Analysis of women labour participation in agricultural production in valikamam area, Jaffna District, Sri Lanka.

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Abstract
This study focused analysis of women labour participation in agricultural production in Valikamam area of Jaffna, Sri Lanka. Several factor both economic and non economic factors are responsible for women labour participation. In this context the present study has been conducted to access the women participation in agricultural production as a women labour involvement in agricultural activities. It examines the influence of selected socio-economic characteristic of women labour that affects their motivation and participation in agricultural production. A random as well as purposive sampling method was used to select respondents for this study. The research was carried out with the use of well structured questionnaire to obtain the necessary data. Both descriptive and Probit analysis were employed to investigate the determinants of women labour participation in agricultural production in the study area. The empirical results revealed that woman age, household size, distance from farm to home, income level, perception and level of contribution had significant impact on the women labour participation in agricultural production; all at 10% and 5% probability level with a log likelihood of -49.139634, pseudo R² of 0.4233 which shows that the models have a good fit. It was found that women labour age, income level, perception and level of contribution on agricultural production had inverse relationship with participation in agriculture while, household size and distance from farm to home had positive relationship.

Keywords: Women labour, Agricultural production, Valikamam, Probit

INTRODUCTION
Women are the majority of the people reside in rural areas and derive their livelihood from agriculture. Sri Lanka is predominantly an agricultural country with 82% of the households still in the rural sector. Women constitute 50.7% of the population and are considered to be a valuable resource potential needed to be in the rural agricultural sector of Sri Lanka. Women contribution of agriculture is increasing to the national economy (Consumer Finance Survey of 2003/2004).

Most of the Sri Lankan women are participated in agricultural sector rather than industrial sector. Women perform numerous labour intensive jobs in agricultural production. Such as land clearing, land tilling, planting, weeding, fertilizer/manure application to harvesting, food processing, and threshing, winnowing, milling, transportation and marketing as well as livestock management. Several factor both economic and non economic factors are responsible for this concern. Traditionally Jaffna women are regarded as home makers who overlooks and coordinate activities at home. Despite this Jaffna rural women play important and dominant role in agricultural production, mainly in farm activities, keeping livestock and other associated activities like milking, preparation of curd and ghee products.

Nowadays, in Sri Lanka there are visible changes in women participation because of the greater opportunities, education and employment. Large number of skilled women labour force employed in various organization and societies and they are aggressively fighting and opposed to restrict them in agricultural production. In agricultural sector, the participating women have less education and technical skills and majority of them use low yielding and unimproved planting material and labour intensive, traditional farm practices, which may adversely affect agricultural production. There is therefore the need for women farmers improving their knowledge specially for their technical knowledge in agricultural production through some training programs, seminars and workshops.

The role of women in agricultural production has however not widely been explored. Inadequate information on the level of women participation in agriculture, and the women’s substantial contribution in agriculture are neglect in policy issues. Such policies tend to either under estimate and or totally ignore women’s role in both agricultural production and the general decision- making process with in household. Therefore, the real concern about the determinants of women participation in agriculture is important one. Considering therefore, this study will provide the development planning and policy formulation that is more relevant to the need of women farmers. It will also provide a basis for further research on the impact of women participation in agriculture in Jaffna as well as in Sri Lanka. The overall of this study is to identifying factors influencing the women labour participation in agricultural production.

Hypothesis:
- Women labour participation is significantly affect the agricultural production positively.
Increasing women age, household size, experience, and extension services are significantly affect the women labour involvement in agricultural production positively.

Increasing level of education, distance of the woman’s farm from homestead and disposable income level of the woman are significantly affecting the agricultural production negatively.

Materials and Methods

This chapter explains about the data and the econometric method used to determine the factors affecting women labour involvement in agricultural production. This study was conducted in Valikamam area of Jaffna district during the period of April to July 2011. The Jaffna district is largest area of northern part of Sri Lanka. It has four sub-divisions, namely Islands, Valikamam, Thennaradchi and Vadamaradch. The Valikamam area was purposively selected for this study and it has seven divisional secretariats, they are Jaffna, Nallur, Sandilipay, Tellipalai, Chankani, Uduvil, Kopay.

The study involved a cross section of 190 randomly selected household sizes of which 165 were used in the analysis to ensure the representation of women labour participation in agricultural production. A questionnaire was prepared with the relevance to the objective of this study. Prior to the interview a pilot study was carried out to determine the viability of questions prepared to collect the necessary data. The data was analyzed using descriptive statistic and probit model. Descriptive analysis was used to answer the question regarding, personal and socio-economic characteristics of the women, their access to economic resources, technical and professional skill information (extension services). To examine the relationship between selected socio-economic characters of the respondent and their participation in agricultural production, a probit model was used. In this model was developed to examine the women labour participation in agricultural production. In order to determine the women participation in agricultural production, a probit model was used. Women participation in agriculture was measured as a discrete choice variable (Yes/No). In model the dependent variable is whether or not the woman labour participates in agricultural production and the independent variables are age of the woman (X1), household size (X2), level of education (X3), years of experience (X4), distance of the woman’s farm from homestead (X5), disposable income level of the woman (X6), extension services (X7), perception (X8), tenure rights (X9), member of cooperative (X10) and Woman contribution in agriculture (X11).

Results and Discussion

The major findings are presented and the relationships among the main variables are analyzed and discussed in this chapter. The data collected for this study permits a examination of selected socio-economic characteristics of the women, their access to economic resources, technical and professional skill information (extension services). To examine the relationship between selected socio-economic characters of the respondent and their participation in agricultural production negatively.

Table I showed the descriptive statistic of women labour participation in agricultural production. In this study around 71.5% of women participate in agricultural production as a labour in agricultural production activities. The respondent age has big range from 22years to 65 years in case; however 42years as mean age to the women labour. Respondent level of education range from 4 years of schooling to 12 years of schooling, however mean level of education is around 8 years of schooling. Moreover, around 45% of the women labour having permanent tenure rights. Household size of the respondent ranges from 1 to 8, and mean household size is around 4.8. Mean value of the income to the women labour participation is 10621.21.

Interpretation for explanatory variables

Table II: Probit Estimates of selected explanatory variables on the dependent variable of women labour participation in agriculture.

| Variables | Coefficient | Df/dx | P>|z| |
|-----------|-------------|-------|-----|
| Age       | -.0826878   | -.0066388 | 0.075 |
| Hsize     | .9146367*** | .0734339 | 0.002 |
| Lnedu     | -2.371645   | -1.904133 | 0.229 |
| Yexp      | .0307883    | .0024719 | 0.364 |
| Lnfarm    | .9860645*** | .0719427 | 0.001 |
| Lnicome   | -11.42427***| -9.7172258 | 0.000 |
| Ext       | .3380799    | .0271436 | 0.179 |
| Pcept     | -.7771669** | -.0623968 | 0.023 |
| Tenure    | .1163714    | .0092666 | 0.764 |
| Mcoop     | -.6861447   | -.0576414 | 0.319 |
| Cont      | -.0005052***| -.4.176-06 | 0.000 |

Df/dx is for discrete change of dummy variable from 0 to 1
*** Significant at 1% level, ** Significant at 5% level, *Significant at 10% level
No of observation=165
Wald chi2 (11) = 54.69
Log pseudo likelihood = -18.603968
Pseudo R² = 0.8113
Prob > chi² = 0.0000

Table II presents the estimation of the parameters of probit model on the factors influencing the contribution of women in agricultural production. The explanatory power of the factors as reflected by Pseudo R² was relatively high (80%). The overall goodness of fit as reflected by Prob > Chi² (0.0600) was also good. In terms of consistency with a priori expectations on the relationship between the dependent variable and the explanatory variables, the model seems to have behaved well.

In model, the parameters were obtained by maximization of the log likelihood function. In this model 8 iterations were necessary to find the maximum of the log likelihood function (-18.603968). The coefficients obtained in the probit estimation or results only serve to provide a sense of the direction of the effects of the covariates on women participation in agricultural production, and cannot be used for magnitude of impact analysis. To examine the magnitude of impact, we calculate the marginal impact of these independent variables on the probability of women participation in agricultural production.

The variable woman’s age has strong impact on women participation in agricultural production. The coefficient of age shows negative and significant relationship between age and women participation at 10% level of significance respectively. That marginal effect of the age is clear sign; that if the age increase from its mean value of 42.36, the probability for the women labour participation in agricultural production will decreased by 0.6638%. In Sri Lanka, young women are less likely to participate in agriculture as well as they want to employ in other sectors. This same result was found in studies of Damisa (2007), and In Kimhi (1998), the coefficient of woman age has negatively and insignificant influence in women labours participation in agriculture.

The variable household size shows positive and significant contributor to the women participation in agricultural production as a labour participation. The coefficient of women labour size is significant at 1% level. This implies that the resource requirement for household farm certainly increase with the size of household. Women in larger household size are therefore likely to contribute more to agricultural production than in those with smaller household size. Marginal effect of the household size shows that, if the household size increases by one unit from its mean of 4.606, the probability for the women labour participation in agriculture is increase by 7.343%. In a priori expectations and findings of Damisa et.al (2007), household size should measure number of working members; generally, an increase in family size is likely to increase the probability of participation in agricultural production; all things being equal; this probability means that, younger members of the households are not participating actively in agricultural production, because youths of modern days prefer white-collar jobs. However contrasting to this finding, Oladejo et.al (2011), find out the coefficient of household size is negatively significant at 5% level.

This variable treated as a log form. In contrast to the expectation of sign, the coefficient of ln(dfarm) has a positive impact and statistically significant at 1% level to women labour participation in agricultural production. Marginal effect of the ln(dfarm) of women labour suggest that 1% increase in distance from farm, is increase the women labour participation in agricultural production by the amount of 7.1942%. In Damisa (2007) and Oladejo et.al (2011) similarly report that farm distance from home coefficient is negative and insignificant impact in women participation in agriculture.

This variable income level treated as log form. The variable has strong impact on women participation agricultural production. The coefficient of income shows negative and significant relationship between income and women participation at 1% level of significant respectively. That marginal effect of income is clear sign; that 1% increase in income from its mean value of Rs 10621.21 resulted 91.72% decrease the women labour participation. A plausible explanation for these results is that wealth of the women participation is a major determinant of women participation in agricultural production. The more financially strong women are less likely to involve in agricultural production. Similar to this findings, studies of Damisa (2007), reported that income negatively significant effect, while Oladejo et.al (2011) found out that income positive and insignificant impact on women participation in agricultural production.

The variable perception shows negative and significant contributor to the women participation in agricultural production as a women labour participation. Marginal effect of perception shows that by holding other variables constant, if the perception increases 1%, the women labour participation decrease by 6.2396%. In Damisa (2007), finding the coefficient of perception is positively and statistically influences at 5% significant level.

Coefficient of Wcont shows negative and significant relationship between women contribution of agricultural production and women participation as a women labour participation. That marginal effect of Wcont is clear sign; that 1% increase in Wcont from its mean value of Rs 35424.24 resulted 41.7% decrease the women labour participation. But the women labour participation giving financial support less and they engaged the farming activities for their earning wage.

Conclusions and Recommendations

This study presented Analysis of women participation in agricultural production in Valikamam area of Jaffna district. The women in the area of study see, agriculture as the major means of livelihood and therefore put high expectation of returns on the occupation. For the aforementioned principle model was developed for the women labour participation is an indicator of women participation in agricultural production. Then, woman age, household size, distance from farm to home, income level,
perception and level of contribution had significant impact on women participation as a women labour participation. The empirical estimation of the probit analysis shows a log likelihood of -18.603968 and pseudo R² of 0.8113 for model respectively, this shows that the model has a good fit. Also, this study pointed out that, despite the influence of other socio-economic variables, there is high level of commitment in agricultural production. The level of their contribution is an indication of their level of commitment in agriculture. The level of contribution to agriculture has significant effect.

Recommendations

Government should encourage efficient and sustainable use of the existing cultivable land, by further investing in agricultural research and extension, with a view to increase the agricultural output as well as the corresponding income for households especially for those investing in commercial agriculture. By so doing, extension visits will afford the farmers the opportunity to have access to subsidized inputs and this will boost their level of participation in agricultural production and increasing the level of women contribution to the agricultural production that will reduce the women’s burden.

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