Women’s Participation in Small Ruminant Rearing and Household Decision Making Process at Banshkhali Upazila in Chattogram District

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Abstract

The study was carried out to examine participation of women in small ruminant rearing and household decision making process at Banshkhali Upazila in Chattogram. Four villages were purposively selected based on the density of small ruminant rearing. Data were collected from 50 households using random sampling method with a structured questionnaire. Descriptive statistic, Participation Index and Logistic Regression Analysis were used to analyse the data. The results of the study showed that (36%) young women were engaged in small ruminant rearing (26-35 age group) and major proportion of the respondents (46%) in the study areas were primary educated. About 52% of the respondents have a family size consisting of 6-10 members. Nearly half (46%) of the women involved in rearing small ruminants earned between BDT 12,000.00 - BDT 18,000.00 per annum. The participation index implies that large proportions of women were always participating in supplying water, feeding and providing fodder and cleaning barns/corral/pens of small ruminants. Moreover, they were rarely participating in construction of house/barns/corral/pens, rearing in confinement/partial-confinement/ free ranges system and bringing animal to veterinary surgeon for vaccination purpose. In household condition, women involved in decision making for rearing livestock, marriage of children whereas rarely participate in activities such as selection of variety and inputs for agricultural production, education of children, purchase of household assets and have minimal participation in selling household assets, freedom of mobility. A logistic regression analysis revealed that women’s participation in household decision making process was negatively related with family size and farm size, but positively related with respondent’s income (P<0.05) and education (P<0.01). It may be concluded that higher the education and income of women, more the tendency of making household decisions alone.

Introduction

Women play a vital role in agricultural sector all over the world. Along with agriculture, they are also engaged significantly in livestock rearing (Moser, 2007) for accelerating family income (Etenesh, 2005; Batool et al., 2014) and to meet the household food requirement (Mullins et al., 1996; Dolberg, 2001).

In Bangladesh, about 49.4% of total population consists of female. Rural women are largely deprived of autonomy as their lives are controlled by male governance in the patriarchal society. Like other patriarchal societies, men have greater power and authority in household decision-making simply by virtue of being men and therefore ‘head’ of the family in Bangladesh (Schuler et al., 1996; Sultana, 2010). The women are subjected to aggressive behavior at the hands of their husbands and other male members of husband’s family.

The role of women in small ruminants keeping is very significant in the rural families in Bangladesh. Small ruminants are considered as the fixed deposits for the rural poor household and the means through which rural women are able to contribute meaningfully to the cash needs for her and family members as well. The economic contribution of rural women is largely ignored in all over the world (ADB, 2004). Active participation of women at all levels of decision making is important to achieve equality and peace in family as well as the development of the country (Hoque and Itohara, 2008). Women’s decision-making power is limited to some...
extent yet in third world countries, like Bangladesh (Sultana et al., 2010). In South Asia, economic empowerment has been the entry point for overall empowerment of women if they are organized under a common platform (Carr et al., 1996). Blood and Wolfe (1960) described that husband-wife decision making power depends upon the resources such as income, educational attainment and occupation. They also find out that women decision making power may increase on their resources increase. If women are involved in more income generating activities, their participation in decision making and socioeconomic upliftment in the family will also increase.

Notwithstanding, many types of research have analyzed the participation of women in livestock rearing activities (Hossain et al., 2004; Hoque and Itohara, 2008; Ayoade et al., 2009; Narmatha et al., 2009; Batool et al., 2014; Dan and Kim, 2020), but there is hardly any work about the women’s participation and decision making power in household level through small ruminant rearing in Bangladesh. For that reason, the current study was conducted with the objectives of investigating women’s involvement in small ruminant rearing activities and their participation in household decisions at Banshkhali Upazila in Chattogram District.

Materials and Methods

The study was conducted in four villages (namely Sambol, South Sambol, Chanua and Shekerkhil) under Banshkhali Upazila of Chattogram district. Banshkhali Upazila is located at 22.05°N 91.94°E in Bangladesh. It has 55,609 households and a total area of 376.9 km². The areas were purposively selected based on density of small ruminant population. Data were collected from 50 women small ruminant rearers following random sampling method during November to December, 2019 through direct interviews using a structured questionnaire. A list of farm households in each village was obtained from the respective local district assemblies like Department of Livestock Services (DLS), and agriculture office. The information supplied by the women was recorded directly in the questionnaire. Both qualitative and quantitative data were collected using household survey method. A survey schedule was developed and pre-tested for the study. Survey questionnaire was prepared in the light to the objectives of the study. The qualitative data were recorded using interview and observation method.

Analytical techniques

After data collection, the questionnaires were checked for completeness, cleaned, organized, coded and then entered into MS-Excel and STATA (Stata 14, Stata Statistical Software, Stata Corporation, College Station, Texas 77845 USA) for analysis. Both the descriptive and econometric methods were used to achieve the objectives. Income from small ruminant was defined as the total earning of respondent from small ruminant rearing during a year. Monthly family income was defined as the total earning of respondent and other members of the family from agriculture, livestock and non-agricultural sources (e.g., selling labour, service, business, remittance etc.) during a month.

For measuring the participation index of the respondents about household decision making process, a 3-point Likert Scale was used. The scales were weighted in order of importance from; always involved=3, rarely involved=2, not at all=1. The respondents were asked to indicate their level of participation in small ruminant rearing and household activities. Ranking of different activities performed by rural women, the frequency of responses from each of the three point continuum of a specific activity under major activity was tabulated and multiplied by concerned score. Then they were added together to get the total score for each specific activity for the purpose of their ranking (Sailaja and Reddy, 2003).

Participation score for each respondent was calculated by using the following formula:

\[ PI = 3 \times AI + 2 \times RI + 1 \times NAA \]

Where, AI= Always Involved, RI=Rarely Involved, NAA= Not At All

Logistic regression model was estimated using binary dependent variable. The binary variable was assigned the value 1 for decision that was taken by women alone and the zero otherwise. The logit model has been specified as follows:

\[ \ln \left( \frac{Y}{1-Y} \right) = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \beta_5 X_{5i} + \beta_6 X_{6i} + U_i \]

\[ Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \beta_5 X_{5i} + \beta_6 X_{6i} + U_i \]

Here, Yi = A binary variable having ‘1’ for scoring above 50 percent of household decisions taken by women alone and ‘0’ otherwise, X1 = Woman’s Income from Small Ruminant rearing (Tk/year); X2 = Age (year); X3 = Education (Dummy; 1=Illiterate, 2=Primary, 3=Secondary, 4=SSC, 5=HSC and above); X4 = Family size (number); X5 = Farm size (decimal); X6=Experience (years); and Ui=Error term.

Results and Discussion

Socioeconomic profile of the respondents

It was observed that, mostly (36%) young women were engaged in small ruminant production (26-35 age group) and in second portion (26%) were middle aged group
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(36-45 age) in the study areas. Dan and Kim (2020) found that majority (72.4%) of the respondents were in the age bracket of 21 to 40 years which is consistent with this present study. Maximum respondents (94%) of the study areas were married followed by widowed (4%) and divorced (2%) (Table 1). The findings agree with that of Fabiyi et al. (2007) and Ayoade et al. (2009) who reported the majority of women involved in livestock production were married. The marital status of a woman supports her in determining the level of participation in the income generating activities.

Table 1 showed that major proportion of the respondent (46%) in the study areas were primary educated followed by illiterate (26%). Educated women could have positive influence on their extent of involvement in livestock production. About 52% of the respondents have a family size of 6-10 members. Large family size has a positive consequence for small ruminant management and household activities. In contrast, Azid et al. (2001) asserted that large family size increase family responsibilities of women have lower participation in economic activities.

Data on occupation indicated that a greater proportion (80%) of the respondents who are full time housewives also engaged in raising of small ruminant. Nearly half of the women (46%) involved in raising small ruminant earned between BDT 12000 – BDT 18000 in a year (Table 1). With this scenario, we can infer that most of the women involved in small ruminant production in the study areas are of low economic base. Our findings agree with that of Dan and Kim (2020) that about 52% of the respondents those are full time housewives also engaged in raising of animals and 47% of the women involved in raising animals earned between BDT 2209.73 – BDT 6629.20 monthly.

Income status of the respondents’ households

Family income at rural areas is composed of agricultural and non-farming sources. Agricultural income is considered as earning from crop, livestock, poultry, vegetable and fruits. On the other hand, non-farming activities included business, services, remittances, labor selling, rickshaw/taxi pulling, handicraft maker etc. In the study areas, labor selling, rickshaw/taxi pulling, handicraft maker etc. have greater contribution (28%) to family income. Income from business avail second largest income (26%) of the total income (Figure 1). It implies that in the study areas people are engaged in various business activities. Livestock is the important source of income in rural household. About 22 percent of the total income earned from livestock in the study areas. Roy et al. (2017) found that about 23%, 19%, 10% and 9% of the total income earned from service, day labour, business and livestock, respectively.

| Characteristics               | Frequency | Percentage |
|------------------------------|-----------|------------|
| Age                          |           |            |
| Below 25                     | 9         | 18         |
| 26-35                        | 18        | 36         |
| 36-45                        | 13        | 26         |
| 46-55                        | 7         | 14         |
| above 55                     | 3         | 6          |
| Marital status               |           |            |
| Married                      | 47        | 94         |
| Widow                        | 2         | 4          |
| Divorced                     | 1         | 2          |
| Education                    |           |            |
| Illiterate                   | 13        | 26         |
| Primary                      | 23        | 46         |
| Secondary                    | 7         | 14         |
| SSC                          | 4         | 8          |
| HSC and above                | 3         | 6          |
| Family size                  |           |            |
| Below 5                      | 17        | 34         |
| 6-10                         | 26        | 52         |
| 10 and above                 | 7         | 14         |
| Occupation                   |           |            |
| Housewife and raising small ruminant | 40  | 80         |
| Housewife, raising small ruminant | 4  | 8          |
| agricultural farming         |           |            |
| Housewife, raising small ruminant | 2  | 4          |
| tailoring                    |           |            |
| Housewife, raising small ruminant | 2  | 4          |
| shopkeeper                   |           |            |
| Housewife, raising small ruminant | 2  | 4          |
| handicraft maker             |           |            |
| Women’s income from raising small ruminant | 10000-below 12000 | 18 | 36 |
| 12000-18000                  | 23        | 46         |
| 19000-25000                  | 8         | 16         |
| 26000 and above              | 1         | 2          |

Involvement of rural women in various livestock and household activities

Women are often less concerned in the decision making process at every stages of family life. In this study, an attempt was made to analyze women’s participation in small ruminants rearing and decision making process in household condition.
Extent of rural women’s participation in small ruminant raising activities

Women’s small ruminant rearing activities have been presented in Table 2. The result shows that the decisions regarding supplying water attain highest score at 138. The 2nd highest ranked decision is on feeding and providing fodder for animals. Cleaning barns/corrals/pens ranked the 3rd position of women participation in small ruminant rearing. It is clear from the results that, rural women are mostly involved in indoor activities regarding small ruminant rearing. Table 2 further divulged that rural women in the study area rarely participate in construction of small ruminant house/barns/corrals/pens, confinement/parti-confine ment/free ranging of animal and animal bring to veterinary surgeon/vaccination purposes. This finding agree with Saghir et al. (2005), Dan and Kim (2020) and Roy et al. (2017) who reported women participate in various activities of livestock management such as fodder cutting, watering and feeding of animals, animal shed cleaning, grazing of animals, gathering dung. It is also observed that a bigger proportion (above 80%) was not at all involved in milking and marketing/sales of animals.

Factors affecting rural women’s participation on household decision making process

To estimate the relationship between the household decision level and different explanatory variables, logistic regression model was found more suitable. Results of the logit model estimated through log likelihood method have been shown in Table 4. Income from small ruminant rearing has a positive effect on the probability of making household decisions by women and the relationship was significant (P<0.05). Here, odd ratio implies that if women’s income from small ruminant increased then the log of odds in favour of taking household decision by women will increase 1.0003 times, holding other variables constant. The age and experience of women in decision making was positive but the relationship was not significant. Education is another factor that influences taking decision by women at household level. Moreover, odd ratio of education implies that if women’s education level increased, she will be 8.37 times more likely to take household decisions, keeping other factors constant.
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Table 2. Extent of rural women’s participation in small ruminant raising activities.

| Activities                              | Extent of participation | Participation indices | Rank |
|-----------------------------------------|-------------------------|-----------------------|------|
|                                         | Always | Rarely | Not at all |               |            |
| Construction of house/barns/corral/pens | 15 (30) | 24 (48) | 11 (22) | 104 | 7 |
| Herding/tethering                       | 35 (70) | 6 (12) | 9 (18) | 126 | 5 |
| Fodder harvesting                       | 8 (16) | 8 (16) | 34 (68) | 74 | 11 |
| Grazing of small ruminant               | 30 (60) | 9 (18) | 11 (22) | 119 | 6 |
| Confinement/partial confinement/free range | 14 (28) | 24 (48) | 12 (24) | 102 | 8 |
| Feeding/providing fodder                | 39 (78) | 5 (10) | 6 (12) | 133 | 2 |
| Supplying water                         | 43 (86) | 2 (4) | 5 (10) | 138 | 1 |
| Caring for sick animals                 | 37 (74) | 7 (14) | 6 (12) | 131 | 4 |
| Animal bring to veterinary surgeon/vaccination | 6 (12) | 28 (56) | 16 (32) | 90 | 9 |
| Cleaning barns/corral/pens              | 36 (72) | 10 (20) | 4 (8) | 132 | 3 |
| Discussions in extension service        | 9 (14) | 15 (30) | 28 (56) | 79 | 10 |
| Milking                                 | 0 (0) | 7 (14) | 43 (86) | 57 | 13 |
| Marketing/sales of animals              | 2 (4) | 6 (12) | 42 (84) | 60 | 12 |

Source: Authors’ estimation based on field survey, 2019. Note: Figure in parenthesis is percentages.

Table 3. Extent of rural women’s participation in various household decisions.

| Activities                              | Extent of participation | Participation indices | Rank |
|-----------------------------------------|-------------------------|-----------------------|------|
|                                         | Always | Rarely | Not at all |               |            |
| Agricultural Production process          | 14 (28) | 17 (34) | 19 (38) | 95 | 7 |
| Selection of variety & inputs for production | 13 (26) | 24 (48) | 13 (26) | 100 | 5 |
| Family income                           | 24 (48) | 17 (34) | 9 (18) | 115 | 1 |
| Family expenditure                      | 17 (34) | 10 (20) | 23 (46) | 94 | 8 |
| Family saving                           | 14 (28) | 11 (22) | 25 (50) | 89 | 11 |
| Sanitation and safe water               | 12 (24) | 11 (22) | 27 (54) | 85 | 12 |
| Health care of family members           | 11 (22) | 13 (26) | 26 (52) | 85 | 12 |
| Education of children                   | 12 (24) | 25 (50) | 13 (26) | 99 | 6 |
| Purchase of household assets            | 9 (18) | 23 (46) | 18 (36) | 91 | 9 |
| Rearing of livestock                    | 18 (36) | 28 (56) | 4 (8) | 114 | 2 |
| Selling household assets                | 4 (8) | 13 (26) | 33 (66) | 71 | 14 |
| Marketing of Agril. production          | 2 (4) | 12 (24) | 36 (72) | 66 | 15 |
| Receiving credit                        | 15 (30) | 25 (50) | 10 (20) | 105 | 4 |
| Marriage of children                    | 19 (38) | 21 (42) | 10 (20) | 109 | 3 |
| Freedom of mobility                     | 12 (24) | 16 (32) | 22 (44) | 90 | 10 |

Source: Authors’ estimation based on field survey, 2019. Note: Figure in parenthesis is percentages.

Table 4. Logistic regression analysis (dependent variable, household decision making status)

| Independent Variables | Coefficient | Std. Err | Significant level | Odds Ratio |
|-----------------------|-------------|----------|-------------------|------------|
| Income from Small Ruminant | 0.000366** | 0.000160 | 0.026             | 1.000361  |
| Age                   | 0.04098     | 0.0727   | 0.557             | 1.041832  |
| Education             | 2.1256     | 6.520    | 0.006             | 8.377638  |
| Family size           | -0.13009   | 0.2451   | 0.641             | .8780099  |
| Farm size             | -0.03255   | 0.0206   | 0.126             | .9679694  |
| Experience            | 0.14794    | 0.2382   | 0.471             | 1.159449  |
| Constant              | -7.1405    | 0.0026   | 0.029             | .0007923  |

Source: Author’s estimation based on field survey. Note: * = Significant at 1% level, ** = Significant at 5% level, N=50

One possible explanation was that the higher the education of women, the more the tendency of making household decisions alone. Hossain et al. (2004) also found that the educated women were more empowered than the illiterate women which were consistent with Roy et al. (2017). Family size and farm size has negative and insignificant effect of having women household decision.

Conclusion

Small ruminant rearing is an important sub-sector of agricultural economy that offers remarkable options for increasing family earnings through female’s contribution because it requires less initial cost of investment, less place and less take care. Socio-economic status of women small ruminant reaper (eg. their level of education, income) determined the extent of their
involvement in livestock and household management activities. It appears from the study that most of the respondents rarely take their decision in different small ruminant raising and household activities. The contribution of women in different activities as well as in total family income was substantial. At present, women are participating in various agricultural and non-agricultural activities for improving their economic vulnerability. But their contribution is largely ignored in our patriarchal society. Women’s participation in household decision making process was negatively related with family size and farm size, but positively related with respondent’s income (P<0.05) and education (P<0.01). It indicates that educated and earner women were more empowered and have the tendency of taking household decisions alone. The age and experience of women in decision making was positive but the relationship was not significant. It was found from the research that to improve women’s economic condition, it is important to increase their participation in different income generating activities and household decision making events. The output of this study may layout proper directions to the researchers and policymakers for livelihood upliftment of women small ruminant rearers’ in Bangladesh.

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Conflict of Interests
The authors declare that there is no conflict of interests regarding the publication of this paper.

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