Drought impact on rural economy of Rayalaseema a Case Study on 6 Villages Of Kadapa District

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ABSTRACT

The share of agriculture sector in the country's GDP is lagging behind with respect to other sectors; it can be witnessed that the same trend is continuing in the annual income of the families which are depending on that sector, compared to the annual income of the families of the other sectors. If such trend continues, the future of the majority of people who eke out their livelihood from the agriculture sector would be gloomy and dismal. Agriculture is the main source of income for both the farming community and labour community in the district. But the district is characterized by continuous droughts, low rain fall, inadequate irrigation facilities, etc. These are the reasons for the low levels of income. There are various reasons for that to happen, primarily due to drought and the development model that the country has chosen and due to the government neoliberal policies. This paper analyzed the drought impact on rural economy and rural households' incomes Kadapa district is one of the 13 districts in the State of Andhra Pradesh. Kadapa district lies in the region of Rayalaseema, in the state of Andhra Pradesh.

1. INTRODUCTION

Rural households earn incomes from diverse sources of farm and non-farms. Most of households earn income from several different sources. There is a growing literature in India on the importance of the non-farm sector in rural income and employment generation. Despite the growing importance of non-farm incomes, it must be emphasized that a very high percentage of rural households rely on crop production, marketing of the produce and related activities. In our sample analysis 90.3 percent of the households were involved in agriculture, animal husbandry and related activities. The primary sector contributed 60 percent of the estimated total household income of resident households of the sample villages. Cultivation is the single largest economic activity, in terms of employment and income generation. The district is a very hot place and comes under scarce rainfall zone. There are no perennial irrigation sources for cultivation purpose in the district. The economy of the district is predominantly agrarian in nature, 75 percent of the population is engaged in agriculture and allied activities for their livelihood. Dry-land farming is adopted in many parts of the district due to low precipitation and uneven distribution of limited rainfall.

2.METHODOLOGY

The methodology of this study including the sampling, the fieldwork and the data sources are briefly described. The choice of the unit of analysis must of course be The micro level analysis of household information involves a three-stage research design of the study area. Purposive sampling is adopted to select the district. YSR Kadapa district has been selected for this study. YSR Kadapa district is one of the four districts of Rayalaseema region in Andhra Pradesh state.

2.1 DATA SOURCES

Both primary and secondary sources of data are used for the analysis in this study. Primary data is collected through structured questionnaires from the sample households in YSR Kadapa

district. The primary and secondary information collected is supplemented by informal discussions with village level officials / educationists / knowledgeable people etc.The study is focused on collection of primary data from the field study of six selected villages in YSR Kadapa District. Primary data has been collected by interview method from household level and also verified through cross checking from different ways.

Secondary data has been collected from different rounds of NSSO Surveys, NCEAR Reports, Various Census reports, Central Statistical Organization, National Income Statistics published by CMIE and various websites and Hand Books of YSR Kadapa district, Chief planning office, Kadapa. The secondary data is used to draw a general background and over all scenario at national level and across states for an overall understanding of the income of households at all India level as well as states.

2.2 SELECTION OF SAMPLE HOUSEHOLDS

In respect of the households‟ selection, 16 percent of the households from all the sample villages have been selected. Proper care has been taken to cover households from different socio-economic strata. Stratified Random sampling method is used to select households.

Table 1.1: Selection of Sample Households

Name of the Mandal	**Name of the Village**	**Total Households**	**Sample Households (16%)**
Jammalamadugu	Dharmapuram	123	21
Mylavaram	Ponnampalli	348	56
T. Sundupalli	Yerramanenipalem	327	53
Nandalur	Rangayapalli	121	20
CK Dinne	Kopparthy	851	139
Khazipet	Ravulapalli	444	71
Total Sample Households		**2214**	**360**

3. SOCIO ECONOMIC PROFILE OF YSR KADAPA DISTRICT (2011 AND 2001 CENSUS)

As per the 2011 census, the population of the YSR Kadapa District is 28.82 lakhs as against 26.2 lakhs in 2001, of which the Rural Population is 19.03 lakhs as against 20.14 lakhs in 2001.There is a negative growth of -5.51between 2001 and 2011.

4. DROUGHT CONDITIONS

Generally, YSR Kadapa District is always affected by droughts. It is observed from the table 4.4 that during the last 20 years, nearly 14 years are drought years. The majority Mandals had been suffering due to drought during the last 20 years period. Due to a series of droughts the district economy had been affected in many ways. During the years 1999-2000, 2001-02, 2002-03, 2009-10 and 2011-12 all mandals are declared as drought affected

in the district by the government of Andhra Pradesh.

Table 1.2: Drought Affected Mandals in YSR Kadapa from 1995-96 to -2014-15

Years	Drought Declared Mandals	Years	Drought Declared Mandals
1995-96	37	2005-06	-
1996-97	-	2006-07	33
1997-98	50	2007-08	-
1998-99	-	2008-09	-
1999-00	51	2009-10	51
2000-01	05	2010-11	-
2001-02	51	2011-12	51
2002-03	51	2012-13	43
2003-04	32	2013-14	16
2004-05	49	2014-15	48

Source: Revenue Department (Disaster Management), Government of Andhra Pradesh

5. DISTRIBUTION OF SAMPLE POPULATION BASED ON OCCUPATION

The total population is represented by the sample taken. In the sample, all the different occupation groups are given proportional representation as far as possible. It can be observed that the sample consists of 55.6 percent farmers households and 25 percent agricultural laborers, non agricultural labour households make up 5.6 percent, self employed in farming sector make up 9.7 percent, remaining 4.2 percent households fall under self employment in non form sector as shown in the table 4.17. The occupation of the head of the household becomes the main occupation of the household.

Table 1.3: Distribution of sample population based on occupation

	Frequency	Percent	Cumulative Percent

Farmers	200	55.6	55.6
Agricultural labour	90	25.0	80.6
Non agricultural labour	20	5.6	86.1
Self employment in form	35	9.7	95.8
Self employment in non form	15	4.2	100.0
Total	360	100.0	

Source: field data and Author's Calculation

6. RURAL HOUSEHOLDS INCOME LEVELS BY THEIR OCCUPATION

According to National Sample survey report of 2012-2013 an average annual income of the Indian farmer household is Rs.77, 888 and while in our sample survey in Kadapa District the average annual of a farmer's house hold is Rs. 69,180. Due to the continuous droughts in Kadapa District, farmer's household annual income in Kadapa District is Rs.8708 less than the national average income.

In this study, rural households are classified into five different occupations. Farmers are those who have their own agriculture land and those who cultivate in it on their own. Agricultural laborers are those who do not have their own agriculture land and so they work in some other farm for daily wages. Non-agricultural laborers are those who earn their livelihood by working at construction sites, mining, etc. Self employment households in farm are those who are in possession of livestock like, sheep, goats, buffaloes, etc and their livelihood depends on this livestock. Self employment households in non-farm are those who earn their livelihood by carrying activities live driving own autos from their native village to a nearby town and fro, maintaining small provisional stores, tailoring, handlooms, and some other small businesses.

It is observed that Indian agricultural sector facing severe crisis due to structural policies of Indian ruling class. In Kadapa District the farm households are facing more severe conditions than his all India compatriot. This indicates actual dismal situation prevailing in the district farmer's household. Here farmers' medium annual income is Rs.60, 000where as minimum average income is Rs.25, 000 and maximum average income is Rs. 3, 01,000. Based on this data one can clearly see the huge income disparities among the farmer community itself. When it comes to the income of other communities, which depend on other occupations, the average annual income of a farm labour is, Rs. 36,733, ranging from a low of Rs.35,000 to high of Rs.39, 000. But, if we closely look at the income level among the farm labour, it is obvious that the income gap is not of that significant.

Annual average income of a non-farm labour is Rs.74,125. Whereas low income stands at Rs. 70,000 and high income stands at Rs.77, 500. Farm self-employment families have the annual average income of Rs. 1, 02, 000, ranging from a low of Rs 90,000 to high of Rs.1,20,000. We can see a slight/marginal income gap in the families of the same sector. The income of a non-farm self-employed households is Rs. 115333. Low Rs. 1,00,000 to high Rs. 1,30, 000.

Occasionally, even if the yielding is good, due to the volatility of market conditions there is no guaranteed assured price for the produce. Hence the income of the farmers are so uncertain. In

high yielding seasons, either farmers have break-even or they just get marginal profits. Hence the debt piles up with private lenders, the cost Vs income always goes in down trend. At the same time the input costs has grown exponentially. The traditional agriculture system is completely damaged and the entire farming sector is linked to the market. On top of that the rural credit systems completely failed as most of the rural credit migrated to the urban markets after 1990 neo-liberal policies. Due to all these reasons, the families depending on agriculture sector only have been suffering across the Country. The situation of Kadapa farmers of Rayalaseema region is even worse, due to the 'man made drought'.

On the other hand, the families who moved towards farm and non-farm self-employment, could maintain their income levels, and could secure a sustainable income sources through livestock and other guaranteed income sources. Whereas the Average net income of a sample households in Kadapa District is Rs.67,429, but surprisingly as per statistics of Socio-economic Survey of Andhra Pradesh 2015-2016, the per capita income of Kadapa District Rs.82,734. It shows a significant difference between these two figures. All the above explained data can be clearly observed in the following table1.4.

The below table depicts the Std Deviation among the farmers' community is 31229. The Std Deviation among agricultural labour is 1993. The Std Deviation among Non-agricultural labour is 3828. The Std Deviation among the self-employed in farm is 11832. The Std Deviation among the self-employed in non – farm is 12169.

Table 1.4: Rural Household Income Levels by Their Occupation

Occupation	Mean Income	Minimum	Maximum	Std. Deviation
Farmers	69,180	25000	310000	31229
Agricultural labor	36,733	35000	39000	1993
Nonagricultural labor	74,125	70000	77500	3828
Self-employment in farm	1,12,000	90000	120000	11832
Self-employment in non farm	1,15,333	100000	130000	12169
Total Occupations	67,429	35000	310000	33036

Source : field data

7. FARMERS INCOME FROM FARM AND NON-FARM SOURCES UNDER RAIN FED LANDS

The off-farm income was registered as Rs 25,136 among marginal, Rs 50,500 among small, Rs.64,070 among medium and Rs.1,35,000 among large farms respectively. Because of drought

the farm cultivation income was seen to be only Rs.15,773 among marginal and Rs 41,500 among small farm households. Rs 56,785 among medium and Rs1,20,000 among large farmers. When compared to irrigated area farmer households, the rain fed area farmer households earn low income. The non-farm income under irrigated land area was found to be Rs 20,000, Rs 11,000, Rs1,70,00 and Rs. 65,000 respectively among marginal, small, medium and large farms.

The highest percent of farm income was registered among the irrigated farms followed by rain fed farms. Non-farm income was seen highest among -irrigated large farm households followed by rain fed and irrigated other farm households.

Table 1.5: Farmers' Income By Sources Under Rain fed Lands

Source of income	**Marginal**	**Small**	**Medium**	**Large**
Farm income				
Cultivation	15,773	41,500	56,785	1,20,000
Agriculture labour	5,000	7,000	4,285	-
Livestock	4,363	2,000	3,000	15,000
Sub total	25,136 (55.6)	50,500 (82.1)	64,070 (79)	1,35,000 (67.5)
Nonfarm income				
Non agricultural labour	20,000	11,000	8,000	-
Non form business	-	-	9,000	31,000
Interests	-	-	-	34000
Sub total	20,000 (44.4)	11,000 917.9)	17,000 (21)	65,000 (32.5)
Grand Total	45,136 (100)	61,500 (100)	81,070 (100)	2,00,000 (100)

Source : field data **Note**: Figures in parenthesis indicate the percent of corresponding values

CONCLUSIONS

The whole study concludes that income and levels of rural households in Kadapa district are very low. Agriculture is the main source of income for both farming community and labour community in the district. But, the district is characterized by continuous droughts, low rain fall, inadequate irrigation facilities, etc. These are the reasons for low levels of income. The cost of cultivation has been increasing in recent years due to mechanization of agriculture and rapid increase of inputs prices particularly seeds, fertilizers and pesticides. This modern agriculture does not help to increase the income levels and living standards of rural households especially dry land farmers and agricultural laborers. But, it helps to abnormal increase in the incomes of the multi-national companies of seeds, fertilizers and pesticides. Majority farmers expressed that modern methods of farming, new machinery and technology increase the output

but that extra output value is lower than the cost of using new methods. Further t that the present modern methods of agriculture benefit to the industries but not to the farmers who make use of that technology. Unless and until major and radical changes will take place in the agriculture sector there will not be any significant changes in the livelihoods of rural people in the district.

POLICY IMPLICATIONS

The results on income and consumption levels of the households confirm that these outcomes are influenced by the area and accessibility of resources and by household occupations and assets. For policy purposes, it is desirable to know how policy changes that influence these factors would affect income and consumption levels suggested to improve the living standards of households in the rural areas. Keeping the above factors in mind, an attempt has been made to suggest / recommend some changes in policy.

GOVERNMENT SHOULD INCREASE IRRIGATION FACILITIES IN RURAL AREAS FOR THE SUSTAINABILITY OF BOTH FARMING AND LABOUR COMMUNITY.

Agriculture is a primary source of income for rural households. Agriculture in rain fed areas and drought prone areas depend on monsoons. During the last one decade monsoons has been affected due to climate change factors. As a result, scanty rains, ground water depletion and changes in cropping pattern have been occurred. Thus, agriculture is not sustainable and profitable in drought prone regions and dry land rain fed areas. Therefore, irrigation is the way to overcome these conditions and the benefits of irrigation are widespread. They are also well documented and relatively uncontroversial. Many empirical studies also found that irrigation increases production, productivity, employment and income levels of rural households, particularly farm families and land less laborers. In irrigated areas farmers do cropping two or three times in a year and earn good incomes.

The potential irrigational benefits to laborers are thus, a hike in daily wages, higher and less variable income, longer and more reliable employment, and if higher production brings prices down, it results in potentially lower food prices. Non-availability of irrigation facilities lead to migration. This may have a many ill effects. And when the irrigation facilities are available, all the ill effects disappear. For example, when there are two or three crops in a year, the need for laborers arise and marginal farmers' requirement to migrate diminishes. Rural poor families can stay together and further, it is easy to send their children to schools and they can have a stable education. Irrigation also protects and supports rural households against the impoverishment that is caused when they have to dispose of their assets or enter into debts. Therefore, government should increase irrigation facilities in rural areas.

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