

Characteristics of Women and Youth Agricultural Labourers and Factors Influencing their Level of Participation in Sugarcane Based Farming System

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One of the most distinguishing features of the rural economy of India has been the growth in the number of agricultural workers, cultivators and agricultural labourers engaged in crop production. The phenomena of under employment, under-development and surplus population are simultaneously manifested in the daily lives and living of the agricultural labourers. They usually get low wages, conditions of excessive burden of work load, and the employment which they get is extremely irregular. (Padhi, 2007). Agriculture is the integral sector of Indian economy as over 68.20 per cent of our people depend upon agriculture as the main occupation for their livelihood. Agricultural labourers constitute one of the vital inputs in the agricultural production process. The rural women, better called "farm women" constitute almost 50 per cent of farm work force whereas rural youth constitute the largest segment of youth, with a population of more than 16 crores (Saha and Banerjee, 1994). According to 1991 census, the total population of women is 406.61 million, of which 304.04 million (75 per cent) are living in rural areas. It has been roughly estimated that

women contributed about 30 per cent of labour force, yet they receive only about 10 per cent of the income and own less than 1 per cent of the property. Rural women constitute majority of the India's poor and suffer most acutely due to decline in social values and environmental degradation. A study of the socio-economic characteristics of farm women and rural youth and their level of participation in farming activities is of utmost importance from the point of view of formulating developmental programmes for their upliftment and extension strategies for these target groups. Against the backdrop of these issues a study was conducted among 180 agricultural labourers consisting of women and youth labourers to study their socio-economic characteristics and their participation in sugarcane based farming system.

METHODOLOGY

The study was conducted in the Lower Bhavani Project (LBP) command area of Cauvery river basin in Erode district of Tamil Nadu. Considering the maximum area under sugarcane, two tahsils viz. Sathiamangalam

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Table. 1. Characteristics of agricultural labourers

Sl. No	Characteristics	Category	Women (n=90)		Youth (n=90)	
			No.	%	No.	%
1.	Age	Young	2	2.22	10	11.11
		Middle	47	52.22	28	31.11
		Old	41	45.56	52	57.78
2.	Marital status	Married	5	5.56	6	6.67
		Unmarried	85	94.44	84	93.33
3.	Educational status	Illiterate	75	83.33	64	71.11
		Primary	6	6.67	14	15.56
		Middle	7	7.78	6	6.67
		Secondary	1	1.11	3	3.33
4.	Occupational status	Wage earners	85	94.44	80	88.89
		Farming + wage earners	5	5.56	10	11.11
5.	Farm status	No land	85	94.44	80	88.89
		With land	5	5.56	10	11.11
6.	Social participation status	Low	1	1.11	3	3.33
		Medium	74	82.22	84	93.34
		High	15	16.67	3	3.33
7.	Communication Status	Medium	-	-	88	97.78
		High	-	-	2	2.22
8.	Farm Power Status	Medium	76	84.44	72	80.00
		High	14	15.56	18	20.00
9.	Occupational experience	Low	13	14.44	15	16.67
		Medium	59	65.56	63	70.00
		High	18	20.00	12	13.33
10.	Annual income (Rs.)	5000-10000	8	8.88	6	6.66
		10001-15000	51	56.66	58	64.44
		15001-20000	20	22.23	19	21.11
12.	Economic motivation	Low	2	2.22	5	5.56
		Medium	73	81.11	72	80.00
		High	15	16.67	13	14.44
13.	Awareness about developmental programmes	Aware	83	92.22	82	91.11
		Not aware	7	7.78	8	8.89
14.	Participation in developmental programmes	Participation	66	73.33	70	77.78
		No participation	24	26.67	20	22.22

from head end and Perundurai from tail region were selected. Based on the same criteria multistage sampling process was adopted to select blocks, firkas and revenue villages from these two taluks. Accordingly four revenue villages viz., Ukkaram and Sathiamangalam from Arasur firka of Sathiamangalam block (head region) and Pethampalayam and Kanchikoil revenue villages from Kanchikoil firka of Perundurai block (tail region) were selected. For the study further 17 hamlets were selected from the four revenue villages considering the following criteria viz., maximum agricultural labour population and maximum area under sugarcane. A sample of 180 agricultural labourers comprising 90 each from head region and tail region were drawn randomly by following proportionate random sampling technique. The sample of 90 labourers included an equal sample of both farm women and youth from each region. Participatory Rural Appraisal techniques such as transect walk, rapport building, venn diagram, matrix ranking, daily routine diagram and seasonality diagram, case studies and interview schedule were employed to collect the relevant and pertinent data from the respondents as required for the study. Percentage analysis, mean, standard deviation, correlation and regression analysis were used to draw meaningful conclusions.

FINDINGS

Profile of farm women and youth labourers

From the Table 1, it was revealed that 45.56 per cent & 57.78 per cent of the

women and youth respondents were from old age group respectively, majority (94.44 and 93.33 per cent) were unmarried. Illiterate per cent was observed in majority in both the groups, wage earning was the main occupation of 94.44 per cent women respondents and 88.89 per cent youth respondents because of Non-possession of land by both the categories of respondents. Social participation status, occupation status, communication status, Farm power status and occupational experience were found of medium level in women and youth respondents. The annual income of 56.66 per cent of the women respondents and 64.44 per cent of youth respondents was in between rs. 10,000 to 15,000 economic motivation was of medium level in 81.11 per cent & 80.00 per cent of the women & youth respondents. It was surprising to notice that majority (92.22 per cent & 91.11 per cent) of the women and youth respondents were aware about various development programme and majority of them participated in the programmes.

Participation of agricultural labourers in sugarcane cultivation

In sugarcane farming, a total of 36 cultivation and post harvest practices were identified and enumerated. The extent of participation of by the agricultural labourers on these operations was assessed. Participation was analysed based on a three point continuum containing the categories such as always, sometimes and never.

Table 2 shows that majority of the women labourers (85.00 to 95.00 per cent)

Table 2. Participation of agricultural labourers in sugarcane farming

Sl. No.	Operations	Participation											
		Farm women (n=90)						Youth (n=90)					
		Always	Sometimes	Never	Always	Sometimes	Never	Always	Sometimes	Never	Always	Sometimes	Never
1.	Field preparation Forming ridges and furrows	3 (3.33)	4 (4.44)	83 (92.22)	88 (97.77)	2 (2.22)	0 (0.00)	36 (40.00)	12 (13.33)	42 (46.66)	90 (100.00)	0 (0.00)	0 (0.00)
2.	Application of FYM or compost	20 (22.22)	11 (12.22)	59 (65.55)	85 (94.44)	5 (5.55)	0 (0.00)	15 (16.66)	14 (15.55)	61 (67.77)	33 (36.66)	22 (24.44)	35 (38.88)
3.	Application of fertilizers	29 (32.22)	27 (30.00)	34 (37.77)	41 (45.55)	17 (18.88)	32 (35.55)	80 (88.88)	7 (7.77)	3 (3.33)	80 (88.88)	8 (8.88)	2 (2.22)
4.	Main field operations Preparation of setts for planting	4 (4.44)	3 (3.33)	83 (92.22)	38 (42.22)	9 (9.99)	43 (47.77)	1 (1.11)	1 (1.11)	88 (97.77)	8 (8.88)	6 (6.66)	76 (84.44)
5.	Sett treatment with Azospirillum	83 (92.22)	0 (0.00)	7 (7.77)	77 (85.55)	3 (3.33)	10 (11.11)	0 (0.00)	4 (4.44)	86 (95.55)	11 (12.22)	15 (16.66)	64 (71.11)
6.	Planting the setts	3 (3.33)	1 (1.11)	86 (95.55)	81 (90.00)	5 (5.55)	4 (4.44)	80 (88.88)	3 (3.33)	86 (95.55)	61 (67.77)	23 (25.55)	6 (6.66)
7.	Filling up the gaps	86 (95.55)	2 (2.22)	2 (2.22)	61 (67.77)	23 (25.55)	6 (6.66)	1 (1.11)	1 (1.11)	86 (95.55)	81 (90.00)	5 (5.55)	4 (4.44)
8.	Trash mulching	86 (95.55)	2 (2.22)	2 (2.22)	61 (67.77)	23 (25.55)	6 (6.66)	1 (1.11)	1 (1.11)	86 (95.55)	81 (90.00)	5 (5.55)	4 (4.44)
9.	a. Weed management Manual b. Using herbicide	0 (0.00)	4 (4.44)	86 (95.55)	11 (12.22)	15 (16.66)	64 (71.11)	3 (3.33)	1 (1.11)	86 (95.55)	81 (90.00)	5 (5.55)	4 (4.44)
10.	Earthing up	3 (3.33)	1 (1.11)	86 (95.55)	81 (90.00)	5 (5.55)	4 (4.44)	86 (95.55)	2 (2.22)	2 (2.22)	61 (67.77)	23 (25.55)	6 (6.66)
11.	Detrashing	86 (95.55)	2 (2.22)	2 (2.22)	61 (67.77)	23 (25.55)	6 (6.66)	1 (1.11)	1 (1.11)	86 (95.55)	81 (90.00)	5 (5.55)	4 (4.44)

Figures in the parenthesis indicate percentage

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Sl. no	Operations	Participation											
		Farm women (n=90)						Youth (n=90)					
		Always No.	Sometimes No.	Never No.	Always No.	Sometimes No.	Never No.	Always No.	Sometimes No.	Never No.	Always No.	Sometimes No.	Never No.
12.	Propping	24 (26.66)	2 (2.22)	64 (71.11)	38 (42.22)	16 (17.77)	36 (40.00)	2	6	82	51	21	18
13.	Top dressing of fertilizers	2 (2.22)	6 (6.66)	82 (91.11)	56.66 (56.66)	23.33 (23.33)	20.00 (20.00)	5	5	80 (88.88)	17 (18.88)	15 (16.66)	58 (64.44)
14.	Water management	5 (5.55)	5 (5.55)	80 (88.88)	0	0	90 (100.00)	0	0	90 (100.00)	0	0	90 (100.00)
15. a.	Pestmanagement Physical control	0 (0.00)	0 (0.00)	90 (100.00)	0 (0.00)	0 (0.00)	90 (100.00)	0	0	90 (100.00)	0	0	90 (100.00)
b.	Mechanical control	0 (0.00)	0 (0.00)	90 (100.00)	0 (0.00)	0 (0.00)	90 (100.00)	0	0	90 (100.00)	0	0	90 (100.00)
c.	Chemical control	0 (0.00)	0 (0.00)	90 (100.00)	11 (12.22)	3 (3.33)	76 (84.44)	0	0	90 (100.00)	4 (4.44)	1 (1.11)	85 (94.44)
d.	Biological control	0 (0.00)	0 (0.00)	90 (100.00)	0 (0.00)	0 (0.00)	90 (100.00)	0	0	90 (100.00)	0 (0.00)	0 (0.00)	90 (100.00)
e.	Cultural control	0 (0.00)	0 (0.00)	90 (100.00)	0 (0.00)	0 (0.00)	90 (100.00)	0	0	90 (100.00)	0 (0.00)	0 (0.00)	90 (100.00)
16. a.	Disease management Physical control	0 (0.00)	0 (0.00)	90 (100.00)	0 (0.00)	0 (0.00)	90 (100.00)	0	0	90 (100.00)	0 (0.00)	0 (0.00)	90 (100.00)
b.	Mechanical control	0 (0.00)	0 (0.00)	90 (100.00)	0 (0.00)	0 (0.00)	90 (100.00)	0	0	90 (100.00)	0 (0.00)	0 (0.00)	90 (100.00)
c.	Chemical control	0 (0.00)	0 (0.00)	90 (100.00)	5 (5.55)	0 (0.00)	85 (94.44)	0	0	90 (100.00)	5 (5.55)	0 (0.00)	85 (94.44)

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Sl. no	Operations	Participation											
		Farm women (n=90)						Youth (n=90)					
		Always No.	Sometimes No.	Never No.	Always No.	Sometimes No.	Never No.	Always No.	Sometimes No.	Never No.	Always No.	Sometimes No.	Never No.
d.	Biological control	0 (0.00)	0 (0.00)	90 (100.00)	0 (0.00)	0 (0.00)	90 (100.00)	0 (0.00)	0 (0.00)	90 (100.00)	0 (0.00)	0 (0.00)	90 (100.00)
e.	Cultural control	0 (0.00)	0 (0.00)	90 (100.00)	0 (0.00)	0 (0.00)	90 (100.00)	0 (0.00)	0 (0.00)	90 (100.00)	0 (0.00)	0 (0.00)	90 (100.00)
17.	Harvesting	6 (6.66)	11 (12.22)	73 (81.11)	37 (41.11)	7 (7.77)	46 (51.11)	0 (0.00)	0 (0.00)	90 (100.00)	0 (0.00)	0 (0.00)	90 (100.00)
18.	Ratoon crop Removal of ridges and furrows	2 (2.22)	4 (4.44)	84 (93.33)	74 (82.22)	9 (9.99)	7 (7.77)	0 (0.00)	0 (0.00)	90 (100.00)	0 (0.00)	0 (0.00)	90 (100.00)
19.	Removing the trash	19 (21.11)	27 (30.00)	44 (48.88)	23 (25.55)	20 (22.22)	47 (52.22)	15 (16.66)	22 (24.44)	53 (58.88)	34 (37.77)	22 (24.44)	34 (35.55)
20.	Burning the trash	2 (2.22)	4 (4.44)	84 (93.33)	9 (10.00)	8 (8.88)	73 (81.11)	0 (0.00)	0 (0.00)	90 (100.00)	0 (0.00)	0 (0.00)	90 (100.00)
21.	Irrigating the field	2 (2.22)	2 (2.22)	86 (95.55)	3 (3.33)	2 (2.22)	85 (94.44)	0 (0.00)	0 (0.00)	90 (100.00)	0 (0.00)	0 (0.00)	90 (100.00)
22.	Stubble shaving	0 (0.00)	0 (0.00)	90 (100.00)	0 (0.00)	0 (0.00)	90 (100.00)	0 (0.00)	0 (0.00)	90 (100.00)	0 (0.00)	0 (0.00)	90 (100.00)
23.	Gap filling	2 (2.22)	2 (2.22)	86 (95.55)	3 (3.33)	2 (2.22)	85 (94.44)	0 (0.00)	0 (0.00)	90 (100.00)	0 (0.00)	0 (0.00)	90 (100.00)
24.	Application of manures and fertilisers	7 (7.77)	2 (2.22)	81 (90.00)	44 (48.88)	12 (13.33)	34 (37.77)	0 (0.00)	0 (0.00)	90 (100.00)	0 (0.00)	0 (0.00)	90 (100.00)
III. 25.	Post harvest Bundling	19 (21.11)	15 (16.66)	56 (62.22)	37 (41.11)	3 (3.33)	50 (55.55)	0 (0.00)	0 (0.00)	90 (100.00)	0 (0.00)	0 (0.00)	90 (100.00)
26.	Transporting	11 (12.22)	14 (15.55)	65 (72.22)	39 (43.33)	3 (3.33)	48 (53.33)	0 (0.00)	0 (0.00)	90 (100.00)	0 (0.00)	0 (0.00)	90 (100.00)

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Sl. no	Operations	Participation								
		Farm women (n=90)			Youth (n=90)					
		Always No.	Sometimes No.	Never No.	Always No.	Sometimes No.	Never No.	Always No.	Sometimes No.	Never No.
27.	Crushing	1 (1.11)	4 (4.44)	85 (94.44)	31 (34.44)	3 (3.33)	56 (62.22)	0	0	0
28.	Boiling	0 (0)	4 (4.44)	86 (95.55)	31 (34.44)	3 (3.33)	56 (62.22)	0	0	0
29.	Stirring	0 (0.00)	4 (4.44)	86 (95.55)	31 (34.44)	3 (3.33)	56 (62.22)	0	0	0
30.	Straining	0 (0.00)	4 (4.44)	86 (95.55)	31 (34.44)	3 (3.33)	56 (62.22)	0	0	0
31.	Turning	0 (0.00)	4 (4.44)	86 (95.55)	31 (34.44)	3 (3.33)	56 (62.22)	0	0	0
32.	Hand moulding	0 (0.00)	4 (4.44)	86 (95.55)	5 (5.55)	3 (3.33)	82 (91.11)	0	0	0
33.	Jaggery preparation	0 (0.00)	4 (4.44)	86 (95.55)	27 (30.00)	0 (0.00)	63 (70.00)	0	0	0
34.	Preserving /Packing	0 (0.00)	0 (0.00)	90 (100.00)	2 (2.22)	0 (0.00)	88 (97.77)	0	0	0
35.	Bottling of sugarcane juice	0 (0.00)	0 (0.00)	90 (100.00)	0 (0.00)	0 (0.00)	90 (100.00)	0	0	0
36.	Drying the bagasse	12 (13.33)	2 (2.22)	76 (84.44)	9 (9.99)	4 (4.44)	77 (85.55)	0	0	0

were frequently engaged in detrashing, weed management and sett planting in sugarcane farming. More than one-third of the women agricultural labourers were frequently involved in the application of FYM or compost (40.00 per cent) and sett treatment with azospirillum (32.22 per cent). Nearly one-third of the women agricultural labourers (26.66 per cent) were very frequently involved in propping. Nearly one-third (30.00 per cent) of the women agricultural labourers were occasionally involved in sett treatment with azospirillum, removal of trash after harvesting. One-fourth (24.44 per cent) of the farm women labourers were occasionally engaged in burning the trash after harvesting. Women did not participate in field preparation aspects of sugarcane crop, gapfilling, trash mulching, herbicide application, earthing up, topdressing of fertilizers, irrigation, pest and disease management and ratoon crop operations except removing and burning the trash.

Regarding youth agricultural labourers, cent per cent of them were often found to be engaged in the application of farmyard manure or compost. Majority of the youth labourers were frequently involved in the formation of ridges and furrows (97.77 per cent), fertilizer application (94.44 per cent), earthing up (90.00 per cent) sett planting (88.88 per cent), weed management (85.55 per cent) and removal of ridges and furrows (82.22 per cent). More than half of the youth labourers were often involved in detrashing (67.77 per cent) and top dressing of fertilizers (56.66

per cent).involved More than one-third of the youth labourers were frequently in manure and fertilizer application to the ratoon crop (48.88 per cent), propping (42.22 pecent), sett treatment with azospirillum (45.55 per cent), gap filling (42.22 per cent), harvesting (41.11 per cent), burning the trash (37.77 per cent), preparation of setts for planting (36.66 per cent), and post harvest operations and jaggery preparation (34 to 41 per cent). Only 12 per cent of the youth labourers were often involved in chemical control of pests and 4.44 per cent of them were often involved in biological control of pests. In disease management too, only 5.55 per cent of the youth agricultural labourers often participated in the chemical control of diseases.

In sugarcane farming, participation of women agricultural labourers was found in limited number of after cultivation practices and sowing, whereas youth were involved in most of the operations.

The association and contribution of independent variables on participation.

The association of independent variables was studied with the dependent variable participation to find out the relationship between the dependent variable and independent variables.

Among the five significantly contributing variables, two variables viz., level of aspiration and economic motivation had shown positive and significant association with participation. (Table 3). This is possible

Table 3. Correlation and multiple regression coefficients of characteristics of agricultural labourers with participation

Var. no.	Variable	Farm women			Youth		
		'r' values	Partial regression coefficient (B)	't' values	'r' values	Partial regression coefficient (B)	't' values
X1	Age	-0.2637*	-0.533*	2.203	-0.0357*	-0.524*	2.095
X2	Education	-0.0702*	-0.576*	2.009	-0.1363*	-1.246*	2.035
X3	Level of aspiration	0.0347*	0.829*	2.102	0.0938*	4.803*	2.699
X4	Economic motivation	0.0407*	0.835*	2.003	0.5302*	7.787*	2.764
X5	Socio-economic status	-0.2262*	-0.480*	2.219	-0.1760*	-6.602*	2.817
		R ² = 0.4310			R ² = 0.4790		

when people have higher level of aspiration and when they get motivated to earn definitely their participation will increase.

Age, education and socio-economic status also had significant association with participation but the association was negative. Labourers will actively participate in farm operations when they are young. Participation tends to decrease as the age of the people increases. Hence, age has got negative and significant relationship. People with higher education and socio-economic status prefer to go for other jobs with less drudgery involvement and higher wage. They do not like to work as agricultural labourers. This might be the reason for the negative relationship of education and socio-economic status with participation of the labourers.

REGRESSION ANALYSIS

The multiple regression analysis was performed to find out the extent of contribution of each variable towards the participation of agricultural labourers in farm operations.

Table 3 indicates that the R² value was 0.4310 which revealed that 43.10 per cent variation in participation was explained by the give independent variables for women agricultural labourers. In case of youth agricultural labourers, the R² value was 0.4790 which revealed that 47.90 per cent of variation in participation was explained by the five independent variables. The five variables such as age, education, level of aspiration, economic motivation and socio-economic status were found to influence the participation of agricultural labourers in farm

activities. With regard to women agricultural labourers remaining 56.90 per cent of variation in participation was explained by rest of the independent variables, while for youth 52.10 per cent of the variation was explained by the remaining independent variables.

It could be seen from the above table that the variables namely level of aspiration and economic motivation had positive and significant contribution to the participation of the agricultural labourers, whereas the variables namely age, education and socio-economic status also had significant contribution, but the contribution was negative.

CONCLUSION

Majority of the women labourers were frequently engaged in detrashing, weed management and sett planting in sugarcane farming. Cent per cent of the youth agricultural labourers were often found to be engaged in the application of farmyard manure or compost in sugarcane farm. Majority of them were frequently involved in the formation of ridges and furrows, fertilizer application, earthing up, sett planting, weed management and removal of ridges and furrows in sugarcane cultivation.

Since factors such as aspiration and economic motivation of the farm women and rural youth were found to influence the participation in sugarcane based farming system, it is imperative that, farm women and rural youth be oriented to skill based and need based training in related agricultural income generating avocations

Government should provide financial support to carry out research and development Non-Governmental organizations can play a vital role in motivating the labourers to participate in training programmes. Extension agents should take efforts to organize training programmes in the village level itself and updating the knowledge and skill of farm labourers in various agricultural activities. NGO's can motivate the agricultural labourers to organize themselves and form self help group and guide them to become micro entrepreneurs. HRD efforts to raise the knowledge and skills of agricultural labourers on value added agricultural operations are needed as suited to different localities.

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