IMPROVED TOOLS AND IMPLEMENTS FOR FARM-WOMEN: PERCEIVED ATTRIBUTES AND EXPERIENCES

Premlata Singh[1], Anita Jhamtani[2], Ruchi Srivastava[3], Chhaya Bhadauria[4], Dibyanshu[5], Shekhar[6] and Rahul[7]

ABSTRACT

Women play a significant and crucial role in agriculture. Though both women and men were involved in carrying out various agricultural activities but women perform major part of agricultural activities like nursery raising, sowing, weeding, manuring, harvesting, collection of produce and storage activities in rural India. The implements earlier developed for these practices have been primarily developed for male workers but women workers too use them. Since research had proved the presence of a great amount of drudgery in agricultural activities, there is a need to develop improved hand tools and practices. This paper discuses perceived attributes and experiences on Twin wheel hoe weeder, Grubber weeder, Fertilizer broadcaster and Hanging type cleaner cum grader.

Key words: *Women; Nursery raising; Sowing; Weeding; Manuring; Harvesting*

INTRODUCTION

Women in rural India play a major role in shaping the country's economy through their active participation in agriculture. They participate in different crop-production and food processing operations as well as in animal husbandry and dairy activities. Lepcha (1987) found that average daily hours spent by women in agricultural and live stock production activities were about 7.2 hours per day. In addition they also carry the burden of house hold work and management. Studies have shown that women irrespective of land status of the farm provide 14-18 hours of productive physical labour in different chores (Srivastava, 1985). Hence, better management of existing resources of land, water, power and other inputs demands introduction of improved implements and technologies.

Women have different ergonomically characteristics than men, i.e., body dimensions were smaller and muscular strength and aerobic capacity were lower than their male counter parts. Also, many times the postural preferences vary as compared to men workers. Therefore, to make the tools and equipment suitable for women workers, due attention needs to be given to their capabilities and limitations while designing and using different equipment. The present paper is based on a NATP research project for women farmers. The study covers the following objective: To study the attributes of improved tools and equipments as perceived by farmwomen and analyse their experience and suggestions about improved tools and equipments.

METHODOLOGY

In Najafgarh and Kanjhawala blocks of Delhi, 36 Self Help Groups of farm- women were formed in 9 selected villages under NATP- MM Project " Empowerment of Women in Agriculture". Each SHG comprises 15 members and all the members of the 36 SHG's were the respondents for the present study (Totally 540 farm women). In these villages, the SHG members were doing agricultural tasks like bund formation, fertilizer application, weeding, etc., by age-old traditional methods using spade, hands and khurpi respectively. In accordance with the objectives of the project, some farm implements/ tools especially designed for farm women were introduced as interventions to them. These included bund former, fertilizer broadcaster, twin wheel hoe weeder and grubber weeder. Farmwomen respondents were given sufficient time to use the supplied equipment (which was either given individually or to a group depending upon the frequency of use of the equipment in the field by the women). Data were collected from SHG members personally and individually through pre-tested interview schedule. Data were collected only from those farmwomen who had actually used it. So, 'n' (total respondents using the implements) varied for each implement. Data on use of implements was gathered in terms of eight parameters, viz., relative advantage, compatibility, simplicity, trialability, observability, utility, cost and applicability and the results are given in Table 1 and 2. The data were analysed in terms of percentage.

RESULT AND DISCUSSION

Table 1 reveals the responses of all 540 SHG members towards attributes of both the weeder's. All 100 per cent respondents opined that both the weeder's saved time and their family member's would not object if they used these. Moreover use of it would not affect their traditional norms/ values, so the society too would not come in their way rather it would permit them to use it. The 100 per cent respondents also felt that learning to use both of them was not a difficult affair, it can be tested in field itself and one can also experiment it on small scale and their results were visible in term of reducing

1. Senior Scientist, **2.** Principal Scientist, **3, 4, 5, 6** & **7.** SRF's, Division of Agricultural Extension, IARI, New Delhi.

health hazards and saving time and energy. 100 per cent respondents also agreed that both of them were applicable in field situation, did not require much cost in maintenance and helped in improving socio-economic- status (SES). 85.27 per cent respondent were either unaware about their cost or could not decide that whether their cost were comparatively less (than the traditional implement). Only 14.81 per cent respondents disagreed that their cost was comparatively less than the traditional implement (Table 1). 92.59 per cent respondents agreed that " Twin wheel hoe" weeders helped in saving money and only 7.5 per cent respondents were either unaware or undecided about this relative advantage. Similarly, 92.96 per cent respondents heartedly agreed that grubber weeder helped in saving money and only 7.04 per cent respondents were either unaware or undecided about this relative advantage. Majority of the respondents (96.3 per cent) agreed that "Twin Wheel Hoe Weeder" had good "work capacity" Ergonomic assessment results had also revealed that "Twin wheel hoe weeder" had four and half times more work capacity to remove weeds than traditional method i.e. "Khurpi" in same time. The 92.6 respondents informed that there was a "need" for it for them. Only few respondents were either unaware or undecided about its "work capacity" (3.33 per cent) and need (7.4 %). Similarly, majority of the respondents (96.97 %) praised and agreed about the work capacity of "Grubber Weeder". Ergonomic assessment results had also revealed that "Grubber weeder" had 5 times more "work capacity" to remove weeds than traditional method i.e. " Khurpi" in same time. The 92.96 per cent respondents agreed that they needed it. Only, few respondents were either unaware or undecided about its "work capacity" (2.96 per cent) and need (7.04 per cent). Approximately, all respondents (99.26 per cent) agreed that "Twin wheel hoe" and "Grubber weeder" could increase productivity. Only negligible respondents (0.74 per cent) were either unaware or undecided about this attribute of the tools.

About the simplicity of the implements 92.6 respondents responded that "Twin wheel hoe" weeder was easy to handle. 93.52 per cent respondents for "Grubber weeder" said the same. Approximately all respondents felt that maintenance of

Table 1. Attributes for improved implements

S. No.	Attributes	Twin Wheel Hoe Weeder (n=540)			Grubber Weeder (n=540)		
		Agree (%)	Undecided (%)	Disagree (%)	Agree (%)	Undecided (%)	Disagree (%)
1	*Relative Advantage*						
a	Saving in Time	100	-	-	100	-	-
b	Saving Money	92.59	7.5	-	92.96	7.04	-
c	Work capacity	96.3	3.33	0.37	96.7	2.96	0.4
d	Need	92.6	7.4	-	92.96	7.04	-
2	*Compatibility*						
a	Family members will not object if it is used by them	100	-	-	100	-	-
b	Use of IT will not affect their traditional norms/values	100	-	-	100	-	-
c	The society can permit them to use it	100	-	-	100	-	-
3	*Simplicity*						
a	It is easy to handle	92.6	5.6	1.86	93.52	1.85	4.63
b	The maintenance of it is easy	99.0	0.93	-	99.63	0.37	-
c	Learning to use it is not a difficult affair	100	0.37	-	99.45	0.55	-
4	*Trialability*						
a	One can experiment it on small scale	100	-	-	100	-	-
b	It can be tested in field itself	100	-	-	100	-	-
5	*Observability*						
a	The results of it can increase productivity	99.26	0.74	-	99.26	0.74	-
b	The results of it were visible	100	-	-	100	-	-
6	*Utility*						
	It is useful in terms of-			-			
a	Reducing health hazards	93.88	6.11	-	92.68	2.8	4.65
b	Saving of time and energy	100	-	-	100	-	-
c	Improving posture	99.45	0.55		42.6	8.9	48.5
d	Proficiency in work	96.29	3.33	0.55	93.52	4.63	1.85
7	*Cost*						
a	The cost of it is comparatively less	-	85.27	14.81	-	85.27	14.81
b	It does not require much cost in maintenance	100	-	-	100	-	-
c	It can improve SES	100	-	-	100	-	
8	Applicability						
a	It is applicable in field situation	100	-	-	100	-	—

Table 2. Attributes for improved implements

S. No.	Attributes	Manual bund former (n = 540)			Fetilizer broadcaster (n = 540)		
		Agree (%)	Undecided (%)	Disagree (%)	Agree (%)	Undecided (%)	Disagree (%)
1	*Relative Advantage*						
a	Saving in Time	92	8	-	100	-	-
b	Saving Money	-	96	4	0	100	-
c	Work capacity	20	34	46	100	-	-
d	Need	84	16	-	100	-	-
2	*Compatibility*						
a	Family members will not object if it is used by them	76	24	-	100	-	-
b	Use of IT will not affect their traditional norms/values	100	-	-	100	-	-
c	The society can permit them to use it	100	-	-	100	-	-
3	*Simplicity*						
a	It is easy to handle	40	10	50	100	-	-
b	The maintenance of IT is easy	92	8	-	100	-	-
c	Learning to use IT is not a difficult affair	80	20	-	100	-	-
4	*Triability*						
a	One can experiment it on small scale	96	4	-	100	-	-
b	It can be tested in field itself	90	10	-	100	-	-
5	*Observability*						
a	The results of it can increase productivity	10	40	50	100	-	-
b	The results of it were visible	100	-	-	100	-	-
6	*Utility*						
	It is useful in terms of-						
a	Reducing health hazards	44	50	6	92.40	6.00	1.66
b	Saving of time and energy	92	8	-	100	-	-
c	Improving posture	4	80	16	100	-	-
d	Proficiency in work	64	26	10	100	-	-
7	*Cost*						
a	The cost of it is comparatively less	2	86	12	54.42	31.2	14.4
b	It does not require much cost in maintenance	82	18	-	100	-	-
c	It can improve SES	96	4	-	100	-	-
8	*Applicability*						
a	It is applicable in field situation	94	6	-	100	-	-

twin wheel hoe (99 per cent) and grubber weeder (99.63 per cent) was easy. 93.88 per cent respondents were in favour that twin wheel hoe helped in reducing health hazards (like pain in wrist, legs, back etc). In case of grubber weeder, 92.68 per cent respondents opined that it helped in reducing health hazards. Approximately all respondents (99.45 per cent) informed that twin wheel hoe helped in improving posture. But in case of grubber weeder only 42.6 per cent respondents informed that it helped in improving posture while more respondents (48.5 per cent) complained "back pain" while using it. Majority of respondents agreed that twin wheel hoe had proficiency in work while only negligible respondents disagreed. In case of grubber weeder 93.52 per cent respondents informed that it had proficiency in work.

Under the project, other implements introduced as interventions for field operations were "Manual bund former" and "Fertilizer broadcaster". Previously, farmwomen were using spade for bund formation and did fertilizer application by hands. The reaction from farm-women were obtained in term of eight parameters tabulated under Table 2 which reveals that 100 per cent respondents agreed that both the implements would not affect their traditional norms/ values and society can permit them to use it. All 100 per cent respondents opined that fertilizer broad caster saved time and energy , helped in improving posture, had good work capacity and proficiency in work, was needed by them, easy to handle and learning to use it was not difficult affair, its maintenance was easy and required low cost of maintenance. 100 per cent respondents agreed that results of it could increase productivity, it could be tested in field itself, one could experiment it on small scale, it was applicable in field situation and it improved socio-economic status (SES) of person possessing it (Table 2). In case of manual bund former, 92.0 per cent respondents agreed that it saved time . Majority of the respondents i.e. 96 per cent were either unaware or could not decide whether this implement saved money or not, while 4 per cent respondents were totally against this idea. The 46 per cent respondents opined that it did not have good work capacity, while 20 per cent were in its favour and 34 per cent were not able to decide about this issue/attribute. The 84 per cent respondents said they needed

that manual bund former, while 16 per cent respondents were not confirmed/ undecided about this matter. The 76 per cent respondents responded that family members would not object if it used by them, while 24 per cent were in undecided category. About the simplicity of the implement, only 40 per cent respondents told that it was easy to handle while half of the respondents i.e. 50 per cent disagreed and 10 per cent were not able to decide about its handling. The 80 per cent respondents agreed that learning to use it was not a difficult affair, while 20 per cent respondents were unable to decide about this matter. Majority of the respondents i.e. 90 per cent were in favour that maintenance of manual bund former was easy, while 8 per cent respondents were either unaware or not able to decide about this issue.

The 90 per cent respondents agreed that bund former could be tested in field itself, while 96 per cent respondents reported that it was applicable in field situation. Half of the respondents i.e. 50 per cent disagreed that the results of bund former could increase productivity. Hence, the twin wheel hoe weeder, grubber weeder and fertilizer broadcaster have been perceived to be appropriate interventions in terms of attributes like relative advantage, compatibility, simplicity, trailability, observability, utility, cost and applicability. The bund former was liked in terms of relative advantages, compatibility and trail.

CONCLUSION

At present, it is a world wide recognized fact that there is active and major participation of women in agriculture. The women as a major labour force in agriculture need to be exposed to improved and ergonomically suitable but simple technologies most relevant to small farmers as also indicated by the present study. This will lead to increased agricultural productivity and help in reducing drudgery and occupational health problems of women farmers.

REFERENCES

1. Lepcha, Tseten Tashi. (1987). A study of farmwomen's contribution to agricultural production in eastern district of Sikkim state. M.Sc. Thesis. Gujarat Agricultural University, Anand.
2. Ojha, T.P. and Saxena, B.B. (1988). Removal of drudgery and income generation for rural women through appropriate mechanization-A Case Study. In: International Conference on Appropriate Agricultural Technologies for Farm Women, Technical Group Session IIA, 30Nov- 6 Dec, 1988.
3. Srivastava, J.C. (1985). Harnessing technology for improving the quality of life in rural women. In: Women and technology. Jain, S.C.(ed.) Rawat publications, Jaipur.pp.38-74.

• • • •