



## GENDER ROLE IN LIVESTOCK PRODUCTION IN SELECTED AREAS OF SATKHIRA DISTRICT, BANGLADESH

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Received : 8 February 2021; Revised : 12 February 2021; Accepted : 10 March 2021; Published : 3 May 2021

**Abstract:** In Bangladesh participation of rural gender in livestock farming is not new but it has not acted upon accordingly. This study attempt to identify the factors which influences rural gender income and overall social status after participation in livestock production, their contribution to the livestock and their empowerment status. The research has conducted in three villages of Satkhira district in Bangladesh. Initially each 25 respondents had been selected purposively engaged in homestead gardening, goat & poultry and beef & dairy farming respectively. Total 75 respondents from study areas were selected purposively. The quantitative data were collected by interviewing 75 respondents through household survey. The quantitative analytical tools used to attain specific objectives included various descriptive statistics, multiple regression analysis, Pearson correlation, WEI, PCI and again qualitative analysis influenced by the economic advancement. In accordance with the results of OLS educational level of gender, farm size, experience, training have positive influence on rural gender income and these variables were statistically significant. And household size, credit received have positive effect but these are not statistically significant. The Pearson correlation analysis showed that age, education, farm size, savings, household expenditure, training received, farming experience have positive correlation with rural gender income, while credit has negative correlation with rural women income and family member has positive correlation respondent's income but not these two variables are statistically significant with income. Considering agricultural livestock activities showed that women were not empowered in taking decision while women were empowered in taking non-agricultural decision in the study area. The qualitative analysis showed that gender participated in livestock farming mainly to increase income and to enhance self-respect. Finally gender has an important role in active economically participation in livestock

### To cite this article:

Md. Mehedi Hasan, Md. Shajahan Kabir & Md. Abdul Kader (2021). Gender in Livestock Production in Selected Areas of Satkhira District, Bangladesh. *Indian Journal of Finance and Economics*, Vol. 2, No. 1, pp. 53-72

production assist them to overcome prejudice, socio-economic countercheck and highest empowerment acquirement in the context of Bangladesh.

**Key Words:** Gender Role Livestock Production

## 1. INTRODUCTION

Bangladesh is a developing country positioned in South Asia region. The current population of Bangladesh is 167,837,443, Per capita national income of our country is 1909 USD (The Daily Star report, 2019). In Bangladesh, livestock production is largely in the hands of women. In fact animal husbandry is becoming feminized. About 70% of the agricultural workers, 80% of food producers, and 10% of those who process basic foodstuffs are women and they also undertake 60 to 90% of the rural marketing; thus making up more than two-third of the workforce in agricultural production. Most of the animal farming activities such as fodder collection, feeding, watering, and health care, management, milking and household-level processing, value addition and marketing are performed by women, (Arshad *et al.*, 2013). Despite their considerable involvement and contribution, significant gender inequalities also exist in access to technologies, credit, information, inputs and services probably because of inequities in ownership of productive assets including land and livestock.

Livestock widens and sustains three major pathways out of poverty: (1) Securing the assets of the poor, (2) Improving smallholder and pastoral productivity and (3) Increasing market participation by the poor (ILRI, 2012). Rural women perform a reproductive role, encompassing child bearing, child rearing and housework. At the same time, they also fulfill a productive role, engaging in paid labor activities outside the house and/or being in charge of a number of tasks related to household farming activities, including livestock management (Ahmed *et al.*, 2011). In some developing countries, they make on average up to 43% of the agricultural labor force and contribute substantially to the livestock management (FAO, 2011). For making the women empowerment in livestock raisers a choice of the project, this study gives reasons from country and global perspective and links the significance of the research with the livestock industrial sector. Rural women play a significant role in conducting small-scale dairy farming in Bangladesh. They have full potential for achieving sustainable development and improvement of quality of life through their proactive participation in farming activities.

Now a days, rural women in Bangladesh play a vital role in a wide range of income-generating activities through agricultural farming which includes vegetable production, post-harvesting, cow fattening and milking

goat farming poultry rearing etc. In Bangladesh, being a traditional Muslim society, the status of women is domestic in nature. Women have been considered as a docile daughter, a complacent wife and a dependent mother. Women's participation in economic activities in general and in agriculture in particular was remained low. But, recent labor force survey conducted by the Bureau of Statistics showed rapidly increased participation of women in economic activities (BBS, 2016). A rural woman faces different stages in her life. Before marriage, she was a daughter; after marriage she was a dependent housewife; after that a dependent mother responsible for all of the household work, including cooking and rearing children, and caring for her husband and other family members. Due to social and traditional barriers, rural women are not able to work outside of their homes. Therefore, their potential is often unrealized (Islam *et al.*, 2012).

The agriculture sector continues to be an essential component of Bangladesh's economy. This sector currently contributes 13.35 percent to GDP, generates productive employment opportunities for 45 percent of the labor force, and renders 60 percent of the rural population depending upon this sector for its livelihood. It has a vital role in ensuring food security, generating overall economic growth, reducing poverty and transforming towards industrialization. In Bangladesh size of the total labor force (15 years and above) during the periods from 1995-96 to 2016-17 has increased from 36.1 million to 63.504 million (BBS, 2016). Average growth rate for this year is 3.571%. During the period female labor force showed larger average growth rate that is 7.227% than male labor force which is 2.540%. Except the period 2010 to 2013 where the male labor force grew at a higher rate (7.66%) than female (5.007%), female labor grew at a higher rate than male as revealed from the Labor force surveys (LFS) in 2010, 2013, 2015, 2017. (Source: BBS 2016). Participation of female labor compared to male has increased in agricultural sector over the periods. During same period female labor force has increased by 136.025% which is much higher than male labor force that has increased by 35.633%. In case of agricultural sector where as female employment has increased by 192.84%, there is a sharp decline in the participation rate for male by 16.26%. While there were only 3.8 million women were engaged as agricultural employment during 1999-00, the number was 18.646 million in 2016-17. (Source: BBS 2016).

### **Objective & Justification of the Study**

This findings of the study is to explore the role of rural gender in small scale livestock production, their level of income, their contribution to the household, their empowerment status, household condition and their problems. So this is important to find out the rural women role in our

economy and society. It will help the administrative and policy makers or both GOs and NGOs who are concerned with the in different development programs particularly in relation with the women development. Satkhira is one of the fish producing district in Bangladesh where most of the rural gender engaged in fisheries activities & prawn culture in general. But in recent year's livestock farming as well as production along with vegetables production has been increased markedly and there are so many unit level farms as well as co-operative union for their betterment. That's why the present research work was carried out in those areas of Satkhira district. The overall objectives of this study is to assess the overall condition of rural gender, considering their changed roles and extent of engagement as economically active participation in livestock production of the study area.

### **Specific Objectives**

In order to do so, this study focuses on attaining the following specific objectives. (1) To find out the socio-economic status of respondent farmers (2) the factors influencing rural gender's income in livestock production. (3) Also explore extent of women's participation and empowerment in decision making and the benefits obtained by gender participation in livestock production & the major drawbacks.

## **2. METHODOLOGY**

The overall objectives of this study is to assess the overall condition of rural gender, considering their changed roles and extent of engagement as economically active participation in livestock production of the study area. The field study was performed in Satkhira sadar (Karima & Fingri villages) and Tala Upazila (Kolia village). In this study, the sample respondents were selected purposively. After preparation of interview schedule at first Satkhira district had been targeted and afterwards three villages namely, Karima, Fingri from Satkhira sadar and Kolia from Tala Upazilas were selected purposively. Among these three villages 75 respondents were chosen purposively for the present study. For necessary comparisons a total of 75 respondents who have involved with livestock farming under the category of homestead gardening, poultry and dairy-beef farming have been interviewed. Initially 25 respondents who had engaged with homestead gardening afterwards 25 respondents who had engaged with poultry and finally 25 respondents engaged in dairy-beef have been selected purposively. Sample household survey method was used for intra-household level, with key informant and focus group discussion, direct observation, group meetings and meetings of federation and cooperatives were employed for inter-household and institution levels. Use of both

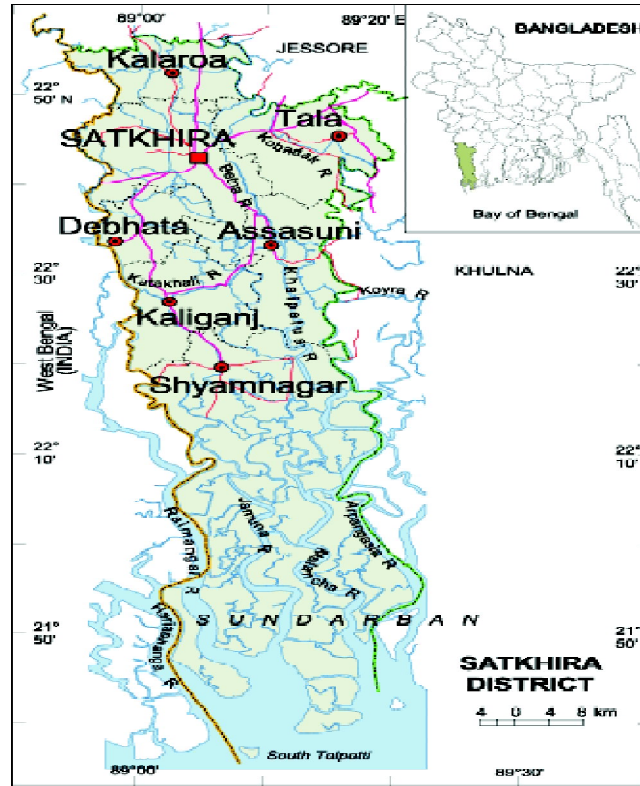


Figure 1: Map of the Satkhira District, Bangladesh

quantitative and qualitative methods provided a richer base for analysis, where data from each method helped to interpret the other.

Quantitative survey information were coded numerically and entered in spreadsheet (Excel). Data analysis were done by using the concerned software such as SPSS and Microsoft Excel. The quantitative analytical tools used to attain specific objectives included various descriptive statistics, multiple regression analysis, Pearson correlation, WEI, PCI and again qualitative analysis influenced by the economic and advancement.

In this research, multiple regression and Pearson correlation were used to identify the factors influencing gender's income through livestock farming.

The model was as followed:

The equation is -

$$Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \varepsilon_i$$

Where,

$Y_i$  = Annual income of rural women

Independent variable:

$X_1$  = Educational level of woman (Years of schooling)

$X_2$  = Household size (Number)

$X_3$  = Farm size (acre)

$X_4$  = Farming experience (Years)

$X_5$  = Training received (Number of days)

$X_6$  = Credit received (Amount)

$\beta_0$  = Intercept;

$\beta_1$  to  $\beta_6$  = Regression coefficients of the independent variables; and

$\varepsilon_i$  = Disturbance term or error term.

### Correlation

In this study, Pearson's Product Moment Correlation Coefficient (r) was performed to determine the relationship between various factors (age, education, household size, farm size, savings, household expenditure, training received, farming experience, credit). Here, the dependent variable is the rural women annual income from vegetable, poultry and dairy production.

### Women Empowerment Index (WEI)

Following the methodology used by Bose, *et al.* (2009), Women Empowerment Index" (WEI) has been constructed in this research, Considering of women participation in household decision making process in agricultural and non-agricultural activities.

For example, the higher value (K) of an indicator (X) goes to indicate the higher empowerment level of a woman. K ranges from 1 to 3.

Where,

1 = The lowest value, when the decision is taken by male alone, in this case women being "least empowered"

2 = The value, when decision is taken jointly by husband/ male and female, when women are "moderately empowered."

3 = The highest value when decision is taken by female alone, that is, when women are most empowered"

The above statement can be measured through rating of each decision indicator (X), as below:

Decision Making indicators	K = Any rating value of each indicator		
	Low empowerment	Medium empowerment	High empowerment
$X_1$	1	2	3
.	1	2	3
.	1	2	3
.	1	2	3
.	1	2	3
$X_n$	1	2	3

Therefore, the average scoring value of  $X_i$  (i.e.,  $i^{\text{th}}$  indicator) for all households would be the average of the value  $K_i$  denoted by the following matrix

$$X_i = K_i \quad (1)$$

Here the researcher used the given value of  $K$  on a Scale from 1 to 3 for ten indicators ( $X_i$ ) to construct the women's empowerment index (WEI).

In this study, ten inter-household decision making indicators were considered where six indicators are agricultural activities related and four are related to non- agricultural activities. Six indicators on agricultural/ livestock farming activities have been used for the agricultural index ( $WEI_{\text{agril.}}$ ), and remaining four for the non-agricultural index ( $WEI_{\text{non-agril.}}$ ). WEI is shown in equations (2) and (3) respectively:

$$WEI_{\text{agril.}} = (\sum^6 X_i)/6 \quad (2)$$

Where,

$WEI_{\text{agril.}}$  = Represents the following indicators of an  $i^{\text{th}}$  household:

X1 = Choice of farming

X2 = Farming management (managing cattle, poultry, vegetable production cleaning shade etc.)

X3 = Purchase of inputs (purchase of feed, fodder, medicine etc.)

X4 = Selling of goods (selling of egg milk, vegetables, etc.)

X5 = Post-harvest operation

X6 = Use of money after selling

$$WEI_{\text{non-agril.}} = (\sum^4 X_i)/4 \quad (3)$$

Where,

$WEI_{\text{non-agril.}}$  = Represents the following indicators of an  $i^{\text{th}}$  household:

X1 = Cash management (income, expenditure and investment for earning)

X2 = Children's education (school enrolment, expenditure on books, uniforms, tuitions, etc.)

X3 = Travel and recreations (mobility to outside home for marketing, visiting relatives, etc.)

X4 = Voting in election (freedom of voice, choice and social activities)

Therefore, the overall WEI shown in equation 4:

$$WEI = (WEI_{\text{agril.}} + WEI_{\text{non agril.}}) / 2 \quad (4)$$

### Problems Confrontation Index (PCI)

Following the methodology used by Ismat, et al. (2009), "Livelihood improvement of small farmers through family poultry in Bangladesh" PCI has been calculated. A four point rating scale were used for computing the problem score of a respondent. The respondents were asked 4 alternatives responses as high, medium low 'and 'not at all' against each of 12 selected problems. Scores were assigned to those alternative responses as:

"High = 3", "Medium = 2", "Low = 1 and "Not at all = 0, respectively

Problem Confrontation Index (PCI) =  $P_h \times 3 + P_m \times 2 + P_l \times 1 + P_n \times 0$

Where,

$P_h$  = Total number of the rural women expressed "high problem

$P_m$  = Total number of the rural women expressed 'medium problem

$P_l$  = Total number of the rural women expressed low problem

$P_n$  = Total number of the rural women expressed 'not at all problem

Secondary data on gender dynamics in livestock, agriculture and related natural resource management was collected from published / unpublished books or journals, official reports or records and websites. Current government policies and strategies and related planning documents were reviewed in relation to gender, social dynamics and livestock in Bangladesh. This information was used to supplement survey data wherever possible.

## 3. RESULTS AND DISCUSSION

### 3.1. Socio-economic Status of the Respondents

Table 3.1.1  
Educational Status

Types of Farming	Uneducated	Primary	SSC	HSC
Homestead gardening (n=25)	2 (2.16)	4 (6.56)	9 (14.15)	2 (2.20)
Goat & Poultry (n=25)	0	7 (10.47)	17 (21.69)	5 (4.10)
Beef & Dairy (n=25)	3 (3.84)	9 (15.49)	12 (16.85)	3 (2.49)
<b>Total (N=75)</b>	<b>5 (6)</b>	<b>22 (32.52)</b>	<b>38 (52.69)</b>	<b>10 (8.79)</b>

Source: Sample Survey 2019 Note: Figures in the parentheses indicate the percentage



Table 3.1.1 Shows that 6% respondents have no experienced in education and 32.52% Went to primary, while 52.69% of them went to SSC level and 8.79% have experienced of HSC. In the overall estimation 94% of the respondents in the study area had literacy rate only 6% of the respondents were illiterate. This is obviously good sign in the study area. Formal education of farmers has also been found to contribute to increased farm income providing an economic justification for pursuing an increasingly educated agricultural sector (Kilpatrick 1997). (Meadows et al., 2014) have found that by utilizing educated lead farmers, who can engage with other agricultural stakeholders, beneficial outcomes for overall sustainability can be achieved.

**Table 3.1.2**  
**Age Status of the Respondents**

Types of Farming	Age			
	10-20	20-30	30-40	>40
Homestead gardening (n=25)	5 (3.31)	15 (15.28)	2 (1.44)	3 (1.33)
Goat & Poultry (n=25)	7 (9.37)	11 (5)	3 (1.83)	5 (3.97)
Beef & Dairy (n=25)	18 (20.18)	19 (21.82)	6 (3.21)	9 (10.26)
<b>Total (N=75)</b>	<b>30 (32.86)</b>	<b>42 (45.10)</b>	<b>11 (6.48)</b>	<b>17 (15.56)</b>

Source: Sample Survey 2019 **Note:** Figures in the parentheses indicate the percentage

Family members were classified into four groups. Among all groups 32.86% belonged to 10-20 years, 45.10% belonged to 20-30, 6.48% belonged to 30-40 years and 15.56% belonged to above 40 years old. In all cases higher percentage of respondents were engaged in dairy and beef cattle production (Mulugeta, M., & Amsalu, T., 2014). Which is a clear indicator that farming in the Study area is dominated by active farmers who are still in their productive stage of life.

**Table 3.1.3**  
**Household Size of the Respondents**

Types of Farming	Small	Medium	Large
	Up to 4 members	(5-7 members)	8+members
Homestead gardening (n=25)	4 (6.04)	12 (16.72)	2 (4.5)
Goat & Poultry (n=25)	6 (9.13)	15 (18.76)	2 (4.5)
Beef & Dairy (n=25)	9 (12.76)	19 (23.81)	5 (8.78)
<b>Total (N=75)</b>	<b>19 (27.93)</b>	<b>45 (59.29)</b>	<b>9 (17.78)</b>

Source: Sample Survey 2019 **Note:** Figures in the parentheses indicate the percentage

This Table 3.1.3 indicates highest percentage of household were found in medium household (59.29%) followed by small (27.93%) and large (17.78%)

household. Considering group-wise household size, small household (12.76%) in dairy & beef farming was highest in percentage compared to goat & poultry and homestead gardening (9.13% and 6.04%) household size. Large household (4.5%) was highest percentage in goat & poultry and homestead gardening compared to dairy farming (8.78%) household size.

**Table 3.1.4**  
**Experience of Training of the Respondents**

<i>Types of Farming</i>	<i>Trained</i>	<i>Non-Trained</i>	<i>Duration (Days)</i>	<i>Average (Days)</i>
Homestead gardening (n=25)	10(45)	8 (30)	34	1.82
Goat & Poultry (n=25)	21(65)	6 (17)	24	0.99
Beef & Dairy (n=25)	25(72)	5 (12)	28	1.56
Total (N=75)	56 (75.93)	19 (21.29)	86	4.37

*Source:* Sample Survey 2019

*Note:* Figures in the parentheses indicate the percentage

This Table 3.1.4 shows that 75.93% rural gender received training program and 21.29% respondents were not received any kind of training facilities. So it can be interpreted that rural gender are now interested to participate in agricultural as well as livestock production training, which obviously needed for increasing their skill and livestock development. In case of three different types of farming women & men who have involved in dairy & beef farming 72% and goat & poultry 65% got much more training facilities than other agricultural farming. Various Studies (Nelson and Phelps 1966; Welch 1970; Reimers and Klasen, 2013) have indicated that training and education might generally be regarded as a means of facilitating farmers to adopt innovations that lift farm productivity and increase farm profitability. Appropriate training and education should help farmers to more readily and more accurately assess and adopt superior technologies and change farm practices from which they can potentially derive commercial advantage (Feder *et al.*, 1985; Asadullah and Rahman, 2009).

**Table 3.1.5**  
**Income generation of the respondents per year from different Sources**

<i>Types of Farming</i>	<i>Total Amount (TK/ Year)</i>	<i>Average (TK/ Year)</i>
Homestead gardening	1152000	46080
Goat & Poultry	737000	29480
Beef & Dairy	1639000	65560
Total	3528000	47040

*Source:* Sample Survey 2019

*Note:* Figures in the parentheses indicate the percentage

Table 3.1.5 shows that per head avg. income is high in beef & dairy farming which is 65,560 TK/Year. Then the second highest and third is homestead gardening 46,080 TK/Year, goat & poultry 29,480 TK/Year respectively. Some studies on income generation (Ahmed, F., Siwar, C., & Idris, N. A. H., 2011) clearly reveals that gender of this areas are highly engaged in livestock production & has a positive role.

**Table 3.1.6**  
**Credit Distribution**

Types of Farming	Credit Received (Avg.)
Homestead gardening	25200 (22.50 )
Goat & Poultry	17750 (15.85 )
Beef & Dairy	69050 (61.65)
Total	112000 (100)

Source: Sample Survey 2019 Note: Figures in the parentheses indicate the percentage

In this Table 1.6 shows that the gender engaged in beef-dairy and goat & poultry jointly holds the highest position 61.65% and 15.85% respectively. On the other hand homestead gardening is 22.50% is the second position. That specifies that farmers are much more interested to invest in livestock production than the rest farming activities because of higher returns. (Ney and Hoffmann *et al.*, 2003) showed that physical capital, represented by the area of agricultural business, is one of the most important variables for the composition of agricultural income.

Tabular representation showed the 75 respondents socio-economic condition. These tables also find out that respondents situation differs from one another. This chapter revealed a clear and essential picture of gender involved and role in livestock production in the study areas. Which is useful to understand their socioeconomic profile of the respondents.

**Table 3.2**  
**Estimation of OLS model for factors influencing rural gender in livestock farming**

Income Y	Coefficient ( $\beta$ )	P value
Constant	7208.8	0.312
Education $X_1$	0.294	0.000***
Household size $X_2$	0.061	0.387(ns)
Farm size $X_3$	0.234	0.002***
Experience $X_4$	0.285	0.000***
Training received $X_5$	0.387	0.000***
Credit received $X_6$	0.070	0.212(ns)
Number of observation = 75		
$R^2 = 0.643$		

Note: \*\*\*Significant at 1% level; and \*\* Significant at 5% level; ns indicates not significant.

### 3.3. Interpretation of OLS model

#### I. Education of women

The result shows that the education of women has positive coefficient it is 0.294. It is highly significant at 1 percent level (Table 3.2). It indicate that, rural women education has strongly effect their income. A survey has been conducted by (Mahmudul *et al*, 2003) among the farmers in Bangladesh and the findings that literate farmers achieve higher income than the illiterate farmers. There are several studies as against regarding education and income support. (Sarker *et al*, 2005; Mortuza *et. al*, 2004; Biswas, 2002)

#### II. Farm size

In line with expectations, farm size has showed a positive and significant effect on rural women income. In rural Bangladesh, families who have a large farm are richer and they have more opportunities to earn money families with comparatively small farms (Islam *et al*, 2010). So that increase in farm size ultimately increases production, which ensures high income as well as better standard of living.

#### III. Household size

The result shows that the household size of women has positive coefficient and it is 0.061 and it is not significant (Table 3.1). That the result did not show that family member had not at all effect on rural women income in the study area. (Azid, T., M. Aslam, 2001)

#### IV. Experience

The result shows that the farming experience of women has a positive coefficient and it was 0.285. It was highly significant at 1 percent level (Table 3.1). So this factor reveals that women who were more experience much income. (Al Mughairy, L. 2004)

#### V. Training received

The result shows that the training of women has positive coefficient and it is 0.387. It is significant at 1 percent level. That means rural women's income is greatly influenced by their training facilities. These training are normally arranged by GOs or NGOs which give them extra knowledge about farming like inputs, marketing condition, vaccination etc. Training facilities has a strong impact rural women income in the study area. (Ahmed & M Hossain, 2009).

## VI. Credit Received

The result shows that the education of women has positive coefficient and it is 0.070. It is not significant which indicated that credit does not influence the rural women income. (Ahmed, F., Siwar, 2011)

### 3.4. Correlation

In this study, Pearson's Product Moment Correlation Coefficient ( $r$ ) was performed to determine the relationship between various factors (age, education, family size, farm size, savings, household expenditure, training received, farming experience, and credit) here, the dependent variable is the rural women annual income from vegetable, poultry and dairy production.

Co-efficient of correlation between explanatory variables and household income ( $n = 75$ )

<i>Selected explanatory variables</i>	<i>correlation Co-efficient (r)</i>
Age	.337**
Education	.547**
Farm size	.450**
Household size	.080
Farming experience	.445**
Training received	.597**
Savings	.410**
Credit received	-.005
Household expenditure	.699**

[\*indicates correlation was significant at 5% level and \*\* indicates correlation was significant at 1% level (2-tailed test)]

Correlation analysis showed that independent variables such as age, farm size, savings, household expenditure, training received and farming experience were positively correlated to respondent's income which were statistically significant. While credit received was negatively correlated to the household income and another variable household size was positively correlated household respondents income but not this one was statistically significant with the rural women income.

### 3.5. Measuring women empowerment using (WEI)

**Table 3.5**  
Participation of women in decision making process

<i>Parameters</i>	<i>Male, 1</i>	<i>Both, 2</i>	<i>Women, 3</i>	<i>Avg. (WEI)</i>
Choice of farming (Dairy, poultry etc.)	22	30	23	1.96
Farming management	28	28	19	1.87
Purchase of fodder	27	26	22	1.96

*contd. table 3.5*

Parameters	Male, 1	Both, 2	Women, 3	Avg. (WEI)
Selling of goods	25	30	20	1.87
Post-harvest operation	27	26	22	1.93
Use of money after selling	17	30	28	2.18
Agricultural indicators	1.97			
Cash management	21	31	23	2.01
Travel & Recreation	25	27	23	1.98
Children's Education	22	29	24	2.02
Voting in election	24	26	25	2.03
Non-agricultural indicators	2.01			

Source: Sample Survey 2019

No. of respondent= 75

$WEI_{\text{agricl}} = 1.97$

$WEI_{\text{non-agricl}} = 2.01$

$$WEI = (WEI_{\text{agricl}} + WEI_{\text{non-agricl}}) / 2$$

$$= (1.97 + 2.01) / 2$$

$$= 1.99$$

Decision making criteria: if  $WEI \leq 2$ , Less empowered and if  $WEI \geq 2$ , Highly empowered. The findings show that almost in all cases, decision was taken jointly by male and females. It is very satisfactory case that decision is taken by female alone particularly in the cases use of money after selling, children's education, voting in election, cash management. Finally, empowerment index has been calculated to know the overall empowerment status of all the 75 rural women in agricultural and non-agricultural activities as well as for both the activities. The  $WEI_s$  as presented in Table clearly describes that women are less empowered since the WEI scores are less than the average level.

The value of average Women Empowerment Index (WEI) by livestock farming of the selected area is 1.99 which is lower than the average value of 2. This indicates that the women are less empowered here. If the agricultural activities is considered then it showed that  $WEI_{\text{agricl}}$  is 1.99 which is also less than 2 and it indicates that women were not empowered in taking agricultural decision. If non-agricultural activities is considered then it showed that  $WEI_{\text{non.agricl}}$  is 2.01 which is greater than 2 and it indicates that women were empowered in taking non-agricultural decision.

### 3.6. Computation of Problem Confrontation Index (PCI)

To measure the extent of severity of the problems confronted by the rural gender in livestock production activities, Problems Confrontation Index (PCI) was computed. The computed PCI of the 12 problems ranged from

158 to 114 against possible range from 0 to 225. Thus, the PCI of individual problem could range from 0 to 225, where 0 indicating 'no problem confrontation' and 225 indicating high' problem confrontation.

The result have been arranged in rank order according to their problem severity which is shown in Table 3.6

**Table 3.6**  
**Computation of Problem Confrontation Index**

Rank Order	Problems	Extent of problem confrontation				PCI
		High (3)	Medium (2)	Low (1)	Not at all (0)	
1	Lack of credit	28	26	21	0	157
2	Lack of capital	15	45	15	0	150
3	High price of feeds & fodder	28	29	18	0	160
4	Low quality semen & breed	17	28	30	0	137
5	Lack of training facilities	19	30	26	0	143
6	High rate of interest	20	35	19	0	151
7	Lack of land	25	19	31	0	144
8	Lack of profit	22	37	16	0	156
9	Low price of livestock products	22	21	32	0	140
10	Inadequate vet. services	25	32	14	0	153
11	Security problem	19	21	35	0	134
12	Discourage from husband	11	17	47	0	114

Source: Sample Survey 2019

### 3.7. Interpretation of Problem Confrontation Index (PCI)

#### *Lack of Credit*

Majority of the respondents pointed out that lack of credit is the major problem in the study area. Out of 75 respondents, 28 women faced this problem at a high extent, 26 women faced this problem at a medium extend 21 women confronted this problem at low extent and there was none who said that lack of credit was not a problem. In this case the computed value of PCI was 157 [(28x 3) + (26x 2) + (21x 1)] against a possible range of to 225.

#### *Lack of capital*

Cash capital and investment are an important input for the enlargement or any farm. It is very difficult for the rural women to collect capital. So that they could not large their farming as they needed. In this case the computed value of PCI was 150 [(15x 3) + (45x 2) + (15x 1)] against a possible range of to 225.

### ***High price of feeds & fodder***

A good number of respondent mentioned that higher price of the input is a problem in agricultural production. In this case the computed value of PCI was 160  $[(28 \times 3) + (29 \times 2) + (18 \times 1)]$  against a possible range of 0 to 223. In the study area most of the women were possessed very small amount land as their own property. Having involvement with livestock farming their return from their farming is also small. That's why most of the respondents said high price of inputs have created high cost of production and they felt need to be solved by the Govt. or other organization.

### ***Lack of quality semen and lower production of breed***

Lack of quality seed and lower production of local breed is determined as the 9th ranked problem of the problem index. The PCI value is 137  $[(17 \times 3) + (28 \times 2) + (30 \times 1)]$  for this problem. They said because of the poor semen quality their production has become low gradually. They also said that because of insufficient capital they could not able to rear high yielding breed.

### ***Lack of Training Facilities***

Training facility enrich and upscale existing knowledge and experience. Majority of the respondents pointed out that lack of training facilities is the major problem in the study area. Out of 75 respondents, 20 women faced this problem at a high extent, 41 women faced this problem at a medium extent, 14 women confronted this problem at low extent and there was no one who said that lack of training facilities was not a problem. In this case the computed value of PCI 143  $[(19 \times 3) + (230 \times 2) + (26 \times 1)]$  was against a possible range of 0 to 225.

### ***High rate of interest***

It is very difficult for rural gender to get credit any organization without any collateral. Formal credit from different institution is very difficult to get and it requires complicated procedure. Therefore, sometimes they borrowed money from land lord or mahazon or relative and neighbor against higher interest rate. For this reason they faced the problem of loan repayment later on. High rate of interest was ranked the 6<sup>th</sup> problem of the study area. Its PCI value is 151  $[20 \times 3) + (35 \times 2) + (19 \times 1)]$  which scored 6<sup>th</sup> largest value ranges from 0 to 25 of the problems in the problem index.

### ***Lack of land***

Respondents pointed the lack of land at 7<sup>th</sup> largest rank. As they said they needed more land to increase their production. Lack of profit was ranked



the 7th problem of the study area. Its PCI value is 144 [(25x 3) + (19x 4) + (31x 1)] which scored 7th largest value ranges from 0 to 225 of the problems in the problem index.

### ***Lack of profit***

Lack of profit was ranked the 6th problem of the study area. Its PCI value is 156 [(22x 3) + (37x 2) + (16x 1)] which scored 6th largest value ranges from 0 to 225 of the problems in the problem index. Due to the various barriers most of the time rural women did not go to the market for selling their product. Maximum time they sell it from their house if the male member is not present in the house. As a result they did not get the maximum profit.

### ***Low price of livestock products***

Low price of livestock products like milk, meat, eggs etc. in the selected areas are not so high or as per their demand of selling price. As a result the PCI value of Low price of livestock products is 140 [(22x 3) + (21x 2) + (32x 1)]. They claimed if they sell their products with good pricing then more people will be engaged in livestock sector in those areas in near future.

### ***Inadequate veterinary Services***

Every farmers has to suffer a great want of good veterinary services, but this is not up to their demand due to shortage of veterinary doctors in those study areas. In this case the computed value of PC was 153 [(25x 3) + (32x 2) + (14x 1)] against a possible range of 0 to 225.

### ***Security problem***

Risk of theft was found very common for family poultry. Greediness was the main cause of that delinquency. It was evident that mainly adult poultry birds were theft by human being during day time. It seems difficult to ensure security of farm. Security problem determined as the 9th ranked problem of the problem index. The PCI value is 134 [(19x 3) + (21x 2) + (35x 1)] for this problem.

### ***Discourage from husband***

Discourage from husband was described as lowest possible problem specified twelve problems faced by the rural women of agricultural production with PCI 114 [(11x 3) + (17x 2) + (47x 1)]. Most of the respondents said that their husband was never discouraged them of doing livestock farming. This is a very good to hear that women get more or less equal opportunity like men.

The findings of the study revealed that the women involved in livestock production expressed their opinion about lack of sufficient capital, lack of credit, higher cost of the input, etc. as their major problems. It has also found that low quality semen and breed problem, discourage from husband and security problem were the minor problems of women involved in agricultural farming of the study areas.

This study also presented and discussed the findings of gender role and participation in livestock farming, their contribution, factors influencing women's participation, their economic condition, power etc. drawn from the qualitative analysis as well as found that women were mainly involved in farming for increasing their income. It has also found that their income had significantly contributed to their children's education, family expenditure. Women in this areas relatively economically empowered after participation in livestock farming.

## CONCLUSION

The research results from different dimensions depict that the selected rural men & women's income or selected household is strongly affected by education, farm size, farming experience, training received of respondents. The overall women empowerment status was not satisfactory in the study areas, where there is a huge scope to work. Various problems such as unavailability of sufficient credit, insufficient capital, inadequate training facilities, high price of medicines, feeds & fodder, low pricing of livestock products and high price of inputs etc. problems are faced by gender in those areas. These problems make gender work harder in livestock production and desirable profit return. Necessary attentions are required from respective authorities to solve those problems. Overall taking all the scenario, this study accepted the fact that after economically participation of rural gender in livestock farming most of the respondents enjoyed relatively better position in the household and increased social prestige which give them ultimately a peaceful life.

## CONFLICT OF INTEREST

The author declare no conflict of interest

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