

# Mitigating drudgery of farm women through technology intervention in rural Punjab

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**ABSTRACT :** With growing concerns and realization on the need for empowering women in agriculture, focus has been on developing core competencies in the area of general issues in agriculture, skill development of stake holders and inclusion of women perspective as in-built component in agricultural research. Keeping these points in mind the present investigation was planned to mitigate drudgery of farm women in agricultural operations. The study was conducted in villages of 3 districts namely Patiala, Barnala and Sangrur of Punjab State. A sample of 90 farm women in the age group of 20-45 years who were involved in various agricultural operations were selected for this study. A self structured and pre-tested interview schedule was used to collect data. Field investigations were also made to observe the farm activities of women. The results revealed that participation of farm women was higher in activities like grain storage, manual harvesting, picking of vegetables and animal dung collection and its disposal. Awareness level of participants regarding drudgery reduction tools was very low before trainings. After trainings, female labourers had 78.2 per cent gain in drudgery reduction techniques.

**KEY WORDS :** Rural women, Agriculture, Farm activities, Drudgery reduction tools, Technology intervention

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## INTRODUCTION

In India around 70 per cent of the population earn their livelihood from agriculture. Rural Indian women are extensively involved in agricultural activities. However, the nature and extent of their involvement differs with the variations in agro-production systems. The mode of female participation in agricultural production varies with the land-owning status of farm households. Their roles

range from managers to landless labourers. In overall farm production, women's average contribution is estimated at 55 per cent to 66 per cent of the total labour with percentages much higher in certain regions. Still today agriculture ranks as one of the most hazardous industry as it is very much oriented towards manual labour and agricultural workers are exposed to a tremendous variety of hazards that are potentially harmful to their health and well-being. Rural communities often

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lack education and information on the health hazards they may face. Farm workers especially women often view pain as a normal part of work and seek care when the condition becomes severe or disabling. This same issue carries over to preventive measures designed to reduce the incidence of musculoskeletal injuries or other hazardous work exposures (Mrunalini and Ch. Snehalata, 2010). Frequently, workers do not understand the association of a problem with its source because of cultural misunderstandings. In most cases, the basic factors - inadequate education and training, poverty and lack of awareness - hinder attempts to deal with the occupational related health problems. Musculo-skeletal disorder is the leading cause of the occupational ill health. An awkward and static posture has been recognized as a risk factor for work related musculo-skeletal problems. From an occupational point of view, the cervical spine, head and shoulders, elbow and wrist joint can be considered to be interrelated as far as the problems of efficiency, design and comfort are considered. It is well known that certain jobs causes' pain at the work to the people with disorder and the symptoms are amplified or exposed by the demands of the job. Musculo-skeletal pains of these types are said to be work related because it is partially caused by the work conditions. It is clear that poor work place and tool design can increase the discomfort of both the healthy and less fit individuals. The design of tools and workspaces can have a profound effect on the posture of the body and long term exposure to hazardous working conditions which alters the physiological and psychological functions of an individual and produces many types of musculoskeletal problems. In developing countries agricultural activities are expected to cause musculo-skeletal disorders (Suthar and Kaushik, 2013). Under the changing dynamics, economical and industrial growth, agriculture has to undergo changes with new approaches, therefore, experiential system in agriculture has strong potential for imparting better training of the farm women with high level of skills.

Punjab is one of the most progressive states on the agriculture front. Agriculture being a family activity, women had contributed significantly to the agricultural development of the state. But, today with agricultural production having reached its peak the scenario in rural Punjab is different from what it was a decade or two back (Sidhu *et al.*, 2005). The operations once performed by female members of the family are now being carried

out by hiring female wage labours. The women of lower socio-economic families work as wage labourers in farms of big farmers and perform the operation such as weeding, hoeing, grass cutting, harvesting, picking etc. They have been intensively involved in agriculture and its allied fields. Now days, the poorer the farm household the greater is their contribution in agriculture. They put in 10-11 hours of work per day in agricultural fields. In cash crops, like potato, rice and cotton, the participation of female labour forces is very high. The payment in grains during harvest of wheat and rice and cash for other crops form the major part of the resources for the family survival. Singh (2012) reported that the share of women labour force in agricultural operations is expected to be 55 per cent by 2025 A.D. Thus, making rural women as backbone of Indian economy. They participate in different farm operations putting many hours of productive manual labour daily. Keeping these points in view, present study was planned with the following objectives:

- To assess the type of activities performed by women labourers in rural Punjab.
- To study the awareness and adoption of drudgery reduction tools in agricultural operations amongst rural women.

There is a vast body of literature linked with the role of women in secondary agriculture and drudgery reduction, some of the pioneer studies are being discussed below:

Malik (2006) in her paper "Women Welfare Projects and Development" has highlighted the deplorable conditions of rural women in Pakistan. Her day becomes from pre-dawn with crushing. Their traditional role of house keeping has been extended to collect fire wood, fodder and working on farms. Owing to social taboos, ignorance, financial constraints, inadequate education facilities, rural women have remained backward. Agriculture dependent rural economies have struggled to improve their economic conditions. On the contrary, shortage of water, dry spell cycles, decrease in cultivable area due to soil deterioration, extension of towns and villages, contraction of infrastructure, rising cost of inputs have adversely affected the lives of rural people. In her research, she has tried to link economic development with women welfare. She emphasized on the need for governments to initiate women welfare projects.

Mehta *et al.* (2012) have pointed out in their paper entitled, "Interventions of drudgery reducing technologies

in agriculture and impact evaluation” that agriculture is main source of livelihood for rural population in India. The study assessed intervention of drudgery reducing technologies. The researchers identified the drudgery areas and activities in agriculture. Participatory field level skill training for proper use of ergonomically improved farm technologies were given to men and women in separate groups. Data were collected to quantify the impact of intervention on the level of drudgery of worker before and after the technology intervention from sample of 30 respondents (15 male and 15 female). Gain in knowledge and change in awareness level were calculated after the training. A significant gain in awareness was observed among both men (2.6) and women (3.0) whereas gain in knowledge more among men (6.6) than women (4.5). In evaluation of field validation of technology on drudgery, it was found that all the five technologies reduced the drudgery of men as well as women.

AICRP on home science (2014). The All India Co-ordinated Research Project (AICRP) on home science is in operation in 10 states agricultural universities. The main thrust of the project is on empowerment of rural women for enhancing the quality of life of farm families. It focused on development of gender specific database and training modules for farm women, technology interventions for drudgery reduction in agriculture, nutritional security and health promotion of farm families promoting vocational skills among adolescent girls, value addition of under-utilized natural fibre resources, utilization of degradable and non-degradable farm waste and empowerment of rural women. All these efforts led to empowerment of women for quality living.

Sharma *et al.* (2015) have reported that Indian farm women do many difficult tasks and weeding of the crop is one among them. It is a main drudgery prone activity which is usually performed by female labourers and to solve this problem, Krishi Vigyan Kendra, Ratlam conducted Front Line Demonstrations on “*improved twin-wheel hoe*” in soybean weeding. The basic objective of these demonstrations was to reduce drudgery with muscular stress and fatigue. The focus of the demonstration was to change the attitude, skill and knowledge towards recommended practices in the work. Farm women adopted the improved technique as it had increased the efficiency to work, reduce the drudgery and helped in avoiding bending or squatting posture. It lessened the exertion and fatigue to make the farm

women comfortable.

Bal *et al.* (2013) reported that women share abundant responsibilities to perform wide spectrum of duties both in the home and outside but their participation is considered normal by the society. They are extensively involved in various farm operations like transplanting, weeding, harvesting, processing, marketing and selling of food grains, fruits and vegetables etc. These tasks not only demand considerable time and energy but also sources of drudgery. Drudgery is generally conceived as physical and mental strain, agony, monotony and hardship experienced by farm women while performing these farm operations. The drudgery prone condition leads to various health and mechanical hazards which creates physical exhaustion fatigue and low productivity. Through various tools and equipment are available for these activities but maximum of them are designed according to requirement of men. This would require the introduction and adoption of drudgery reducing farm technologies to alleviate the sufferings of women in farm operations and to enable them to participate more energetically and enthusiastically. Therefore, All India Co-ordinated research project on Home Science-FRM Component monitored various drudgery related factors which can be used for accessing the health of the farm women. For this purpose, 75 farm women were selected from five different villages of Ludhiana district. The introduced tools were maize sheller, improved sickle and ring cutter. The parameters for assessment of drudgery experience were drudgery scores, Ovako Work Assessment System, Cardiac Strain Index and Angle of Deviation. The results showed significant reduction in these parameters when improved tools were used as compared to traditional tools.

#### **Need and scope of the study :**

The application of ergonomics and improved tools or task design based on both the researchers and subject’s perception of a need to improvement has the potential to reduce bio-mechanical disorders associated with agricultural tasks or tools. Women in India are the major work force in agriculture and perform almost all the agricultural activities. Since labour intensive methods of production are common in rural areas, it is important to develop technologies that can improve their labour efficiency and reduce drudgery”. Technology intervention means the application of scientific knowledge as solutions to practical problems. In agriculture it means to introduce

tools, implements and machinery useful for various agricultural operations. It may comprise of mechanical or motorized power, or a combination of these. A country's development is regarded by its level of technology integration in different domains of human activity. Therefore, technology interventions in agriculture shall -

- Improve technology options available to farmers.
- Improve effectiveness of technologies.
- Alleviate women from burdensome labour at work.

Drudgery can be reduced by providing gender friendly farm tools and equipments which increase the productivity of worker with safety and comfort. Time scheduling is also needed for achieving such tasks.

## METHODOLOGY

The present investigation was conducted in the villages of three districts namely Patiala, Barnala and Sangrur of Punjab state. A sample of 90 rural farm women labourers in the age group of 20-45 years was selected. These women were involved in various

agricultural operations. A self-structured and pre-tested interview schedule was used to collect the information required to fulfil the scope of the study. The interview schedule comprised both open and close ended questions. In-depth interviews were conducted by the investigators and both quantitative and qualitative data was generated. Apart from interviews, the field observations were also made to observe the farm activities of women labourers involved in the study.

## OBSERVATION AND ASSESSMENT

Table 1 reveals that the storage of grains is an activity in which participation of women is 100 per cent. The participation of female labour was found to be more in activities such as manual harvesting (93.3%), picking of vegetables (95.6%), animal dung collection and its disposal (94.4%). In drying and cleaning of grains and in weeding, participation of women was found to be 80 per cent and 86.8 per cent, respectively. Similar findings have been reported by Singh *et al.* (2004); Parimalam (2016); Sharma and Khandelwal (2002) and Aggarwal *et al.* (2013).

Trainings on drudgery reduction technologies in

**Table 1 : Participation of rural women labourers in farm activities**

Sr. No.	Farm activities	Number	% age
1.	Nursery raising	40	44.4
2.	Transplanting	50	55.6
3.	Weeding	79	87.8
4.	Thining	79	83.3
5.	Manual harvesting	84	93.3
6.	Picking of vegetables	86	95.6
7.	Threshing	20	22.2
8.	Winnowing	50	55.5
9.	Drying and cleaning of grains	72	80.0
10.	Grading	80	88.9
11.	Storage	90	100.0
12.	Animal dung collection and its disposal	85	94.4

**Table 2 : Testing of knowledge of farm women in drudgery reduction tools and methodology**

Knowledge about drudgery reduction tools and methodology	Before training	After training	%age increase in knowledge
Twin wheel hoe	30	58	93.3
Okra plucking gloves	28	52	85.7
Tubular maize sheller	36	67	86.1
Solar dryer	32	58	81.2
Seed treatment drum	38	63	65.7
Revolving stool	26	43	65.3
Improved sickle	33	64	93.9
Trolley for animal dung collection and its disposal	25	46	84
Total score	248	442	78.2

agriculture are organized by Krishi Vigyan Kendras across Punjab. These kendras train farm women to reduce work related fatigue in agricultural operations. It is evident from Table 2 that female labourers had 78.2 per cent gain in drudgery reduction techniques. The findings are in agreement with the results quoted by Sridhar *et al.* (2015).

### Conclusion :

It can be concluded from the results that the participation of female labour was found to be more in activities such as storage, manual harvesting, picking of vegetables, animal dung collection and its disposal, drying and cleaning of grains and weeding. The study also inferred that women successfully used friendly tools in agriculture for reduction of drudgery. The above findings indicate that Krishi Vigyan Kendras are realizing the objectives of their mandated activities in terms of achieving desired outcomes and impact. Mitigation of drudgery of farm women can lead to empowerment of rural women in terms of physical and mental stress. The follow up of participants by the KVKs will provide much needed guidance and persuasion to the female labour so that they can operate these implements in a proper and safe manner.

## REFERENCES

AICRP reports (2011-2014).

**Aggarwal, Hemla, Sharma, Subita and Sharma, Rajni (2013).** A study of agricultural activities performed by rural women and problems faced by them in Jammu district of J&K State, *Internat. J. Scientific & Res. Pub.* [On-line], **3**(1):1-3.

**Bal, Sharambir Kaur, Sharma, Shivani and Kaur, Harpinder (2013).** Assessment of drudgery experience of rural women while performing different farm operations. *Adv. Res. J. Soc. Sci.*, **4**(1): 68-71.

**Malik, Saeeda (2006).** *Four women welfare projects being executed*, A report published by Sindh Minister for Women

Development, Karachi, pp. 5-9.

**Mehta, M., Gandhi, S. and Dilbaghi, M. (2012).** Intervention of drudgery reducing technologies in agriculture and impact evaluation. *Work*, **41**(Suppl. 1) : 5000-5008.

**Mrunalini, A. and Ch. Snehalata (2010).** Drudgery experiences of gender in crop production activities. *J. Agric. Sci.*, **1**(1): 49-51.

**Parimalam, P., Kavitha Shree, G.G. and Nallakurumban, B. (2016).** Drudgery due to agriculture works among Sirumalai tribals. *Internat. J. Appl. Home Sci.*, **3** (3 & 4) : 118-125.

**Sharma, B., Singh, S.R.K., Gupta, S., Shrivastava, M.K. and Verma, Shilpi (2015).** Improving efficiency and reduction in drudgery of farm women in weeding activity by twin wheel Hoe. *Indian Res. J. Extn. Edu.*, **15** (1) : 76-80.

**Sharma, K.C. and Khandelwal, S. (2002).** Role of farm women in animal management. *Rajasthan. J. Extn. Edu.*, **10** : 126-129.

**Sidhu, Kiranjot, Brarh, Jasjit Kaur and Kaur, Gurvinder (2005).** Shifting role of women in rural Punjab. *Indian J. Soc. Res.*, **46**(1): 9-15.

**Singh, Premlata, Jhamtani, Anita, Bhadauria, Chhaya, Srivastava, Ruchi, Rahul and Singh, Joginder (2004).** Participation of women in agriculture. *Indian J. Extn. Edu.*, **40** (3-4) : 23-26.

**Singh, S.P. (2012).** Drudgery alleviating: Farm tools and implements. *Indian Farm.*, **61**(12): 19-20

**Sridhar, G., Rao, B. Srihari, Patil, D.V., Rao, S.S.N. Malleswara (2015).** Impact of women empowerment through drudgery reduction in agriculture operation trainings during 12<sup>th</sup> Five Year Plan Period in BCT-Krishi Vigyan Kendra(KVK), Visakhapatnam District. *Internat. J. Innovative Res. Sci., Engg. & Technol.*, **4** (7):5299-5312.

**Suthar, Nidhi and Kaushik, Vandana (2013).** Musculoskeletal problems among agricultural female workers. *Studies Home & Commun. Sci.*, **7**(3): 145-149.

## WEBLIOGRAPHY

[www.ijsrp.org](http://www.ijsrp.org)

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