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Impact Assessment of Popularization of Agricultural Technologies in Different Production Systems

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ABSTRACT

Women in rural areas perform a major part of all agricultural operations like weeding, transplanting, sowing, harvesting, cleaning, storage etc. Technological empowerment of women is the need of the day for betterment of agriculture and agricultural production system. Hence, the study was conducted with an objective to popularize the improved agricultural technologies in different production systems. The trainings were conducted in different villages namely Dummawad, Marewad, Lokur and Mudhol taluk and about 160 farm women were trained. The pre & post knowledge tests were executed before and after the training programmes. The results revealed that the farm women had less knowledge regarding improved technologies namely serrated sickle, groundnut decorticator, cycle weeder and were not aware of fertilizer trolley, saral kurpi, sapling transplanter, spiral grain separator, maize sheller and bhendi plucker. The post test scores revealed that farm women had maximum knowledge gain with respect sapling transplanter followed by spiral grain separator, saral kurpi and cycle weeder. Thus, such trainings on improved tools/implements & machinery empowers the rural women with technical knowledge and enhances the agricultural productivity.

***Key word:** Impact assessment, Popularization, Agricultural Technologies, Knowledge*

INTRODUCTION

Agriculture in India is unique in its characteristics, where over 250 different crops are cultivated in its varied agro-climatic regions, unlike 25 to 30 crops grown in many of the developed nations of the world. India with its favorable agro-climatic conditions and rich natural resource base has become the world's largest producer across a range of commodities. Over the last few years, there has been considerable progress in agriculture mechanization. It is generally believed that the benefits of modern technology have been restricted to farmers with large land-holdings. Yet the fact remains that even small farmers are adopting and utilizing selected farm equipments for efficient farm management through custom hiring. But still they have to be educated in this line. Mechanical equipments for various farm operations like sowing, irrigation, plant protection and threshing etc are generally being used by the farming community.

Farm women perform hard physical work in plantation of crops, care and management, harvesting, threshing/processing, marketing, child bearing and rearing simultaneously. The farmwomen undergo hard physical drudgery especially while transplanting vegetable in mud with bending position for a long time in rains and scorching sun, harvesting by bending with traditional sickle, weeding by hand in sun, rain and cold for a long hours, drying of produce, standing in scorching sun, winnowing in dust and sun for a long time, with hard physical labour, dehusking/ shelling, pounding, grinding of cereals, pulses by hand as well as hand operated chakki. Drudgery is generally conceived as physical and mental strain, agony, monotony and hardship experienced by human beings[4]. However, women report more fatigue than men. So, the plight of the Indian farm woman in this regard is alarming as they work for long hours without leisure, perform multiple roles in family and continue to be constrained by illiteracy, malnutrition and unemployment. This fatigue concerns mental and physical fatigue, sleepiness, feeling tired or emotional exhaustion. Almost all farmwomen suffer from physical drudgery in various operations. Here the intervention of small agricultural tools helps to reduce their drudgery and improve efficiency[3]. With this background the present study is an attempt to popularize agricultural technologies in different production system and to study its impact.

MATERIAL AND METHODS

Three operational villages of AICRP-Family Resource Management *viz.,* Dummawad, Marewad, Lokur and Mudhol from Kalagatagi, Dharwad and Mudhol taluks were selected for conducting trainings on popularization of agricultural tools and technologies for farm women. The statistical analysis like Pre test and Post test index score and 't' test were used for analysis of the data.

RESULT AND DISCUSSION

The Socio-Economic status of training beneficiaries from the selected villages is represented in the **Table 1**. It is clear from the table than more than half percentage (56.25%) belonged to middle age followed by old age (23.75%) and young age group. Majority respondents were illiterates (38.12%).About one fourth of the selected sample were educated up to primary school(26.25%) followed PUC(18.12%) and only meager percentage of the respondents (1.87%) degree holders. Majority of respondents belonged to nuclear family (56.25%) followed by joint family(43.75%). It was interesting to study that majority of the respondents (61.25%) were living in pukka house followed by kaccha house (38.75%) .The training cum demonstration and exhibitions of drudgery reducing agricultural technologies for women in agriculture were conducted in the selected villages. The impact of training programme was studied through pre test i.e. before the training programme and post test after a gap of fifteen days. A training programme was conducted at Dummawad village of Kalaghatagi taluk. The impact of the training is depicted in **Table 2**. As per the pre test scores, the farm women had less knowledge regarding improved technologies viz., serrated sickle (1.52), groundnut decorticator (1.44), cycle weeder (1.30), cot bag (0.12) and had no knowledge regarding fertilizer trolley, saral kurpi, sapling transplanter, spiral grain separator, maize shellar and bhendi plucker. The post test scores revealed that farm women had maximum knowledge gain with respect sapling transplanter (8.76) followed by spiral grain separator (8.67), saral kurpi (7.20) and cycle weeder (6.08). The results of **Table 3** shows the impact of training programme at Lokur village of Dharwad district. The pre and post test of the knowledge of farm women regarding improved technologies were conducted. The pre test scores revealed that the farm women had very less knowledge regarding improved agricultural tools viz., saral kurpi (1.00) groundnut decoitcator (0.96), cycle weeder (0.8), serrated sickle (0.44) of improved technologies and had no knowledge regarding fertilizer trolley, sapling transplanter, spiral grain separator, maize sheller and bhendi plucker. The post test scores revealed that farm women had

maximum knowledge gain with respect sapling transplanter (8.12) followed by cycle weeder (7.88), saral kurpi and spiral grain separator (7.12), and fertilizer trolley (6.32). **Table 4** shows the impact of training programme at Marewad village of Dharwad district. The pre and post test of the knowledge of farm women regarding improved technologies were conducted. According to the pre test scores the farm women had very less knowledge regarding saral kurpi (1.00) groundnut decorticator (0.96), cycle weeder (0.8), serrated sickle (0.44) of improved technologies and had no knowledge regarding fertilizer trolley, sapling transplanter, spiral grain separator, maize sheller, bhendi plucker. The post test score revealed that farm women had maximum knowledge gain with respect sapling transplanter (8.12), followed by cycle weeder (7.88), saral kurpi and spiral grain separator (7.12), fertilizer trolley (6.32), The 't' test values have shown highly significant

knowledge gain of farm women. The results of **Table 5** shows the impact of training programme on 'Popularization of Drudgery Reducing Improved Agricultural Implements at Mudhol taluka of Bagalkot district during krishimela. The pre and post knowledge tests of the of farm women regarding improved technologies were conducted. The pre test scores revealed that farm women were unaware of all the improved agricultural tools. The post test scores revealed that farm women had maximum knowledge gain with respect to sapling transplanter and saral kurpi (8.76) followed by cycle weeder, spiral grain separator, groundnut decorticator (8.68, 7.12, 6.76) respectively. The 't' test values have shown highly significant knowledge gain of farm women with respect to all the improved technologies. Shridhar *et.al*[6] in their study depicted that there was gain in knowledge (142.5%) regarding drudgery reducing technologies among the selected trainees.

Table 1: General information of the training beneficiaries   N=160

Particulars	Frequency	Percentage
Age		
Young (<25)	30	18.75
Middle (26-40)	92	56.25
Old (>40)	38	23.75
Education		
Illiterate	61	38.12
Primary school	42	26.25
High school	25	15.62
PUC	29	18.12
Degree	3	1.87
Family type		
Nuclear	90	56.25
Joint	70	43.75
Type of House		
Kaccha House	62	38.75
Pukka House	98	61.25

Table 2: Impact of training programme on 'Popularization of Drudgery Reducing Improved Agricultural Implements' at Dummawad village of Kalagatagi taluka   N=30

Particulars	Pre test	Post test	't' value	Pre test Index	Post test index	Knowledge gain
Saral Kurpi	0.00	7.20	27.21**	0.00	80.00	7.20
Fertilizer Trolley	0.00	5.88	33.36**	0.00	84.00	5.88
Serrated Sickle	1.52	5.68	12.80**	21.71	81.14	4.16
Sapling transplanter	0.00	8.76	31.44**	0.00	87.6	8.76
Maize Shellar	0.00	3.72	14.58**	0.00	74.40	3.72
Groundnut Decorticator	1.44	6.76	17.19**	20.57	96.57	5.32
Cot Bag	0.12	5.08	40.58**	1.71	72.57	4.96
Bhendi Plucker	0.00	3.32	17.56**	0.00	83.00	3.32
Cycle weeder	1.30	7.38	28.54**	0.00	83.80	6.08
Spiral grain separator	0.00	8.67	22.38**	0.00	24.4	8.67

**Significant at 1% level

Table 3: Impact of training programme on 'Popularization of Drudgery Reducing Improved Agricultural Implements at Lokur village of Dharwad taluk

N=40

Particulars	Pre test	Post test	't' value	Pre test Index	Post test index	Knowledge gain
Saral kurpi	1.00	8.12	28.51**	18.52	90.22	7.12
Fertilizer trolley	0.00	6.32	30.69**	0.00	90.28	6.32
Serrated Sickle	0.44	5.68	20.63**	9.32	81.14	5.24
Sapling transplanter	0.00	8.12	28.51**	0.00	90.22	8.12
Groundnut decorticators	0.96	6.12	28.15**	11.63	70.15	5.16
Maize Sheller	0.76	3.72	14.58**	10.10	74.40	2.96
Cot bag	0.00	5.08	63.50**	0.00	72.57	5.08
Bhendi plucker	0.00	3.32	17.56**	0.00	83.00	3.32
Cycle weeder	0.8	8.68	31.54**	2.18	86.80	7.88
Spiral grain separator	0.00	7.12	25.51**	0.00	80.22	7.12

**Significant at 1% level

Table 4: Impact of training programme on 'Popularization of Drudgery Reducing Improved Agricultural Implements' at Marewad village of Dharwad district

N=40

Particulars	Pre test	Post test	't' value	Pre test Index	Post test index	Knowledge gain
Saral kurpi	1.00	8.12	28.51**	18.52	90.22	7.12
Fertilizer trolley	0.00	6.32	30.69**	0.00	90.28	6.32
Serrated Sickle	0.44	5.68	20.63**	9.32	81.14	5.24
Sapling trans planter	0.00	8.12	28.51**	0.00	90.22	8.12
Groundnut decorticators	0.96	6.12	28.15**	11.63	70.15	5.16
Maize Sheller	0.76	3.72	14.58**	10.10	74.40	2.96
Cot bag	0.00	5.08	63.50**	0.00	72.57	5.08
Bhendi plucker	0.00	3.32	17.56**	0.00	83.00	3.32
Cycle weeder	0.8	8.68	31.54**	2.18	86.80	7.88
Spiral grain separator	0.00	7.12	25.51**	0.00	80.22	7.12

**Significant at 1% level

Table 5: Impact of training programme on popularization of Drudgery Reducing Improved Agricultural Implements at Mudhol, Bagalkot district   N=50

Particulars	Pre test	Post test	't' value	Pre test Index	Post test index	Knowledge gain
Saral Kurpi	0.00	8.12	28.51**	0.00	90.22	8.12
Fertilizer trolley	0.00	6.32	30.69**	0.00	90.28	6.32
Serrated sickle	0.00	5.68	20.63**	0.00	81.14	5.68
Sapling transplanter	0.00	8.12	28.51**	0.00	90.22	8.12
Maize shellar	0.00	3.72	14.58**	0.00	74.40	3.72
Groundnut decorticator	0.00	6.76	77.54**	0.00	96.57	6.76
Cot bag	0.00	5.08	63.50**	0.00	72.57	5.08
Bhendi plucker	0.00	3.32	17.56**	0.00	83.00	3.32
Cycle weeder	0.00	8.68	31.54**	0.00	86.80	8.68
Spiralgrain separator	0.00	7.12	25.51**	0.00	80.22	7.12

**Significant at 1% level

CONCLUSION

The result clearly indicated the significant impact of training programme in gain in knowledge regarding agricultural technologies and tools. Therefore, it could be employed that more and more such training programmes on improved/farmer friendly agricultural tools and technologies may be organized which would be benefited to farmwomen to empower and for drudgery reduction point of view.

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