

IMPACT OF RKVY PROGRAMME ON INCOME DISTRIBUTION PATTERN OF PIGGERY BENEFICIARIES

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ABSTRACT

Rastriya Krishi Vikas Yojana (RKVY) draws up plan to integrate agriculture with allied enterprises. This study aims at assessing the impact of RKVY programme on income distribution of piggery beneficiaries in Chittoor, Kadapa, Kurnool and Nellore districts of Andhra Pradesh. Thirty beneficiaries were purposively selected since they have completed 3 years of pig rearing and were personally interviewed for collection of data. The net income was found to be Rs.58,590, Rs.2,05,577 and Rs.2,70,269 in the 1st, 2nd and 3rd years, respectively. Savings increased as the years passed by. The Gini concentration ratios in respect of the income were found to be 0.6989, 0.5353, and 0.4454 in respective years.

Keywords: Gini concentration ratio, Income distribution, Piggery beneficiaries, RKVY

INTRODUCTION

Pig production has a high potential to contribute to highest economic gain. This is because the pigs have high fecundity, high feed conversion efficiency, early maturity, short generation interval and relatively small space requirement. Rashtriya Krishi Vikas Yojana (RKVY) draws up plan to integrate agriculture with allied enterprises. This study aims at assessing the impact of the RKVY programme on income distribution pattern of its beneficiaries in Chittoor, Nellore, Kadapa and Kurnool districts of Andhra Pradesh.

The chief mandate of the Rashtriya Krishi Vikas Yojana (RKVY) project located at AICRP on Pigs, Tirupati is to supply superior germ plasm of Large White Yorkshire crossbred breeder pigs to the needy farmers of the state.

Desired number of weaner pigs are distributed to the farmers at subsidized cost along with other inputs like concentrate feed, medicines and vaccines. The project takes sufficient care while selecting beneficiaries it was ascertained regarding the facilities available with the beneficiaries like housing, water, feeding and availability of labour etc. In addition training in feeding, breeding and other routine farm operations are imparted to the beneficiaries. They are properly advised about the importance of record keeping. The average herd size recorded was 70, 93 and 110 in the 1st, 2nd and 3rd year respectively.

MATERIALS AND METHODS

To measure the income distribution, Gini concentration ratio was used.

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Gini coefficient of inequality

Gini coefficient of inequality was defined as the proportion of area under diagonal line which is known as Lorenz curve. It is a graphical device to represent the size distribution of the income. The curve relates the cumulative proportion of the population to the cumulative proportion of the income received. To construct the Lorenz curve, the cumulative percentage of households on the horizontal axis and cumulative percentage of income on the vertical axis were taken. If all the members of the population received equal income or wealth, the Lorenz curve would coincide with the curve of absolute equality otherwise, it would be below the diagonal. The diagonal line is the curve of equal distribution. The departure of the actual curve, from the line of perfect equality shows the degree of inequality. Its value ranges from 0 to 1. The value going closer to zero, greater is the income equality. If it goes closer to one, it indicates more of income inequality. A Gini ratio of zero would mean that every individual would receive the exactly the same income, while a ratio of one would mean that one individual receives all the income. The following formula was used to calculate the Gini concentration ratio:

$$GCR = 1 - \sum P_j (Q_j + Q_{j-1})$$

Where GCR = Gini concentration ratio

P_j = Proportion of families in the j th group

$Q_j + Q_{j-1}$ = Cumulative proportion of incomes in the j th & $j-1$ th farm households

RESULTS AND DISCUSSION

Income pattern of swine farmers:

Perusal of Table 1 reveals that the gross income was arrived at Rs.2,76,897 in the 1st year, Rs.4,67,373 in the 2nd year, and Rs.5,46,288 in the 3rd year. The net income was found to be Rs.58,590, Rs.2,05,577 and Rs.2,70,269 in respective years. There was a steady increase in the net income

pattern of swine farmers from swine farming alone. The average herd size recorded was 70, 93 and 110 in the 1st, 2nd and 3rd year respectively.

As every year an average 12-14 piglets are added to the stock. Given the care bestowed by the farmers, mortality is minimum. With the addition of piglets, annually there is a steady increase in the flock size. An average of 65-70 per cent of stock is disposed per annum retaining the breeder stock. Returns were obtained from sale of live animals, pork and manure. It follows cycle like as there is addition of piglets and given percentage of disposals.

Table 1
Income pattern of Swine Farmers

	1 st Year	2 nd Year	3 rd Year
Gross Income (Rs.)	2,76,897	4,67,373	5,46,288
Net Income (Rs.)	58,590	2,05,577	2,70,269

Family expenditure pattern of swine farmers:

The average family expenditure of the sample farmers per annum ranged from Rs.44,232 to Rs.54,900 from 1st to 3rd year. The pattern of expenditure did not show much deviation across the years. The percentage expenditure on food, housing, clothing and electricity almost remained same (Table 2).

The contribution of food to total family expenditure was Rs.17,881 (40.42%), Rs.19,708 (38.51%) and Rs.21,715 (39.55%) in respective years. These findings were in agreement with the observations made by Guide (1991) and Dankwa *et al.*, (1992). Expenditure towards house rent was recorded as Rs.9,489 (21.45%) in the 1st year, Rs.10,740 (20.97%) in the 2nd year and Rs.11,480 (20.93%) in the 3rd year.

Table 2**Family Expenditure pattern of Swine farmers**

Items	1st Year	2nd Year	3rd Year
Food (Rs.)	17,881 (40.42%)	19,708 (38.51%)	21,715 (39.55%)
House rent (Rs.)	9,489 (21.45%)	10,740 (20.97%)	11,480 (20.93%)
Clothing (Rs.)	2,212 (5.01%)	3,072 (6%)	3,843 (7%)
Fuel& Electricity (Rs.)	4,480 (10.13%)	5,420 (10.58%)	5,790 (10.54%)
Health (Rs.)	2,708 (6.12%)	3,856 (7.53%)	4,686 (8.53%)
Education (Rs.)	5,250 (11.86%)	5,844 (11.41%)	5,190 (9.45%)
Miscellaneous (Rs.)	2,212 (5.01%)	2,560 (5%)	2,196 (4%)
Total (Rs.)	44,232 (100%)	51,200 (100%)	54,900 (100%)

Saving pattern of swine farmers:

Savings were arrived at by deducting the total variable costs, fixed costs and family expenditure from the gross income. The results indicated that savings accounted for Rs.14,358 in the 1st year, Rs.1,54,377 in the 2nd year, and Rs.2,15,369 in the 3rd year. (Table 3). These results are in deviation with that of Gangaiah (2006) who reported that whenever people are able to receive sufficient income, they usually invest towards the improvement of the quality of their lives rather than towards savings. The savings have increased

in the light of increased incomes over the time period with family expenditure not going up substantially. No doubt there was an increase in the absolute expenditure on food as well as non food items. But, the increased income allowed them to save progressively more income even in the light of the increased expenditure.

This is obviously due to propionate rise in the income compared to propionate rise in the expenditure. On the whole, savings exhibited a very healthy sign in the pig farming.

Table 3**Saving pattern of Swine Farmers**

	1st Year	2nd Year	3rd Year
Gross Income (Rs.)	2,76,897	4,67,373	5,46,288
Total Fixed costs (Rs.)	35,412	31,012	28,614
Total Variable costs (Rs.)	1,82,895	2,30,784	2,47,405
Family Expenditure (Rs.)	44,232	51,200	54,900
Saving (Rs.)	14,358	1,54,377	2,15,369

$$\text{Savings} = [(\text{Gross income}) - (\text{Total Fixed costs} + \text{Total Variable costs} + \text{Family expenditure})]$$

Income distribution pattern**Distribution of farmers according to income during 1st year**

The income distribution pattern of farmers during 1st year is presented in Table 4. The particulars revealed that 50% of farmers had fallen in the income range of below Rs.30,000 and had a share of only 0.62% of average income, whereas 20% of the farmers had fallen in the income range between Rs.30,000-60,000 and had a share of 1.95% of average income. The farmers with the income range between Rs.60,000-90,000 was 13.35% with a share of 4.41% of average income whereas 3.33% of the farmers had fallen in the income range between Rs.90,000-1,20,000 and recorded a share of 5.93% of average income. The percentage of farmers with the income range between Rs.1,50,000-1,80,000 was 3.33% with a share of 9.76% of average income.

The farmers with income range between Rs.1,80,000-2,10,000 were 3.33% and had a share of 11.12% of average income. The farmers in the income range of Rs.4,20,000-4,50,000 recorded were 3.33% and shared 2.31% of average income; respectively. The farmers with 3.33% had fallen in the income range between Rs.7,80,000- 8,10,000 with a share of 43.21% of average income. It was found that among all other farmers the highest share of average income was recorded with in this income range. The highest number of farmers i.e. 50% had fallen in the income range below Rs.30,000 and their share in the total average income stood at 0.62%. Results indicated that in the 1st year 50 per cent of the farmers had fallen in the income range of less than 30,000 and 20 per cent fell in the income bracket of Rs.30,000-60,000 which shows that 70 per cent of the farmers come under the income range below Rs.60,000.

Distribution of farmers according to income during 2nd year

In Table 5 the income distribution pattern of farmers during the 2nd year is embodied. The highest share of 17.24% of average income was observed in the income range between Rs.8,70,000-9,00,000. Among all other farmers the highest number of farmers i.e. 13.35% had fallen in the income range of less than Rs.30,000 and their share was only 0.41%. In the second year, the percentage of farmers with income range of less than 30,000 was 13.35 per cent and that of farmers in Rs. 30,000-60,000 was 10 per cent whereas 20 per cent of farmers had fallen in the range of 60,000-90,000. Compared to the 1st year, the farmers have moved to the higher range of income in the 2nd year.

The percentage of farmers who stood at 70 per cent with income range of below 60,000 in the 1st year had come down to 23.35 per cent in the 2nd year, which shows that the remaining 46.65 per cent of the farmers have moved to the other higher income levels.

Distribution of farmers according to income during 3rd year

The income distribution pattern of farmers during 3rd year is shown in Table 6. Approximately 6.66% of the farmers had fallen in the income range between Rs.8,70,000-9,00,000 and had a share of 15.02% of aggregate income which accounted for highest share of average income among all other farmers. The highest number of farmers i.e. 13.35% each had fallen in the income range of Rs.60,000-90,000 and Rs.1,20,000-1,50,000 and their share in the total average income was 1.42% and 2.21%, respectively. In the third year there was none in the 1st income group i.e. less than 30,000 and just 3.33 per cent were in the income group of 30,000-60,000 and the data indicated that there was fairer distribution of income among the same pig farmers in the 3rd year. The results of this

Table 4
Distribution of farmers according to income during 1st year

Class intervals (Rs.)	Percentage of farmers	Cumulative Percentage of farmers	Average income per farmer (Rs.)	Percentage of aggregate income	Cumulative Percentage of income
0-30000	50	50	11193.33	0.62	0.62
30000-60000	20	70	35833.33	1.95	2.57
60000-90000	13.35	83.35	80750	4.41	6.98
90000-120000	3.33	86.68	108800	5.93	12.91
120000-150000	-	86.68	-	-	12.91
150000-180000	3.33	90.01	179000	9.76	22.67
180000-210000	3.33	93.34	204000	11.12	33.79
210000-240000	-	93.34	-	-	33.79
240000-270000	-	93.34	-	-	33.79
270000-300000	-	93.34	-	-	33.79
300000-330000	-	93.34	-	-	33.79
330000-360000	-	93.34	-	-	33.79
360000-390000	-	93.34	-	-	33.79
390000-420000	-	93.34	-	-	33.79
420000-450000	3.33	96.67	421000	2.31	56.79
450000-480000	-	96.67	-	-	56.79
480000-510000	-	96.67	-	-	56.79
510000-540000	-	96.67	-	-	56.79
530000-570000	-	96.67	-	-	56.79
570000-600000	-	96.67	-	-	56.79
600000-630000	-	96.67	-	-	56.79
630000-660000	-	96.67	-	-	56.79
660000-690000	-	96.67	-	-	56.79
690000-720000	-	96.67	-	-	56.79
720000-750000	-	96.67	-	-	56.79
750000-780000	-	96.67	-	-	56.79
780000-810000	3.33	100	794000	43.21	100
810000-840000	-				
840000-870000	-				
870000-900000	-				

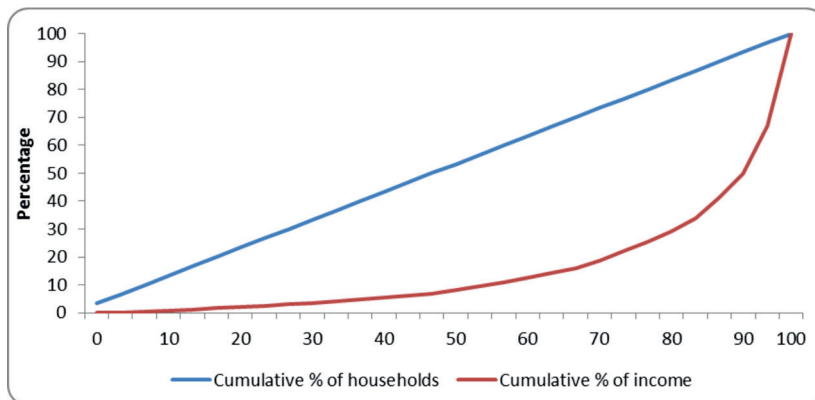
Table 5
Distribution of farmers according to income during 2nd year

Class intervals (Rs.)	Percentage of farmers	Cumulative Percentage of farmers	Average income per farmer (Rs.)	Percentage of aggregate income	Cumulative Percentage of income
0-30000	13.35	13.35	20750	0.41	0.41
30000-60000	10	23.35	48856.66	0.96	1.37
60000-90000	20	43.35	74166.66	1.46	2.83
90000-120000	6.67	50.02	114000	2.24	5.07
120000-150000	6.67	56.69	140500	2.76	7.83
150000-180000	10	66.69	157333.33	3.1	10.93
180000-210000	3.33	70.01	201000	3.95	14.88
210000-240000	-	70.01	-	-	14.88
240000-270000	3.33	73.35	257000	5.04	19.92
270000-300000	-	73.35	-	-	19.92
300000-330000	6.67	80.02	308000	6.04	25.96
330000-360000	3.33	83.35	345000	6.77	32.73
360000-390000	-	83.35	-	-	32.73
390000-420000	-	83.35	-	-	32.73
420000-450000	3.33	86.67	432000	8.48	41.21
450000-480000	3.33	90.01	479000	9.4	50.61
480000-510000	-	90.01	-	-	50.61
510000-540000	-	90.01	-	-	50.61
530000-570000	-	90.01	-	-	50.61
570000-600000	-	90.01	-	-	50.61
600000-630000	-	90.01	-	-	50.61
630000-660000	-	90.01	-	-	50.61
660000-690000	-	90.01	-	-	50.61
690000-720000	-	90.01	-	-	50.61
720000-750000	-	90.01	-	-	50.61
750000-780000	-	90.01	-	-	50.61
780000-810000	3.33	93.34	784000	15.39	66
810000-840000	-	93.34	-	-	66
840000-870000	3.33	96.67	854000	16.76	82.76
870000-900000	3.33	100	878000	17.24	100

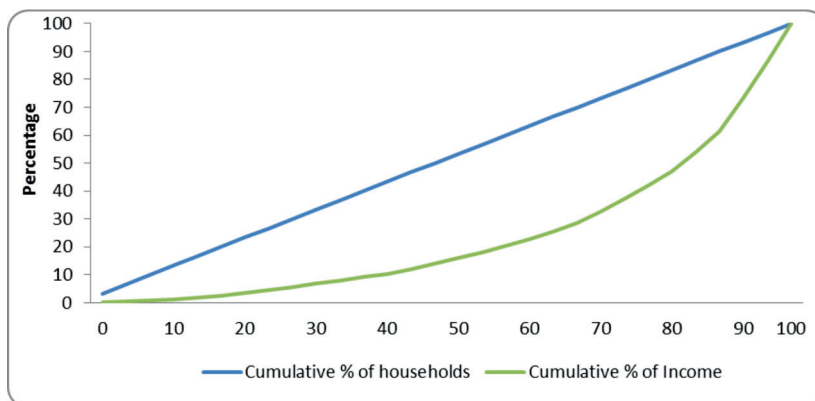
Table 6
Distribution of farmers according to income during 3rd year

Class intervals (Rs.)	Percentage of farmers	Cumulative Percentage of farmers	Average income per farmer (Rs.)	Percentage of aggregate income	Cumulative Percentage of income
0-30000	-	-	-	-	-
30000-60000	3.33	3.33	30000	0.56	0.56
60000-90000	13.35	16.68	82750	1.42	1.98
90000-120000	10	26.68	94666.66	1.62	3.6
120000-150000	13.35	40.1	129000	2.21	5.81
150000-180000	10	50.01	162000	2.81	8.62
180000-210000	3.33	53.34	207000	3.55	12.17
210000-240000	3.33	56.67	225000	3.86	16.03
240000-270000	10	66.67	254333.33	4.36	20.39
270000-300000	3.33	70	284000	4.87	25.26
300000-330000	-	70	-	-	25.26
330000-360000	3.33	73.33	336000	5.77	31.03
360000-390000	-	73.33	-	-	31.03
390000-420000	-	73.33	-	--	31.03
420000-450000	-	73.33	-	-	31.03
450000-480000	3.33	76.66	476000	8.17	39.2
480000-510000	-	76.66	-	-	39.2
510000-540000	3.33	79.99	537000	9.22	48.42
540000-570000	6.66	86.65	547000	9.4	57.82
570000-600000	-	86.65	-	-	57.82
600000-630000	-	86.65	-	-	57.82
630000-660000	-	86.65	-	-	57.82
660000-690000	-	86.65	-	-	57.82
690000-720000	-	86.65	-	-	57.82
720000-750000	3.33	89.98	742000	12.74	70.56
750000-780000	-	89.98	-	-	70.56
780000-810000	-	89.98	-	-	70.56
810000-840000	-	89.98	-	-	70.56
840000-870000	3.33	93.31	840000	14.42	84.98
870000-900000	6.66	100	877000	15.02	100

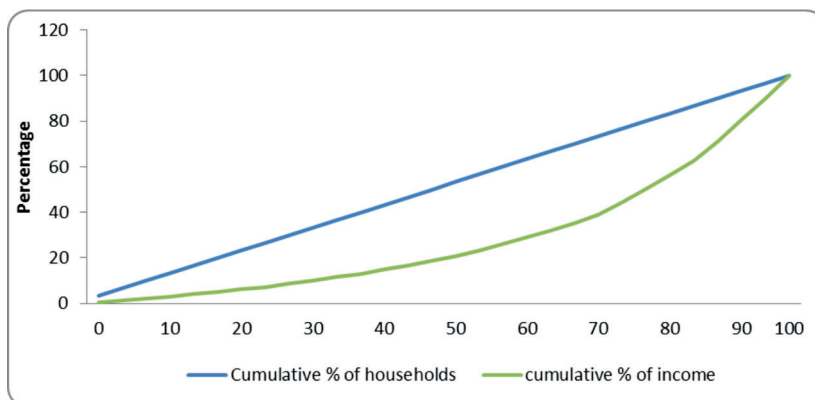
Fig 1.
Lorenz curve during first, second and third years



I YEAR



II YEAR



III YEAR

X-axis: cumulative % of income y-axis: cumulative % of households

analysis have amply demonstrated that income distribution patterns had improved with passage of time. In other words the income were more stable with passage of time in the pig rearing.

Quantification of measure of distribution of income

The Gini concentration ratios estimated to quantify the distribution of income showed that they were 0.6989 in the 1st year, 0.5353 in 2nd year and 0.4454 in the 3rd year (Table 7) revealing the decline in the extent of income inequalities among pig farmers with time. Similar trend was noted in the findings of Malya (1961), Santra (1970), and Rai (1972). The distribution pattern was also illustrated through Lorenz curves in Figure 1. The Lorenz curve was positioned relatively away from the equality line in the first year and it was relatively closer in the second and third year showing the reduction of income inequalities among the farmers which is a positive sign.

Table 7

Quantification of measure of distribution of income

	1st Year	2nd Year	3rd Year
GCR	0.6989	0.5353	0.4454

CONCLUSION

The RKVY programme was able to help the piggery beneficiaries to have an improved standard of living as revealed by the increased family expenditure in the second and third year. Since gross income tended to increase during the study period, the net incomes as well as savings increased by many fold in the third year compared with the first year. Another important yardstick i.e

income inequalities, they tended to decrease in second and third year over first year, among the beneficiaries. Overall the RKVY programme had brought in substantial improvement in the income and savings of the piggery beneficiaries that had positive impact on their socio economic status.

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