The Pharma Innovation Journal 2022; 11(3): 611-615

www.ThePharmaJournal.com

The Pharma Innovation

ISSN (E): 2277- 7695
ISSN (P): 2349-8242
NAAS Rating: 5.23
TPI 2022; 11(3): 611-615

www.thepharmajournal.com
Received: 05-01-2022
Accepted: 07-02-2022

Somoprava Arukha
Research Scholar, Department of FRM, O.U.A.T, Odisha, India

Dr. Trupti Mohanty
Professor, Department of FRM, O.U.A.T, Odisha, India

Dr. Jyotirmayee Udgata
Senior Scientist& Head, KVK Jharsuguda, Odisha, India

Dr. Manashi Mohanty
Professor, Department of FRM, O.U.A.T, Odisha, India

Corresponding Author:
Somoprava Arukha
Research Scholar, Department of FRM, O.U.A.T, Odisha, India

Participation of rural women in agriculture and allied activities in rice-based farming system: A study in Puri District of Odisha, India

Somoprava Arukha, Dr. Trupti Mohanty, Dr. Jyotirmayee Udgata and Dr. Manashi Mohanty

Abstract
Rural women in Odisha play a significant role in agriculture and allied activities. They are actively participating in all range of agricultural activities including pre-harvesting, and post-harvesting. But despite such a huge contribution, her role has yet not been recognized and they are considered as 'invisible farmers'. To explore their extent of participation in different activities, the current research was carried out in Puri district of Odisha state. For the present study a total of 120 rural women were selected from 4 villages of Puri district through multistage random sampling technique. Keeping in view these facts the present study has been designed to explore the extent of their role performance and factors responsible in different agricultural and allied activities in rice-based farming system. Women are always involved in post-harvest operations like winnowing, threshing, paddy parboiling, drying, and storing. Further important participated activity by the respondent is nursery raising, uprooting seeding, transplanting and weeding they are involved regularly to secure the growth of the plant Procurement of seed, bond formation, land preparation, seed treatment they are involved occasionally. Women are more involved in activities related to caring of animals and less in outdoor activities like marketing and selection of animals. There is very less involvement of women in apiary. Women are very less involved in activities related to pisciculture. Women in this area moderately participate in vermin- composting activities like tank preparation, procurement of vermin culture, compost harvesting and marketing of produce because of the time constraints. Women are moderately participating in mushroom cultivation. Less participation of rural women was found in rural craft activities in this area.

Keywords: Women, participation, agriculture and allied activities

Introduction
Odisha is an agrarian state. It employs around 73% of it and its population in farming who contribute around 30% to the net state domestic product. Odisha contributes one tenth of the total rice produced in the country. Favourable climate and presence of rich soils accounts for the flourishing agriculture of Odisha. According to the Indian Fiscal commission, "Agriculture is not merely an Occupation; it is a way of life which for centuries has shaped the thought and outlook of many millions of people. Evidently, Agriculture plays a critical role in the economy of the state and livelihood of majority of its populace. Puri is a coastal district of the Odisha state of India. It famous for agriculture and its moderate climate. Rice is a major crop in Puri district and rice-based farming system is the major prevalent farming system in this area. Rice based farming system can be described as mix of farming practices that comprises of rice as the major crop followed by subsequent cultivation of other crops. In Odisha, according to 2011 census, 61.8 percent of total workers are engaged in agriculture and the percentage of agricultural labourers among total women worker is 57.8 percent (Das L. 2015). It is estimated that, rural women are responsible for production of more. A recent estimation by FAO (2011) showed that women agricultural labour consists of 43 percent of total world agricultural labour force. M.S. Swaminathan, the famous agricultural scientist, describes that it was women who first domesticated crop plants and there by initiated the art and science of farming. While men went out hunting in search of food, women started gathering seeds from the native flora and began cultivating those of interest from the point of view of food, feed, fodder, fibre and fuel. Majority of rural women participated regularly in cleaning of animal sheds, preparing milk products, gathering dung, selling milk or milk products, selling egg or poultry, and egg collection. In household management, majority of rural women are regularly engaged in food preparation, looking after all family members, preparing local beverages, cleaning the house,

clean up after meals, washing clothes, child care, fetching water and embroidery work. Capacitating rural women in all rounded developmental aspect can affect their livelihoods which enables than actively participate in various agricultural and non-agricultural activities (Mulugeta and Amsalu, 2014).

Research methodology

Keeping in view the objectives of the study, survey research design was therefore considered to be most appropriate to gather data. Multiphase sampling techniques has been followed to select Districts, Blocks, Panchayats, Villages and Respondents. The study was undertaken in Puri district of Odisha. As the district is one of major paddy growing district. The district of Puri comprises of 11 blocks. Out of these 18% i.e. 2 blocks namely Pipili and Nimapada were selected purposively. One G. P from each blocks i.e. Uchhupur G.P.from Nimapada block and Gobindapur G.P of Pipili block are selected at random. Two villages from each G.P. i.e. Nuasahi and Bariha from Uchhupur G.P and Matiapada and Kunjar from Gobindapur G.P. are selected randomly. 30 rural women from each selected village are selected randomly as the respondents for the present study. The total respondents are 120.

In the field of behavioural research, scaling attains paramount importance because; it is the scale that converts the human feeling in to the numerical. To ensure maximum objectivity of the study, the standard scales developed by different experts have been used with great care to fit into the present investigation. Besides the structured schedule was also developed by the researcher herself for the empirical measurement. Scoring of the variables is done basing on the Likert's scale**.** Statistical measures provide the investigator with an opportunity for expressing the facts in an empirical way. The statistical measures employed in the study for interpretation of data are explained herewith: -Percentage, Mean Score, Standard Deviation, Co-Efficient of Variation: -Rank Order, Score Gap: Correlation Co-Efficient, Test of Statistical Significance ('T' Test). The ranking of activities was done on the basis of their mean value. The data, thus, collected were analysed by using Statistical Package for Social Sciences (SPSS) (Davis *et al.*, 2004) [8].

Results and discussion

The rural women play multiple roles in managing their livelihoods. Participation refers to taking part in activities in various types of work often with others. If there is a need, there is participation. Rural women have very hectic life. The rural women in rice-based farming system participate in different agricultural and allied activities with sustainable efforts for higher production and income. The participation score indicates the involvement of rural women in various activities. In the study area, the women workers take part in various agricultural activities. Work participation classified in to three categories always, sometimes and never was analyzed with score value of 3, 2, and 1 respectively. The results indicated in the table below.

Table 1: Participation of respondents in Agriculture Activities N=120

Sl. No.	Activities	Mean Score	Rank	Gap%
1	Procurement of seed	1.95	VII	35
2.	Land preparation	1.74	IX	42
3.	Seed treatment	1.48	X	50.66
4.	Nursery raising	2.30	IV	23.33
5.	Uprooting seeding	2.30	IV	23.33
6.	Transplanting	2.30	IV	23.33
7.	Fertilizer application	1.02	XV	66
8.	Irrigation	1.25	XIII	58.33
9.	Disease and pest management	1.03	XIV	65.66
10.	Weeding	2.01	VI	33
11.	Bond formation	1.94	VIII	35.33
12.	Harvesting	2.23	V	25.66
13.	Threshing	2.35	III	21.66
14.	Winnowing	3.00	I	0
15.	Paddy parboiling	3.00	I	0
16.	Drying	3.00	I	0
17.	Storing	2.94	II	2
18.	Marketing of produce	1.42	XI	52.66
19.	Marketing of by product	1.30	XII	56.66

The table1 shows that women are always involved in post-harvest operations like winnowing, threshing, paddy parboiling, drying, and storing. After harvest, it is very important to handle the crop with almost care so that it does not get damaged. Further important participated activity by the respondent is nursery raising, uprooting seeding, transplanting and weeding they are involved regularly to secure the growth of the plant Procurement of seed, bond formation, land preparation, seed treatment they are involved occasionally. However, there are some other works in which their participation is not up to the mark like marketing of produce and by products. Women are not actively involved in works like disease management and irrigation. So, in all these activities rural women in rice-based farming system largely take part and contribute immensely to agricultural production. Above findings of the study have been supported by Das (2015) [7] and Chauhan (2011) [5]. Women participation was 100 percent in the major farming activities like cutting, cleaning of grains, drying of grains, storage and processing. It was observed that winnowing, weeding, cleaning of field were the activities where the participation of women was more than 75 percent. Least involvement of farm women was found fertilizer application (1%). No participation was observed in marketing and plant protection measure that also reported similar result by Chayal and Dhaka (2010).

Table 2: Participation of respondents in Animal Husbandry N=120

Sl. No.	Animal Husbandry activities	Mean Score	Rank	GAP%
1	Cleaning of sheds	2.22	II	26
2	Cleaning of animals	2.22	II	26
3	Feeding	2.23	I	25.66
4	Washing utensils	2.23	I	25.66
5	Disease management	2.11	III	29.66
6	Milking	1.99	IV	33.66
7	Dung cake preparation	1.93	V	35.66
8	Vaccination of poultry birds	1.03	VII	65.66
9	Eggs collection & packing	1.03	VII	65.66
10	Marketing of produce	1.13	VI	62.33

Above Table 2 presents the participation of rural women in animal husbandry activities. It revealed that the participation of rural women was maximum in aspects of feeding and washing utensils (rank I), followed by cleaning of sheds and cleaning of animal (rank II), Disease management of animals (rank III), milking (rank IV), dung cake preparation (V), marketing (VI). Least participation of farm women was observed in vaccination of poultry bird's and eggs collection & packing. This might be due to the fact that males are engaged in field oriented/outside work. Hence, the farm women become responsible for the care and management of animal at home. Which is similar with the result of Narayan (2015) [14] which revealed that 79.1% of women were involved in feeding and watering of animals, 48.33% involved in milk and milk product selling. 59% women were involved in taking care of animals which is dissonance with the above result. The findings also show that actual doing by women are more in activities related to caring of animals and less in outdoor activities like marketing and selection of animals. The results of the present research study confirm the results of some studies like Chauhan, (2009) [4] and Kalyani K.S. *et al.* (2011) [11].

Table 3: Participation of respondents in Pisciculture N=120

Sl. No.	Pisciculture Activities	Mean score	Rank	Gap%
1	Pond preparation	1.43	III	52.33
2	Aquatic weed management	1.44	II	52
3	Procurement of spawn/ fingerlings	1.45	I	51.66
4	Pond stocking	1.39	IV	53.66
5	Feed management	1.44	II	52
6	Netting	1.08	V	64
7	Marketing of produce	1.44	II	52

Women have rarely engaged in commercial offshore and long-distance capture fisheries because of the vigorous work involved but also because of women's domestic responsibilities and/or social norms. Above table presents the aspect very less participations of rural women in Pisciculture and maximum in aspects of procurement of spawn/ fingerlings (rank I), followed by aquatic weed management, feed management, marketing of Fish (rank II), pond preparation (rank III), pond stocking (rank IV), Least participation of farm women was observed in Netting. This might be due to the fact that males are engaged in field oriented/outside work. Hence, the farm women become responsible for the care and management pond. The result also shows that actual doing by women are very less in activities related to pisciculture. Average wage earning 27.96% received per day by women in Fishery sector according to Lal R and Khurana A. (2011) [12] and Behera and Behera (2013) [2]. More than 90% of the marketing of fishes taking care by women in Manipur, Devi and Singh (2015) [9].

Table 3: Participation in Apiary activities N=120

Sl. No.	Apiary activities	Mean Score	GAP%
1	Procurement of box/ bee colony	1.55	48.33
2	Bee- Hive management	1.55	48.33
3	Honey- Extraction	1.55	48.33
4	Marketing of produce	1.55	48.33

The data in the table indicate that there is gap of 48.33 per cent in participation in apiary activities and very less involvement of women in these activities. This sector can be a profit-making sector for the rural women basically in rice-based farming sector. The women can take the benefits of AICRP (All India Coordinated Research Project) operating in Sakhigopal by OUAT, BBSR.

Table 4: Participation of respondents in Mushroom cultivation N=120

Sl. No.	Mushroom cultivation	Mean score	GAP%
i.	Procurement of mushroom spawn	1.9	36.67
ii.	Straw cutting / soaking / treatment	1.9	36.67
iii.	Bed preparation	1.9	36.67

iv.	Harvesting	1.9	36.67
v.	Marketing of produce	1.9	36.67

The data in the table shows that women are moderately participating in mushroom cultivation. The women can be organized into women producer groups for linkage with banks for bankable projects. In rice-based farming system this is a suitable enterprise as paddy straw is abundantly available in the area.

Table 5: Participation of respondents in Vermin-composting N=120

Sl. No.	Vermin-composting	Mean Score	GAP%
i.	Tank preparation	1.75	41.67
ii.	Procurement of vermin culture	1.75	41.67
iii.	Compost harvesting	1.75	41.67
iv.	Marketing	1.75	41.67

The table 5 shows that women in this area moderately participate in vermin- composting activities like tank preparation, procurement of vermin culture, compost harvesting and marketing of produce because of the time constraints.

Table 6: Participation of respondents in rural entrepreneurial activities

Sl no.	Rural entrepreneurial activities	Mean score	Rank	GAP%
1	Coir work	1	V	66.66
2	Tailoring	1.11	II	63
3	Terracotta	1.08	III	64
4	Broom making from coconut leaf rib	1.33	I	55.66
5	Paper plate making	1.00	V	66.66
6	Marketing of produce	1.06	IV	64.66

Above table 6 presents less participation of rural women in Rural craft activities but maximum in aspects of broom making from coconut leaf rib (rank I), followed by tailoring (rank II), terracotta work (rank III), marketing (rank IV), Least participation was observed in both coir work and paper plate making.

Table 7: Participation in decision making

Sl No.	Related task	Mean Score	Rank	GAP%
1	Agricultural activities	2.49	II	17
2	Allied activities	2.50	I	16.66
3	Education of Children	2.45	III	18.33
4	Marriage of Children	2.39	V	20.33
5	Purchase of household items	2.30	VI	23.33
6	Savings	2.4	IV	20.00
7	Purchase of land	1.04	X	65.33
8	Purchase of farm inputs	1.43	IX	52.33
9	Cropping patterns to be followed	1.85	VII	38.33
10	Going outside to attend meetings / training	2.40	IV	20
11	Marketing of produce	1.55	VIII	48.33

The above data shows that how negligible women's participation in decision making process. Women in the study region play a significant role in decision making related to agriculture and allied matters. Women said that family members mostly agree with them to take decisions related to allied activities and agricultural activities. But male members did not agree much with her decisions in marketing of produce, purchase of farm inputs, and purchase of land and sometimes they have to take permissions to visit relatives, and attend social function, meetings/trainings or to go to market have restricted mobility due to several cultural taboos. Generally, in these matters like children's education, children's marriage, purchasing household items they inform their family elders to take the decision. However, the degree of freedom also depends upon the age of women and her position in family. In nuclear family's men and women jointly take decision but in joint family decisions are taken mostly by male head of the family. Level of education also affects women decision making power. If women are educated and she is economically active in any work then her decision-making power as compared to illiterate or non-working women. Similar result Found by Chowdhry S. (2004) [3] and Baliyan K.*et al.* (2014) [1].

Table 8: Drudgery reducing implements used by the respondents N=120

Sl No.	Equipment	Mean	Rank	GAP%
1	Weeder	1.07	VI	46.25
2	Bund former	1.12	IV	62.50
3	Paddy Trans planter	1.08	V	63.89
4	Fertilizer broadcaster	1.05	VII	65.00
5	Seed treatment drum	1.00	VIII	49.58
6	Improved sickle	2.99	I	0.33
7	Pedal Operated Paddy Thresher	2.18	II	27.22
8	Winnower	2.04	III	31.94
9	Paddy parboiling drum	1	VIII	66.66

The data in above table shows that women in the rural area used many types of drudgery reducing equipment's. In this area some women have their own improved sickle, pedal operated paddy thresher and winnower. Many times, they hired other equipment's like bund former, paddy transplanter, weeder etc. In this area women didn't use the fertilizer broadcaster and paddy parboiling drum because this types of equipments are not available there. And also, they didn't know about the use of these equipments because their education and knowledge level are very low. Women in the study area do many of the most difficult farm tasks like Transplanting, weeding, harvesting and post-harvest processing of produce. All of these tasks are time consuming and full of drudgery. So, they need some improved implements and machinery which can help to reduce drudgery and physical exertion.

Conclusion

Women folk are the backbone of rural economy. They play a significant role in domestic and socio-economic activities of the society. National development is not possible without developing this important and substantial segment of any society. From the results it was concluded that Women in this area always involved in post-harvest operations like winnowing, threshing, paddy parboiling, drying, and storing. Further important participated activity by the respondent is nursery raising, uprooting seeding, transplanting and weeding they are involved regularly to secure the growth of the plant Procurement of seed, bond formation, land preparation, seed treatment they are involved occasionally. Women are more involved in activities related to caring of animals and less in outdoor activities like marketing and selection of animals. There is very less involvement of women in apiary and rural craft activities. Women in this area moderately participate in vermin- composting activities like tank preparation, procurement of vermin culture, compost harvesting and marketing of produce because of the time constraints. Women are moderately participating in mushroom cultivation.

Suggestions

- Increase the education and social participation among the women through organizing the awareness campaign, sensitization programmes and other feasible educational approaches in the thrust area.
- Capacity building of the rural women on the suggested vocations should be done through skill training, exposure visit and other types of advisory support. Fully involvement in various farm and nonfarm activities should be encouraged.
- Institutional extension personnel should have frequent contact with the women in this area.
- Marketing support need to be strengthened with regulatory marketing network, establishing cooperatives system.
- Women's to on-farm and off-farm production should be recorded in national account.
- Recognition of labour work of working women in the rural economy may be accounted in monetary terms. More facilities should be provided to poor rural women for land, agricultural and livestock extension, services.

Women also said that family members mostly agree with them to take decisions related to agricultural activities.

References

1. Baliyan K. Factors Affecting Participation of women in household decision making: Implication for family Welfare and Agriculture Development, *Socio-Economic voices*, 2014, PP: 1-11
2. Behera B, Behera AC. Gender Issues: The Role of Women in Agriculture Sector in India, *International Journal of Marketing, Financial Service & Management Research.* 2013;2(9). ISSN:2277-3622,
3. Chowdhry S. Invisible Activities of Rural Women, *Kurukshetra*. 2004;52(9).
4. Chauhan NM. Participation of tribal farm women in animal husbandry. Paper presented in: *Seminar on Participatory Approach in rural Development* on 31st, at JAU, Junagarh, Gujurat, 2009.
5. Chauhan NM. Role performance of tribal farmwomen in agriculture and animal husbandry in Gujarat, Karnataka *Journal Agricultural Science.* 2011;24(5):672-674.
6. Chayal K, Dhaka BL, Poonia MK, Tyagi AVA, Verma SR. Involvement of Farm Women in Decision- making in Agriculture, *Stud Home Com Science.* 2013;7(1):35-37.
7. Das L. Work Participation of Women in Agriculture in Odisha, *IOSR Journals of Humanities and Social Science.* 2015;20(7):66-78.
8. Davis K, Franzel S, Hildebrand P, Place N. Extending Technology among Small –Scale Farmers in Meru: Ingredients for Success in Farmer Groups. *Proceeding of the 20th Annual Conference of Association for International Agricultural and Extension Education (AIAEE)*, Dublin, Ireland, 2004, Pp: 902-13.
9. Devi SR, Singh LK. Women's Role in Agriculture and Allied Fields in Manipur, *Indian Journal of Hill Farming.* 2015;28(2):154-157.
10. FAO. World Livestock - Livestock in food security. Rome, FAO, 2011.
11. Kalyani KS, Krishnamurthy V, Rao CC, Kumari NA. Role Performance of Tribal Women in Agriculture: A Study in Agency Area of East Godavari District, Andhra Pradesh, *J. Dairying, Foods and H.S.* 2011;30(3):221-224.
12. Lal R, Khurana A. Gender issues: The role of women in agriculture sector, *ZENITH International Journal of Business Economics & Management Research.* 2011;1(1). ISSN: 2249 8826
13. Mulugeta M, Amsalu T. Women's role and their decision making in livestock and household management, *Journal. Agricultural. Extension. Rural Development.* 2014;6(11):347-353.
14. Narayan MD, Radhika S, Rani BJ. Role and constraints of women in dairying Growth towards women empowerment, *International Journal of Scientific Research.* 2015;4(1):452-454.