

## PARTICIPATION OF GENDER IN PADDY CULTIVATION PRACTICES

Pallabi Bora<sup>1</sup> and Pallabi Das<sup>2</sup>

1 & 2 Assistant Professor, Department of Extension Education, College of Agriculture,  
Assam Agricultural University, Jorhat, Assam-785013  
Email: pallabi.bora@aau.ac.in

### ABSTRACT

The present study was conducted in Assam focusing on gender roles and division of labor in different activities related to paddy cultivation. A total of 320 numbers of respondents were selected for the study. The data were collected through personal interview with the help of research schedule during 2022. The participation of respondents engaged in paddy cultivation were studied in seven domains: activities related to seed, raising of nursery and transplanting, preparation of field, fertilizer application, water management and intercultural practices, harvesting and Post-harvest and marketing of produce. The responses were collected in frequency and percentage in three-point continuum of "Active participation", "Partial participation" and "No participation" having the score of 3, 2 and 1 respectively. The overall extent of participation of both men and women in paddy cultivation was calculated to gain an overall view of low, medium and high level of participation. A two sample Z- tests was performed to determine whether there existed any difference in paddy cultivation practices between men and women. Thus, frequency, percentage, Mean, Standard deviation and two sample Z test were used as statistical tools to conduct the present study. The results revealed that majority of the farm women (57.50%) had active participation in seed preservation, transplanting of seedlings into main field (83.75%), post-harvest activities (91.25%). Men were playing role in fertilization (66.25%), water table maintenance (89.38%), chemical applications (89.38%), marketing related activities (90.63%). It can be concluded that women contribute equally with men. They should empower with all necessities which will help to reduce gender gap in agriculture.

**Keywords :** gender, participation, paddy cultivation

### INTRODUCTION

India is primarily an agricultural country and agriculture plays a strategic role in the process of economic development. In the current agricultural landscape, gender plays an important role in it. Here, gender refers to the characteristics of women, men, girls and boys that are socially constructed. Women constitute a significant resource in agriculture and the rural economy, as farmers, laborers, and entrepreneurs. While women are the driving force behind sustainable and socially inclusive development, they also play a supporting role in agriculture (Chauhan and Vinaya, 2016). Their activities typically include producing agricultural crops, tending animals, processing and preparing food, working for wages in agricultural or other rural enterprises etc. Many of these activities are not defined as "economically active employment" in national accounts but they are essential to the well-being of rural households. They make an essential contribution to agriculture and rural economies in all developing countries but are unpaid farm workers in their own family (Patil *et al.* 2019).

According to International Labour Office, women make up 41% of the world's agricultural workforce. A comparison of women's participation in north and south India also shows that traditionally more female labor is used in rice cultivation (Rosenzweig *et al.* 1982). Women play a predominant role in all kinds of paddy cultivation. Their role is not less than men; in fact they are the equal partners in paddy cultivation practices. Therefore, the present study focuses on gender roles in paddy cultivation practices and the division of labor in different activities related to paddy cultivation in the tribal dominating districts of Assam.

### OBJECTIVE

To ascertain the gender's degree of participation in paddy cultivation practices

### METHODOLOGY

Among thirty two districts of Assam, four districts i.e. Jorhat, Morigaon, Baksa and Dhemaji were selected for their high concentration of tribal populations involved in paddy cultivation. Two tribal-dominated villages engaged in paddy cultivation were randomly selected from one purposively

selected block of each district. Twenty tribal households from each village were considered and finally, two members from each household that comprised both husband and wife was included which makes a total of 320 numbers of respondents for the study. The data were collected through personal interview method with the help of a research schedule during the year 2022. The participation of the respondents engaged in paddy cultivation were studied in seven domains i.e activities related to seed, raising of nursery and transplanting, preparation of main field, manure and fertilizer application, water management and intercultural practices, harvesting and Post-harvest and finally marketing of farm produce.

The responses were collected in frequency and percentage in three-point continuum of “Active participation”, “Partial participation” and “No participation” having the score of 3, 2 and 1 respectively. The overall extent of participation of both men and women in paddy cultivation was calculated to gain an overall view of low, medium and high level of participation. A two sample Z- tests was performed to determine whether there existed any difference in paddy cultivation practices between men and women. The Z calculated value was compared with Z table value (two tailed  $\pm 1.96$ ) which reflected the significance at 5 % probability level. Thus, frequency, percentage, Mean, Standard deviation and two sample Z test were used as statistical tools to conduct the present study.

## RESULTS AND DISCUSSION

### 1. Extent of gender division of activities in paddy cultivation

It is a usual fact that both women and men of a tribal farming community are involved in agriculture. However, there exists a variation in the extent of participation between them. Therefore, an attempt was made to ascertain their degree of participation on seven domains of paddy cultivation practices using a three point continuum scale. The idea could be visible from the results which are depicted in the following tables.

#### a. Activities related to seed

The Table 1 (a) indicated that majority of the farm women (57.50%) had active participation in seed preservation followed by seed soaking (43.75%) whereas, men farmers were seen having active participation in seed selection (56.88%) and seed soaking (52.50%). However, in seed purchasing, both genders did not have much involvement as the data reflected that more than ninety five percent of women and men did not have any participation in it. This might be due to the fact that they used to keep their own seeds of previous years that could be used for succeeding year or probably their inability to afford seeds or might be due to non-availability of seeds as and when required. These findings are contrary to the findings of Nikulsinh *et al.* (2011).

**Table 1 (a) : Distribution of respondents according to their participation in activities of seed** (n=320)

| Sr. No. | Activities               | Active Participation f (%) |            | Partial Participation f (%) |            | No Participation f (%) |             |
|---------|--------------------------|----------------------------|------------|-----------------------------|------------|------------------------|-------------|
|         |                          | Women                      | Men        | Women                       | Men        | Women                  | Men         |
| 1       | <b>Selection of seed</b> | 51 (31.88)                 | 91 (56.88) | 26 (16.25)                  | 18 (11.25) | 83 (51.88)             | 51 (31.88)  |
| 2       | <b>Seed purchasing</b>   | 03 (1.88)                  | 04 (2.50)  | 03 (1.88)                   | 03 (1.88)  | 154 (96.25)            | 153 (95.63) |
| 3       | <b>Seed preservation</b> | 92 (57.50)                 | 54 (33.75) | 16 (10.00)                  | 14 (8.75)  | 52 (32.50)             | 92 (57.50)  |
| 4       | <b>Soaking of seed</b>   | 70 (43.75)                 | 84 (52.50) | 29 (18.13)                  | 24 (15.00) | 61 (38.13)             | 52 (32.50)  |

(Figures in parenthesis indicate percentage)

#### b. Activities related to raising of nursery and transplanting

As revealed in the Table 1 (b), active participation of women were observed in transplanting (83.75%) and uprooting of seedling (76.88%). But it was found that that most of the women did not participate in certain activities like nursery bed preparation (94.38%), sowing (90.00%). While full participation by men farmers were found in those activities

where participation of women were less such as nursery bed preparation (94.38%) and sowing (90.63%) followed by manuring (78.13%). Accordingly no participation by farm men were seen in uprooting (76.88%) and transplanting (76.88%) which were largely being performed by farm women. The findings are in line with the finding of Dhruv (2020) as it stated that involvement of tribal farm women was maximum in transplanting.

**Table 1(b): Distribution of respondents according to their participation in raising of nursery and transplanting activities** (n=320)

| Sr. No. | Activities                                      | Active Participation f (%) |                | Partial Participation f (%) |               | No Participation f (%) |                |
|---------|---|----------------------------|----------------|-----------------------------|---------------|------------------------|----------------|
|         |   | Women                      | Men            | Women                       | Men           | Women                  | Men            |
|         | <b>Nursery Raising &amp; Transplanting</b>      |                            |                |                             |               |                        |                |
| 1       | <b>Preparation of Nursery bed</b>               | 01<br>(0.63)               | 151<br>(94.38) | 08<br>(5.00)                | 01<br>(0.63)  | 151<br>(94.38)         | 08<br>(5.00)   |
| 2       | <b>Sowing</b>                                   | 07<br>(4.33)               | 145<br>(90.63) | 09<br>(5.63)                | 06<br>(3.75)  | 144<br>(90.00)         | 09<br>(5.63)   |
| 3       | <b>Manuring &amp; Fertilization in seed bed</b> | 27<br>(16.88)              | 125<br>(78.13) | 19<br>(11.88)               | 08<br>(5.00)  | 114<br>(71.25)         | 27<br>(16.88)  |
| 4       | <b>Application of water in seed bed</b>         | 70<br>(43.75)              | 89<br>(55.63)  | 22<br>(13.75)               | 19<br>(11.88) | 68<br>(42.50)          | 52<br>(32.50)  |
| 5       | <b>Uprooting of seedling</b>                    | 123<br>(76.88)             | 28<br>(17.50)  | 27<br>(16.88)               | 09<br>(5.63)  | 10<br>(6.25)           | 123<br>(76.88) |
| 6       | <b>Transplanting in main field</b>              | 134<br>(83.75)             | 32<br>(20.00)  | 16<br>(10.00)               | 05<br>(3.13)  | 10<br>(6.25)           | 123<br>(76.88) |

(Figures in parenthesis indicate percentage)

#### c. Activities related to preparation of main field

The data presented in Table 1 (c) depicted that no women was found to have active participation in ploughing and puddling activities except a meager portion (1.25%) who had partial participation in it. However, (13.33%) and (1.25%) had active participation in stubble collection and bund formation respectively. The finding of the study was

similar to the finding of Appalanaidu (2020) that women had less participation in land preparation. This might be due to the fact that land preparations demand much more physical involvement and lack of gender friendly farm tools might be the possibility of less participation of women in land preparation. Whereas, farm men were found to take a lead role in field preparation as above ninety percent had fully participated in bund formation and ploughing respectively.

**Table 1 (c) : Distribution of respondents according to their participation in preparation of main field activities**

(n=320)

| Sr. No. | Activities                    | Active Participation f (%) |                | Partial Participation f (%) |               | No Participation f (%) |               |
|---------|-------------------------------|----------------------------|----------------|-----------------------------|---------------|------------------------|---------------|
|         |                               | Women                      | Men            | Women                       | Men           | Women                  | Men           |
|         | <b>Field preparation</b>      |                            |                |                             |               |                        |               |
| 1       | <b>Ploughing and Puddling</b> | 0<br>(0.00)                | 108<br>(67.50) | 02<br>(1.25)                | 13<br>(8.13)  | 158<br>(98.75)         | 39<br>(24.38) |
| 2       | <b>Formation of bund</b>      | 02<br>(1.25)               | 154<br>(96.25) | 03<br>(1.88)                | 01<br>(0.63)  | 155<br>(96.88)         | 05<br>(3.13)  |
| 3       | <b>Stubble removal</b>        | 21<br>(13.33)              | 62<br>(38.75)  | 77<br>(48.13)               | 77<br>(48.13) | 62<br>(38.75)          | 21<br>(13.13) |

(Figures in parenthesis indicate percentage)

#### d. Activities related to manuring and application of fertilizers

From Table 1 (d) it was observed that men farmers were playing a predominant role in manuring and fertilization. More than sixty percent of men farmers actively participated in carrying fertilizer and manures to the field (66.25%) which was followed by application of fertilizer (63.135). Also fifty percent of them actively participated in compost

preparation. But very less women had active participation in carrying fertilizer (26.25%), compost preparation (18.13%). Moreover, active involvement in fertilizer purchase (1.25%) and application of fertilizer (1.25%) were very minimal. This implies that women had less autonomy on buying or purchasing or they did not possess appropriate knowledge, skills in the preparation and application of fertilizers. These findings are in contrast with the findings of Naik *et al.* (2014).

**Table 1 (d) Distribution of respondents according to their participation in application of manure and fertilisers activities** (n=320)

| Sr. No. | Activities                                      | Active Participation f (%) |            | Partial Participation f (%) |            | No Participation f (%) |            |
|---------|---|----------------------------|------------|-----------------------------|------------|------------------------|------------|
|         |   | Women                      | Men        | Women                       | Men        | Women                  | men        |
| 1       | Compost preparation                             | 29 (18.13)                 | 80 (50.00) | 77 (48.13)                  | 77 (48.13) | 54 (33.75)             | 03 (1.88)  |
| 2       | Fertilizer purchase                             | 02 (1.25)                  | 99 (61.88) | 13 (8.13)                   | 09 (5.63)  | 145 (90.63)            | 52 (32.50) |
| 3       | Carrying fertilizer and manures                 | 42 (26.25)                 | 106 66.25) | 17 (10.63)                  | 13 (8.13)  | 101 (63.13)            | 41 (25.63) |
| 4       | Fertilizer application at different crop stages | 02 (1.25)                  | 101 63.13) | 11 (6.88)                   | 07 (4.38)  | 147 (91.88)            | 52 (32.50) |

(Figures in parenthesis indicate percentage)

**e. Activities related to water management and intercultural practices**

The data obtained from Table 1 (e) indicated that active participation by men was observed in water table maintenance (89.38%) and chemical applications (89.38%). No any participation was observed in application of irrigation water by both of them as it might be due to non-availability of irrigation canals or tanks. Also no participation was observed in thinning and gap filling by (90.63%) farm men and women

(86.25%). This implied that both the gender did not possess adequate knowledge on the importance of weed removal, thinning and gap filling that necessitated the intervention of concerned departments. It was also observed that women’s participation was less as about (98.13%) and (90.63%) of them did not participate in chemicals application and weed removal This finding does not support the finding of Yadav *et al.* (2018) that women performed active role in weeding and plant protection measures.

**Table 1 (e) Distribution of respondents according to their participation in water management and intercultural practices** (n=320)

| Sr. No. | Activities   | Active Participation f (%) |             | Partial Participation f (%) |           | No Participation f (%) |             |
|---------|--|----------------------------|-------------|-----------------------------|-----------|------------------------|-------------|
|         |  | Women                      | Men         | Women                       | Men       | Women                  | Men         |
| 1       | Water table maintenance in the standing crop           | 14 (8.75)                  | 143 (89.38) | 14 (8.75)                   | 03 (1.88) | 132 (82.50)            | 14 (8.75)   |
| 2       | Application of water                                   | 0 (0.00)                   | 0 (0.00)    | 0 (0.00)                    | 0 (0.00)  | 0 (0.00)               | 0 (0.00)    |
| 3       | Removal of weeds                                       | 04 (2.50)                  | 11 (6.88)   | 11 (6.88)                   | 11 (6.88) | 145 (90.63)            | 138 (86.25) |
| 4       | Thinning and gap filling                               | 13 (8.13)                  | 04 (2.50)   | 09 (5.63)                   | 11 (6.88) | 138 (86.25)            | 145 (90.63) |
| 5       | Application of chemicals (Pesticides, weedicides etc.) | 01 (0.63)                  | 143 (89.38) | 02 (1.25)                   | 01 (0.63) | 157 (98.13)            | 16 (10.00)  |

(Figures in parenthesis indicate percentage)

**f. Activities related to harvesting and Post- harvest**

It was observed from the Table 1 (f) that majority of the farm women had active participation in post- harvest activities such as winnowing (91.25%), sun drying and cleaning (81.88%). Most of the women were also seen to participate actively in harvesting and tying of crops (67.50%). The findings of the study is supported by the finding of Sekhar (2014) that participation of women was more in the activities of harvesting and post-harvest of

crops. Whereas, men farmers were having full participation in shifting harvested crop to threshing floor (97.50%), bundling (96.25%) and milling (88.13%). In threshing, equal percent of men farmers (48.13%) fell into full and partial participation. The reason might be that they were using hire mechanized tools which indicated that there was a gradual tendency towards mechanization of farm. Moreover, 27.50 percent of men farmers had full participation in harvesting and tying which indicated that in certain tribal pockets men were also involved in harvesting activity.

**Table 1 (f) Distribution of respondents according to their participation in harvesting and post-harvest activities**

(n=320)

| Sr. No. | Activities   | Active Participation f (%) |                | Partial Participation f (%) |               | No Participation f (%) |                |
|---------|--|----------------------------|----------------|-----------------------------|---------------|------------------------|----------------|
|         |  | Women                      | Men            | Women                       | Men           | Women                  | Men            |
|         | <b>Harvest and Post- harvest activities</b>                  |                            |                |                             |               |                        |                |
| 1       | <b>Harvesting</b>  | 108<br>(67.50)             | 44<br>(27.50)  | 08<br>(5.00)                | 10<br>(6.25)  | 44<br>(27.50)          | 106<br>(66.25) |
| 2       | <b>Tying and bundling</b>                                    | 04<br>(2.50)               | 154<br>(96.25) | 05<br>(3.13)                | 01<br>(0.63)  | 151<br>(94.38)         | 05<br>(3.13)   |
| 3       | <b>Shifting harvested crop from field to threshing floor</b> | 0<br>(0.00)                | 156<br>(97.50) | 05<br>(3.13)                | 01<br>(0.63)  | 155<br>(96.88)         | 03<br>(1.88)   |
| 4       | <b>Threshing</b>   | 32<br>(20.00)              | 77<br>(48.13)  | 77<br>(48.13)               | 77<br>(48.13) | 51<br>(31.88)          | 06<br>(3.75)   |
| 5       | <b>Winnowing</b>   | 146<br>(91.25)             | 07<br>(4.38)   | 12<br>(7.50)                | 09<br>(5.63)  | 02<br>(1.25)           | 144<br>(90.00) |
| 6       | <b>Sun drying and cleaning</b>                               | 131<br>(81.88)             | 17<br>(10.63)  | 12<br>(7.50)                | 06<br>(3.75)  | 17<br>(10.63)          | 137<br>(85.63) |
| 7       | <b>Milling</b>   | 08<br>(5.00)               | 141<br>(88.13) | 06<br>(3.75)                | 04<br>(2.50)  | 146<br>(91.25)         | 15<br>(9.38)   |
| 8       | Storing of grains  | 94<br>(58.75)              | 69<br>(43.13)  | 30<br>(18.75)               | 37<br>(23.13) | 36<br>(22.50)          | 54<br>(33.75)  |

(Figures in parenthesis indicate percentage)

**g. Activities related to marketing of farm produce**

From the Table 1 (g) it was evident that extent of men's participation in this activity was prominent and women were taking less part in marketing as the data showed that farm men had an active participation in taking farm produce to selling point (90.63%) and in selling the farm produce

(81.88%). While it was noticed that about above ninety percent of farm women did not participate in transporting and (88.75%) in sale of farm produce. The finding is in conformity with the findings of Mohanta (2017). This implies that when the question of monetary gains arose, women were not given the chance to take part.

**Table 1 (g) : Distribution of respondents based on their participation in marketing of farm produce activities**

(n=320)

| Sr. No. | Activities                        | Active Participation f (%) |                | Partial Participation f (%) |              | No Participation f (%) |              |
|---------|-----------------------------------|----------------------------|----------------|-----------------------------|--------------|------------------------|--------------|
|         |                                   | Women                      | Men            | Women                       | Men          | Women                  | Men          |
| 1       | <b>Marketing</b>                  |                            |                |                             |              |                        |              |
| 2       | <b>Sale of farm produce</b>       | 05<br>(3.13)               | 131<br>(81.88) | 13<br>(8.13)                | 14<br>(8.75) | 142<br>(88.75)         | 15<br>(9.38) |
| 3       | <b>Transport to selling point</b> | 08<br>(5.00)               | 145<br>(90.63) | 06<br>(3.75)                | 04<br>(2.50) | 146<br>(91.25)         | 11<br>(6.88) |

(Figures in parenthesis indicate percentage)

**2. Extent of participation of gender division of activities in overall paddy cultivation practices:**

Respondents were grouped into three categories as high, medium and low based on their degree of participation in overall paddy cultivation practices. It was evident from table 2 that more than fifty percent tribal farm women had medium overall extent of participation in paddy cultivation

practices which was followed by high (24.38%) and low level (22.50%). The finding of the study is supported by the finding of the study conducted by Chandravadia *et al.* (2020) and Bora *et al.* (2022) where above fifty percent of tribal farm women had medium extent of involvement in agricultural production. A medium participation (54.38%) level was also observed in tribal farm men. A total of (28.13%) of them had

high and remaining (17.50%) had low level of participation in paddy cultivation practices.

Although both gender of tribal farmers belonged to medium level of overall participation in paddy cultivation practices, but the mean scores varies between them. Women had mean score of (49.29) with the standard deviation of (4.85) while, mean score of (70.31) with standard deviation (3.51) was found in women. This indicated that differences

in extent of participation existed between gender, but that did not reflect that women did not have any contribution towards paddy cultivation. Women were also contributing significantly like men. There was no any activity where women were not involved. But in some activities such as land preparation, fertilizer application, plant protection measures, marketing, less extent of women’s participation were visible for which there existed the difference in overall participation between them.

**Table 2 : Distribution of respondents according to their extent of participation in overall paddy cultivation activities (n=320)**

| Sr. No. | Women                          |               |       |      | Men                     |               |       |      |
|---------|--------------------------------|---------------|-------|------|-------------------------|---------------|-------|------|
|         | Category                       | Frequency (%) | Mean  | S.D. | Category                | Frequency (%) | Mean  | S.D. |
| 1.      | <b>Low</b><br>(<44.44)         | 36<br>(22.50) | 49.29 | 4.85 | Low<br>(<66.80)         | 28<br>(17.50) | 70.31 | 3.51 |
| 2.      | <b>Medium</b><br>(44.44-54.14) | 85<br>(53.13) |       |      | Medium<br>(66.80-73.82) | 87<br>(54.38) |       |      |
| 3.      | <b>High</b><br>(>54.14)        | 39<br>(24.38) |       |      | High<br>(>73.82)        | 45<br>(28.13) |       |      |

(Figures in parenthesis indicate percentage)

**3. Two sample Z test of participation of gender division of activities in paddy production practices:** A Z-test (two sample) was conducted to assess whether there were

difference between two population mean in paddy cultivation. The Table 4.2.4 showed the Z- value of women and men farmers along with their mean scores and sample variance.

**Table 3. Z- Test of significance on extent of participation in paddy production practices (n=320)**

| Sr. No. | Activities  | Mean  |       | Sample Variance |      | Z- calculated value | Z- table value (Two tailed) |
|---------|---|-------|-------|-----------------|------|---------------------|-----------------------------|
|         |   | Women | Men   | Women           | Men  |                     |                             |
| 1       | <b>Seed activity</b>                                | 6.46  | 7.28  | 5.38            | 1.28 | 4.041*              | 1.96                        |
| 2       | <b>Nursery raising</b>                              | 10.96 | 13.43 | 1.91            | 2.35 | 15.074*             |                             |
| 3       | <b>Field preparation</b>                            | 3.78  | 8.17  | 0.75            | 0.83 | 44.122*             |                             |
| 4       | <b>Manuring and fertilization</b>                   | 5.60  | 9.49  | 2.01            | 8.96 | 14.837*             |                             |
| 5       | <b>Water management and intercultural practices</b> | 4.62  | 7.93  | 1.25            | 0.52 | 31.310*             |                             |
| 6       | <b>Harvest and post-harvest activities</b>          | 15.35 | 18.62 | 4.73            | 2.27 | 15.65*              |                             |
| 7       | <b>Marketing of farm produce</b>                    | 2.51  | 5.39  | 1.16            | 1.21 | 23.64*              |                             |

\* denotes significance at 5% level of probability

The Table 3 depicted that all the seven major activities in paddy cultivation showed significant differences between women and men. No any activity was found to be non-significant. Thus, the null hypothesis that there was no significant difference in the extent of participation between women and men may be rejected. Therefore, in this case, we accept alternate hypotheses that there was significant difference between women and men in paddy cultivation practices.

**CONCLUSION**

Agriculture plays an important role in the economy as significant portion of the population is involved in agriculture. Gender plays a significant role in agriculture. The division of labor in the farm is found to be mostly dependent upon gender. Farm women contribute equally with men in various cultivation practices of paddy. However, despite of their significant contributions, women are still considered as invisible segment of farming community. Women are not

enjoying equal benefits and opportunities as men in farming. Thus, women should be empowered by providing all the necessities required for farming. This will definitely help to reduce the gender gap in agriculture

## RECOMMENDATIONS

Based on the findings, the study provides the following recommendations:

- a. Empowering women farming community by equipping them with the improved agricultural skills and innovative knowledge to enable them to adopt new technologies, technical packages and to create viable options for those who remain.
- b. More emphasis should be given by state government, SAUs and reputed NGOs, ICAR for promotion of women friendly agriculture technology among farming communities.
- c. Equal participation of males and females should be encouraged. Females should be equally involved in the decision-making process so it increases gender participation in agriculture.

## ACKNOWLEDGEMENT

The researchers are highly thankful to all the paddy growers for sparing their time for completing the research work and the department of extension education, AAU for kind guidance during the study

## CONFLICT OF INTEREST

This is to declare that there is “No conflict of interest” among researchers.

## REFERENCES

- Appalanaidu, P. (2020). Tribal Women and Economic Significance: A Comprehensive Study. *International Journal of Research and Review*, 7(11): 68-81.
- Bora, Pallabi, Das, Pallabi and Goswami, Ranjita (2022) Adoption behaviour of tribal and non-tribal paddy growers. *Guj. J. Ext. Edu.* 34(1):86-89.
- Chandravadia, K., Bariya, M. and Kumbhani, S. (2020).

Participation of Tribal Women in Agricultural production. *Gujarat Journal of Extension Education*, 31(2): 110-112.

Chauhan N. B. and Vinaya Kumar, H. M. (2016). Gender responsive climate change strategies for sustainable development. *Productivity*, 52 (2): 182-186.

Dhruw, B., Chandrakarand, M.R. and Choudhary, V.K. (2020). Tribal Women Participation in Agriculture in Gariaband District Of Chhattisgarh. *Journal of Pharmacognosy and Phytochemistry*, 9(5): 81-85.

Mohanta, R. (2017). Participation Of Tribal Women in Agriculture. *International Journal of Science, Environment and Technology*, 6(1): 745-750.

Naik, R.M. and Tandel B.M. (2014). Farm Women Participation in Vermi compost Production. *Gujarat Journal of Extension Education*, 25(2): 178-180.

Nikulsinh, M. Chauhan and Patel, A.P. (2011). Self-Reliance in Paddy Seed through Seed Village Programme. *Gujarat Journal of Extension Education*, 22: 76-79.

Patil, B. and Babu, V.S. (2019). Role of women in agriculture. *International Journal of Applied Research*, 4(12): 109–114.

Rosenzweig, M.R. and Schultz, T.P. (1982). Market Opportunities, Genetic Endowments and Intra Family Resource Distribution: Child Survival in India. *The American Economic Review*, 72 (4): 803-815.

Sekhar, C. (2014). Gender Inequity in Farm Level Decision Making and Resource Ownership and the Need for Empowering Women to Achieve Food Security: A Case Study In North Western Region Of Tamil Nadu, India, *Paper presented at Dialogue on International Food Security*, pp. 3-6.

Yadav, S., Sharam, N.K., Kumar, V., Mishra, P. and Choudhary, S.L. (2018). Role of Rural Women in Agriculture Activities in Jaipur District of Rajasthan, India. *International Journal of Current Microbiology and Applied Sciences*, 7(2): 3549-3555.

---

Received : October 2023 : Accepted : December 2023