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AWARENESS OF FARMERS REGARDING EXTENSION SERVICES IN AFGHANISTAN

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ABSTRACT

Agriculture is deemed important in Afghanistan especially to achieve food security. The agricultural extension department is destined to assist farmers by making them aware of the new technologies and ways of improving crop production. This study was conducted to explore the awareness level of farmers about the different services rendered by the extension field staff. A total of 150 randomly selected farmers were interviewed on a validated and reliable interview schedule face to face. Collected data were analyzed using Statistical Package for Social Sciences (SPSS). Results confirmed that Farmers had a high level of awareness about the promotion of Good Agricultural Practices and the cultivation of alternate crops. Whereas, awareness regarding water-saving methods, high-value crops, irrigation practices and climate challenges was medium. This study opined that farmers need more awareness about climate change and adaptation measures followed by the use of ICT-based gadgets to access desired information. Therefore, the integration of ICTs in communication channels used by extension staff is suggested to disseminate the desired information on a large scale.

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INTRODUCTION

In Afghanistan, 80% of the people live in rural areas mainly dependent on agriculture for their subsistence. Almost 58% of the share of GDP comes from agriculture in Afghanistan. Due to 20 years of conflict, agricultural production and rural infrastructure were badly struck with adverse impacts on the national economy and the farmers' livelihoods. Agriculture production was adversely influenced by the conflicts, and the country was unable to achieve self-sufficiency in food and export of agricultural commodities (Kawasaki *et al.*, 2012).

The agricultural sector in Afghanistan has to face different challenges including the restoration of infrastructure as irrigational facilities, the development of alternative crops to replace poppy cultivation and many more. Therefore the development of agriculture that engages two-thirds of the labour force is important and provides a stable life for the people involved in it (Kawasaki *et al.*, 2012). A wide range of legal and illegal crops, including vegetable crops, livestock and poppy cultivation has become important for Afghanistan's agricultural industry. For rural people, these aspects are

the most important sources of revenue-generating (FAO, 2006).

The agriculture sector in Afghanistan is the backbone of the country's economy and growth, Furthermore, a large area of agricultural land (9.6%) has been kept fallow. The main reason for this is that farmers have limited or no access to capital. Furthermore, the industry is not producing to its full capacity (Muradi and Boz 2018). agriculture makes up about 23 percent of the GDP (gross domestic product). Moreover, agriculture is very important in terms of getting foreign exchange; more than 80 percent of the country's exports are agricultural products. Agriculture is also important in ensuring the country's food security. It provides the majority of the people's food and is the primary source of income for 44 percent of households (Khudadad *et al.,* 2021).

The Afghan government has spent the previous two decades concentrating on strengthening the country's agriculture industry, Several initiatives and projects were launched in partnership with its donor partners to help the country's agriculture industry grow. These development programs seek to boost agriculture commercialization and technological innovation. These programs have had many successes, particularly in the horticultural sub-sector, Increased production of vegetables, commercial potatoes, spices (especially saffron), and temperate fruits, for example, has boosted farmers' income to some extent (Ashktorab *et al.,* 2019).

Public sector extension, private sector and NGOs are the leading institutions working for the farmers and conducting technology transfer among farmers to improve farm production and social capital. The relative strengths and weaknesses of these institutions like public, private and NGO vary while transferring technology and performing social development initiatives. As far as public sector extension is concerned, this is more reliable in organizing a variety of extension programs dealing with the conservation of natural resources and operating farms with a high level of management. The private sector tends to have strong access to resources and recent technologies; thus, this sector can give farmers a great acquittance with the latest agricultural technologies followed by the information to utilize certain technologies on the farm level. NGOs are considered a very important institution in Afghanistan. The NGOs technically facilitate the rural poor by employing a variety of social development and programs focusing on the alleviation of poverty. The staff engaged in the NGOs is found motivated and skilled in organizing and managing the small farmers, marginal farmers and women providing them with easy access to the technologies and required resources. Delivering extension-led programs to demonstrate the technological, organizational and human resources of all groups irrespective of the type of farmers was perceived as important for the developing countries by Swanson and Samy (2012).

In the Afghani context, research on extension aspects is negligible leaving a research gap. Therefore, considering the awareness among farmers an important avenue this study was conducted to examine the awareness level of farmers regarding extension services. This study was quantitative and was conducted in district Chaparhar of the province of Nangarhar, Afghanistan.

METHODOLOGY

This study was conducted in the district Chaparhar of the province of Nangarhar, Afghanistan**.** The study district has 23 villages in total. Out of a total of 23, 10 villages were selected using a simple random sampling technique. The total population of farmers in the selected 10 villages was 410. A sample size of 150 respondents was determined through the online sample size calculator www.surveysystem.com keeping the confidence interval at 5 and the confidence level at 95%. A structured interview schedule was the research instrument of study. Data were collected through face-to-face interviews on a validated, reliable and pre-tested interview schedule.

The validity of the research instrument was tested by consulting with the researcher's supervisory committee. All questions were critically analyzed to be effective and real. Validity was checked with the help of faculty members from the Institute of Agricultural Extension, Education and Rural Development, University of Agriculture Faisalabad, Pakistan. As far as the reliability of the instrument was concerned, Cronbach's Alpha was used. Cronbach's Alpha is a well-accepted form of measuring the internal consistency of an instrument in terms of reliability as endorsed by other researchers like Koukel and Cummings (2002) and Cranwell *et al.* (2004). Cronbach's Alpha was calculated to check the reliability of the interview schedule by using Statistical Package for Social Sciences (SPSS) and the value appeared 0.87, which engrossed that the instrument was reliable enough to proceed. The researcher developed a pre-

testing interview strategy to collect relevant data and pre-testing was carried out on 30 people to determine the accuracy of interview schedules. As a result of this pre-testing, the necessary changes were made to produce the final shapes.

Data were collected through face-to-face interview techniques. Using the Statistical Package for Social Sciences (SPSS), the percentage, frequency and mean standard deviation, were calculated after collecting the data for, discussion, interpretation and conclusion. Five-point Likert scale was used to obtain the response (1: very low 2: low 3: medium 4: high 5: very high).

RESULTS

Demographic attributes of the respondents

Table 1 shows that around 9% of farmers were aged under 30 years. About (45%) were aged between 31-45 years. Moreover, out of the total respondents, 46% were aged more than 45 years. Similar findings were reported by Akponikpè *et al.* (2010) who stated that the average age of farmers was 52 years with the majority between 35-70 years. The current results are endorsed with the results of Akter *et al.* (2012) as they reported 36% of farmers reporting their age under 35 years followed by 65% of farmers aged more than 35 years. Moreover, 16% of farmers were illiterate, while only (4.7%) of farmers were primary. Out of all respondents, 15.3% were educated to middle level. The respondents who attained education up to matric level were 24.7%. Around 7% of the respondents were those whose qualification was intermediate. Slightly more than one-fourth (26.7%) of the farmers had graduated and 6% were having post-graduation. The findings were contradictory with those of Ofuoku and Campus (2011) as they found that 30.53% of respondents in the study area had a primary level of education, 18.32% of farmers had secondary education, 18.32% had tertiary education and almost 6.10% of respondents had received adult education.

The data given in Table 1 further indicated that nearly half (48.7%) of the study respondents were small landholders bearing land holdings of less than 5 hectares. Among total respondents, 42% were having 6-10 hectares of land. About 9% of respondents reported their land holdings size of more than 10 hectares. More than half of the respondents (51.3%) were small landholders having an area under cultivation of less than 5 hectares. Among the total respondents, 42% had 6-10 hectares of cultivated land. About 7% of respondents reported their cultivated land size of more than 10 hectares. About 51% of the farmers were owners of their lands, 34.7% were tenants and 14% of respondents were owner cum tenants, who also used to borrow land for agricultural production along with their land. The study results are more or less similar to those of Muhammad *et al.* (2012) as they found that the overwhelming majority of farmers were owners of their lands.

Table 1. Distribution of results according to the age of the respondents (n=150).

Demographic attributes	Frequency	Percentage
Age		
Up to 30	14	9.3
31-45	67	44.7
More than 45	69	46.0
Education		
Illiterate	24	16.0
Primary	7	4.7
Middle	23	15.3
Matric	37	24.7
Intermediate	10	6.7
Graduation	40	26.7
post-graduation	9	6.0
Land size (hectares)		
<5	73	48.7
6-10	63	42.0

>10	14	9.3
Farming experience		
<5 years	63	42.0
6-10 years	62	41.3
>10 years	25	16.7
Area under cultivation		
Up to 5 hectares	77	51.3
6-10 hectares	63	42.0
More than 10 hectares	10	6.7
Tenancy status		
Owner	77	51.3
Tenant	52	34.7
Owner-cum-tenant	21	14.0

Awareness level among farmers about the services provided by the agriculture extension

There were many extension services delivered by the different institutions on different agricultural aspects. The major objective was to increase the awareness level among farmers about the latest agricultural techniques. Therefore, the awareness among farmers about the shared extension services is important. Therefore, farmers were asked to narrate their awareness level about the different extension services. For better comprehension, the overall awareness was categorized into different categories. The major categories of awareness included;

- Awareness about the services regarding crop management
- Awareness regarding technology transfer through traditional media and programs
- Awareness regarding technology transfer and information dissemination using media

The responses against each aspect of awareness were analyzed through descriptive statistics. The awareness level was ranked based on their respective mean values.

Table 2. Awareness about the services regarding crop management.

Awareness of crop management services	Mean	SD	Awareness level
Promotion of Good Agricultural Practices	4.65	1.097	High
Promotion of alternate crops	4.59	1.154	High
Provision of inputs to the farmer	3.31	1.105	Medium
Promotion of water-saving techniques	3.15	1.047	Medium
Supporting production and marketing of high-value crops	3.12	1.080	Medium
Restoration of irrigation facilities	3.06	1.142	Medium
Improving rural food security	3.03	1.176	Medium
Income generating activities	2.95	1.054	Medium

Scale: 1.0-2.4 (Low), 2.5-3.4 (Medium) 3.5-5.0 (High)

Table 2 shows that farmers had a high level of awareness regarding the promotion of Good Agricultural Practices ($\bar{X}$=4.65) followed by a high level of awareness about the promotion of alternate crops ($\bar{X}$ =4.59). This implies that the extension department had more focus on the promotion of Goof Agricultural Practices and adoption of alternate crops which can guarantee good quality production and net profits eventually. These results are supported by those of Baral *et al*. (2021) as they found that farmers growing ginger were getting more production, and income and the environment was protected as a result of using Good Agricultural Practices promoted and guided by the extension sector.

Awareness among farmers regarding the promotion of water-saving techniques, supporting production and marketing of high-value crops, restoration of irrigation facilities, improvement of rural food security and income-generating activities was of medium level. This

explains that extension services had their focus on making farmers aware of numerous activities to foster the level of production and income-generating activities. The findings of Yang and Gao (2021) state that water-saving techniques are important in agriculture to increase production and achieve food security. Therefore, extension sectors have focused on water saving especially in the era of climate change and water scarcity. Afghanistan was facing serious problems with the efficient use of water resources, expanding irrigation areas, and enhancement of irrigation techniques (Kawasaki *et al*., 2012).

Table 3. Awareness regarding technology transfer through traditional media and programs.

Awareness about Extension services	Mean	SD	Awareness level
Information dissemination	4.83	1.200	High
Training of farmers	4.78	1.745	High
Agriculture exhibitions	4.55	1.058	High
Demonstrations	4.49	.958	High
Agricultural fairs and exhibitions	4.34	1.073	High
Youth programmes for youth empowerment	4.2	1.088	High
Developing and broadcasting agriculture programmes	3.23	1.144	Medium
Extension services for women	3.20	1.159	Medium
Establishment of Provincial Model Teaching Farms	3.01	.847	Medium

Scale: 1.0-2.4 (Low), 2.5-3.4 (Medium) 3.5-5.0 (High)

Table 3 shows the role of extension in information dissemination, training of farmers, organizing agriculture exhibitions, demonstrations, agricultural fairs and exhibitions, youth programmes for youth empowerment, developing and broadcasting agriculture programmes, rendering extension services for the women and establishment of provincial model teaching farms were known to the farmers. Although farmers had a high level of awareness regarding extension role in information dissemination about the agricultural practices ($\bar{X}$=4.83), imparting training to the farmers ($\bar{X}$=4.78), organizing agricultural exhibitions ($\bar{X}$=4.55), setting up demonstration plots ($\bar{X}$=4.49), organizing agricultural fairs and exhibitions ($\bar{X}$=4.34) and organizing youth programs for the empowerment of youth ($\bar{X}$=4.20). whereas, farmers had a medium level of awareness regarding the role of the extension department in developing and broadcasting agriculture programs ($\bar{X}$=3.23), extension advisory services for the women ($\bar{X}$=3.20) and establishment of provincial model teaching farms ($\bar{X}$=3.01).

This is deduced from the results that the extension department had a diverse role to play in the facilitation of farmers. The report from CNFA (2007) confirmed that demonstration was a very important tool used by the extension agencies for the awareness and facilitation of the farmers. In another study, Kock *et al.* (2017) reported that numerous communication methods were used by the working staff. They agreed that radio was the important medium where the programs were broadcasted to showcase on-farm demonstration plots, information dissemination regarding alternate cropping schemes, seed types and sources and organization of farmers' training.

Table 4. Awareness regarding technology transfer and information dissemination using media.

Extension services	Mean	SD	Awareness
Broadcasting radio programs	4.48	1.083	High
Use of e-extension and ICT-based approaches	4.44	1.018	High
Agricultural marketing (especially Saffron)	3.10	1.214	Medium
Climatic information dissemination	3.10	1.022	Medium
Establishment of helpline centres for farmers	3.07	.960	Medium

Scale: 1.0-2.4 (Low), 2.5-3.4 (Medium) 3.5-5.0 (High)

Table 4 indicated that awareness among farmers regarding broadcasting radio programs ($\bar{X}$=4.48) and the use of e-extension and ICT-based approaches ($\bar{X}$=4.44) was high among farmers. Whereas, awareness regarding agricultural marketing (especially Saffaron), climatic information dissemination and establishment of helpline centres for farmers was medium. It was quite interesting that farmers' awareness about the climatic information was medium, despite climate change being the most significant challenge having adverse impacts on crop production. Whereas, farmers had less inclination and awareness about the helpline which could be an effective information source for the farmers to access required information. Poole *et al.* (2019) have argued that food insecurity and malnutrition are increasing in Afghanistan. Food insecurity was subject to poor agricultural productivity due to climatic changes. In another study, Sarwary *et al.* (2021) conducted in Afghanistan found that farmers had witnessed climate change and the majority of the farmers (over 80%) perceived high to a very high degree of climate change impacts. Farmers perceived that climate change had adverse impacts on employment opportunities, availability of labor, insect pests' outbreaks and reduction in the level of groundwater. Changing the existing cropping patterns, farm diversification and drilling new bore wells to pump water were the prominent adaptation practices adopted by the farmers to improve crop production and meet water scarcity.

CONCLUSION AND RECOMMENDATIONS

This study concluded a commendable level of awareness among farmers concerning the promotion of Good Agricultural Practices (GAPs) and the cultivation of alternate crops, signifying the extension department's significant emphasis on strategies that promise enhanced quality production and increased profits. Awareness regarding water-saving techniques, support for high-value crops, irrigation restoration, and income-generating activities is moderately widespread, this reflects the extension services' efforts to equip farmers with a range of tools to amplify productivity and income generation. Given the escalating concerns about climate change and water scarcity, the extension sector's focus on water-saving methods is particularly timely. While awareness around climatic challenges garners moderate attention, the relatively lower awareness concerning helpline indicates an untapped avenue for disseminating vital information to farmers.

This study urged a more proactive role of the extension sector for the awareness of the farmers regarding ways to improve production. The extension department should utilize and integrate Information Communication Technologies (ICTs) for the effective dissemination of information and to create awareness among farmers. More focus is also needed to make the farmers aware of climate change, its adverse impacts and effective management.

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