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**Hitesh Muwal**  
Department of Animal  
Production, Maharana Pratap  
University of Agriculture and  
Technology, Udaipur,  
Rajasthan, India

**Lokesh Gupta**  
Department of Animal  
Production, Maharana Pratap  
University of Agriculture and  
Technology, Udaipur,  
Rajasthan, India

**Heera Lal Bugalia**  
Department of Animal  
Production, Maharana Pratap  
University of Agriculture and  
Technology, Udaipur,  
Rajasthan, India

**Pradeep Nodal**  
Department of Animal  
Production, Maharana Pratap  
University of Agriculture and  
Technology, Udaipur,  
Rajasthan, India

**Pawan Acharya**  
Department of Animal  
Production, Maharana Pratap  
University of Agriculture and  
Technology, Udaipur,  
Rajasthan, India

**Corresponding Author:**  
**Hitesh Muwal**  
Department of Animal  
Production, Maharana Pratap  
University of Agriculture and  
Technology, Udaipur,  
Rajasthan, India

## An analysis on socioeconomic profile of organic poultry rearers in trible and non-trible area of Rajasthan

**Hitesh Muwal, Lokesh Gupta, Heera Lal Bugalia, Pradeep Nodal and Pawan Acharya**

### Abstract

The current study deals with the socioeconomic status of organic poultry rearing in Non-TSP and TSP areas of southern region of Rajasthan. In the Non-Tribal and Tribal areas of southern Rajasthan, total 240 poultry farmers randomly selected from 16 villages in 8 tehsils of 4 districts participated in an analytical study on organic poultry farming. Rajasthan to identify the socioeconomic profile of the organic poultry keepers during the organic/ backyard poultry production. The data revealed that majority (66.25%) of respondents had medium level of income category, belong to nuclear type of family (66.25%), (61.25%) having agriculture + animal husbandry/poultry farming as main occupation, head of family was male with (88.33%) and 38.33% were from Schedule Tribe (ST) caste. The majority of the respondents had a pucca house (44.59%), and had a small flock size (52.50%). According to the study a significant improvement in the sustainable organic poultry production of the underprivileged tribal and non-tribal communities of southern Rajasthan can be achieved by introducing hybrid varieties suitable for organic backyard / free range poultry farming and by upgrading the skills of poultry farmers.

**Keywords:** Socioeconomic, organic poultry, Rajasthan, respondents, free range

### Introduction

In the Indian agriculture sector presently the poultry sector is the fastest growing with more than 8% annual growth rates (Erdaw and Beyene, 2022) <sup>[14]</sup>. In the globe, India has the position of third in eggs production and seventh position in poultry meat production (Pandey *et al.*, 2022) <sup>[23]</sup>. According to the last two years of statistical data, India has 851.81 million poultry population (BAHS, 2020-21). The percent growth rate in the poultry population is 16.8% than previous year (Livestock census, 2012) <sup>[18]</sup>. Annually in India, the poultry sector about 260 million layers birds produced around 3.4 million tons (74 billion) of eggs as well as 3000 million broilers birds produced about 3.8 million tons of poultry meat (Kanakachari *et al.* 2022) <sup>[16]</sup>. Total egg production in the country has increased by 10.19% as compared to 2018. The total meat production from poultry is 4.34 million tons in 2019-20, contributing about 50.50% of total meat production according to 20th livestock census. Rajasthan has only two percent of India's total poultry population, according to the Livestock Census of 2012, which places it in 18th place (Mishra *et al.* 2009) <sup>[20]</sup>. The availability of eggs per person per year in the state of Rajasthan is very low (11 eggs), much lower than the 180 eggs recommended by the Nutritional Advisory Committee of the ICMR and much lower than the national average of 45 eggs. This suggests that there is substantial potential for improvement in Rajasthan's poultry production. According to Indian agro-climatic conditions organic farming is the most considerable because Indian farmers followed indigenous technical knowledge and practices but organic poultry production is still lagging behind (Chander and Mukherjee, 2005) <sup>[7]</sup>. In comparison, India exports organic products to every continent in the world, with the EU receiving the largest share (44.12%) followed by Canada (21.57%), the United States (19.18%) and Asian nations (12.70%) (APEDA, 2014; Deshmukh and Babar, 2015) <sup>[11]</sup>. Consumers are now more self-aware of the quality and safety of the food items they regularly consume. (Ambali and Bakar, 2014) <sup>[1]</sup>. Presently, in India among the all-states Madhya Pradesh has the highest contribution with 27% of the total land area under organic farming followed by Rajasthan (0.35 million ha.) and Maharashtra (0.28 million ha.). Whereas in hill states Sikkim has the highest area under organic agricultural land and Arunachal Pradesh has the least organic agricultural land (Naik *et al.* 2022) <sup>[21]</sup>.

## Materials and Methods

**Selection of Districts:** The present survey based study was conducted for investigation of the various levels of constraints and their types which faced by poultry keepers during the organic poultry farming in Southern parts of Rajasthan (namely included Dungarpur, Udaipur, Rajsamand, Pratapgarh, Banswara, Bhilwara and Chittorgarh). But during the survey the main point kept in mind that the maximum population of organic poultry farmer's districts were selected followed by two tribal districts (Udaipur and Dungarpur) and two Non-tribal districts (Bhilwara and Chittorgarh) for future scope.

### Selection of Villages

With the help of employees from the department of animal husbandry, patwari, and agriculture supervisors, a comprehensive list of organic poultry reared has been collected from each recognized tehsil for the purpose of selecting regions. Two villages from each of the selected tehsils were selected from the list that had been developed based on the tehsil's largest number of chicken farmers. However, a total number of 16 villages were selected and identified to farmers for this survey. The name of 16 selected villages is *viz.* Dharti Devi, Upali Bassi, Budra and Balicha from Udaipur districts; Dolver, Khari, Majola and Chela Kherwada from Dungarpur district; Bhagwanpura, Bhimiyawas, Pondras and Kodukota from Bhilwara district and Navapura, Kanoj, Panchli and Natwat Maharaj from Chittorgarh districts was prepared on the basis of maximum poultry population.

### Selection of Respondent

During this survey from each village total 15 respondent's poultry farmers were randomly listed with the help of respective patwari, gram sevak and key informants. A total of

240 poultry farmers were selected for the present study.

The construction and order of the questions were modified appropriately based on the knowledge gathered from the pre-testing. In order to arrive at logical interpretation, the data were compiled, tabulated and analysed.

## Results and Discussion

### Annual income of family (Rs./Year)

The data presented in Table 1 visualize that out of 240 poultry farmers, 66.25% respondents were reported to have medium level of income (Rs. 62520-120729) whereas, 18.75% respondents were reported to have income less than Rs.62520 per year and remaining 15.00% were reported to have yearly income more than Rs. 120729 per year. A further glance on the data in the table 1 shows that only 17.50% of Non-TSP and 12.50% of TSP area respondents were from high level of income group (>Rs. 120729), whereas, it was observed that 66.67% of Non-TSP and 65.83% of TSP area respondents were reported to be from medium income group (Rs 62520-120729) and remaining 15.83% of Non-TSP and 21.67% of TSP area respondents were observed to be in low-income category (up to Rs. 62520). Samantaray *et al.* (2020) [25] who reported in a study that majority (43.07%) respondents had their annual income less than Rs. 50,000 per year, 40.46% had their annual income from Rs. 51000-1 lakh per year and remaining 6.15 percent poultry reares had their annual income more than Rs. 1 lakh in Ganjam, Dhenkanal and Angul districts of Odisha which is in general agreement to this present study. Similar findings were stated by Sharma (2021) [26] and Bharti (2020) [5]. In contrast to these findings, Dumarya *et al.* (2015) [12] and Chaturvedani *et al.* (2017) [8] reported that the majority of poultry farmers belong to the low-income group on the basis of income reviewed from all sources including poultry farming.

**Table 1:** Distribution of respondents on the basis of their annual family income n=240

S. No.	Category	NON-TSP (n <sub>1</sub> =120)		TSP (n <sub>2</sub> =120)		Over all n=240	
		f	%	f	%	f	%
1.	Low (up to Rs. 62520)	19	15.83	26	21.67	45	18.75
2.	Medium (Rs 62520-120729)	80	66.67	79	65.83	159	66.25
3.	High (>Rs.120729)	21	17.50	15	12.50	36	15.00
	Total	120	100	120	100	240	100

f= Frequency, % = %, n= Total number of respondents

### Type of Family

The data summarized in the Table 2 indicates that out of total respondents, 66.25% of the respondents belong to nuclear type of family, whereas, 33.75% poultry farmers belong to the joint type of family. Further interpretation of data in table 2 reveals that 62.50% respondents of Non-TSP and 70.00% respondents of TSP area belongs to nuclear type of family. Remaining, 37.50% respondents of Non-TSP and 30.00% respondents of TSP area were having joint type family group.

Which was in agreement with the reports of Verma (2009) [29], Mishra *et al.* (2009) [20] and Choudhary (2017) [9]. In contrary to these findings, reported that majority (55.56%) of backyard poultry rearers belongs to joint family, while the remaining 44.44% have a preference of nuclear family in Banswara district of Rajasthan. Contrary results were also reported by Deka *et al.* (2013) [10] and Rahman (2017) [24]. The difference in type of family might be due to different areas of study and to their social customs.

**Table 2:** Distribution of respondents on the basis of their family type n=240

S. No.	Family type	Non-TSP (n <sub>1</sub> =120)		TSP (n <sub>2</sub> =120)		Over all n=240	
		f	%	f	%	f	%
1.	Nuclear	75	62.50	84	70.00	159	66.25
2.	Joint	45	37.50	36	30.00	81	33.75
	Total	120	100	120	100	240	100

f= Frequency, % = %, n= Total number of respondents

## Occupation

Perusal of data presented in Table 3 reveals that out of 240 respondents, 61.25% of respondents reported to have agriculture + animal husbandry/poultry farming as main occupation. Whereas, 31.67 and 7.08% of total respondents have reported as labour and Services (Govt/Private) as main occupation, respectively. None of the respondents in the study area were having agriculture as only main occupation. None

of the respondents in both Non-TSP and TSP area were having only agriculture as occupation. The results of present study are in agreement with Verma (2009) [29], Thakur *et al.* (2013) [28] and Budharam *et al.* (2021a) [6]. In contrary to these findings, Deka *et al.* (2013) [10] and Chaturvedani *et al.* (2017) [8] reported that 74.00 and 51.67% respondents respectively had agriculture farming as primary occupation in their study area.

**Table 3:** Distribution of respondents on the basis of their occupation n=240

S. No.	Family occupation	NON-TSP (n <sub>1</sub> =120)		TSP (n <sub>2</sub> =120)		Over all n=240	
		f	%	f	%	f	%
1.	Agriculture	0	0.00	0	0.00	0	0.00
2.	Agriculture +Animal Husbandry/Poultry Farming	79	65.83	68	56.67	147	61.25
3.	Labour	32	26.67	44	36.66	76	31.67
4.	Services (Govt./Private)	9	7.50	8	6.67	17	7.08
Total		120	100	120	100	240	100

## Gender of family head

The data of Table 4 indicate that out of total respondents in the study area, 88.33% of the respondent's family head was male, whereas, 11.67% poultry farmers belonging to the family head were female. Further glance at the data in Table 4 reveals that 80.83 and 95.83% farmers of Non-TSP and TSP areas, respectively, have male as family head. Remaining respondents were 19.17 and 4.17% respondents of Non-TSP and TSP areas where females were family heads. In a similar way Kumar and Bhati (2021) [30] reported that in backyard poultry rearers in Banswara district of Rajasthan, 85.19%

backyard poultry respondents were male and 16.67% were female. The positive results also reported by Balamurugan *et al.* (2015) [4], Ekunseitan *et al.* (2016) [13], Chaturvedani *et al.* (2017) [8], and Surendra *et al.* (2022) [27] found that the majority of family heads were male. It depicts that male members of the family were relatively more engaged in backyard poultry rearing in the study area. In contrary to these findings, Deka *et al.* (2013) [10], Thakur *et al.* (2013) [28], Oladunni and Fatuase (2014) [22], Choudhary (2017) [9] and Bharti (2020) [5] reported that the higher numbers of female category were involved in backyard poultry farming.

**Table 4:** Distribution of respondents according on the basis of family head n=240

S. No.	Gender	NON-TSP (n <sub>1</sub> =120)		TSP (n <sub>2</sub> =120)		Over all n=240	
		f	%	f	%	f	%
1.	Male	97	80.83	115	95.83	212	88.33
2.	Female	23	19.17	5	4.17	28	11.67
Total		120	100	120	100	240	100

f= Frequency, % = %, n= Total number of respondents

## Caste

The perusal of data revealed that in table 5 according to their caste indicated that out of total 240 respondents surveyed, majority of respondents belongs to ST (38.33%), SC (26.25%), OBC (22.51%) and General (12.91%). Only the study revealed that 34.17% respondents in Non-TSP area and 10.84% respondents of TSP area belong to Other Backward Class, while, 29.16 percent farmers of Non-TSP area and 23.33% farmers of TSP area were from Schedule Caste (SC) category. Furthermore, 22.50% of respondents of Non-TSP area and 3.33 per respondents of TSP area were reported from General category group. It was also found that 14.17% respondents in Non-TSP area and 62.50% respondents in TSP area were from Schedule Tribe (ST) group. It is evident from the results that majority of the respondents engaged in organic

poultry farming belong to OBC in Non-TSP and ST Category in TSP area. Kumar and Bhati (2021) [30] reported that among backyard poultry farmers in Banswara district of Rajasthan, 80.00% respondents belongs to ST, 6.67% to SC, 7.41 to OBC and 5.92% belongs to general category. The closest studies also found by Budharam *et al.* (2021a) [6] and Mishra *et al.* (2009) [20]. These findings are contrary to that of Mandal *et al.* (2006) [19] who found that majority (57.50%) of the respondents in Bareilly district of Uttar Pradesh belonged to general category followed by 21.67% from SC category and 12.50% from ST category, which may be due to fact that the current study was carried out in regions with a higher population of Schedule Tribes and government assistance program was in existence to provide subsidies to Schedule Tribes.

**Table 5:** Distribution of respondents on the basis of their caste n=240

S. No.	Caste	NON-TSP (n <sub>1</sub> =120)		TSP (n <sub>2</sub> =120)		Over all n=240	
		f	%	f	%	f	%
1.	ST	17	14.17	75	62.50	92	38.33
2.	SC	35	29.16	28	23.33	63	26.25
3.	OBC	41	34.17	13	10.84	54	22.51
4.	General	27	22.50	4	3.33	31	12.91
Total		120	100	120	100	240	100

f= Frequency, % = %, n= Total number of respondents

### Flock size of poultry birds

In Table 6 data related to flock size of poultry birds indicate that out of total respondents, 52.50% of respondents reported to have small flock size (up to 10 poultry birds) while, 34.17% of the respondents reported to have medium flock size (11-20 poultry birds) followed by 13.33% respondents found to have large flock size (>20 poultry birds). Kumaresan *et al.* (2007) [17] conducted a survey in all the eight districts of Mizoram state and found that, majority of respondents reared

flock size less than 10 birds (63.40%) followed by 11-20 birds (21.90%) and more than 20 birds (14.6%). Deka *et al.* (2013) [10], Rahman (2017) [24], Choudhary (2017) [9] and Sharma (2021) [26] also reported similar results which are in agreement with the findings of the present study. On the contrary, Hussein *et al.* (2022) [15] reported that majority of the poultry farmers reared flock ranging 11-20 birds (39.1%) followed by 6-10 birds (19.6%), 21-40 birds (19.6%), 1-5 birds (15.2%) and 41-50 birds (6.5%) in Somalia.

**Table 6:** Distribution of respondents on the basis of their flock size of poultry n=240

S. No.	Size of flock	NON-TSP (n <sub>1</sub> =120)		TSP (n <sub>2</sub> =120)		Over all n=240	
		f	%	f	%	f	%
1.	Small flock size (up to 10)	62	51.67	64	53.33	126	52.50
2.	Medium flock size (11-20)	40	33.33	42	35.00	82	34.17
3.	Large flock size (>20)	18	15.00	14	11.67	32	13.33
Total		120	100	120	100	240	100

### Type of house

The results of current investigation revealed that majority (60.83%) of respondents of Non-TSP area were residing in pucca house, while, (48.33%) of farmers of TSP area had kaccha house. Remaining 12.50% of respondents of Non-TSP and 23.34% respondents of TSP area were residing in mixed type house. Chaturvedani *et al.* (2017) [8] and Budharam *et al.*

(2021a) [6] also reported more or less similar findings. Kumar and Bhati (2021) [30] reported that out of 135 respondents, majority (53.33%) have mixed type of house, 26.67% have pucca and 20.00% have Kaccha type houses in Banswara district of Rajasthan, which is not in agreement with the results of current findings.

**Table 7:** Distribution of respondents on the basis of their type of house n=240

S. No.	Type of House	NON-TSP (n <sub>1</sub> =120)		TSP (n <sub>2</sub> =120)		Over all n=240	
		f	%	f	%	f	%
1.	Kaccha House	32	26.67	58	48.33	90	37.50
2.	Mixed House	15	12.50	28	23.34	43	17.91
3.	Pucca House	73	60.83	34	28.33	107	44.59
Total		120	100	120	100	240	100

f= Frequency, % = %, n= Total number of respondents

### Conclusion

In order to overcome from the present study, the majority of poultry keepers' poultry framers were belonged to medium income group (Rs 62520-120729), nuclear type of family, having agriculture + animal husbandry/poultry farming as main occupation, head of family was male and from Schedule Tribe (ST) caste. Most poultry farmers reared non-descript chicken and there is need to be aware of the best hybrid variety for backyard / free range farming in their local area, development of a hatchery unit of hybrid variety to supply grown up chicks for the farmer round the year. There is also a need for research in skill up gradation of poultry farmers for a better development in sustainable organic poultry production of the downtrodden tribal and non-tribal community of southern region of Rajasthan.

### Conflict of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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