

## Utilization of Labour in Different Crops of Tribal Agriculture in Telangana

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### ABSTRACT

Agriculture is a backbone of Indian economy. The Govt. of India Established 4 ITDAs in Telangana region of Andhrapradesh. These are 1. Eturnagaram, Warangal (dist) 2. Badrachalam, Khammam (dist) 3. Utnoor, Adilabad (dist) 4. Srisailam, Mahabubnagar (dist). For the purpose of present study, we have selected two ITDAs. Viz., Eturnagaram, Warangal (Dist) and Badrachalam, khammam (Dist). It was observed that human labour employment per hectare for all the crops were high on Khammam district compared to the Warangal district. The size of human labour was inversely proportional to the farm size. The cattle labour utilization is more on small tribal farms compared to other farms in both districts.

**Key words:** Economy, ITDAs, Farms, Employment.

### INTRODUCTION

India is one of the countries having the largest concentration of tribal population in the world. According to 2011 census the population of the scheduled tribes in the country were 8.43 crores, constituting about 8.2 per cent of the total population indicating approximately one tribesman for every fourteen Indians. Majority of tribal population is concentrated in nine states i.e. Madhya Pradesh, Bihar, Orissa, Gujarat, Rajasthan, Assam, Maharashtra, West Bengal and Andhra Pradesh<sup>1,6</sup>. Though 80 per cent of tribals depend on agriculture as the main source of livelihood, they still remain below the poverty line. Each tribal group possesses its own strong socio- economic and cultural ethos. There are some tribal groups

which are, even now, at food-gathering stage, while others practice shifting or 'Jhum' cultivation. Some tribal areas are not easily accessible while in some others small scale industrialization has brought a change in their way of life.

#### **Integrated Tribal Development Agency, Warangal and Khammam Districts**

The Integrated Tribal Development Agency (ITDA) came into existence on 1<sup>st</sup> October 1979 with headquarters at Eturnagaram, Warangal district and in Khammam district ITDA was formed on ITDA head quarter under the Society Registration Act: 1974-75 1st at Khammam, 1974-75 Shifted to Palwancha and 1979 Shifted to Bhadrachalam 1993.

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These two ITDAs were functioning with a view to implement developmental programmes in sectors like education, irrigation, agriculture, animal husbandry, cooperation, industries, medical and health etc. The overall objective of the ITDA is the development of tribals in their economic, social and cultural aspects. The agency prepares separate action plans for each year.

## MATERIALS AND METHODS

### Selection of District

Warangal and Khammam districts were selected purposively. The Integrated Tribal Development Agency has been operating in these districts for more than 30 years. Warangal district has considerable tribal population of about 7.99 lakhs which constitutes 30 percent of total population in the district and Khammam district has considerable tribal population of about 11.44 lakhs which constitutes 34 percent of total population in the district. Comparative Among the two districts high tribal population exists in Khammam district. This ranks first in the state in tribal population.

### Selection of mandal

The area of operation of Integrated Tribal Development Agency in Warangal district extends to 13 mandals. Out of 13 mandals 3 mandals viz., Eturnagaram, Tadwai and Mangapet were selected for the detailed study because Tribal Development programmes were well initiated in these 3 mandals extending to 64 villages in Eturnagaram, 21 villages in Tadwai and 33 villages in Mangapet mandals. Thus out of 396 villages covered by Integrated Tribal Development Agency in the entire district, 118 villages (24.36%) in these 3 mandals were covered by the study.

The tribal population is considerably large in these three mandals when compared to other mandals. Out of the total tribal population of 5, 30,656. Eturnagarm, Tadwai and Mangapet have population of 11,776,

11876 and 11560 respectively.

In Khammam district 3 mandels viz., Palwancha, Mulkalapally and VRC puram were selected for the detailed study. Tribal Development programmes were well initiated in these 3 mandals extending to 53 villages in Palwancha, 34 villages in Mulkalapally and 37 villages in VRC puram mandals. The tribal population is considerably large in these three mandals when compared to other mandals. Out of the total tribal population of 7, 65,565 in the district, Palwancha, Mulkalapally and VRC Puram have population of 29,368, 21,417 and 16,112 respectively.

### Selection of villages

From each mandal two villages were selected at random making the total of 12 villages from two districts.

### Selection of farmers

The farmers in each selected village were arranged in descending order taking the size of holding into consideration. They were grouped into suitable categories. The farmers were selected at random depending upon his availability. The size groups are follows:

Small	:	0-1	ha.wet
land or 0-2.5 ha.			dry
Medium	:	1-2	ha.wet
land or 2.5-5 ha.			dry
Large	:	2 ha	above wet
or 5 ha.			dry

The number of farmers was taken as 9 under each category randomly. Hence, the total sample size was 108.

### Employment pattern

Labour is an important input in the crop production. The labour employment on the farm depends on the nature of the operations, size of the farm, type of the crop and availability of labour. The human labour and cattle labour utilization on selected crops is discussed in the ensuing paragraphs.

### Cotton

The total labour utilization of cotton crop according to the farm size per hectare is presented in table 01.

**Table 1: Labour utilization in cotton cultivation according to farm size per hectare (in man days)**

Particulars	Khammam				Warangal			
	Small farms	Medium farms	Large farms	Pooled farms	Small farms	Medium farms	Large farms	Pooled farms
1 .Human labour in man days								
Family labour	62.10	58.28	53.16	57.85	54.28	42.39	31.14	42.60
Hired labour	28.36	36.76	39.14	34.75	23.41	23.41	43.06	33.66
Total human labour	90.46	95.04	92.30	92.60	77.69	76.91	74.20	76.26
2. Cattle labour in cattle pair days								
	17.05	26.15	29.20	24.12	14.17	23.08	28.43	21.89

It was observed from the table that, the total human labour utilization on tribal farms was the highest on medium farms with 95.04 man days per hectare and lowest on small farms with 90.46 man days. The same for the large farms is 92.30 man days. For the sample as a whole, 92.60 man days of human labour were utilized to raise cotton crop on one hectare. The utilization of family labour varied from 53.16 man days to 57.85 man days on large farms and pooled farms. On the small farms and medium farms, they were 62.10 and 58.28 man days respectively. The utilization of hired labour is 28.36, 36.76, 39.14 and 34.75 man days respectively on small, medium, large and pooled farms. It is further noticed that the cattle labour utilization on tribal farms varied from 17.05 cattle pair days on small farms to 29.20 cattle pair days on large farms. The same for medium and pooled farms were 26.12 and 24.12 cattle pair days respectively. In I.T.D.A Eturnagaram, Warangal districts, the total human labour utilization on tribal farms was the highest on small farms with 77.69 man days per hectare and lowest on large farms with 74.20 man days. The same for the medium farms was 76.91 man days. For the sample as a whole, 76.26 man days of human labour were utilized to raise cotton crop on one hectare. The utilization of family labour varied from 31.14 man days to 42.60 man days on large farms and pooled farms. On the small farms and medium farms, they are 54.28 and

42.39 man days respectively. The utilization of hired labour is 23.41, 23.41, 43.06 and 33.66 man days respectively on small, medium, large and pooled farms. It is further noticed that the cattle labour utilization on tribal farms varied from 14.17 cattle pair days on small farms to 28.43 cattle pair days on large farms. The same for medium and pooled farms was 23.08 and 21.89 cattle pair days respectively.

#### Maize

It is observed from the table that, in I.T.D.A Badrachalam, Khammam districts, and the total human labour utilization on tribal farms was the highest on small farms with 92.77 man days per hectare and lowest on medium farms with 77.90 man days. The same for the large farms was 80.11 man days. For the sample as a whole, 83.59 man days of human labour were utilized to raise maize crop on one hectare. The utilization of family labour varied from 55.70 man days to 66.72 man days on large farms and pooled farms. On the small farms and medium farms, they are 81.76 and 62.72 man days respectively. The utilization of hired labour is 11.01, 15.18, 24.41 and 16.86 man days respectively on small, medium, large and pooled farms. It is further noticed that the cattle labour utilization on tribal farms varied from 15.49 cattle pair days on small farms to 9.69 cattle pair days on large farms. The same for medium and pooled farms was 12.95 and 12.71 cattle pair days respectively<sup>6</sup>.

**Table 2: Labour utilization in maize cultivation according to farm size per hectare (in man days)**

Particulars	Khammam				Warangal			
	Small farms	Medium farms	Large farms	Pooled farms	Small farms	Medium farms	Large farms	Pooled farms
1. Human labour in man days								
Family labour	81.76	62.72	55.70	66.72	86.99	80.68	72.04	79.90
Hired labour	11.01	15.18	24.41	16.86	18.29	21.16	30.16	23.20
Total human labour	92.77	77.90	80.11	83.59	105.28	101.84	102.2	103.10
2. Cattle labour in cattle pair days								
	15.49	12.95	9.69	12.71	21.89	14.68	6.80	14.45

In I.T.D.A Eturnagaram, Warangal districts, the total human labour utilization on tribal farms was the highest on small farms with 86.99 man days per hectare and lowest on large farms with 72.04 man days. The same for the medium farms was 80.68 man days. For the sample as a whole, 103.10 man days of human labour were utilized to raise maize crop on one hectare. The utilization of family labour varied from 72.04 man days to 79.90 man days on large farms and pooled farms. On the small farms and medium farms, they are

86.99 and 80.68 man days respectively. The utilization of hired labour is 18.29, 21.16, 30.16 and 23.20 man days respectively on small, medium, large and pooled farms. It is further noticed that the cattle labour utilization on tribal farms varied from 21.89 cattle pair days on small farms to 6.80 cattle pair days on large farms. The same for medium and pooled farms were 14.68 and 14.45 cattle pair days respectively<sup>3</sup>.

#### **Paddy**

**Table 3: Labour utilization in paddy cultivation according to farm size per hectare (in man days)**

Particulars	Khammam				Warangal			
	Small farms	Medium farms	Large farms	Pooled farms	Small farms	Medium farms	Large farms	Pooled farms
1. Human labour in man days								
Family labour	59.72	63.77	71.49	64.99	63.61	79.84	72.69	72.05
Hired labour	38.86	53.54	43.24	45.21	42.92	47.06	47.93	45.21
Total human labour	98.58	117.31	114.73	110.20	106.53	126.90	120.62	118.02
2. Cattle labour in cattle pair days								
	8.10	12.55	14.44	11.69	10.26	13.39	16.19	13.28

It is observed from the table that, in I.T.D.A Badrachalam, khammam district, the total human labour utilization on tribal farms is the highest on large farms with 114.73 man days per hectare and lowest on small farms with 98.58 man days. The same for the medium farms was 117.31 man days. For the sample as a whole, 110.20 man days of human labour were utilized to raise paddy crop on one hectare. The utilization of family labour varied from 71.49 man days to 64.99 man days on large farms and pooled farms. On the small farms and medium farms, they were 59.72 and 63.77 man days respectively. The utilization of hired labour is 38.86, 53.54, 43.24 and 45.21 man days respectively on small,

medium, large and pooled farms. It was further noticed that the cattle labour utilization on tribal farms varied from 8.10 cattle pair days on small farms to 14.44 cattle pair days on large farms. The same for medium and pooled farms were 12.55 and 11.69 cattle pair days respectively. In I.T.D.A Eturnagaram, Warangal districts, the total human labour utilization on tribal farms was the highest on small farms with 106.53 man days per hectare and lowest on medium farms with 126.90 man days. The same for the large farms was 120.62 man days. For the sample as a whole, 118.02 man days of human labour were utilized to raise paddy crop on one hectare. The utilization of family labour varied from

72.69 man days to 72.05 man days on large farms and pooled farms. On the small farms and medium farms, they were 63.61 and 79.84 man days respectively. The utilization of hired labour was 42.92, 47.06, 47.93 and 45.21 man days respectively on small, medium, large and pooled farms. It is further noticed that the

cattle labour utilization on tribal farms varied from 10.26 cattle pair days on small farms to 16.19 cattle pair days on large farms. The same for medium and pooled farms were 13.39 and 13.28 cattle pair days respectively<sup>2</sup>.

#### Groundnut

**Table 4: Labour utilization in groundnut cultivation according to farm size per hectare (in man days)**

Particulars	Khammam				Warangal			
	Small farms	Medium farms	Large farms	Pooled farms	Small farms	Medium farms	Large farms	Pooled farms
1. Human labour in man days								
Family labour	78.17	97.63	51.44	75.75	72.80	97.46	55.05	79.81
Hired labour	17.86	29.81	18.05	21.91	19.25	34.08	21.26	24.86
Total human labour	69.03	127.44	69.49	97.66	92.05	131.54	76.31	99.96
2. Cattle labour in cattle pair days								
	10.47	19.67	7.33	12.49	11.91	21.11	8.54	13.85

It was observed from the table that, in I.T.D.A Badrachalam, Khammam districts, the total human labour utilization on tribal farms was the highest on medium farms with 127.44 man days per hectare and lowest on small farms with 69.03 man days. The same for the large farms was 69.49 man days. For the sample as a whole, 97.66 man days of human labour were utilized to raise ground nut crop on one hectare. The utilization of family labour varied from 51.44 man days to 75.75 man days on large farms and pooled farms. On the small farms and medium farms, they were 78.17 and 97.63 man days respectively. The utilization of hired labour was 17.86, 29.81, 18.05 and 21.91 man days respectively on small, medium, large and pooled farms. It was further noticed that the cattle labour utilization on tribal farms varied from 10.47 cattle pair days on small farms to 7.33 cattle pair days on large farms. The same for medium and pooled farms were 19.67 and 12.49 cattle pair days respectively.

In I.T.D.A Eturnagaram, Warangal districts, the total human labour utilization on tribal farms was the highest on medium farms with 131.54 man days per hectare and lowest on large farms with 76.31 man days. The same for the small farms was 92.05 man days. For the sample as a whole, 99.96 man days of human labour were utilized to raise ground nut crop on one hectare. The utilization of family

labour varied from 55.05 man days to 79.81 man days on large farms and pooled farms. On the small farms and medium farms, they were 72.80 and 97.46 man days respectively. The utilization of hired labour was 19.25, 34.08, 21.26 and 24.86 man days respectively on small, medium, large and pooled farms. It was further noticed that the cattle labour utilization on tribal farms varied from 11.91 cattle pair days on small farms to 8.54 cattle pair days on large farms. The same for medium and pooled farms were 21.11 and 13.85 cattle pair days respectively<sup>5,7</sup>.

These trends in the employment of human and cattle labour indicates the impact of integrated tribal development agency on the tribal farms through the implementation of various programmes like assistance for irrigation wells, supply of electric motors, input supply and land development etc.

#### CONCLUSION

It is interesting to note that human labour utilization per hectare decreased with the increase in farm size. Further, it was found that human labour utilization was more on farms of Khammam district compared to Warangal district tribal farms. In I.T.D.A Badrachalam, Khammam districts, the total human labour utilization on tribal farms was the highest on medium farms with 95.04 man

days per hectare and lowest on small farms with 90.46 man days. The same for the large farms was 92.30 man days. For the sample as a whole, 92.60 man days of human labour were utilized to raise cotton crop on one hectare. In I.T.D.A Eturnagaram, Warangal districts, the total human labour utilization on tribal farms was the highest on small farms with 77.69 man days per hectare and lowest on large farms with 74.20 man days. The same for the medium farms was 76.91 man days. For the sample as a whole, 76.26 man days of human labour were utilized to raise cotton crop on one hectare.

#### REFERENCES

1. Cynthia Lai, Catherine Chan, Jacqueline Halbrecht, Linsey Shariq, Pravat Roul, Travis Idol, Chittanrajan Ray, Carl Evensen, Comparative Economic and Gender, Labor Analysis of Conservation Agriculture Practices in Tribal Villages in India. *International Food and Agribusiness Management Review*, **15(1)**, (2012).
2. D.R. Singh, Sushila Kaul, Sivaramane N, Migratory Sheep. and Goat Production System, The Mainstay of Tribal Hill Economy in Himachal Pradesh. *Agricultural Economics Research Review*, Vol.: **19, No: 2**, (2006).
3. Debabrata Saha, R.C., Sundriyal, Utilization of non-timber Forest Products in Humid Tropics: Implications for Management and Livelihood Forest Policy and Economics, Vol.: **14, No:1**, 28-40, (2012).
4. Hand book of girijan co-operative society of Andhra Pradesh, (2011).
5. Samantaray S. K., Prusty S. and Raj R. K., Constraints in Vegetable Production-experiences of Tribal Vegetable Growers. *Indian Research Journal of Extension Education*, Vol.: **9, No: 3**, (2009).
6. Dash S. S. and Misra M. K., Studies on Hill Agro-ecosystems of Three Tribal Villages on the Eastern Ghats of Orissa, India Agriculture, Ecosystems and Environment Vol.: **86, No: 3**, 287-302, (2001).
7. Sanjay Kanti Das, An Analysis of Constraints in Women Empowerment in Tribal Area: Evidences from Assam *Asian Journal of Research in Social Sciences and Humanities* Vol.: **2, No: 4**, 63-76, (2012).