CONSTRAINT ANALYSIS OF SWINE FARMING UNDER RASHTRIYA KRISHI VIKAS YOJANA (RKVY) IN ANDHRA PRADESH STATE*

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Received : 15.07.2013 Accepted : 05.11.2013

ABSTRACT

A study was undertaken to assess the economic impact of Rashtriya Krishi Vikas Yojana (RKVY) project run by AICRP on pigs at Tirupati on the livelihoods of beneficiaries of piggery units. The study was carried out in Chittoor, Nellore, Kadapa and Kurnool districts of Andhra Pradesh state. Data were collected from 30 beneficiaries, who were supplied germplasm under RKVY project. These beneficiaries were purposively selected for impact studies since they have completed 3 years of pig rearing and were personally interviewed for collection of data. The constraints that impede the successful management of swine farms were identified and ranked. The most pressing problem of swine farms was the non-availability of Swill feed which is most important ingredient round the year in required quantities. The other equal important constraint was the accessability to institutional credit agencies. Cost of vaccines was another factor in terms of severity as expressed by the farmers. In addition lack of demand for dreessed pork in rural areas, limited availability of breeding stock were identified. Apart from these major problems there were other constraints too affecting the efficient management of swine farms.

Keywords: Constraints- piggery, Swine farming, Swill feed, Garrett's ranking, Garrett's Score, RKVY, poor credit facilities.

* Part of M.V.Sc., thesis submitted to Sri Venkateswara Veterinary University, Tirupathi

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INTRODUCTION

Pig production, among other animal husbandry activities has a high potential to contribute to high economic gain and the piggery sector is gaining slow but steady momentum during the past years recording 4% growth rate. Under Rashtriya Krishi Vikas Yojana (RKVY) Programme a model pig unit has been established at All India Co-ordinated Research Project (AICRP) on pigs, Tirupati to supply superior germplasm of Large White Yorkshire crossbred pigs to the pig farmers that aims in improvement of socio-economic status of downtrodden rural poor. From among the 120 beneficiaries of the RKVY project who were supplied with the weaner pigs as breeding stock from the year 2009-10 onwards, a total number of 30 beneficiaries were purposively selected as sample for the impact study. This number has been arrived at based on the criterion that they should have completed a minimum period of 3 years in running the enterprise. The beneficiaries selected represented the districts comprising Chittoor, Nellore, Kadapa and Kurnool of Andhra Pradesh state. The beneficiaries have taken up the swine farming but there are some pressing problems that were found to stay in running the enterprise. Therefore there is a need to unearth those constraints for redressal. This forms the central point of the study.

MATERIALS AND METHODS

Desired number of weaner pigs as per the availability are distributed to the interested farmers on subsidized cost along with other inputs like concentrate feed, medicines and vaccines. The project takes sufficient care to crosscheck the facilities available with the beneficiaries like housing, water, feeding and availability of labour *etc*. In addition minimum training in feeding, breeding and other routine farm operations are imparted to the beneficiaries. They are properly advised about the importance of record keeping.

Information relating to the major constraints perceived by the beneficiaries was enlisted based on personal interview and the constraints were ranked as per Garrett's ranking technique. The collected details were analyzed by using Garrett's Ranking Technique.

Garrett's Ranking Technique : Ranking given by 30 beneficiaries for each factor was analyzed. Thus assigned ranks by the individual beneficiaries were counted into percent position value by using the formula.

Per cent position = $100(R_{ij}-0.5)/N_j$

Where, R_{ij} stands for rank given for the i^{th} factor by the j^{th} individual.

N_j stands for number of factors ranked by j^{th} individual.

The Per cent position were converted into scores by referring the Garret's Ranking technique (Garrett and Woodworth, 1969). Mean scores were calculated by dividing the total score by the number of respondents. Overall ranking was obtained by assigning ranks in the descending order of the mean score.

RESULTS AND DISCUSSION

The constraints that impede the successful management of the pig farming were identified and ranked. (Table 1)

As per the ranks, non-availability of Swill feed as perceived by the farmers due to high demand was the most severe constraint as felt by the farmers. The swine units normally depended upon student's hostels, hotels, and restaurants for procuring the Swill feed. Given the rising number of piggery units there was a proportionate increase in the demand for the Swill feed. This situation put a pressure on the Swill feed price, and therefore is an important issue. These observations were in agreement with those of Devendra and Fuller (1979), Westernbrinke (1995), Ezeibe (2010), Ogunniyi and Omoteso (2011).

Access to credit facility was a constraint as felt by the farmers since the banks do not liberally extend loans to pig units as found for dairy, sheep or poultry units. Similar findings were observed in the studies conducted by Ashalatha and Prabhakar (2010), Ogunniyi and Omoteso (2011), Wabache *et al.* (2004).

The farmers felt that the cost of vaccines was on higher side therefore they shy away from buying coupled with inaccessibility of veterinary services. Veterinary services do not reach pig units unlike dairy units or sheep units. Kumar *et al.* (2004) and Ogunniyi and Omoteso (2011) reported similar findings in their studies.

In rural areas there was no continuous demand for pork as one finds in urban areas. Therefore the rural entrepreneur prefers to sell live animals rather than in the form of pork as a result the profit margins dip. These findings are in agreement with the observations made by Meganathan *et al.,* (2010), and Jain and Pandey (2000).

The other main constraint faced by farmer is limited availability of breeding stock. As mass production centers or seed projects are unable to cope up with the huge demand, there is shortage of supply of breeding stock either to start or expand the enterprise. Pandey and Kumar (2000), Kumar *et al.,* (2004) and Wabache *et al.,* (2004) observed similar findings.

The critical periods in pig rearing are preweaning stage, breeding and farrowing stages during which period scientific rearing is required. But farmers lack the awareness to be ready to tackle these critical phases consequent to which mortality was found to be relatively higher during this period. Farmers need to get themselves trained on the scientific aspects from the veterinary specialists so that these problems can be minimized.

Another problem is that social unacceptance of the pig rearers in the society. They are not easily accepted by the society, the way a poultry rearer or a dairy farmer or sheep or goat farmer is accepted. This social unacceptance discourages the prospective entrepreneurs into this trade.

For those entrepreneurs who can manage with the family workers, things go smoothly but when they depend on hired labour it is an issue to be handled. The reason being,

the enterprise needs permanent labour and the labourers wouldn't come forward as they are prepared for other enterprises like agriculture, dairy, poultry or sheep farming. Therefore for those who are willing to work on pig farms as permanent labourers, the owner has to pay comparatively higher wages. Meganathan *et al.,* (2010) recorded similar observations.

Initial investment in the form of sheds is compulsory for pig rearing as one needs to have minimum housing or sheds. There is no short cut to this to look into the safety in maintenance of the animals. In addition high cost of machinery and equipment like auto, tricycle, feeders and waterers also constitute to the high initial investment. Ogunniyi and Omoteso (2011) also recorded similar findings.

Table 1. Constraint analysis

S.No	Items	Sum	Garret's Score	Garrett's Ranking
1	Non availability of Swill feed	1876	62.53	I
2	Lack of veterinary care	1588	52.93	III
3	Poor credit facilities	1695	56.50	II
4	Lack of demand for dressed pork in rural areas	1586	52.86	IV
5	Limited availability of breeding stock	1488	49.60	VI
6	Lack of awareness about scientific rearing	1510	50.33	V
7	Social unacceptance	1349	44.96	VII
8	High initial investment	1029	34.30	X
9	Lack of market facilities	1290	43.00	VIII
10	Labour problem	1081	36.03	IX

Swill feed is the life blood of swine farming and its availability round the year in the required quantities more specifically in the rural areas is a cause of concern. It is quite obvious that in rural areas the access to Swill feed is not easier as it is in urban areas. Therefore this problem needs to be addressed.

A viable solution in the offing is that animal nutritionists need to develop a balanced feed ration with locally available ingredients alternative to conventional feed stuffs at a cheaper cost in lieu of Swill feed without sacrificing the quality component would do a world of good to the swine farmers.

To redress the problem relating to supply of superior germplasm of crossbred breeding stock, the Government, University and Animal Husbandry Departments should come forward to establish mega seed projects at regional or district level for producing required number of seed stock to initiate pig farms by enthusiastic entrepreneurs. Further, these farms at district level will serve as demonstration units, where training programmes in modern scientific pig rearing can be imparted.

Since the swine industry is in the hands of unorganized, resource poor farming community the middle-men are playing a major role in marketing. Hence the government may think of encouraging these farmers to form co-operative societies or organize self-help groups to tackle their problems.

The extension wings of Animal Husbandry Departments or the University will have to organize awareness campaigns regarding promotion of pork eating habit in the community.

It is also the paramount responsibility of government as well as lending agencies to come forward to extend credit facilities to the enthusiastic entrepreneurs to take up pig rearing in a big way on par with other livestock like dairy, sheep, goat and poultry.

Garrett's Ranking methodology

In the first stage: Ranking given by 30 beneficiaries for each factor was analyzed

Eg: Rank given by the beneficiaries.

Beneficiary No.	Factors (Constraints)									
	1	2	3	4	5	6	7	8	9	10
1	1	8	2	6	3	5	4	10	7	9
2	9	1	3	6	4	10	8	7	2	5
3										
.										
.										
29										
30	1	8	7	5	6	2	4	3	10	9

In the second stage: Thus assigned ranks by the individual beneficiaries were counted into percent position value by using the formula.

Per cent position = $100(R_{ij}-0.5)/N_j$

Where, R_{ij} stands for rank given for the i^{th} factor by the j^{th} individual.

N_j stands for number of factors ranked by j^{th} individual.

The per cent position values for the same assigned ranks by the beneficiaries were given as follows.

Beneficiary No.	Factors									
	1	2	3	4	5	6	7	8	9	10
1	5	75	15	55	25	45	35	95	65	85
2	85	5	25	55	35	95	75	65	15	45
3										
.										
.										
29										
30	5	75	65	45	55	15	35	25	95	85

In the third stage: For each per cent position scores were obtained with reference to Garrett's Ranking Conversion Table (Appendix 2) and each percent position value was converted into scores by reference to Garrett's Table (Garrett and Woodworth, 1969). Eg: Garrett's Table scores for the percent position values are given as follows.

Beneficiary No.	Factors									
	1	2	3	4	5	6	7	8	9	10
1	82	38	70	47	63	52	58	18	42	30
2	30	82	63	47	58	18	38	42	70	52
3										
.										
.										
29										
30	82	38	42	52	47	70	58	63	18	30

In the fourth stage: Summation of these scores for each factor was worked out for the number of respondents who gave ranking for each factor.

Beneficiary No.	Factors									
	1	2	3	4	5	6	7	8	9	10
1	82	38	70	47	63	52	58	180	42	30
2	30	82	63	47	58	18	38	42	70	52
3										
.										
.										
29										
30	82	38	42	52	47	70	58	63	18	30
Sum	194	158	175	146	168	140	168	123	130	98

In the fifth stage: Mean scores were calculated by dividing the total score by the number of respondents

Beneficiary No.	Factors									
	1	2	3	4	5	6	7	8	9	10
1	82	38	70	47	63	52	58	180	42	30
2	30	82	63	47	58	18	38	42	70	52
3										
.										
.										
29										
30	82	38	42	52	47	70	58	63	18	30
Sum	194	158	175	146	168	140	168	123	130	98
Mean	64.66	52.66	58.33	48.66	56	46.66	51.33	41	43.33	37.33

In the Sixth and last stage : Overall ranking was obtained by assigning ranks *etc.* in the descending order of the mean score.

Beneficiary No.	Factors									
	1	2	3	4	5	6	7	8	9	10
1	82	38	70	47	63	52	58	180	42	30
2	30	82	63	47	58	18	38	42	70	52
3										
.										
.										
29										
30	82	38	42	52	47	70	58	63	18	30
Sum	194	158	175	146	168	140	168	123	130	98
Mean	64.66	52.66	58.33	48.66	56	46.66	51.33	41	43.33	37.33
Ranks	1	4	2	6	3	7	5	9	8	10

APPENDIX - 2

GARRETT RANKING CONVERSION TABLE

The conversion of orders of merits into units of amount of "Scores"

Per cent	Score	Per cent	Score	Per cent	Score
0.09	99	22.32	65	83.31	31
0.20	98	23.88	64	84.56	30
0.32	97	25.48	63	85.75	29
0.45	96	27.15	62	86.89	28
0.61	95	28.86	61	87.96	27
0.78	94	30.61	60	88.97	26
0.97	93	32.42	59	89.94	25
1.18	92	34.25	58	90.83	24
1.42	91	36.15	57	91.67	23
1.68	90	38.06	56	92.45	22
1.96	89	40.01	55	93.19	21
2.28	88	41.97	54	93.86	20
2.69	87	43.97	53	94.49	19
3.01	86	45.97	52	95.08	18
3.43	85	47.98	51	95.62	17
3.89	84	50	50	96.11	16
4.38	83	52.02	49	96.57	15
4.92	82	54.03	48	96.99	14
5.51	81	56.03	47	97.37	13
6.14	80	58.03	46	97.72	12
6.81	79	59.99	45	98.04	11
7.55	78	61.94	44	98.32	10
7.55	78	61.94	44	98.32	10
8.33	77	63.85	43	98.58	9
9.17	76	65.75	42	98.82	8

Per cent	Score	Per cent	Score	Per cent	Score
10.06	75	67.48	41	99.03	7
11.03	74	69.39	40	99.22	6
12.04	73	71.14	39	99.39	5
13.11	72	72.85	38	99.55	4
14.25	71	74.52	37	99.68	3
15.44	70	76.12	36	99.80	2
16.69	69	77.68	35	99.91	1
18.01	68	79.17	34	100	0
19.39	67	80.61	33		
20.93	66	81.99	32		

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