

INVOLVEMENT OF TRIBAL WOMEN IN MAIZE CULTIVATION IN NEH REGION

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A large number of farmwomen are engaged in farming operation either as cultivators or helpers to cultivators or agricultural labours. These women participate in most of the agriculture operation like manuring land preparation, sowing of seed, transplanting, carrying the produce from farm to home storage of food, cattle care and preparation of manure pit (Chowdhury and Sharma, 1961, Nain et al, 1966, Singh 1968, Devadas et al, 1972, Kaur, 1981). Maize is the second most important crop after paddy of NEH Region. It is grown in jhum as the mixed crop as well as pure crop. Maize crop is used as fried cobs and boiled grains. It is also used as feed to pigs. The women play a vital role in this crop from sowing to post harvesting operations. The study was therefore, undertaken to analysis the women's involvement in operational analysis of family members involved in maize cultivation.

METHODOLOGY

The study was conducted in northeastern hill region of India which is tribal dominated area having hill topography with the practice of jhum cultivation. Two states viz. Meghalaya and Arunachal Pradesh were selected. One district was selected from each state and out of each district one block was selected randomly. Two villages were selected from each block from village 20 households (20 female and 20 male) were selected by simple random technique. The data were collected through pretested structured schedule by personal contact interview method. The total 160 respondents (80 female and 80 male) were interviewed for this study.

RESULT AND DISCUSSION

Involvement of male and female in maize cultivation

The maize cultivation activities were presented in table 1. Twelve and eleven maize cultivation activities were selected for knowing the responses of males and females in Meghalaya and Arunachal Pradesh respectively. The application of FYM was not followed in maize crop in Arunachal Pradesh, as the animals were not kept in houses. Because of higher altitude also it was very difficult to carry the FYM to the field. The male responses revealed that the majority of maize cultivation activities like application of FYM (70.00%) sowing (77.50 %), watch and ward (55.00 %), thrashing of cobs (72.50%), storage (62.50 %) and sale of produce (70.00%) were performed by males. The female participation was observed in land preparation (30.00 %) intercultural operation, watch and ward, harvesting, cleaning (45.00%), post harvest operation (37.50%) and sale of produce (30.00%). Female were participating in almost all the activities jointly with males. The participation of any other member of family was only in watch and ward, harvesting of cobs, thrashing and cleaning activities. But percentage of participation was very low.

According to male responses (table1), the participation of male ranged from 17.50 to 77.50 % with maximum participation in sowing and minimum participation in cleaning. The participation of female ranged from 0.00 to 45.00 % with maximum participation in cleaning and minimum or nil participation was found in application of FYM, sowing, transplanting of cobs and hanging of cobs. Female were

performing these activities jointly. Children were also participated in some activities. The females also endorsed same findings for themselves but with slight variation.

In Arunachal Pradesh, male's participation was very low in maize cultivation activities compared to the females. The female's participation was very high in sowing (95.00) intercultural practices (80.00%) cleaning (70.00%), harvesting of cobs for seed purpose in the thatched house on sticks (85.00) and sale of produce (75.00%). Joint participation of males and females was found to be high in land preparation (55.00%) transportation of cobs, post harvest operation (75.00%) that might be due to the following of slash and burn method for land preparation. In hill area transportation is very difficult, tedious and tiresome task due to high altitude. The post harvest operation in Meghalaya and Arunachal Pradesh was totally different. The maize cobs were hanged in the thatched house on sticks. So it needed tow persons for carrying out this operation. The participation of other members of the family was also found in watch and ward, harvesting, transportation of cobs, thrashing, cleaning and sale of the produce.

The pooled data of male responses indicated that the participation of male was less than 50.00 % in all the maize cultivation activities. The participation of males ranged from 8.75 to 46.25 % with maximum participation in watch and ward and minimum in cleaning. The participation of females was maximum in intercultural practices (60.00%), cleaning (57.50%) and sale of produce (51.25%). The female's participation ranged from 0.00 to 60.00 % with maximum participation in intercultural operations and minimum in application of FYM.

In Meghalaya, males mainly performed sowing whereas in Arunachal Pradesh, the females performed it. Intercultural operations were performed by male, female and jointly in Meghalaya but in Arunachal Pradesh by females only. In Meghalaya hanging of cobs for seed purpose was performed by males, but in Arunachal Pradesh it was performed by females. Sale of produce was done by males in Meghalaya and by females in Arunachal Pradesh.

The calculated value of rank correlation for Meghalaya were 0.956 and 0.913, and for Arunachal Pradesh were 0.969 and 0.965 and for pooled data 0.948 and 0.910 for males and females responses respectively, which indicate high level of agreement in the responses of the opposite partner, male responses were considered for male only and female responses were considered for female only. These findings were on the line of Promila (1994)

Comparative analysis of family members participation in maize cultivation

Among the maize cultivation activities sowing, harvesting, thrashing, hanging of cobs and storage and sale of produce were found male dominated in Meghalaya whereas same activities were female dominated in Arunachal Pradesh. Only two activities intercultural practices and cleaning were female dominated in both the states. But land preparation watch and ward transportation of cob was male dominated in Meghalaya but same activities were performed by males and females jointly in Arunachal Pradesh (table 2). There was only one activity post harvest operation, which was performed jointly by males and females in Meghalaya and Arunachal Pradesh. Males only in Meghalaya carried out FYM application. The overall data revealed that the males predominantly carried out the application of FYM, watch and ward thrashing only. The sowing, intercultural operations, females carried out cleaning hanging of cobs for seed purpose and sale of produce predominantly. Land preparation, harvesting, and transportation of cobs and post males and females performed harvest activities jointly. Above findings derives from the findings of Promila (1994).

It could be concluded from the study that activities like sowing, intercultural operation, cleaning and hanging of cobs for seed purpose and female carried sale produce. That has shown more engagement of female in maize cultivation. The female should be given the opportunity to learn the maize production technology to increase the production. The drudgery reduction technology may be developed so that they can save the labour and time.

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Table 1. Participation of respondents in maize cultivation

MEGHALAYA								
Activities	Male response (N=40)				Female response (N=40)			
	M	F	MF	AO	M	F	MF	AO
Application of FYM	28 (70.00)	0 (0.00)	12 (30.00)	0 (0.00)	25 (62.50)	0 (0.00)	15 (37.50)	0 (0.00)
Land preparation	17 (42.50)	12 (30.00)	11 (27.50)	0 (0.00)	14 (35.00)	12 (30.00)	14 (35.00)	0 (0.00)
Sowing	31 (77.50)	0 (0.00)	9 (22.50)	0 (0.00)	31 (77.50)	0 (0.00)	9 (22.50)	0 (0.00)
Intercultural operation	10 (25.00)	16 (40.00)	14 (35.00)	0 (0.00)	12 (30.00)	19 (47.50)	9 (22.50)	0 (0.00)
Watch and ward	22 (55.00)	10 (25.00)	0 (0.00)	8 (20.00)	21 (52.50)	11 (27.50)	0 (0.00)	8 (20.00)
Harvesting	13 (32.50)	9 (22.50)	12 (30.50)	6 (15.00)	9 (22.50)	16 (40.00)	10 (25.00)	5 (12.00)
Transportation of cobs	18 (45.00)	0 (0.00)	12 (30.00)	10 (25.00)	17 (42.50)	0 (0.00)	14 (35.00)	9 (22.50)
Thrashing of cobs (Manually maize seller)	29 (72.50)	5 (12.50)	2 (5.00)	4 (10.00)	28 (70.00)	6 (15.00)	3 (7.50)	3 (7.50)
Cleaning	7 (17.50)	18 (45.00)	11 (27.50)	4 (10.00)	2 (60.00)	23 (0.00)	9 (40.00)	6 (0.00)
Hanging of cobs and Storage	25 (62.50)	0 (0.00)	15 (37.50)	0 (0.00)	24 (60.00)	0 (0.00)	16 (40.00)	0 (0.00)
Post harvest operation	10 (25.00)	15 (37.50)	15 (37.50)	0 (0.00)	10 (25.00)	16 (40.00)	14 (35.00)	0 (0.00)
Sale of produce	28 (7.00)	12 (30.00)	0 (0.00)	0 (0.00)	27 (67.50)	13 (32.50)	0 (0.00)	0 (0.00)
	$r = 0.913^{**}$				$r = 0.956^{**}$			

ARUNACHAL PRADESH

Activities	Male response (N=40)				Female response (N=40)			
	M	F	MF	AO	M	F	MF	AO
Land preparation	8 (20.00)	10 (25.00)	22 (55.50)	0 (0.00)	8 (20.00)	12 (30.00)	20 (50.00)	0 (0.00)
Sowing	2 (5.00)	38 (95.00)	0 (0.00)	0 (0.00)	2 (5.00)	36 (90.00)	2 (5.00)	0 (0.00)
Intercultural operation	1 (2.50)	32 (80.00)	7 (17.50)	0 (0.00)	1 (2.50)	35 (87.50)	4 (10.00)	0 (0.00)
Watch and ward	15 (37.50)	10 (25.00)	11 (20.75)	4 (10.00)	8 (20.00)	20 (50.00)	8 (20.00)	4 (10.00)
Harvesting	2 (5.00)	19 (47.50)	17 (42.50)	2 (5.00)	2 (5.00)	28 (70.00)	8 (20.00)	2 (5.00)
Transportation of cobs	1 (2.50)	10 (25.00)	26 (65.00)	3 (7.50)	0 (0.00)	12 (30.00)	24 (60.00)	4 (10.00)
Thrashing of cobs (Manually maize seller)	6 (15.00)	15 (37.50)	10 (25.00)	9 (22.00)	5 (12.50)	20 (50.00)	8 (20.50)	7 (7.50)
Cleaning	0 (0.00)	28 (70.00)	0 (0.00)	12 (30.00)	0 (0.00)	28 (70.00)	0 (0.00)	12 (30.00)
Hanging of cobs and Storage	6 (15.00)	34 (85.00)	0 (0.00)	0 (0.00)	5 (12.50)	35 (87.50)	0 (0.00)	0 (0.00)
Post harvest operation	0 (0.00)	10 (25.00)	30 (75.00)	0 (0.00)	0 (0.00)	10 (25.00)	30 (75.00)	0 (0.00)
Sale of produce	4 (10.00)	29 (72.50)	0 (0.00)	7 (17.50)	2 (5.00)	30 (75.00)	2 (5.00)	6 (15.00)
	$r = 0.965 **$				$r = 0.969 **$			

POOLED								
Activities	Male response (N=80)				Female response (N=80)			
	M	F	MF	AO	M	F	MF	AO
Application of FYM	28 (35.00)	0 (0.00)	12 (15.00)	0 (0.00)	25 (31.25)	0 (0.00)	15 (18.75)	0 (0.00)
Land preparation	25 (31.25)	22 (27.50)	33 (41.25)	0 (0.00)	22 (27.50)	24 (30.00)	34 (42.75)	0 (0.00)
Sowing	33 (41.25)	38 (47.50)	9 (11.25)	0 (0.00)	33 (41.25)	36 (45.00)	11 (13.75)	0 (0.00)
Intercultural operation	11 (13.75)	48 (60.00)	21 (26.25)	0 (0.00)	13 (16.25)	54 (67.50)	13 (16.25)	0 (0.00)
Watch and ward	37 (46.25)	20 (25.00)	11 (13.75)	12 (15.00)	29 (36.25)	31 (38.75)	8 (10.00)	12 (15.00)
Harvesting	15 (18.75)	28 (35.00)	29 (36.25)	8 (10.00)	11 (13.75)	44 (55.00)	18 (22.50)	7 (8.75)
Transportation of cobs	19 (23.75)	19 (23.75)	29 (36.25)	13 (16.25)	17 (21.25)	12 (15.00)	38 (47.50)	13 (16.25)
Threshing of cobs (Manually maize seller)	35 (43.75)	20 (25.00)	12 (15.00)	13 (16.25)	33 (41.25)	26 (32.50)	11 (13.25)	10 (12.50)
Cleaning	7 (8.75)	46 (57.50)	11 (13.75)	16 (20.00)	2 (2.50)	51 (63.75)	9 (11.25)	18 (22.50)
Hanging of cobs and Storage	31 (38.75)	34 (42.50)	15 (18.75)	0 (0.00)	29 (36.25)	35 (43.75)	16 (20.00)	0 (0.00)
Post harvest operation	10 (12.50)	25 (32.50)	45 (56.25)	0 (0.00)	10 (12.50)	26 (32.50)	44 (55.00)	0 (0.00)
Sale of produce	32 (40.00)	41 (51.25)	0 (0.00)	7 (8.75)	29 (36.25)	43 (53.75)	2 (2.50)	6 (7.50)
$r = 0.913^{**}$				$r = 0.956^{**}$				

A figure in parenthesis indicate percentage.; M = Male, F = Female, MF = Male and Female, AO = Any Other; ** Significant at one per cent level

Table 2. Comparative analysis of family member participation inn maize cultivation.

Activities	Meghalaya		Arunachal Pradesh		Pooled	
	MR	FR	MR	FR	MR	FR
Application of FYM	28 (M)	25 (M)	NA	NA	28 (M)	25 (M)
Land Preparation	17 (M)	14 (MF)	22 (MF)	20 (MF)	33 (MF)	34 (MF)
Sowing	31 (M)	31 (M)	38 (F)	36 (F)	38 (F)	36 (F)
Intercultural practices	16 (F)	19 (F)	32 (F)	35 (F)	48 (F)	54 (F)
Watch and ward	22 (M)	21 (M)	16 (MF)	20 (F)	37 (M)	29 (M)
Harvesting	13 (M)	16 (F)	19 (F)	28 (F)	29 (MF)	44 (F)
Transportation of cobs	18 (M)	17 (M)	26 (MF)	24 (MF)	29 (MF)	38 (MF)
Threshing	29 (M)	28 (M)	15 (F)	20 (F)	35 (M)	33 (M)
Cleaning and Winnowing	18 (F)	23 (F)	28 (F)	28 (F)	46 (F)	51 (F)
Hanging of cobs and storage	25 (M)	24 (M)	34 (MF)	35 (F)	34 (F)	35 (F)
Storage and pest Management	15 (MF)	16 (F)	30 (MF)	45 (MF)	45 (MF)	44 (MF)
Sale of produce	28 (M)	27 (M)	29 (F)	30 (F)	41 (F)	43 (F)

Initial in parenthesis indicate the dominant participant; M = Male, F = Female, MF = Male and Female, NA = Not applicable; MR = Male Response, FR = Female Response