

## Need Assessment of Cotton Growing Farm Women in Southern Tamil Nadu

Parimalam Pa<sup>1</sup>, Padmanaban Kb<sup>2</sup>, Logeswari Sc<sup>3</sup>, Nallakurumban Bd<sup>4</sup> and S Thambithuraie<sup>5</sup>

### ABSTRACT

Today rural women are majorly involved in agriculture practices. Cotton being one of the major crops in agriculture production systems, women also work in various activities from pre sowing till harvesting of cotton crop. The present study was conducted in three southern districts of Tamil Nadu namely Madurai, Trichy and Viruthunagar. Seventy one cotton growing farm women were selected for the study. Total of 176.5 acres of cotton production was done in the respondents' field. The mean age of the respondents was 42 years of age. Eighty per cent of the farm women were literate and majority of the farm women were small farm land holders. All the farm women were under economic weaker section group. Sowing, thinning and gap filling, weeding and harvesting were the major activities performed fully by farm women. Sickle and hand hoe were the only tools used to remove weeds in cotton crop. Leg, hand and back were the major areas affected by musculoskeletal discomfort. The study revealed that farm women need women friendly farm tools for harvesting and weeding operation in cotton crop. The increase in productivity of farm women depends on the comfort of farm women while at work.

**Key words:** Cotton crop, need assessment, productivity, tools, women.

### INTRODUCTION

Cotton cultivation is done in an area of 105 lakh hectares in India and among them Tamil Nadu constitutes 1.5 lakh hectare cotton cultivation (Cotton Advisory board, 2011). Agriculture in developing countries heavily depends on manual labour and major contribution comes from women. The intellectual and physical workforce of women in agriculture is unpaid worldwide. (State of Food and Agriculture and Cheryl Doss, 2011).

There are approximately four million cotton farmers, with about 45 million people employed in all the cotton production and processing in India; women account 70 per cent of cotton planting and 90 per cent hand picking/harvesting. (Sangeeta Waldron, 2016) and Kale *et. al.*, (2018) & Bishnoi *et. al.*, (2017). This study was proposed to explore the women participation in cotton cultivation

practices. This also involves the understanding about different problems faced by farm women in agricultural activities. Overall representation on the needs of farm women in cotton growing was understood in this paper.

### METHODOLOGY

A study was conducted at three districts *i.e.* Madurai, Trichy and Viruthunagar. An *exploratory* research design was used to explore the women participating activities in cotton crop production activities. Seventy one farm women were selected by criterion sampling method. The criteria in selection were that all the respondents were cotton growing land holders. A standardized interview schedule was used to conduct the survey. Appropriate statistical tools were used to analyse the results from the study.

---

<sup>1</sup>Professor and Head, <sup>3</sup>Senior Research Fellow, <sup>4</sup>Assistant Professor, Dept. of Family Resource Management, Home Science College & Research Institute, TNAU, Madurai, Tamil Nadu, India; <sup>2,5</sup>Assistant Professor, Dept. of Farm machinery, Agricultural Engineering College, TNAU, Kumulur, Tamil Nadu, India

## RESULTS AND DISCUSSION

Table 1 represented the district wise cotton cultivated area in acres. Thirty three farmers cultivated total of 89 acres crop in Viruthunagar district. In Trichy district 26 farmers had cultivated total of 57.5 acres of cotton crop. Twelve farmers of Madurai district had cultivated total of thirty acres of cotton crop in the study. Total of seventy one farmers had cultivated about 176.5 acres of cotton production.

**Table 1: Distribution of districts with cultivation details**

District	No. of farmers	Cultivated area (acre)
Madurai	12	30
Trichy	26	57.5
Viruthunagar	33	89
	71	176.5

The sociological profile of the respondents is represented in Table 2. The mean age of the respondents was 42 years of age with S.D. 11.3 years. Sixty eight per cent of the respondents were middle aged to old age farm women. Among them forty nine per cent of them were middle aged, 14 per cent were late middle aged and five per cent were old age farm women workers. 32 per cent of them were young farm women working in cotton production. 80 per cent of the farm women were literate. Among them 50 per cent was school dropouts, 27 per cent were high secondary school educated. 3 per cent had completed their bachelors' graduation. 51 per cent of them were nuclear family sections. 91 per cent of the farm women were small farm land holders. Only 3 per cent were marginal farmers. Remaining 6 per cent of them were having no land to cultivate.

**Table 2 : Sociological profile of agricultural farm women**

Particulars	No. of respondents	Percentage
Age (in years)		
Young age	23	32
Middle age	35	49
Late middle aged	10	14
Old age	3	5
Education		
Illiterate	14	20
School dropouts	36	50
Higher secondary school	19	27
Graduation	2	3
Family type		
Nuclear	36	51
Joint	35	49
Total land holding		

No land	4	6
Small (2 – 5 acres)	65	91
Marginal (5 – 10 acres)	2	3

The work experience of the farm women were represented in Table 3. The mean work experience was 19 years. 70 per cent of the farm women had work experience more than 15 years in cotton production. Among them 45 per cent of them had work experience of 15 to 25 years. The 18 per cent of workers had work experience of 26 to 35 years and 7 per cent of them had more than 35 years of farm work experience. The 30 per cent of workers had farm work experience less than 15 years.

**Table 3: Work experience of farm women**

Work experience (Year)	No. of respondents (n=71)	Percentage
Less than 15	21	30
15-25	32	45
26-35	13	18
More than 35	5	7

Table 4 represented the annual income details for the year 2016-17 and the wage worker details. The mean annual income of the workers was ₹ 50000/-. Majority (79%) of the farm women had an annual income of ₹10000- one lakh. Among them 56 per cent had income of ₹10000 to 50000/- and 23 per cent had annual income of ₹ 50000- one lakh. The 18 per cent of workers had annual income more than one lakh. Only 3 per cent of them had very low annual income of less than ₹10000/-. It can be inferred from the table that all the farm women were under economic weaker section group.

**Table 4: Annual income and wage worker details (2016-17)**

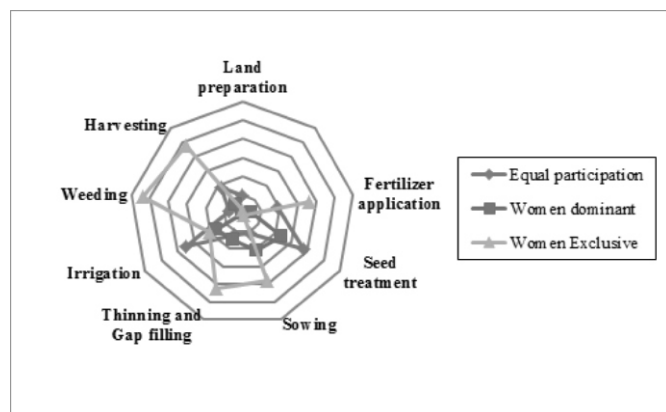
Particulars	No. of respondents (n=71)	Percentage
Income /annum(2016-17)		
Less than 10000	2	3
10000 -50000	40	56
50000 -100000	16	23
More than 100000	13	18
Wage details		
Non wager	58	81.6
Wage worker	13	18.3

Figure 1 represented the gender participation in cotton crop. Four major activities viz., sowing, thinning and gap filling, weeding and harvesting were performed fully by women. Seed treatment was the only major

women dominant activities. Land preparation, fertilizer application and irrigation were the activities performed equally by both men and women farmers.

Tools used by farm women in fully women activities were represented in figure 2. Sickle and hand hoe were the tools used to remove weeds in cotton crop. Sowing, thinning and gap filling and harvesting of cotton was done manually without help of any farm tool.

**Figure 1:**  
Gender participation of farm women in cotton crop



**Figure 2:**  
Farm tools used in cotton crop



Table 5 represented the problems reported by the farm women while performing fully women involving activities. While performing sowing activity the major problem faced by farm women was back pain(36%), leg pain (30%) followed by no proper tool reported by 9 per cent of the women. In weeding activity 33 per cent had reported that they have back pain problem, 32 per cent had hand pain, 20 per cent of them reported they had fatigue

and 6 per cent of the workers had body pain. Thinning and gap fulfilling activity was reported to lead to body pain by 17 per cent of the workers followed to 11per cent of them reported that there is no proper tool. Harvesting activity performing 30 per cent of the workers reported they had leg pain, 28 per cent of the workers had reported no proper tool, 11 per cent of the workers reported that they had body pain, 10 per cent reported fatigue during harvesting. It can be inferred that, hand pain and back pain were major problem & faced by workers while performing weeding and sowing activities. Leg pain was observed to be reported while performing sowing and harvesting activities. Lack of proper tool was reported majorly for harvesting activity.

**Table 5: Problems given by the workers for fully women activities**

Particulars	Sowing	Weeding	Thinning and gap filling	Harvesting
No proper tool	9	3	11	28
Fatigue due to strenuous work	3	20	0	10
Body pain	0	6	17	11
Hand pain	2	32	0	7
Back pain	36	33	0	8
Leg pain	30	2	0	30

Table 6 represented the suggestions given by farm women. 38 per cent of the farm women suggested for modification in weeding tool, 27 per cent of the women suggested harvesting tool to be developed, 13 per cent of the workers suggested tool for sowing activity. 6 per cent of the women suggested for modification in cotton picking machine. It can be inferred from the Table that, tool modification was the major suggestion given by the farm women.

**Table 6: Suggestions given by the farm women**

Particulars	No. of respondents	Percentage
Cotton picker should be altered	4	6
Weeding tool should be modified	27	38
Sowing tool should be developed	9	13
Harvesting tool can be developed	19	27

## CONCLUSION

Women account for almost half of the world's agricultural workforce. Cotton crop was cultivated widely in Trichy and Viruthunagar districts. The mean age of the respondents was 42 years of age with S.D. 11.3 years. Eighty per cent of the farm women were literate and they had both nuclear and joint family system. Ninety one per cent of the farm women were small farm land holders.

Seventy per cent of the farm women had been in this occupation for more than 15 years. All the farm women were under economic weaker section group though 81 per cent of them were possessing own lands. Four major activities viz., sowing, thinning and gap filling, weeding and harvesting were performed fully by women. Sickle and hand hoe were the only tools used to remove weeds in cotton crop. Sowing, thinning and gap filling and harvesting of cotton was done manually without help of any farm tool. Musculoskeletal discomfort in leg, hand and back were majorly reported. The farm women suggested for modifications in weeding tool and harvesting of cotton to increase their productivity. Thus, development of new tools for women oriented activities in cotton cultivation will help this vulnerable group to sustain their wellbeing as cotton growing farm women.

*Paper received on* : September 18, 2019

*Accepted on* : October 22, 2019

#### REFERENCES

Cotton Advisory board, (2011). State wise Area, Production, Yield for last ten years Cotton corporation of India.

Bishnoi, M., Sisodiya, S.S., Sharma, F.L. and Kumar, V. (2017) Knowledge of Farmers about Improved Bt Cotton Production Technology, *Indian Journal of Extension Education* . 53, 4, pp. 121-123

Kale, N.M., Mankar, D.M. and Wankhade, P.P. (2018) Herbicide Adoption Pattern of Cotton Farmers in Vidarbha, *Indian Journal of Extension Education* , 54, . 2, pp 48-58

State of Food and Agriculture and Cheryl Doss, (2011). The role of women in agriculture. Agricultural Development Economics Division. *The Food and Agriculture Organization of the United Nations*. Pg 1-8.

Sangeeta Waldron. (2016). Empowering India's women cotton workers reduces the use of water and chemicals. Just means. <http://justmeans.com/blogs/empowering-indias-women-cotton-workers-reduces-the-use-of-water-and-chemicals>