



## Analysis of Participation of Women in Horticultural Activities

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### Abstract

The present study was conducted to investigate involvement of rural women in various production activities of horticultural crops. A survey was conducted 300 respondents of 6 villages of 2 districts ( Khurda and Ganjam ) of Odisha to study the participation of women in various activity of production of horticultural crops. The study revealed that participation of women was more in various production and post production activities of vegetables than fruits and flowers. The results showed that participation of women was higher in weeding (80%), field preparation (40%), irrigation (40%), collection of fruit (40%), sorting and grading (40%) of fruit crop while it was low in pit digging (10%), planting (15%), training and pruning (5%) of fruit crops. The participation of women was more than 80% in field preparation, stable collection, seed cleaning, seed sowing, transplanting of seedlings, weeding, sorting and grading of vegetables. Less than 50 percent participation of women was found in cleaning of bunds (42%), irrigation ( 38%), fertilizer application ( 24 %), crop watch (24 %), application of insecticides and pesticides ( 28%) and marketing ( 35 %). The study also depicts that age, family income, land holding influence the women participation in horticulture while type of family, education level, caste did not effected by the women participation in cultivation of horticultural crops.

**Keywords:** Women, Participation, Horticultural Crops

### Introduction

Horticulture is one of the fastest growing sectors of agriculture. The growth of this sector was about 5.5 % during last two and half decades (Anonymous, 2014). The horticulture crops have potential of providing more employment and income from unit area than field crops. Apart from employment generation and income enhancement, the horticulture sector has vast scope of value addition which not only provides employment to farm family but also to landless household particularly women. Women play a significant and crucial role in horticultural development including production, post harvest operation and value addition.

There is a greater involvement of women under various field operations along with house arrangement. Out of the total net shown area is 142 million hectare, horticultural crops are grown in 23 million hectares. It is estimated that women are responsible for 70 percent of actual farm work and constitute up to 60 percent of the farming population. The role of women in horticulture has not appropriately highlighted. Women are generally engaged in multiple occupations ranging from unpaid family labour to self-employed in their home or village or outside to generate income for themselves. However, women in rural areas have affinity towards farming and as high as 75 per cent of the rural women are found participating in different farm and allied works (Sadangi, *et al.*, 1996). The involvement of women has increase in horticultural sector with the increase in area and production of these crops. The women are playing major role in cultivation of fruits, vegetable and flowers (Baba *et al.*, 2010). With the increase movement of male population in other sector, the role of women in horticulture as well as

in other sectors of agriculture has increased. Keeping the above background in mind an attempt was made to analyse the participation of women in various operations of horticultural crops.

### Methodology

Study was conducted in 6 villages of 2 districts ( Khurda and Ganjam) of Odisha during 2009-10 to analyze the participation of women in horticultural crops. The population of study consisted of farmwomen involved in various activities of production and post production of horticultural crops. A sample of 300 farm women was selected through proportion at random sampling. Selected respondents were interviewed personally using well structured pre tested interview schedule. The amount of work done by farmwomen in various farm activities was found by using the following criteria score category and the mean weighted score was found out for individual farm activities. The amount of work done was categorised in five categories and given scores 1 for least, 2 for less than half, 3 for more than half, 4 for major and 5 for complete . The Data collected were analyzed using appropriate statistical tool to infer results.

### Results And Discussion

The socio-economic characteristics of related respondents indicated that 40.2 % of the respondents belonged to middle age group followed by old age ( 37.3% ) and young (22 % )group. It was also revealed that majority (75%) of respondents belonged to joint family. The result on family income shows that majority (62.7 %) of respondents had family income between Rs. 30,000/ to Rs.60,000/- followed by (26 %) with family income be-

low 30,000/ per annum. The 13.3 0% families had income between Rs.60,000/- and Rs 90,000/- .Only 1.33 % families had more than Rs 90,000/- income annually. The data of caste categories indicate that maximum (41.7%) were from schedule tribe category, 25% were from schedule class, 15 % were from other backward classes and rest of respondents (18%) were belonged to higher castes. The data on their educational status revealed that majority (40.7%) of the respondents were illiterate. Among the literate respondents, (41.3%) had passed primary level, 18% percent were matriculation or above. The result on land holding shows that majority (46.7%) were had small scale land holdings followed by medium (40%) scale land and only (13.3%) had large scale land (Table 1). None of the women farmer were owner of the land. The land records were on the name of their husband or father or father -in law.

The data on participation of selected respondents in various activities of fruits, vegetable and flowers crops revealed that the participation of women was more in cultivation of vegetables as compared to fruits sand flower crops. The participation of women was less in fruit production related activities. Their role was mainly in weeding (80%), field preparation (40%), irrigation (40%), collection of fruit (40%), sorting and grading (40%). The participation of women was low in pit digging (10%), planting (15%), training and pruning (5%) of fruit crops (Table 2). The participation of women was high vegetable production activities. Their participation was more than 80% in field preparation, stable collection, seed cleaning, seed sowing, transplanting of seedlings, weeding, sorting and grading of vegetables. The contribution of women was between 60 to 80 percent in manure application, harvesting, cleaning and collection of vegetables. Less than 50 percent participation of women was found in cleaning of bunds (42%), irrigation ( 38%), fertilizer application ( 24 %), crop watch (24 %), application of insecticides and pesticides ( 28%) and marketing ( 35 %). The participation of women was higher in harvesting, cleaning and grading. The lower participation of women in fruit cultivation activities may be due to lesser repetitive activities in fruits crops as compared to vegetables. The similar as reported by Tripathi *et al* (2009). The lower participation in flower cultivation may be due to lesser area under cultivation of flower crops in the surveyed villages (Table 2). Singh *et. al.* (2004) also reported that the farm operations in which the participation of women was 100 percent were cleaning the produces, cutting, picking, storage and processing activities. Baba *et al* (2010) also reported higher participation of women in intercultural operations, harvesting, planting of vegetables. Similar results were reported by Chayal and Daka (2010).

The data reveals that stubble collection, seed cleaning, seed treatments, transplanting, weeding , were major

farm activities which were mostly done by farm women. The farm operations including cleaning of field, raising nursery for seedling , weeding, gap filling, harvesting, shifting of produce to grading site, sorting and grading are mainly performed by women. They do more than half work of field preparation, manure application, cleaning and collection of produces in horticultural crops. The farm women do less than half work of leveling of land cleaning of field bunds, irrigation, fertilizer application, crop watch, etc.. In case of leveling of field, fertilizer application, training and pruning, application of plant protection chemicals least amount of work was performed by women in horticultural crops (Table 3). Similar results were reported by Choudhary and Singh (2003), Singh *et al.* (2004) , Chayal and Daka (2010) in other crops.

Attempts were made to find out the relationship between the personal variables of women with their participations. It was found that age of women was negatively correlated with agriculture operations (Table 4). The physical strength of young farm women enables them to perform more agriculture activities. The findings are supported by Choudhary and Singh (2003) and Chayal and Daka (2010). The correlation of Family type , education level, caste with the participation of women in various activities of horticultural crops was found non - significant. It is also shows by data that land holding and family income were significantly effected the participation farm women in horticultural activities.

## Conclusion

The present study concludes that the women play a significant and crucial role in production of various horticultural crops. The participation of women was more in various production and post production activities of vegetables than fruits and flowers. The research revealed that showed that women's participation was maximum in stubble collection, seed sowing ,seed cleaning, transplanting, and weeding of horticultural crops. They play major part of field preparation, manure application, harvesting, cleaning and collection of produces, sorting and grading. In case of pit digging, training and pruning, planting of fruit trees, levelling of field, fertilizer application, plant protection measures their participation is less. The study also depicts that age, family income, land holding influence the women participation in horticulture while type of family, education level, caste did not effected by the women participation in cultivation of horticultural crops.

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**Table 1. Socio personal characteristics of respondents (N=300)**

variables	Categories	Number	Percentage
Age	Young (< 30 yrs)	67	22.3
	Middle(30-40 yrs)	121	40.3
	Old (> 40 yrs)	112	37.3
Type of family	Joint	225	75.0
	Nuclear	75	25.0
Annual family income(Rs)	Below 30,000	78	26.0
	30,000-60,000	188	62.7
	60,000 -90,000	40	13.3
	90,000 & above	4	1.33
Caste	General	55	18.3
	Other backward castes	45	15.0
	Schedule caste	75	25.0
	Schedule tribes	125	41.7
Education	Illiterate	122	40.7
	Primary	124	41.3
	Matriculate or above	54	18.0
Land holding	Small	140	46.7
	Medium	120	40.0
	Large	40	13.3

**Table 2: Participation of farm women in farm activities (N=300)**

Activities	Participation of women (%)			Average
	Fruits	Vegetable	Flowers	
Field Preparation	40	84	52	58.7
Leveling of land	-	38	-	38.0
Stubble collection	-	84	-	84.0
Cleaning of field bunds	-	42	-	42.0
Manure application	-	62	54	58.0
Seed cleaning	-	84	-	84.0
Seed treatments	-	84	-	84.0
Seed sowing	-	80	45	80.0
Transplanting of Seedlings	-	80	-	80.0
Pit digging	10	-	-	10.0
Planting of fruit trees	15	-	-	15.0
Irrigation	40	38	46	41.3



Weeding	-	84	78	81.0
Fertilizer application	20	24	28	24.0
Crop watch	10	22	16	16.0
Training and pruning	5	-	-	5.0
Application of Insecticides & pesticides	-	28	-	28.0
Harvesting	30	67	80	59.0
Cleaning& Collection	40	67	58	55.0
Sorting and grading	40	80	62	60.7
Marketing	22	35	44	33.7

Table 3: Amount of work done by farm women

Activities	Work done (MWS)
Field Preparation	2.9
Leveling of land	1.9
Stubble collection	4.2
Cleaning of field bunds	2.1
Manure application	2.9
Seed cleaning	4.2
Seed treatments	4.2
Seed sowing	4.0
Transplanting of Seedlings	4.0
Pit digging	0.5
Planting of fruit trees	0.8
Irrigation	2.1
Weeding	4.1
Fertilizer application	1.2
Crop watch	0.8
Training and pruning	0.3
Application of Insecticides & pesticides	1.4
Harvesting	3.0
Cleaning& Collection	2.8
Sorting and grading	3.0
Marketing	1.7

Table 4: Relationship of personal variables of women with their participation in horticultural activities (N=300)

Personal variables	Coefficient of correlation "t"
Age	-3.95
Type of Family	Non-significant
Land holding	3.24
Family income	2.78
Education level	Non-significant
Caste	Non-significant