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RESEARCH ARTICLE

Impact Assessment of Agricultural Training Program of AKRSP to Enhance the Socio-Economic Status of Rural Women: A Case Study of Northern Areas of Pakistan

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ABSTRACT

Agriculture, the backbone of the Pakistan's economy, is still running on old methods of cultivation owing to illiterate farmers with low capital formation and saving. There is need of the time to build the capacity of farmers in agricultural production. This research endeavor was aimed to analyze the impact of agricultural trainings imparted by Agha Khan rural support program (AKRSP) by focusing on rural women. This study was confined in three districts namely: Gilgit, Skardu and Ghanchi of Northern Areas (NAs) of Pakistan. Multistage random sampling technique was used for data collection. The data was analyzed through multiple regression analysis. It was revealed that these training programs has significantly increased agricultural and livestock production and thus laid a positive impact on income of respondents. Most of the coefficients of variables of trainings like variable of training in fruit production, livestock and poultry production and record keeping along with age and literacy status of respondents, were found to be positive and statistically significant. It was found that through HRD program of AKRSP, skill of local women is improved in different fields of agriculture and livestock and poultry production activities.

INTRODUCTION

The objective of full development of an economy can never be achieved without employing its human resource in an effective and systematic way. Human resource development is fundamental part of socio-economic development (Shaheen et al., 2007). Usually an economy comprises of both male and female and exclusion of female from development process is actually a great human potential loss (Anonymous, 1992). Both men and women play an important role in feeding the world. According to an estimate, women produce more than 50% of the total world food (FAO, 1995). Women's contribution in agricultural labour force in developed countries is 36.7% while, it is about 43.6% in developing countries (FAO, 1999). In Asian countries, women account for approximately 50.0% of food production overall in the region, with considerable variation from country to country. In addition to agricultural activities women often devote more time and resources under their control towards improving household concerns related to food security as compared to men and their involvement was significant in term of decision making authority (Saito & Weideman, 1990; Thomas, 1990 & Quisumbing et al., 1995).

Agricultural is the main source of livelihood in the less developing countries and their development directly depends upon the development of agriculture (Tetlay et al., 1988). Like most of developing countries agriculture in Pakistan is the largest sector of economy. It contributes 21 percent of gross domestic products. About 60 percent rural population directly or indirectly depends on this sector for their livelihood and this sector provides employment opportunities for 45 percent of country's labor force and is the main source of foreign exchange (Anonymous, 2012). In rural areas of Pakistan, women play a major role in agricultural production, livestock raising and cottage industries. They are equally efficient in seed bed preparation,

tilling, sowing, fertilizer application, fodder cutting, weeding, intercultural operations, transplanting, husking, threshing, drying, storing cereals and fodder, selling agricultural commodities and harvesting of all the crops, fruits and vegetables (Anonymous, 1988; World Bank, 1989; Shah & Khan, 2004).

In order to meet the current requirement of population, it is necessary to trained agricultural personnel on more scientific lines. The approach used for training of human beings after 1990s calls HRD, an integrated and holistic idea for change in work related behavior by using a wide range of learning techniques and strategies. It stressed on personal development in which an individual recipient should take the responsibility (Megginson et al., 1993). HRD is the process of increasing, knowledge, skills and capabilities of all the people in a society.According to Nadler and Nadler (1989) HRD is a learning experiences, specifically training, education, and development, organized and provided by employers during certain periods of time in order to encourage improvement of performance and/or personal growth of employees. According to Mclean and Mclean (2001), HRD is any process or activity that either initially or over the longer term, has the potential to develop adults' work based knowledge, expertise, productivity and satisfaction, whether for personnel or group/team gain, or for benefit of an organization, community or ultimately the whole humanity.

Over the past three decades, most of the NGOs are working to enhance the human potential throughout the Pakistan (Shaheen et al., 2007). AKRSP is one of such NGOs who are working for human resource development. It was established in 1982 with the mandate to upgrade the poor. Human resource development is one of the main components of AKRSP. AKRSP organizes different training courses especially in the field of Agriculture to enhance the skills and capacity of rural poor. AKRSP trained members of Village/ women organizations (VO/WOs) in management and cultural practices applied in agriculture. As the focus of study was confined on members of WOs with following objectives:

1. To analyze the economic impact of various training programs imparted by AKRSP to enhance the capacities of rural women in agricultural production.
2. To arrive at suggestions for future policy recommendations.

MATERIALS AND METHODS

The present study was conducted in three out of seven districts of Northern areas of Pakistan. These districts namely Gilgit, Ghanchi and Skardu were purposively selected because there were maximum numbers of registered members who obtained loan and got trained in different fields of agriculture and livestock since long ago. The main source of income of these people is agriculture and tourism.

For data collection, a pre-tested interview schedule was used (Wingenbach et al., 2003). One hundred WOs were randomly selected from each of the three purposively selected districts, making a total number of 300 WOs. Then from each of the WO, 2 female members who obtained credit and trainings since long time were selected purposively. The sample size was 600 women respondents. The base period is 2000.

Data Analysis

Different statistical techniques were employed for achievement of objectives. The collected data were analyzed after sorting with the help of suitable computer software (SPSS) (Bonne et al., 2002; Davis et al., 2004). Simple data analysis including frequency distribution and percentage was used for socio-economic characteristics of respondents.

As the study analyzed the impact of HRD program of AKRSP on socio-economic conditions of poor rural women, a multiple regression technique was applied to assess the impact of these agricultural trainings on respondents (Fayyaz, 2006). The model is:

$Y_{i=}$

$$\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 D_1 + \beta_4 D_2 + \beta_5 D_3 + \beta_6 D_4 + \beta_7 D_5 + \beta_8 D_6 + \beta_9 D_7 + \mu_i$$

Specification of Variables

Y_i= Average monthly income of respondents' family ("000"PKR)

$X_{1=}$ Age of Respondents (Years)

X_2= Respondents' average monthly income

D_1= Dummy for literacy status of respondents (Value is one if respondent is literate, otherwise zero)

D_2 = Dummy for training in crop production (Value is one if respondent is trained in crop Production, otherwise zero)

D_3= Dummy for training in fruit production (Value is one if respondent is trained in fruit Production, otherwise zero)

D_4= Dummy for training in poultry production (value is one if respondent is trained in Poultry production, otherwise zero)

D_5= Dummy for training in animal husbandry (value is one if respondent is get trained in the field of animal husbandry, otherwise zero)

D_6= dummy for training in forestry (value is one if respondent is get trained in forestry, Otherwise zero) &

D_7= Dummy for training in record keeping (value is one if respondent is trained in record Keeping, otherwise zero)

$B_{0=}$ Constant term

β = Coefficient on independent variables

μ = Error/ disturbance term

RESULTS AND DISCUSSION

In the present study, following parameters of socio-economic status of respondents such as Age,

educational status and occupation of respondents were considered. Data in table 1 showed that majority of respondents (16.6 per cent) belongs to the age group of 26-35years. Out of total respondents (35.9 per cent) were illiterate. These results are in line with that of Aneela et al. (2009). An overwhelming majority of respondents (35.25) were involved in more than one occupation. These results are matched with that of Mansoor et al. (2007) that majority of beneficiaries' (69 per cent) of SRSP were involved in farming and small business enterprises.

Types of Trainings Received by Respondents

AKRSP is the leading NGO in program area and is earnestly associated with number of developmental programs. HRD is the basic components of such developmental programs and in HRD, training in different fields where these rural women of program area were actively involved for their economic development like trainings in crops, fruits, vegetables, livestock and poultry production and small business enterprises etc. The regarding the participation of respondents in agricultural trainings imparted by AKRSP is presented in table 2.

The data depicts that overwhelming majority of respondents (45.5 per cent) have get trained in fruit production followed by poultry production (45.5 per cent), animal husbandry (45 per cent), crop production (38.8 per cent) and training in forestry (11.5 per cent) respectively.

Improvement in Meat and Egg Production

Poultry production is practiced by almost all rural household as a major activity of livelihood. In NAs, poultry birds are reared in almost every household and practiced are made to improve the number as well as their productivity. Detail in this respect is demonstrated in table 3. By analyzing the detail it was depicted that majority (42.8 per cent) of respondents stated that there is improvement in meat and egg production of their poultry birds while only 7.2 per cent of respondents showed negative tendency in production of meat and eggs. The main reason of increase in production of meat and eggs is awareness that has been created by AKRSP through trainings about using the improved method of rearing, better nutrition and timely vaccination.

Improvement in Milk and Meat Production

Rural women usually involve in livestock production activities such as feeding, grazing, and housing and milking of animals. So livestock production is one of the major cash activities in rural areas. So keeping in view the importance of livestock sector, AKRSP has started different intervention in this field for improving the milk and meat productivity of animals in study area. The data in table 4 reflects that vast majority (36.2 per cent and 37.5 per cent) of the respondents stated that production of milk and meat respectively of their livestock is improved. While only 13.8 per cent and 12.5 per cent showed negative response about their livestock productivity (milk and meat respectively). This significant improvement in livestock productivity has brought after AKRSP's livestock related interventions. Through timely vaccination and treatment with the assistance of technical staff of AKRSP, the health condition of livestock has improved. Another reason could be the introduction of trained personnel and they showed that training they get and credit they received is ultimately helpful in increasing the production of milk and meat.

Improvement in Fruit Production

The results in table 5 reflect that vast majority of respondents (37.2 per cent) of respondents showed their views against the increase in area of fruit trees while only majority (26.4 per cent) of respondents stated that their fruit production has increased. These positive changes occur in fruit production due to use of improved horticultural practices. The climate of NAs is also very favorable for fruit production. So it might be a one of the reason responsible for increase in fruit production along with horticultural practices.

Improvement in Vegetable Production

The results in table 6 shows that an overwhelming majority (37.8 per cent) of respondents stated that their crop area is same of 2000 while only 12.2 per cent stated that they have brought more land under cultivation which was initially barren or under same crop due to lack of finance. On the other hand, vast majority (35.8 per cent) of respondents stated that per unit yield of their vegetables has increased after availing the credit and training program of AKRSP. While 14.2 per cent of respondents were those whose production remains same or showed down ward trend. These positive changes occur in research area to a greater extent by timely use of agri-inputs like improved seeds provided by AKRSP, fertilizers and technical assistance from AKRSP. The climate of NAs is also very favorable for agricultural activities. So it might be the one of the reason of increase in vegetable production.

Improvement in Crop Production

The results in table 7 reflect that overwhelming majority (35.1 per cent and 37.8 per cent) of the respondents stated that their crop production (increase in area and increase in yield respectively) has increased. There are many reasons of this positive change in crop productivity like timely availability of credit and technical assistance in the form of trainings, availability of improved variety seeds, fertilizers and also improved method of cultivation. The main crops of research area are wheat, maize and barley. Initially the people of research area have no awareness about multiple cropping system and these crops are grown for home purpose only. But now AKRSP and other NGOs are creating awareness among people of research area

Table 1: Demographic Information of Respondents

Personal Characteristics	No (n=600)	Percentage (%)
Age		
15-25	53	8.8
26-35	209	34.8
36-45	125	20.8
46-55	141	23.5
55+	72	12
Literacy Level		
Literate	228	38
Illiterate	372	62
Occupation		
Housewives	31	2.58
Housewives+farming	73	6.08
Housewives+farming+ small enterprises	423	35.25
Govt Servant	25	2.08
Govt servant+farming	48	4.0

Table 2: Types of Trainings Received by Respondents

Category	Yes		No	
	No.	%age	No.	%age
Trainings in Crop Production	233	38.8	367	61.2
Trainings in Fruit Production	327	54.5	273	45.5
Trainings in Poultry Production	273	45.5	327	54.4
Trainings in Animal Husbandry	270	45	330	55
Trainings in Forestry	69	11.5	531	88.5

Table 3: Distribution of Respondents According to Improvement in Meat and Egg Production

S. No	Category	Meat and egg production	
		No.	%age
1	Yes	514	42.8
2	No	86	7.2
3	Total	600	50

Table 4: Distribution of Respondents According to Improvement in Milk and Meat Production

S. No.	Category	Milk Production		Meat Production	
		No.	%age	No.	%age
1	Yes	434	36.2	450	37.5
2	No	166	13.8	150	12.5
3	Total	600	50	600	50

Table 5: Distribution of Respondents According to Improvement in Fruit Production

S. No.	Category	Increase in area		Increase in yield	
		No.	%age	No.	%age
1	Yes	146	12.2	317	26.4
2	No	454	37.8	283	23.6
3	Total	600	50.0	600	50.0

Table 6: Distribution according to improvement in vegetable production

S. No	Category	Increase in area		Increase in yield	
		No	%age	No	%age
1	Yes	147	12.2	430	35.8
2	No	453	37.8	170	14.2
3	Total	600	50.0	600	50.0

Table 7: Distribution of Respondents According to Improvement in Crop Production

S. No.	Category	Increase in area		Increase in yield	
		No.	%age	No.	%age
1	Yes	421	35.1	453	37.8
2	No	179	14.9	147	12.2
3	Total	600	50.0	600	50.0

Table 8: Distribution of Respondents according to their increase in income after skill Enhancement

S. No.	Income	No.	%age
1	500-1000	90	15
2	1000-1500	120	20
3	1500-2000	325	54.2
4	2000+	65	10.8

about advanced techniques of production like crop rotation, multiple cropping system etc.

Increase in Monthly income after Skill Enhancement of Respondents

Women in research area had taken part in different agricultural trainings regarding to income generating activities. They applied their skill in practical field which intern increased their income. As table 8 indicates the sample women were classified into four income brackets according to increase in income. Majority of women (54.2%) were earned income up to 1500-2000 per month. Women falling in income bracket of 1000-1500 and 500-1000 were 20% and 205 respectively. Only 10.8% were fall in the category of 2000+.

Multiple Regression Model for determining the Effects of Trainings in different fields of Agriculture on Income enhancement of Respondents

Table 9 provides an overview of the explanatory variables used in multiple regression model and also their effects on income. The overall results of the model are satisfactory because the ρ value of F-test is highly significant and the sign of explanatory variables are consistent with prior expectations and most of them are statistically significant at 0.01 and 0.05 level. The value of Adjusted R^2 is .146 which depicts that model is good fitted. The value of R^2 (.159) and F-test shows that estimated results of multiple regression are quite meaningful because the dependent variable is related to each explanatory variable. R^2 value .159 means that 15 percent variations in income were explained by all explanatory variables while rests of 85 percent variations are explained by some missing variables.

The variable of age of respondents (X_1) indicates that age has significant influence on respondents 'household average monthly income. These findings are tallies with that of Ahmad (2011) that younger respondents (20-40years) were 4 times more likely involved in credit activities than older people. Respondents' status of education (X_2) is highly significant and shows that positive relation with respondents' household average

Table 9: Results of multiple regression analysis for the determinants of respondent's Family income from different interventions of AKRSP

Variables	Estimated coefficients(β)	Std. Error	t- statistics	Sig
Constant	4144.321	789.337	5.250	.000
Age	38.453	18.058	2.129	.034
Literacy Status	1377.846	377.290	3.652	.000
Respondents' avg. Monthly Income	.424	.112	3.783	.000
Training in Crop Production	454.693	408.248	1.114	.266
Training in Fruit Production	962.827	416.321	2.313	.021
Training In Poultry production	790.027	370.671	2.131	.033
Training in Animal Husbandry	653.940	367.957	1.777	.076
Training in Forestry	406.679	584.202	.696	.607
Training in Record Keeping	831.831	369.466	2.251	.023
No. Of observations		600		
df of regression		11		
R		.399		
R^2		.159		
Adjusted R^2		.146		
Standard error of estimates		4194.994		
F-values		12.421 (.000)		

monthly income (Ahmad, 2011). The average monthly income of respondent (X_3) is crucial determinant of family income. This variable is found to be positively related to household average monthly income and also highly significant.

The variable of training in crops is shown to be statistically insignificant and have positive relation with average monthly income of respondents' family. The positive co efficient of D_1 shows that the respondents' average family income is 819 rupees more if they participate in training in crops than that of those who do not get training the crops production. The variable of training in fruit production has also significant and positive relation with average monthly income of respondents. The positive co efficient of trainings in poultry at less than 1 per cent level of significance indicates that if all other variables are holding constant, the average monthly income of respondents' family is 790.027 more if they get trained in poultry production than those who do not trained. These results are in coincidence with that of Shaheen et al. (2007) which show that training program of SRSP in poultry farming have significantly increase the income of rural women folk.

The variable of training in animal husbandry is also found to be statistically significant and positively related to the average monthly income of respondents' family. These results are matched with that of Ampaire and Rothschild (2010) which describe that more trainings in livestock development will improve the health of livestock which will ultimately positively affect the farmers' income. The variable of training in forestry is also found to statistically insignificant but positively related to the average monthly income of respondent's family. The variable of training in record keeping is also found to be statistically significant and positively related to the average monthly income of respondents' family.

Conclusion and Policy Recommendation

The current study concludes that training programs of AKRSP in different fields of agriculture has significantly increased the income of rural women and as a result the socio-economic status and decision making power of women has changed positively. It was further concluded that besides capacity building of rural women in agricultural production, rural women should also be trained in other different skills like tailoring, candle-making, glass work, wood work, surf and soap making and also in embroidery.

It was recommended that efforts should be made to involve local women in development process through different types of incentives and also by providing micro-credit at their door steps on easy installments with low interest rates.

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