THINK INDIA JOURNAL

ISSN:0971-1260
Vol-22- Issue-14-December-2019

Impact On Cropping Pattern Among The Tribal Households In Telangana

Jayanthy.S
Assistant Professor of Management Studies
Bharath Institute of Science and Technology,
Selaiyur, Chennai, Tamil Nadu 600 073
Bharath Institute of Higher Education and Research

ABSTRACT

The present paper deals with the cropping pattern among the tribal households with special reference to Khammam and Adilabad districts of Telangana. The paper is mainly based on the data gathered from the primary sources. By and large, from the analysis, it can be said that the causes and resultant consequences of the changes in cropping were so complex and inter-related to each other and therefore, it is not that much easy to isolate the individual factors. The cropping pattern among the tribal farmers was predominantly oriented towards food crops only and there is no change overtime in their cropping pattern. Finally, the study also lends support of the earlier writings that the cropping pattern in most of the tribal villages oriented towards growing the food crops primarily cereals of the type. Therefore, the researchers of the present study were of the view that the tribal farmers have to be open minded and willing to experiment with new technologies and have to develop an alternative model with harmonious admixture of traditional and modern scientific knowledge.

KEYWORDS: Cropping pattern, Tribal farming, Food crops

1. INTRODUCTION

The present paper deals with the cropping pattern among the tribal households with special reference to Khammam and Adilabad districts of Telangana. The present paper is divided into three sections. Section-I deals with the nature of tribal agriculture and the cropping pattern in tribal areas. Section-II deals with the review and methodology of the present paper. Field findings and summary of the study had been presented in Section-III. Cropping pattern can be defined as the proportion of area under different crops at a particular period of time. A change in cropping pattern means a change in the proportion of area under different crops. Cropping pattern in India is determined mainly by natural factors like rainfall, climate and soil conditions. Economic factors[1], historical factors[2], social factors[3], and policies of the government[4] affect the cropping pattern in a significant way. Besides, technological factors[5] also play an important role. Cropping patterns can be of various kinds. The important cropping patterns are: Sole cropping[6], Double cropping[7], Rotational cropping[8], Mixed cropping[9] and Intensive cropping[10]. It can be of two types, Multiple cropping[11] and Inter-cropping[12].

Cropping pattern in Indian agriculture is broadly classified into two parts viz; food grain and non-food grain crops. In the recent years, the importance of food grains processing industries is being increasingly recognized for generation of income and employment. Agriculture sector has been the source of supply of raw materials to industries. In India, the demand for food grain and non-food grain commodities is increasing due to increase in population. Therefore, it can be said that the increase of agricultural production is essential for meeting the increased demand. This sort of tendency is not an exception to the agriculture even in the case of tribal areas.

ISSN:0971-1260
Vol-22- Issue-14-December-2019

Majority of the tribes are engaged in agricultural and livestock rearing activities and other economic pursuits of the tribes are food gathering, hunting, fishing, handicrafts, trade and industrial labour etc. Among various activities agriculture, livestock rearing and non-farm activities are the major sources of income and the percentage of their contribution to the tribal livelihood is not so open. Data pertaining to the contribution of various economic activities among the tribal farmers is mandatory for any economic development programmes for the tribal farmers. Though various studies on socio-economic conditions of farmers were carried out in India, studies are limited with reference to the tribal farmers.

This economic backwardness is also reflected through the crops being grown on the tribal farms. Almost all the tribal farmers still grow indigenous crops giving low yields and eventually low marketed surplus and get low farm incomes resulting into low marginal propensity to save. These farmers also operate at a low capital base of the liberal credit facilities available after nationalization of the major commercial banks.

Indian tribes have been studied by the scholars of different disciplines from different points of view on various facets of the Indian tribes. Some of the studies had been mentioned hereunder. Sinha, A.K. et. al. (2004) in their study, they analyzed the existing cropping pattern and the possibilities for enhancing the productive potential of tribal farms in Ranchi district, Jharkhand State. The study has taken up during 2000-01, collected from a sample of 120 tribal farmers, were used in the analysis. Linear programming was used to develop optimum plans for each size group of selected farms. The study found that 20 per cent of the existing area under rice cultivation (71.25 per cent of the total cropped area) needs to be allocated to vegetables and pulses in order to obtain maximum profit. Through the re-allocation of resources, cropping intensity on the sample farms can be increased by up to 184 per cent. Through the optimization of resources use, under the condition of improved technology and unrestricted capital, net farm income can be increased by up to 275 per cent.

Besides the aforesaid studies, the studies (Dobariya, et.al, (2016), Jalaja, and Kala (2015), Trivedi and Patel (1992), Venkateshwara Swamy, et.al.(2016), Pavankalyan and Vasudev (2017) that have been carried were of the view that the cropping pattern in almost all the tribal villages was oriented towards foodgrains which is in sharp contrast to the plain areas. Keeping all these facets in view, the present study had been undertaken to analyse the under mentioned objectives.

2. OBJECTIVES

To examine the nature of cropping pattern among the tribal households;

- To analyse the relative share of different crops in the cropping pattern followed by the sample farmers; and
- To analyse the relative share of area under different sources of irrigation.

To ascertain the aforesaid objectives, the researchers had adopted the following

3. Methodology

The research design adopted for the study is to examine the cropping pattern among the tribal households in the erstwhile districts of Khammam and Adilabad in Telangana State. These two districts in the State of Telangana represent the highest concentration of tribal population. Further, it is to be noted that, from each district, three mandals had been chosen. From each mandal, one village had been selected at random and from each village, 30 sample households have been chosen at random. Altogether, six mandals, six villages and 180 sample households had been selected for the present study. The data had been collected from the chosen tribal

ISSN:0971-1260
Vol-22- Issue-14-December-2019

households by administering the pre-tested, structured interview schedule by the method of personal interview. The sample households were personally contacted and rapport was established to get unbiased information. The researchers had been collected the data during the year 2013-14 and the data pertaining to the reference period of 2012-13. Table-1 shows about the size of sample households.

Table-1: A Panoramic view of the Sample Size

Name of the District	Name of the Mandal	Name of the Village	No. of sample Households in the village
Adilabad	1. Tiryani	1. Indhanpalle	30
	2. Utnoor	2. Singaraipet	30
	3. Jannaram	3. Jannaram	30
Khammam	1. Chintoor	1. Chatti	30
	2. Bhadrachalam	2. Kistaram	30
	3. Yellandu	3. Yellandu	30

The present section had been devoted to examine the cropping pattern among the tribal households with empirical evidence. In this section, as per requirement of the study, the field study was conducted in three villages of three mandals in Adilabad and Khammam districts of Telangana by covering 30 samples from each village and altogether the data had been collected from the 180 tribal households with a view to analyse the relative share of different crops in the cropping pattern followed by the sample farmers.

Table-2: Age, Sex and District-wise Distribution of the Sample Respondents

Age Particulars	Sex	Khammam	Adilabad	Total
≤25	Male	13 (7.22)	8 (4.44)	21 (11.66)
	Female	-	-	-
25-35	Male	28 (15.55)	20 (11.11)	48 (26.66)
	Female	-	-	-
35-45	Male	25 (13.88)	27 (15.00)	52 (28.88)
	Female	-	-	-
45-55	Male	12 (6.66)	20 (11.11)	32 (17.77)
	Female	-	1 (33.34)	1 (0.55)
55-65	Male	11 (6.11)	13 (7.22)	24 (13.33)
	Female	-	-	-
≥ 65	Male	1 (0.55)	1 (0.55)	2 (1.11)
	Female	-	-	-
Total	Male	90 (50.00)	89 (49.44)	179 (99.45)
	Female	-	1 (0.55)	1 (0.55)
Grand Total		90 (50.0)	90 (50.0)	180 (100.0)

Source: Field Study

Note: Figures in Parentheses indicate percentages

ISSN:0971-1260
Vol-22- Issue-14-December-2019

The occupational distribution of the sample households shows (Table-3) that an overwhelming majority of them are performing agriculture as their main occupation. 48.88 per cent and 49.44 per cent of them in Khammam and Adilabad respectively performing the agriculture as a main occupation and the similar tendency had also been visualized even in the case of study area as a whole. The other main occupations like agricultural labour, forestry did not figure and sometimes very negligible. But, here it is to be noted that an overwhelming majority (56.11 per cent) of the sample respondents are performing agricultural labor as a sub-occupation and this had been the highest in Khammam followed by Adilabad with 43.33 per cent and 12.77 per cent respectively. The mean value of the main occupation is worked out to be 62. The standard deviation value is 99.62 and the co-efficient of variation is worked out to be 160.77. Thus, it can be said that there is a widespread dispersion among the households in performing the main occupation. By and large, the similar tendency can also be discerned even in the case of sub-occupations f the sample households. From the values of standard deviation and the co-efficient of variation, the spread is more in Khammam than in Adilabad.

Table-3: Occupational Distribution of the Sample Respondents

Occupation	Main Occupation		Total	Sub Occupation		Total
	Khammam	Adilabad		Khammam	Adilabad	
Nill	-	-	-	11 (6.11)	5 (2.77)	16 (8.88)
Agriculture	88 (48.88)	89 (49.44)	177 (98.33)	-	-	-
Agricultural Labour	1 (0.55)	1 (0.55)	2 (1.11)	78 (43.33)	23 (12.77)	101 (56.11)
Forestry	-	-	-	-	7 (3.88)	7 (3.88)
Agricultural Labour+MFP	-	-	-	-	51 (28.33)	51 (28.33)
Others	1 (0.55)	-	1 (0.55)	1 (0.55)	4 (2.22)	5 (2.77)
Total	90 (50.0)	90 (50.0)	180 (100.0)	90 (50.0)	90 (50.0)	180 (100.0)
Mean	30.0	45.0	62.0	30.0	18.0	36.0
Standard Deviation	50.80	62.22	99.62	41.86	20.0	40.77
Co-efficient of Variation	169.33	138.26	160.67	139.53	111.11	113.25

Source: Field Study

Note: Figures in Parentheses indicate percentages

Distribution of the sample respondents by sources of income has shown in Table-4. While looking at the data, it can be said that majority of the sample households in the study area obtained the higher incomes while performing the agriculture as a occupation and the percentages are being 67.50, 75.80 and 57.89 in the study area as a whole Khammam and Adilabad respectively. While earning incomes from agriculture labour stood second with the percentages of 25.75, 48.98 and 19.96 of Adilabad, Khammam and the study area as a whole respectively. Income from MFP is not figured in Khammam, whereas in Adilabad, it is 7.62 per cent of the total incomes of the Adilabad district. Similarly, the income from leased out and coal mine work did not figure in Adilabad. From the analysis, it can be said that in spite of other occupations, agriculture is providing substantial incomes to the sample households. The mean value of the incomes are worked out to be 82238.64, 82810.80 and 134066.92 in Khammam,

ISSN:0971-1260
Vol-22- Issue-14-December-2019

Adilabad and the study area as a whole respectively. While looking at the values of standard deviation and co-efficient of variation, one can conclude that there is a widespread dispersion among the sample households across the different occupations. Therefore, from the analysis, it can be surmised that even after the lapse of many years of globalisation, the occupation of agriculture preponderates over other occupations with which it can be said that agriculture play a vital role in the tribal areas in general and the study area in particular.

Table-4: Distribution of the Sample Respondents by Sources of Income

Sources of Income	District		Total
	Khammam	Adilabad	
Agriculture	436418.54 (75.80)	287629.35 (57.89)	724047.89 (67.50)
Agricultural Labour	86225.00 (14.98)	127904.00 (25.75)	214129.00 (19.96)
Forestry (MFP)	-	37905.50 (7.62)	37905.50 (3.55)
Attached Labour	2500.00 (0.43)	9400.00 (1.90)	11900.00 (1.10)
Leased out	2650.00 (0.46)	-	2650.00 (0.25)
Coalmine work/Factory work	17,000.00 (2.97)	-	17,000.00 (1.60)
Govt service	24540.00 (4.26)	12000.00 (2.41)	36540.00 (3.40)
Others	6337.00 (1.10)	22026.00 (4.43)	28363.00 (2.64)
Total	575670.54 (100.0)	496864.85 (100.0)	1072535.39 (100.0)
Mean	82238.64	82810.80	134066.92
Standard Deviation	158901.52	109634.50	247939.83
Co-efficient of Variation	193.22	132.39	184.93

Source: Field Study

Note: Figures in Parentheses indicate percentages

Table-5 shows about the distribution of the sample households by size of landholding. The data presented in the Table reveals the fact that a majority of the sample households in are small farmers. 21.66 per cent, 16.11 per cent of the total are the small farmers in Khammam and Adilabad respectively. The similar tendency can also be discerned even in the case of study area as a whole. Of the total 180 tribal sample households, a meagre households are in the category of big farmers. This finding clearly shows that tribal farmers in the study area are small scale farmers. The mean values of the size of landholding are 18, 22.5 and 36 in Khammam, Adilabad and the study area as a whole respectively. The values of the standard deviation and the co-efficient of variation indicate the stark inequalities in holding the land even among the tribal households and the same is reflected in the case of incomes obtained from the agriculture.

ISSN:0971-1260
Vol-22- Issue-14-December-2019

Table-5: Distribution of the Sample Respondents by Land size

Size Class	Khammam	Adilabad	Total
Landless	2 (1.11)	-	2 (1.11)
0.1-2.5	11 (6.11)	23 (12.77)	34 (18.88)
2.5-5.0	39 (21.66)	29 (16.11)	68 (37.77)
5.0-10.0	32 (17.77)	24 (13.33)	56 (31.1)
Above 10	6 (3.33)	14 (7.77)	20 (11.1)
Total	90 (50.0)	90 (50.0)	180 (100.0)
Mean	18	22.5	36
Standard Deviation	16.47	6.24	26.64
Co-efficient of Variation	91.5	27.73	74.0

Source: Field Study

Note: Figures in Parentheses indicate percentages

Table-6: Land owned and Average size of holding

	Khammam	Adilabad
No of families owning the land	88	90
Total land owned	511.25	564.00
Average size of holding	5.80	6.26
Sample population	456	472
Average size of population	5.06	5.24

Source: Field Study

Note: Figures in Parentheses indicate percentages

Land owned, average size of holding and average size of family, average size of population have shown in Table-6. The data attest the fact that the average size of holding in Adilabad is higher than the Khammam with 6.26 acres and 5.80 acres in both the districts the average size of landholding is higher than the national average i.e. 1.52. The average size of population in Khammam is worked out to be 5.06 and in Adilabad it is 5.24 and in both the districts the average size of population is more or less equal to the national average (5.2).

Table-7: Cropping Pattern for Both Karif and Rabi Seasons in Khammam

Area under different crops	Name of the Village			Total
	Chatti	Kistaram	Yellandu	
Paddy	48.50 (31.00)	64.00 (32.95)	42.50 (22.98)	155.00
Maize	4.50 (2.87)	-	2.00 (1.08)	6.50
Jowar	55.00 (35.14)	61.00 (31.40)	66.00 (35.68)	182.00
Samai	-	6.25 (3.22)	1.00 (0.54)	7.25
Pearl millet	-	6.00 (3.08)	-	6.00
Green Gram	3.00 (1.91)	12.50 (6.43)	6.50 (3.52)	22.00
Red Gram	12.00 (7.67)	2.00 (1.04)	18.50 (10.00)	32.50
Black gram	-	3.00	3.00	6.00

ISSN:0971-1260
Vol-22- Issue-14-December-2019

		(1.54)	(1.62)	
Hoarse gram	2.00 (1.28)	4.00 (2.06)	3.00 (1.62)	9.00
Cow gram	-	2.00 (1.04)	-	2.00
Ground nut	-	-	-	-
Gingilly	9.00 (5.75)	-	14.50 (7.84)	23.50
Mirchi	7.50 (4.80)	9.50 (4.90)	3.00 (1.62)	20.00
Redgram+ gingilly	15.00 (9.58)	-	10.00 (5.40)	25.00
Jowar + green gram	-	15.00 (7.72)	2.00 (1.08)	17.00
Greengram + redgram	-	-	9.00 (4.86)	9.00
Greengram + cowgram	-	3.00 (1.54)	-	3.00
Redgram + jowar	-	-	4.00 (2.16)	4.00
Greengram + hoarse gram	-	3.00 (1.54)	-	3.00
Blackgram + hoarse gram	-	0.50 (0.25)	-	0.50
Redgram +Blackgram	-	0.50 (0.25)		
Jowar	-	2.00 (1.04)	-	2.00
Total area under the crops	156.50 (100.00)	194.25 (100.00	185.00 (100.00)	535.75
Mean	17.38	12.14	13.21	26.76
Standard Deviation	19.98	20.10	18.69	49.52
Co-efficient of Variation	114.95	165.56	141.48	185.05

Source: Field Study

Note: Figures in Parentheses indicate percentages

Table-7 shows about the nature of cropping pattern in the erstwhile district of Khammam. The total area under the crops is worked out to be 535.75 acres. Of the total cropped area, 66.68 per cent of the area was under food crops like paddy, maize, jowar, samai, pearl millet. 13.37 per cent of the area was under pulses like green gram, red gram, black gram, hoarse gram, and cow gram. 8.11 per cent of the area was under the oil seeds like groundnut, and gingilly. 3.73 per cent of the area was under mirchi which is a commercial crops. 11.84 per cent of the area was under mixed cropping like red gram plus gingilly, jowar plus green gram, etc. Thus, from the above analysis, it can be surmised that an overwhelming area was devoted to the traditional crops. Despite, commercialization is rampant in the plain areas, one cannot find the commercialization in the tribal areas. By and large, the similar tendency can also be discerned even in the case of the villages under the consideration for the study.

ISSN:0971-1260
Vol-22- Issue-14-December-2019

4. CONCLUSION

To depicts the distribution of sample households by size of land holding and the sources of irrigation. From the data presented in the Table-11 reveals the fact that irrespective of size of the land holding, an overwhelming majority of the sample households are having the "other sources" for irrigating their lands would imply that they may depend on the "rain water". While looking at the Table-11, it can be said that in a relative sense in both the study areas of Khammam and Adilabad, lift irrigation is figured in and this is the highest in Adilabad within the range of 0.1-2.5 acres, which is accounting for 34.80 per cent followed by Khammam with in the same size of landholding which is accounting for 27.28 per cent. Thus, from the above analysis, it can be said that there is no correlation between the size of landholding and sources of irrigation and hence, during the field work, it had also been observed that private irrigation especially wells as a source of irrigation is figured in relatively higher in Adilabad as compared with Khammam.

By and large, from the above analysis, it can be said that the causes and resultant consequences of the changes in cropping were so complex and inter-related to each other and therefore, it is not that much easy to isolate the individual factors. The cropping pattern among the tribal farmers was predominantly oriented towards food crops only and there is no change overtime in their cropping pattern. Further, it can be said that the present study corroborates the empirical findings of the scholars like B.K.Burman, Krishnaswamy and Patel, Murthy and Singh, Pawer etc. Finally, the study also lends support of the earlier writings that the cropping pattern in most of the tribal villages oriented towards growing the food crops primarily cereals of the type. Therefore, the researchers of the present study were of the view that the tribal farmers have to be open minded and willing to experiment with new technologies and have to develop an alternative model with harmonious admixture of traditional and modern scientific knowledge.

5. NOTES

- Economic factors include prices, income, size of holdings, availability of inputs and land tenure, etc.
- These pertain to historical pattern of land tenure. If the land is divided into a number of small plots with ownership vested in numerous small and marginal farmers (as under ryotwari) the tendency will be to grow food crops. As against to this, if ownership of land is vested in large owners (as under zamindari) the tendency will be to produce more cash crops.
- Social factors include customs, traditions, outlook towards material things and social

ISSN:0971-1260
Vol-22- Issue-14-December-2019

environment, etc.

- Government policies relate to exports, taxes, subsidies, supplies of inputs and availability of credit, etc.
- These include the use of agricultural inputs and methods such as modern machinery, improved seeds, fertilizers, improved ploughs, tractors, harvesters and irrigation etc., which helps to raise productivity.
- Single cropping (monoculture) means when a single crop is grown during a season.
- It refers to the practice of growing two crops in a year.
- It means when cropping is done in a definite sequence.
- It refers to a process of growing two or more crops together in the same piece of land. Mixed cropping widely practiced in India, particularly during the kharif season.
- It is the process of growing a number of crops on the same piece of land during the given period of time. The aim is to increase the income per unit area within a specified period of time.
- This is a cropping system in which two or more crops are grown in succession within a year. An example of multiple cropping is Rice-Potato-Sunflower followed by Rice-Wheat-Moong.
- This is a process of growing subsidiary crops between two widely spaced rows of main crop. Examples are Sugarcane-Soyabean, Moong or Urd-Maize, and Urd, Moong or Cotton-Pigeonpea.

ISSN:0971-1260
Vol-22- Issue-14-December-2019

REFERENCES

[1] Dobariya,J.B. et.al, (2016): **Cropping Pattern in Tribal Area of Dang District**, *J Krishi Vigyan,* Vol. 5(1), pp.19-22.

[2] Jairath, M. S. (1994): **Wholesale Market and Agricultural Development in the Tribal Areas**, *Indian Journal of Agricultural Marketing,* Special Issue, pp. 105-113.

[3] Jalaja,V and Kala,P.A, (2015): **Case Study of Tribal farmers Agricultural Information Needs and Accessibility in Attappady Tribal Block, Palakkad**, *IOSR Journal of Humanities and Social Science,* Vol.20(8), pp.7-12.

[4] Mohammad Awais (2012): **An analytical Study of Socio-economic Conditions of Tribal Farmers in Bijnor District of U.P. State**, *Ph.D Thesis*, Aligarh Muslim University, Aligarh.

[5] Pavankalyan, V and Vasudev, N (2017): **Cropping Pattern and Cropping Intensity of Tribal Agriculture**, *International Journal of Pure and Applied Bioscience*, Vol. 5(4), pp.1185-88.

[6] Rao, P.P. and Rao, V.G.K. (1996): **Adoption of Rice Production Technology by the Tribal Farmers**, *Journal of Research ANGRAU*, Vol-24, No.2, pp. 22-25.

[7] Rao, Y.V.K. and Bathaian, D. (1993): **Income, Consumption and Saving Behaviour of Tribal Farmers of Andhra Pradesh,** *Agricultural Situation in India,* Vol-48, No.3, pp. 145-150.

[8] Reddy, Mohan, K (2010): **Indigenous Markets in India-A Study in Tribal Areas,** Serials Publications, New Delhi.

[9] Sahu B N. (1970): **Guidelines Development of Tribal Agriculture in India,** *Indian journal of Agricultural Economics,* Vol. 25 (3), pp.224-225.

[10] Sinha, A.K., Pandey, R. K. and Singh, B.K. (2004): **Possibilities of Increasing Income and Employment on Tribal Farms of Ranchi District, Jharkhand**, *Journal of Research-Birsa Agricultural University,* Vol. 16(2), pp.277-282.

[11] Trivedi, J.C. and Patel, H.N. (1992): **A Study of Cropping pattern followed by Tribal Farmers of Panchmahals district in Gujarat**, *Gujarat Journal of Extension Education*, II &III., pp.1-4

[12] Venkateshwara Swamy, T and Naveen, V, and Mohan Reddy, K (2016): **Analysis of Cropping Pattern in Telangana – A Study,** *Farmers Suicides Causes Consequences and Preventive Measures (Etd) By Punnaiah,* A, Vaagdevi Publishers, Hyderabad, New Delhi, pp.263-269.

