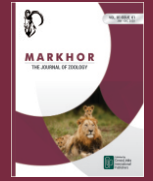




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Original Article

Economic Importance of Backyard Poultry in Taluka Jhando Mari, District Tando Allahyar, Sindh

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ABSTRACT

Present study was carried out to observe the economic importance of backyard poultry birds in rural areas of Taluka Jhando Mari district Tando Allahyar during the 2022. **Objective:** To determine the profitability of backyard poultry production in rural areas of Tando Allahyar. **Methods:** Our study was divided into two different parts (i) primary and (ii) secondary part. Primary category was based on collection of data by interview from respondents by filling questionnaire. **Results:** The results revealed that 70% of household poultry kept by female and 30% were males. The cost function was estimated using the OLS method. The model of study suggested that price of egg and price of per bird were recorded statistically significant whereas per bird cost was observed non-significant statistically. It was concluded that high egg producing poultry breeds such RIR, Plymouth, White leghorn must be raised in order to increase the production of household backyard poultry birds. **Conclusions:** It is also concluded that improvement in rural poultry germplasm will be highly effective in rural poultry production system in future and will be major business for completing the food security and nutritional diet in middle class population of our country. Government of Sindh should also encourage private sector poultry by providing loan and poultry feed on cheapest prices to improve the production of backyard poultry farmers and their livelihood.

INTRODUCTION

Backyard poultry farming, an ancient and customary method, remains a vital factor in fostering the economic progress of rural communities worldwide. Specifically, in the Taluka Jhando Mari of the Tando Allahyar District in

Sindh, Pakistan, the practice of rearing poultry in domestic settings has become indispensable for the local populace, providing essential income and sustenance [1]. This article delves into the economic significance of backyard poultry

farming in this particular area, emphasizing its role in improving livelihoods, ensuring food security, and alleviating poverty. Additionally, the economic benefits of backyard poultry farming extend beyond individual households, encompassing broader aspects as well [2-6]. Recent research and publications shed light on the increasing acknowledgment of backyard poultry farming as a sustainable and inclusive economic endeavor. In a study carried out by United Nations agency in 2022 (FAO) Food and Agriculture Organization, positive influence of small-scale poultry farming on poverty alleviation and rural progress was underscored. The study emphasized the necessity for policy backing and investments in the sector to fully unleash its potential for socioeconomic advancement [7-9]. To summarize, the economic significance of backyard poultry farming in Taluka Jhando Mari, District Tando Allahyar, Sindh, is substantial for the local community. Keeping in the view of importance of backyard poultry, present study was designed to observe the return from backyard poultry in taluka Jhando Mari and also observe factors influencing the net income of backyard poultry farming in the same area.

METHODS

Present study was carried out for month duration in the of 2023 month of March in Taluka Jhando Mari district Tando Allahyar, Sindh, Pakistan. Jhando Mari is mainly consisting upon rural areas and basically residents are engaged directly and indirectly with agriculture sector. Most of the villagers kept buffalo, goat sheep and small number of farms to complete their basic family needs even they have their own cultivation land or not. They cultivate crops, vegetables, fruits such as cotton, sugarcane, maize, barley, oat, ladyfinger, brinjal, carrot, radish and in fruits Banana, Guava, Mangoes and kept poultry for meat and egg purpose. Taluka Jhando Mari has 350 registered villages, but due to unavailability of funds and transportation problems total 6 numbers of villages were brought under the study. The villages' names were Bahar Khan Mirjat, Dolat Mirjat, Jalal Khan Thebo, Bachal Khskeli, Hassan Dars and Abdul Ghani Qaimkhani. The selection of villages was performed on random bases and present of backyard poultry birds in each household respondent. In this study total 80 randomly respondent was selected and a questionnaire was filled by interweaving these respondents. This technique was utilized to achieve the 80 number of respondents with the percentage rate of 1.54 from mentioned villages of Taluka Jhando Mari. The sampling proportion allocation was performed by the procedure as suggested by [1]. The total number of sample respondent from each selected village in our study given in the table-1.

Table 1: Total number of sample respondent from each selected village

Name of village	Number of the household	Size of sample
Bahar Khan Mirjat	1254	24
Dolat Mirjat Q	500	8
Jalal Khan Thebo	1504	24
Bachal Khskeli	354	4
Hassan Dars	801	15
Abdul Ghani Qaimkhani	598	5
Total	5011	80

The data for present study were collected by filling the questionnaire specially designed for this study. The interview was conducted from male respondent whereas female respondent was also interviewed according the schedule suggested by male respondent of household. In order to observe the influence of initial flock raising cost, cost of feed, cage, and vaccination on total cost was analysis with the following formula as suggested by [1]. In order to analyzing the theoretical as well as empirical application cost of below 3rd degree polynomial use applied to observe the cost structure. Where C = total cost, X is output level and β s are considered as the parameters of total cost and $C = \beta_0 + \beta_1 X_i + \beta_2 X_i^2 + \beta_3 X_i^3 + U_i$ term.

Profit analysis: In order to analysis the profit cost following econometric method was utilized to observe the profit.

$\Pi = \beta_0 + \beta_1 PE + \beta_2 PB + \beta_3 CB + i.e.$ Where Π = Profit (Net Revenue)

PE = Egg price (Rs.)

PB = Price of bird (Per/Bird)

CB = Per bird cost (Rs. /Bird)

RESULTS

The results of our study are displayed under with various headings. The result revealed that average of respondents in our study was 40 years and range were 15 to 65 years old. Maximum number of respondents was in age of 30% in 40 to 60 years group as compared with 20 to 25% 40 to (70%), 18 to 22 (18%), 24 to 34 (12.9%) and above 70 were (3%) in our study. The findings of our study showed that average size of respondent's family 10 in under the study area. The largest size of family was recorded 24 and lowest family size was observed 3. It has been observed that about 53% families of respondents were consisting of more than 10 family members in house. The results of our study revealed that 70% of respondent's backyard poultry bird keeper was women whereas 30% were men. As the mostly backyard poultry birds were kept by women and attain their feeding drinking and other actives but men were also interested in it. The education rate of respondent was observed very low in our study area. It was observed that 31% of the respondents were educated whereas 6% of respondent

were educated at primary level and 8% were up to middle level and 14% were observed literate more than matriculation. In our study, it was observed that 32% of sampled respondents have gross income among 0-8000 rupees in one month whereas 30% of respondent have 18000, 16% respondents were got more than 16 thousand rupees per month. It was recorded that average monthly income of respondents was recorded 12,543 rupees in one month. The highest monthly income was recorded more 70 thousand and lowest 600 in one month. Table 2 shows the number of poultry birds and the purpose from which the respondents kept death.

Table 2: Number of poultry birds' purpose of rearing kept by household in district, Tando Allahyar

Name of village	Number of birds (%)
Less than 5	7 (10%)
5 - 10	24 (31%)
10 - 20	29 (37%)
20 - 30	13 (11%)
30 - 40	3 (4%)
40 - 50 or above	2 (5%)
Total	81 (100%)
Rearing purpose	
Family consumption purpose	38 (44.1%)
Hobby purpose	16 (18.6%)
Commercial purpose	32 (37.3%)
Total	86 (100%)

The results of our study showed that maximum percentage 76.1% of respondent kept Golden misri birds whereas 11.6% of birds were kept Asteralop and 5.1% Plymouth and 7% of bird were kept fancy type in our study area. It was observed that 8.68% of birds were found male with 57% of recorded egg laying layers, 22.01% pullet and 11.03% were observed small chicks, respectively are show in table 3. The results of present study regarding flock rearing sources showing the 55% of respondent have their own flock and maintain it for further process through natural brooding whereas 41.1% of respondent brought their flock from the local market of district Tando Allahyar having small pullet or one month old chicks and 4% of respondent brought and maintained their flock from their friends and relatives for family as well as hobby purpose. Details are presented in table-3.

Table 3: Type of birds and source of flock kept by household in district, Tando Allahyar

Type of bird	Adult (Male)	Adult (Female)	Pullet	Chicks	Total breed-wise	Percentage %
Plymouth	13	45	36	-	94	5.1%
Golden Misri	60	413	151	121	745	76.1%
Asteralop	20	100	81	25	226	11.6%
Fancy	6	16	-	05	30	7%
Total	99	574 (57.4)	268 (25.13)	151 (17.11)	1095	100%

Source of flock	Number (%)
Market	32 (41.1%)
Friend	4 (4%)
Own flock	46 (55%)
Total	82 (100%)

The results of our study showed that 50% of respondent have provided only night shelter to their backyard poultry birds whereas 29.4% of respondent have provided cage to their birds as house type, 20.13% of respondent provided no any type of house to their birds they mostly sat on the tree during night time and spend their day time in open yard system of house or surrounding the house areas of village, table 4. In our study highest egg production was observed 153 numbers of eggs by plymouth breed whereas 147 eggs were given by asteralop breed. The egg production of golden misri and fancy birds was recorded 113 and 103, respectively.

Table-4 Type of housing for birds and breeds of poultry birds kept by household in district, Tando Allahyar

Type of house	Number (%)
Night shelter	39 (50.21%)
Cage	25 (29.4%)
None	16 (20.13%)
Total	80 (100%)
Types of breeds	
Per year egg production	
Plymouth	153
Golden Misri	103
Asteralop	147
Fancy	113
Average egg production per year	133

The results of our study depicted that maximum number of mortality percentage was recorded in 54.1% in non-descriptive types breed birds which have no any information about their phenotypic and genetic characterization. Whereas 30.1% mortality percentage was observed in fancy type birds with 16.9% and 24.01% in plymouth and asteralop chicken breeds, respectively. The results of our study regarding the interest about commercialization of their poultry flock showed that 17% of sampled respondents showed interest for commercialization of their flock with modern methods whereas 87% of sampled respondent showed interest against the commercialization of their flock.

Table 5: Health courage status and breed wise mortality % of birds kept by household in district, Tando Allahyar

Category	Number (%)
Vaccine used for poultry by household respondent	43 (51%)
Vaccine not used for poultry by household respondent	36 (47%)
Total	79 (100%)

Types of breeds	Number of mortalities per (%)
Playmouth	17(16.9 %)
Fancy	44(30.1 %)
Asteralop	45(24.01 %)
Non descriptive	314(54.1 %)
Total	420(27.3 %)

In our study gross revenue per poultry bird was observed 251.12 rupees in which 221.31 rupees were earned from production of egg that was considered as the 94.4% of the gross income and rest 9.39 were earned by the selling of birds that shared about 4.6% in the total gross income. In our study per bird total cost was estimated 89.21 whereas the net revenue income per bird was estimated 152.56 per annually.

Table 6: Respondent interest towards commercialization and total gross and revenue kept by household in district, Tando Allahyar

Category	Number (%)	
Number of the Respondent intention towards commercialization	15 (17%)	
Number of the Respondent having no any intention towards commercialization	65 (87%)	
Total	80 (100%)	
Particulars	Total Amount	Net income per bird
Production of bird	219398.13	221.31
Production of egg	8691	9.39
Gross revenue	227083.21	251.12
Total cost	79704	89.21
Net income	148576	152.56

DISCUSSION

Poultry sector is backbone of livestock and agriculture sector of Pakistan as fulfilling meat and egg requirement of ever-growing population of our country. In rural areas farmers kept poultry birds to sell out the egg and birds for completing basic needs of their family with income earned from it. It is therefore poultry played a vital role in sharing basic part of socioeconomic wellbeing of rural peoples. Rural farmers kept more than 10 to 15 number of birds for consumption of meat and egg as food source for their family purpose besides small earning to support their families in the form of cash. The results of our study for number of poultry birds kept by household displayed in table-2. The results showed that average number of birds was 13 with 37% respondent have 10 to 20 number of birds whereas 31% of respondent have 5 to 10 number of birds, 11% of respondent have 20 to 30 number of birds, 10% respondent have less than 5 number of birds, 5% respondent have 40 to 50 number of birds and 4% respondent have 30 to 40 number of poultry birds. Whereas in district Kolmo of Zambia have 23.14 21.15 [10, 3]. The findings of [11, 12], are in agreement with result of our study, who have reported average respondent kept birds 42% for

family support and 17% for hobby and 38% for their commercial purpose. Most of the rural people kept poultry birds to complete their egg and meat requirement on different occasion such as on arrival of guest or on some types of cultural celebration [13]. Details are mentioned in table-3. The results of our study were lower than the findings of [2, 14], they had reported 70% of birds were kept egg lying layer of different indigenous and local breeds of Daikina and Ethiopia. The variation between the results may be due to interest of people on commercialization of poultry industry and having much information about earnings from poultry birds through different ways. Details are given in table-4. The findings of our study for night shelter housing type were supported by the findings of [15, 16], author reported (51 to 47%) of night shelter housing type was provided to Assel chicken in Pakistan and Bangladesh and whereas the in other housing type most of the birds were kept in free range system where they can stay on tree to spend their night. The findings of our study were supported by the findings of [15-18], Pakistan and Assel chicken in Bangladesh have been provided night shelter and none type of housing system as birds rooming around the village and house of owner and stay on tree during the night time. Details of results are given in table-4. The average egg production was observed 133 number of eggs per year in our study. Similar types of findings have been reported by [2, 19, 9, 14] who have reported average number of egg production 135 for backyard poultry birds in Kolmo and Ethiopian breeds. Details are given in table-5. In our study 53% of sampled respondent were observed using the vaccine as precautionary measurement to prevent their flock from various type of bacterial and viral diseases. Whereas 47% of sampled respondent were observed not using vaccine to prevent their flock from various infectious diseases. The results of our study are higher as compared with results of [11, 12, 20, 21], who have reported less percentage of villagers were using the vaccine as precautionary measures in their flock. They reported that villagers mostly used different types of herbal plant in their feed to improve the immunity of birds against different viral and bacterial disease. The details are given in table-5 and 6. In our study per bird total cost was estimated 89.21 whereas the net revenue income per bird was estimated 152.56 per annually. The gross income and revue price was estimated by the method as suggested by [19, 22], who have also presented similar types of results related with present study. The details are given in Table-6. In our study flock raising initial cost per bird was recorded 38.49 rupees that consist of 485 of the total initial cost of value of the flock. In our study the feed cost per bird was observed 9.21 that consist of the 10.1% of total cost. In our study the cost of cage per bird was recorded 22.25 rupees that was 30.21%

of total cost. The managerial cost per bird was recorded 25.43 rupees that were 31% of total cost. In our study vaccination cost per bird was found 3.31 rupees that was 4.69% of total cost.

CONCLUSIONS

It was concluded that flock size should be increased with high egg producing strains of household poultry. Precautionary measures such as vaccination should be performed to reduce mortality percentage. Male and female respondent should be trained for poultry farming and Government should provide loan with minimum interest rate that respondent can setup their modern farms easily.

Authors Contribution

Conceptualization: HAK

Methodology: RRK, ZAK, ZAM

Formal analysis: MAM, MAS, FAK, LK

Writing-review and editing: GMS, IA

Author have read and agreed to the published version of the manuscript.

Conflicts of Interest

The authors declare no conflict of interest.

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