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Perceived Effectiveness of Public Sector Extension Under Decentralized Agricultural Extension System in the Punjab, Pakistan

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ABSTRACT

Agricultural extension is a non-formal type of education that provides advisory services by the use of educational approach in acquiring knowledge and skills to deal with the growing needs of global world. In Pakistan agricultural extension services are being provided by the Extension Field Staff (EFS) of Agriculture department. To up-lift the living standard of rural people, who are nearly about 67% of the whole population, Government has tested so many extension systems but un-fortunately all of them were abolished and terminated one after the other due to multidimensional problems including use of top down approach and ineffective technology transfer mechanism between the researcher, farmer and extension worker. Recently in 2001 Government introduced institutional reforms of Agricultural Extension with the name 'Devolution of Power Plan', which is the more advanced form of Decentralization. The decentralization of agricultural extension reforms is being implemented in many developing countries in Asia. To determine the perceived effectiveness of the new system the present research study was designed and conducted in Punjab Province, which is the main agricultural producer in the country. Simple Random Sampling was used for the selection of study respondents. All the EFS working in the district Muzaffargarh of Punjab Province were selected as the respondents of the study. The instrument for the collection of data was a well-designed interview schedule, which was prepared after extensive literature review. The data, thus collected were analyzed with the help of SPSS by using descriptive statistics. The results of present study depicts that among agricultural extension activities undertaken by EFS under decentralized extension system crop production activities were disseminated in very good and ranked as '1'. Somewhat different trend was found in crop protection activities as they were disseminated in very good manner having rank order '2'. Whereas the post harvest techniques also fell in good category. However, the information's about marketing were good and average as reported by 28.0% of the respondents for each case, respectively. Activities related to post harvest techniques and marketing were ranked as '3' and '4', respectively. It was concluded that among individual contact methods farm and home visit was perceived as very good having rank '1'. Similarly In case of group contact method more than half of the respondents reported that farmer training meetings were used as very good with rank order '1'. In mass contact methods only print media fell in the category of 'good' having rank order '1' on the basis of their weighted score.

Key Words: Perceived effectiveness; Decentralization; Agricultural extension system

INTRODUCTION

Throughout the world the powerful effect of agricultural development vivid on rural livelihood not only by increasing their incomes but also by releasing labor and capital that can be used in non-agricultural enterprises and goods (Johnson, 2000; Lanjouw & Lanjouw, 2001; Haq, 2003). This better utilization of skill and craft mainly dependent on the swift movement of market information, which is the main cause of agricultural extension, that serves as important tire of agriculture and rural development process. The whole process of agricultural development showed weak linkages between its different components (Sharma, 2003; Mubangizi *et al.*, 2004) and it seems necessary to revive the shattered agricultural education, research and extension system (Khan, 2002). Agricultural extension is one of the main institutional components of agriculture as it promotes the transfer and exchange of information that can be converted into functional knowledge. It is better to say that extension is the instrument, which is helpful in developing enterprises that promote productivity and generate income in the present climate of change, which ultimately reduce poverty in developing as well as developed countries (Kaimowitz, 1990; Alston & Pardey, 1996; Carney, 1998; Wanga, 1999; Anderson & Feder, 2003).

Un-fortunately in developing as well as low income countries agricultural extension has failed in diffusing new technology to its ultimate users (Government of Malawi, 2000) and further deterioration witnessed with the passage of time (Eicher, 2001). The failure of agricultural extension services for last decades is under constant pressure to be responsive to ever-growing challenges of food production. The prime challenges in the traditional public extension systems enlisted as outdated, top-down, paternalistic, inflexible, subject to bureaucratic inefficiencies that results

less ability to cope with the dynamic demands of modern day agriculture (World Bank, 2002; Obaa *et al*., 2005). In some countries the change is occurring with its natural pace but in many developing countries these have been accelerated by structural adjustment reforms (Rivera *et al*., 2000; Chapman & Tripp, 2003).

Like other developing country Pakistan is also an agrarian country, whose economy is highly dependent on agriculture having 23% share to GDP (Government of Pakistan, 2005). But still the performance of agriculture sector at the farm level remains significantly below the potential and limited due to the weak institutional formwork in disseminating agricultural technology to the farmers (Farooq, 2005). Research scientists evolving new methods and technologies to meet the challenges of new era and the farming community also has a potential and courage to adopt but the third component i.e. agricultural extension, which serves as a technology transfer vehicle and play a significant role in increasing the productivity, farm incomes and ensure food security has been very much weak since independence (Luqman *et al.,* 2004; Farooq, 2005). The extension services in the country have not been able to achieve their goals effectively, because of a number of bottlenecks. These include weak research-extension linkages, lack of adequate resources for on-farm demonstrations, poor mobility, inadequate research and training in extension methodology and lack of an effective system of continuing education for extension personnel at various levels (Sandhu, 1993). Among major filed crops wheat, rice, cotton and sugarcane accounts for 90.4% of the value added in major crops and 37.1% of the value added in overall agriculture (Government of Pakistan, 2005). The low production of these crops depends upon a number of factors including ineffective and isolated agricultural extension system (ADB, 1999; NRSP, 1999; Butt *et al.,* 2005; Khan, 2005).

All over the world agricultural extension assists the rural population of remote areas to up-lift their living standard through increase in crop production (World Bank, 2003). The Government of Pakistan is well aware of this fact therefore from the Day of Independence different extension and rural development programs at national level launch by her e.g. Village Agricultural and Industrial Development Programme (Village-AID), Basic Democracies System (BDS), Integrated Rural Development Programme (IRDP) and Training and Visit System (T & V) (Davidson *et al.,* 2001; Saima *et al.,* 2005). Un-fortunately all these programmes were abolished one after the other because of their conventional, top down nature and inherited less effective technology transfer model (Röling & De Jong, 1998; Davidson *et al.,* 2001; Williamson, 2002; World Bank, 2003).

The last efficient extension programme was (T & V) that become ineffective due to its rigidity, top down orientation, non-responsiveness to farmers' needs, much expensive, least effective in feed back communication with farmers and un-able to meet the challenges of changing circumstances (Byerlee, 1988; FAO, 1990; Antholt, 1990). To overcome the weaknesses and shortcomings in (T & V) system Government introduced Decentralization of Agricultural Extension reforms with the name Devolution of Power Plan to up-lift the local people's economic status through pooling all the national sources and resources at grass root level (World Bank, 2002a; Luqman *et al.,* 2005). Devolution is the complete, permanent (SPDC, 2000) and advanced form of decentralization and also helps in strengthening the functions of and empowering with more authority to the elected representatives (FAO, 2001).

With the promulgation of this new system, institutional reforms have been introduced almost in all the line departments including Agricultural Extension (Luqman *et al.,* 2004). The new system of agricultural extension, works under the supervision of district Government in which each district is managing its agricultural extension activities, where the functions of all sister organizations such as Water Management, Fisheries, Livestock, Soil conservation, Forestry, etc; are put under single manager called as Executive District Officer of Agriculture (EDOA) (World Bank, 2003; Lodhi *et al.,* 2005).

The administrative changes in the setup of agricultural extension department affect the working efficiency of Extension Field Staff (EFS) in their area of jurisdiction having both positive and negative impacts (Luqman *et al.,* 2005), while on the other hand Farooq (2005) conducted a research study in two districts of North West Frontier Province (NWFP) and observed the difficulties faced by the extension staff in post devolution framework. The major hurdles in creating difficulties for EFS in the research area were multifarious duties, double chain command and lack of administrative staff and burden of increased paper work. Keeping in view the advantages and disadvantages of Decentralization of agricultural extension reforms, the purpose of the present research study was designed to determine the effectiveness of public sector extension under decentralized Agricultural Extension system in the Punjab, Pakistan, as perceived by the EFS.

METHODOLOGY

The methodology of research study provides a path to researcher how to complete the process of collection, analyzing and interpretation of data (Nachmias & Nachmias, 1992). Pakistan has four provinces namely Punjab, Sindh, North West Frontier Province (NWFP) and Balochistan (Shariff, 2004). The study was conducted in Punjab province, which consists of 35 districts. Out of which one district 'Muzaffargarh' was selected through Simple Random Sampling technique (Acharjee *et al*., 2002; Hossain & Mishra, 2002; Kumar & Trikha, 2002). There are four tehsils in the district namely Alipur, Jator, Kot Adu and Muzaffargarh. District Muzaffargarh is mainly dependent on agriculture. The major crops sown in the district are

wheat, rice, cotton and sugarcane. Among fruit trees, mange, pomegranate, dates, orange and lime are important and grown in form of gardens (Government of Pakistan, 2000). Under the supervision of Executive District Officer (EDO) Agriculture, the Department of Agriculture (Extension) is mainly responsible for educating the farmers in the better crop production techniques (District Government Muzaffargarh, 2004).

All the extension staff including Executive District Officer (EDO) Agriculture, District Officer (DO) Agriculture, Deputy District Officers Agricultural Extension (DDOAE), Agriculture Officers (AOs), Agriculture Inspectors (AIs) and Field Assistants (FAs) currently work in the district serve as respondents for the present study. The data were collected during the year 2003 by the help of a well structured and validated interview schedule (Eck & Torres, 1996; Cho, 2002; Wingenbach *et al.,* 2003). A five point Likert type scale was used to find out the responses of the respondents regarding the self-perceived effectiveness of extension activities and extension methodologies (Thomas & Hoover, 1991; Chizari *et al.,* 1999; Lindner *et al.,* 2003). The data, thus collected were analyzed by using Statistical Package for Social Sciences (SPSS) (Bonne *et al.,* 2002; Davis *et al.,* 2004). Descriptive Statistics (frequencies, means & standard deviations) were used for the analysis of data (Eck & Torres, 1996; Layfield & Dobbins, 2002).

RESULTS AND DISCUSSION

Effectiveness of agricultural extension activities. Agricultural activities aim at improving the livelihood of numerous families residing in rural areas (SDC, 2003) especially those farmers, who have small land holding (Blowfield *et al.,* 1999; Hellin & Higman, 2001). The data concerning the effectiveness of agricultural extension activities being followed by EFS of agriculture department after decentralization and tabulated in Table I, which depicts that extension activities related to crop production were disseminated in very good, good and average manners as reported by 49.5, 41.9 and 5.4% of the respondents, respectively. Some what different trend was found in crop protection activities as they were disseminated in very good way as reported by 49.5% of the respondents followed by good, very poor, average and poor as pointed out by 37.6, 6.5, 5.4 and 1.1% of the respondents, respectively. Whereas, the post harvest techniques used were good, very good and average in view of 47.3%, 21.5% and 17.2% of the respondents, respectively. However, the information's about marketing were good and average as reported by 28.0% of the respondents for each case, respectively and disseminated in a very good way as reported by 19.4% of the respondents.

The ranking of agricultural extension activities was made on the basis of their weighted score, which is calculated by multiplying the frequency of responses from each of the five columns of a specific activity was tabulated and multiplied by concerned score. Then they were added together to get the total score for each specific activity. And the data in this regard is presented in Table II, which shows that among agricultural extension activities, which were being performed by EFS after decentralization, activities related to crop production were ranked as '1' followed by crop protection, post-harvest technologies and marketing. The effectiveness of extension activities related to crop production is more (Mean = 4.37) as compared to crop protection activities (M = 4.23), activities concerning post harvest techniques (Mean = 3.72) and marketing related activities (M = 3.29). On the basis of mean value all the other activities were ranked as 2, 3 and 4, respectively. But changed pattern was observed in standard deviation, which showed that marketing was at top with 1.27, followed by 1.06, 1.05 and 0.78 for each crop protection, post harvest techniques and crop production, respectively.

Effectiveness of extension methods used by EFS after decentralization. Extension Field Staff use a variety of extension methods for effective dissemination of agricultural knowledge and skill to the farmers. Some of them are individual, some are group and some are mass contact methods. These methods increase the credibility of EFS in the eyes of farmers. The way through, which information is disseminated within the farming community is considered the main organizational vehicle (Cernea *et al.,* 1984). The respondents were asked questions about the effectiveness in using these methods after decentralization and the data in this regard is given in Table III, which exhibits that in individual contact methods rating showed that farm and home visit was 'very good' as perceived by 47.3% of the respondents, office calls was 'good' as reported by 49.0% of the respondents, telephone calls fell in 'poor' category as perceived by 37.5% of the respondents and personnel letters were lie in 'very poor' category as reported by 40.0% of the respondents.

In case of group contact method 46.4% of the respondents reported method demonstration meetings 'good', 36.7% reported result demonstration meetings also 'good', lecture meetings 'good' as reported by 45.8% of the respondents, 55.0% of the respondents reported that farmer training meetings were very 'good', 35.1% said that group discussion was 'good', seminar/workshop was observed as 'very poor', 'poor' and 'average' as reported by 25.7% of the respondents but field days were 'good' as reported by 55.7% of the respondents.

In mass contact methods only print media fell in the category of 'good' as reported 44.0% of the respondents, radio fell in 'average' category as viewed by half (50.0%) of the respondents but television fell in 'poor' and 'very poor' category as reported 37.5% of the respondents.

The rating of various extension teaching methods, which were being used by EFS for the dissemination of latest agricultural technology among the farmers was made by using a five point likert type scale namely 'very poor', 'poor', 'average', 'good' and 'very good', which was

Table I. Perceived effectiveness of extension activities after decentralization as reported by EFS

Agricultural Extension activities	Response									
	Very Poor (1)		Poor (2)		Average (3)		Good (4)		Very good (5)	
	No.	%	No.	%	No.	%	No.	%	No.	%
Crop production	1	1.1	2	2.2	5	5.4	39	41.9	46	49.5
Crop protection	6	6.5	1	1.1	5	5.4	35	37.6	46	49.5
Post harvest techniques	4	4.3	9	9.7	16	17.2	44	47.3	20	21.5
Marketing	12	12.9	11	11.8	26	28.0	26	28.0	18	19.4

Table II. Ranking of Agricultural Extension Activities performed by EFS under decentralized extension system

Agricultural Extension Activities	Weighted Score	Rank Order	Mean	SD
Crop production	406	1	4.37	0.78
Crop protection	393	2	4.23	1.06
Post harvest techniques	346	3	3.72	1.05
Marketing	306	4	3.29	1.27

Table III. Perceived effectiveness of extension methods used by EFS as reported by the respondents

Extension Methods	Response									
	Very Poor (1)		Poor (2)		Average (3)		Good (4)		Very good (5)	
	No.	%	No.	%	No.	%	No.	%	No.	%
Individual Contact Methods										
Farm and Home visit	1	0.9	-	-	7	6.4	50	45.5	52	47.3
Office calls	-	-	8	8.3	24	25.0	47	49.0	17	17.7
Telephone calls	10	31.3	12	37.5	6	18.8	4	12.5	-	-
Personnel letters	14	40.0	5	14.3	10	28.6	6	17.1	-	-
Group Contact Methods										
Method demonstration meetings	6	6.2	7	7.2	17	17.5	45	46.4	22	22.7
Result demonstration meetings	5	5.1	5	5.1	31	31.6	36	36.7	21	21.4
Lecture meetings	2	1.9	14	13.1	21	19.6	49	45.8	21	19.6
Farmer Training meetings	4	3.7	5	4.6	7	6.4	33	30.3	60	55.0
Group Discussion	14	14.4	11	11.3	24	24.7	34	35.1	14	12.7
Seminars/Workshop	9	25.7	9	25.7	9	25.7	6	17.1	2	5.7
Field Days	7	6.6	5	4.7	21	19.8	59	55.7	14	13.2
Mass contact methods										
Print media	2	1.8	2	1.8	12	10.9	48	44.0	45	40.9
Radio	-	-	2	25.0	4	50.0	2	25.0	-	-
Television	3	37.5	3	37.5	1	12.5	1	12.5	-	-

assigned scores of 1, 2 ,3, 4 and 5, respectively. The raking of different extension methods was done on the basis of their weighted score, which was calculated by multiplying the frequency of responses from each of the five columns of a specific activity under major activity and was tabulated in Table IV, which shows that among farm and individual contact methods farm and home visit was ranked as '1' (M = 4.4), followed by office calls (M = 3.8), personal letters (M = 2.3) and telephone call (M = 2.5). The reverse pattern was observed in the value of standard deviation, which shows that personnel letters were at top followed by telephone calls, office calls and farm and home visit.

Among group contact methods farmer training meetings was ranked as '1' (M = 4.28) followed by method demonstration meetings (M = 3.72), lecture meetings (M = 3.68), result demonstration meetings (M = 3.64), field days (M = 3.64), group discussion (M = 3.24) and seminar/workshops (M = 2.51). The reverse pattern was observed in standard deviation value was highest (SD = 1.26) for group discussion followed by seminar/workshops (SD = 1.22), method demonstration meetings (SD = 1.09), results demonstration meetings and field days (SD = 1.04) and lecture meetings (SD = 1.00).

Among mass contact methods print media was ranked '1' (M = 4.21) followed by radio (M = 3.00) and television (M = 2.25). The standard deviation showed different pattern as television was at top (SD = 1.49) followed by print media (SD = 0.85) and radio (SD = 0.76).

CONCLUSIONS

It was concluded that extension activities related to crop production were disseminated in a very good manner after decentralization. Farm and home visit was perceived as very good for delivering agricultural extension message to the ultimate users among individual contact methods. Under decentralized agricultural extension system among group contact methods farmer-training meetings were perceived as very good as reported by more than half of the respondents.

Recommendations and policy implications. Government should take a quick and serious step to take on maximum number of agricultural extension professional in the Agriculture Department (extension wing) and also designed a proper policy for it.

Table IV. Ranking of Extension Methods used by EFS for the dissemination of Agricultural technology among the farming community

Extension Methods	Weighted Score	Rank Order	Mean	SD
Individual Contact Methods				
Farm and Home visit	482	1	4.38	0.69
Office calls	361	2	3.76	0.84
Telephone calls	68	4	2.13	1.01
Personnel letters	78	3	2.23	1.17
Group Contact Methods				
Method demonstration meetings	361	5	3.72	1.09
Result demonstration meetings	409	2	3.64	1.04
Lecture meetings	394	3	3.68	1.00
Farmer Training meetings	467	1	4.28	1.03
Group Discussion	314	6	3.24	1.26
Seminars/Workshop	88	7	2.51	1.22
Field Days	386	4	3.64	1.00
Mass Contact Methods				
Print media	459	1	4.21	0.85
Radio	24	2	3.00	0.76
Television	16	3	2.25	1.49

- Government should impart extensive in-service agricultural trainings to train the extension personnel to cope with the growing needs of rural people.
- Government should impart trainings and refresher courses to train the extension field staff (EFS) about the philosophy and methodology of Decentralization of agricultural extension reforms.
- Effective and efficient evaluation mechanism should be launched to monitor and evaluate the activities of EFS and also their performance.
- Service structure for agriculture extension department should be revised like other departments so that young, talented and energetic staff can join the department.

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