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### Gender analysis of roles and resources in agriculture and allied practices with respect to climate change factors in coastal areas of Odisha

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#### Abstract

Women cultivators largely contribute to the agricultural production. However, their contribution remains unrecognized. The present research is about the gender roles of men and women farmers in the agricultural and allied activities and also about the various resources available to them according to their gender. The study was conducted in the Marsaghai and Dwitiyalaya village of Kendrapara district and Sanagbpur and Tirtol village of Jagatsinghpur district of Odisha state with a total sample size of 200. As this is a gender perspective research study, out of the total respondents 100 are men and 100 are women. The men and women respondents are selected by the process of random selection. The results clearly shows that activities like land preparation (75%), manure and fertilizer application (67.5%), irrigation (69%) and marketing of produce (84%) etc. are mainly done by men farmers whereas activities like plant protection measures, threshing, winnowing, grading, storing etc. are mainly done by female members of the family. It is observed that majority of the women who cultivate their farms do not have title to the land and are less likely to be included in different decision making process and financial matters and other outdoor activities relating to beneficiaries of various government schemes or extension activities.

**Keywords:** Gender role, resources, climate change, agricultural practices, decision making

#### Introduction

International organizations such as FAO not only recognize the role that women across the globe play in the agro production systems but also the gendered distribution of benefits received from participation in agricultural production. Women cultivators largely contribute to the agricultural production. However, their contribution remains unrecognized. Rural Indian women are extensively involved in agricultural activities. However the nature and extent of their involvement differs with the variations in agro production systems. The mode of female participation in agricultural production varies with the landowning status of farm households. Their roles range from managers to landless labourers. In overall farm production, women's average contribution is estimated at 55% to 66% of the total labour with percentages, much higher in certain regions. Traditionally, women undertake a myriad of roles in agriculture, from sowing seeds and tending crops to post-harvest activities such as threshing and winnowing. However, patriarchal norms and cultural biases contribute to their invisibility in agricultural discourse and decision-making processes. Agriculture provides many job opportunities and livelihoods around the world. It can also reflect gender inequality and uneven distribution of resources and privileges among gender. In particular, indigenous and rural women continue to face numerous

obstacles when trying to access and control natural resources, technological devices and agricultural services; also, they are not involved in processes of decision-making. Most of the time, such obstacles have their roots in practices of discrimination, which highly influence women's independence.

#### Methodology

The study was conducted in the Marsaghai and Dwitiyalaya village of Kendrapara district and Sanagbpur and Tirtol village of Jagatsinghpur district of Odisha state with a total sample size of 200. As this is a gender perspective research study, out of the total respondents 100 are men and 100 are women. The men and women respondents are selected by the random selection method. The respondents' roles and resources as per their gender was assessed through a well-structured interview schedule by the process of personal interview. For the assessment of respondents' perception, modified Likert type perception scale developed by which covers various dimensions of gender roles such as participation and role analysis in crop husbandry practices, animal husbandry practices and participation in decision making processes where respondents' response was recorded in a five point continuum. Descriptive statistics, frequency count, percentage calculation and chi-square test value are used to analyze the collected data.

## Results and Discussion

### Gender Analysis

The various roles of men and women respondents involved in different agricultural practices like Crop Husbandry,

Animal Husbandry and also in routine family activities were analyzed. The results are presented in the following table below.

Comparative participation and role analysis in crop husbandry practices as perceived by men and women respondents (N= 200)

Activities	Perception of Men		Perception of Women		Overall Perception		Chi-square test value
	Men	Women	Men	Women	Men	Women	
Land Preparation	78	22	72	28	75	25	0.667
Sowing	65	35	56	44	60.5	39.5	1.391
Manure and Fertilizer application	72	28	63	37	67.5	32.5	1.458
Intercultural Operations Hoeing, Earthing Up Thinning, Gap Filling Weeding Mulching	59	41	65	35	62	38	0.530
Irrigation	68	32	70	30	69	31	0.023
Plant Protection Measures	56	44	31	69	43.5	56.5	3.089*
Harvesting	63	37	45	55	54	46	5.817**
Threshing, Winnowing, grading, Storing	52	48	39	61	45.5	54.5	2.901
Marketing	83	17	85	15	84	16	0.037

\* and \*\* shows significant at 5% and 1% level of significance

The results clearly shows that activities like land preparation (75%), manure and fertilizer application (67.5%), irrigation (69%) and marketing of produce (84%) etc. are mainly done by men farmers whereas activities like plant protection measures, threshing, winnowing, grading, storing etc. are mainly done by female members of the family.

The findings show a significant difference in participation

of men and women farmers in all the crop husbandry practices. Women farmers work load in the field can be increased significantly by the change of climate as they have major work to do at the time of crop harvesting and post harvesting activities. Women farmers are mainly responsible for grading and storing of food grains but they have less or no role in marketing processes of produce.

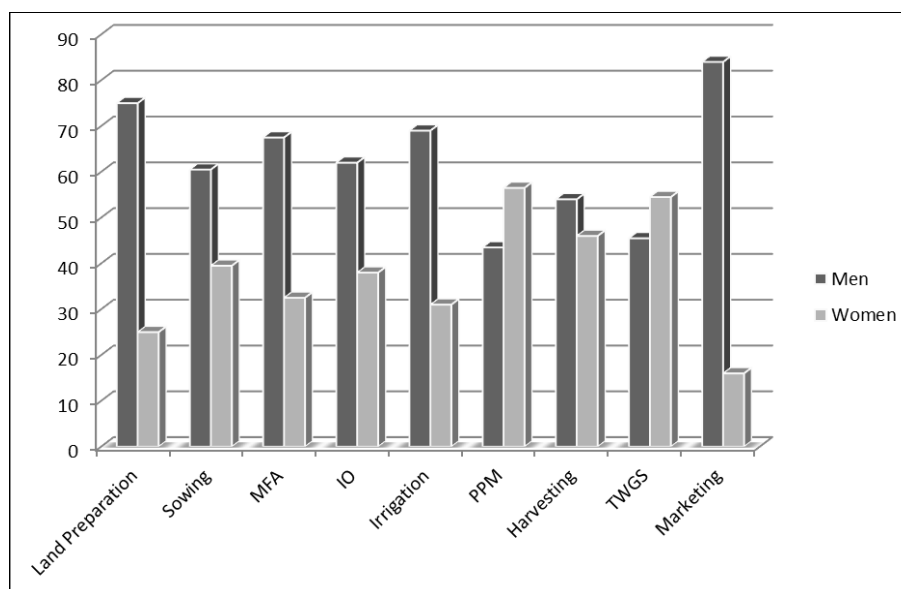


Fig 1: Role analysis in crop husbandry practices

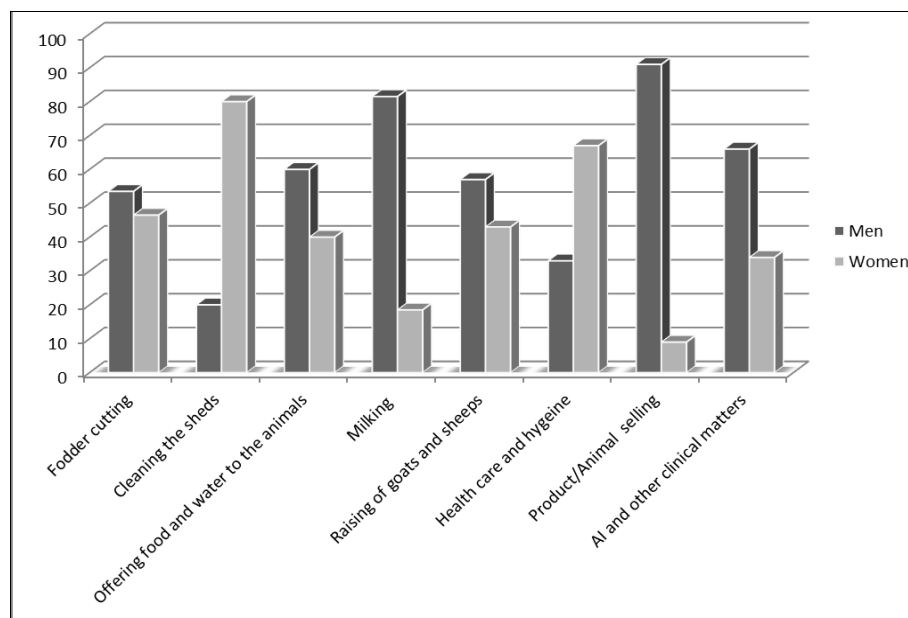
The data in the above table clearly indicates that offering food to the animals (60%), milking (81.5%), product/animal selling (91%) and clinical matter decisions (66%) are the activities mainly done by the men members of the family whereas fodder cutting, transporting, cleaning the sheds,

hygiene maintenance etc. are mainly done by the female members of the family. There is significant difference in the activities like transporting the fodder and health care and hygiene maintenance of animals as seen from the chi-square value in the above table.

## Comparative participation and role analysis in Animal Husbandry practices as perceived by men and women respondents (N= 200)

Activities	Perception of Men		Perception of Women		Overall Perception		Chi-square test value Chi-square test value
	Men	Women	Men	Women	Men	Women	
Fodder cutting, transporting and feeding to the livestock	31	69	76	24	53.5	46.5	3.801*
Cleaning the sheds	17	83	23	77	20	80	0.718
Offering food and water to the animals	57	43	63	37	60	40	0.520
Milking	78	22	85	15	81.5	18.5	1.193
Raising of goats and sheeps	62	38	52	48	57	43	1.652
Health care and hygiene	43	57	23	77	33	67	8.163**
Product/Animal selling	89	11	93	7	91	9	0.549
AI and other clinical matters	60	40	72	28	66	34	2.696

\* and \*\* shows significant at 5% and 1% level of significance



**Fig 2:** Role analysis animal husbandry practices

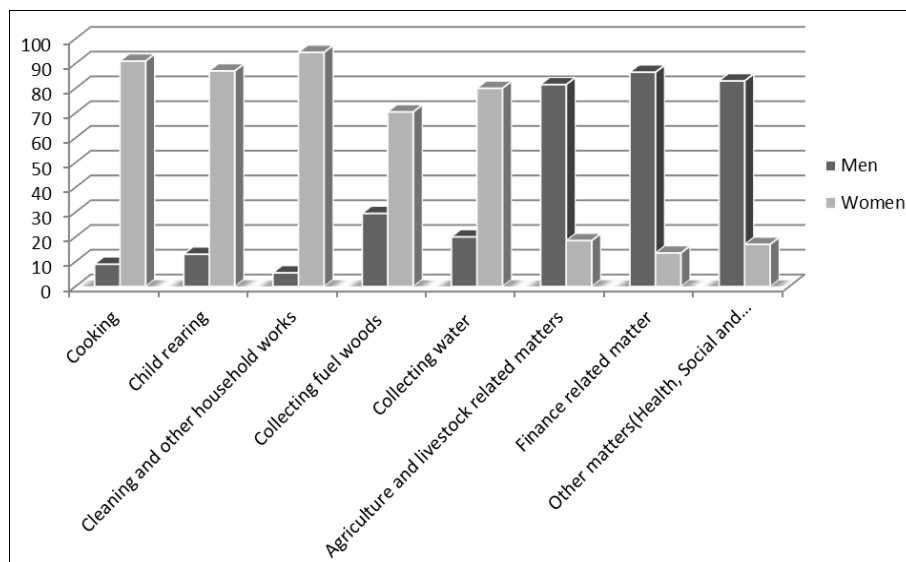
## Comparative participation and role analysis in participation and decision making processes as perceived by men and women respondents (N= 200)

Activities	Perception of Men		Perception of Women		Overall Perception		Chi-square test value
	Men	Women	Men	Women	Men	Women	
Cooking	13	87	05	95	9	91	2.991
Child rearing	17	83	09	91	13	87	2.166
Cleaning and other household works	4	96	7	93	5.5	94.5	0.384
Collecting fuel woods	32	68	27	73	29.5	70.5	0.386
Collecting water	21	79	19	81	20	80	0.031
Agriculture and livestock related matters	78	22	85	15	81.5	18.5	1.193
Finance related matter	84	16	89	11	86.5	13.5	0.685
Other matters (Health, Social and Psychological)	76	24	90	10	83	17	4.987*

\* and \*\* shows significant at 5% and 1% level of significance

The data from the above table clearly indicates that all the routine family activities like cleaning, child rearing, cooking, fuel and water collecting etc. are mostly done by the women farmers but the activities like agriculture and livestock related matters, finance related matters and other decisions of houses all are taken by the men members of the family only. The chi-square value in the above table clearly shows the significant difference between the women and

men as men have the major role in taking decisions relating to health, social and psychological matters. Women also tend to have less entitlements and access to natural resources, such as land and water. For example, despite the significant role they play in managing it, women frequently face obstacles in accessing irrigation water for the cultivation of crops and for raising livestock.



**Fig 3:** Role analysis in participation and decision making processes

### Conclusion

It was observed that men and women have different participation level in the crop husbandry practices. Women are mainly involved in plant protection, threshing, winnowing, grading and other after harvesting activities where as men farmers are actively involved in land preparation, sowing, irrigation and marketing of produce. Findings show that in animal husbandry practices women had very high participation in fodder cutting, transportation of fodder and feeding to the livestock, cleaning the sheds, care and maintaining hygiene of animals etc. but men are more involved in milking, product/animal selling and other clinical works of livestock. The research study shows that women had very high participation in routine household activities like cooking, child rearing, cleaning and collection of fuel woods and water whereas men are highly involved in all the household and agriculture related decisions, finance related matters and other matters of households. Both men and women were involved in farming, but they did different things in different places, therefore, it is closely related to the type of agricultural production system. Female farmers are more numerous and engaged in small-scale production; males are the leaders in terms of production because they tend to be responsible for more land. Therefore, there is a growing recognition about necessity for implementing women centric schemes for the agricultural sector which would empower them for becoming visible part of the food supply chains and contribute to enhancing global food security.

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