to face interview from 35 sheep farmers of the study area where 5 farmers were selected from every 3 unions and4 farmers selected from rest 5 unions. The interview schedule was fixed by contracted with farmer according with favorable time of the farmer.

Preparation a questionnaire

A well structure questionnaire was prepared for collecting relevant and important survey data from the sheep farmers keeping the aim of the study in mind. The question was simple and easy to understand for the responders also open and close ended question was included on it.

Farm visit and data collection

The researcher visited the selected sheep farms and data collected from the farm register or interviewing from the respective sheep farmers. The following information were collected as given below:

1. Farmer's Demographic Information
2. Farm Demographic Information
3. Farm management system
4. Animal level information
5. Prospect of sheep farming in farmer perception
6. Constraints of sheep farming
7. Processing of the primary data, tabulation and analysis

Chapter 3

Results and Discussion

Socio-economic status of the sheep farmers

According to the results majority (77.14%) of the sheep farmers were male followed by 22.86% female directly involved (Figure 1). A total of 54.29% of the farmers reared sheep as a partial source of income for their family whereas 45.71% reared as primary source of income (Figure 2). It was found that male farmers were more active, energetic and enthusiastic in sheep rearing activities. Majority 71.42% of the sheep farmers were illiterate followed by secondary 5.71%, primary 22.85% (Figure 3). The findings of this study were quite similar with that of Begum et al. (2007), where they were reported that 20% farmers were illiterate, 40%, 30% and 10.0 % farmers had primary, secondary and above secondary level of education, respectively. Table 4 showed that the occupation of 51.42% sheep farmers was agriculture followed by day labor and business 11.42% while others (25.71%). Kamal et al. (2012) found that the occupation of majority of the farmers (61.3%) was agriculture followed by day laborer (18.7%), businessman (13.3%) and the lowest number of farmers (6.7%) engaged in service. In the table 5 represents that 85.71% of the farmers having own crop land and average land area was 56.4 decimal/household along with 37.14% of the farmer had own grazing land for sheep and average land grazing land was 13.23 decimal/household.
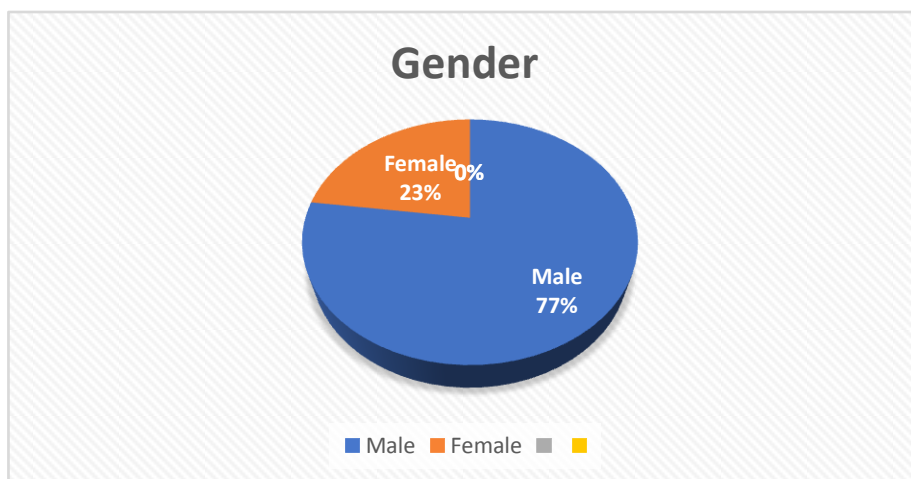

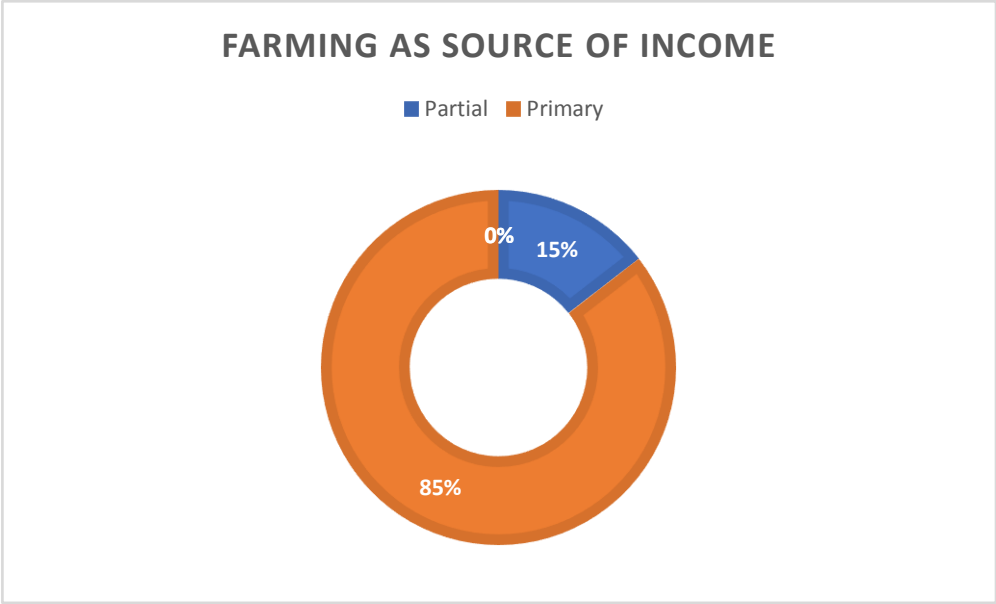**Figure 1: Distribution of farmer according to gender**

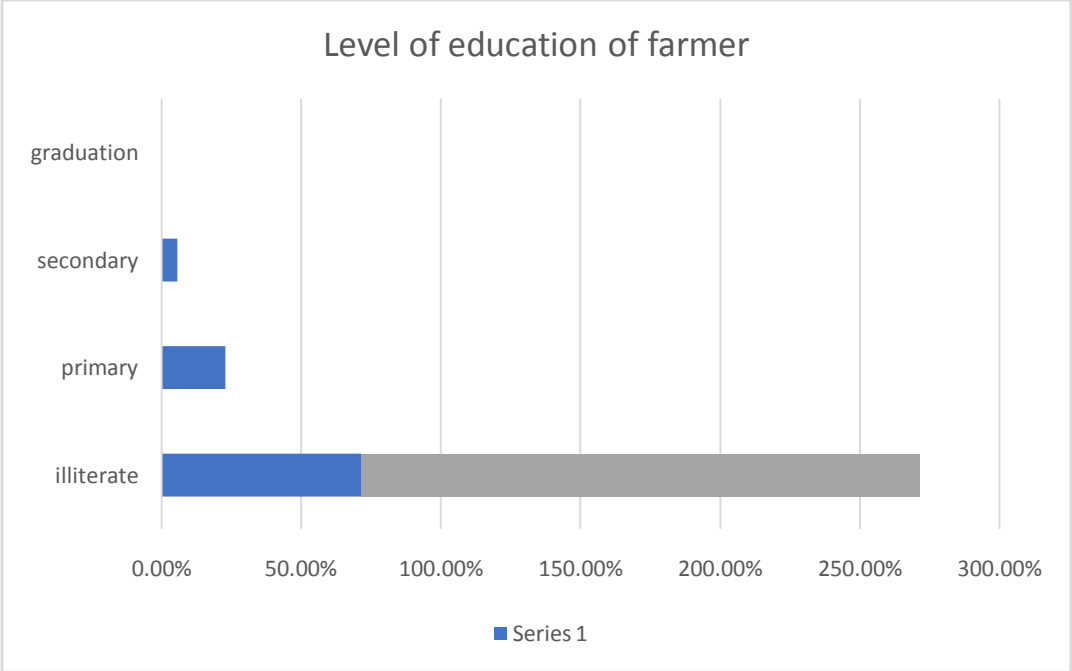**Figure 2: Distribution of farmer farming as source of income.**

Figure 3: Educational qualification of farmers.

Table 4: Occupation of sheep farmer.

Categories	Variables	Frequency (35)	Percentage
	Agriculture	18	51.43%
	Labor	4	11.43%
Occupation of farmer	business	4	11.43%
	Service	0	0%
	Others	9	25.71%

Table 5: Distribution of farmer according with having own land

Categories (in Decimal)	Frequency	Percentage	Mean (Decimal)	Max.	Min.
Crop land	Having crop land = 30	85.71%	56.40	163	12
	Having no crop land = 05	14.28%			
House land	Having house land=35	100%	15.74	50	2
	Having no house land=0	0%			
Fodder land	Having fodder land=0	0%	0	0	0
	Having no fodder land=35	100%			
Grazing land	Having grazing land=13	37.14%	13.23	88	2
	Having no grazing land=22	62.85%			

Knowledge and attitude of the sheep farmers

The study represents that about 51.42% of the sheep farmers had no training on sheep farming (Table 6). However, 48.57% of the sheep farmers have training on sheep farming. Kamal et al. (2012) found that majority of (79.30%) respondent farmers had no training on sheep/goat farming followed by 16.7% low training, 3.3% medium training and 0.7% of the farmers had high training exposure on sheep rearing.

The results of the Table 7 showed that 54.28% of the sheep farmers had reported that they have 10 years experience of sheep farming following 31.42% and 14.28% farmer have 20 and 30 years sheep farming experiences, respectively.

Table 6: Distribution of the sheep farmers according to their training exposure

Variables		Freq.	Percentage
Training exposure	Having training	17	48.57%
	Having no training	18	51.42%

Table 7: Farming experience of farmer

Categories	Scores	Frequency	Percentage
Farming experience of farmer	≤10	19	54.28%
	≤20	11	31.42%
	≤30	5	14.28%

Housing of Sheep farm:

The result of the study revealed that 48.571% of the farmer followed free range/bathan rearing system whereas semi-intensive rearing system followed by 51.42% of the farmer. Majority (57.14%) of the farmer used tin shed house and Semi-paka and semi-concrete shed was 14.28% and 8.5% respectively. Slatted type floor, muddy and wooden blatten was common type floor for sheep rearing and percent range from 34.28%, 31.42% and 28.57% (Table 8). Table 9 showed that 42.85% of the farmer provide 4 square feet space per animal, 22.85% and 28.57% of the farmer given 6 and 10 square feet space per animal respectively only 5.71% farmer give above 10 square feet space.

Table 8: Farm demographic information.

Categories	Variables	Freq.	Percentage
	Intensive	0	0%
Rearing system	Semi-intensive	18	51.42%
	Free range/Bathan	17	48.57%
	total	35	100%
	Concrete	0	0%
	Semi concrete	3	8.57%
	Herring	0	0%
House type	Tin shed	20	57.14%
	paka /Semi-paka	5	14.28%
	other	7	20%
	total	35	100%
	Slatted	12	34.28%
	Muddy	11	31.42%
	Herring	0	0%
Floor type	Wooden	10	28.57%
	blatten/moorum	2	5.71%
	total	35	100%
	Over pole	21	60%
Shed type	Over ground	14	40%
	others	0	%

Table 9:   Distribution farmer of Space provided for per animal

Categories	Score (Sq.feet)	Frequency	Percentage
Space per animal (sq. feet)	≤4	15	42.85%
Max.16	≤6	8	22.85%
Min.1.4	≤10	10	28.57%
	above 10	2	5.71%

Feeding of sheep

The results of the study showed that 91.8% of the sheep farmers fed leaves and seasonal grasses to their sheep and about 94.28% of the sheep farmers used road side grass (Table 10). In another study 60% of the sheep fed roadside grass and only 33% sheep fed cultivated fodder and roadside grass during rainy season (Sarker et al., 2017). For treatment of sick sheep, 42.85% of the farmers contacted a local doctor and 22.85% contacted a veterinarian (Table 11). Rest of the sheep farmers (34.28%) did not practice any treatment measures for their sick animals. Kamal et al. (2012) found that 73.3% of the farmers contacted a local doctor and 26.3% of the farmers contacted a veterinarian for the treatment of small ruminant diseases. The results of the study showed that 31.42% of the farmers gave vaccines to their sheep and 68.57% of the sheep farmers did not vaccinate their sheep (Table 12). Begum et al. (2007) reported that 83.3% of the farmers used vaccination, 80% of the farmers took activities for de-worming. Another study stated that about 80% of the farmers regularly vaccinated their sheep, 87% of the farmers did not use antibiotics, hormones, and growth regulators for meat production and only 13% farmers used these for sheep production (Sarker et al., 2017). On an average 57.00% of the farmer fed the sheep only scavenging and rest of 43.00% farmer rely on scavenging and concentrates feeding (Table 11).

Table 10: Distribution of sheep farmers according to the types of feed supplied

Feed	Percentage
Tree leaves	91.429%
Road side grass	94.2857%
Legume	54.2857%
Seasonal grass	91.4285%
Straw	11.4285%
Hay	2.8571%

Table 11: Animal feeding method and animal treatment

Categories	Variable	Freq.	Percentage
Feeding	Scavenging	20	57.14%
	Stall feeding	0	0%
	Scavenging & conc.	15	42.86%
Treatment by	Own	12	34.29%
	Quack	15	42.86%
	Vet. doctors	8	22.86%

Table 12: General prevention practices

Categories	Variable	Frequency	Percentage
Dipping practice	Yes	6	82.86
	No	29	17.14
Shearing practices	Yes	6	82.85
	No	29	17.14
Vaccination	Yes	11	31.43
	No	24	68.57
Deworming	Yes	30	85.71
	No	5	14.29

Common diseases of sheep farm:

Many diseases have been found in household sheep farm.Nonspecific diarrhea found 71.42% and pneumonia,coughing,fever,bloat,PPR about by 51.42%, 62.85%,60% 45.71% and 22.45% respectively. Foot rot, abortion,predator, external parasite also found in many sheep farm which is about above 10% (Table 13).

Table 13:   Distribution of diseases commonly found in the sheep farm

Diseases	Percentage
Pneumonia	51.42%
Diarrhea	71.42%
Coughing	62.85%
Fever	60%
Bloat	45.71%
PPR	22.8%
Foot rot	17.14%
Toxemia	2.8%
Heart stroke	2.8%
Res. Infection	5.7%
Tympani	8.5%
Indigestion	2.8%
Tetanus	2.8%
Abortion	14.2%
Lymphadenitis	11.4%
Predator	11.4%
External parasite	20%

Statistics of sheep population:

Data contained in the Table 14 indicate that the 28.57% farmershave 10-15 number of sheep and 17.14% farmer have ≤5 and rest of11.42% farmer have above 20 number of sheep. A total number of lactating sheep ≤3,≤6 and above10,were 80%，14.2857%, 5.7142% respectively. About 82.85% farmers have ≤ 3 pregnant sheep where8.85% farmer have above 6 pregnant sheep. Age at puberty of household sheep at Subarnachar was 188.1714 days and 230 days,150days was maximum and minimumdays respectively. On the basis of nutrition, breed and date of birth, the age at puberty ranges from 5 to 20 months for female sheep (Ensminger, 2002). Age at first lambing (days) was 309 days,lambing interval (days),gestation period, lambing interval, lactation period, litter size were 142.2 days, 208.8571 days 60.057 days, 1.8571 number respectively (Table15).Husain and Amin (2003) reported that lambing interval of native sheep was 253 days which is higher than the findings of present study. Nimbkar et al. (2002) found the average lambing interval was 264 ± 81 days in Deccani sheep in India which is also higher than the present findings. Gestation length did not differ significantly amongthe three areas.Husain and Amin (2003) reported that the gestation period of native sheep was 149.0 days which was higher to the present findings. Nimbkar et al. (2002) found that the average litter size of Garole x Deccani sheep was 1.6 and Banerjee (2008) reported litter size of 1.9 in native Bengal Garole which was higher than that of present findings. Large litter size and short lambing interval of indigenous sheep of south-western coastal regions of Bangladesh indicate that this sheep is more prolific in nature. Indigenous sheep of south-western coastal regions were low milk producers. Therefore, farmers in all areas under study reported that they did not get milk from their sheep. The lambs usually suck the udder to fulfill their requirements.

Table 14: Total number of sheep according to their different stage of production

Categories	Score(number)	Freq.	Percentage
Total number of sheep	≤5	6	17.14%
	≤10	10	28.5%
	≤15	10	28.5%
	≤20	5	14.2%
	Above 20	4	11.4%
No. lactating	≤3	28	80%
	≤6	5	14.2%
	Above10	2	5.7%
No. of dry	≤3	29	82.8%
	≤8	3	8.5%
	Above 10	3	8.5%
No. Pregnant	≤3	29	82.8%
	≤6	3	8.5%
	Above 10	3	8.5%
No. lamb	≤5	24	68.5%
	≤10	7	20%
	Above 10	4	11.4%
No. ram/tup	≤1	24	68.5%
	≤2	7	20%
	Above3	4	11.4%

Table 15: Distribution of sheep according to animal reproductive performance

Variables	Means(day)	Maximum(day)	Minimum
Age of puberty(day)	188.2	230	150
Gestation period	142.2	150	132
Lambing interval	208.8	270	160
Lactation	60	150	30
Litter size	1.85	3	1

Age of first lambing	309	399	255
No. of lamb death per year	3.22	25	0
No. of lamb born per year	15.82	200	3
Number of sold per year	5.57	20	1
Treatment cost	1628.57	5000	0
Feed cost	15780.58	7000	0
Abortion rate	1.4	7	0
Death of adult sheep	1.91	10	0

Table 16: Rank order of prospect in sheep farming

Variables	Consider as a prospect	Ranking
Low cost of feed	11.4%	12th
Less amount of quality feed needed	54.2%	10th
More diseases resistant	77.14%	5th
Less space required	74.2%	6th
Good price of sheep meat\sheep	88.5%	1st
Easy to medication and treatment	80%	4th
Easy to handle the flock	65.7%	7th
Less treatment cost	51.4%	11th
Less mortality of sheep than other animal	62.8%	8th
More prolificacy of sheep than other animal	82.8%	3rd
Minimum investment is needed in sheep farming	85.7%	2nd
Cost of housing sheep is minimum	82.8%	3rd
Less labor required	57.1%	9th
No need of skill person	54.2%	10th
Need of special training	74.2%	6th

Problems of sheep farming:

On the basis of the opinions provided by the respondents on 14 problems the severity intensity of the faced problems was measured. The problems which were frequently faced by the farmers in the coastal areas were termed as the severe problems on the basis of magnitude of appearance and frequency of occurrence. Thus the severe problems could also be termed as the common problems. The findings stated that 94.28% of the sheep farmers considered High price of feed and fodder is a major problems in sheep farming. Sarker et al. (2017) stated that the major problems of organic sheep production were the lack of technical knowledge, training facilities, high price of vitamins, minerals and supplementations. Hossain et al. (1996) found that high feed cost and shortage of animal feed were the greatest problems of the farmers for raising sheep. The most severe problem for sheep rearing faced by the sheep farmers was the lack of facility of a veterinary surgeon (Table 17). Some other problems were found like high price of vaccine and medicine, lack of artificial insemination facilities, lack of capital and loan facilities and lack of training facilities. In the (table 18) indicates that 28.57% farmer was lower class before sheep farming and after sheep farming this percentage reduced to 14.28% along with upper lower, lower middle class reduced 34.28 to25.7% and37.14% to 30.71% respectively.

Table 17: Rank order of the problems faced by the sheep farmers in sheep rearing

Variables	Consider as a constrains	Rank
High price of good breed	31.4%	11th
Scarcity of quality breed in time	51.4%	8th
Scarcity of breeding rams	65.7%	5th
High price of feed and fodder	94.2%	1st
Unavailability of quality feed and fodder	85.7%	3rd
Lack of knowledge of fodder production	60%	7th
Scarcity of grazing land	91.4%	2nd
High mortality rate	82.8%	4th
Unavailability of vaccine and medicine	60%	7th
Lack of veterinary surgeon	62.8%	6th
Diseases susceptibility	48.5%	9th
Lack of artificial insemination facilities	28.5%	12th
Lack of marketing facilities	45.7%	10th
Lack of govt support	45.7%	10th

Table 18:   Economic condition of farmer before and after farmin

Farmers class	Economic condition before farming (%)	Economic condition after farming (%)
Lower class	28.5714%	14.2857%
Upper lower class	34.2857%	25.7142%
Lower middle class	37.1428%	30.7142%
Upper middle	0%	14.2857%

Chapter 4

Conclusions

The present study concluded that the major portion of the sheep farmers had small family, were illiterate, had no training on sheep farming, but had medium sheep farming experience with low extension media contact. Indigenous sheep of south-western coastal regions of Bangladesh were prolific in nature and their milk was only consumed by lambs. Though sheep farmers in the studied areas faced several problems, however, it was found prospective to the resource poor farmers for improving their income and livelihood. The farmers of the study area do not have an adequate educational qualification and competence for socio-economic up-lifting other than the experience and expertise for sheep farming, and thus sheep farming is of moderate to high prospect for improvement of their socioeconomic status.

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The Author

BIOGRAPHY

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Photo Gallery

Housing of Sheep

Sheep Grazing