

Original Research Article

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Impact of Backyard Poultry Rearing on Living Standard of Tribal Community in Kandhamal District of Odisha, India

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ABSTRACT

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Backyard poultry rearing requires minimum input cost, making it highly affordable by the poor village farmers and its high return on investment is known to improve the farmers' living standards. In the present study poultry birds of Banaraja breed were distributed amongst 500 tribal farmers belonging to 5 villages in K. Nuagaon and G. Udayagiri block of Kandhamal district, Odisha. Data were collected using questionnaires. The study revealed that after the technical intervention none of the 39 farmers who belonged to the lower income slab of less than Rs. 8000/ year remained in that group. Over and above, the higher income slab of more than Rs. 15000/year to which only 9 farmers belonged prior to the technical intervention now consisted of 135 farmers. Data relating to the usage of the extra income to improve living standards revealed that the farmers gave priority to essential amenities like electricity (23.48 %), latrine (15.65 %), bathroom (23.48 %) and also 12.66 % of farmers converted their Kaccha houses to Pakka houses. Farmers also purchased luxury items like mobile (26.96 %) and DVD player (0.87 %). Therefore, it is concluded that backyard poultry production can be taken up by poor farmers as an extra income generating activity, to improve their living standards.

Introduction

India ranks 3rd and 6th in the world in poultry egg and meat production, respectively (FAO, 2014). Also 30% of poultry production is in the unorganized sector. Seventy percent of the world's rural poor depend on livestock as a component of their livelihoods (LID, 1999; FAO, 2002), and a vast majority of those keep poultry (Sonaiya *et al.*, 1999; Epprecht *et al.*, 2007). Village poultry production, known as backyard extensive poultry production, is a common phenomenon in many developing countries. This mode of poultry production is characterized by ownership of up to one

hundred birds; generally reared free-range, with minimum or low inputs and zero to minimal bio- security (Guèye, 2000). In fact among the rural poor, poultry is found to be a crucial livelihoods asset for the poorest segments, such as those households that are in the first income quintile (Maltsooglou and Rapsomanikis, 2005; Roland-Holst *et al.*, 2007).

Poultry production by rural poor households contributes to several livelihoods indicators, including (but not limited to) income,

nutrition, food security, savings, insurance and gender equality (Alabi *et al.*, 2006; Guèye, 2007; Sonaiya, 2007; Smucker and Wisner, 2008). Furthermore poultry production constitutes a quick and high return investment opportunity (Epprecht *et al.*, 2007; Sonaiya, 2007) for improving any one or all of these livelihoods indicators. Moreover, poultry production is often recognized as an entry point into livestock production (Alabi *et al.*, 2006; Guèye, 2007), which is associated with breaking out of poverty traps.

The roles of poultry in income and food security are straightforward to characterize: rural poor households generate cash income through the sales of those poultry and poultry products (Islam *et al.*, 2014) which they do not consume themselves. In rural areas where credit markets are missing, similarly to other large livestock, poultry functions as 'insurance' to hedge against shocks and stresses (Rosenzweig and Wolpin, 1993). Often poultry functions as a 'savings account', which can be tapped into fairly quickly to meet household needs such as school fees, costs of weddings and funerals (Obi *et al.*, 2008). Poultry also contributes to household nutrition, as many rural poor households rely on their own poultry production to supply the majority of their animal source food. Poultry provides not only protein but also highly-bio-available essential micronutrients, such as iron, vitamin A and zinc, which are crucial especially for child nutrition and health (Iannotti *et al.*, 2008). Chronic malnutrition and micronutrient deficiencies are very high in developing countries (Quinn *et al.*, 1990; Callens and Phiri, 1998) and hence poultry is particularly important for the improvement of this livelihoods indicator.

In fact National Agricultural Innovations Project lists poultry as one of the new income earning activities in which women are

increasingly being involved. Household level studies conducted in Africa revealed that women earned significant incomes from poultry sales, even after accounting for household consumption (Chitukuro and Foster, 1997; Alabi *et al.*, 2006).

The objectives of the study were to find out the contribution of poultry farming on rural livelihoods economically, as well as socially and culturally and to small house hold food security. Another look of the study was direct contribution to family reproduction, in the form of meat and eggs, and at its indirect contribution, i.e. when poultry are sold or traded and when birds play a role in maintaining social networks and rural life.

Materials and Methods

The Tribal Sub Plan has been running since year 2013 at Krishi Vigyan Kendra, Kandhamal, Orissa University of Agriculture & Technology, Bhubaneswar. Under the TSP, poultry birds of Banaraja breed were provided to 500 tribal farmers belonging to five villages, Banduguda, Katadaganda, Kelamaha, Gambuli and Sudipada of K. Nuagaon and G. Udayagiri block of Kandhamal district to uplift the rural livelihood. Total 30 beneficiaries were randomly selected from each village, thus making a total sample of 150 respondents. The data were collected through questionnaire in right of the data were analyzed. The collected data were analyzed and categorized into different variables.

Results and Discussion

The data depicted in Table 1 shows that maximum number of poultry farmers (64 %) belonged to the middle age group of 31-50 years and the remaining 36 % fell in the category of above 50 years. Table 1 shows that based on level of education, the highest

number of beneficiaries (55.33 %) were found to be illiterate, while 22.67 per cent and 18.67 per cent were educated up to primary and secondary education, respectively. Remaining 3.33 per cent were educated up to secondary education. These results are conformity to Biroll *et al.*, (2010) that households with less educated heads are significantly more likely to keep poultry.

The farmers were grouped according to their occupation, both during the survey and after technology interventions. At the time of base line survey it was observed that the occupation of 79 farmers was farming (Table 1). After three years of technological intervention it was determined that the number of farmers who also took up labour work was gradually reduced from 18.26 % to 2.61 %. The data depicted in Table 2 shows that maximum number (76 %) of beneficiaries lived in Kachha houses. After technology intervention 17 number (11.33 %) of Kachha houses were converted into Pakka houses.

The electricity and mobile facility were increased due to poultry farming (Table 2). The data depicted in Table 2 shows that 76 % and 44.67 % farmers obtained and used electricity and mobile, respectively after technological intervention.

Prior to these technology none of the beneficiaries owned or used basic amenities like latrine and bathroom, but after the said intervention 21.33 % and 26 % farmers owned latrine and bathroom, respectively.

The vehicle facilities were increased due to poultry farming and data depicted in Table 2 shows that the number of bicycles were increased from 41 to 54 (8.67 % increase) whereas the number of household having bike facility was increased from 17 to 21 (2.67 % increase). These results are agreement to Holst *et al.*, (2007) that 50 % of the rural farmers say that more income from livestock including poultry is the reason for their improved living standards.

Table.1 Profile of poultry faming farmers

Parameter	Parameter	Number	Percent
Age group	Distribution of poultry farmers according to age		
	Young age (Up to 30 year)	0	0.00
	Middle age (31 to 50 year)	96	64.0
	Old age (Above 50 year)	54	36.0
	Total	150	100.00
Level of education	Distribution of poultry farmers according to their level of education		
	Illiterate	83	55.33
	Primary education (Up to VII Std.)	34	22.67
	Secondary education (VIII to X Std.)	28	18.67
	Above secondary education	5	3.33
	Total	150	100.00
Occupation	Distribution of poultry farmers according to their occupation		
	Farming Only	79	52.67
	Farming + Animal Husbandry	26	17.33
	Farming + Labour work	27	18.00
	Farming + Animal Husbandry + Labour work	18	12.00
	Total	150	100.00

Table.2 Impact of poultry farming on change in living standard

Parameter	Parameter	Before	After
Types of houses	Kachcha	133	114
	Pakka	17	36
	Total	150	150
Facility in houses	Impact of poultry farming on changes in their facility in houses		
	Electricity	87	114
	Latrine	0	32
	Bathroom	0	39
	Mobile	21	67
	Total	108	239
Information of vehicle	Impact of poultry farming on changes in their holding of vehicle		
	Bicycle	41	54
	Bike	17	21
	Total	46	69
Instruments for Entertainment	Impact of poultry farming on changes in their holding of Instruments for Entertainment		
	Radio	37	60
	TV	9	18
	CD player	2	5
	DVD player	0	1
	Total	48	84
Annual Income	Impact of poultry farming on changes in their holding of Instruments for Entertainment		
	Low (up to Rs. 8,000)	39	0
	Medium (Rs. 8,000 to 15,000)	102	15
	High (Above Rs. 15,000)	9	135
	Total	150	150
Type of family	Impact of poultry farming on changes in type of family		
	Joint	128	103
	Separate/ Nuclear	22	47
	Total	150	150
Numbers of family members	Impact of poultry farming on changes in family members		
	Two to four	6	10
	Five to eight	86	111
	More than eight	58	29
	Total	150	115
Family of bad habit	Impact of poultry farming on changes in their bad habit		
	Tobacco chewing	53	35
	Bidi/ Cigarette	74	55
	Total	127	90

Table.3 Additional income through poultry farming

S. No	Item	No/Income (Rs.)
1	Total egg produced per year	161
2	Own use	58
3	Sold in market	103
4	Rate per egg	4
5	Average existing birds	7
	Total income (Rs.)	2884

Table.4 Impact of poultry farming on change in their life style (n=115)

S. No.	Parameters	Number	Percent
1	Food quality	115	100.00
2	Clothes	83	72.17
3	Housing	15	13.04
4	Farm implements	56	48.70
5	Farm expenses	112	97.39
6	Children education	113	98.26
7	Vehicle	15	13.04

The entertainment facilities were increased due to poultry farming and data depicted in Table 2 shows that the number of radio, TV, CD player and DVD players increased in number 23 (20.00 %), 9 (7.83 %), 3 (2.61 %) and 1 (0.87 %), respectively due to poultry farming. These results are similar with Dhavan (2008) that sudden requirements like medical emergencies, celebrations, gifting etc. were taken care of using this extra income. Backyard poultry was used as a savings account which could be used as and when required.

The farmers were grouped according to their annual income during the survey and after technological interventions (Table 2). At the time of base line survey it was observed that the annual income of 39 (26 %) farmers were in the group of less than 8000, 102 (68 %) farmers were between 8000 to 15000, while the remaining 9 (6 %) farmers were above 15000 (Table 2). After three years of technology interventions it was determined that the annual income of the farmers was

gradually increased. The average annual income of the farmers was above the 8000 i.e. no farmers lies in the category of less than 8000. The youth farmers generated more income from the poultry farming than old. It was concluded that poultry farming is the best activities for sustainable livelihood. These results are agreement with Dhavan (2008) that increase in net income per household is Rs. 2280/- i.e. 290 % rate of return on investment with the poorest having highest net profit margin.

The number of nuclear families increased from 14.67 % to 33.33 % whereas the number of farmer family members decreased (Table 2). Majority of the farmers quit their bad habits viz. addiction to tobacco (15.65 %) and smoking (16.52 %).

Table 3 shows additional income produced through poultry farming. The increased income was utilized hugely by the farmers in improving their nutritional status and education for the next generation. Also some

income was diverted towards betterment of their living standards and farm mechanization.

These results are agreement with Iannotti *et al.*, (2009) that 33% and 30% of the additional income from poultry rearing was used on education and food respectively. Only 14% was used on clothes and none was used on housing (Table 4).

Poultry rearing is one of the best solutions for increasing the income of tribal farmers for sustainable livelihood. The tribal farmers can also fulfill their - requirement of the basic amenities. It is also observed that there is need to develop low cost housing techniques for poultry rearing to control the attack of the wild animals.

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