

Back Yard Poultry Production in Mahoba: A Socio-Economic Analysis

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Abstract

Almost every household keeps semi-intensive back yard poultry production in the backyard as a tradition, both for food and for the generation of additional income in mahoba. Recent studies have shown that improving husbandry and management practices on the house can increase the return of the back yard poultry farmer significantly. A survey was carried out on households with back yard poultry on the social and economic importance of back yard poultry production on the mahoba in 2012. Results showed that on an average, the back yard poultry farmer was 45 years of age, 33% were illiterate, 36% of the farmers were women, and the family consisted of 5.5 members. Besides their main occupation, animal husbandry was the main side activity of 61% of the households. 78% of the respondents reared chickens firstly for income, 11% for home consumption, 7% for cultural reasons, and 4% simply for game. The profit obtained from the sale of chickens and eggs, and the monetary value of sale and home consumption of these commodities represented 14% and 21% of the total income of the family, respectively. 62% of the households wished to expand back yard poultry production as they found this system of production more profitable than the rearing improved commercial broilers and layers. All the poultry sellers who marketed the back yard poultry found their business profitable, and wished to expand it. They priced the birds by their appearance, offered Rs 85/ kg live weight, and sold them at Rs110/kg live weight to consumers in Mahoba. Back yard poultry had a guaranteed market, especially for being free intensive birds, and for their rustic taste.

Key words: Back Yard Poultry, Income, Mahoba, Marketing, Socio-Economics

Livestock sector plays an important role in socio-economic development of rural households. Indian poultry industry has made a tremendous growth during the last 4 decades. Poultry is the foremost developing segment of the agricultural sector in India. Globally, India ranked 3rd in egg production (66.45 billions) and 5th in chicken production (3.6 Mt) in the year 2011-12. This increase in poultry production has enhanced the per capita availability

to 55 eggs and 2.4 kg poultry meat per annum (Economic Survey, 2012-13). It contributes about 6 percent to the Gross Domestic Product and 25 percent to the Agricultural GDP. India has one of the world largest commercial poultry sector, but a big rural and urban divided in the level of consumption of poultry product. Rapid economic growth and urbanization has resulted in fast expansion of industrial large scale, vertically integrated, poultry

production units. Opportunities have also expanded for small scale poultry enterprises due to improved market access infrastructure and a preference structure that might still favour free range Desi birds and eggs. Market oriented backyard poultry enterprises are being recognized as a stepping stone for the poorest households enabling them to take the first step towards breaking out of the vicious circle of poverty and deprivation. There is also growing evidence to demonstrate the role of rural family poultry in enhancing the food and nutrition security of the poorest households, reducing the livelihood vulnerability and insecurity, and promotion of gender equity (Dolberg 2004, Ahuja 2004, Ahuja and Sen 2007, Otte 2006). India is self-sufficient in poultry meat and eggs, the bulk of which is produced by industrial farms. Back yard poultry production is not of economic importance to Mahoba, but in India, the rearing of the semi-intensive and so-called 'local or desi' breed of chickens is considered to be an important source of both food and income to a large number of Indian families. As the interventions and investigations were limited to a small group of family poultry farmers, additional information was required to make an assessment of the social and economic importance of this system of poultry production in mahoba.

Materials and Methods

This survey was carried out on a larger group of households, and from the whole mahoba. The survey consisted of two parts namely, a socio-economic survey and a market survey. For study, data were collected purposively from 150 households of 20 villages including Jaitpur, Panwari, Charkhari and Kabrai blocks of the Mohoba district during the months of October and November 2012 and also included the poultry sellers who market the live chickens in Mahoba. The survey enabled to make an appraisal of the social and economic importance of the Back yard poultry to mahoba and the needs of both farmers and poultry sellers also involved in the survey.

Socio-economic survey

A standard questionnaire was used and each of those persons in the household who was responsible for the farming activity was interviewed at his residence for recording information. The information collected pertained to the following:- profile of farmer, management of the farm, production costs and revenue, problems and constraints, support services, environmental issues and prospects.

Market survey

Another standard questionnaire was used to interview the poultry sellers. Seven sellers were interviewed in the month of October and November 2012 at their residence. The following information was collected from them: profile of the poultry sellers, method of purchase, price determination, selling of chickens, problems, constraints and prospects in the marketing system.

Results and Discussion

Socio-economic survey

The socio-economic profile of farmers has been presented in Table 1. 64 per cent of the respondents were males and 36% were females. The age of the respondents ranged between 16 and 68 years, with most of them being around 45 years. 68% respondents were married and 19 were single, of whom 12 were unmarried children of the family aged between 12 and 24 years. 64 per cent of the respondents were heads of households and 24% were spouses. The number of members in the family was in the range of 1 and 8 and was 5.5 on average.

Table 1. Socio-economic status of Respondents

Status of household	Number of persons	(%)
Head	96	64
Spouses	36	24
Unmarried male children	18	12
Total	150	100

The respondents had varied types of occupation, with no special categories, and included crop farming, labourers, and self employed workers. However, 31 were housewives, 20 were planters and 24 were labourers. 33% of the respondents had never attended school. 48% had education up to primary level, and 19% had attended secondary school. The approximate monthly income of the respondent was in the range of Rs 2000 and Rs 14000, and that of the whole family was in the range of Rs 4000 and Rs 21,000. Over 70% of both respondents and families earned between Rs 2,000 and Rs 5,000, as shown in Table 2.

Table 2. Monthly incomes of the respondents and their families

Income (Rs)	Number of respondents	Number of families
2000-5000	76	71
5001-8000	43	38
8001-12000	27	23
>12000	4	18

Occupational Status

Apart from a full time job, agriculture farming was the main activity of 61% of the respondents, while animal farming, labourers and self occupation were the main activity of 23%, 11% and 5% respondents, respectively, as shown in Table 3.

Table 3: Occupation Status of Respondents

Activity	Main activity (%)	II nd activity (%)
Crop farming	61	27
Animal farming	23	16
Labourers	11	8
Self occupations	5	2

Livestock farming activities

Besides keeping back yard poultry, the respondents reared cattle, buffalo, sheep, goats and pigs, and in varying numbers, as given in Table IV. 59% reared

13.4 head of sheep. The estimated revenue of the previous year obtained from each of these animals was on an average Rs 12647, Rs 17528, Rs 20416, Rs10783 and Rs 8631 per farmer, respectively, as shown in Table 4. The average yearly income from livestock was calculated to be Rs 23680 per household. This represented 34% and 21% of the income of the farmer and of the family, respectively Table 4.

Table 4: Livestock Status and Income

Species %	Number of animals		Income (2012)			
	Range	Average	% farmers	Range (Rs)	Average (Rs)	
Cattle	43	1-8	5.2	19	8000-50,000	17,528
Buffalo	26	1-7	4.8	22	10000-50000	20,416
Goats	59	1-28	13.4	12	5000-20000	12,647
Sheep	15	1-32	12.7	6	3000-15,000	10,783
Pigs	6	1-16	7.6	4	2000-25,000	8,631

Experience in back yard poultry production

The farmers were keeping back yard chickens for one to 50 years. Their experience the rearing of domestic chickens was as table 5. It is to be noted that a fair share (24%) of the farmers had relatively fewer number of years of experience (6 to 10 years).

Table 5: Experience in back yard poultry production

Number of years of experience	% farmers
1-5	19
6-10	24
11-20	18
21-30	15
31-40	16
41-50	08
Total	100

Reasons for keeping domestic chickens

As a first priority, 78% of the respondents were keeping domestic chickens for generating income, while 11% reared them for their own consumption.

Another 7% were keeping these either for cultural reasons and 4% reared for game purpose, as shown in Table 6.

Table 6. Reasons for keeping family chickens

Reasons	Priority 1 (% respondents)	Priority 2 (% respondents)
Source of income	78	27
Own consumption	11	36
Cultural	7	4
Game	4	2

Managing family poultry

Sources of local chickens

87% of the respondents maintained their flock of local chickens out of their purchased day old chicks, while 13% chickens out of their own farm.

Flock size and structure

The number of local chickens on the farms was in the range of 8 and 360 and was 32.65 on an average. The largest number of farms (59.33%) had between 11 and 50 local chickens, as shown table 7.

Table 7: Status of local chickens

No. of local chickens	Number of farmers
< 10	14
11-50	89
51-100	32
101-150	9
>151	6
Total	150

Besides rearing local chickens the farmers also kept other species of fowl, as mentioned in Table 8.

Housing

56% of the respondents had a shelter for their chickens. The size of shelter ranged between 5 and 100 m² and was on an average 12.5 m². The chickens were housed permanently on 14% of the farms, while only night shelter was provided on 30% of the

farms. Thus, the chickens were kept in a free range system on the majority of farms. The farmers who had a shelter for their chickens had spent between Rs 1000 and Rs 40000 and Rs 8750 on an average on the construction of the shelter, as shown in Table 9.

Table 8. Flock Size and Structure

Type of fowl	% farms	Number of birds	Range	Average number of birds per farm
Local chickens	150	4683	8-360	32.6
Broilers	36	753	5-300	18.4
Layers	14	340	5-150	12.7
Kroilers	8	185	3-100	7.5

Table 9: Expenses for the Chickens Shelter

Number of birds	Range of housing cost (Rs)	Number of farmers
< 10	1000	7
11-50	2000-5000	47
51-100	5001-15000	79
101-150	15000-25000	13
>151	25001-40000	4

Feeding

84% of the respondents allowed their chickens including the chicks to roam around the house for feeding. All of them gave supplementary feeds to the birds, and in different combinations. The supplements consisted of wheat, barley, gram, rice polish, maize(arhar chuni, Urd, mung), mineral mixture and salt which were given on 30%, 22%, 20%, 10%, 15%, 2% and 1% of the farms, respectively. The frequency at which these supplements were fed varied from farmers to farmers. Feed costs also varied according to the number of birds, and the type and frequency at which these supplements were given. The expenses that incurred on feeding by the householders were in the range of Rs 10 and Rs 2500 and were Rs 342 per household per month, on an average. The feeding practices and costs of feeding are given in Tables 10 and 11 respectively.

Table 10: Feeding of Supplements to the Chickens

Ingredients	Frequency of feeding		
	Daily (% farmers)	Occasionally (% farmers)	Seasonally (% farmers)
wheat	30	27	30
Barley	22	20	15
Gram	20	30	40
rice polish	10	7	0
maize	15	13	12
Mineral mixture	2	2	2
Salt	1	1	1

Table 11: Cost of Feeding of Supplements

Ingredients	Quantity feed (kg/mth)		Cost (Rs/month)	
	Range	Average	Range	Average
Wheat	3-75	35.8	45-1125	537
Barley	2-50	30	26-650	390
Gram	1-30	17.4	40-1200	696
rice polish	1-15	5.3	38-2500	331
Maize	1-30	15.6	20-600	312
Mineral mixture	1.5-3.0	2.3	75-150	115
Salt	1.5-3.0	2.1	10-20	15

Table 12. Disease occurrence on the farms

Disease problem	% Disease
Infectious bronchitis	36
Marek disease	31
New castle disease	44
Avian influenza	26
Bacillary white Diarrhoea	49
Cannibalism	18
Fowl pox	17
Fowl cholera	14
Internal parasite	38
External parasite	42

Disease occurrence on the farms

54% of the farmers had experienced disease problems on their farms during the study year. 47%

of the farmers had experienced the problems in the dry season (July-December). Infectious diseases were the major disease problems encountered on the majority of farms. These infectious diseases were described on the basis of the signs of disease that the farmers had observed, as given in Table 12.

Loss of birds

The farmers suffered loss of birds due to disease, predation or were simply losing them in the open. Deaths due to disease occurred on 54% of farmers. Disease was the main cause of their loss, and the deaths were more or less the same magnitude in adults, growers and chicks. Predation and getting lost while erring occurred mostly in chicks on 19% and 11% of farms respectively. The losses due to these various causes are given in Table 13.

Table 13. Loss of Birds

Cause of loss	Adults		Growers		Chicks	
	% farmers	Average N/farmer	% farmers	Average N/farmer	% farmers	Average N/farmer
Disease	54	23.7	52	23.2	61	33.78
Predation	7	12	9	16.5	19	13.6
Lost	5	10	7	13.6	11	35.48

The losses of birds due to disease in adults, growers, and chicks were calculated to be 16.7%, 15.9% and 29.6% per farmer, per year, respectively.

Vaccination

The majority of farmers did not vaccinate their chickens against the four most common and universally occurring diseases of economic importance as shown below.

Table 14: Birds vaccinated (% farmers)

Disease	Birds vaccinated (% farmers)
Newcastle disease	7
Marek disease	18
Infectious bursal disease	12
Fowl pox	4

Table 15. Disposal of chickens and eggs and income derived

Consumption	Chickens			Eggs		
	farms%	Ave. no./ mth/ farm	Value ¹ Rs/ mth/farm	farms%	Ave. no./ mth/ farm	Value ² Rs/ mth/ farm
Own consumption	20	6	660	29	27	108
Sold in the same village	18	13	1430	21	50	200
Sold to merchant	62	21	2310	50	126	504

Note: Market value of 1 live chicken assumed at Rs 110/kg & 1 egg assumed at Rs 4.00

Disposal of chickens and eggs and income derived

80% of the farmers indicated selling their farm produce, and 20% were not selling. Chickens and eggs were both consumed and sold on 94% of the farmers. The disposal of chickens and eggs during the month is given in Table 15. The monthly monetary value representing home consumption and sale of chickens was in the range of Rs 660 and Rs 3740, and eggs Rs 108 and Rs 704 on an average, per farm, whereas the revenue obtained from the sale of chickens and eggs was on average Rs 4144 per farm per month. The profit of that the farmer obtained through the sale of chickens and eggs, by subtracting the feed costs from the revenue, were on average Rs 1748 per month.

Prospects in poultry farming

62% of the farmers wished to expand their poultry farming activity. Out of these, 44% preferred to expand the farming of the desi chickens, 29% would

go for broilers and 11% for layers. 38% of those who preferred to expand local chicken production believed that local chickens were more profitable than other types while 27% believed that they were easier to manage and 25% said to market guaranteed and 16% of the farmers had no preference for any specific type of chickens as shown in Table 16.

Major constraints limiting back yard poultry farming activity

High feed costs was reported to be the major constraint of 27% of the farmers while Disease 19%, Lacks of Improved breeds 14%, inadequate veterinary service 11%, lack of finance 10 %, Market 08%, extension service 07% and Lacks of proper management 04% of the farmers as shown in Table 17.

Suggestions for improving back yard poultry production

Farmers made suggestions in order to improve back yard poultry production. These suggestions were as table 18

Table 16: Reasons for Expanding Poultry Farming Activity

Type of chicken	Reasons (% farmers)					
	% Farms	Market guaranteed	More profitable	For own consumption	Resistant to disease	Easily Managed
Local	44	23	38	9	3	27
Broilers	29	36	32	10	6	16
Layers	11	19	81	-	-	-
No preference	16	-	-	-	-	-

Table 17: Major constraints in Back Yard Poultry

Major constraints	% farmers
High feed cost	27
Disease	19
Lacks of Improved breeds	14
Veterinary service	11
Lack of finance	10
Market	08
extension service	07
Lacks of proper management	04

Table 18. Suggestions for Improving Back Yard Poultry Production

Suggestions	% farmers
Back yard poultry production must be promoted	65
Veterinary service must be improved	39
Extension service must be improved	37
Introduce similar improved breeds	42
Provide Govt. subsidy	34
Availability of feed	23
Provide developed market	47
Regularly vaccination	31
Provide finance facility	36

Type of chicken and egg preferred for consumption

The majority of farmers associated their preference of the local chicken and egg to taste, as shown in Table 19.

Table 19. Reasons for Preferring Local Eggs and Chickens

Item	Reasons	
	Taste %	Nutritive value %
Eggs	69	31
Chickens	76	24

Market survey and Marketing activity

The marketing of back yard poultry was effected by specific individuals in the business, and were referred to as chicken sellers. It was a part time activity of all the 7 respondents, their main activity being shop keeping (81%), village selling 16% and restaurant keeping (3%). They were involved in marketing only back yard poultry.

Purchase of local chickens

Five out of the seven chicken sellers purchased local chickens throughout the year, while two purchased at specific festivals times. The chicken sellers went directly to 81% of the farmers for purchase, while 19% farmers brought their chickens to the middlemen. Four chicken sellers purchased chickens 1-2 times per month. Three farmers purchased 4 times per month. The latter would buy young growers and keep them until ready for sale. The number of birds purchased per month by the chicken sellers was in the range of 200 to 500 and was on average 320 birds/months.

Price determination

The price of the chicken was determined on live weight and not on colour or sex, and the birds were weighed at purchase. The average weight of a live chicken was around 1.10 kg. The price ranged between Rs 100-120/kg live-weight and was on an average Rs.110/kg. The variation in the buying price occurred all year round. The price fluctuated more during festivals occasions and winter season, when the selling price was highest. The price was mutually determined by both buyer and seller.

Selling of chickens

Six of the seven chicken sellers were also retailers, and sold the chickens themselves. One had a relative as counterpart for retailing. The chickens were sold directly to consumers. A negligible number of chickens were sold live to consumers in mahoba. This activity was profitable to all the chicken sellers.

They wished to expand the activity, as there was a promising market.

Problems and constraints faced by the chicken sellers

- Storage problem
- Transport problem
- Transport charges is very high
- Management problem
- No appropriate market
- Thefts
- Credit facilities
- Harassed by district officer and police

Conclusion

Back yard poultry production in mahoba, that is the rearing the local breed of chickens, was a side activity that was carried out mainly by elderly male heads of household, spouses and housewives, whose families had around 5-6 members. Besides their main occupation, the back yard poultry farmers were also engaged in other activities namely, (i) livestock farming (ii) crop farming, (iii) labourer and (iv) self-employed. The poultry farmers were mostly had some education at primary level, or uneducated and belonged to the low income group and had a few too many years of experience of family poultry keeping. The farmers reared from a few to hundreds of the Desi chickens, and they reared them firstly for the generation of additional income, and secondly for home consumption. A few persons also kept these chickens for cultural and game reasons. Besides rearing the Desi chickens, more than one third of the back yard poultry farmers also reared broiler chickens, mostly for their own consumption. A few of them had layers and Kroilers. Besides having poultry, a large number of the farmers reared, cattle, goats, sheep and pigs for a source of income. Although 56% of the households had a chicken house, chickens were permanently housed on only 14% of the farms and 30% chickens were provided

house only night. Birds were allowed to the open for feeding themselves on nearly all the farms (84% farms), but a large proportion of the farmers also gave supplementary feeds which were mainly wheat 27-30%, barley 15-22%, gram 20-40%, maize 12-15%, rice 0-10%, mineral mixture 2% and 1% salt of the farms, which were purchased. 54% Diseases, especially of infectious origin and were the main causes of deaths and thus, economic loss. Since only 18%, 12% and 7% of the farmers were vaccinating their flocks against Marek disease, infectious bursal disease and Newcastle disease, respectively. Chickens and eggs produced were consumed and sold on the majority of farmers, and the farmer was making a profit. The majority of farmers believed that the rearing of the local chickens was more profitable and easier to manage than broilers or layers, but house and feed cost was high. The majority of farmers preferred the desi chicken and egg for consumption, especially for their taste. This was an indication of the social importance of these chickens. The major constraints that limited back yard poultry farming activity were namely, high feed costs, poultry diseases, lacks of improved breed, inadequate veterinary and extension service and lack of finance facility. These could be overcome by vaccination and other disease control measures and support from government.

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