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Efficiency increase of farm women in grading by hanging sieve

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Abstract
The present study was undertaken to investigate efficiency increase of farm women in Rewa districts of Madhya Pradesh. Female labourers as well as cultivators were selected randomly as respondents. The results of the study show that cleaning and grading of harvest with the help of hanging sieve lead to increased efficiency and reduced drudgery ; which eventually improves farm women's quality of life. The study recommends that extension officials should select drudgery reducing tools with a view to benefit both men and women so that they could perform their roles in agriculture efficiently, improve quality of life and thus increase their family income.

Keywords: hanging sieve, efficiency enhancement, drudgery reduction

Introduction
Agriculture is considered to be an unorganized sector therefore there is no scalability of efficiency. Agriculture is considered as an activity of unorganized sector due to no fixed working hours, no provident fund or gratuity, low-paid, seasonal and uncertain job which makes an employment insecure. It is a common perception that an unorganized sector mostly comprises of landless agricultural labourers, small and marginal farmers and sharecroppers. For such reasons these sector indirectly employs weaker sections of community including women.

Women in agriculture are mainly held responsible to perform many laborious primary agricultural operations and post harvest operations along with household work. These operations include sitting in cross legged or in bending position for long hours or carrying loads on head or back. Such activities lead to joint pressure and pain. Due to multidimensional responsibilities, long duration of working and multitasking, women face fatigue and tiredness, eventually their efficiency decreases and health deteriorated. Looking into the status of farm women it seemed imperative to reduce her work load and increase her efficiency. An estimate by the World Bank shows that 90% of the women working in the informal sector are not included in the official statistics and their work is undocumented and considered as disguised wage work, unskilled, low paying and do not provide benefits to the workers. Statistics show that vast majority of Indians work in Agriculture where 55% of the population is female agricultural workers and 30% of the men are labourers and not cultivators.[1]

In India, estimates of the time contribution of women to agricultural activities ranges from about 30 percent to 50 percent. In an average farm family it was observed that migration of male members exerts more drudgery on women. Taking these facts into account the present study was conducted with the following objectives

1. To study the socio economic profile of the respondents
2. To study the efficiency increased due to use of hanging sieve
3. To know the attitude of respondents towards drudgery reducing tools and efficiency increase

Methodology
This study was conducted in 3 adopted villages of KVK-Rewa (MP) namely Bajrangpur, Rithi and Dihi. Thirty women including 15 women labourers and 15 farm women from each village were selected making a sum of 90 farm women (3*2*15). The inclusion of both women labourers and farm women become necessity in district like Rewa where women participation in agriculture is largely as labourers. The 4 field crops viz Paddy, Soybean, Wheat and chick pea were selected for observation with different suitable sieve perforations. For each operation

respondents were asked to select to perform that operation after weighing the produce.

Hanging sieve (104X62X20 cm^3) hanged from the tree branch with the help of rope) was compared with hand held small sized sieve (48 X 35X 15 cm^3). Observations were taken for one quintal of harvest for each crop at different days.

The primary data was collected with the help of pre-tested interview schedule. The collected data was analyzed through the statistical methods viz. Frequency, percentage, mean, S.D., and t-test.

Results and Discussion

Table 1: Statistical Difference in selected attributes of respondents

S. No.	Variable	Farm Women		Labourers		*t* Value
		Mean	S.D.	Mean	S.D.	
1.	Age	41.2	61.21	38.93	87.2	1.24 NS
2.	Education	3.49	3.35	3	1.18	1.54 NS
3.	Size of land holding	2.76	38.31	0.85	12.75	11.87*
4.	Annual income from all sources	2.31	0.49	1.02	0.51	8.65*
5.	Economic motivation	11.46	34.54	3.87	1.35	12.41*
6.	Farming Experience	11	27.55	11.12	59.38	-0.07NS
7.	Contact with extension agencies	2.67	0.41	1.6	0.36	7.26
8.	Involvement in farm activities	1.36	0.51	3.44	0.84	-12.05*
9.	Training received	3.93	1.29	1.56	0.61	11.45*

* = Significant at 0.05 probability level, NS = Non-significant

The table 1 shows that the age, education and farming experience had non-significant difference between farm women and farm labourers whereas size of land holding, annual income from all sources, economic motivation, farming experience, contact with extension agencies, involvement in farm activities and training received had found have significant difference at 0.05 probability level farm women and women labourers.

Table 2: Efficiency increased due to Use of Hanging sieve

Crop	Quantity to be sieved	Mean Efficiency through hand- held sieve	Mean Efficiency through hanging sieve	% increase in in efficiency
Paddy	1 quintal	9.23 (553.8 mins)	1.49 hrs (89.4 mins)	519.46
Soybean	1 quintal	8.05 hrs c (483 mins)	1.1 hrs (66.o mins)	631.81
Wheat	1 quintal	8.34 hrs (500.4 min)	1.32 hrs (79.2 mins)	531.81
Chick pea	1 quintal	8.15 (489 mins)	1.20 hrs (72 mins)	579.16

Data presented in table 2 shows efficiency increase due to use of hanging sieve in performance of women. It shows that Highest efficiency increase was recorded in cleaning of one quintal soybean (631.81 per cent) followed by chick pea (571.16 per cent) and wheat (531.81 per cent). However efficiency increase was recorded minimum in case of paddy (519.46 per cent). It was observed that only small amount of grain could be sieved at one time and since it was hand-held in bending position or squared leg position for long time it causes strain and fatigue. Where as big sized sieve could clean much larger amount at one time. Since it was hanged, only pushing and pulling operation was required which helped the women farmer to complete the work more efficiently in lesser time and without fatigue. Similar results were also reported by Hasalkar *et al*. (2005) [3] and Tripathi *et al*., (2020) stating that user Eco-friendly tools can increase the working efficiency and reduce the working load health hazards during agricultural activities on farm.

Results showed that efficiency increase leads to reduction of drudgery because of time saved. Increasing efficiency may lead to reduce fatigue and farm women would have time for her, to take rest, to increase knowledge and to improve her life style. Whereas for women labourers it could be more earning and income generating if she works with the help of sieve.

Table 3: Statistical Difference in Attitude of respondents towards Drudgery reducing tools

Attitude	Farm Women		Women Labourers		*t* Value
	Mean	SD	Mean	SD	
Attitude towards Efficiency enhancement	17.16	19.09	17.82	20.29	-0.71 NS
Attitude towards Drudgery Reduction	18.27	19.61	13	6.5	6.91*

* = Significant at 0.05 probability level, NS = Non-significant

Data in table 3 presents statistical difference in attitude of respondents towards drudgery reducing tools including hanging sieve. It shows that attitude towards efficiency enhancement had non-significant difference between farm women and farm labourers whereas attitude towards drudgery reduction have significant difference at 0.05 probability level between farm women and women labourers. Results are in sync with findings of Kaur And Singla who reported that women successfully used friendly tools in agriculture for reduction of drudgery.

Table 4: Constraints perceived by respondents in using Drudgery reducing tools

Constraints	Frequency	Rank
High cost of Drudgery reducing tools	87 (96.67)	I
Requirement of variety of tools	72 (80.00)	III
Fear of economic loss to women labourers	43 (47.77)	IV
Lack of knowledge	74 (82.23)	II
Lack of purchase power to women	39 (43.33)	V

Data in table 4 presents constraints perceived by respondents in using drudgery reducing tools. It shows that among all constraints high cost of drudgery reducing tools ranked I followed by lack of knowledge regarding such tools (Rank II), requirement of variety of tools to perform various farm operations (Rank III) fear of economic loss to women labourers (Rank IV) and lack of purchase power to women to buy such tools (Rank V).

Conclusion

Efficiency increase through women friendly large and small tools may help in increasing quality of women engaged in farm operation irrespective of their ownership. These tools not only help in performing efficiently but reducing drudgery too. It was rightly stated as the efficiency increases the workload reduces and time saved. This time saving works as an investment for quality of life. However women labourers were scared that such tools can limit their daily wages but needless to say that if they charge for volume basis they will earn more. There is a need to create awareness transfer knowledge regarding such tools to the input dealers so that availability may be increased. Labour-saving agricultural technologies and practices (e.g: improved farming and processing tools – adequate storage facilities, practices such as roof water harvesting or minimum tillage), and related services (eg: extension, farmer field schools), can offer valuable solutions to reduce women's work burden. Some of these options, provided they are introduced and adapted to local contexts and for women's needs, have been tested as successful. (FAO).

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