

Mainstreaming Gender in Training of Arid Agriculture Production System

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INTRODUCTION

Men and women are considered equal partners in agriculture, however experience of different parts of the world have shown that over the last few decades women have been pushed out of mainstream agriculture in the name of development. Their knowledge, contribution, participation in decision-making and the status has not enhanced despite green revolution, in fact it is more or less same. In agriculture domain male farmers are singled out for attention by “male developers”. Men received land, credit, training, information; men only got machines to lighten their burden and to increase efficiency; men were made members of cooperatives and development committees. Cash crops delivered cash into the hands of men. Introduction of cash crops and commercialization marginalized women because markets, banks, trading centers were public spaces and thus beyond the reach of most women. (Bhasin, 2002).

The neglect of women as farmers, is due to the fact that they are concentrated outside market and remunerative work. The plight of women is alarming due to social vulnerabilities like illiteracy, poor health, unemployment, inadequate technical knowledge and skills. Due to limited access and control over production resources, services, markets, women’s potential towards increasing agricultural productivity remains untapped. (Gupta, 2002). Women have been playing a crucial role in agricultural development since early stages of civilization. They help in maintaining food production through their active participation in many agricultural operations. The nature and extent

of women’s involvement in agricultural operations depends largely on male dominance over the resource use pattern. They are utilized more as unskilled agricultural labour restricting their ability of decision-making and land ownership rights. This has affected crop production system at large, because the driving force behind innovative agriculture has remained illiterate and ignored.

The role of women in agriculture has been considered as secondary largely because they do not have possession over natural resources like land and improved agricultural implements. If they are not mainstreamed in knowledge and training system like male farmers, the growth of agriculture will remain hampered. To improve agricultural production it is essential that both men and women are equally empowered by providing equal opportunities for socio-personal development. Women’s abilities need to be enhanced by improving their access to resources, technology and information (Paroda 1999). Right to information and knowledge is a fundamental right of women, which needs to be nurtured for maximization of production in agricultural sector. If women are given information about latest technological advancement they can definitely bring the innovative changes in their farms as they will have knowledge as well as will to implement knowledge into action. Simple knowledge sharing system between institutions and women groups help women to adopt newer non-monetary technological inputs without any extra efforts. (Tewari, 2002) This work boost up the ability of women to take decisions on their farms therefore, it is felt necessary to

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mainstream women in agricultural information network. Limited studies are available to reveal knowledge of women in agriculture therefore, present study was done to find out the existing knowledge base of women engaged as agricultural labours either on their own farms or as hired labourers.

METHODOLOGY

Two villages in Jodhpur and Bikaner districts were selected through random sampling method. A questionnaire was prepared and pre-tested on five families and improved as per objective of the study. This questionnaire was used for data collection work in village Kagnada in Jodhpur district and Bajju in Bikaner district. The interview method was used for collecting information from women. In the whole study 48 women were interviewed (24 in each village). Knowledge of farm women on cultivation of Kharif crops namely Pearl Millet, Mung-bean, Moth-bean, Cluster-bean and Til were assessed for improved variety, recommended seed rate, spacing, fertilizer/FYM doses and attack of insects and pests on these crops.

RESULTS

Socio-economic Profile

Socio-economic profile of the respondent farmwomen revealed that women were primarily illiterate, however younger girls were found educated up to 6th and 7th. But it was not confirmed whether these girls have actually passed the class they reported, as they read newspaper with difficulty or they had withdrawn study in between. Agricultural occupation along with one or two animals was a common occupational engagement with them. Land holding was very limited with these families and was generally undivided land ownership where father was the landowner. In none of the cases land was found in the name of women. (Table 1).

General Features of Village

Table 2 provides the details of environs in which the respondent women were staying. The educational facilities were limited for children;

Table 1
Socio Economic Profile of Respondents

<i>Socio economic character</i>	<i>Kagnada n(%)</i>	<i>Bajju n(%)</i>
<i>Age (yrs)</i>		
Young < 35	4 (16.7)	3 (12.5)
Middle 36-49	15 (62.5)	18 (75)
Old > 49	5 (20.8)	3 (12.5)
<i>Education</i>		
Illiterate	18 (75)	16 (66.7)
Up to primary	4 (16.7)	4 (16.7)
> Primary	2 (8.3)	4 (16.7)
<i>Occupation</i>		
Agriculture	-	-
Agriculture + Livestock	12 (50)	9 (37.5)
Agriculture labours	12 (50)	15 (62.5)
<i>Unirrigated land holding (beegha)</i>		
< 5	12 (50)	15 (62.5)
> 5	12 (50)	9 (37.5)
<i>Annual income (Rs)</i>		
< 5000	18 (75)	17 (70.8)
> 5000	6 (25)	7 (29.2)

women as such do not get any exposure relating to their own skill and knowledge development opportunities. The distance to nearest town was also more as per sandy tract, and women were socially prohibited to move alone. Poverty prevailing in these areas also restricts women to remain in villages. The agriculture is predominantly rain fed which provides only subsistence means to farmers.

Knowledge of Improved Kharif Crop Varieties

It was observed that varieties names were not known to women for Mung-bean, Cluster-bean and Til. But in Jodhpur region 40% women reported that they knew the improved variety HHB 67. In Bikaner region all women reported that RMO 40 was the most used variety of moth. Knowledge of CAZRI moth2 variety was not available with women in both the regions. However, all women reported that the seeds that come in packing has higher yield potential, whereas the seeds women use to save since ages is now derecognized by themselves.

Table 2
General Features of Village

Features	Kagnada	Bajju
Total area of the village (ha)	1282.77 ha	3743.47 ha
Total Population	610	3135
Male	329	1799
Female	281	1336
No. of household	83	579
Educational facility as school	Primary school	Primary school (1) Middle school (1) Secondary school (1)
Medical facility	5 km away	Dispensary Health centre Registered private practitioner
Drinking water	Tap water Well water Tap water	Tank water
Communication (Post Office)	5 km away	Post office
Approach road	Pukka and kutchra road	Pukka road
Distance from nearest town	54 km	100 km
Unirrigated (including fallow land)	1182.39 ha	1001.63 ha
Culturable waste (including gauchar and grooves)	-	1983.03 ha
Area not available for cultivation	100.38 ha	758.81 ha
<i>Literate</i>		
Male	120	942
Female	15	223

Knowledge and Practice of Seed Rate

Regarding seed rate knowledge women in Bikaner reported that they are using 12 kg per hectare for Pearl Millet which is 7 kg higher to recommended, where as in Jodhpur 10 kg per hectare is used which is 5 kg higher to recommended (Table 3). In case of Mung- bean in Bikaner region 5.5 kg less seed was applied in comparison to recommended seed rate where as in Jodhpur region 2 kg less is used. In Moth- bean 6 kg lesser seed is applied in Bikaner region and 2 kg lesser to recommended dose is applied in Jodhpur. In Til the seed rate was 0.5 kg

less in Bikaner and 0.5 kg higher in Jodhpur. In Cluster- bean the seed rate reported was higher by 5 kg in Bikaner region and lower by 5 kg in Jodhpur region.

Table 3
Difference in Recommended Seed Rate and Farmwomen's Practice

Crop	Recommended kg/ha	Farm women's practice		Difference	
		Bikaner (kg/ha)	Jodhpur (kg/ha)	Bikaner (kg/ha)	Jodhpur (kg/ha)
Bajra	5.0	12.0	10.0	+7.0	+5.0
Moong bean	12.0	6.5	10.0	-5.5	-2.0
Moth bean	12.0	6.0	10.0	-6.0	-2.0
Til	2.5	2.0	4.0	-0.5	+0.5
Cluster bean	15.0	20.0	10.0	+5.0	-5.0

Knowledge of Crop Spacing

Knowledge on spacing between rows and between plants was almost nil as generally the sowing is done by tractor and cultivator maintains the distance between plants and between rows. No changes are made in this spacing as hired tractor is used for sowing.

Knowledge of Fertilizer Doses

Generally in rain fed areas no chemical fertilizer is given to the soil, therefore women's knowledge on this aspect was limited (Table 4). However they reported the quantities of FYM they are adding to field for different crops. A ratio of 2.5 to 3.5 tons per hectare is generally observed in case of FYM application.

Table 4
Fertilizer application vs FYM application

Crops	Recommended	Farm women's practice	
		Jodhpur q/ha	Bikaner q/ha
Pearl Millet	40 kg N,40 kg P ₂ O ₅	3.5	2.5
Mung-bean	20 kg N,40 kg P ₂ O ₅	3.5	2.5
Moth-bean	20 kg N,40 kg P ₂ O ₅	3.5	2.5
Til	40 kg N,40 kg P ₂ O ₅	3.5	2.5
Cluster-bean	20 kg N,40 kg P ₂ O ₅	3.5	2.5

Knowledge of Insects and Pest

Insect pest attack on Pearl Millet, Mung-bean and Til was reported but women told that due to economic constraints no insecticide or pesticide is sprayed on standing rain fed crops (Table 5). However they knew local names for all insects and identified them as harmful and non-harmful.

Table 5
Insect pest attack on Kharif crops

Crops	Bikaner Dialect	Jodhpur Dialect	Remedies
Pearl millet	Karna partha hai	Kaduba	Gods mercy no treatment
Moong	Gund ata hai	Lat padthi hai	Gods mercy
Moth	Nil	-	-
Til	Nil	Tuntia lagta hai	Gods mercy
Guar	Nil	Nil	-

Wage Rates of Men and Women

It was reported by women that wage rates are similar to men in Bikaner region but there was a difference of Rs 10/- in case of female labour in Jodhpur region (Table 6). In years of drought the wage rates even fall low by Rs 30/- per day.

Table 6
Wage rates of Agricultural Operations

S. No.	Men (Rs /day)		Women (Rs/day)	
	Jodhpur	Bikaner	Jodhpur	Bikaner
1. Sowing	160	150 + Food	150	150 + Food
2. Intercultural	160	150 + Food	150	150 + Food
3. Irrigation	160	150 + Food	150	150 + Food
4. Harvesting	160	150 + Food (negotiable)	150	150 + Food
5. Winnowing/ Threshing	160	150 + Food	150	150 + Food
6. Storage	160	150 + Food	150	150 + Food

DISCUSSION

The work women are engaged in agriculture is mainly done in the open that we can see them 'at work' without any special research effort. Surprisingly, this work has remained ignored; undercounted and ill recorded, the reasons go beyond definitions and methods of data collection.

Increasing field work and research studies in recent times have exposed the distortions in the existing data base and their harmful implications while it comes to women receiving their due in the development process. We have today plenty of empirical evidence to show that women do participate practically in all regions and at different stages of agricultural production. Despite various handicaps like insufficient access to education and exposure to public life, women have shown sensitive response to changes and innovations (Sarda Moni, 1988).

The modernization process in the agricultural sector including the introduction of high yielding varieties, quality seed, fertilizers, pesticides and modern implements has pushed the women to less skilled job and as support agents rather than major handlers of equipment. Modernization did not change the pattern of employment for women but affected the level of employment. Suitable technology for rural women are lacking for transfer to rural masses. Even the women have been generally deprived of the beneficiary status in the training component of developmental and poverty alleviation programs (Ananda Laxmi, 1988). Considering the responsibilities of women in agriculture and home maintenance the agricultural technologists have to develop appropriate technologies to ensure gainful utilization of the services of women. There is a need to assess special demands of women and then develop better technologies for agricultural operations like sowing, weeding, harvesting, winnowing and cleaning of crop products to reduce the physical burden and drudgery for the women (Krishnamurthy and Kulkarni, 1988). Women have been playing a crucial role in the process of agricultural development since early stages of civilization. To achieve substantial growth in farm production and to have more just in the third world countries, greater equitable opportunities need to be provided to women (Vijaya and Singh 1988).

Women need much greater access to technical information through training institutions like Krishi Vigyan Kendras, SAU's, Mahila Vikas Abhikarans, etc, specifically in those subjects in which they are primarily engaged as economic contributors. There

is possibility to improve this situation by employing more women extension agents who are employed in agricultural extension service (Shantha Govind, 1988). The exposure of women to women extension functionaries will help women to get importance in decision-making process pertaining to vital issues, which affect agricultural production. A lack of women among front line staff also sometimes is a major constraint to achieve gender equity in agricultural developmental programmes. The obstacle needs to be overcome by hiring women extension staff to work as interface between women's groups and government extension agencies. Women's groups need to be specially targeted in all training and extension outreach programmes so that wherever they are under represented due to any reason the effect is counteracted by such approach. (IFAD, 1999)

CONCLUSION

Owing to natural biological role of women in society, positive discrimination in favour of women need to be exercised, so that women continue to look after homesteads without loss of opportunity for personal skill development. The study concludes that though gender roles are culturally constructed power relationships between the sexes the inequality existing between them need to be paralleled so that women are empowered within to make decisions and control life situations to boost up agricultural sector.

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