
FINANCIAL PERFORMANCE EVALUATION OF PRIMARY DAIRY CO-OPERATIVE SOCIETIES: A CASE STUDY OF GOA**Suraj M. Popker¹ and Prof. Guntur Anjana Raju²**Assistant Professor¹, CES College of Arts & Commerce, Cuncolim, Salcete, GoaProfessor and HOD², Department of Commerce, Goa University, Taleigao Plateau, Goa

ABSTRACT

Financial soundness of primary dairy co-operative enterprise is prerequisite for strong dairy co-operative movement in the state. The study entitle "Financial Performance Evaluation of Primary Dairy Co-operative Societies: A Case Study of Goa" has considered 90 dairy societies out of 176 and covers the period from 2000-01 to 2014-15. For the purpose of present study, 50 percent of societies are considered from each talukas and to analyses financial statements of the society's different financial ratios are employed. The study reveals that no dairy society under study has been classified as excellent society whereas nine PDCSs were classified as very good societies on the financial parameters and remaining 81 dairy society's performance was average according to 'Z' score. The study concludes that financial performance of primary dairy co-operative societies is average.

Key Words: Financial Performance, Primary dairy co-operative societies, Ratio analysis and 'Z' Scores.

INTRODUCTION

The financial statements are summarized reports of historical accounting transactions of a business. They are prepared for presenting a periodical review on the progress of a business and plays vital role in accounting, reporting and evaluating the performance of entities. Evaluation of financial performance demands financial analysis, which study relationship among the various financial factors in a business. The financial performance is the important aspect for the operation and survival of any business entity and is mainly concerned with the decision making ability of financial manager. Here financial manager plays important role in channelizing the funds in most profitable ventures, which call for financial analysis. The analysis of financial statements can be done by employing various tools such as: Comparative Financial Statement, Common-size Statement, Cash Flow Statement, Accounting Ratios, Funds Flow Statement etc. Ratio analysis is one of the important analytical tools employed to measure the financial health and profitability of a business entities. Accounting ratio explains relation between two figures or two sets of accounting heads contained in financial statements. A cautious investigation of the financial statements can reveal important inferences of business organization irrespective of type of organization. Since ratio analysis is one of the best ways of indicating business performance, the ratio analysis technique is employed to evaluate the financial performance primary dairy co-operative societies under study. In this paper entitle "Financial Performance Evaluation of Primary Dairy Co-operative Societies: A Case Study of Goa" is attempt to evaluate financial performance of 90 primary dairy societies out of 176 societies in the state of Goa.

REVIEW OF LITERATURE

A host of studies have been undertaken by the National Dairy Development Board, Institute of Rural Management, different scientists & economist on economic of dairy and dairy development as well as other study related could provide a frame of reference for the current study and serve as a point of departure for the future empirical research to verify available findings below some the earlier studies are outlined for quick overview.

Thomas, H. Stafford in his article titled "Financial Performance of Dairy Co-operatives" analyzed financial performance of dairy co-operatives. He collected financial data for financial year 1981, from 291 co-operatives and classified them in to five types of dairy co-operatives considering size and types of dairy societies for the purpose of analyses. The study uses ratio analysis for evaluating financial performance. The variables considered are: Equity funds, Liquid assets, Total Liabilities, Income from milk, Operating expense and Total Expenditure.

The study finds considerable variation in different ratios based on types and size of dairy co-operative. Study further finds that the average total liabilities to equity ratio for all the groups of dairy is 0.78; average operating ratio for all dairies is 2.16; average liquid assets ratio is 1.21:1 and average income from milk to total income is 0.69. The study therefore concludes that amount of equity in dairy co-operatives considering types and size of dairy varies considerably as compare to other ratios. **Kale, N. K. et.al.** in his research paper "An Economic Enquiry in to working of Dairy Co-operatives in the Coastal Area of Maharashtra", attempted to assess financial position, working and efficiency of dairy co-operative societies. The study considered 23 dairy co-operatives

and uses ratio analysis for evaluating performance. The variables considered are: Owned Funds, Borrowed Funds, Working Capital, and Gross Profit. The study finds that owned fund were at lower side and dairies were heavily depended on borrowed funds; study reveals that large proportion of income flow was from trading activities and that the working capital structure of the dairy co-operatives under study was poor and hence dairy co-operative were unable to make payments to its milk supplying farmers. **Claudia Parliament, Zvi Lerman, et.al.** in their research paper "Performance of Co-operatives and Investor- Owned Firms in the Dairy Industry", attempt to assess financial performance of dairy co-operatives. Their endeavor was to study performance in term of investors' funds by comparing it with liquidity, leverage, assets turnover and coverage ratio. The necessary data pertaining to study was obtained through financial statement for the period from 1976 to 1987. The study uses ratio analysis for evaluating performance. The study concludes that the performance of co-operatives enterprises under study was significantly better then investors owned firms in terms of liquidity, leverage, assets turnover and coverage ratio. Further, study finds that there was no significant difference in rate of return on equity on investors owned firms and co-operatives firms. **Ahuja Usha Rani, Rawat B.S. et.al.** in their study "Economic Appraisal of Milk Plants of Haryana and Rajasthan Dairy", attempted to analysed the economic viability of dairy federations. The study was based on secondary data covering period from 1970-71 to 1983-84. The data is analyzed by using financial ratios, cost benefits analysis and annuity method. According to study, both the milk federation show does not depict satisfactory result in term of cost and benefits analysis. The study reveals that Rajasthan milk plant shows better result in terms of financial performance as compare to Haryana plant. Further study concludes that average capital per litres and fixed investment in plant was very low in Rajasthan milk plant as compare to Haryana plant.

DATA AND METHODOLOGY

For the purpose of evaluating financial performance of primary dairy co-operative societies, the study has considered 90 dairy societies out of 176 and covers the period from 2000-01 to 2014-15. For the purpose of present study, 50 percent of societies are considered from each talukas and for selecting samples criteria considered are: that the primary dairy co-operative societies must be registered prior to 2000-01 with the Registrar of Societies and dairy societies must be regular in preparing their accounts and auditing the annual statements.

In this study some of the relevant financial ratios are employed to examine the financial performance of primary dairy co-operative societies like: i) Gross Profit Ratio, ii) Net Profit Ratio, iii) Operating Ratio, iv) Milk Income To Total Income, v) Fodder Income To Total Income, vi) Business Income to Total Income, vii) Turnover Ratio, viii) Ratio of Fixed Assets To Owned Funds, ix) Current Ratio, x) Liquid Ratio, xi) Proprietary Ratio and xii) Ratio of Equity To Total Funds (Refer Annexure-1).

Again, based on average ratio for the above period and based on the value of Primary Dairy Co-operative Societies (PDCSs) are classified into five categories, namely, Excellent, Very Good, Average, Below Average and poor by using following methodology: If 'X' is a normal random variable with Mean μ and standard deviation σ , then $Z = \frac{x-\mu}{\sigma}$ is a standard normal variate with zero mean and standard deviation = 1. First, z scores

for each ratio variable are calculated and then by using the concept of Standard Normal Cumulative Distribution the Primary Dairy Co-operative Societies (PDCSs) are classified as shown in the Table below. For negatively interpreted ratios the table is reversed.

Table no:1

Value of Z score	Category of PDCSs	Score allotted for Aggregation
Above 80 %	Excellent	5
Above 60 % to 80 %	Very Good	4
Above 40% to 60%	Average	3
Above 20% to 40%	Below Average	2
Below 20%	Poor	1

Scores of each of the ratio are then again averaged to obtain aggregate score for each financial ratio parameter. The with average score 4.5 and above are classified as excellent, with score between less than 4.5 to 3.5 are classified as very good, between 2.5 to less than 3.5 as average, those between 1.5 and less than 2.5 as below average and less than 1.5 as poor. Finally, average scores of each Primary Dairy Co-operative Societies financial ratio parameter are aggregated and averaged to obtain composite score for each of the Primary Dairy Co-operative Society. Based on this score final classification of Dairy Co-operative Societies (PDCSs) into five groups is done by same methodology specified above.

DATA ANALYSIS

Table no: 1 below gives average scores for each parameter like profitability ratios (Gross profit, net profit and Operating Ratio) ; income ratios (Income from Milk, Income from Fodder, Other income and Business income) and efficiency, liquidity and stability (Turnover Ratio, Fixed Assets to Owned Funds, Current Ratio, Liquid Ratio, Stock- Working Capital Ratio, Proprietary Ratio and Equity to Total Fund) , by averaging these overall scores based on 'Z' scores each primary dairy co-operative societies is classified as depicted in the Table no: 2 below as Excellent; Very Good; Average; Below Average and Poor on current ratio parameter. Refer Appendix 1.

Code No. DMUs/PDCs	NAMES OF DMUS / PDCSS	AVERAGE SCORES OF PROFITABILITY	AVERAGE SCORES OF INCOME RATIOS	AVERAGE SCORES OF EFFICIENCY, LIQUIDITY AND STABILITY	TOTAL SCORE
1	Sarvan Karapur , Bicholim	4.00	4.75	3.29	4.01
2	Abhinav Sahakari, Bicholim	3.67	5	3.14	3.94
3	Shree Sateri , Maulinge- Bicholim	3.67	5	3.14	3.94
4	Shree Bhumika , Sal - Bicholim	3.67	4.75	3.29	3.90
5	Dugdh Sindu , navelim - Bicholim	3.67	4.75	3.43	3.95
6	Kisaan Utkarsh , Kudney - Bicholim	3.67	4.5	3.43	3.87
7	Rudreshwar, Harvalem - Bicholim	4.33	5	3.14	4.16
8	Shree Krishna , Pilgao - Bicholim	3.67	4.75	3.43	3.95
9	Shree Mahamaya, Mayem - Bicholim	4.00	4.5	3.57	4.02
10	Gopal , Surla - Bicholim	3.67	4.5	3.86	4.01
11	Gopal , Virdi - Bicholim	3.67	4.75	3.14	3.85
12	Janata , Aamona - Bicholim	3.67	5	3.14	3.94
13	Shree Agondeshwar -Cancona	3.67	4.75	3.29	3.90
14	Shree Mallikarjun , Cancona	4.00	4	2.57	3.52
15	Shri laxminarayan - Cancona	4.33	5	3.43	4.25
16	Shree Mahadevo , Ozray - Pedne	4.33	5	3.00	4.11
17	Shree Hanuman, Nagzar - Pedne	4.00	5	3.29	4.10
18	Shree Sateri , Ibrampur - Pedne	4.67	5	3.00	4.22
19	Shree Bhagwat, Tuye - Pedne	3.67	5	3.57	4.08
20	Shree Jai Durga Mahila - Pedne	3.67	5	3.57	4.08
21	Shree Bhoomika , Palya - Pedne	3.67	5	2.86	3.84
22	Tambowsay ,Tambowsay - Pedne	4.33	5	3.29	4.21
23	shree Satpurush ,Morji - Pedne	4.00	5	3.29	4.10
24	Mauli, Virnoda - Pedne	3.67	5	3.14	3.94
25	Gokul Agarwada - Pedne	4.00	5	2.71	3.90
26	Shri Gayatri , Korgao - Pedne	4.33	5	3.00	4.11
27	Shree Mahadevo, Varkhan - Pedne	3.67	5	2.86	3.84
28	Shree Navadurga Borim - Ponda	3.00	4.75	2.86	3.54
29	Dhenu , Barazan Usgao - Ponda	3.67	4.75	2.71	3.71
30	Somnath, Kodar - Ponda	4.33	4.25	2.86	3.81
31	Shree Krushna , Madkai - Ponda	5.00	4.25	3.14	4.13
32	Pragati , Kapileshwar Ponda	5.00	4.25	2.43	3.89
33	Bandiwade , Bandiwade -Ponda	5.00	4.25	3.00	4.08
34	Shri Mahalaximi , Talavali -Ponda	5.00	3.25	2.57	3.61
35	Bataki , Bataki -Ponda	3.67	4.25	3.29	3.73
36	Shree Shantadurga , kumbharguvem -Ponda	5.00	4.25	3.43	4.23
37	Shri Sattya ,Savaiverm -Ponda	3.67	4.25	3.43	3.78
38	Threebhoovan , Mardola -Ponda	3.67	4.25	3.14	3.69
39	Shree Mahadav ,Btoeda -Ponda	3.67	4.25	2.86	3.59

40	Madhanand ,Savaiverem -Ponda	3.67	4.25	3.14	3.69
41	Gangeshwari , Ganja -Ponda	4.33	4.5	3.14	3.99
42	Navadurga , Kundai -Ponda	5.00	4.25	3.14	4.13
43	Molem , Molem - Sangem	3.67	5	3.86	4.17
44	Jaibhavani , Dharbandoda - Sangem	3.67	5	2.43	3.70
45	Shree shantadurga , Shegao - Sangem	4.00	5	3.43	4.14
46	Doodsager t, Shegao - Sangem	3.67	5	3.29	3.98
47	Vijaaya , Dharbandoda - Sangem	3.67	5	3.00	3.89
48	Shree Shiddhanath , Villiam Bhatti - Sangem	4.33	5	3.14	4.16
49	Gopalkrishna, Kalaya - Sangem	4.67	4.5	3.00	4.06
50	Shree Kalnath, Vandevi Kalaya - Sangem	3.67	5	3.43	4.03
51	Netravali , Netravali - Sangem	4.00	5	3.14	4.05
52	Rushivan , Rivana - Sangem	4.33	5	3.29	4.21
53	Sangem - Sangem	3.67	4.5	3.00	3.72
54	Lotolim Loutolim Salcete	4.33	4.5	4.14	4.33
55	Banavalim banavalim Salcete Goa	4.00	5	3.14	4.05
56	Shree Sateri Raia - Salcete	4.33	4.75	3.29	4.12
57	Veroda , Veroda Cuncolim - Salcete	3.67	4.75	3.00	3.81
58	Cuncolim , Saverkata Cuncolim - Salcete	4.67	5	2.71	4.13
59	Seraulim , Seraulim - Salcete	4.67	4.5	2.86	4.01
60	Shree Shantadurga , Cuncolim - Salcete	3.67	4.75	2.71	3.71
61	Chidambaram, Bambar - Sattari	4.00	4.25	3.29	3.85
62	Godhan , Riva - Sattari	3.67	4.25	3.29	3.73
63	Nagargao ,Nagargao - Sattari	4.00	4.25	3.43	3.89
64	Rambrasad , Khadaki - Sattari	4.33	4.25	3.71	4.10
65	Goverdhangopal, Bhoopal - Sattari	4.33	4.25	3.14	3.91
66	Naneli , Thane - Sattari	4.33	4.25	3.43	4.00
67	Masodem , Valpoi - Sattari	3.67	4.25	3.86	3.92
68	Shree Rudresh , Nanus - Sattari	3.67	5	3.57	4.08
69	Maus , Dhabay - Sattari	3.67	5	3.71	4.13
70	Sateri , Ravan Parya - Sattari	4.00	4.25	3.00	3.75
71	Gulayli , Paikulay Gulayli - Sattari	4.33	4.25	2.86	3.81
72	Shantadurga , Khatoday - Sattari	4.00	4.25	3.29	3.85
73	Bheeronda , Bheeronda - Sattari	3.67	4.25	3.14	3.69
74	Shri Bramadev , Bramakamali - Sattari	4.00	4.25	3.71	3.99
75	Somnath , Adnem -Quepem	4.33	5	3.14	4.16
76	Shree mallikarjun , cavrem- Quepem	4.33	5	3.17	4.17
77	Shri Bhumiipurish , Fatorpa - Quepem	4.67	4.5	3.43	4.20
78	Shantadurga, Balli - Quepem	4.33	5	3.00	4.11
79	Shree Sidhivinayak , Maina - Quepem	4.00	5	3.14	4.05
80	Shree Kital , mina - Quepem	4.00	5	3.00	4.00
81	Shree Sateri Mahamaya , Kotambi - Quepem	4.33	4.5	3.14	3.99
82	Kushaavati mahamaya , Shirvoi - Quepem	4.00	5	3.00	4.00
83	Wade , Kurdi - Quepem	3.67	4.75	3.86	4.09
84	Shubhalaxmi , Revoda - Bardez	4.00	5	3.00	4.00
85	Adarsh , Assnora - Bardez	3.67	4.75	2.86	3.76
86	Jai Shantoshi Mahila t, Sangold - Bardez	4.00	5	3.43	4.14
87	Shree Prabhu Bhagawati Mahila , Kamurli - Bardez	4.00	5	3.29	4.10
88	Pirna Sahakar, Pirna - Bardez	4.00	5	2.86	3.95
89	Chudamani , Chodan- Tiswadi	3.67	4.5	3.29	3.82
90	Shree Sateri Sahakari Dudh Utpadak Saunsthan Mayadit, Dhulpi-Tiswadi	3.67	4.5	2.86	3.67
Compiled & Calculated from PDCSs annual financial statement					

Prof Profitability is assessed by the three ratios namely gross profit ratio, net profit ratio and operating ratio. On the basis of the ratio average profitability the average score is depicted in above table no: 2. According to

profitability parameter, determined with the help of 'Z' score it is reveals that PDCSs namely Shree Mahamaya Utpadak Saunsthan Mayadit, Mayem - Bicholim; Gopal Utpadak Saunsthan Mayadit, Surla – Bicholim; Shree Bhagwati Sahakari Dudh Utpadak Saunsthan Mayadit, Tuye – Pedne; Shree Jai Durga Mahila Sahakari Dudh Utpadak Saunsthan Mayadit, Torsay – Pedn; Masodem Dudh Utpadak Saunsthan Mayadit, Valpoi - Sattari; Shree Rudresh Dudh Utpadak Saunsthan Mayadit, Nanus - Sattari; Maus Dudh Utpadak Saunsthan Mayadit, Dhabay - Sattari; Shri Bramadev Dudh Utpadak Saunsthan Mayadit, Bramakamali - Sattari and Wade Dudh Utpadak saustha maryadit, Kurdi - Quepem has shown excellent performance. In case of remaining 81 PDCSs it has shown average performance in terms of profitability. The study also reveals that no PDCSs were classified as excellent dairy society and further no societies were found in below average and poor category.

Under income analysis four different ratios namely income from milk; income from fodder; income from other source and business income were considered. The performance analysis as depicted in above table no: 2 reveal that 66 PDCSs out of 90 society's performance was excellent whereas 24 PDCSs has classified as very good societies on the income parameter.

Efficiency, Liquidity and Stability is assessed by seven ratios namely turnover ratio; fixed assets to owned funds ratio; current ratio; liquid ratio; stock-working capital ratio; proprietary ratio and equity ratio. According to the analysis depicted in the table no 2 three PDCSs namely Shree Hanuman Sahakari Dudh Utpadak Saunsthan Mayadit, Nagzar – Pedne; Pragati Sahakari Dudh Utpadak Saunsthan Mayadit, Kapileshwar Ponda and Jaibhavani Dudh Utpadak Saunsthan Mayadit, dharbandoda - Sangem has performance below average. Whereas eleven PDCSs namely Shree Mahamaya Utpadak Saunsthan Mayadit, Mayem – Bicholim; Gopal Utpadak Saunsthan Mayadit, Surla – Bicholim; Shree Bhagwati Sahakari Dudh Utpadak Saunsthan Mayadit, Tuye – Pedne; Shree Jai Durga Mahila Sahakari Dudh Utpadak Saunsthan Mayadit, Torsay – Pedne; Molem Dudh Utpadak Saunsthan Mayadit, Molem - Sangem; Rambrasad Dudh Utpadak Saunsthan Mayadit, Khadaki - Sattari; Masodem Dudh Utpadak Saunsthan Mayadit, Valpoi - Sattar; Masodem Dudh Utpadak Saunsthan Mayadit, Valpoi - Sattari; Shree Rudresh Dudh Utpadak Saunsthan Mayadit, Nanus - Sattar; Maus Dudh Utpadak Saunsthan Mayadit, Dhabay - Sattar; Shri Bramadev Dudh Utpadak Saunsthan Mayadit, Bramakamali - Sattari and Wade Dudh Utpadak saustha maryadit, Kurdi – Quepem shows very good performance and remaining 76 PDCSs performance in terms of efficiency, liquidity and stability was average.

CLASSIFICATION	NAMES OF PDCS/DMU CODE NUMBER	NUMBER OF PDCSs
Excellent	No DMUs/PDCS falls under excellent category	NIL
Very Good	Code no. DMUs/PDCs fall under very good category are: 9, 10,19,20,67,68,69,74 and 83.	9
Average	DMUs/PDCSs fall under average category are:	81
Below Average	No DMUs/PDCSs fall under below average category.	NIL
Poor	No DMUs/PDCSs fall under Poor category	NIL

According to overall grading of PDCSs as depicted in above table no: 3 no dairy society under study consideration has been classified as excellent society whereas nine PDCSs namely Shree Mahamaya Utpadak Saunsthan Mayadit, Mayem – Bicholim; Gopal Utpadak Saunsthan Mayadit, Surla – Bicholim; Shree Bhagwati Sahakari Dudh Utpadak Saunsthan Mayadit, Tuye – Pedne; Shree Jai Durga Mahila Sahakari Dudh Utpadak Saunsthan Mayadit, Torsay – Pedne; Masodem Dudh Utpadak Saunsthan Mayadit, Valpoi - Sattar; Shree Rudresh Dudh Utpadak Saunsthan Mayadit, Nanus - Sattari; Maus Dudh Utpadak Saunsthan Mayadit, Dhabay - Sattari; Shri Bramadev Dudh Utpadak Saunsthan Mayadit, Bramakamali - Sattari and Wade Dudh Utpadak saustha maryadit, Kurdi – Quepem classified as very good and remaining 81 dairy societies were classified as average societies on overall grading under 'z' scores parameters.

CONCLUSION

Present study relies mainly on ratio analysis which has many limitations. Some of these limitations are: firstly, it is difficult to generalize about whether a particular ratio is "good" or "bad"; secondly, large many enterprises use "window dressing techniques" to make their financial statements look stronger; thirdly, a firm may have some ratios looking "good" and others looking "bad" making it difficult to tell whether the enterprises is, on balance, strong or weak. However, according to 'Z' scores parameter the study concludes that no dairy society under study has been classified as excellent society whereas nine PDCSs classified as very good and remaining 81 dairy societies were classified as average societies.

ANNEXTURE

ANNEXTURE-1
AVERAGE RATIOS OF THE PDCS FOR THE PERIOD 2000-01 TO 2014-15

DMU's CODE NUMBERS	Gross Profit Ratio	Net Profit Ratio	Operating Ratio	Milk Income To Total Income	Fodder Income To Total Income	Other Income To Total Income	Business Income To Total Income	Turnover Ratio	Ratio Of Fixed Assets To Owned Funds	Current Ratio	Liquid Ratio	Stock-Working Capital Ratio	Proprietary Ratio	Equity To Total Fund
1	7.70	6.13	1.57	64.53	0.83	34.68	65.35	4.09	0.10	1.72	0.52	0.07	0.61	0.61
2	11.58	8.04	3.54	69.57	1.43	29.00	71.00	2.10	0.25	2.97	0.73	0.01	0.76	0.02
3	15.78	10.71	5.08	60.79	1.72	37.49	62.51	2.66	0.07	1.90	1.65	0.01	0.65	0.07
4	15.89	9.40	6.49	59.35	0.85	39.80	60.20	2.26	0.12	2.07	1.45	0.00	0.72	0.04
5	16.44	9.83	7.46	47.68	1.18	51.15	48.85	1.82	0.08	6.46	1.85	0.00	0.69	0.07
6	16.01	6.38	7.65	73.80	0.64	25.55	74.45	2.77	0.10	2.23	1.19	0.00	0.65	0.09
7	5.41	4.23	1.32	69.35	2.39	28.26	71.74	7.50	0.10	1.94	1.23	0.02	0.50	0.06
8	12.27	9.59	2.69	72.09	1.08	26.83	73.17	3.14	0.12	2.41	1.15	0.05	0.63	0.06
9	10.81	8.89	1.92	17.59	0.13	82.28	17.72	2.82	0.08	2.76	1.26	0.00	0.70	0.04
10	15.85	11.75	4.11	12.87	0.28	86.85	13.15	2.17	0.87	4.55	2.56	0.02	0.66	0.04
11	11.85	9.08	2.78	71.74	0.98	27.27	72.73	3.15	0.08	1.68	0.80	0.02	0.64	0.06
12	12.13	7.56	4.57	62.51	2.11	35.38	64.62	2.07	0.23	2.23	1.20	0.01	0.70	0.04
13	10.59	6.59	4.00	77.34	1.24	21.43	78.57	4.94	0.14	0.94	2.55	0.00	0.59	0.11
14	5.75	3.83	1.92	122.64	2.20	-24.84	124.84	4.52	0.54	1.91	0.91	0.01	0.65	0.02
15	5.58	4.07	1.50	69.84	11.57	18.59	81.41	4.88	0.48	1.91	1.78	0.01	0.62	0.04
16	6.69	5.46	1.23	79.70	2.63	17.67	82.33	11.05	0.11	1.44	1.20	0.01	0.45	0.01
17	10.40	11.10	2.11	72.77	1.32	25.90	74.10	3.19	0.06	0.72	2.72	0.00	0.62	0.05
18	6.67	4.38	1.06	72.03	2.69	25.28	74.72	8.80	0.07	1.12	1.10	0.01	0.56	0.03
19	9.78	9.51	2.13	64.26	2.08	33.66	66.34	6.75	0.19	1.09	2.80	0.03	0.52	0.15
20	7.70	5.86	2.29	73.18	1.45	25.37	74.63	4.30	0.32	2.95	1.45	0.09	0.67	0.02
21	8.68	6.56	2.45	72.73	1.67	25.61	74.39	4.04	0.12	0.60	0.87	0.09	0.62	0.04
22	6.09	4.46	1.32	76.72	1.39	21.89	78.11	5.94	0.36	1.21	1.71	0.00	0.63	0.03
23	6.98	6.40	2.13	65.30	2.18	32.52	67.48	3.27	0.19	0.98	2.04	0.02	0.72	0.03
24	8.72	3.59	2.43	74.20	2.03	23.78	76.22	4.92	0.08	1.06	1.09	0.03	0.67	0.03
25	7.99	3.84	1.59	80.03	4.37	15.60	84.40	9.02	0.49	0.84	0.78	0.00	0.56	0.06
26	8.30	7.23	1.07	73.53	2.66	23.81	76.19	6.62	0.08	0.88	1.77	0.01	0.56	0.03
27	12.06	9.42	2.64	56.99	1.70	41.31	58.69	2.33	0.07	1.49	0.90	0.02	0.70	0.06
28	2.15	6.15	2.00	5.81	1.02	21.90	78.10	3.02	0.59	1.23	1.21	0.96	0.58	0.05
29	12.27	3.01	3.45	78.35	1.24	20.41	79.59	2.40	0.11	1.50	1.14	1.02	0.66	0.09
30	6.28	4.97	1.31	75.54	0.02	22.82	77.18	5.88	0.25	1.49	0.83	0.04	0.57	0.04
31	18.31	17.13	0.01	25.64	0.01	73.48	26.52	4.15	0.95	1.51	0.29	0.08	0.41	0.05
32	12.62	8.70	0.04	71.65	0.01	27.65	72.35	2.07	0.07	1.22	0.57	0.66	0.65	0.03
33	5.13	3.65	0.01	72.28	0.06	21.55	78.45	7.92	0.16	1.06	0.56	0.08	0.61	0.04
34	8.59	14.73	0.07	0.50	0.24	1.46	76.36	1.47	1.11	1.19	0.53	0.09	0.59	0.10
35	7.41	5.20	2.21	70.92	0.02	27.20	72.80	3.88	0.21	2.12	0.52	0.05	0.64	0.05
36	10.82	7.91	0.03	76.36	0.01	22.97	77.03	3.50	0.05	2.34	1.15	0.03	0.65	0.02
37	10.20	5.95	11.57	75.62	0.05	19.28	80.72	3.10	0.74	1.92	0.65	0.08	0.49	0.02
38	10.37	8.04	2.33	63.22	0.02	35.25	64.75	3.47	0.75	1.06	0.59	0.05	0.62	0.02
39	4.22	2.43	1.79	73.88	0.01	25.01	74.99	3.52	0.36	1.50	0.73	0.19	0.60	0.03
40	6.61	4.07	2.53	78.46	0.02	25.01	79.96	4.65	0.12	1.66	1.08	0.02	0.61	0.08
41	6.70	5.42	1.28	68.60	0.68	20.04	69.28	6.21	0.56	1.70	0.66	0.05	0.48	0.03
42	5.63	2.94	0.03	64.25	0.02	33.29	66.71	2.89	0.09	2.02	0.98	0.08	0.67	0.06
43	10.44	7.45	2.99	69.44	3.10	27.46	72.54	7.24	13.01	2.47	0.52	0.05	0.45	9.15
44	11.29	5.53	5.76	69.88	7.84	22.28	77.72	3.01	0.43	0.59	0.71	0.66	0.60	0.05
45	18.36	16.30	2.06	49.20	2.88	43.21	52.08	11.59	0.32	1.31	2.15	0.01	0.35	0.09
46	22.84	20.57	2.27	60.64	5.08	33.38	65.73	5.18	0.67	1.37	0.91	0.00	0.35	0.03
47	9.52	6.38	3.14	78.16	1.59	19.89	79.75	3.26	0.16	0.85	0.45	0.04	0.55	0.03
48	4.84	3.74	1.10	67.72	1.32	30.96	69.04	9.89	0.23	1.19	0.56	0.02	0.51	0.03
49	10.75	9.69	1.06	56.20	0.55	43.25	56.75	2.96	0.07	0.80	1.03	0.00	0.66	0.02
50	19.71	16.89	2.82	58.88	3.32	37.80	62.20	8.29	0.45	2.43	0.72	0.01	0.21	0.09
51	10.76	9.11	1.66	72.22	3.40	24.38	75.62	7.04	0.78	0.89	0.96	0.01	0.47	0.05
52	12.07	10.68	1.39	74.13	2.30	23.57	76.43	4.01	0.01	2.52	0.65	0.00	0.60	0.03
53	13.67	10.51	3.15	51.95	0.54	47.50	52.50	2.89	0.11	0.79	0.76	0.11	0.53	0.06
54	14.21	12.65	1.56	77.19	0.27	22.54	77.46	7.36	0.25	3.55	3.13	0.00	0.43	1.05
55	10.84	8.79	2.10	69.28	33.99	26.49	73.51	5.63	0.11	0.75	1.31	0.01	0.46	1.07
56	6.48	5.06	1.42	73.14	0.86	26.01	73.99	5.44	0.33	0.91	2.21	0.00	0.67	0.02
57	8.16	5.45	2.72	55.75	0.95	43.30	56.70	1.90	0.36	2.03	1.28	0.02	0.74	0.04
58	3.08	2.13	0.96	59.17	4.87	35.96	64.04	10.14	0.10	0.82	1.18	0.14	0.60	0.03
59	5.72	4.88	0.84	69.29	0.52	30.19	69.81	7.29	0.23	1.01	0.61	0.02	0.54	0.02

60	9.66	6.49	3.16	70.69	0.85	28.46	71.54	2.56	0.07	1.34	0.61	0.43	0.67	0.001
61	7.45	4.91	2.11	64.57	0.04	31.71	68.29	7.10	0.40	1.13	0.97	0.03	0.50	5.40
62	6.44	4.22	2.22	81.15	0.02	17.24	82.76	6.15	0.90	0.73	0.65	0.07	0.40	4.50
63	7.27	5.35	1.92	67.51	0.03	17.35	84.87	5.88	0.46	1.97	1.02	0.04	0.54	7.02
64	6.67	5.18	1.49	78.42	0.03	19.05	100.22	6.24	0.11	2.94	0.99	0.03	0.55	3.10
65	2.44	1.71	0.01	61.09	0.09	33.16	66.84	16.21	0.09	1.62	0.48	0.08	0.46	0.27
66	3.76	2.67	1.08	74.56	0.04	21.32	78.68	11.54	0.35	1.65	0.98	0.11	0.49	8.59
67	11.40	8.30	3.09	75.00	0.02	22.87	77.13	3.49	0.10	2.31	1.48	0.02	0.66	5.18
68	7.04	4.88	2.16	69.88	2.69	27.43	72.57	8.61	0.37	2.24	0.99	0.02	0.50	5.63
69	7.22	4.89	2.33	73.46	1.89	24.65	75.35	4.97	0.19	2.09	1.54	0.01	0.55	9.58
70	8.12	6.41	1.71	74.38	0.02	23.76	76.11	6.35	0.17	1.91	0.53	0.03	0.51	0.05
71	6.28	4.85	1.44	64.83	0.03	59.02	68.29	5.36	0.19	1.47	0.74	-0.02	0.51	0.06
72	9.38	7.50	1.87	67.04	0.04	65.44	70.60	3.67	0.04	1.68	1.88	0.01	0.66	0.09
73	9.00	1.77	3.28	68.88	0.01	29.75	70.25	2.08	0.06	0.79	1.38	0.03	0.73	10.57
74	8.79	6.82	1.97	69.03	0.04	27.19	72.81	4.04	0.12	0.83	2.86	0.04	0.56	6.35
75	6.90	5.76	1.14	64.45	2.15	33.40	66.60	3.60	0.10	0.81	1.72	0.01	0.67	0.02
76	5.74	4.50	1.24	58.49	2.44	39.07	60.93	4.18	0.34	1.31	0.74	0.01	0.64	0.02
77	19.64	18.85	0.79	24.32	0.48	75.20	24.80	6.55	0.02	2.75	1.11	0.07	0.42	0.14
78	12.44	11.07	1.36	59.60	2.84	37.56	62.44	3.89	0.11	1.17	1.67	0.01	0.57	0.04
79	8.11	6.23	1.88	72.32	1.60	26.08	73.92	5.98	0.60	1.97	1.04	0.01	0.49	0.00
80	5.83	3.87	1.96	73.88	1.38	24.74	75.26	8.48	0.22	1.14	1.39	0.02	0.51	0.11
81	7.77	6.57	1.20	76.47	0.58	22.95	77.05	6.89	0.56	1.15	1.63	0.01	0.47	0.03
82	2.62	0.62	2.00	68.23	1.32	30.44	69.56	4.03	0.42	0.71	1.42	0.03	0.74	0.06
83	8.01	5.34	2.67	75.56	1.16	23.29	76.71	3.49	0.68	3.22	1.91	0.00	0.69	0.02
84	6.23	4.35	1.87	76.38	2.50	21.12	78.88	4.41	0.37	0.91	1.19	0.01	0.62	0.02
85	11.62	8.09	3.52	74.88	0.78	24.34	75.66	3.14	0.11	0.77	0.87	0.04	0.68	0.02
86	8.36	6.47	1.88	64.82	3.84	31.34	68.66	9.81	0.29	1.54	2.10	0.02	0.38	0.19
87	5.05	3.32	1.73	66.57	3.29	30.14	69.86	3.58	0.06	1.85	1.63	0.05	0.72	0.03
88	7.46	5.90	1.57	66.73	2.23	31.04	68.96	4.25	0.15	0.67	0.79	0.09	0.63	0.02
89	19.19	14.64	4.55	85.68	0.22	14.10	85.90	2.29	1.02	0.80	2.10	0.01	0.64	0.08
90	9.36	5.44	3.91	72.91	0.35	26.74	73.26	3.70	0.13	0.43	0.84	0.05	0.61	0.07
AVG	9.43	6.75	2.31	66.34	1.83	30.08	70.48	5.05	0.42	1.62	1.21	0.07	0.58	0.91
STD	4.19	4.40	1.76	16.79	3.86	15.25	14.52	2.70	1.36	0.91	0.62	0.18	0.10	2.36

Compiled & Calculated from PDCSs Annual Statement.

AVG: Mean

STD : Standard Deviation

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IMPACT OF AGRICULTURE INSURANCE SCHEME ON FARMING UNDER DIFFERENT SOURCES OF IRRIGATION IN ANDHRA PRADESH

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ABSTRACT

The economy of Andhra Pradesh State is basically an agrarian in character. Ironically the percentage of irrigated area is only 40 per cent. Total irrigated area has decreased from 48.54 lakh hectares to 41.54 lakh hectares from 2008-09 to 2013-14. The reasons for poor productivity might be owing to the intensive dependency on poor monsoon conditions prevailing in India in addition to severely impacted by its vagaries and attacked by pests and diseases. Due to these poorly manageable controllable risks on the one hand and uncontrollable extraneous perils on the other hand made agriculture as risky enterprise. Hence now-a-days agriculture makes the farmers more vulnerable to impoverishments; debt traps and destitution resulting farmers to commit suicides on their ravaged fields. So there is a dire need to have some measures to hedge their risks against all sorts of uncertainties in the present scenario. The emergence of Crop Insurance is one amongst in the direction to anchor a stable growth of agriculture produce to agriculturists. In this backdrop the study of Modern National Agriculture Insurance Scheme (MNAIS) in Andhra Pradesh is more significant and its role in improving the operational performance of Indian farmers is commendable. The study further intends to compare the MNAIS scheme with other schemes of similar nature and suggests modifications to the scheme for attaining best risk hedging results to the Indian farmers.

Key words: MNAIS, Insurance, Premium, Subsidy. Claims

INTRODUCTION

India is an agricultural country. The Indian economy is basically agrarian. Agriculture is the backbone of the Indian economy. As Mahatma Gandhi said, "India lives in villages and agriculture is the soul of Indian economy". Nearly two-thirds of its population depends directly on agriculture for its livelihood. Agriculture is the main stay of India's economy. But agriculture sector has been continuously falling from 55.1% in 1950-51 to 37.6% in 1981-82 & further to 18.5% in 2006-07. But agriculture still continues to be the main sector because it provides livelihood to a majority of the people. In 1951, 69.5% of the working population was engaged in agriculture. This percentage fell to 66.9% in 1991 & to 56.7% in 2001. However, with rapid increase in population the absolute number of people engaged in agriculture has become exceedingly large.

The above importance of agriculture in India is one side of the coin and the another side, agriculture is an uncertain business because this sector is dependent largely on the weather and is severely impacted by its vagaries as also by attack of pests and diseases. These unpredictable and uncontrollable extraneous perils render Indian agricultural and extremely risky enterprise, so this main employment provider and the backbone of Indian economy, is requires the most care and protection against all sort of uncertainties.

NEED FOR CROP INSURANCE

Crop insurance is one alternative to manage risk in yield loss by the farmers. It is the mechanism to reduce the impact of income loss on the farmer (family and farming). Crop insurance is a means of protecting farmers against the variations in yield resulting from uncertainty of practically all natural factors beyond their control such as rainfall (drought or excess rainfall), flood, hails, other weather variables (temperature, sunlight, wind), pest infestation, etc. (1 & 3). Crop insurance is a financial mechanism to minimize the impact of loss in farm income by factoring in a large number of uncertainties which affect the crop yields. As such it is a risk management alternative where production risk is transferred to another party at a cost called premium. The weather based crop insurance uses weather parameters as proxy for crop yield in compensating the cultivators for deemed crop losses (4). It provides a good alternative both to farmers and government. Farmers get on actuarially fair insurance with swift payments at little administrative costs to the government (5).

Rainfall insurance is a specific form of weather insurance. As such weather insurance is not yield insurance while crop insurance is. In both the cases cultivators pass risk in yield to another party for a premium. The insurance need for agriculture, therefore, can not be over emphasized as it is a highly risky economic activity because of its dependence on weather conditions. To design and implement an appropriate insurance programme for agriculture is therefore very complex and challenging task. There are two approaches to crop insurance, namely, individual approach where yield loss on individual farms forms the basis for indemnity payment, and homogeneous area approach where a homogeneous crop area is taken as a unit for assessment of

yield and payment of indemnity. In both the cases reliable and dependable yield data for past 8-10 years are needed for fixing premium on actuarially sound basis. Homogeneous area approach has the advantage of availability of data on yield variations.

The government of India, having historically focused on crop insurance as a planned mechanism to mitigate the risks of natural peril on farm production, is responsible for the world's largest crop insurance program with 25 million farmers insured. The national agriculture insurance scheme (NAIS) is the main crop insurance program in the country, it is started in the year 1999.

CROP INSURANCE PROGRAMMES IN INDIA

1. First Ever-Individual Approach Scheme
2. Pilot Crop Insurance Scheme (PCIS) – 1979
3. Comprehensive Crop Insurance Scheme (CCIS)
4. Experimental Crop Insurance Scheme (ECIS)
5. Pilot Project on Farm Income Insurance Scheme
6. Sookha Suraksha Kavack (Drought Risk Insurance)

7. Products in the Market

- 7.1. National Agricultural Insurance Scheme
- 7.2. Weather Based Crop Insurance Scheme
- 7.3. Varsha Bima-2005
- 7.4. Rabi Weather Insurance
- 7.5. Kharif Weather Insurance

MODIFIED NATIONAL AGRICULTURE INSURANCE SCHEME

In the year 2010, the Government approved some new changes in NAIS renaming it as the *Modified National Agriculture Insurance Scheme* or MNAIS. This new Insurance Scheme which is yet to be implemented embraced provisions like – reducing the insurance unit to village panchayat level and Provide insurance coverage and financial support to the farmers in the event of failure of any of the notified crop as a result of natural calamities, pests & diseases, encourage the farmers to adopt progressive farming practices, high value inputs and higher technology in Agriculture and to help stabilize farm incomes, particularly in disaster years are main aims of these schemes. In this regard the study on MNAIS (modified national agriculture insurance scheme) in India having more significant.

REVIEW OF LITERATURE

1. According to Raju and Ramess (2008) NAIS having limited coverage in different years 1999-2000 to 2005-2006 NAIS covered 9 to 15% farmers, 8 to 16 crop area and 2.14 to 3.57% crop output in terms of money.
2. Debdatta PAL & Tomojit (2010) stated that this scheme would also ensure quick settlement of claim attributed to the independently monitored weather indices besides protecting farmers for overall income rather than crop specific yield.
3. It is believed that these index based schemes are much more efficient than earlier indemnity based insurance schemes. However, implementing both area yield as well as weather index insurance face the huge challenge of inherent risk involved in these mechanisms.
4. It is argued that farmers' own measures to reduce the risk in farming in semi-arid tropical India were costly and relatively ineffective in reducing risk in farming and to adjust to drought and scarcity conditions. The riskiness of farming impinges upon the investment in agriculture leading to sub-optimal allocation of resources (Jodha 1978). Jodha finds that official credit institutions are ill equipped to reduce the exposure of Indian farmers to risks because they cannot or do not provide consumption loans to drought-affected farmers.
5. It absorbs the shock of crop failure by providing cushion wherein farmer is assured of minimum protection against various natural calamities. Moreover, crop insurance provides right to seek compensation rather than requesting for gratis from the government in the event of crop failures. Thus, crop insurance will help maintain

the dignity of the farmer. Even in the years of crop failures, crop insurance assures farmers decent living from their own efforts and not by charity (Ahsan 1985).

6. In India, more than two third of the land holdings are less than 2 hectares. The average size of holding is less than 1.55 hectares and more than half of the arable area is rain-fed and output from agriculture is largely conditioned by the monsoon. A properly designed and implemented crop insurance programme will protect the numerous vulnerable small and marginal farmers from hardship, bring in stability in the farm incomes and increase the farm production (Bhende 2002).

However, the existing model reduces the burden of debt repayment in the event of crop failures and it neither provides any help to meet the consumption needs nor augment income due to crop loss. The present scheme helps to sustain the viability of the credit institutions rather than the farmers. Nevertheless crop insurance enhances the confidence of the farmers and encourages adoption of improved technology and investment in agriculture.

Richards (2000) has studied crop insurance proposals concerned with reforms in the US federal Multiple-Peril Crop Insurance Program for specialty crops. It has raised concerns that a higher cost for catastrophic-level coverage would significantly reduce program participation. The demand estimates for three levels of insurance coverage (50%, 65%, 75%) based on aggregate data from grape producers in 11 California counties for the period 1986-96 indicated that the

SIGNIFICANCE OF THE STUDY

The economy of Andhra Pradesh State is basically an agrarian in character. Ironically the percentage of irrigated area is only 40 per cent. Total irrigated area has decreased from 48.54 lakh hectares to 41.54 lakh hectares from 2008-09 to 2013-14. The reasons for poor productivity might be owing to the intensive dependency on poor monsoon conditions prevailing in India in addition to severely impacted by its vagaries and attacked by pests and diseases. Due to these poorly manageable controllable risks on the one hand and uncontrollable extraneous perils on the other hand made agriculture as risky enterprise. Hence now-a-days agriculture makes the farmers more vulnerable to impoverishments; debt traps and destitution resulting farmers to commit suicides on their ravaged fields. So there is a dire need to have some measures to hedge their risks against all sorts of uncertainties in the present scenario. The emergence of Crop Insurance is one amongst in the direction to anchor a stable growth of agriculture produce to agriculturists. In this backdrop the study of Modified National Agriculture Insurance Scheme (MNAIS) in Andhra Pradesh is more significant.

OBJECTIVE OF THE STUDY

- To examine the operational performance of existing Modified National Agriculture Insurance scheme in Andhra Pradesh.
- To assess impact of MNAI programme on farmers' in Andhra Pradesh

METHODOLOGY

The data collected from primary as well as secondary sources of information. The primary data collected from the field survey and secondary data collected from government of India official websites <http://www.aicindia.com/AICEng/pages/default.aspx>. Simple statistical tools like percentages and averages are used to analyze data. Purposive random sampling method is used in the present study.

The sample consists of 250 farms covering an extent of 702 acres of irrigation under the canal sources for rice in the Guntur district of Andhra Pradesh state.

OPERATIONAL PERFORMANCE OF MNAIS IN ANDHRA PRADESH

For the analysis of operational performance of existing agriculture insurance scheme in Andhra Pradesh, we made attempt to registered farmers and business statistics under MNAIS from rabi 2010-11 to khariff 2013-14 for 7 seasons in two dimensions.

FARMER DIMENSION

The table- 1 shows the details of top five ranker states' registered farmers and insured area under the program of MNAI in India. In no of registered farmers under MNAI Rajasthan state stands at first position with 31.79% followed by Andhra Pradesh with 15.78%, West Bengal with 11.47%, Uttar Pradesh with 11.25%, Behar with 11.14%. In covered insured area as usually Rajasthan and Andhra Pradesh stands for first and second positions with 32.48% and 16.47% and followed by Bihar with 11.84%, Uttar Pradesh with 10.52%, West Bengal with 3.48% respectively. In the subject of benefitted farmers in this program, surprisingly Andhra Pradesh state stands at first position with 28.765% followed by Rajasthan with 16.16%, Uttar Pradesh with 13.76%, West Bengal with 8.75%, Bihar with 5.80% respectively.

Table – 1

MNAIS – Benefited Farming Statistics from Rabi 2010-11 to Kharif 2013-14 i.e., For 7 Seasons (As On 09.07.2014) Top 5 States In India
(In '000')

Sr. No	States and UTs	No of Farmers Covered	%	Area Insured	%	No of Farmers Benefited	%
1	Rajasthan	2385.64	31.79	2568.13	32.48	168.82	16.16
2	Andhra Pradesh	1184.12	15.78	1302.75	16.47	300.37	28.76
3	West Bengal	861.39	11.47	293.51	3.71	91.45	8.75
4	Uttar Pradesh	840.84	11.20	832.41	10.52	143.81	13.76
5	Bihar	836.41	11.14	936.30	11.84	60.66	5.80
	Total	6108.4	81.40	5933.10	75.03	765.11	73.25
	All India	7503.82	100.00	7906.62	100.00	1044.40	100.00

Source: <http://www.aic india.com/AICEng/pages/default.aspx>

At over all India level, these five ranked states covered 81.40 % of registered farmers, 75.03 % of area insured and 73.25 % benefited farmers under this programme. Finally the study find that Andhra Pradesh state's farmers who are insured their irrigated area under MNAI programme, highly benefitted among the five ranked states India, (nearly 20% of registered farmers, 21% area insured and 39.26% benefitted farmers).

Table - 2

MNAIS – Benefited Farming Statistics for Kharif (As On 09.07.2014) in Andhra Pradesh
(In '000')

Kharif						
Years	No of Farmers	%	Hectors	%	No of farmer beneficiaries	%
2011	39568	3.92	53076	5.17	4640	0.92
2012	493054	48.92	493108.45	48.08	277140	54.95
2013	475324	47.16	479312.68	46.75	222578	44.13
Total	1007946	100.00	1025496.87	100.00	504358	100.00
Rabi						
2010-11	54195	31.87	65217	29.01	1594	8.18
2011- 12	58602	34.46	89904	39.99	12492	64.10
2012- 13	35364	20.79	43093.10	19.17	5403	27.72
2013-14	21910	12.88	26587.16	11.83	-	-
Total	170071	100.00	224800.27	100.00	100.00	100.00

Source: <http://www.aic india.com/AICEng/pages/default.aspx>

The above table -2 shows the year wise and season details of registered farmers, their insured area and benefited farmers (from 2011 to 2013 for Kharif season and 2010- 11 to 2014 for Rabi season) in Andhra Pradesh state. It is very clear that more number of farmers involved and benefitted under this program in 2012 for khariff season with 48.92%, 48.08% and 54.955 respectively and 2011- 12 for Rabi season with 34.46%, 39.99% and 64.10% respectively.. Finally it is find that after 2012 Kharif season and 2011-12 Rabi season, formers are not interested on crop insurance.

BUSINESS DIMENTION

In case of sum insured Andhra Pradesh state stands first position with 28.38% followed by Rajasthan with 14.87%, West Bengal 13.24%, Uttar Pradesh with 10.48% and Bihar with 10.32%. In the category of gross premium Andhra Pradesh state stands for first position with 23.16% followed by Bihar with 19.83%, West Bengal with 19.04%, Rajasthan with 13.48% and Uttar Pradesh with 4.26% but in case of premium subsidy Bihar state stands for first position with 23.30% followed by West Bengal with 21.48%, Andhra Pradesh with 20.33%,rajestan with 12.25% and Uttar Pradesh with 2.87% respectively. In case of claims again Andhra Pradesh state stands for first position with 51.91% followed by Bihar with 10.46%, Uttar Pradesh with 9.34%,west Bengal with 5.02% and Rajasthan with 3.64% respectively.

Table- 3

MNAIS - Business Statistics from Rabi 2010-11 to Kharif 2013-14 i.e., for 7 Seasons (As On 09.07.2014) in India

(Rs in crores)

S. No	States and UTs	Sum Insured	%	Gross Premium	%	Premium Subsidy	%	Claims	%
1	Andhra Pradesh	5178.00	28.38	448.45	23.16	238.02	20.33	760.88	51.91
2	Rajasthan	2712.91	14.87	260.97	13.48	143.43	12.25	53.48	3.64
3	West Bengal	2415.78	13.24	368.70	19.04	251.53	21.48	73.62	5.02
4	Uttar Pradesh	1912.18	10.48	82.52	4.26	33.69	2.87	136.95	9.34
5	Bihar	1883.60	10.32	383.98	19.83	272.81	23.30	153.33	10.46
	Total	14102.47	77.30	1544.62	79.77	939.48	80.23	1178.26	80.37
	All India	18242.71	100.00	1935.86	100.00	1170.61	100.00	1465.75	100.00

Source: <http://www.aic india.com/AICEng/pages/default.aspx>

At over all India level, these five ranked states covered the business with 77.30 % of sum insured, 79.77% of gross premium, 80.23% of premium subsidy and 80.37% of claims under this programme.

Finally it is find that Andhra Pradesh state's MNAI programme, highly benefitted in case of business also, among the five ranked states in India, (nearly with 37 % of sum insured, 29 % gross premium, 25% of premium subsidy and 63 % of claims.

Table- 4: MNAIS – Business Statistics for Kharif (As On 09.07.2014) in Andhra Pradesh (In '000')

Kharif								
Years	Sum Insured	%	Gross Premium	%	Premium Subsidy	%	Claims	%
2011	16844.34	3.90	872.07	2.12	370.84	1.67	232.27	0.31
2012	200816.23	46.36	15925.84	38.83	7847.09	35.27	42455.40	56.18
2013	215472.53	49.74	24227.38	59.05	14033.60	63.07	32877.34	43.51
TOTAL	433133.11	100.00	41025.29	100.00	22251.54	100.00	75565.02	100.00
Rabi								
2010-11	19194.69	22.38	1134.19	28.95	534.50	33.29	77.92	4.13
2011-12	34938.63	40.73	1318.20	33.65	472.39	29.42	966.67	51.30
2012-13	18276.94	21.31	827.53	21.13	336.39	20.95	381.53	20.24
2013-14	13363.16	15.58	637.42	16.27	262.33	16.34	458.66	24.33
TOTAL	85773.43	100.00	3917.36	100.00	1605.62	100.00	1884.78	100.00

Source: <http://www.aic india.com/AICEng/pages/default.aspx>

The year wise and season wise business details of registered farmers under MNAI program (from 2011 to 2013 for Kharif season and 2010- 11 to 2014 for Rabi season) in Andhra Pradesh are in above table-4. It is very clear that the business on sum insured, gross premium and premium subsidy is high in 2013 with 49.74%, 59.05% and 63.07% respectively and in case of claims, it is high in 2012 for Kharif season and for Rabi season 2011-12 is highly benefitted in sum insured, gross premium, premium subsidy and claims with 40.73%, 33.65%, 29.42 and 51.30% respectively. Finally it is find that this business activities are gradually increasing year by year in the Kharif season and in the Rabi season it is gradually decreasing after 2011-12 at Rabi season.

Table- 5: Details of Total Number House Holds

Formers who are involved in MNAIS	f	%
Involved	22	8.80
Not involved	189	75.60
Don't know about MANI	39	15.60
Total	250	100.00

Source: field survey

The above Table- 5 shows the details of total number of farm house holds from the field survey. About 250 house hold only 22 respondents involved in MNAI program with 8.8%, 189 respondents known the program but not interested to insure their crops with 75.60% , remaining 39 respondents do not know the national program with 15.60 %.

SOCIO ECONOMIC STATUS OF THE FARMERS

The Table - 6 shows the details of insured farmer households socio economic conditions. The insured farmers are over 31 years with age range of 31-40 with 86.36% of the age distribution. Thus, the involvement of youths in agricultural production in the study area is very low.

The gender distribution of the farmers is asymmetrical with male farmers been with 81.82% and females with 18.18%. This however shows that female farmers take more risks than the male farmers and hence indicates that they are more informed on how to manage their vulnerability to loss by participating in the insurance scheme.

Table- 6:Details of Socio Economic Status of House Holds Who Are Involved In MNAI Program

Variable	Category	Sample house hold(N=22)	
		f	%
Age	Less than 20	0	0.00
	21 -30	2	9.09
	31-40	19	86.36
	41-50	1	4.55
	50 and above	0	0.00
Gender	Male	18	81.82
	female	4	18.18
Education	Illiteracy	0	0.00
	Up to 5 th	1	4.55
	6 th to 10 th	19	86.35
	Intermediate	1	4.55
	Graduate	0	0.00
Marital status	Technical	1	4.55
	Married	22	100.00
	Unmarried	0	0.00
Number of children	Widow	0	0.00
	1	3	13.64
	2	17	77.27
	3	2	9.09
	4	0	0.00
5 and above	0	0.00	

Source: Field survey

Higher number of insured farmers is having above primary education with 90.90% it indicates that the level of education of the farmers may have influenced their level of awareness as to how to minimize the effects of agricultural risks or in case of its occurrence, cover the costs.

The result shows that all the farmers are married and 86% percent of the house holds having children more than 2. The need for the farmers to meet their responsibilities as married and parental by ensuring maximum output may be responsible for their engagement in full scale agricultural production which has necessitated their participation in the insurance scheme in a bid to minimize their exposure to imminent losses.

IMPACT OF MNAI PROGRAMME ON FARMER'S

The below Table – 7 shows the details of MNAI programme impact on farmer house holds

Table- 7: Impact of MNAI Program on House Holds Details

Variable	Category	Sample house hold(N=60)	
		F	%
Farming System	1.Commercial	21	95.45
	2.Peasant	1	04.55
Farming Experience	Less than 10	3	13.64
	10 – 20	17	77.27
	21 – 30	1	4.55
	31 – 40	1	4.55

	41 – 50	0	0.00
	Above 50		
Motivating factors	Accessibility to loan	20	90.91
	Aversion to Risk	2	9.09
	Insurance Marketing	0	
Farm Investment after Participation in the scheme	Increased	20	90.91
	Decreased	0	0.00
	No impact	2	9.09
Farm Output after Participation in the Scheme	Increased	19	86.36
	Decreased	0	0.00
	No impact	3	13.64

Source: Field survey

However, the result shows that 95% of the farmers are involved in commercial agriculture. Above 86.09% of the farmers having more than 10 years farming experience, it indicates that experience tells about the risks and minimize their exposure to imminent losses

Above 90% of the insured farmers participated in the insurance scheme because is it one of the requirements needed to access agricultural loans. Thus, this indicates that the objectives of the Modified Agricultural Insurance Scheme to increase access of farmers to credits is been achieved. All of the farmers confirmed that there has been increase in their investments after their participation in the scheme. However, this may not be unconnected from the fact that they all participated in the scheme in order to access agricultural loans and these loans have increase their input consumption level.

Above 86% of insured farmers confirmed that their outputs have increased since their participation in the insurance scheme. This is as a result of the increase in their scale of production and input consumption which cannot be unconnected from their access to credit which brought about increased investment in their production.

CONCLUSIONS

The operational performance of the Modern National Agriculture Insurance Scheme in Andhra Pradesh State was enunciated with the parameters viz., number of farmers covered under the scheme, area insured in hectares and number of farmers benefitted. Study found that Andhra Pradesh is leading among the states implemented this scheme in availing the benefits of new Insurance Scheme by way of constituting 15.78 per cent, 16.47 per cent and 28.76 per cent in the total farmers covered, area insured and number of farmers benefitted respectively during 2010-11 to 2013-14.

Further the performance is also studied by examining the sum assured, gross premium, premium subsidy and claim settlement as parameters. The percentage share of sum assured by Andhra Pradesh state to all India constitutes 28.38 per cent, gross premium of 23.16 per cent, claim settlement of 51.91 per cent while as the in the domain of premium subsidy Andhra Pradesh State is behind Bihar(23.30 per cent), West Bengal (21.48 per cent) with 20.33 per cent.

From the study it is also found that only 8.80 per cent of farmers in Andhra Pradesh were involved in MNAIS, while as 75.60 per cent were not involved though they were aware about the scheme and about 15 per cent to total house hold farmers are not at all aware of the scheme. Of the total number of farmers availing this scheme, majority of them were commercial farmers having 10 to 20 years of farming experience and who were accessible to loan . These farmers have expressed about the increase of form investment substantially over the years after availing this insurance scheme.

Hence it is concluded that the performance of scheme in Andhra Pradesh is quite successful when compared to the other states. The farmers felt their investment and output has increased but the percentage of farmers availing this is scheme is scanty. Hence awareness programmes and workshops are needed for the farmers to avail the benefits of this scheme to sustain growth in the much demanded agriculture activities which are the backbone of Indian Economy.

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