Research article

Farmer's constraints in receiving animal health services in rural areas of Bangladesh

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ABSTRACT

The purpose of the study was to determine the constraints faced by the farmers in receiving animal health services in some selected areas of Bangladesh. Another objective was to explore relationship of constraints faced by the farmers in receiving animal health services with that of selected farmers' characteristics. The study was conducted in four upazilas, namely Companyganj under Sylhet district, Modhukhali under Faridpur district, Mathbaria under Perojpur district and Mithamoin under Kishoreganj district. Data were collected from a sample of 480 farmers by using a structured interview schedule and FGD during the months of March to August 2010. Data were collected from two groups of farmers, those residing in the villages near the upazila headquarter and those in remote areas. Farmers' constraints in receiving animal health services was measured on the basis of their responses to the questions asked against a four point rated scale. The identified major constraints for receiving veterinary services were: (i) unavailability of veterinary doctors in appropriate time, (ii) high cost of medicines and vaccines, (iii) unavailability of veterinary doctors in the locality especially in remote areas, (iv) inadequate supply of necessary medicines from hospitals, (v) unsatisfactory level of services in hospitals, and (vi) high cost of service fee as charged by veterinary doctors during doorstep service. Correlation analysis showed that farmers' extent of constraints in receiving veterinary services had significantly negative correlation with their education, farm size, annual income and organizational participation, while no such relationship were established with their age, household size and training exposure.

INTRODUCTION

Livestock plays an important role in the national economy of Bangladesh with a direct contribution of 12% to agricultural GDP and 3% to national economy (Bangladesh National Livestock Extension Policy, 2013) and providing 15% of total

employment in the economy (Bangladesh National Livestock Development Policy, 2007). The livestock sub-sector that includes poultry offers important employment and livelihood opportunities particularly for the rural poor, including the functionally landless, many of whom regard livestock as a main livelihood option. About 75 percent people rely on livestock to some extent for their livelihood, which clearly indicates that the poverty reduction potential of the livestock sub-sector is high (Tareque *et al*. 2010).

Inadequate veterinary services are one of the major obstacles for livestock development in Bangladesh. The ratio of Veterinary Surgeons to farm animals and birds was estimated at 1:1.7 million and only 15-20 percent of farm animals receive routine vaccination. Private sector investment in the animal health sector remains low and is expanding gradually (Bangladesh National Livestock Development Policy, 2007). Animal health service is important for maintaining good productivity of animals in a country. Veterinary services in the sub-continent started in 1795 for the treatment of horses of British cavalry only and during the British regime this service was extended gradually up to sub-divisional level for livestock conservation (DLS website, history of the department).

In Bangladesh, the service is provided through the Department of Livestock Services (DLS) under the Ministry of Fisheries and Livestock. Animal health protection and treatment is the most voluminous component of the service delivery system of DLS which is executed through a network of nine Field Disease Investigation Laboratories (FDIL), one Central Disease Investigation Laboratory (CDIL), 17 district diagnostic laboratories, two Veterinary Vaccine Production Laboratories (VVPL) officially known as Livestock Research Institute (LRI) at Dhaka and Animal husbandry Research Institute (AHRI) at Comilla, one Central Veterinary Hospital, 64 District Veterinary Hospitals and 465 Upazila Livestock Development Centers or popularly known as Upazila Veterinary Hospitals (UVH). The UVH functions as nucleus of DLS' activities at grassroots level. The treatment of livestock is carried out at both UVH and farm houses by competent veterinary surgeons. On an average around 40 sick animals are attended daily in the UVH and around 10 are attended at the farmhouses (Rahman and Jahan, 2003). Each of the veterinary hospitals is staffed with one Upazila Livestock Officer (ULO), one Veterinary Surgeon (VS), one Compounder and 3-5 Veterinary Field Assistants (VFA) (Rahman and Jahan, 2003).

It is assumed that majority of the farmers do not come to UVHs to receive health care services for their livestock due to some reasons and constraints. It was therefore felt that, it is necessary to have an assessment of the problems faced by the rural people in receiving animal health services and to find out possible solutions for ensuring quality services from the veterinary hospitals. Thus the study was undertaken in order to have an understanding of the above-mentioned issues with the following objectives: (i) to identify the constraint faced by farmers in receiving veterinary services from UVH along with their gravity level and (ii) to explore the relationship between the constraints faced by farmers and selected farmers' characteristics.

METHODOLOGY
Location of the study
The study was conducted in the operating areas under the Micro-Finance and Technical Support (MFTS) project as implemented by Palli-Karma Shayahak Foundation (PKSF). Four upazilas under four districts of Bangladesh were the specific locations. Those were Companyganj under Sylhet district, Modhukhali under Faridpur district, Mathbaria under Perojpur district and Mithamoin under Kishoreganj district. The upazilas were selected as per advice of the Livestock Coordinator of MFTS project and the decision was finalized after preliminary visit and consultation with the officials of the concerned partner NGOs of PKSF (known as PO) and Upazila Livestock Officers. In each upazila, two locations were selected for data collection. One of them was around the upazila headquarters, where official animal health services were easily available to the villagers and the other was a locality far from the upazila headquarters, from where it was difficult for the villagers to avail any type of services from the Upazila Veterinary Hospitals. In the present study, such remote villages were considered as distant study locations, which had poor communication infrastructures (road connections) to reach the upazila headquarters, making it difficult to reach the hospitals in a short time.

Population and sample of the study

Data were collected from two different groups of farmers: MFTS project beneficiaries and their neighbours, who did not receive any support from MFTS project (hereinafter termed as non-beneficiaries). Therefore, the MFTS project beneficiaries of a specific upazila and their neighbours were the population of the study. However, beneficiaries of only two unions (near and far from upazila headquarters) and their upazilas were purposively selected as the study sample. The list of MFTS beneficiaries were collected from the concerned PKSF-POs. The total sample list is presented in Table 1.

Measurement of variables for the study

Constraints faced by the farmers in receiving animal health services was the focus variable of the study. A 4-point rated scale was developed to measure the variable. A number of 16 constraint items were preliminary identified through Focus Group Discussion and consultation with concerned ULOs and VSs. Finally, ten items were retained to be included in the scale after scrutinizing their validity. A respondent was asked to indicate whether she/he faced "high constraint", "moderate constraint",

"low constraint" or "no constraint" against each constraint items and scores were assigned for those responses as 3, 2, 1 and 0, respectively (Rahman, 1994). The mean constraint score was computed to have a clear understanding of the magnitude of the problem and to compare among the selected constraint items. The mean constraint value could be interpreted in the following way:

Ranges of mean constraint score	General interpretation
0	No constraint faced by the respondents in the item
0.1 to 1.0	Low constraint facing in the respective item as perceived by the respondents
1.1 to 2.0	Moderate constraint facing in the respective item as perceived by the respondents
2.1 to 3.0	High constraint facing in the respective item as perceived by the respondents

Apart from the focus variables, a number of farmers' selected characteristics were also considered for the study. The variables and their ways of measurement have been presented in the Table 2.

Table 1: The study locations and sample size for data collection

Upazila and District	Study locations (villages and unions)	Sample size	
		From near locations	From far locations
Companyganj, Sylhet	Near: Three villages under Islampur union Far: Three villages under Ranikhali and East Islampur unions	90	90
Modhukhali, Faridpur	Near: Two villages under Raipur union Far: Three villages under Jahapur union	45	45
Mathbaria, Perojpur	Near: Two villages under Mathbaria union Far: Two villages under Sapleja and Natunhat unions	55	55
Mithamoin, Kishoreganj	Near: Two villages under Mithamoin union Far: Two villages under Gupdighi and Gahghra unions	50	50
Total (480)		**240**	**240**

Data collection

Both qualitative and quantitative means of data collection procedures were used in the study. Although the major part of the data were collected through survey by using a personal interview schedule (questionnaire), other necessary data and situational information were collected by conducting Focus Group Discussion (FGD). In order to collect relevant data, a structured interview schedule was carefully prepared keeping the objectives of the study in mind. The schedule was pre-tested before final data collection and necessary

modifications were made on the basis of pre-testing experience. Data were collected from the selected farmers by using the interview schedule during March to August, 2010.

Data management and analysis
The collected data were coded, compiled and analyzed as per objectives of the study. Appropriate statistical measures were used to describe the data. Statistical test, such as t-test for difference of means for independent sample and correlation were conducted. SPSS version 13 was used for data management and analysis.

RESULTS AND DISCUSSION
Constraints faced by the farmers in receiving professional veterinary services
A major observation of the study regarding availability of veterinary services in the villages of Bangladesh was that the majority of the livestock farmers did not go to the hospital or UVH for taking animal health service from the professional veterinarians. This study particularly aimed at finding out the reasons behind this as well as the villagers' faced constraints in receiving veterinary services from the government livestock offices. Apart from the comparison between the extent of constraints in near and far distance from the upazila headquarters, an overall rank order was also developed on the basis of the overall mean constraint scores. The results are shown in the Table 3. A close look into Table 3 reveals the facts, that for majority of the constraint items (first seven items) faced by the livestock farmers, are rated very high (indicated by mean value of higher than 2.50). Thus, the first seven constraints items could be considered as the major barriers that prevent the farmers to reach the government veterinary services at the grassroots level.

Table 2. Measurement of farmers' characteristics

Farmers' characteristics	Measuring system and units
Age	Actual years at the time of data collection
Education	Total years of schooling in terms of classes attended, examination passed or degree obtained in any formal education system. Score of 1 for each grade/year and 0 for no schooling.
Household size	Actual number of members in the household including dependant members of the family
Farm size	Actual area under farming operation including land taken/given on sharecropping (half benefit). Expressed in hectare (ha).
Annual household income	Income of all household members from all sources including farming, business, other income generating activities, remittance and other forms of supports. Expressed in Thousand Taka.
Training exposure	Number of days attended in any training program in the last five years.
Organizational affiliation	Number of years of involvement by the respondent in any social entity or organizations with any capacity.

The major problems are mainly related to availability of veterinarians in farm and home levels, cost of services in terms of consultations and medicines, and level of veterinary services at upazila hospitals. It is also noticeable that extent of the constraints related to availability of veterinarians, distance from the upazila headquarter, expenses of disease treatment were higher among the villagers living far from upazila than those who lived near the upazila headquarters. The last two constraints are related to personal understanding of the villagers and therefore need to be resolved by i n c r e a s i n g their awareness on veterinary services. It could be concluded that unless these problems are properly solved, people will not prepare themselves to make enough efforts for receiving services from public sector veterinary officials. The finding is also in conformity with some other studies conducted in India. Those studies indicated that veterinary services were also not easily available to rural areas in India although there always a great demand by the people for the services for developing their enterprises (Kokate and Tyagi, 1991; Singh, 1995; Shivalingaiah and Veerabhadraiah, 1996). In

Pakistan, it was found that the state run Veterinary Department was understaffed, under-budgeted, and had minimum laboratory expertise. The service was inadequate to rural people especially people of the remote areas (Afzal, 2009). Also in the context of

Bangladesh, according to Rabbani *et al* (2004), the dairy farm owners of some selected areas of B o g r a district mentioned that inadequate veterinary services was a major problem for dairy enterprise development.

Table 3. Problems faced by the villagers in receiving veterinary services from Upazila Livestock Offices

Sl. No.	Constraint items	Mean constraint score (range: 0-3)			t-value
		All farmers	Near	Far	
1	Unavailability of veterinary doctors in appropriate time/ doctors coming late	2.90	2.93	2.88	1.641
2	High cost of medicines and vaccines	2.84	2.82	2.87	-1.348
3	Unavailability of veterinary doctors in the locality/no doorstep services by DLS	2.76	2.63	2.87	-5.628***
4	Inadequate supply of necessary medicines and vaccines from hospitals	2.74	2.73	2.76	-0.578
5	Distance from the veterinary hospital and associated problems as high transport cost and complexity	2.68	2.50	2.86	-4.551***
6	Service from ULO/VS doctor expensive/doctors don't provide service free of charge	2.58	2.51	2.64	-2.122*
7	Unsatisfactory services (timely attention, careful attitude etc.) in hospitals	2.56	2.60	2.52	1.248
8	Vaccines supplied from the hospitals are of poor quality	0.93	0.95	0.92	0.348
9	Lack of understanding of the severity of problem/necessity of treatment	0.75	0.76	0.74	0.285
10	Unwillingness of the owner to spend money for treatment of livestock	0.45	0.55	0.33	3.209**

*, ** and *** t-value significant at 0.05, 0.01 and 0.001 levels of probability, respectively

Moreover, the researchers made an attempt to know the problems of DLS in delivering veterinary services to mass people. A number of Upazila Livestock Officers and Veterinary Surgeons were consulted to get an understanding of the issue. Some livestock experts also identified some reasons during personal communications. From the discussions, a number of major problems of the public sector veterinary service has been identified which included:

1. Insufficient supply of medicaments, drugs and vaccines along with their purchasing system
2. Huge working burden of the veterinarians with limited manpower (big areas to cover with poor communication facilities, large distances)
3. Lack of transport facilities in remote areas,
4. Irregular communication between veterinarians and herdsmen

5. Modest salary and difficult living conditions (working climate, accommodation, shopping facilities, family supporting)
6. Inadequate infrastructures in upazila veterinary hospitals (laboratories, store rooms)
7. Lack of peoples' awareness on facilities and limitations of upazila veterinary hospitals, and
8. Rudimentary training for local private practitioners known as Community Based Animal Health Workers (CAHWs).

Characteristics of the respondents
The characteristics profiles of the respondents have been presented in Table 4. As the data are self-explanatory and not utmost important to describe the characteristics, only tabular presentation is shown.

Relationship between the constraints faced by the farmers and the farmers' characteristics

Relationships between the constraints faced by the farmers in receiving veterinary services and the selected farmers' characteristics were tested by computing coefficient of correlation (r) between the concerned variables. The computed correlation values are presented in Table 5. Data presented in Table 5 show that out of seven characteristics, four were found negatively significant with farmers' faced constraints in receiving animal health services. The significant negative correlations between the concerned variables indicate that the lower the level of education, farm size, annual income and organizational participation of the farmers had the higher were their extent of constraints in receiving veterinary services. Study of Rahman (1994) also revealed similar findings, although conducted in the domain of extension service in crop production.

Table 4. Salient feature of the selected characteristics of the respondents

Characteristics of the farmers	Measuring unit	Observed range	Mean	Standard deviation
Age	Years	16-75	39.1	10.16
Education	Years/grades of schooling	0-15	2.96	2.99
Household size	Number of members	2-8	4.76	1.19
Farm size	Hectare	0-24.29	0.67	1.264
Annual household income	'000 Tk.	36.30-149.50	114.68	96.06
Training exposure	Days	0-7	0.85	1.34
Organizational affiliation	Years	0-20	0.44	0.75

Table 5. Relationship between farmers' characteristics and the constraints faced by them in receiving animal health services

Farmers' characteristics	Coefficient of correlation (r) with the constraints faced by the farmers in receiving animal health services
Age	0.008
Education	-0.180**
Household size	0.31
Farm size	-0.171**
Annual household income	-0.120*
Training exposure	-0.043
Organizational affiliation	-.226**

* Coefficient of correlation significant at 0.05 level of probability, ** Coefficient of correlation significant at 0.01 level of probability

Majority of these problems could be solved, if the number of veterinary doctors in the upazila hospitals is increased with transport facilities and for this government initiative is of great importance. Private entrepreneurs may also come forward to establish veterinary clinics or other such infrastructures where the demand for veterinary services is very high. On the other hand, results of the correlation analysis showed that education, farm size, annual household income and organizational participation are important factors that might have significant influence on the problems they are facing. Therefore, the resource poor farmers and who have less access to veterinary services should be given proper emphasis in the livestock service delivery policy. Finally, the DLS should have proper reorganization and reform in terms of technical and sub-technical manpower, infrastructure, service delivery system, etc. for providing effective services to the rural poor farmers.

CONCLUSION

The results of the study indicate that the major constraints faced by the farmers in receiving animal health services were: unavailability of veterinary

doctors in time, high cost of treatment, lack of door-step services by the veterinary doctors, inadequate supply of medicines and vaccines from the hospitals, distance from the veterinary hospitals, high cost of services received from ULO/VSs, and unsatisfactory level of services in hospitals. The other mentionable problems included ineffectiveness of the vaccines supplied from hospitals, lack of understanding of the severity of the problems, and lack of seriousness of the owner for treatment of ailing animals and birds.

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