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Prospects and challenges of homestead cattle production in the villages of Chapai Nawabganj district in Bangladesh

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Abstract

This study was conducted to focus the present livestock scenery with wide prospects and challenges of homestead livestock production in the villages of Chapai Nawabganj district in Bangladesh. A total of 107 households were surveyed with a pre-tested questionnaire through one-to-one interview. Range from 18 to 35 years old people involved in livestock production whom education level were classified as S.S.C (24.30%), H.S.C (56.10%), and B.A. and M.A. (19.60%). By profession householders were farmers (30.80%), businessman (27.10%) and house maker (7.50%). Most of the farmers did not exercise vaccination (88.80%) and de-worming (77.60%) program. They did not cultivate grass (73.80%) for better production. Many of the household owners (36.61%) reared cattle and per household cattle number was 2.06±0.21. Farmers were not knowledgeable about modern health management of the cattle and they also were not interested to cultivate grasses which are the staple feed for their cattle. Natural mating system was the main way of insemination at rural villages of the studied area. Opinions of farmers were very much positive towards cattle rearing. They pointed the prospects of cattle rearing were: a) high price of beef and milk products and b) easy and participatory husbandry practices at homestead level. On the contrary farmers reported that a) high feed cost, b) lack of health worker and c) lower rate of raw milk price were the major challenges in homestead cattle production under village condition.

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Introduction

Bangladesh is an agricultural country, livestock and poultry keeping is an immemorial custom of the rural villagers. Per capita meat and milk requirement are 120 gm/day and 250 ml/day respectively, but in Bangladesh per capita availability of the same are 102 gm/day and 120 ml/day respectively (BER, 2013). Getting higher global demand for livestock is being forced by the growth of incomes and populations in developing countries (Jabbar *et al*, 2011). Today small and large scale dairy cattle production and beef industry is an emerging sector to fight the poverty in Bangladesh. About 150 million households are engaged in milk production and the majority of them are from the developing countries of the world (FAO, 2010). In Bangladesh, cattle, buffalo and goat are considered as dairy animals. Out of total milk production, about 90% is coming from cattle, 8% from goat and the remaining 2% from buffalo (BBS, 2012). A crossbreeding program has been undertaken using local zebu cows and American Brahman sire to boost up meat production in Bangladesh (Rashid *et al.,* 2016). Insufficient requirement indicates a great prospect for increasing cattle production. Improvement in genetic capabilities and environment could only be the suitable way for Deshi cattle improvement (Rahman *et al.,* 2015). On the other hand Bhuiyan (2007) found that the existing cattle breeding policy of the country is a two-tier system and according to this policy, dairy cattle development could be done using both crossbred and indigenous cattle. Many researchers have studied and published scientific papers in the field of cattle production in Bangladesh but most of them designed their experiment to cattle development depending upon scientific thoughts only and those were less participatory. So, this study was designed to explore the practical opinion of the cattle farmers at the rural villages' level to learn the main objectives for a practical and participatory research work to initiate a homestead cattle production development program.

Materials and methods

Experimental animal and place

A total of 107 households were enumerated in the villages in 7 upazilas under the district of Chapai Nawabganj in Bangladesh to explore the information about prospect and challenges in cattle production from November 2015 to January 2016.

Data collection method

Data were collected by direct interviewing methods using a pre-prescribed questionnaire. Data like gender, education, occupations of householder, livestock rearing at homestead, type or breeds of cattle available at homestead, husbandry and breeding systems, prospects and challenges etc were collected.

Experimental design

The design of the study was unbalanced factorial in nature, because observation number of different traits was unequal.

Statistical analysis of data

All collected data were documented and stored on to the excel spread sheet. Then those data were edited and analyzed for having frequency and percentages using descriptive statistics menu under the Statistical Package for the Social Sciences version 14.0 (SPSS, 2005).

Results and discussion

Households' characters

Most of the householders were (78.50%) male and interestingly all householders were educated (Table1). By profession householders were farmers (30.80%), businessman (27.10%) and house maker (7.50%). However, Ahmed *et al.* (2010) found 70.2% householder were farmer, 11.2% businessman, 8.4% teacher and 3.3% doctors in a study under small scale cattle fattening program. Occupations of the householder in the household at the study area might be indicative that majority of the population were dependent on agricultural activities and business.

Livestock species reared at homestead level

Many of the household owners (36.61%) reared cattle and per household cattle number was 2.06±0.21 (Table 2). Similarly, Winarto (2000) found 1 to 2 animals per household in east Java of Indonesia and he also documented that nearly two-thirds (65%) of the studied households raised cattle.

At present study, it was reported that most of the households raised goat & cattle and the lowest number of households reared sheep & buffalo. However, according to Islam and Oliuzzaman (1992) the average numbers of indigenous cattle were, 3.03, 3.49 and 3.1 per family in Trisal,

Gouripur and Mymensingh Sadar upazilla and which were nearly similar to the present study. The above discussion might be suggested that goat were more popular than sheep and likewise cattle were more favorite than buffalo species in the villages of Chapai Nawabganj district in Bangladesh.

Table 1. Characteristics of Households in the villages of Chapai Nawabganj district.

Criteria	Factors	HH Number	% HH
Gender	Male	84	78.50
	Female	23	21.50
Education	SSC and below	26	24.30
	HSC and BA	60	56.10
	BA Honors and MA	21	19.60
Age range	18 to 35 years	107	100
Occupation	Businessmen	29	27.10
	Farmer	33	30.80
	House wives	8	7.50
	Students and others	37	34.60

Breeds/Types of cattle reared
Only four breeds/types of cattle were found in the villages of Chapai Nawabganj district (Table 3). Most of the households reared Deshi cattle but few of them kept cross bred cattle. Milk production recorded at present study was in line with Rokunuzzaman (2006), who found average milk yield, 8.39±2.010 (Holstein Frisian cross), 4.35±1.121 (Sindhi cross) and

2.38±0.728 (Deshi cows) liters per day in Jessore district. Saadullah (2001) said that Holstein crossbred and Sahiwal cattle are very popular and contribute a major portion of milk in a profitable way. The discussion might be indicative that although crossbred cattle were more milk producer but majority of the household did not rear those.

Table 2. Livestock species reared at homestead level in the villages of Chapai Nawabganj district.

Name of livestock	Number per HH	Total numbers HH reared	% HH reared	Total HH surveyed
Goat	3.80±0.49 (64)	64	45.07	107
Sheep	2.15±0.33(13)	13	9.15	107
Cattle	2.06±0.21(52)	52	36.61	107
Buffalo	1.92±0.18 (13)	13	9.15	107

Husbandry system practiced
Majority of the household owners (88.8%) did not use vaccine and anthelmintics for their cattle (Table 4).

Similarly, Rahman *et al.* (2014) reported that 68% farmers in Sylhet, Faridpur, Pirozpur and Kishorgonj region did not use vaccine. Most of them (73.80%) did not cultivate grass and only 1.90 % farmers' cultivated hi-yielding grass.

Study revealed that farmers were not knowledgeable about modern health management of the cattle and they also were not interested to cultivate grasses which are the staple feed for their cattle. Ali and Anwar (1987) reported that shortage of high yielding grass was the greatest problem of the farmers for rearing cattle.

Table 3. Breeds/Types of cattle reared in the villages of Chapai Nawabganj district.

Name of Breed	Number of HH	Milk (liter/day)	% HH reared	Total HH reared
Red Sindhi cross	1	6	1.90	52
Holstein-Frisian cross	3	10	5.80	52
Jersey cross	1	8	1.90	52
Deshi	47	2.91±0.24	90.00	52

Table 4. Husbandry system practiced in the villages of Chapai Nawabganj district.

Item	Category	HH Number	% HH
Vaccination	Yes	12	11.20
	No	95	88.80
De-worming	Yes	24	22.40
	No	83	77.60
Grass cultivation	Yes	28	26.20
	No	79	73.80
Name of cultivated grasses	Napier	2	1.90
	Local	26	24.30
	Do not cultivate	79	73.80

Insemination system practiced

Most of the farmers (73.10%) used village breeding bull to inseminate their cattle and a few of them kept breeding bulls of their own for their cow (Table 5). Similarly, Quddus and Amin (2010) reported that 85.1% farmer used own village breeding bull for inseminating their she cows and 23.2% farmers used Artificial Insemination (AI) technique. Natural mating system was the main way of insemination at rural villages of the studied area.

Table 5. Insemination system practiced in the villages of Chapai Nawabganj district.

Insemination system	Number HH	% HH
Artificial Insemination (AI) worker	3	5.80
AI from Livestock hospital	8	15.40
AI from NGO	1	1.90
Village breeding bull	38	73.10
Own breeding bull	2	3.80
Total HH	52	100

Table 6. Prospects of cattle rearing in the villages of Chapai Nawabganj district.

Prospects	Number HH	% HH
High Price of milk and milk products	7	6.50
All family members can participate in husbandry process	14	13.10
High price and demand of beef	5	4.70
a) High Price of milk and milk products	39	36.40
b) All family members can participate in husbandry process		
c) High price and demand of beef		
a) All family members can participate in husbandry process	27	25.20
b) High price and demand of beef		
a) High Price of milk and milk products	9	8.40
b) High price and demand of beef		
d) High Price of milk and milk products	6	5.60
e) All family members can participate in husbandry process		
Total HH	107	100

Prospects of cattle rearing

Today cattle rearing are a promising and profitable sector in Bangladesh (Table 6). Most of the householders (36.40 %) were in an opinion that high price of beef and milk products, and easy and participatory husbandry practices made cattle rearing a lucrative small enterprise at homestead level.

On the other hand, Quddus and Amin (2010) found crossbred cattle farming a profitable enterprise. So cattle rearing could be a very good enterprise to generate employment in the study area. Opinions of farmers were very much positive towards cattle rearing.

Table 7. Challenges of cattle rearing in the villages of Chapai Nawabganj district.

Challenges		Number HH	% HH
Lack of grass land		6	5.60
Feed cost high		11	10.30
Vaccination worker not available		9	8.40
Lack of reasonable price of raw milk		1	0.90
Lack of easy access in bank loan		13	12.10
a)	Lack of grass land	24	22.40
b)	Feed cost high		
c)	Vaccination worker not available		
d)	Lack of reasonable price of raw milk		
e)	Lack of easy access in bank loan		
a)	Lack of grass land	3	2.80
b)	Feed cost high		
c)	Vaccination worker not available		
d)	Lack of easy access in bank loan		
a)	Lack of grass land	4	3.70
b)	Feed cost high		
c)	Lack of reasonable price of raw milk		
d)	Lack of easy access in bank loan		
a)	Lack of grass land	12	11.20
b)	Feed cost high		
c)	Lack of easy access in bank loan		
a)	Lack of grass land	3	2.80
b)	Feed cost high		
c)	Lack of reasonable price of raw milk		
a)	Lack of grass land	13	12.10
b)	Lack of reasonable price of raw milk		
c)	Lack of easy access in bank loan		
a)	Feed cost high	8	7.50
b)	Lack of easy access in bank loan		
Total HH		107	100

Challenges of cattle rearing

Many of the householders (22.40%) were observed that main constraints of cattle rearing at homestead were lack of grass land, high feed cost, vaccination worker not available and lack of reasonable price of raw milk (Table 7). Ahmed *et al.* (2010) reported that 95 % householders were in an opinion that high cost of feed was the major problem of small scale cattle fattening. The discussion might be suggested that immediate steps like feed cost reduction, health

worker increase and raw milk price increase were major challenges to continue and increase dairy and beef cattle production and which could be the sustainable and lucrative enterprise for village peoples.

Conclusion

Majority of the population were dependent on agricultural activities and business, and although crossbred cattle were more milk producer but

majority of the household did not rear those. Farmers were not knowledgeable about modern health management of the cattle and they also were not interested to cultivate grasses which are the staple feed for their cattle. Natural mating system was the main way of insemination at rural villages of the studied area. Opinions of farmers were very much positive towards cattle rearing. Immediate steps like feed cost reduction, health worker increase and raw milk price increase were major challenges to continue and increase dairy and beef cattle production.

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