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DOUBLING FARMER'S INCOME IN ANDHRA PRADESH (REALITY AND POSSIBLITIES)

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ABSTRACT

The government initiative to increase farmer's income is welcome as it is central to dealing with the agrarian crises in India. Government needs to proactively address the situation and make more long term farmers centric policies related to irrigation, farm diversification, form profitability and community support programs so as to socially and economically empower farmers. . Hence in this background the present study has been made to examine the possibilities of doubling farmer's income in Andhra Pradesh. For greater empowerment farmers need to be organized into groups that bring them together to discuss their common problems, build confidence, make them aware of economic opportunities, learn to act together to meet the challenges they face due to pressure on land and water, climate change, lack of access to input delivery systems, exploitative markets and inadequate credit, and increasing volatility in global and national markets. Finally, Government need to take long-term steps to ensure the economic viability of farming.

Key words: Agriculture, doubling Farmer's income, . Farmer's suicides, Remunerative prices.

I.INTRODUCTION:

Farmers in India are feeling marginalized even in states which were leaders in green revolution. The cropping pattern of paddy-wheat is under strain due to stagnation in their yields. Demands of loan waivers have become frequent and Pan-India. Farmer's suicides are almost daily news. Indian agriculture is dominated by marginal and small farmers who suffer serious disadvantage in terms of scale. Small farm size discourages many formers to go for diversification of fruits and vegetables mainly because of the price risk and uneconomic. The government initiative to increase farmer's income is welcome as it is central to dealing with the agrarian crises in India. Government needs to proactively address the situation and make more long term farmers centric policies related to irrigation, farm diversification, form profitability and community support programs so as to socially and economically empower farmers. The need to focus on farmers incomes also stems from the fact that a very large proportion of farming households in most of the central and eastern states (23% & 45%) live below the poverty line (BPL), higher than the national average (22.5%). The proportion of BPL farming households (17.5% - 22.5%), even in some of the so-called agriculturally progressive states, such as Gujarat, Karnataka, Maharastra and Tamilnadu, is close to the national average. Further the gap between farm and non-farm incomes has grown over the decades, from a ratio of 1:3 in the mid 1980's to 1:4.08 in the middle of last decade, and 13.1.2 in 2011-12 (Chand. 2017). To illustrate if production is less farmers have little surplus to sell and if production is good, prices fall below the MSP. Such situations rein in the increase in income of the farmers.

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According to Situation Assessment Survey of Agricultural (SAS) Households in the year 2012-13, the average annual income of a farm household from farm as well as non-farm sources was Rs.77, 112. Sixty percent of total income of an agricultural household was derived from farm activities (Cultivation and farming of animals) and 40 percent was derived from non-farm sources (wage, salary, non-farm business etc.) In absolute terms, cultivation generated annual income of Rs. 36,938 and livestock provided Rs.9,176 per agricultural household. According to the estimate, the share of livestock activity in total farm income of agricultural household was close to 19.89 per cent. This is much lower than the CSO estimates of share of livestock in net value added in agriculture sector for the same year, which was 28.6 percent. This is indicates that farm income reported in SAS differs significantly from CSO measures of farm income, presumably due to the specific definition of farmer used in the SAS 2013 (Chand.R. et.al 2015).

The need to raise farmer's income got a lot of attention after the Prime Minister Shri Narendra Modi, while talking about income of the farmers is the Kissan Rally; the PM stated that it is his dream to see farmers double their income by 2022, when country completes 75 years of Independence. It must be noted that agriculture and allied activities remain the main livelihood for more than half of the Indian population. The Socio-Economic and Caste Census (SECC) 2011, released in 2015, also indicates that out of 24.39 crore households in the country, 17.91 crore lived in villages and are more or less dependent on agriculture. Doubling agricultural income by 2022 is a mammoth task. It is also one that is the need of the hour with majority of the country's population depended on agricultural activities, no true development can be said to be meaningful unless it incorporates the needs of this sector. Increasing farmer suicides rates and increasingly erratic weather patterns further add to the proclaim. The focus of the government on this sector is much needed. The Niti Aayog recently come out with the form point action plan to achieve doubling Indian farmer's incomes in five years. The top point action plan includes the following measures, 1) Remunerative prices for farmers by reforming the existing marketing structure: 2) Raising productivity; 3) Reforming agriculture land policy; and 4) Relief measures. Hence in this background the present study has been made to examine the possibilities of doubling farmer's income in Andhra Pradesh.

II. OBJECTIVES:

(1) To examine the agricultural growth trends in Andhra Pradesh with GSDP and GDP.
(2) To examine the production and productivity of major crops in A.P.
(3) To study the cost of cultivation and net returns of major crops and average amount of debt of agricultural households in Andhra Pradesh.
(4) To offer the suitable measures to achieve the goal of doubling farmer's income in Andhra Pradesh.

III. METHODS AND SOURCE OF DATA:

This paper is based on secondary data collected from the published sources of various government departments like office of the Commissioner and Directorate of Agriculture, Government of Andhra Pradesh, Directorate of Economics and Statistics, Government of Andhra Pradesh. Time series data from 1990-91 to 2014-15 are used for the analyses of the study. The compound (long –Linear) growth rates are estimated by employing the equation $\mathbf{Y} = \mathbf{a}e^{bt}$, where 'b' is the growth rate. For analytical convenience the new state of Andhra Pradesh i.e. thirteen districts are taken as one unit.

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IV. AGRICULTURAL GROWTH TRENDS IN INDIA AND ANDHRA PRADESH.

Table-1

(GSDP and GDP growth Rates and Sub-sectors in GDP/GSDP in Andhra Pradesh and India.)

	GDP/GSDP (Rs'000 Cr) At 2004-05 prices		Percentage share in GDP/GSDP					
			Agriculture and allied activities		Industry		Service	
	India	A.P	India	A.P	India	A.P	India	A.P
2005	2971.5	134.8	19.03	29.85	20.22	21.61	60.75	48.54
2010	4516.1	195.0	14.64	25.95	20.43	22.39	64.94	51.66
2014	5741.8	246.7	13.94	24.27	18.70	19.94	67.36	55.79
*growth rate(%)	7.74	6.94	3.8	4.51	7.10	6.07	8.95	8.55
*C V (%)	21.99	19.90	11.44	13.80	20.25	17.80	25.19	24.36

*Note: the GDP/GSDP and sectoral growth rates are estimated from their absolute values for the period 2005-14.

C.V. coefficient of variation computed for the period 2005-14

Source: Inclusive and sustainable agricultural development of Andhra Pradesh – Report of the Commission constituted by the Government of A.P. - 2016.

During the 2005-14 decade, accelerated agricultural growth made a major contribution to pushing up the growth rate of the Andhra Pradesh economy as a whole. It enabled the overall Andhra Pradesh growth rate to catch up with the growth rate of GDP in Indian as a whole. The GSDP of crop production subsector of the agriculture and allied activities sector has growth at 3.4 per cent per annum as compared with 2 percent at the All India level. However, year to year fluctuations in Andhra Pradesh agriculture are greater than in India as a whole .Among allied agricultural activities livestock and fishing made a significant contribution to agricultural GSDP. The share of GSDP from allied activities has been around 50 percent of agricultural GSDP. Among allied agricultural activities, livestock and fishing have grown considerably but these activities have experienced grates fluctuations in value, as compared to that of crop production.

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Growth of Important crops in A.P. 1990-2015: Table 1: Area and production of major crops in the state – Andhra Pradesh

(Area in lakh hectares, production in lakh tones)

Year	Rice		Coarse cereals		Pulses		Foodgrains		Oilseeds		Horticultural crops		Palm Oil		GCA
	Area	Prodn.	Area	Prodn.	Area	Prodn.	Area	Prodn.	Area	Prodn.	Area	Prodn.	Area	Prodn.	
TE 90-91	25.30	59.51	34.68	67.61	8.46	4.59	43.14	72.20	20.88	23.47	3.04	-	-	-	78.91
TE 91-92	26.68	63.51	34.41	70.98	9.14	5.09	56.92	94.47	22.84	25.50	3.29	-	-	-	81.86
TE 92-93	25.92	63.23	32.90	70.26	9.47	5.22	55.74	93.87	23.77	26.70	3.38	-	-	-	82.34
TE 93-94	25.65	66.26	32.04	73.04	9.40	4.95	54.81	96.39	24.35	29.25	3.60	-	-	-	82.65
TE 94-95	25.57	67.53	31.68	74.02	9.45	4.45	41.12	76.16	23.87	28.68	3.50	-	-	-	82.7
TE 95-96	25.71	67.68	31.41	73.78	9.57	4.48	40.98	75.95	23.78	28.46	4.10	-	-	-	83.07
TE 96-97	26.40	67.52	31.79	73.66	9.80	4.97	41.59	76.32	23.20	25.93	4.33	62.43	0.29	0.48	83.99
TE 97-98	26.34	66.95	31.34	72.88	9.67	4.99	41.01	77.87	22.20	23.10	4.86	63.28	0.23	0.48	82.78
TE 98-99	26.98	70.82	31.58	76.50	9.44	5.12	41.02	81.61	20.76	19.92	5.05	63.59	0.24	0.45	82.93
TE 99-00	36.13	71.62	30.95	77.00	9.43	4.86	40.39	81.86	19.66	13.95	5.25	62.85	0.27	0.88	82.52
TE 00-01	36.56	76.97	31.47	83.22	10.26	6.20	41.74	89.42	19.98	14.47	5.49	72.54	0.28	1.01	84.06
TE 01-02	35.68	77.42	30.42	83.91	11.20	7.15	41.63	91.06	19.96	12.27	5.52	72.07	0.29	1.18	82.41
TE 02-03	23.59	70.60	27.69	77.22	12.47	8.03	40.16	85.26	19.71	12.53	5.63	75.40	0.31	0.96	78.80
TE 03-04	21.13	63.98	25.49	71.81	12.93	7.89	38.43	79.70	19.35	9.38	5.70	79.61	0.33	1.07	76.59
TE 04-05	20.17	62.87	24.76	72.05	12.59	7.38	37.35	79.44	22.15	11.03	5.74	83.55	0.35	1.18	77.09
TE 05-06	22.35	69.45	26.97	80.46	11.76	8.03	38.06	88.48	23.51	11.45	6.51	88.10	0.41	1.52	80.16
TE 06-07	24.33	76.22	28.50	88.18	11.54	9.11	39.04	97.33	20.77	9.66	6.74	96.99	0.49	1.90	80.73
TE 07-08	25.49	80.85	29.60	94.70	12.48	10.69	41.07	105.52	17.92	14.44	7.56	110.57	0.60	2.88	82.20
TE 08-09	26.08	86.15	30.40	103.63	12.46	10.79	42.52	114.70	17.41	15.70	6.62	123.92	0.72	3.96	82.84
TE 09-10	25.33	84.43	29.77	103.07	12.37	10.87	42.14	114.18	18.66	20.25	6.11	132.04	0.81	4.86	82.15
TE 10-11	25.98	81.11	30.39	101.69	12.34	10.15	42.73	111.99	17.54	18.24	5.21	142.48	0.82	7.23	82.47
TE 11-12	24.81	77.32	29.41	97.77	13.02	9.98	42.43	107.74	15.59	19.58	5.00	151.38	0.80	9.42	81.21
TE 12-13	24.43	74.97	29.55	97.97	13.41	10.10	42.97	108.07	15.42	20.35	4.94	181.78	0.74	11.78	82.21
TE 13-14	23.80	75.33	29.52	99.83	12.53	10.48	42.05	110.31	14.91	19.91	4.80	214.44	0.74	12.46	80.48
TE 14-15	23.96	77.71	29.70	102.69	11.63	10.54	41.33	113.23	13.53	20.45	4.93	216.87	0.85	14.68	79.26

Source: Various Statistical Abstracts of Andhra Pradesh, Directorate of Economics and statistics, government of Andhra Pradesh.

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In the recent years, many have been suggesting that the farm income can be increased only by increasing the productivity of crops. There is no doubt that any increase in productivity of crops would ultimately increase the value of output or gross income from crop cultivation. Productivity of crops cannot be increased without adopting superior technology and yield increasing inputs along with better irrigation facility. Hence, it is interest to examine the production and productivity of major crops in Andhra Pradesh. To have a comparative picture of growth of major crops in the state, the growth rates estimated on the basis of semi log trend and the growth rates based on annual averages (End Period growth rates) for major crops in the state for the given respective periods are presented in Table 2.

i) Growth Rates based on Semi log Time Trend:

Glancing over the growth behaviour of major crops across four decades, the area under Rice is reported a positive growth in the period 1990-91 to 1990-2000, While the yield showed a positive growth in the period 2000-01 to 2009-10. Over a period i.e., from 1980-90 to 2010-15 the area under rice has decreased showing a negative non-significant growth. On the other hand the yield of rice which was reported a positive significant growth in the first period ultimately showed a positive non-significant growth. No significant growth is observed in the area of coarse cereals across the three periods except in second period is negatively significant growth, while the yield of coarse cereals which showed a positive significant growth in the second and third periods, ultimately showed a decrease in the fourth period. The area under pulses showed a positive significant growth 3.01 in the first period, ultimately shoed a negative significant growth of -7.20 in the fourth period. Except in the second period the yield of pulses is reported a positive significant growth in the other three periods. The area under food grains showed a significant negative growth in the first and fourth periods, showing a negligible positive growth in third period. The yield of food grains showed a continuous positive significant growth across the four periods. The area under Oil seeds showed a positive significant growth in the first period gradually reported a continuous significant negative growth in the subsequent periods. On the other hand the yield of Oil seeds showed a positive significant growth in the first period, decreased to -8.76 per cent in the second period and showed a positive but not significant growth in the subsequent two periods.

The area under Horticultural crops which negative growth in the first period has improved to a positive significant growth in the second period. From there a decrease in the growth of area is observed in the subsequent two periods. More over the yield of Horticultural crops showed a positive significant growth in the period 2000-01 to 2009-10, but reported a positive non-significant growth in the period 2010-11 to 2014-15. The area and yield of Palm Oil showed a positive significant growth in the period 2000-01 to 2009-10 but significant growth is not observed in both the subsequent periods 2010-11 to 2014-15. The decrease in the area of Oil Seeds and increase in the area of Palm Oil in the two periods 2000-01 to 2009-10 and 2010-11 to 2014-15 indicate inclination of farmers towards growing Oil Palm than the Oil Seed Crops.

ii) Growth Rates based on Annual Averages:

The Growth Rates based on Annual Averages indicate a decrease in the growth of area under Rice, Coarse Cereals and Food Grains in the four continuous periods. While the yield of Rice, Coarse Cereals and food grains showed a continuous negative growth in the four periods. More over the area under pulses showed a positive increase in the growth in the four periods except in the period 2010-11 to 2012-13. On the other hand the yield of pulses showed a positive growth except in the period 2010-11 to 2013-14.The area under Oil Seeds showed a continuous increase in the growth across the four periods. While the fluctuating trend is observed in the case of yield of Oil Seeds across the periods. A continuous decrease in the growth of area and yield of Horticultural crops is observed across the periods. The area under Oil Palm showed a negative growth in the period 2010-11 to 2011-12 and improved to 0.55 per cent in the period 2010-11 to 2012-13. But a steep fall in the growth is observed in the period 2010-11 to 2013-14 and finally the area under Oil Palm showed a growth of -0.83 per cent in the period 2010-11 to 2014-15. On the other hand the yield of Oil Palm showed a continuous negative growth across the four periods.

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Table- 2: Growth rate in area and yield rate of major crops in the state (%)

1	Rice		Coarse cereals		Pulses		Food grains		Oilseeds		Horticultural crops		Palm Oil	
	Area	Yield	Area	Yield	Area	Yield	Area	Yield	Area	Yield	Area	Yield	Area	Yield
1980-81 to 1989-90	-1.06 (0.99726)	1.66* (5.06709)	-1.80 (0.3916)	1.51 (0.33992)	3.01* (3.89570)	4.12* (4.2021)	-2.11** (2.7265)	2.18* (4.3647)	5.68* (8.2684)	6.54* (3.7457)	-0.29 (0.5074)	N.A	N.A	N.A
1990-91 to 1999-00	4.50*** (2.0243)	-2.76 (1.2244)	-0.73*** (2.2906)	2.06* (3.6460)	1.17 (0.5592)	-0.16 (0.0980)	-3.36 (1.4970)	2.30** (2.7761)	-2.52 * (4.3933)	-8.76 ** (3.2601)	6.06 * (4.6975)	N.A	N.A	N.A
2000-01 to 2009-10	1.02 (0.6979)	1.24 *** (2.0955)	0.89 (0.7450)	2.82 * (4.50)	-0.19 (0.1968)	4.74 * (3.3804)	0.45 (0.6168)	3.36 * (3.5811)	-2.30 (0.8883)	4.99 (0.9391)	0.60 (0.3099)	7.35 * (3.6663)	13.75 * (13.4183)	8.68 * (7.1319)
2010-11 to 2014-15	-1.99 (0.6538)	3.69 (1.8073)	0.70 (0.3429)	2.80 *** (1.9685)	-7.20 * (3.9956)	8.31 * (3.5716)	-2.54 ** (2.2470)	4.57 * (4.0113)	-7.52 ** (3.1775)	5.64 (1.2145)	-0.6972 (0.3493)	6.65 (0.8648)	7.12 (1.2648)	3.75 (1.4830)
2010-11-2011-12@	1.14	-12..49	0.70	-7.61	0.33	3.23	0.57	-7.80	0.20	-45.24	1.18	-5.02	-0.26	-0.00
2010-11-2012-13@	0.77	-3.98	0.41	-2.13	0.09	45.29	0.30	-2.35	0.23	17.54	0.39	-6.20	0.55	-3.21
2010-11-2013-14@	0.16	-2.56	0.01	-1.60	0.51	-72.33	0.14	-4.20	0.24	-3.51	0.21	-5.02	0.05	-2.15
2010-11-2014-15@	0.25	-4.60	0.14	-3.19	0.49	39.28	0.23	-5.09	0.60	-6.35	0.13	-1.01	-0.83	-0.87

Note: For the periods 1980-90 (1st Period), 1990-2000(2nd period), 2000-10(3rd period) and 2010-15(4th period) growth rates are estimated on semi log trend and the figures in brackets are 't' values. @ Growth rates based on annual averages, * denotes 1% level of Significance, ** denotes 5% level of Significance, *** denotes 10% level of Significance
#: Since the data for the bifurcation Andhra Pradesh is not available for yield of Horticultural crops, Palm Oil area and yield, the growth rates are estimated for the data of un bifurcated Andhra Pradesh. N.A: Data not available for those periods.
Source: Various Statistical Abstracts of Andhra Pradesh, Directorate of Economics and statistics, government of Andhra Pradesh& Commissioner of Horticulture Department, Govt., of A.P

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Now it is interest to analyse the cost of cultivation of major crops in Andhra Pradesh. What is the status of farm income of the rural households? Why is the farm income low? Is the farm income same for both irrigated crops and rain fed / un irrigated crops? It is often believed that the crops cultivated under irrigated conditions generate higher income than those crops cultivated with less or un-irrigated condition. How far this is true? Using cost of cultivation survey data, some studies have shown an insignificant difference in farm income between irrigated and less or un-irrigated crops. Why is this so? Is it because of increase in the cost of cultivating crops under irrigated condition? One needs to find out of the difference in cost of cultivation between irrigated and un-irrigated crops using spatial and temporal data to assert the real movement in it.

Table: 4: Costs of Cultivation and Net Returns of Crop (2002 and 2010), (Rs.000s ha)

	Triennium Ending 2002				Triennium Ending 2010			
Crop	Cost A2/ha	Cost C2/ha	Net return cost A2/ha	Net return cost C2/ha	Cost A2/ha	Cost C2/ha	NR A2/ha	NR C2/ha
Sugarcane	29.1	54.1	32.3	7.3	57.5	106.6	74.4	25.3
Paddy	16.1	28.9	14.3	1.4	30.1	54.4	29.7	5.4
Cotton	11.9	20.5	7.6	-1.1	26.0	47.3	28.2	6.9
Onion					31.3	50.8	26.2	6.7
Maize	6.1	11.6	9.6	4.1	30.7	49.3	25.6	7.0
Black gram	4.4	8.3	6.2	2.3	10.3	20.0	17.7	8.0
Groundnut	9.7	16.5	3.2	-3.6	23.0	41.2	14.6	-3.0
Gram					17.6	29.3	13.6	1.9
Ragi	13.0	25.3	-3.7	-15.9	18.3	40.7	11.1	-11.3
Red gram	9.9	18.2	-1.3	-9.5	20.6	42.2	9.2	-12.4
Jowar	5.4	10.6	3.9	-1.3	14.9	25.4	5.8	-4.6
Green gram	4.9	8.8	1.8	-2.1	6.1	12.5	4.7	-1.8
Sunflower	9.8	17.6	2.5	-5.3	15.8	25.0	3.8	-5.4
Total	14.0	25.3	11.7	0.4	28.1	50.6	27.9	5.3

Note: Cost A2: all paid out costs + depreciation on implements & farm buildings + rent paid for leased in land; Cost C2: include paid out costs + interest on owned capital assets + imputed value of family labour.

Source: "Inclusive and Sustainable Agriculture Development of Andhra Pradesh- (2016), Report of the Commission Constituted by the Government of Andhra Pradesh-CESS-Hyderabad.

The growth prospects of agriculture in state depend upon the trends in net income both in absolute and is relative terms. The last decade (TE 2002 to TE 2010) witnessed a steep increase in the cost of farming particularly of traditional crop. The cost of cultivation doubled regardless of whether one used the cost A2 or cost C2 criterion. The increase in cultivation costs was not compensated for by output price increase and thus agriculture became almost unviable. State intervention is often delayed as well as grossly inadequate. The truth is that with the adoption of all these technologies/ inputs, the cost of cultivation

is bound to increase which is the major problem that the Indian farmers have been encountering in the recent years.

In order to increase the farm income, many suggestions have been made by different committees and researchers. While some have suggested the increased supply of institutional credit will help improving the farm income, hence it is interest to study the supply of institutional credit and average amount of debt of agricultural households in new satate of Andhra Pradesh.

Table-5: Average Amount of Debt (AoD) of Agricultural Households by Agency (2002-2010) (Rs. 000)

Agency	PO		PT		OCT		MF		SF		Total	
	AOD	%	AOD	%	AOD	%	AOD	%	AOD	%	AOD	%
North Coastal Andhra												
Coop	7.4	6.9	0	0	4.5	12.4	4.5	9.2	6.7	6.7	5.3	8.6
Banks	12.1	11.2	5.6	20.7	6.4	17.4	9.5	19.4	8.2	8.3	8.5	13.5
M. Lender	84.5	78.3	3	11.3	22	60.3	28.5	58.4	82.6	83.3	43.9	70.5
All	108	100	26.8	100	36.4	100	48.8	100	99.1	100	62.3	100
South Costal Andhra												
Coop	8.9	10	5.6	6.7	20.6	11.6	11.8	13.1	16.4	12.4	16.3	10.2
Banks	21.1	23.6	22.5	27	56.6	31.8	21.0	23.3	35.9	27.3	37.1	29.5
M. Lender	55	61.6	45.4	54.5	95.6	53.7	55.5	61.5	69.5	52.7	69.1	54.9
All	89.3	100	83.2	100	178	100	90.2	100	131.8	100	125.8	100
Rayalaseema												
Coop	40	24.5	32.8	24.9	33.8	28.5	9.7	18.1	46.2	31.4	34.3	27.4
Banks	12.2	7.5	20.2	15.4	52.9	44.5	15.3	28.5	82.5	55.9	43.7	34.8
M. Lender	101	61.7	78.2	59.4	30.1	25.4	25.8	481	17.1	11.6	44.8	35.7
All	163.6	100	131.5	100	118.8	100	53.7	100	147.4	100	125.4	100
Andhra Pradesh												
Coop	17.3	15.1	13.4	14	26.4	20.6	8.0	11.1	33.7	24.5	21.8	18.5
Banks	16.3	14.2	21.3	22.3	48.8	38.1	17.5	24.2	61.7	44.7	36.8	31.1
M. Lender	75.5	65.6	53.8	56.2	49.6	38.7	41.9	57.9	38.5	27.9	55.0	46.5
All	115.1	100	95.8	100	127.9	100	72.3	100	137.9	100	118.2	100

Source: Estimated based on unit record data of 70th round of NSS.

Note: PO, PT and OCT are Agrarian groups and SF and MF are farm –size classes. PT: Pure Tenants, PO: Pure owners; OCT: Owner-cum-Tenant; NCA: North Coastal Andhra; SCA: South Coastal Andhra; RS: Rayalaseema. The sub-totals do not add up to column totals since certain categories are not included. The data relating to RRBs are included in Banks.

The institutional (bank, co-operatives and government) and non-institutional sources (money lender, landlord, trader, relatives and friends) of credit are equally important to the farming community in the sate with the each source accounting for nearly half of the outstanding loan amount. It is to be noted that most of the farmers are accessing loans from both intuitional and non-intuitional sources.

The importance of the government as a provider of credit is minimal (less than one per cent of the total outstanding debt) in the state. About Rs. 9,381 Crores was the outstanding

loan to cooperatives (18.6 per cent of total aggregate debt) while the corresponding figure for commercial banks was Rs.14, 156 Crore which worked out to 31.1 per cent of the outstanding loan amount of over Rs. 45,000 Crore. Thus, the share of formal intuitions in the total outstanding debt of cultivator households in the Andhra Pradesh is a little over 50 per cent.

Two-thirds of the cooperative debt (Rs. 9,381) has gone to Rayalaseema region. The marginal and small farmers received a high proportion of the loan amount (68 per cent) from the cooperatives. The access of owner0-com-tenants to these institutions was better as their share in the total debt provided by the cooperatives was to the tune of 64 per cent. The independence of indebtedness (IOI) which respect to cooperative was lower in the north coastal Andhra region for all the farmer categories indicating the low outreach of cooperatives to the farmers of the region.

The outstanding debt on account of commercial and regional banks was Rs. 14,156 Crore and most of it flowed to the Rayalaseema (54.7 per cent) and south coastal Andhra (42.6 per cent) regions. The share of the small and marginal farmers in the outstanding bank credit (75.9 per cent) was higher than that from Cooperatives both in absolute and relative terms. The woner-com- tenants were better placed in regard to their share in bank credit (78.8 per cent) compared to their share in total cultivator households (59.4 per cent). The disadvantage of pure tenants in accessing bank loans was very evident in the back ground region of north coastal Andhra.

Among the non-institutional sources, the money lender was the main source of credit to the Andhra Pradesh farmers. The outstanding loans to money lenders amounted to Rs. 21,155 Crore, constituting 46.5 per cent of the total outstanding loan amount in 2012-13. The data on the incidence of indebtedness (IOI) point out that the agricultural households of north coastal Andhra were at a relative disadvantage even in accessing loans from this source. It is to be noted that the average debt of pure tenants on this account was low (Rs.3,030). The dependence of marginal and small farmers on this non-institutional source was very high (62 per cent at the state level) and it was the highest (94.5 per cent of the total outstanding debt) in the backward north coastal Andhra.

FINDINGS:

- Year to year fluctuations in Andhra Pradesh agriculture are greater than in India as a whole .Among allied agricultural activities livestock and fishing made a significant contribution to agricultural GSDP.
- No significant growth is observed in the area of coarse cereals across the three periods except in second period is negatively significant growth, while the yield of coarse cereals which showed a positive significant growth in the second and third periods, ultimately showed a decrease in the fourth period.
- The area under food grains showed a significant negative growth in the first and fourth periods, showing a negligible positive growth in third period. The yield of food grains showed a continuous positive significant growth across the four periods.
- The decrease in the area of Oil Seeds and increase in the area of Palm Oil in the two periods 2000-01 to 2009-10 and 2010-11 to 2014-15 indicate inclination of farmers towards growing Oil Palm than the Oil Seed Crops.
- A steep fall in the growth is observed in the period 2010-11 to 2013-14 and finally the area under Oil Palm showed a growth of -0.83 per cent in the period 2010-11 to 2014-15. On

the other hand the yield of Oil Palm showed a continuous negative growth across the four periods.

- The cost of cultivation doubled regardless of whether one used the cost A2 or cost C2 criterion. The increase in cultivation costs was not compensated for by output price increase and thus agriculture became almost unviable.
- The importance of the government as a provider of credit is minimal (less than one per cent of the total outstanding debt) in the state.
- The dependence of marginal and small farmers on this non-institutional source was very high (62 per cent at the state level) and it was the highest (94.5 per cent of the total outstanding debt) in the backward north coastal Andhra.
- Farmers have suffered losses or realized low income due to both increased cost of cultivation and insignificant increase in value of output due to market failure.
- Although the awareness about the Minimum Support Price (MSP) is very low among the farmers, it is plays a key role in deciding the market price of agricultural commodities. Mere announcement of MSP would not help the farmers but along with MSP, there is also a need to strengthen the procurement infrastructure. Prices fall below the MSP

SUGGESTIONS:

- Agricultural Produce Marketing Committee (APMC) Act of 2003 should be implemented at war footing. The producer's markets on the lines of "Ryatu Bazars" should be encouraged across every part of the state to improve the farm income and to eliminate middlemen.
- Another important aspect is high indebtedness among the farmers. One of the major factor for high indebtedness is investment in wells and a high incidence of failure. There is no insurance against this investment and most of this investment is financed by informal sources. The co-operative sector which is active in other states plays a negligible role in the state. It is desirable to regulate investment in ground water and extend insurance coverage for it.
- Erratic rainfall and drought are the most important factors affecting farmers. There is need to set up multi-disciplinary monsoon management centre in each drought-affected district, to provide timely information to rural families on the methods of mitigating the effects of drought.
- Animal husbandry caups could be set up to make arrangements for saving cattle and other farm animals because usually animals tend to be neglected during such crises.
- As different states would need varied strategies as they are at different levels of agricultural development in terms of growth rates and the level of farmer incomes.
- Crop insurance schemes is the welcome step in order to provide security to farmers.

CONCLUSION:

In the transformation of the agricultural sector into a modern and vibrant sector, the capacities of the functionaries manning the agricultural institutions and of the farmers have to be enhanced significantly. For greater empowerment farmers need to be organized into groups that bring them together to discuss their common problems, build confidence, make them aware of economic opportunities, learn to act together to meet the challenges they face due to pressure on land and water, climate change, lack of access to input delivery systems, exploitative markets and inadequate credit, and increasing volatility in global and national markets. Finally, Government need to take long-term steps to ensure the economic viability of farming.

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