VETERINARY SCIENCE RESEARCH JOURNAL
olume **6** | Issue 1 | Apr., 2015 | 36-41

DOI : 10.15740/HAS/VSRJ/6.1/36-41
Visit us - *www.researchjournal.co.in*
e ISSN-2230-942X

RESEARCH ARTICLE

Constraint analysis of backyard pig production in tribal areas of Assam

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Abstract : An ex-post facto study was conducted in Dhemaji and Karbi Anglong districts of Assam state with the objective to understand the constraints perceived by tribal farmers in backyard piggery farming. Data were collected personally from 200 tribal families practising backyard piggery from twenty different villages through interview schedule. The results revealed that feeding with a mean score of 2.83 and management with 2.81 were the most important areas of constraints perceived by the respondents followed by marketing (2.73), breeding (2.66) and health care (2.64). The findings also revealed that educational qualification, annual income, mass media exposure, extension agency contact, innovation proneness and risk orientation of the respondents had significant relationship with the constraints perceived by them in backyard pig rearing.

Key words : Constraints, Backyard pig farming, Tribal

How to cite this paper : Shyam, Janmoni, Tripathi, Hema and Yadav, Jyoti (2015). Constraint analysis of backyard pig production in tribal areas of Assam. *Vet. Sci. Res. J.*, **6**(1) : 36-41.

Paper History : Received : 18.12.2014; Revised : 02.03.2015; Accepted : 10.03.2015

INTRODUCTION

Backyard pig husbandry is one of most popular and traditional enterprises of the tribals in north eastern region of India and pig as livestock in the north eastern region of India is a big blessing, an asset of excellent nature and very much integral to the life system of people (Monoshri *et al.*, 2014). In Assam, pig production is invariably a small-scale, backyard, market oriented enterprise attributed to various factors like low productivity of the indigenous pigs, poor managemental practices, acute shortage of nutritive feeds, lack of subsidies etc. It is practised mainly by Scheduled Tribes (ST) and some other backward classes (OBC) to generate income accumulated capital and fulfil socio-cultural obligations (ASRLMS report, Govt. of Assam, 2012). Although the demand for pork meat is increasing day by day, yet the farmers are confined to rear the pigs in their backyard due to general constraints like poor managemental practices, lack of scientific knowledge on pig farming, dependence on locally available feeds for feeding due to poor socio economic status etc. Empirical studies are lacking in terms of specific constraints perceived by the tribal farmers practising backyard piggery production in Assam. So, in light of the above facts, the present study was undertaken to analyse the prevailing constraints perceived by the tribal pig farmers of Assam.

RESEARCH METHODOLOGY

The present study was conducted in Dhemaji and Karbi Anglong districts of Assam, selected purposively due to

high tribal population. Dhemaji has 47.29 per cent and Karbi Anglong has 55.69 per cent of ST population of the total ST population of the state as per Census, 2001 (Economic Survey of Assam 2011-12). Dhemaji district is situated in the remote corner of north east India on the north bank of river Brahmaputra (north bank plain zone). The boundaries of the district are the hilly ranges of Arunachal Pradesh to the north and the east, Lakhimpur district in the west and the river Brahmaputra in the south. The district has a total geographical area of 3237 sq km. The district is divided into 2 sub-divisions *viz.*, Dhemaji and Jonai, comprising of 5 blocks *viz.*, Dhemaji, Sissiborgaon, Morkongselek, Bordoloni and Machkhowa development blocks. Mising tribe is the predominant tribe in Dhemaji district of Assam. They are the second largest tribal group in north-east India, first being the Bodos in Assam. The Karbi Anglong distrcit is situated in the central part of Assam (Hill zone). It is bounded by Golaghat district in the east, Meghalaya and Morigaon districts in the west, Nagaon and Golaghat district in the north and N.C. hills district and Nagaland in the south (Fig. A). The district has a total geographical area of 10,434 sq km. The district is divided into 3 sub divisions*viz.*, Diphu, Bokajan and Hamren comprising of 11 blocks *viz.*, Lumbajong, Howraghat, Samelangso, Langsomepi, Bokajan, Nilip,

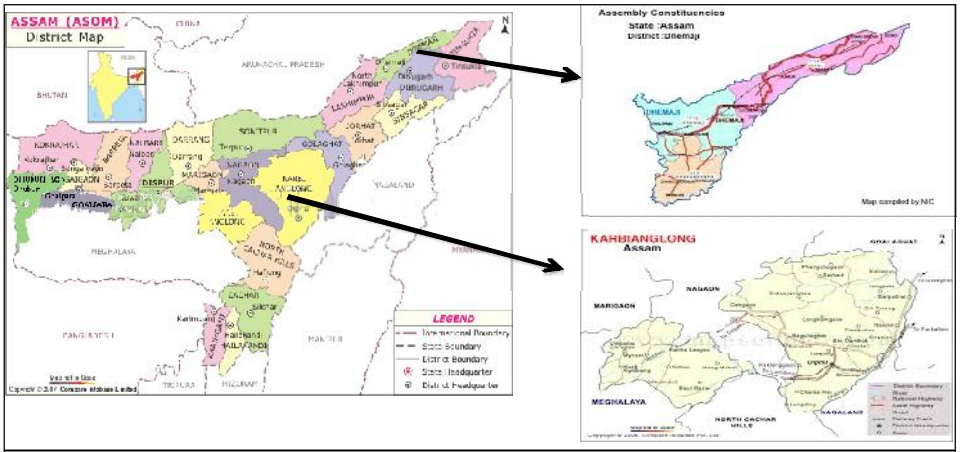

Fig. A : Map showing the study areas in Assam

Rongmongwe, Rongkhang, Socheng, Chinthong and Amri development blocks. The Karbis are the principal tribal community in the Karbi Anglong district of Assam and they constitute the third largest tribal community in Assam after the Bodos and the Mishings.

From each selected districts, two blocks and from each block five villages were chosen randomly, making a total of twenty villages. From each village, ten families practising backyard piggery were selected constituting a total sample size of 200 for the study. The constraints were measured in three point continuum quantified by assigning the score of 3, 2 and 1 for 'major', 'minor' and 'not a constraint', category in five selected areas *viz.*, breeding, feeding, health care, management and marketing practices as perceived by the respondents which included a total of 22 different sub-areas in piggery farming. The maximum and minimum obtainable scores were 66 and 22, respectively. The scores for each constraint were added and the mean constraint score was obtained. The relationship between the socio-economic characteristics of the selected pig farmers and the constraints in pig farming was assessed using zero order correlation and multiple regression analysis.

RESULTS AND DISCUSSION

The results obtained from the present investigation as well as relevant discussion have been summarized under following heads :

Socio-economic characteristics of the pig farmers :

Majority (54 %) of the pig farmers belonged to middle age group between 36-45 years, 37.50 per cent had

educational qualification up to primary level (Table 1). More than 56 per cent of the respondents had medium family size comprising 5-7 members. More than half of the respondents had small land holding with experience of 18-26 years in piggery farming. Forty seven of the pig farmers had medium pig stock (8-10 pigs) with 50 per cent having medium annual income of Rs. 66,033.33-81,466.67. Majority had medium and low level of mass media exposure. More than 50 per cent of the respondents had low level of extension agency contact and innovation proneness (66 %) and 48.50 per cent of the respondents had medium level of risk orientation. Payeng *et al.* (2013) also reported similar findings in his study on the economics of pig production in organised and unorganised sectors in Assam.

Table 1 : Socio-economic characteristics of the respondents **(n=200)**

Variables	Categories	Frequency	Percentage
Age	Young (upto 35 years)	72	36.00
	Middle (36-45 years)	108	54.00
	Old (more than 45 years)	20	20.00
Education qualification	Illiterate	17	8.50
	Primary	75	37.50
	Middle	40	20.00
	High	41	20.50
	Intermediate	16	8.00
	Graduate	11	5.50
	Post graduate and above	0	0.00
Family size	Small (upto 5 members)	70	35.00
	Medium (5-7)	113	56.50
	Large (more than 7 members)	17	8.50
Land holding	Landless (No agricultural land)	0	0.00
	Marginal (less than 1 hectare)	91	45.50
	Small (1-2 hectare)	104	52.00
	Medium (2-4 hectare)	5	2.50
	Large (more than 5 hectare)	0	0.00
Experience in rearing	Short (upto 18 years)	9	4.50
	Medium (18-26 years)	115	57.50
	Long (more than 26 years)	76	38.00
Pig stock	Small (6-8)	60	30.00
	Medium (8-10)	94	47.00
	Large (10-12)	46	23.00
Annual income	Low (50,600-66,033.33)	81	40.50
	Medium (66,033.33-81,466.67)	100	50.00
	High (81,466.67-96,900)	19	9.50
Mass media exposure	Low (9-13.33)	85	42.50
	Medium (13.33-17.67)	90	45.00
	High (17.67-22)	25	12.50
Extension agency contact	Low (9-13)	104	52.00
	Medium (13-17)	82	41.00
	High (17-21)	14	7.00
Innovation proneness	Low (3-5)	132	66.00
	Medium (5-7)	41	20.50
	High (7-9)	27	13.50
Risk orientation	Low (22-25.33)	92	46.00
	Medium (25.33-28.67)	97	48.50
	High (28.67-32)	11	5.50

Constraints perceived by the pig farmers :

Table 2 revealed that 90 per cent of the respondents perceived that lack of availability of good quality boar for breeding purposes as the major constraint and ranked first with a mean score of 2.91 followed by high cost involved in calling a veterinarian with a mean score of 2.86. Improved breeds are more susceptible to diseases revealed by 78.50 per cent as major constraint and ranked third with a mean score of 2.75. Lack of knowledge about heat detection and pregnancy diagnosis with a mean score of 2.45 and 2.36 were ranked fourth and fifth, respectively and was not the major constraints perceived by the respondents in backyard pig rearing. Table 2 further reveals that in feeding practices, the highest mean score 2.89 for constraint perceived by the respondents was non-availability of concentrate feeds, ranked first followed by possibility of feeding concentrate feed due to high cost with mean score 2.83 and insufficient availability of feeds like wild roots, tubers and leaves from nearby areas for animals feeding perceived as major constraint by 85.50 per cent tribals with mean score 2.81. Constraint hierarchy under health care revealed non-availability of medicines as first rank and major constraint with a mean score of 2.91 followed by non-availability of veterinarians at the time of need mentioned by 81 per cent respondents as second major constraint with

Table 2 : Constraints perceived by the tribal respondents in different sub areas of backyard pig rearing (n=200)

Variables	Major	Minor	Not a constraint	TMWS	ATMWS	Rank
Breeding						
Lack of good quality boar for breeding purposes	181(90.50)	19(9.50)	0(0.00)	2.91	2.66	I
High cost involved in calling veterinary staff for treatment of breeding related problems	171(85.50)	29(14.50)	0(0.00)	2.86		II
Lack of knowledge about pregnancy diagnosis	106(53.00)	60(30.00)	34(17.00)	2.36		V
Improved breeds are susceptible to disease	157(78.50)	35(17.50)	8(4.00)	2.75		III
Lack of knowledge about heat detection	110(55.00)	70(35.00)	20(10.00)	2.45		IV
Feeding						
Non availability of concentrate feeds	178(89.00)	22(11.00)	0(0.00)	2.89	2.83	I
Belief that available feed like wild roots, tubers and leaves from nearby areas is insufficient for animals feeding	171(85.50)	20(10.00)	9(4.50)	2.81		III
Feeding of concentrates is not possible due to high cost	165(82.50)	35(17.50)	0(0.00)	2.83		II
Non-availability of information about balance feeding	155(77.50)	45(22.50)	0(0.00)	2.78		IV
Healthcare						
Non-availability of the medicines	181(90.50)	19(9.50)	0(0.00)	2.91	2.64	I
Non-availability of the veterinarians at time of need	162(81.00)	36(18.00)	2(1.00)	2.80		II
Non-availability of the para vets	70(35.00)	75(37.50)	55(27.50)	2.08		IV
High cost of medicines	157(78.50)	40(20.00)	3(1.50)	2.77		III
Management						
High cost investment in scientific management of animals.	171(85.50)	29(14.50)	0(0.00)	2.86	2.81	II
Lack of knowledge about scientific management of pigs	174(87.00)	26(13.00)	0(0.00)	2.87		I
Limited resource for providing infrastructure facilities	165(82.50)	35(17.50)	0(0.00)	2.83		III
Reliance on the indigenous methods of deworming and castration as they are considered to be more convenient, effective and cheap	155(77.50)	30(15.00)	15(7.50)	2.70		IV
Marketing						
Transportation of pig to other market places is costly	157(78.50)	40(20.00)	3(1.50)	2.77	2.73	III
Lack of organized market	171(85.50)	29(14.50)	0(0.00)	2.86		I
Lack of credit facility	165(82.50)	35(17.50)	0(0.00)	2.83		II
Lack of proper slaughter house	155(77.50)	30(15.00)	15(7.50)	2.70		IV
Inadequate price of the products	125(62.50)	45(22.50)	30(15.00)	2.48		V

TMWS-Total Mean Weighted Score; ATMWS-Average Total Mean Weighted Score; Figures in Parentheses indicates percentage

mean score of 2.80. High cost of medicines with a mean score of 2.77 was assigned third rank by 78.50 per cent of the respondents. Non–availability of paravets was the least important constraints among the health component with a mean score of 2.08. Table 2 further revealed that, among the various sub-items of management practices, lack of knowledge about scientific management of pigs was the most important areas ranked first by 87 per cent of the respondents. The mean score for the item was 2.87. The second rank was assigned to the sub-area, high cost investment in scientific management of animals followed by limited resources for providing infrastructure facilities and reliance on the indigenous methods of deworming and castration with a mean score of 2.86, 2.83 and 2.70 by 85.50 per cent, 82.50 per cent and 77.50 per cent, respectively. Data pertaining to constraints with respect to marketing practices revealed that lack of organized market was the first and most important constraint perceived by the respondents with a mean score of 2.86. Lack of credit facility was ranked second with a mean score of 2.83 followed by costlier transportation of pig to other market places and lack of proper slaughter house ranked third and fourth by majority of the respondents. Inadequate price of the products was not found to be a major constraint and thus ranked lowest with a mean score of 2.48. Amongst all the sub-areas, the average total weighted mean scores of constraints depicted that feeding (2.83) and management (2.81) were the most important areas of constraints perceived by the respondents with highest scores followed by marketing (2.73), breeding (2.66) and health care (2.64). Studies conducted by Jini (2008); Nath *et al.* (2012) and Tochhawng and Rewani (2013) also reported constraints like lack of adequate credit facilities, inadequate scientific knowledge on pig farming, lack of breeding and lack of marketing facilities, high cost of feeds, non–availability of timely medical care and problem in transportation of live pigs.

Relationship between socio-economic characteristics with constraints in pig farming :

Correlation co-efficient was determined to know the relationship between socio-economic characteristics of the respondents with the constraints perceived by them. Table 3 shows that out of the eleven variables, six variables namely educational qualification, annual income, mass media exposure, extension agency contact, innovation proneness and risk orientation had significant relationship with the constraints. Age, family size, land holding experience in pig rearing and pig stock did not show any significant relationship with the constraints in backyard pig rearing. Education had negative but significant relationship with the perceived constraints which might be due to the fact that with the increase in education, the farmers gained more knowledge which resulted in decrease in the constraints. Similarly annual income, mass media exposure, extension agency contact, innovation proneness and risk orientation negative correlation was observed with respect to the perceived constraints. This might have resulted due to the fact that with

Table 3 : Correlation and multiple regression analysis of socio-economic variables and respondents with the perceived constraints in backyard pig rearing

Variable no.	Variables	Correlation 'r' value	Regression	
			β value	't' value
X_1	Age	-0.106^{NS}	-0.099	-2.031^{NS}
X_2	Educational qualification	-.432**	0.083	-1.291*
X_3	Family size	-0.123^{NS}	-0.026	-0.574^{NS}
X_4	Landholding	0.077^{NS}	0.053	1.181^{NS}
X_5	Experience in rearing	-0.1^{NS}	-0.006	-0.111^{NS}
X_6	Pig stock	-0.13^{NS}	-0.058	-1.259^{NS}
X_7	Annual income	-.682**	-0.465	-2.755**
X_8	Mass media exposure	-.540**	-0.016	-0.179*
X_9	Extension agency contact	-.574**	-0.344	-3.722*
X_{10}	Innovation proneness	-.556**	-0.011	-0.111**
X_{11}	Risk orientation	-.585**	-0.252	-1.596^{NS}

$R^2 = 0.667$; * and ** indicate significance of values at P=0.05 and P=0.01, respectively; NS=Non-significant

$Y=B_o+ \beta_1 X_1+ \beta_2 X_2+ \beta_3 X_3+ \beta_4 X_4+ \beta_5 X_{5+} \beta_6 X_{6+} \beta_7 X_7+ \beta_8 X_8+ \beta_9 X_9+ \beta_{10} X_{10}+ \beta_{11} X_{11}$

$Y=42.647-0.099 X_1+ 0.083 X_2 -0.026 X_3+ 0.053 X_4 -0.006 X_5 -0.058X_6 -0.465 X_7-0.016 X_8$
$-0.344 X_9 -0.011X_{10} -0.252X_{11}$

Y=Constraints; B_o=Constant; X_1= Age; X_2=Education qualification; X_3= Family size; X_4= Landholding; X_5= Experience in rearing; X_6= Pig stock; X_7=Annual income; X_8=Mass media exposure; X_9=Extension agency contact; X_{10}=Innovation proneness; X_{11}= Risk orientation

the increase in factors like mass media, extension agency contact the farmers might have become more innovative and adopted better management practices leading to decrease in their constraints with respect to piggery farming. The multiple regression co-efficient R^2 was 0.667. The results revealed that educational qualification, annual income, mass media exposure, extension agency contact and innovation proneness were the five significant contributory variables. The selected independent variables accounted for 66.70 per cent of the variation towards the dependent variable, perceived constraints in piggery farming.

Conclusion :

Feeding and management were the most important areas of constraints perceived by the respondents followed by marketing, breeding and health care. Constraints like non-availability of concentrate feeds, lack of knowledge on balance feeding can be overcome by identifying the non-conventional feed resources for cost effective pig husbandry and also by providing requisite training on balance feeding practices for optimum production for their respective pig units. The study highlighted the need strengthening of veterinary sector and also the supply of good breeding stock along with timely supply of medicines. Training and other capacity building programmes along with intense extension activities in every aspect of breeding, feeding, management, healthcare and marketing practices may help them to find the possible solutions for profitable pig rearing and enhancing the nutritional security and other livelihood security of the tribal piggery farmers of Assam.

LITERATURE CITED

GOI (2012). Basic Animal Husbandry Statistics, Ministry of Agriculture, Government of India, New Delhi.

Jini, D. (2008). Knowledge and adoption level of scientific pig rearing practices among farmers in Arunachal Pradesh. M.V.Sc. Thesis, Indian Veterinary Research Institute, Izzatnagar, Bareilly, U.P. (INDIA).

Johari, M., Saharia, K.K., Hazarika, P., Khuman, L.S., Bora, L. and Ray, M.N. (2014). Impact of personal traits on piggery management. *Indian Res. J. Ext. Edu.*, **14**(2):16-19.

Nath, B.G., Chandra, R., Toppo, S., Chatlod, L.R. and Mohanty, A.K. (2012). Characteristics and constraints of pig production under rural conditions in Sikkim. *Online J. Ani. & Feed Res.*, **2**(2): 145-148.

Payeng, S., Borgohain, A. and Bora, J.R. (2013). Economics of pig production in organized and unorganized sectors. *Indian Res. J. Ext. Edu.*, **13**(1):101-106.

Tochhawng, L. and Rewani, S.K. (2013). Constraint analysis of backyard pig farming in tribal areas of Mizoram. *Indian Res. J. Ext. Edu.*, **13**(2):123-125.

■ **WEBLIOGRAPHY**

ASRLMS report (2012). A study on contributing and limiting factors relating to pig rearing as a source of income in Assam. 1-19pp. *http://www.asrlms.in*.