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Article

Socio-economic status and husbandry practices of indigenous goat rearing community in Bangladesh

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Abstract: The research was conducted of a indigenous goat rearing community named "Deshi Chaagol Palon Mohila Somoby Somity Ltd" at three villages namely Pachpai, Borochala and Gangatia under Bhaluka Upazilla, Mymensingh district. Fifty (50) farmers were selected randomly in the study area to conduct baseline survey with help of well organized questionnaire which developed through Participatory Rural Appraisal (PRA). Data were analyzed using Statistical Package for the Social Sciences (SPSS) version 17.0. Among livestock, 31 % goat, 29% chicken and 28% cattle were reared in the project areas. 49% goats were solid Black and 36% were Black Boiragi. The profession of the farmer was agriculture (80%). The education level of the farmers was 32% illiterate and 36% were also completed primary education (1-5 class). The average family size, annual income and land size were 4.28±0.15, 83910.00±4330.61 Tk. and 45.78±6.12 decimal, respectively. Farmer's goat rearing experience was 11.70±1.05 years. Maximum farmers (76%) were reared their goats by semi-intensive systems. Development of data based on socio-economic status of farmers during this study might help in decision making on evaluation of performance of goat at farmer's community.

Keywords: goat; socio-economic; husbandry; rural

1. Introduction

Livestock being one of the major components of agriculture (crop, livestock, fisheries and forestry) plays a vital role in national economy. The total livestock population composed of 25.77 million goats, 23.79 million cattle, 14.71 million buffaloes and 3.34 million sheep (DLS, 2016). Among the livestock sector goats are a very important species of livestock in Bangladesh, mainly on account of their short generation intervals, higher rates of prolificacy and the ease with which the goats and their products can be marketed. Among the world's developing countries, Bangladesh is home to one of the richest treasures - prized Black Bengal goats (Amin *et al.*, 2001). Goat is perhaps one of the most important amongst the domestic species in the tropics performing a variety of functions and in comparison to other ruminants, displays a unique ability to adapt and maintain themselves in harsh environments. But changing patterns of land use are threatening the animals´ future. Meat and skin obtained from the Black Bengal are of excellent quality and fetch high prices, even in the local market. Goats contribute to food self-sufficiency of smallholder farmers by providing food (meat and milk), skin, manure and direct cash income. Black Bengal goats are living resort for poverty alleviation particularly in subsistence level of farming for many small and landless farmer families at rural level (Amin, 2000). Goats play an important role in livelihoods of smallholder farmers in Bangladesh as they serve as assets that can be easily liquidated to provide cash in times of need (Akhter *et al*., 2006).Goats are deeply embedded in almost all over Bangladeshi culture and are considered as true friends to the rural poor. The old saying that "the goat is the poor man's cow" still holds true in the majority of developing countries (Amin, 2000). Goat rearing being the main

means of survival for many women in remote villages, there is a need to develop a scientific method of goat rearing without causing adverse impact on the environment (Choudhury *et al.*, 2012).

2. Materials and Methods

The research was conducted of a indigenous goat rearing community named "Deshi Chaagol Palon Mohila Somoby Somity Ltd" at three villages namely Pachpai, Borochala and Gangatia under Bhaluka Upazilla, Mymensingh district as shown in Figure 1. A well organized questionnaire was developed for baseline survey through Participatory Rural Appraisal (PRA) which was helped to know population number of Black Bengal goat, local management, feeding and breeding system of Black Bengal goat, available local breed of goat, social status of farmers etc. Fifty (50) farmers were selected randomly in the project area to conduct baseline survey. Obtained information was putted and stored on to the Excel spread sheet. Then data were analyzed using Statistical Package for the Social Sciences (SPSS) version 17.0.

3. Results and Discussion

3.1. Livestock species in the community

Among livestock species, 31% goat, 29% chicken, 28% cattle, 3% duck, 7% pigeon and 2% sheep, respectively were reared in the community as shown in Figure 2.

3.2. Type and coat colour of goat

Type and coat colour of goat are shown in Figures 3 and 4. Most of the goats were solid Black (49%) and 36% were Black Boiragi in the studied community. 43% and 24% goats were doe and Castrated male, respectively. Choudhury *et al.* (2012) studied with Black Bengal goat at three villages namely Gangatia, Pachpai and Borochala, Bhaluka, Mymensingh and reported that does and bucks ratio were 92.45 : 7.55. They also found highest percent doe (100%) in Gangatia and highest percent buck (11%) was found in Pachpai. Choudhury *et al.* (2012) reported that Solid Black (42%) was highest among others coat color of goats in all the three villages. They also found that percent of Solid Black Bengal (65) was highest in Pachpai than that of other two villages. Toggenburg pattern (55%) was highest in Gangatia than that of other villages. Brown Bezoar was very similar (18-19%) in Gangatia and Borachala but lower in Pachpai.

3.3. Socio-economic status of the goat rearing farmers

Most of the farmers in the goat rearing community were 1-5 class (36%) passed and 32% were illiterate as shown in Figure 5. Maximum farmer's profession in the community was Agriculture (80%) as shown in Figure 6. Faruque *et al.* (2016) studied with livelihood through community based goat production and reported most of the farmers were completed Primary (55%) and 38.3% were illiterate. They also reported about 3.33% were below Secondary School certificate and 1.67% Higher Secondary School certificate level. They found that most of the goat rearers were housewife (95%), few of them were students (4%) and teachers (1%).

Table 1 shows the socio-economic status of the farmers. Maximum family head was men (90%). Earning person of most farmer's was one (90%) in this goat rearing community. The average family size, annual income and land size were 4.28±0.15, 83910.00±4330.61 Tk. and 45.78±6.12 decimal, respectively. Farmer's goat rearing experience was 11.70±1.05 years. Faruque *et al.*, (2016) reported that the highest and lowest annual income of the (Community Based Organization) CBO members were Tk. 9750 (30% of total CBO members) and Tk. 4500 (10% of total CBO members).

Maximum farmers (76%) were reared their goats by semi-intensive systems. 65% farmers were used crop field, road side and open field as grazing filed for goats. Most of the farmers were community type (92%). 44% and 20% farmers were kept their goats in cattle house and Deshi goat rearing house, respectively. 98% and 90% farmers were practiced deworming and Vaccination program, respectively (Table 2). Choudhury *et al.* (2016) reported that most of the farmers of central region reared their goat in semi intensive system but 80.5% farmers of southern reared their goat in semi intensive system. They also reported that few (12.2%) farmers of central region reared goat in free range system. Maximum farmers (80.5%) reared goats in semi-intensive system but few farmers (7.3%) used confinement system of rearing, while 12.2% farmers used free range system in the southern region (Hossain *et al.*, 2015). Choudhury *et al.*, (2016) found that most (68% and 75.6%) of the farmers of central and southern region kept their goat at goat's house beside this, 16% and 19.5% farmers of central and southern region also kept goat at veranda of farmer's living house. They also reported that most of the farmers (90%) of central region grazed their goat but 70.7% farmers did not graze their goat during rain time. Choudhury *et al.*, (2016) studied on feeding and breeding management system of goat at central and southern regions and reported that a few numbers of farmers (8%) vaccinated their goats though 50% farmers

de-wormed their goats in the study area. Hossain *et al.*, (2015) who found most of the farmers vaccinated their goats.

Table 1. Socio-economic status of the goat rearing farmers.

Parameter	Category	Number of farmers	%
Head of the family	Self	5	10
	Others	45	90
Sex of head of family	Men	45	90
	Women	5	10
Earning person	One	43	86
	Two or above	7	14
Parameter	**Mean±SE**		
Family size (no)	4.28±0.15 (50)		
Annual income (Tk.)	83910.00±4330.61 (50)		
Land size (deci.)	45.78±6.12 (50)		
Goat rearing experience (years)	11.70±1.05 (50)		

Table 2. Rearing and management of goats in the studied areas.

Parameter	Category	Number of farmers	%
Rearing system	Extensive	2	4
	Semi-intensive	37	76
	Intensive	10	10
Type of grazing field	Crop field, road side and open field	30	65
	Low land, crop field, road side and open field	8	18
	Crop field and open field	4	9
	Road side and open field	1	2
	Crop field	2	4
	Road side	1	2
Type of farmers	As usual	1	2
	Commercial	3	6
	Community	44	92
Type of house	Goat house	3	8
	Farmers house	1	2
	Cattle house	17	44
	Baranda	1	3
	Deshi goat rearing house	8	20
	Others	9	23
	From farmer house	7	17
Deworming practice	Yes	49	98
	No	1	2
Vaccination	Yes	45	90
	No	5	10

Table 3. Reproductive performances of goats.

Parameter	Mean±SE
Age at first heat (m)	8.87±0.19 (49)
Age at first kidding (m)	13.85±0.19 (49)
Litter size (no)	1.92±0.06 (49)
Service per conception (no)	1.08±0.04 (46)
Birth weight (kg)	1.49±0.02 (49)
Age at sold (m)	25.42±1.25 (41)
Weight at sold (kg)	19.48±0.61(42)
Market prize (Tk.)	5964.29±349.86 (42)
Service cost (Tk.)	33.66±0.91(41)

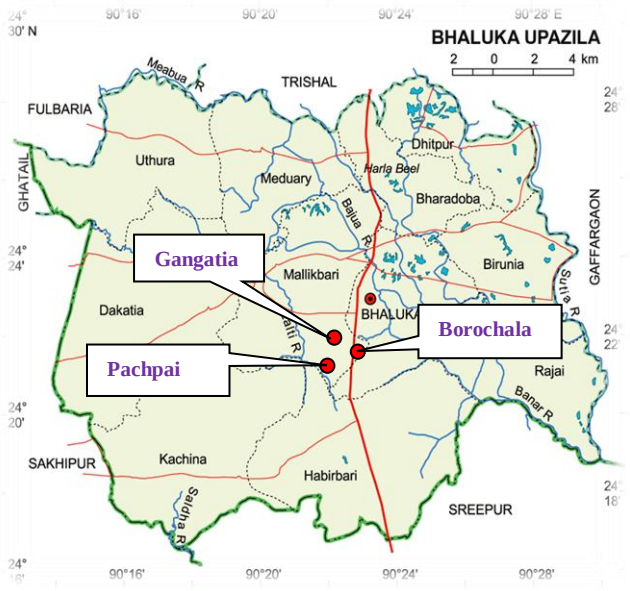

Figure 1. Working area in the research site.

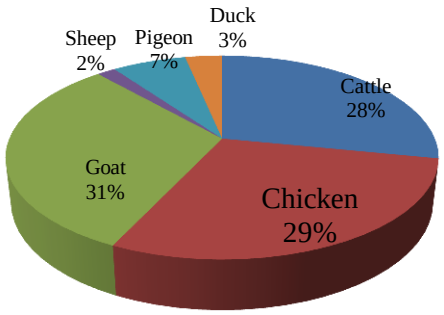

Figure 2. Types of livestock species rear.

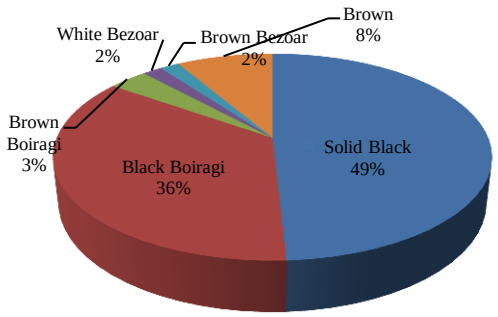

Figure 3. Coat color of goat.

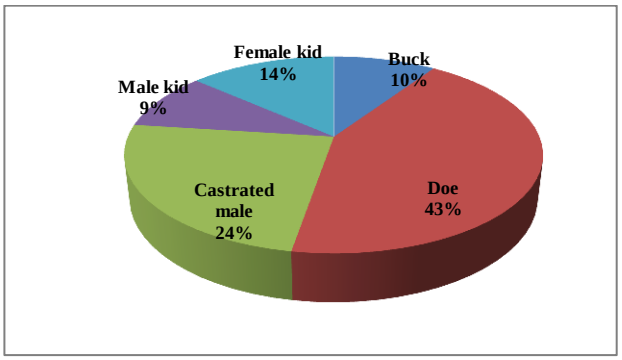

Figure 4. Type of goat rear.

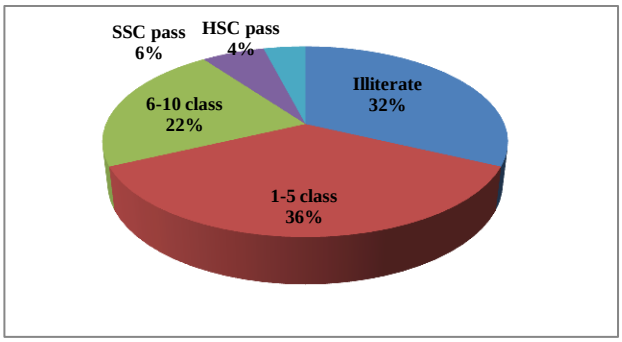

Figure 5. Education level of community farmer.

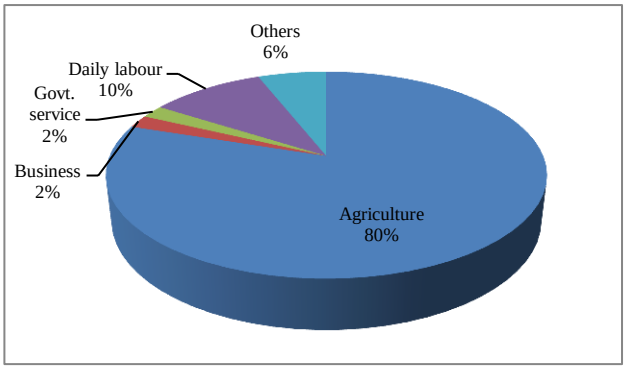

Figure 6. Professions of the community farmers.

Table 3 shows the some reproductive performances of goat in the studied goat rearing community. Age at first heat, age at first kidding, litter size and birth weight of goat were 8.87±0.19 months, 13.85±0.19 months, 1.92±0.06 and 1.49±0.02 kg, respectively. Faruque *et al.*, (2016) found that average birth weights of male and female kids were 1.08±0.01and 0.98 ± 0.01 kg respectively with average of 1.03 ± 0.01 kg. Islam *et al.*, (2016) reported that the birth weight of female and male kids in the Mymensingh Sadar Upazila were found 1.35±0.06 kg and 1.65±0.10 kg, respectively. Weaning weight of female and male kids were found 5.02±0.12 kg and 5.49±0.14 kg, respectively. The average litter size in Black Bengal does were 1.51±0.05. Choudhury *et al.*, (2012) reported that the highest litter size was found in does (1.68±0.39) of Gangatia village (1.67±0.51) and in Solid color Black Bengal goats (1.67±0.54). Jalil (2014) reported that litter size of Black Bengal goats was 1.75±0.03.

4. Conclusions

Data base on socio-economic status of farmers and phenotypic performances of goats during this study might help in decision making on evaluation of performance of goats at farmer's rural community level.

Conflict of interest
None to declare.

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