

Socio-economic status of duck farmers and duck farming in haor areas of Sylhet district in Bangladesh

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ABSTRACT

This study was conducted to evaluate the socio-economic status of the duck farmers and to investigate the management practices of duck farming. Also attempt to identify the problems of duck farming in Biswanath and Balagonj upazila of Sylhet during a period from September to November 2014. For this study the information was collected by direct interview using a questionnaire from 60 duck farmers. Status of the duck farmers of the selected regions were investigated in the present study. The results reveal that most of the respondents duck farmers were < 35 years of age (52%) having with primary level of education (28%). In most of the farms there were local (deshi) ducks of 65.5% followed by KC (21.5%) and zinding (13%) respectively. For ducks feeding of the farmers depended on natural feed sources while some provided rice and broken rice (23.5%) rice polish and wheat bran (21.5%) and mixed feed (38%). Family size of the most of the farmers (57%) were large (size > 6 members). About 73% farmers had no training on duck farming and some of the farmers had training with short duration (7 to 15 days). Fifty percent of the farmers were made duck houses with tin-shed and wood having necessary floor space. Result of this study revealed that majority of the farmers (68%) had no idea about common duck diseases. The highest proportion of the farmers (65%) never followed the vaccination program regularly. There have some problems identified for duck farming including low price of duck meat and egg made ranked as most serious problems. Therefore, if the problems are addressed properly, the duck farming in haor areas in Sylhet, Bangladesh could be more profitable business for the farmers.

Keywords: Socio-economic status, duck farming, haor areas, Sylhet, Bangladesh.

INTRODUCTION

Ducks are being reared worldwide and almost seventy five percent of them are found in Asia. The domestication of wild ducks first occurred in China, probably as early as 4000 BC and it possesses the highest duck population. Even though domestication of wild ducks occurred prior to chicken, also it is believed that commercial duck has been longer in china than in any other country. Today among the leading duck producing countries of the world, Vietnam, Poland, Indonesia, Thailand, USA, Brazil, and China. Haor is a Bangla word which refers to flood prone land and other low lying areas that remain inundated with water for several months each year. Haor is now being used to indicate a unique geographical site of Bangladesh that added a splendid diversity to the nature of the country. Duck contributes major source of animal protein in Bangladesh and it is an important component of farming system and plays a significant role to rural economy^[5]. Duck comprises of about 16% (42.68 million) of the total poultry population (270.71 million), occupying second place next to chicken in the production of table eggs in the country^[1]. It contributes a major source of animal protein in Bangladesh. Like chicken duck provides hard-cash income and creates employment opportunities for the rural farmers and landless peoples^[6]. Moreover, duck rearing is suitable for wide spread

implementation as it is of low cost, requires little skills, is highly productive and can be incorporated into the household works^[10]. Duck population in Bangladesh has been reported to be 45.12 million^[2] mostly of indigenous type although genetic dilution in some regions has occurred due to distribution of high yielding breeds or strains. As animal types beside chicken, duck creation assumes an imperative part in the country economy of Bangladesh. As indicated by a report of Food and Agricultural Organization, the position of Bangladesh as for duck meat and egg creation is eleventh and fourth separately among the Asian nations^[8]. Duck rising is suitable for across the board usage as it is of ease, requires little abilities, is profoundly gainful and can be joined into the family unit works^[7].

Duck production in the haor areas (Biswanath and Balagonj) of Bangladesh gives independent work to landless and small farmers. There is an awesome probability of enhancing the profitability of ducks in haor regions through supplementary feeding. Ducks, being an imperative poultry species, can contribute proficiently increasing egg and meat production than chicken in the haor or low lying regions. Duck production has some remarkable focal points, for example, (1) Duck raising is beneficial and simple in management (2) Ducks are less hazardous bird (3) They have more disease resistance limit than other poultry feathered creatures (4) They have longer

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economic egg-production life (5) Duck eggs are heavier and show signs of improvement value (6) Ducks are great forager and henceforth require less food (7) Duck meat is exceptionally delectable and is favored by the general population (8) The birds do not need elaborate housing and (9) Ducks go about as natural method for pest control by eating snails and other yield pests. Sylhet district which has the largest concentration of Haor areas of Bangladesh has greater potentiality of duck rearing exist in Biswanath and Balagonj Upzilla. In this investigation an attempt was made to study the existing duck farm management system in selected areas of Sylhet district. The goals of the study were to determine the socio-economic profiles of the duck farmers in accordance to investigate the present management practices of and also to identify the problems of duck farming.

MATERIALS AND METHODS

Two upazilas in the region of Sylhet to be specific: Biswanath and Balagonj were chosen purposively because of comparatively higher concentration of duck farms in these areas. Another reason was that no study of this kind was done previously in this area. A Total of 60 farmers constituted the sample of the study. The primary information was gathered by questionnaire and talking with the farmers in the study region. Information were gathered both from primary and secondary sources. The secondary information sources constituted related writings, books, journals, articles, thesis, and websites. The data were collected during September to November 2014, subsequently processed and analyzed according to the objectives of the study. Estimation of socio-economic profile of the duck farmers and management practices followed in duck farms are depicted beneath:

Farmer's age

Age of a respondent was measured regarding year from birth to time of taking interview. Age of a farmer was categorized into three group young (up to 35 years), middle-aged (36-50 years) and old (above 50 years).

Level of education the respondent farmers

Education is defined as a process of bringing desirable change into the behavior of human being. It was measured in terms of one's year of schooling. One score was given for passing each level in an educational institution. According to the level of education the farmers were classified into four categories namely: Illiterate, can sign only, primary, secondary and HSC or above.

Family size of respondent famers

The family size was measured by the aggregate number of individuals in the group of a farmer. The family members included the farmer him/herself, wife and husband, children and other dependent

members who live and eat together. On the basis of the number of family members, the respondent farmers were classified into three categories namely: small, medium and large.

Occupation of duck farmers

Occupation is a methods or courses by which a man procures some cash for his job. The respondent under scrutiny has different occupations other than duck cultivating exercises. These are duck farming, agriculture, service and, business.

Conjugal status

The conjugal status of the respondent farmers was four sorts to be specific: married, unmarried, divorced and others (widow, abundant etc.).

Training received

Training acquires a positive change working effectiveness of human life. Training got was measured by the aggregate number of day went to by the respondent in different training programs throughout his life arranged by any organization. On the basis of training attended, the respondent farmers were classified into four categories namely: No training, short training, moderate training and long training.

Duck Housing

Type of house: Total housing type was three: (1) Tin and wood (2) Straw and bamboo (3) Bamboo and (4) Soil and others. Floor space for ducks: The standard floor space for ducks is 1.5–2.0 square feet. On the basis of standard floor space the respondents were classified into two categories namely: sufficient and insufficient. Ventilation: Ventilation is of two types. One is sufficient and another is insufficient. Depending on ventilation facilities the farm houses were classified into two categories namely: sufficient and insufficient ventilation.

Feeding management for ducks

Sources of feed: There were two types of feed used in duck farm. These were-(1) natural (scavenging) and (2) supplemented feed.

Amount of feed: Amount of feed supply in duck farm is of two sorts. One is adequate and another is inadequate.

Use of feed ingredients: There were four types of feed ingredients used in the sample duck farm of the study area namely: (1) mixed feed, (2) paddy and wheat and (3) rice polish and wheat bran (4) rice and broken rice

Breed used in duck farm

There were mainly three types of duck breed in the study area. These were: Deshi, Khaki Campbell and Zinding.

Prevention and control of duck Diseases

Duck house Cleaning: The respondent farmers were asked whether they clean their poultry house every now and again or not. The reactions were of three

sorts--(1) regular cleaning, (2) irregular cleaning and (3) not at all.

Diseased ducks disposal: The respondent farmers were asked whether they separate diseased duck or not. The responses were two types namely-(1) yes and (2) no.

Disposal of dead ducks: In the study area the process of disposal of dead duck is of two types namely: buried and thrown away.

Duck farmers idea about duck disease: The respondent was asked whether they have idea about duck disease or not. The answers were two types namely: clear idea and partial idea.

Vaccination schedule in duck farm: The respondent was asked whether they follow regular vaccination program in their duck farm or not. The answers were two types namely: regular, irregular and not at all.

Veterinary services of disease outbreak: The respondents were asked which type of veterinary services they take during the outbreak of disease in their duck farm. The types of treatments were - (1) veterinary doctor, (2) village doctor and (3) no veterinary services.

Knowledge of duck farming: The knowledge of duck farming of an individual farmer refers to the level of awareness, understanding and skill of various aspects of duck farm practices. It was measured by registering a duck farming knowledge score taking into account a few inquiries on different aspects of duck farming. The inquiries included things on recollecting, comprehension, applying, investigating, assessing and making. A score of 2 (two) was allocated for an issue of remembering and understanding, Questions for rest four measurements were allotted a score of 3 (three). Everything contains 5 questions. Full checks was given for agreeable answer from the respondents; half or two-third stamp for incomplete right answer and zero imprint for wrong or no answer. Along these lines the aggregate score was measured which could be shifted from 0 to 80. Zero shows no learning while 80 demonstrates most elevated information about duck farming. Depending upon obtained score of information the member farmers were grouped into three classes specifically: low, medium and high level of learning.

Statistical analysis

Descriptive statistics such as mean, percentage, range, standard deviation and ranking were used to describe the indicators of the study. Where specified, the data were analyzed for statistical significance using Chi-square test in SPSS 17.0 (SPSS Inc., Chicago, Illinois 60606, USA).

RESULTS AND DISCUSSION

The mean age of the farmers was 33.33 years with standard deviation 20.133. On the basis of age (years) of the farmers of the study areas were arranged into three main groups namely: young, middle-aged and old. Information exhibited in Table 1 show that most of the farmers (52%) in the study

territory were young trailed by middle-aged (36%) and old (12%) respectively. Education was measured by direct interview with the respondent farmers in the study area. Twenty eight (28%) percent farmers received primary education and only five (5%) percent had higher secondary or above level of education. The literacy rate of forty eight (48%) percent recorded which seemed to be lower than that of national average of 64.67 per cent ^[3]. The state of education is very disappointing in Haor areas. According to NIPORT ^[7], Sylhet district (which has the largest concentration of Haors) has the lower proportion of people attending the primary and secondary education in compare to other divisions. Forty two percent of the respondent farmers had larger family size (more than 7 members) which was followed by medium size thirty two percent and small size twenty six percent of the farmers which was higher than the national average of 4.90 ^[3].

The occupation of the participant farmers are shown in Table 1. From the table it is evident that most of respondent farmers (50%) had agriculture as their main occupation followed by Duck farming (25%), business (18%) and service (7%). The participant duck farmers had some subsidiary occupation which helped them in earning some extra income. Conjugal status of the farmers is shown in Table 1. From the data presented in the table, it is seen that majority of the duck farmers (53%) were married followed by unmarried (27%), divorced (13%) and others (7%). Sometimes local Livestock Department and NGOs arrange training for the poultry and dairy farmers. The information about training received by the respondent farmers is shown in Table 1. On the basis of training score the respondent farmers were classified into four categories namely: no training, short training, moderate training and long training. Data presented in Table 1 indicate that highest proportion (73%) of the farmers had no training. Only 17% and 10% farmer had moderate and short training respectively. However, in the study area no one had taken long training.

In duck farming, proper housing is an important thing. Houses protect duck from bad weather and predator animals. In the study area, mainly four types of duck houses were found which are shown in Table 2. From the table, it is evident that most of the houses were made with tin and wood (50%) followed by straw-bamboo made (30%) and house made by only bamboo was (8.50%) and the house made by soil and others materials was (11.50%). It was found that tin and wood made houses are permanent and long lasting. Cost involvement is not so high. So, most of the participant farmers were encouraged to make low cost shelter for their ducks. Another reason was that the tin and wood made houses are more secured and hygienic for duck. Floor space is an important factor for duck farming. Higher stocking density hampers growth performance of poultry (Mendes et al. 2004). The standard floor space for ducks is 1.5–2.0 square feet. On the basis of standard floor space the respondents were classified into two

categories namely: sufficient and insufficient (Table 2). In the study area most of the farmers ensured sufficient floor space (70%) for their ducks. Only 30% farmers did not maintain standard floor space due to poor knowledge and management inefficiency in duck farming. Ventilation permits natural air and light in the duck houses that enhance growth of duck. It should be used as a major management tool to

were classified into two categories namely: sufficient and insufficient ventilation. From the data furnished in Table 2 it was seen that most of the duck (70%) houses had sufficient ventilation. The ventilation facilities of rest of the duck houses were insufficient (30%).

Feeding management is the most important factor in

Table 1. Socio-economic status of the respondent duck farmers in Biswanath and Balagonj upazila, Sylhet.

Parameters	Category	Farmers (%)	Mean \pm SD
Age (year) of the farmers	Young (<35 years)	52	33.33 \pm 20.133
	Middle-Aged (36-50 years)	36	
	Old (> 50 years)	12	
Level of Education	Illiterate	27	20.00 \pm 9.849
	Can sign only	25	
	Primary	28	
	Secondary	15	
Family Size of the farmers	HSC or above	5	33.33 \pm 8.083
	Small (up to 4)	26	
	Medium (5-6)	32	
Occupation of duck farmers	Large (> 6 members)	42	25.00 \pm 18.239
	Duck farming	25	
	Agriculture	50	
	Service	7	
Farmers Conjugal status	Business	18	25.00 \pm 20.461
	Married	53	
	Unmarried	27	
	Divorced	13	
Training received	Others (widow, abundant Etc.)	7	25.00 \pm 32.752
	No training	73	
	Short training	17	
	Moderate training	10	
	Long training	0	

Table 2. Duck rearing practices by respondent duck farmers in Biswanath and Balagonj upazila, Sylhet

Parameters	Farmers (%)			Mean \pm SD
	Biswanath (n = 30)	Balagonj (n = 30)	Total (n = 60)	
Duck house construction				
Tin and wood				
Straw and bamboo	53	47	50	25.00
Bamboo	27	33	30	\pm 19.187
Soil and others	7	10	8.50	
	13	10	11.50	
Floor space for ducks				
Sufficient	73	67	70	50.00
Insufficient	27	33	30	\pm 28.284
Ventilation of duck house				
Sufficient	73	67	70	50.00
Insufficient	27	33	30	\pm 28.284

provide the optimum healthy environment for duck. Due to lack of testing facilities with modern equipment's, natural ventilation (sufficient air movement) was observed by open eyes. However, depending on ventilation facilities the farm houses

duck farming. Because, feed cost is the highest cost among all other production costs. Efficient management in feeding duck saves production cost that increases net return from duck farm. Among farmers, 46.50 percent did not supply additional feed

to their ducks. Ducks were reared under scavenging condition (with only natural feed resources) during rainy season, whereas, 53.50 percent farmers gave

their farm houses frequently. On the other hand, 35.50% farmers cleaned their farms regularly. A few portions of farmers (14%) never cleaned their farm

Table 3. Duck feeding and management practices by duck farmers in Biswanath and Balagonj upazila, Sylhet

Parameters	Farmers (%)			
	Biswanath (n = 30)	Balagonj (n = 30)	Total (n = 60)	Mean ± SD
Duck feed Sources				
Only Scavenging	43	50	46.50	50.00
Scavenging and supplementation	57	50	53.50	±4.949
Amount of feed				
Adequate	40	30	35	50.00
Inadequate	60	70	65	±21.213
Feed ingredients used for ducks				
Paddy	17	17	17	25.00
Rice and broken rice	27	20	23.50	±9.083
Rice polish and wheat bran	23	20	21.50	
Mixed feed	33	43	38	

supplemental feeding to their ducks to maximize egg production. The main components of supplemental feeds were paddy, a mixture of rice and broken rice and a mixture of rice polish and wheat bran and mixed feed materials. About 38 percent farmers supplemented their ducks with mixed feed whereas 23.50%, 21.50% and 17% farmers supplemented their ducks with paddy, a mixture of rice and broken rice, a mixture of rice polish and wheat bran respectively.

Type of breed used in the duck farm is shown in Table 4. The table indicates that most of the farmers reared Deshi duck (65.50%) followed by Khaki

houses. Sporadic cleaning and inability to cleaning may be because of absence of learning and/or a kind of negligence. Passing of ducks are typical marvels in duck farm. Dead duck ought to be discarded precisely. It is a typical practice to burry or blazes the dead duck. Amid blazing awful stench is spread out. Thus, the arrangement of covering the dead duck is generally utilized. But 82% of the farmers did not follow this principle (Table 5). Yet, 18% farmers of the study territory take after this tenet. They discarded the dead ducks outside. The reason is the absence of legitimate information. The absence of mindfulness on the effect of tossing dead winged

Table 4. Type of breed used in duck farming by duck farmers in Biswanath and Balagonj upazila, Sylhet

Parameters	Farmers (%)			
	Biswanath (n = 30)	Balagonj (n = 30)	Total (n = 60)	Mean ± SD
Deshi	67	64	65.50	
KC*	20	23	21.50	33.333
Zinding	13	13	13	±28.179

*Khaki Campbell

Campbell (21.50%) and Zinding (13%) in their farms. Highest availability of Deshi duck all over Bangladesh excepting Haor Area (Netrokona, Kishoreganj and Sunamganj district) was reported by Department of Fisheries and Livestock Information in June 2011. Recently, the growth performance of desi ducklings could be improved by supplementation of improved diets under scavenging system of duck rearing^[9].

Regular cleaning is an integral part of duck farm management. Regular cleaning shields the farm houses from flare-up of malady. It additionally keeps the farm environment sound. Table 5 speaks to the cleaning practices followed in the farm houses of the study range. From the table, it is found that the greater part of the farmers (50.50%) did not clean

animals somewhere else may be a reason. The level of idea of the respondent farmers about duck diseases is shown in Table 5. The data contained in the table indicate that major portion of the farmers (65%) had partial idea about duck diseases.

On the other hand, 35% farmers had clear idea about duck diseases. The reason behind it is lack of training facilities for the farmers. Prevention is better than cure. This popular principle is mostly used in duck farms. All the duck farmers have to follow strictly a vaccination schedule. Vaccination protects the birds from diseases and saves production cost. The information collected on vaccination program followed by the respondent farmers is shown in Table 5. From the table it is evident that about 65% farmers did not vaccinate their ducks as they even

Table 5. Prevention and control measures of diseases practiced in duck farm in Biswanath and Balagonj upazila, Sylhet

Measures	Farmers (%)			
	Biswanath (n=30)	Balagonj (n=30)	Total (n=60)	Mean ± SD
Duck house cleaning				
Regular	38	33	35.50	33.33
Irregular	49	52	50.50	±18.462
Not at all	13	15	14	
Dead ducks				
Buried	19	17	18	50.00
Thrown away	81	83	82	±45.255
Farmers Idea about duck disease				
Clear idea	38	32	35	50.00
Partial idea	62	68	65	±21.213
Vaccination for ducks				
Regular	17	12	14.50	36.66
Irregular	43	18	30.50	±25.808
Not at all	60	70	65	
Veterinary services				
Veterinary doctor	10	8	9	
Village doctor	60	60	60	33.33
No consultation	30	32	31	±25.580

don't know the importance of vaccination. On the other hand, 30.50% farmers did not follow vaccination program regularly. It is interesting to note that a few numbers of farmers (14.50%) were only following the vaccination schedule regularly. At the point when infection occurs in the farm, the duck farmers have to need services from veterinary doctors. But in the study area most of the farmers (60%) took veterinary services from village doctor (Table 5). Only 9% farmers consulted directly with veterinary doctors for the treatment of their diseased ducks. There were some farmers who never consulted with doctor (31%) for medication of their diseased ducks. The reason might be that for consultation with veterinary doctor the farmers had to come at upazila veterinary hospital and pay fee to the doctors, which was costly. Likewise, it is additionally tedious for them.

CONCLUSION

This study investigated the present socioeconomic status of the duck farmers and participation level in duck rearing in haor areas. It could be concluded that haor areas were more suitable position for duck rearing. Duck production is one of the promising sectors for empowering village women to meet the family needs as well as commercial. The study revealed that haor peoples were more vulnerable in case of low educational level, landlessness in both cultivated and homestead, and limited scope of better occupational status. This implies that more interventions need to be undertaken by the public and private agencies to help the haor peoples get

involved in duck rearing activities. This would serve as an incentive to them in the haor areas.

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