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A STUDY ON WOMEN FARMER'S PATICIPATION IN AGRICULTURE EXTENTION ACTIVITIES IN VAVUNIYA DISTRICT, SRI LANKA

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Abstract: **Women's roles and activities in agriculture are increasing as result of decreasing men's participation due to the ethnic war between Tamils and Sinhalese prevailed during the last two decades in the study area. Despite this importance, women's participation in the extension activities remains low. The survey research was done with an objective to contribute for increased participation in extension activities. Stratified random sampling design was used to select women farmers. Inflexible domestic obligation, less appropriate technology, time constraints and transport difficulties were the major barriers for extension participation more than 70% of women farmers. The study also revealed that Tamil and Sinhalese women increasingly involve in the traditional men's farm activities. Mass media was the popular method in providing agriculture information for women. But the department gave priority for group extension methods. Indirect communications were mainly adopted with women farmers. Majority of the extension staff pointed out that they still face constraints in addressing the needs and problems of women farmers due to insufficient gender knowledge and skills. Provision of child care facilities at residential training center, establishment of gender dis-aggregated data base, extension plan based on such data base considering women's problems and needs, strengthening mass media and group extension methods, targeting women separately for extension delivery and gender awareness workshops for staff are recommended to improve women's extension participation.**

Keywords: **Gender, gender dis-aggregated data base, appropriate technology, domestic obligations**

1. INTRODUCTION

The ethnic conflict prevailed during the last two decades in the study area created a vulnerable segment of women dependent families in communities (Statistical Hand Book, 2002). Loss of males and migration to cities and abroad led to a situation where women are compelled to do farming in order meet their day to day family needs in addition to their inflexible household activities. Agriculture is still remains as a major source of livelihood and income for rural women (Devereux et al, 2001). In many developing countries, rural women farmers are living in a resource poor and vulnerable context. They have to face a lot of challenges to acquire necessary resources to increase farm productivity and income. Livelihood intensification through adoption of appropriate of technologies becomes a possible way for women farmers to improve farm income and sustain food security (Ellis, 1999). Hence, agricultural extension plays a very crucial role to increase the productivity and rural incomes by bridging the gap between technical knowledge and farmer practice (Birkaeuser et al, 1991). However women farmers are still struggling to perform their roles and activities in farming by unequal rights, access to and control over productive resources and cultural restriction imposed by gender. Gender is an important organizing principle and crucial element which influence women's agriculture production like other element such as agro ecological and climatic conditions (Kroma, 2002). Gender refers to the socio cultural definition of man and

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women, the way the societies distinguish men and women and assign them social roles and activities (Bashin, 2002). Gender varies with time, place, culture, society even within society. In many societies, gender is unequal which results women to be subordinated or have an inferior status to men (Moser, 1999). Women are more restricted and marginalized in terms of having equal responsibilities, decision making power and access and control over resources. This situation makes women to face specific problems and needs in societies. Women's involvement in agriculture is highly influenced by gender. Since agriculture extension services have a positive impact on farm productivity and income, it is so important to ensure that extension activities are easily accessed by women farmers as well. Despite these importances, real women farmer's participation in agricultural extension activities still remains low in the study area (Administration report, 2002). Therefore this study was undertaken with an objective to contribute for increased participation of women farmers in the agricultural extension activities.

2. METHODS AND MATERIALS

The research strategy included field survey and a desk study. Surveys were conducted using two set of questionnaires. The first survey focused with real women farmers and the next one focused with field extension staff attached to the Department of Agriculture, Vavuniya district. Questions related to activity profile, access and control profile, problems and needs for extension participation and technological needs were asked to women farmers. Questions related methods of communication, extension methods, kinds of technologies and their target groups, factors considered in planning extension activities and problems faced to address women's problems were asked to extension staff. Stratified random sampling design was used to select women farmers from three communities in the district. Attention was paid to include adequate number of respondent from each society representing their total population in the district. Gathered data were analyzed using descriptive statistics and Harvard framework for gender analysis. Comparisons were also made on selected variables between ethnic groups. Frequency counts, percentages and mean were used to interpret the analyzed data.

3. RESULTS AND DISCUSSIONS

Gender analysis of the farming population in the study area.

Table 1: Activity profile of farmers among three societies in the district

Activities	*Tamils*		*Sinhalese*		*Muslims*	
	M	***W***	***M***	***W***	***M***	***W***
House hold activity						
Child care	-	+++	-	+++	-	+++
House keeping	-	+++	-	+++	-	+++
Cooking	-	+++	-	+++	-	+++
Caring sick persons	+	+++	+	+++	-	+++
Farm Activities						
Paddy						
Land preparation	+++	-	+++	-	+++	-
Planting	-	+++	-	+++	-	+++
Weeding	+	+++	-	+++	+	+++
Fertilizer application	+++	-	+++	+	+++	-
Spraying chemicals for pest control	+++	-	+++	-	+++	-
Irrigation	+++	-	+++	-	+++	-
Harvesting	++	+++	+	+++	+++	+

Post harvest operation	++	+++	++	+++	++	++
Value addition –rice flour, recipes	-	+++	-	+++	-	+++
Other Field Crops and Fruits	-	-	-	-	-	-
Land preparation	+++	+	+++	++	+++	-
Planting	+	+++	-	+++	++	+++
Weeding	-	+++	-	+++	+	+++
Fertilizer application	+++	+	++	++	+++	-
Pest and disease control	+++	+	+++	++	+++	-
Irrigation	+++	+	++	++	+++	+
Harvesting	+	+++	-	+++	++	+++
Post harvest operation	+	+++	-	+++	+	+++
Marketing	+	+++	-	+++	+++	+
Home gardening	-	-	-	-	-	-
Land preparation	++	++	-	+++	++	++
Planting	-	+++	-	+++	-	+++
Weeding	-	+++	-	+++	-	+++
Fertilizer application	-	+++	-	+++	-	+++
Pest and disease control	+	+++	-	+++	++	++
Irrigation	+	+++	+	+++	++	+++
Harvesting	-	+++	-	+++	-	+++
Marketing	-	+++	-	+++	-	+++

+=Low involvement, ++= moderate involvement, +++= high involvement and - = not at all

All women farmers are highly obliged to carry out domestic activities. These domestic obligations of women farmers restrict their mobility, time and energy to do farming activities. Women from all three groups are highly involved in the traditional farming activities as these activities do not demand much physical body strength and energy. However, men from Tamils and Sinhalese moderately involve in harvesting and post harvest operation due to the introduction and use of new tools and machineries in such operation in the study area. Even though, paddy cultivation is entirely done by men, women from Tamils and Sinhalese increasingly involve in land preparation, Fertilizer management, irrigation, pest and disease control and marketing in the cultivation of other Field Crops and fruits which reflect a remarkable change in their traditional farming activities. A similar pattern of changes have already been occurred in Mali and Ethiopia (Brock and Coulibaly, 1999). Involvement of Muslim women is comparatively low in such activities as a result of socio cultural restriction. Home gardening is carried out by women from all groups.

4. ACCESS AND CONTROL PROFILE

Access and control profile of the farming population in the study area is given in the Table 2.

Table 2: Access and control profile of farming among three societies

Resource / Benefits	*Tamils*				*Sinhalese*				*Muslims*			
	Asses		***Control***		***Asses***		***Control***		***Asses***		***Control***	
	M	**W**	***M***	**W**	***M***	**W**	***M***	**W**	***M***	**W**	***M***	**W**
Home land	+++	+++	+++	+	+++	+++	+++	++	+++	+++	+++	-
Farm land (Low lands)	+++	+	+++	+	+	++	+++	+	+++	-	+++	-

Farm tools	+++	++	+++	+	+++	++	+++	++	+++	+	+++	-
Formal credit	+++	+	+++	-	+++	-	+++	-	+++	-	+++	-
Informal credit	++	+++	+	+++	+	+++	-	+++	++	+++	++	+++
Market- retail / village	++	+++	+	+++	++	+++	+	+++	++	+++	++	+++
Market – whole sale / city	+++	- +++		-	+++	+	+++	-	+++ -		+++	-
Extension service	+++	+	+++	+	+++	++	+++	+	+++	+	+++	-
Farm produces – food crops	++	+++	+	+++	+	+++	+	+++	++	+++	++	+++
Farm produces – cash crops	+++	-	+++	-	+++	-	+++	-	+++	-	+++	-
Farm income	+++	++	+++	++	+++	++	+++	++	+++	++	+++	-
Non- farm income	+++	-	+++	-	+++	-	+++	-	+++	-	+++	-

+=Low involvement, ++= moderate involvement, +++= high involvement and - = not at all

Women had full access to home lands and low access to farm land (low lands) as low lands are found away from the residences. Women's low control over lands and assets even they have ownership is mainly due to cultural traditions and fear to their husbands. Tamil and Muslim women in the study area get land ownership from their parents as a dowry for marriage. Women have moderate access and low control over farm tools due to lack of knowledge and skills on improved farm implements. Women have little access to formal credits even they have property ownership as a result of limited social interaction, time constraints and cultural barriers (Holt and Ribe, 1997). Women have full access and control to village level and retail markets as they have to sell their produces to meet household and personal needs (Zwarteveen, 1997; Doss, 2001). The variation in the access and control to attend extension activities indicates the differences in the existing power relationship between men and women among three communities (Moser, 1999) as well as the type of extension methodology adopted. Women from three societies have moderate access and control over farm income as they maintain homes and are the custodian of household needs.

5. TECHNOLOGICAL NEEDS AND PROBLEMS OF WOMEN FARMERS IN THE STUDY AREA

Type extension messages required by women farmers in the study area are given in Table 3.

Table 3. Technological needs and problems of women farmers among three societies

Extension Topics	Tamils % reported	Sinhalese % reported	Muslims % reported
Paddy			
Varieties	50	50	-
Planting techniques	44	50	33
Weeding	31	37	-
Pest & disease control	62	62	-
Harvesting	44	37	33
Post harvest operation- threshing, winnowing	75	62	-
Cleaning and storage			

Value addition & preparation of rice based Products	31	50	66
IPM	56	62	-
Fruits and Other Field Crops			
Varieties	56	87	-
Planting techniques	50	25	33
Fertilizer management	44	37	-
Plant propagation	50	62	66
Weeding	50	87	33
Harvesting	44	37	-
Post harvest operations- grading, ripening, Storage	75	62	33
Preservation & value addition	50	87	66
Marketing techniques	44	87	-
Vegetables			
Nursery management	50	37	33
Planting techniques	44	37	66
Pest & disease management	62	87	33
Organic farming	75	75	33
Value addition& preservation	44	50	66
Home gardening			
Planning & selection of crops	75	62	33
Planting techniques	44	37	33
Pest & disease management	62	37	-
Water management	62	37	-
Organic gardening	50	62	66
Value addition& preservation	44	50	100
Nutrition & food preparation	25	25	66
Others			
Mushroom cultivation	31	50	-
Compost making	50	50	66
Natural pesticide preparation	50	62	66
Agro based income earning activities	69	62	33

There was an increasing involvement by the majority of Tamil and Sinhalese women farmers in paddy cultivation. They preferred to know more about paddy varieties, post harvest operation, pest and disease control and IPM. Similar paddy, majority of the Tamil and Sinhalese women farmers needed technologies related to plant propagation, nursery management, value addition and preservation, varieties, marketing, pest and disease management, organic farming, water management and post harvest operations with respect to OFC, fruits and vegetables. However majority of Muslim women farmers still preferred to know massages regarding their traditional tasks. Technological needs of women farmers clearly reveals that there is a change in their traditional farming activities as reflected in their activity profile. As Olowu and Yahaya (1998) said, agriculture technology needs of women farmers in the study area are positively related to their tasks and activities in farming. The need for organic farming, compost making and preparation of natural pesticides highlights

growing women's concern over health and environmental issues in the district. Women's need for technology in relation to agro – based income generating activities indicated that income from farming is yet not sufficient for them to meet their household needs.

6. PROBLEMS OF WOMEN FARMERS FOR EXTENSION PARTICIPATION

Problems mentioned by women farmers from three communities for extension participation is given in Table 4.

Table 4: Problem of women farmers for participating in the extension activities

Problems	*Tamils* *% reported*	*Sinhalese* *% reported*	*Muslims* *% reported*
Household responsibility	94	87	100
Transport difficulties	44	37	–
Lack of time	75	62	100
Lack of suitable technology	62	37	–
Inappropriate time of extension trainings	75	62	–
Social & cultural restriction	44	25	100
No timely information	50	37	-
Marketing problem	37	-	-

Even though, the household responsibility was the foremost problem for all groups, inappropriate time of extension trainings, lack of time, lack of appropriate technology and untimely information about the extension activities were the problems for more than 50% Tamil women farmers. In the mean time lack of time and unsuitable time of extension activities accounted for more than 50% of Sinhalese women whereas social restriction and lack of time were the reasons for 100% of Muslim women for not participating in the extension activities. The severity and type of problems are not the same among the societies even they are closely living in the district. This situation reflects that cultural tradition and gender restriction vary between the communities and give rise different pressure and limitation for women farmers to attend extension activities. Inflexible domestic obligations make all women farmers difficult to find time to attend extension activities. As Anna (2003) indicated women's greatest barriers for extension participation are time constraints, lack of suitable agricultural information, and inadequate transportation.

7. NEEDS OF WOMEN FOR PARTICIPATING IN EXTENSION ACTIVITIES

Requirements suggested by women farmers form three communities for improving their participation in extension activities are given Table 5.

Table 5: Needs of women farmers for participating in extension activities

Needs	*Tamils* *% reported*	*Sinhalese* *% reported*	*Muslims* *% reported*
Appropriate time extension	94	87	83
Transport arrangement	50	62	33
Appropriate technology	62	37	66
Proper methods of communication	50	62	86
Closer venue for training	50	50	100
Incentives –money other seeds	37	50	33
Female field Extension staff	37	25	100
Child care facilities at training center	62	50	-
Marketing arrangement	44	50	-
Timely information	50	-	-
Short duration of trainings	44	50	-

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Appropriate time of extension activities, appropriate technologies, proper methods of communication and suitable venue preferably close to homes were reported for extension participation by more than 50% of the women farmers regardless of ethnicity. However, timely information about extension services, short duration of training and child care facilities at residential training centre were also important requirements for Tamil women farmers. Incentives either cash on in kinds, short training hours and marketing arrangements were other needs of Sinhalese women whereas 100% of Muslim women required female extension workers. Needs given by all women farmers for extension participation are the direct impact of their gender restriction. The differences and magnitude of problems and needs mentioned by women farmers highlight that the extension department should consider all those when plan and implement extension activities.

8. EXTENSION METHODOLOGY

Table 6: Sources of agricultural information of women farmers in the study area

Sources	*Tamils* *% reported*	*Sinhalese* *% reported*	*Muslims* *% reported*
Farmer training	44	62	33
Farm visits	37	50	33
Demonstration	31	-	-
Field day	50	-	-
Radio, TV	50	75	83
Leaflets, hand outs	50	62	100
Magazines, papers, poster	44	50	66
Other farmers	69	62	100
Women organizations	44	-	33

Tamil women farmer received information from a variety of sources when compared to other two societies. Mass media such as radio, TV, posters and magazines and other neighbor farmers were the main sources of information for more than 50% of women farmers in all three communities. 60% Sinhalese women farmers had access to farmer training whereas Sinhalese and Muslims women farmers had little access to demonstration and field days. Even there are many source of agriculture information; women's access to such sources varies between societies reflecting their constraints imposed by gender.

Table 7: Extension methods and their most use as perceived by extension staff

Extension Methods	*Extension Staff* *% reported*
Farmer Training	85
Demonstration	85
Individual Visits	77
Field Days	61
Printed Media	40
Radio. TV	31
Exhibition	31

Group methods such as farmer training, demonstration and field days were more popular methods while mass media methods were less used in the district. In a contradictory, less popular methods are more accessed by women farmers. This implies that gender practical problems of women farmers such as mobility and time constraints prevent their access to group methods. This situation in the district urges that the extension department should plan and conduct group methods at appropriate time and closer venue with prior information using proper communication methods.

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Table 8: Methods of communication with women farmers as reported by extension staff

Methods	*Extension Staff % reported*
Direct contact	38
Through Village level organizations	58
Through male farmers	85
Through other village level field staff	70

It was found that majority of the communication was done through indirect methods. Only 40% of the contact was direct individual method. Indirect communication is always less effective in reaching the target group mainly due to failure to timely inform and convince the targeted people and lack of interest by third parties. This stresses the importance of proper communication in the study area for effective extension services for women.

Table 9: Problem faced by extension staff to make direct contact with women farmers

Methods	*Extension Staff % reported*
Insufficient time to directly inform	61
Lack of mobility	77
Lack of interest of women farmers	58
Women always occupied with domestic work – need to wait long time to meet them	85 58
Social and cultural barriers	61
Lack of active village level organizations	

More than 75% of staff said lack of mobility and need of additional time to meet women farmers at their homes. Look of interest of women farmers, social and cultural barrier and insufficient time for field work also reported by 58% of the staff. Even though extension staff reports many problems in making direct contact with women farmers, these can be solved through proper time management, provision of official mobility and mobilizing women organizations at village level.

Table 10: Constraints faced by extension staff to address the problems and needs of women farmers

Constraints	Extension staff % reported
Lack of knowledge on women farmer's practical issues	77
Lack of knowledge on women farmer's specific needs	85
Lack of skill and experience to handle women problems	85
Time constraints	70
Social culture restriction	38
Lack of resources	70
Inadequate support form colleagues	38

More than 75% of staff reported that then don't have sufficient knowledge and skills on women farmer's practical problems and their needs. 70% of them also reported time constraints and lack of resources are their main obstacles. No doubt, extension staffs still face problem in addressing the needs and problems of women farmers in the extension programs. Insufficient knowledge and skills on gender aspects and lack of resources are the major obstacles for them to adequately address women's practical problems and needs and extension activities. It is true that without such knowledge and facilities it will be extremely difficult for staff to address the gender related problems and needs in extension program and activities.

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9. CONCLUSIONS

Time constraints, inflexible domestic activities, less inappropriate technologies, improper extension methodology and lack of staff's knowledge and skills on gender issues are the major barriers for women's extension participation in the study area. Provision of child care facilities at residential training centre, establishment of gender dis- aggregated data base, extension plan based on the base considering women's problems and needs, strengthening mass media and group extension methods, targeting women separately for extension delivery and gender awareness workshops for staff are recommended to improve women's extension participation

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