

AN ASSESSMENT OF TECHNICAL COMPETENCIES (AGRONOMIC PRACTICES) NEEDED BY AGRICULTURAL OFFICERS IN THE PUNJAB, PAKISTAN

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Pakistan is an agricultural country; its development is mainly dependent on this sector. However, agricultural production of the country is much lower than that of many other countries. This is an era of information wave, which requires the generation, dissemination, and use of information rapidly. The current technological developments will have a big impact on the future direction of extension and rural development programs realizing the abruptness of the new technologies, Govt. of Pakistan accorded a very high priority to this sector. For this purpose, they have been asked to work under Devolution of Power Plan 2001. That is why the present study has been designed which represents a descriptive survey research. Out of 341 Agricultural Officers (AOs), a random sample of 181 was taken. The panel of experts established face and content validity of research instrument. The Cronbach's alpha calculated for Agronomic Practices (0.97). The questionnaire was mailed to the respondents. Data were analyzed by "Statistical Package for Social Sciences" (SPSS). The discrepancy values based on the mean perceptions of AOs were positive values for all 14 competencies ranging from lowest value 0.21 to highest value 0.99. It means that AOs needed training in all 14 competencies of Agronomic Practices.

Key Words: Technical competencies, agriculture extension

INTRODUCTION

Basically Pakistan is an agricultural country. The majority of its population (67.5%) lives in rural areas. Rural population is directly or indirectly involved in agriculture for its livelihood. The trained and skilled manpower in the field of agriculture is vital for (Pakistan) development. Low productivity of Pakistan's agriculture is one of the major areas of concern for our planners, policy makers and research workers. The average yields obtained at the farmers' fields hardly exceed 30% of their potential. Reports show the yield gaps of wheat, rice, maize, sugarcane and cotton is 72%, 83%, 88%, 78% and 72% respectively as compared to their potential yield under experimental conditions. The productivity of farms almost become stagnant over the past few years and most of the farmers are now practicing traditional farming (Abbas, 2001). The main constraints, confronting Pakistan's agriculture are identified by (Aslam and Khan 1984; Ahmed, 1992; Abbas, 2001) as under:

Yield reduction due to poor manuring range is up to 60%. Unluckily, about 60% farmers do not use fertilizer and those using do not use it according to the recommendations. Moreover, 94% of the total fertilizer used, is applied to five crops (*i.e.* cotton, wheat, sugarcane, rice, and maize). Weeds compete with the major crops for water, nutrients, space and light. Thus, reduced the crops yield. Due to poor cultural and management practices the problem of pest infestation has increased considerably during the last few years.

In Pakistan, continuous cropping and mining over ages has impoverished the soil to such extent that it cannot nourish healthy plants. According to the reports of Rapid Soil Fertility Survey and Soil Testing Institutes, our soils are universally deficient in nitrogen while 90% of them lack adequate content of phosphorus to support bumper crops.

The productivity of the soil is impaired under saline and sodic conditions. According to the reports an area of approximately 5.32 to 6.23 million hectares is affected by salinity and sodicity to varying extent. A publication of Saline Agriculture Cell, University of Agriculture, Faisalabad reported that up to 64% of wheat, 68% of rice, 59% of cotton and 62% of sugarcane yield was reduced in moderately salt affected areas.

Modern agriculture requires a balanced and timely use of various inputs for getting good results. The main inputs are water, mechanization, seed, fertilizer, weedicides, and pesticide. The shortage of these inputs is another cause of low yield of crops.

The agricultural research, extension and farming community sectors are not free of problems. Major issues and problems in this context are identified as under:

Research is not problem-oriented and site-specific. Research in the past has been heavily concentrated on wheat, cotton, and rice and impact is clearly reflected in the generally enhanced output of these crops. The neglect of crops such as oilseed, maize, pulses, fruits and vegetables must be corrected if the yield and productivity increases in these products are to be expected. Even areas where research has been

undertaken on significant scale, the transfer of information and technology to the farmers has been inadequate due to stereotyped approach to extension. Ahmed (1992) conducted a study to examine a credibility of the of extension field staff. He observed that farmers were of the view that extension workers were not able to communicate with the farmers. Lack of training had also produced a negative impact on the working efficiency of extension field staff. Khan (1991) conducted a study to evaluate the working efficacy of the extension workers. He reported a working efficiency of the AOs (Ext.) and concluded that those officers felt a great need for further training in the areas of technical competencies like Plant Protection, Agronomy and Agricultural Extension in the area of professional competency. They were not satisfied with the existing training facilities. Ali (1991) identified training needs of the Extension Field Staff (EFS) and recommended that EFS should be trained in identified areas. Lodhi (2003) identified a lack of training of the organizational staff of the Dept. of Agri. (Ext.) Govt, of Punjab, Pakistan. The extension system is weak and extension worker are considered not fully competent to perform their job. Khan et al (2004) conducted a study to prioritize the training needs of AO (Ext). He concluded that priority wise professional competencies in which agriculture officer needs training regarding program planning.

The agricultural extension system in the Punjab has been identified as very weak and the extension workers designated as Agriculture Officers (AOs) have been labeled as incompetent to tackle with the job requirements under the changing circumstances of globalization and trade liberalization. The information boom and rapidly changing world has created a need for their training and persistent refresher courses.

There is a dire need to identify the job areas in which AOs are less competent and need trainings. Until and unless these areas are clearly identified their training programs may not be planned efficiently. This study was therefore, planned to identify, analyze, and prioritize the competence of AOs in various job related areas. It is hoped that the findings of this study will help design effective training program(s) for AOs.

Objectives

- (1) To determine the present levels of technical competencies possessed by AOs (Ext.) regarding agronomic practices in Punjab, Pakistan
- (2) To determine the importance levels of and technical competencies needed by AOs (Ext.) regarding agronomic practices for their job performance.
- (3) To develop rank orders of identified technical competencies possessed by AOs (Ext.).

MATERIALS AND METHOD

The study presented descriptive research methodology. The population of this study consisted of 341 AOs in Dept. of Agri. (Ext.) who were employed at various places in the Punjab province at the time of data collection. The sampling frame was obtained from the office of the Director General Agri. (Ext. & AR) Lahore. A sample size of 181 AOs was randomly selected from the population for the study. The sample size was determined by using table for determining sample size from a given population (Fitzgibbon *et. al.* 1987). A questionnaire was developed by the researcher from the synthesis of related literature reviewed; personnel insights of researcher and discussion with knowledgeable and experienced professionals in the discipline of Agri. Extension Education. The questionnaire was developed keeping in view the job requirements of AOs. It was also tested for reliability and validity. The Chronbach's alpha calculated for agronomic practices of 14 competencies statement was 0.97. It was comprised of 14 technical competencies. Each competency statement required the respondents to rate the item on two similar 1-5 point Likert scale. One rating was for the possessed level of competency and other for importance level of competency.

Data collection was accomplished through the use of mail questionnaire. A questionnaire package containing cover letter and a stamped self addressed return envelop was mailed to 181 AOs, included in the sample. The cover letter explained the purpose and instructions for completing the questionnaire. The letter stated that all responses would be kept confidential, noting that the code appearing on the questionnaire was strictly for follow-up purposes. Techniques listed by Isaac and Michael (1995) were used to enhance the response rate. The overall response rate was 79.5%. The data were analyzed statistically using computer soft wares Statistical Package for Social Sciences (SPSS) and Microsoft Excel.

RESULTS AND DISCUSSION

Agriculture Officers (AOs) themselves rated the levels of competencies they possessed and the importance levels of these competencies for their job performance. The discrepancy values (DVs) on the basis of differences between the importance levels of competencies for the job performance of AOs and the possessed levels of competencies by AOs were calculated. These differences were considered as the felt levels of training needs in the identified competencies. The data concerning these aspects are presented in Table 1.

Table 1. Rank orders of the training needs of agriculture officers based on the differences between importance and possessed levels of technical competencies in “Agronomic Practices”

Competency the ability to	Importance level (II) mean	Possessed level (PL) mean	Difference DV=II-PL= training need	R
Describe the agronomic practices of minor crops	4.12	3.44	0.68	1
Advise about the plant protection of minor crops	4.31	3.69	0.62	2
Guide farmers about the seed rate of minor crops	4.21	3.65	0.56	3
Describe the agronomic practices of major crops	4.50	3.98	0.52	4
Advise about the fertilizer requirement of minor crops	4.18	3.66	0.52	5
Explain the land preparation methods of major crops	4.48	3.97	0.51	6
Advise about the irrigation requirement of minor crops	4.24	3.74	0.50	7
Explain the land preparation methods of minor crops	4.05	3.55	0.50	8
Guide farmers about the harvesting practices of minor crops	4.22	3.73	0.99	9
Guide about the plant protection measures of major crops	4.52	4.03	0.49	10
Guide farmers about the harvesting practices of major crops	4.41	3.93	0.48	11
Guide about the irrigation requirement of major crops	4.51	4.06	0.45	12
Advise about the fertilizer requirement of major crops	4.46	4.10	0.36	13
Guide farmers about the seed rate of major crops	4.38	4.17	0.21	14

DV= means discrepancy value between importance and possessed levels of competencies;

IL=Importance level; PL= Possessed level.

Out of 14 training needs of AOs the top three (most important) were: (1) the ability to describe the agronomic practices of minor crops (DV=0.68) (2) the ability to advise about the plant protection of minor crops (mean=0.62); and (3) the ability to guide farmers about the seed rate of minor crops (DV=0.56). The training needs with lowest importance levels included: (1) the ability to guide farmers about the seed rate of major crops (DV=0.21); (2) the ability to advise about the fertilizer requirement of major crops (DV=0.36); and (3) the ability to guide about the irrigation requirement of major crops (mean=0.45).

CONCLUSION

The discrepancy values based on the mean perceptions of AOs were positive values for all technical competencies ranging from lowest value 0.21 to highest value 0.99. It means that AOs needed training in all 14 competencies in “Agronomic Practices” identified in Table 1.

On the basis of the findings of the study the following recommendation was developed.

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