

**A report on Poultry rearing strategy by rural womenfolk
and its economic impact in Muktagacha, Bangladesh**



A PRODUCTION REPORT SUBMITTED

BY

Intern ID: 52

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The Author

Poultry rearing strategy by rural womenfolk and its economic impact in Muktagacha, Bangladesh

ABSTRACT

The study was performed as a part of my internship program during the placement period from 12/10/2019 to 13/12/2019 in Muktagacha, Mymensingh. The study was undertaken to know the backyard rearing system of poultry by rural womenfolk. This study shows that there is no scientific method followed in backyard farming in regard to housing, feeding, incubation etc. Though the backyard poultry owners do not take any preventive measures against diseases, even they usually do not clean or disinfect the poultry houses in a regular basis. Hence they are often face economic loss due to attack of diseases and other factors causing death of birds. A significant percentage of eggs produced in every households and the eggs and birds were sold in the market for cash. The monthly cost per households was 112.50 taka and the return per household was taka 407.15. The benefit cost ratio was 3.62:1. Despite some problems backyard poultry farming by women is profitable and contributed to some extent to family income.

Keywords: Poultry, backyard farming.

Chapter -1

INTRODUCTION

Bangladesh is an agro-based country. The main occupation and way of life for the rural people is agriculture. Most of the people lived in the village don't have their own land to cultivate. They depend on others property and also the seasonal crop. Livestock resources necessarily encompass animal health care and welfare, quality production factors, and effective rearing to keep pace with expansion of entrepreneurship related to concerned industries. It plays an important role in the agricultural production sphere. Statistics show that about 1.47% of national GDP is covered by the livestock sector, and its annual rate of growth is 3.47% (BBS 2018-19). About 20% of the population of Bangladesh earn their livelihood through work associated with raising cattle and poultry (BBS 2018-19). The rural people mainly women are illiterate. They don't want to go outside for work to reduce their poverty due to conservative mentality and lack of education and knowledge. For this type of family poultry rearing is one of the prospective sectors for poverty elevation. This is quick returnable enterprise which require relatively small initial investment.

Rural women in Bangladesh traditionally play an important role in livestock production. Women are able to operate and manage technical enterprises like broiler, layer and duck farms efficiently with a high return on the investment. Poultry production on a smaller scale like in the Smallholder Livestock Development Project, the poultry for Nutrition Project and the Participatory Livestock Development Project are useful to improve the native backyard poultry under scavenging and semi-intensive systems, where women traditionally play the most important role.

Bangladesh has a population of 161.4 million and a density of 51,703 people per square mile (World bank 2019, United states census bureau). 62.6% of the population live in rural areas and the percentage of women are higher than men. Female-headed households constitute 9 % of all households and 30 % of all poor households. Although the vast majority of the rural population is poor and illiterate, the women are the poorest and have a much lower literacy rate than men. The problems affecting the economic and social status of women in Bangladesh are huge and complex.

Poultry rearing has emerged as an integral part of agribusiness of farming community in Bangladesh. The villagers who cannot afford to rear cattle or goats can easily rear a small number of birds. About 75% of rural house holds and 89% of the rural livestock households rear poultry under scavenging condition. It is an important source of cash income for the rural women (Alam, 1995).

Bangladesh Bureau of Statistics (BBS) in its latest Household Income and Expenditure Survey (HIES) 2016 reported that daily per capita consumption of major meat like chicken, duck and egg has increased compared to that in 2010. Among those protein items, intake of eggs and chickens has jumped significantly over the last six years (HIES, 2016). According to the HIES statistics, egg consumption by a person has increased to 13.58 grams daily in 2016 from only 7.20 grams in 2010. Daily egg consumption per capita was only 5.27gm in 2000 and 5.15gm in 2005, BBS statistics showed. Similarly, chicken and duck consumption has picked up to 17.33gm per day in 2016 compared to 11.22gm in 2010. In 2000, per capita chicken and duck intake was 4.50gm which increased to 6.85gm daily in 2005, the HIES data showed. Experts said the contribution of Bangladesh's poultry industry was significant as businessmen supply huge chickens and eggs in the market at affordable prices over the years.

The expansion of poultry sector depends, among other things, on the profitability of chicken rearing and egg production at farmers level (Agarwal *et al.*, 1986). About 75% of eggs and 78% of meat is produced under scavenging system of production (Rahman, 1998).

Poultry production in Bangladesh is dominated by scavenging indigenous chicken. Poultry are reared free and with little or no feed supplement. They feed mainly rice polish, kitchen wastes, green vegetables, leaves, insects and feed available in the surrounding areas. They are dual purpose birds providing both meat and eggs to the farmers. Most of the rural people in Bangladesh keep poultry for their family income and consumption. Generally the rural women keep poultry mainly for economic purpose, particularly for making personnel income more easily than rearing other off farm activities. But involvement of women in poultry keeping suffers due to lack of improved birds, quality feed, disease control measure, poultry management etc., those factors are still not clearly known to rural women.

Chapter -2
OBJECTIVES

Rural women traditionally play a very important role in raising livestock. In most cases, they are solely responsible for goats/sheep and poultry rearing. They also take care of the health of the animals and birds. However, the household job they perform is unpaid and the traditional extension service does not make much contribution to raise their skills. The women are by passed by banks and other money lending institutions. To know the socio-economic status of poultry rearing in backyard system at upazila level and to gather knowledge about the management pattern of family level poultry keeping the present study was undertaken. This study also focus on the productivity, profitability, cost and return aspects of different type of poultry farms under different management and also suggest simple and low cost practices to enhance sustainable income generation to generation through backyard poultry.

Chapter -3

Review of Literature

A number of studies have been conducted on the Backyard poultry farming

Biswas (2001) conducted Poultry rearing by rural women was found profitable although they faced various problem relating to social, financial and management problem. Scientific method of poultry rearing was not adopted by rural women in the study area. As a consequence they are deprived incur losses as many of the birds died by diseases. Further more they did not clean the poultry house with disinfectant that causes increased disease attack. Rural women had to face some social problem like theft of birds. This problems sometimes hindrance the desireness of rural women in poultry rearing.

J. Alam (2001) conducted a similar nature of study in 4 districts of Bangladesh has evaluated the impact of interventions made by the Small holder Livestock Development Project (SLDP) on socio-economic condition of the poor people. The generation of income and employment from SLDP activities has enhanced the status of women in the family. An overwhelming majority of beneficiaries reported that their socio-economic condition improved after their participation in SLDP.

IA Begum (2013) Conducted an assessment of the small holder farming system and found that local scavenging chickens dominate poultry production (86 percent), while the remaining 14 percent of meat comes from commercial farming systems–90 percent from small-scale commercial farms and only 10 percent from large-scale farms (BBS, 2005). Huque and Stem (1993) found that small farmers in Bangladesh produced about 96 percent of eggs and 98 percent of chicken meat. This situation has not changed significantly since their findings. Despite the contribution of the poultry subsector to the economy and livelihoods of small farmers, the production system is not adequately market oriented. Considerable obstacles need to be overcome before small farmers can obtain remunerative prices and profits from poultry production. This chapter explores ways to link small farmers with commercial poultry production systems and evaluate whether contract farming (CF) could improve market access for smallholder poultry farmers in Bangladesh.

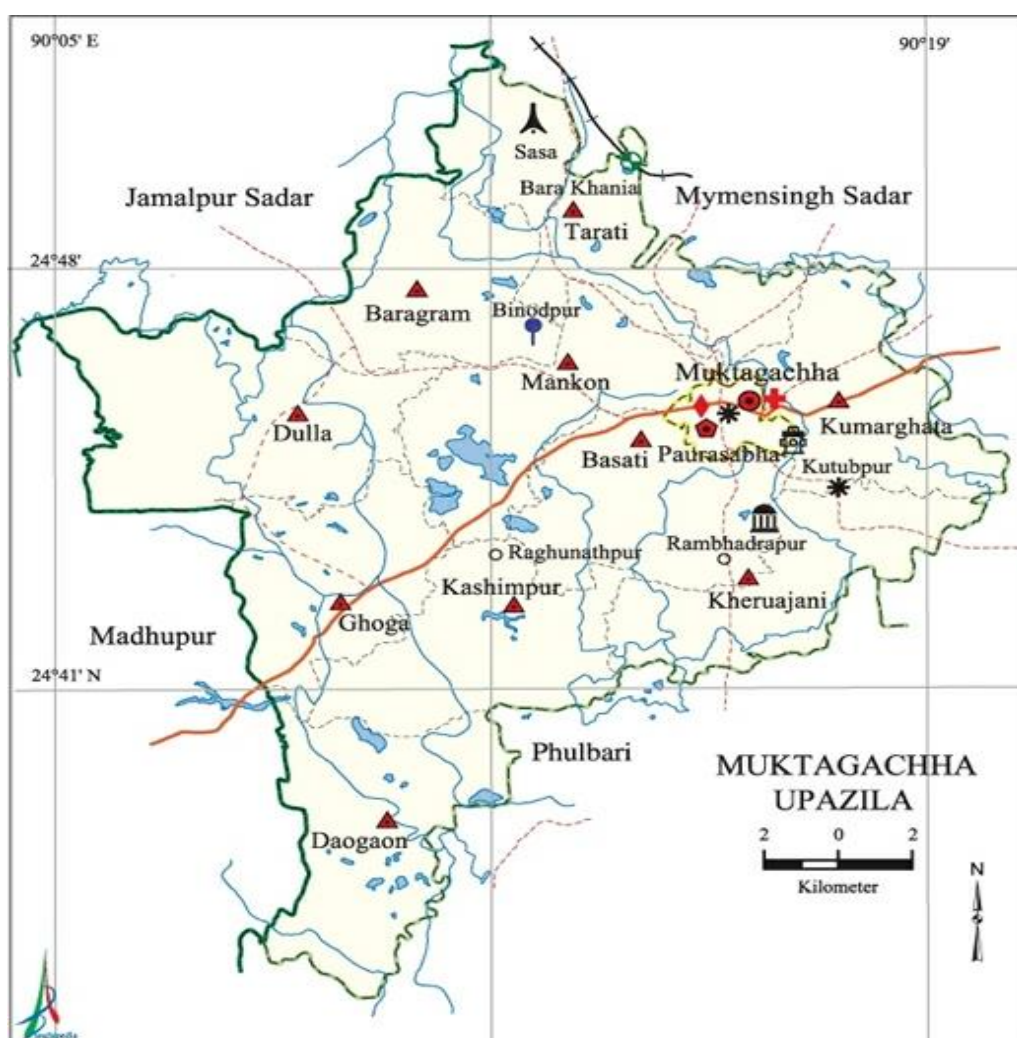
Alam (1997) conducted a research works to examine the productivity and profitability of poultry farms under traditional, semi-intensive and intensive management systems were investigated. The production of egg per layer per year was 43.88 for traditional, 141.11 for semi-intensive and 230.15 for intensive farms. A significant percentage of eggs produced by each type of farm was sold in the market for cash. The annual cost of operation per farm was Taka 820.03, Taka 10732.75 and Taka 715164.94 for traditional, semi-intensive and intensive farms, respectively. The cost per bird was Taka 33.61 for traditional, Taka 51.28 for semi-intensive and Taka 106.68 for intensive farms. The cost per egg was Taka 0.49, Taka 2.16 for traditional, semi, intensive and intensive farms, respectively. The benefit cost ratio was 2.94:1 for traditional 1.31:1 for semi- intensive and 1.22:1 for intensive farms.

Chapter -4

MATERIALS AND METHODS

1. Study area:

The study was conducted at Muktagacha upazila, Mymensingh, Bangladesh. Muktagacha is an Upazila of Mymensingh District in the Division of Mymensingh, Bangladesh. Muktagacha is located at 24.7583°N 90.2667°E. It has 64044 households and a total area of 314.71 km² (Wikipedia). A survey was conducted on twenty households in Muktagacha upazila who rear poultry in scavenging system mainly by women.



2. Sample collection process:

A total of twenty households having at least 5 birds each, was selected randomly. The birds were looked after by the rustic women.

3. Methods of data collection:

The survey was conducted with a pre-structured questionnaire on the basis of baseline data obtained from RDRS, Bangladesh for a period of two months.

4. Analytical technique:

The collected data were sorted and imported into MS Excel for descriptive analysis (Percentage, mean, median).

Chapter - 5

MANAGEMENT SYSTEM

The management system of poultry rearing in rural households are not so organized and they don't have any interest to know about the improvement of the poultry and the rearing system. It was found that most of the households have birds of about 5-10.

1. Feeding system :

There was no formulated diet pattern for the birds and no difference in the diet of adult and chicks. They feed their birds once in the day mostly in the morning. 80% of the rural people feed their birds rice polish with rice at the morning and the rest of the people didn't supply any feed to their birds. They survive only feed found in scavenging system. Mainly the bird depends on kitchen wastes, insects, grass tips etc.

2. Housing system:

The housing system of rearing poultry in the village is quite different from the literature. Most of the houses were made by mud and tin roof, some of the house were made by bamboo and tin and another group of people rear their bird only in bamboo made house.

3. Incubation system:

The farmers of backyard poultry usually use broody hens for incubation of eggs to hatch out the chicks. Most of the households preferred to incubate the eggs by broody hens because it need less money. For this purpose women use "chary" made of only mud considered as incubator containing rice straw or ash. Sometimes the "chary" was made by only bamboo and a deep layer of rice straw was placed on it. The number of eggs set for incubation varies from 10-12 per hen. The hatching rate was 85-90% per hen.

4. Mortality rate of chicks:

The chicks in backyard system were deprived from proper care and management rather they need special care. They don't have separate house and feed. They reared with the adult hen in the muddy house. Then they become susceptible to diseases. Most of the women who reared chicken report that largest number of chicks die in age group of 1-12 days. Moreover

the indigenous (Desi) birds resistance in parasitic diseases but not in bacterial and viral diseases like Salmonellosis, Newcastle disease, Avian influenza etc. Another important fact is predator attack by fox or mongoose which also causes a big trouble.

5. Vaccination and medication system:

Due to lack of proper education, lack of veterinary service and lack of awareness of the owner there was no proper health care of poultry in that area. They don't give the life saving vaccines like Marek's vaccine , BCRDV vaccine, RDV vaccine etc in right time. Thus poultry is considered to be the most risky venture by the households as any outbreak of disease or epidemic can wipe out the entire poultry population. This fear prevents people considering poultry as a sustainable income generating activity although a large number of household rear poultry. Most of the rural people doesn't identify the diseases. They gave medicines to the poultry advised by the other farmer or "quack". Due to the resistance power of the indigenous birds they didn't face large loss.

6. Biosecurity:

Biosecurity attributed by the household poultry rearing using chemical agent is negligible in the rural condition 0.99% of the rural people don't maintain commercial biosecurity and 1% maintain to some extent. But almost 100% of the poultry rear maintains traditional control measures and biosecurity. In that case they used ash as disinfectant to control ecto-parasite and for floor disinfection.

Chapter - 6

RESULTS AND DISCUSSION

Table:1 Management of poultry rearing by rural women:

Sl. No	Parameters	Observation
1	Type of house	
	a. Earthen %	40%
	b. Bamboo case %	10%
	c. Mud and tin %	50%
2	Feed intake (gm/d/chicken)	98.25gm
3	Cleaning of poultry house (no/month)	11.9 times
4	Cleaning materials used in %	
	a. Ash	70%
	b. Sand	30%
	c. PPM, detol, savlon	0
5	Vaccine taken in %	40%
6	Without vaccine in %	60%
7	Method of treatment	
	a. Traditional method in %	80%
	b. Modern method in %	20%

The management system of households are found from this table. About 40% of the women used earthen house for their birds, 10% use bamboo case and about 50% women used house with mud and tin. They cleaned their house 11.9 times in a month and mostly use ash that is about 70% , other 30% use sand as cleaning agents. They didn't use any chemical agents for cleaning which is more safe and hygienic. They also didn't vaccinated their birds regularly. Some of them are conscious and they vaccinated their birds but the number was small about 60%. The birds suffering from many diseases and die without proper diagnosis and treatment. They mainly follow the traditional method of treatment that is about 80%.

Table: 2 Socioeconomic status of women:

Sl no	Parameters	Observations
1	No of household investigated	20
2	No of family members per house	5.35
3	No of educated members per house	1.9
4	Land area owned per household (hectre)	0.38

This table potray's that the socioeconomic status of women who rear scavenging poultry. There were 20 house under observation and the number of family members in that households was 5.35 and the number of educated family members of that houses was 1.9. The land area per household was 0.38 hectre.

Table: 3 Production performance of chicken:

Sl no	Parameters	Observations
1	No of birds reared per farm	10.65
2	No of layers per farm	8.05
3	Egg production layer/year	80

In this table the poultry population and the production of eggs is showed .The average number of birds per household was 10.65 and the number of layers per household was 8.05. The production of eggs per layer per farm was 85.5. Backyard poultry farm reared indigenous birds and their productivity was very low.

Table: 4 Purpose of egg use:

Sl no	Parameters	Percentage (%)
1	Broken egg %	0.86
2	Consumed egg %	32.25
3	Sold egg %	51.04
4	Hatching egg %	15.85
5	Hatchability rate %	69.75

This table shows the production and use of eggs. Losses of eggs due to breakage was 0.86%. The consumed egg percentage was 32.25% and this proportion was solely used for their own consumption. A significant percent of eggs in each households was sold for cash money. About 51.85% eggs was sold and a minimum amount of eggs was used for hatching. The hatchability rate was 69.75%.

Table: 5 Percentages of different management cost :

Sl no	Parameters	Percentage (%)
1	Feed cost	88.30
2	Housing cost	10.92
3	Medicine cost	0.77
4	Monthly cost in taka	112.50

Table 5 represents the monthly cost of the households. In backyard system of poultry rearing owners spend less amount of money. Their cost was mainly for feed that was about 88.30%, 10.92% of the cost goes for housing and very less amount for medicine about 0.77%.The cost for every households in month was 112.50 tk on an average.

Table: 6 Monthly return of the household:

Sl no	Parameters	Amount in BDT
1	Sale of eggs (Tk)	14.49
2	Sale of birds (Tk)	185.5
3	Own consumption (Tk)	79.16
4	Monthly return	407.15

This is the table for monthly return from the poultry of the households. Here one women can got 14.49tk by sold of eggs, 185.5 Tk from selling of birds. 79.16 Tk one household can consumed. The monthly return from the poultry on average 407.15 Tk for each households.

Table: 7 cost and return from poultry rearing (Monthly/households) at a glance:

Sl no	Parameters	Amount in BDT
1	Total cost	112.50
	a. Feed cost	99.34(88)
	b. Housing cost	12.28(10)
	c. Medicine cost	0.86(0.77)
2	Total return	407.15
	a. Sale of eggs	142.49(34)
	b. Sale of birds	185.5(45.6)
	c. Own consumption	79.16(19.44)
3	Death loss	65.5
4	Net return= B-A-C	229.15
5	Cost benefit ratio	3.62
6	Return per 100tk investment	362.00

This is the final calculation table for calculate the net return of each household .

From poultry rearing in backyard system. Here shows that the total cost in each household was 112.50 Tk and the total return from poultry in every month was 407.15. The net return from the poultry was 229.15 Tk and the cost benefit ratio was 3.62. It can easily says that on investment of 100 Tk the return will be 362 Tk. So, poultry rearing appeared to economically profitable in Muktagacha upazila.

Chapter -7

LIMITATIONS OF THE STUDY

There was some limitations in the study of backyard poultry rearing. Because the time for the study was limited and the study area was also small. The system of poultry rearing is unorganized in rural area and most of them are illiterate and it was the main reason for not getting the proper and reliable data. The amount of feed supplement, quality of that feed and their intake proportion was unrecorded. The purchase and sale of poultry products are limited. So it is difficult to know the real picture of backyard poultry rearing of the whole country.

Chapter - 8

Conclusion

The backyard poultry farming in Bangladesh is revealed as a source of income for the poor & marginal people of the rural areas. There is a scope of arising group activities of the people of rural villages are to commence leading to avenues which will give supplementary income to the farm families. By the above study it is clearly denoted that poultry rearing appeared to be economically profitable especially for the rural women. It can help to poverty elevation for rural people. Most of the part of Bangladesh is rural area, for the economic development, rearing of poultry can easily be contributed for development.

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Appendix - I

Questionnaire

1. Name of the owner:
2. Address:
 - a) Village
 - b) Union
 - c) Upazilla
 - d) District
3. Occupation of the owner:
4. Number of family member:
5. Yearly income of the family:
6. Number of birds (chicken):
7. Housing system practiced:
 - a) Housing system
 - b) Type of housing
 - c) materials used in the house
8. Management practices:
 - a) Feeding:
 - a)Type of feed
 - b)Source of feed
 - c)Time of feeding
 - d)Amount of feeding
 - e) Supplementary feed
 - b) Vaccination
 - c) Medication
9. Incubation and brooding system:
 - a) Materials used for incubation
 - b) Availability of broody hen
 - c) Number of egg set
 - d) Hatchability rate
10. Diseases prevalence:
11. Morbidity and mortality rate:
12. Production statistics:
 - a) Clutch production

b) Monthly production

c) Yearly production

13. Monthly consumption of egg:

14. Annual income from egg & selling of birds:

From egg sale:

a) Daily income b) Monthly income c) Yearly income

From bird selling:

a) Daily income b) Monthly income c) Yearly income

Appendix – II

SI no	Name	Type of house			Clean ing of house (no/m onth)	Cleaning material			Vac cine take n	Wit hou t vac cine	Method of treatmen t	
		E.H	B.H	M& TH		Ash	sand	PPM /detol			Tra diti onal	M od er n
1.	Jarina begum	Y	-	-	12	Y	-	-	-	Y	Y	-
2.	Asma	Y	-	-	11	Y	-	-	Y	-	Y	-
3.	Runa	-	Y	-	9	Y	-	-	Y	-	-	Y
4.	Salma	-	-	Y	15	-	Y	-	Y	-	Y	-
5.	Korimon	-	-	Y	10	Y	-	-	-	Y	-	Y
6.	Saleha	-	-	Y	12	-	Y	-	-	Y	Y	-
7.	Salina	Y	-		13	-	Y	-	-	Y	Y	-
8.	Halima	-	-	Y	15	Y	-	-	-	Y	Y	-
9.	Joinob	-	Y	-	8	Y	-	-	Y		Y	-
10.	Khaleda	Y	-	-	12	Y	-	-	-	Y	-	Y
11.	Nuri	Y	-	-	14	Y	-	-	Y	-	Y	-
12.	Nasima	-	-	Y	15	-	Y	-	Y	-	Y	-
13.	Buety	-	-	Y	15	Y	-	-	-	Y	Y	-
14.	Julehha	Y	-	-	15	Y	-	-	Y			Y
15.	Hasna	Y	-	-	10	-	Y	-	-	Y	Y	-
16.	Parul	-	-	Y	8	Y	-	-	-	Y	Y	-
17.	Sokhina	-	-	Y	10	Y	-	-	-	Y	Y	-
18.	Jobeda	-	-	Y	10	-	Y	-	Y		Y	-
19.	Khadiza	Y	-	-	12	Y	-	-	-	Y	Y	-
20.	Lota	-	-	Y	12	Y	-	-	-	Y	Y	-
	aveg	40	10	50	11.9	70	30	0	40	60	80	20

Special note: Here Y means yes and, - = means no.

Appendix - III

S L	Name	No of family member	No of educated member	Land (hctre)	No of birds	Feed intake (gm/day/bird)	No of layers	Egg prod /layer/year
1	Jarina begum	6	2	0.4	7	110	4	90
2	Asma	7	2	0.50	13	105	9	85
3	Runa	4	1	0.25	17	105	11	78
4	Salma	5	3	0.3	9	100	7	75
5	Korimon	7	2	0.4	8	95	6	82
6	Saleha	6	1	0.1	5	110	4	70
7	Salina	3	0	0.4	13	90	9	78
8	Halima	6	3	0.5	11	95	8	72
9	Joinob	5	2	0.5	16	85	13	85
10	Khaleida	8	3	0.3	5	105	3	75
11	Nuri	3	1	0.25	9	100	7	80
12	Nasima	5	2	0.3	14	85	10	80
13	Buety	4	1	0.4	17	90	15	85
14	Julekha	4	2	0.3	8	100	6	90
15	Hasna	5	2	0.5	7	110	4	85
16	Parul	6	3	0.35	13	95	11	70
17	Sokhina	4	1	0.25	11	95	9	75
18	Jobeda	7	2	0.5	16	80	15	80
19	Khadiza	6	2	0.45	8	100	5	80
20	Lopa	6	3	0.60	6	110	5	85
	Aveg	5.35	1.9	0.38	10.65	98.25	8.05	80

Appendix - IV

SL	Name	Total egg(no/year)	Broken eggs%	Consumed eggs%	Sold eggs%	Hatching eggs%	Hatchability Rate %	Price of per egg
1	Jarina begum	360	1	40	44	15	70	5.20
2	Asma	765	0.5	35	52.5	12	75	5
3	Runa	858	0.6	25	49.4	25	78	4.90
4	Salma	525	0.8	28	56.2	15	72	5
5	Korimon	492	0.7	42	47.3	10	75	5
6	Saleha	280	1	60	27	12	75	4.80
7	Salina	702	1.25	35	45.75	18	70	4.80
8	Halima	576	0.75	32	47.25	20	70	4
9	Joinob	1105	1	22	52	25	75	5.20
10	Khaleda	225	1.5	45	38.5	15	78	5.10
11	Nuri	560	0.75	30	57.25	12	65	5.20
12	Nasima	800	0.5	28	55.5	16	60	5.20
13	Buety	1275	1	19	60	20	65	5.20
14	Julekha	540	0.8	30	57.2	12	65	5
15	Hasna	340	0.6	35	50.4	14	65	5
16	Parul	770	1	32	52	15	70	5.10
17	Sokhina	675	0.6	40	47.4	12	72	5.10
18	Jobeda	1200	1	22	59	18	70	5
19	Khadiza	400	1	25	58	16	60	5
20	Lopa	425	0.8	20	64.2	15	65	5.10
	aveg	643.65	0.86	32.25	51.04	15.85	69.75	5.00

Appendix – V

SL No	Name	Cost			Monthly cost	Return			Monthly return	Monthly net return
		Feed Cost %	Housing cost %	Medicine cost %		Sale of egg (tk)	Sale of bird (tk)	Own consumption (tk)		
1	Jorina begum	84	15	1	150	68.64	80	62.4	211.04	61.04
2	Asma	90	9.5	0.5	160	167.34	250	111.56	528.9	368.9
3	Runa	85	15	-	200	173.07	350	87.58	610.65	410.65
4	Salma	95	4.5	0.5	120	122.94	200	61.25	384.19	264.19
5	Korimon	80	18	2	150	96.96	150	86.1	333.06	183.06
6	Saleha	70	29	1	100	30.23	70	67.19	167.42	67.42
7	Salina	85	14	1	120	128.47	200	98.28	426.75	306.75
8	Halima	90	9.5	0.5	100	90.72	400	61.44	552.16	452.16
9	Joinob	85	14	1	150	248.98	250	105.33	604.31	454.31
10	Khaleda	90	9.5	0.5	70	36.81	-	43.03	79.84	9.84
11	Nuri	95	4.5	0.5	110	138.93	100	72.80	311.73	201.73
12	Nasima	95	4.5	0.5	150	192.41	200	97.07	489.48	339.48

13	Buety	87	12	1	160	331.5	350	104.97	786.47	626.47
14	Julekha	90	9.5	0.5	80	128.7	150	67.5	346.2	266.2
15	Hasna	90	9	1	70	71.39	120	49.57	240.96	170.96
16	Parul	85	14	1	80	179.17	180	104.72	463.89	383.89
17	Sokhin a	90	9	1	80	135.97	180	114.75	430.72	350.72
18	Jobeda	90	9	1	110	295	300	110	705	595
19	Khadiz a	95	4.5	0.5	50	96.65	100	41.66	238.31	188.31
20	Lopa	95	4.5	0.5	40	115.97	80	36.12	232.09	192.09
	aveg	88.3	10.92	0.77	112.50	142.49	185.5	79.16	407.15	294.65