

# Identification & Transfer of Appropriate Technologies for Rural Women in Orissa

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## Keywords

Marginal, Farm Women, Workforce, Drudgery

## How to cite this article

Nayak, J., Mhatre, C. and Rout, P. K. 2023. Identification & Transfer of Appropriate Technologies for Rural Women in Orissa. *Vigyan Varta* 4(4): 5-7.

## ABSTRACT

In Odisha state, population was 4.70 crores in Census year 2021. Odisha is one of the largest producers of rice in India. About 57 per cent farmers were marginal who owned 22.73 per cent land holdings and 27.38 per cent were small with 30.38 per cent area. Thus, marginal and small categories farmers together were 79.15 per cent those accounted for only 53.11 per cent area. The farm activities were performed by these categories of farm women/workers. As per census data it is clear that the existence of farm women in agriculture shows an increase. Farm women seem to be spectator in era of high-level mechanization while their existence in Indian agriculture as workforce shows an increase. These workforces need to be equipped with modern farm tools and equipment. The ICAR-CIWA, Bhubaneswar with its mandate of drudgery reduction has been working on women friendly farm tools and equipment since its inception (year 1996). From the study it was revealed that the implementation of transfer of technology programme through trainings has positively motivated the farmwomen to go for advanced agricultural practices for their own benefit

## INTRODUCTION

In Odisha state, population was 4.70 crores in Census year 2021. Odisha is one of the largest producers of rice in India. The other crops cultivated are: jute, oil seeds, pulses, coconut, mesta, sugarcane, tea, rubber, cotton, gram, mustard, maize, sesame, ragi, potato, and soybean. Cuttack, Dhenkanal, Baleswar and Sambalpur are the major agricultural hubs of the state. Average cropping intensity is 156 per

cent, highest (214%) in Puri district and lowest (129%) in Sundargarh district. About 57 per cent farmers were marginal who owned 22.73 per cent land holdings and 27.38 per cent were small with 30.38 per cent area. Thus, marginal and small categories farmers together were 79.15 per cent those accounted for only 53.11 per cent area. The farm activities were performed by these categories of farm women/workers. As per census data it is clear that the

existence of farm women in agriculture shows an increase.

The mechanization aspects have been covered in the state mostly by popularizing tractor, power tiller, self-propelled reaper, self-propelled transplanter, rotavator, power operated implements, hydraulic trailer, combine harvester, manual implements, M B plough, H.S plough, I.C plough, CI plough, seed drill, puddler, thresher (pedal & power), winnower, groundnut digger, storage bins, pumps etc. Most of the equipment do not suit the requirement and need of farm women as the ergonomic characteristics are different than men in addition to their wearing of *Saree*, work posture, etc. Thus, drudgery faced by them seems to be static though high level mechanization has been taken place in a number of farm operations that mostly suit to the large/resourceful farmers. Small farmers are not fully benefited with it. Farm women seem to be spectator in era of high level mechanization while their existence in Indian agriculture as workforce shows an increase. These workforce need to be equipped with modern farm tools and equipment.

The ICAR-CIWA, Bhubaneswar with its mandate of drudgery reduction has been working on women friendly farm tools and equipment since its inception (year 1996). Potential farm equipment developed by various NARS system were screened and evaluated in drudgery reducing farm tools and equipment. This will be enhancing the output by reaching maximum women through effective networking (state department of agriculture, KVKs, NGOs and manufacturers) with the Institute. It will also make a difference as it will cater to maximum users who have not been benefited as yet. Besides training and demonstration for effective use, the actual availability through dissemination of tools for use at farmer's level will ensure to reap/ reach the benefit to the targeted group/locale.

The following tools are quite suitable for improving working efficiency apart from

obtaining fatigue of rural women. Rural women accepted these weeders with considerable interest.

### Cono Weeder

Particulars	Mean Values	
	Cono Weeder	Traditional Practice (Hand Pulling)
Number of workers required	1	1
Output, m <sup>2</sup> /h	125	60

### Benefits

Bending posture is avoided thus reducing drudgery of workers in weeding operation in Wetlands.

- Output is increased significantly.

### Improved Sickle

Particulars	Mean Values	
	Improved Sickle	Local Sickle (Plain)
Number of workers required	1	1
Strokes/min	34	39
Output, m <sup>2</sup> /h during harvesting	151	159
Heart rate during work, beats/min	120	124
Cardiac cost beats/m <sup>2</sup>	11	13
Saving in cardiac cost/m <sup>2</sup> , %	15	-

### Benefits

- About 15% saving in cardiac cost of workers per unit of output with improved sickle as compared to local sickle.
- Serrated sickle does not require the sharpening of cutting edge frequently.
- It also provides safety to the workers due to its better construction.

### Four-Row Rice Transplanter

Particulars	Mean Values for	
	Transplanter	Traditional Practice
Numbers of Workers required	1	1
Number of plants/hill	2 to 4	3 to 6

Output, m <sup>2</sup> /h	245	34
Heart rate during work, beats/min	148	130
Cardiac cost, beats/m <sup>2</sup>	30	67
Saving in cardiac cost/m <sup>2</sup> , %	55	-

### Benefits

- About 55% saving in cardiac cost of workers per unit area.
- It avoids bending postures which is adopted in traditional method.
- Line sowing helps in promoting the use of mechanical weeder thereby reducing drudgery and cost during weeding operation.

### Pedal Operated Paddy Thresher

Particulars	Mean Values for	
	Pedal Thresher	Traditional Practice
Number of Workers required	1	1
Output, kg/h	35	30

### Benefits

It helps to reduce the drudgery involved in paddy threshing operation as bending posture is avoided and arms are not be raised above shoulder height as in case of traditional method i.e. beating on platform/stone.

### Suggestions for Improvement

Sl. no	Major Suggestions (N=100)	%
1	Supply and availability of quality seed	85
2	Result Demonstration	80
3	Exposure Visit	90
4	Subsidy for Agricultural Implements	86
5	More Scientists & farmers interaction	95
6	Credit Supply	92
7	Regular feed back	99
8	Frequent training	70
9	Group work	80

10	Notes/leaflets	75
11	Emphasis on organic farming	80
12	Time of the training in off season	92

The major suggestions include more time for scientist & farmer's interaction, regular feedback, exposure visit, credit supply etc. All the suggestions speak of to know the latest technologies. These are very genuine requirements for the upliftment of farmers, who are the backbone of the Nation.

### CONCLUSION:

Even in this era of globalization and liberalization, for a majority of the rural Indian farmers, agriculture is 'not a business', it is 'a way of life'. They are emotionally attached to their land and farming is the sole source of livelihood for millions of rural farmers. From the study it was revealed that the implementation of transfer of technology programme through trainings has positively motivated the farmwomen to go for advanced agricultural practices for their own benefit. However, the planners, policy makers, the ICAR, the State development departments and NGOs need to look into the problems faced by the farmer's community of this State and accordingly more number of training programme may be conducted. These will not only help the farmers to get better return from agriculture but also the overall production of the State will be increased.

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