AN ANALYSIS OF FARMER FIELD SCHOOL (FFS) AS A POTENTIAL SOURCE OF ADVANCED TECHNOLOGY DISSEMINATION AMONG THE FARMERS OF DISTRICT FAISALABAD, PAKISTAN

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Abstract: Pakistan is a developing country with agro-based economy. Several extension approaches, designed primarily to improve the living standard of rural people through increased agricultural production and improve farm income, have been tried but in vain. In recent years, a number of developmental agencies, including the World Bank, have promoted farmer field schools (FFS) as a more effective approach to extend science-based knowledge and practices to farmers. The FFS training program utilizes participatory methods "to help farmers develop their analytical skills, critical thinking, creativity, and help them learn to make better decisions. The present study was therefore, conducted to assess FFS as a potential source of latest agricultural technology transfer for farming community in Faisalabad, Pakistan. The total sample of 200 respondents was analyzed. The analysis revealed that an overwhelming majority (90.87%) received latest package of agricultural technologies from Agriculture experts. The data collected by "survey" method was analyzed through Statistical Package for Social Sciences (SPSS) and results indicated that new seeds of crops with the mean value of 2.574, liquid fertilizer (*Bio Aab*) with mean value of 2.689 and application of advance agricultural machinery (mean value=2.733) were found significantly important for amelioration in yield per acre. It is envisaged that the results of the study will be helpful to ameliorate the working efficiency of the farmer field schools staff and also useful for the appropriate and effective training of farmers. Moreover this will pave the way for the planning of new future projects to strengthen the farmer field school (FFS) approach.

Keywords: Agriculture Extension; Agriculture technology transfer; Decision making; Farmer Field School; Participatory approaches

INTRODUCTION

Pakistan is a developing country with agro-based economy. Agriculture sector of the country occupies a prime position in its economy and contributes 23% to GDP and provides employment to 45% of the total work force. Not only more than 45% of country's work force is employed in agriculture but also 110.46 million of country's population (173.51 million) living in rural areas is directly or indirectly linked with agriculture for its bread and butter. Faisalabad is the third largest city in Pakistan after Karachi and Lahore. The population of Faisalabad is 5.429 million along with the area of 14.43 thousand acres. As far as Jaranwala is concerned, it is covering an area of 1,770.04 km^2, with a population of 1.186 million people, as per the last census [1]. Moreover, the past, present and future

Table 1: Frequency distribution, mean and rank order of the farmer respondents regarding recommended agricultural inputs provided under FFS

Inputs	Response		Extent of use										Mean	Rank Order
	Yes		1		2		3		4		5			
	F	%	F	%	F	%	F	%	F	%	F	%		
Seed	200	100.0	26	5.2	38	7.6	98	19.6	22	4.4	16	3.2	2.574	2
Liquid Fertilizer (*Bio Aab*)	200	100.0	21	10.8	21	19.0	87	59.7	31	7.5	40	2.8	2.689	3
Machinery	200	100.0	19	3.8	11	2.2	90	18	34	6.8	46	9.2	2.733	1

Source-Field data Frequency (F)=200

Scale: To some extent=1, Below average=2, Average =3, Above average=4, To high extent=5

of the country is adhere with agricultural sector. Hence, the development of this sector is unquestioned.

In Pakistan, mainly the provincial governments are responsible for agricultural research and extension activities. Several extension approaches, designed primarily to ameliorate the living standard of rural people through increased agricultural production and improved farm income strategies, have been tried but in vain.

Indeed, Agricultural Extension and farmer education programmes are the key policy instruments for Pakistani Government seeking to improve the productivity of agriculture. Some studies estimated high rates of return to the investment in extension [2], or to farmer education [3]. Yet, many researchers documented poor performance in the operation of extension and informal education systems, due to bureaucratic inefficiency, deficient programme design, and some generic weaknesses inherent in publicly-operated, staff-intensive, information delivery systems [4].

In recent years, a number of development agencies, including the World Bank, have augmented Farmer Field Schools (FFS) as a more effective approach to diffuse science-based knowledge and best practices to farming community. The FFS training programme uses participatory methods which are "to help farmers develop their analytical skills, critical thinking, creativity, and help them learn to make better decisions". Such an approach, in which the trainer is more of a facilitator, rather than an instructor, mirror an example shift in extension work [5]. According to the FAO [6], The FFS keeps the potential to give farmers practical knowledge and skills to apply the new technologies more efficiently in a market driven agricultural system and to equip best utilization of relevant services offered by private service providers.

As an extension approach, the FFS concept does not require that all farmers must attend FFS training. Rather, only an exclusive figure of farmers within a village or local farmers group are trained in such a way that these informal schools, which demand weekly meetings in a season-long training course are fully equipped with modern techniques. However, in order to transfer new knowledge more speedily within the farming community, selected farmers receive additional skill based training to become farmer-trainers and are expected to organize field-school imitations within the community, with some support from public sources. In addition, all FFS trained members are motivated to share their knowledge and experiences with other farmers of the local village. These farmer-to-farmer diffusion effects are expected to bring about cost-effective knowledge diffusion and financial sustainability issues that have hampered many public extension systems in both developed and developing countries [7]. FFS training aims to affect farmer's knowledge, which can be interpreted broadly to include the possession of analytical skills, critical thinking, and ability to make better decisions, as well as familiarity with agricultural practices, adoption of new technologies and understanding of interactions within the agricultural ecosystem. Improved knowledge is, in turn, reflected in farmers' cultivation practices, input management, and crop yields. A field school can be expected to improve the performance growth rate of farmers by increasing farmer's knowledge regarding crop husbandry. Government of Pakistan has launched different extension approaches under

Table 2: Response of respondents regarding different type of advanced technologies recommended by agricultural experts in farmer field school; and farmers' information level regarding new technologies and their application in the actual field

Response	Frequency	Percentage (%)
Regarding different type of Advance Technologies recommended by agricultural experts in farmer field school		
Yes	128	64
No	38	19
No response	34	17
Total	200	100
Information level regarding new technologies and their application in the actual field		
Yes	81	67.5
No	9	7.5
No response	30	25.0
Total	200	100

the umbrella of agriculture Department for an effective technology transfer. In Government sector, many efforts have been made to improve the performance of Extension services situation of Extension in the country. In spite of serious deficiencies and financial hurdles, agricultural extension has made significant contribution to enhanced agricultural productivity [8]. The prime aim of the study was to appraise the FFS approach as a potential source of advanced technology transfer among the farming community of District Faisalabad, Pakistan.

MATERIALS AND METHODS

The population for the study consisted of the FFS farmers in the study area. Two Tehsils out of five of the District Faisalabad (namely Jaranwala and Fasialabad) were randomly selected. On the basis of Fitzggibbon [9] 200 farmers were selected at random from both Tehsils. The primary data were collected by using "survey" method. For this purpose, 30 farmers were interviewed having almost similar characteristics as those of the actual farmer respondents of the study. In the light of the results of pre-testing, the required modifications were made in the research tool. All the respondents were interviewed either at their homes or at farms with the help of the interview schedule, but for the convenience of the respondents on one hand and for getting accurate information on the other hand, the questions were asked in a local language (*Punjabi*). Data were analyzed by using the computer software Statistical Package for Social Sciences (SPSS).

RESULTS AND DISCUSSION

Results in Table 1 showed that under FFS the most provided agricultural input was advanced machinery as reported by respondents that ranked 1st for different crops with mean 2.733, followed by seed and a liquid fertilizer (*Bio Aab*) with means 2.689 and 2.574 respectively. The more focus on seed, liquid fertilizer and agricultural machinery was due to lack of awareness and application of new technologies among the farming community. The present study results are supported with those of [10]; [11] who concluded that FFS is one of the participatory approaches and besides, new science based technology, farming community also learnt new topics of interest which certainly improved the farmers knowledge and skills resulting in improved yield. Furthermore, it enabled farmers to improve their major crops yield through recommended fertilizers and seeds up to 20% exclusively when inputs were made available [12].

Results displayed in Table 2 revealed that 64% of respondents were of the view that the recommended technologies by agricultural experts are advanced, 19% of respondents reported that technologies are not advanced and are expensive while 17% of respondents gave no response. Earlier findings [13] regarding the present study also reported similar results. As far as level of farmer's information is concerned, data depicted that 67.5% of the respondents easily understood and applied the information provided by extension field staff. While 7.5% respondents

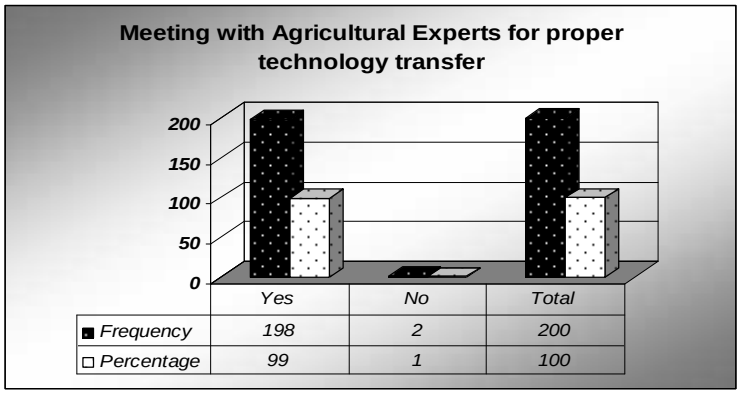

Fig. 1: Distribution of respondents regarding meetings with agricultural experts for proper technology transfer

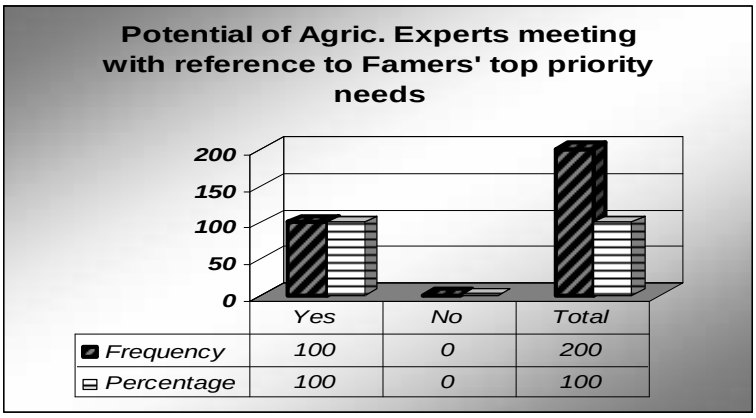

Fig. 2: Distribution of respondents according to potential of agric. experts meetings to transfer the technologies with regard to farmer's top priority needs

reported that information provided by extension field staff was difficult. It could be due to many factors like age, affordability, access and education and 25% respondents gave no response. Braun [14] also concluded that FFS is an easily understandable technique through which farmers can understand without any difficulty about new technologies and their application in the actual field. In addition, FFS is proved to be more instrumental for farmer participation enthusiastically in the improvement of agriculture sector in our local conditions.

Hundred percent respondents reported that meetings with agriculture experts were beneficial in terms of technology transfer among the farmers of both Tehsils of Faisalabad (Fig. 1). Relevant studies have been conducted in African and Asian countries to assess the importance of agric. Experts gatherings with the farming community. Overall results showed encouraging repercussions regarding performance, knowledge and skill enhancement through various kinds of meetings [15], [16], [17]. Moreover, farming community got leadership and management skills which lead them to the road to the prosperity and development. Furthermore, peasants felt pleasure to be the part of different meetings where they discussed community and crop matters. Under the umbrella of these meetings, farmers started seriously thinking about problems not only individually but also collectively as well. Therefore, FFS approach has paved the way to agricultural progress [18], [19], [20] and [21].

Fig. 2 signifies that 100% of respondents reported that Agricultural experts meeting have potential to transfer new technologies with regard to farmer's top priority needs. Results of previous researchers also support in terms of demand driven priorities of farmers because a successful technology is one which is adopted by its target clients [22] & [23].

CONCLUSION

Results of this empirical study show that FFS approach has brought positive changes not only in terms of the crop maximization but also in the development of livelihood of the farming community. FFS approach is changing the attitude and mindset of an overwhelming majority of farmers due to the application of advance agricultural technologies. By the adoption of this approach, peasants feel that it has become an eye opener for them as reported by majority of the respondents in the study area.

Some researchers, however, also pointed out the weaknesses in FFS like its applicability is limited to the interested farmers and raised questions regarding its overall impact and financial resources availability without any constraint and delay [15b]. While others unveiled other issues like inappropriate curriculum, favoritism and land lords traps [24].

Cutting it short, farmers are getting new and improved quality inputs which are enhancing their crop yield and income. Similarly, farming community is equipping with new technologies and resultantly they are adopting novel and sustainable items like liquid fertilizer (*bio-aab*) and recommended seed. The present findings suggest that number of FFS may be increased in all districts of the country to benefit the rest of the people as encouraging results were obtained from current study.

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