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An analysis of Extension Services in rural Sindh, Province of Pakistan

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Abstract

The study was carried out to discover the existing state of affairs regarding extension services for cotton crop in District Tando Allahyar, Sindh province of Pakistan. In this study, observation of 180 cotton growers was assembled using multi-stage cluster sampling. The results of the study stated that more than three fourth (76.7 percent) of cotton farmers are receiving extension services from private/pesticide companies' sources. Only 5 percent of farmers are facilitated by the public extension department. The mainstream about 77 percent of cotton growers claimed their average yield 35 maunds/acre. Although majority (47 percent) of the cotton growers rely on the dealers for different reasons, but 37 percent (sixty six out of one hundred eighty) farmers with high average production 41-70 maunds/acre consider the prescription of company agents followed by only eighteen respondents have faith in dealers. The results discovered that the majority of the respondents recognizes that different pesticide representatives are more knowledge, providing extension agents to the farming community. Dealers are not only supposed to be a good source of credit facility to purchase pesticides, but also considered the most trustworthy followed by company representatives and extension workers. Effective operational collaboration with private organizations is suggested to strengthen the agricultural innovation mechanism.

Keywords: Agriculture Extension; Public and Private, Dealers, Pesticide Companies

1. Introduction

Agricultural extension is defined as the informal education and agricultural knowledge to the farmers (Byerlee, 1988). Currently, the arena of extension includes modern technology and methodology focusing the different aspects of rural life, particularly the field of agriculture. The significance of extension services is indubitable as most of the farmers had a meager knowledge of the significant ideas underlying substitute of pest control systems (Sinzogan et al., 2004), they get recommendations from public and private institutions constantly. However, the existence of public extension department has been just but due to several reasons it has come under immense pressure by the critics as Anderson and Crowder (2000) are strongly agreed to downsize and reform in extended services in Africa. Henk and Jiggins (2007) stated that policy of developing countries regarding the public to educate farmers in adopting the modern techniques is inappropriate. Allam (2004) elaborated a number of causes including ineffective extension services for technological transformation in Sudan. Abbott (1987) revealed that obstacles to

progress in Africa agriculture development are political commitments of governments, ethnic concerns and patronage interests because of official monopolies.

At the same time, the policies regarding agriculture credit in developing countries are not friendly therefore small farmers tend to attach with the local dealers to avail credit benefits (Mulyanto and Magsi, 2014). Agwu et al. (2008) have explained that although the agricultural policies of Pakistan are friendly to agriculture yet it is contrasted to the standard of sustainability. Lohano et al. (1998) divulged that credit policies in Pakistan are not friendly to provide farm credit to small and medium-scale landowners. Lori (1990) criticized that the agriculture credit policy in Central America does not collaborate the interests of both farmers and the wider circle of related elements in order to meet Integrated Pest Management. Dina (1997) examines the roles of public and private sectors in agricultural extension. He suggested that pluralistic extension approach would be appropriate system to confirm rational competition and sustain worth. Because some sorts of extension services involve public funding and others are by commercialized nature of farm client that can be provided by the private sector. Moreover, Temel (2004) emphasized that flexible executive approaches should be practiced for timely and operational collaboration with private organizations to strengthen the agricultural innovation system in public organizations of Azerbaijan.

The public agricultural extension involves skilled agricultural experts (often government employees) who teach advanced methods of farming, demonstrate innovations, and regulate farmer meetings to introduce the changing phenomena and agricultural policies. While, private firms try to provide services appropriate to their specialization or what the farmer wants and farmers respond if feel that service is beneficial to them (Mengal et al., 2014). In Pakistan, the impacts of different extension programs may be counted on finger tips (Syed et al., 1993). Kumbhar et al. (2012) have conducted a survey research of extension agents regarding information and reported that the majority of respondents perceived that lack of effective monitoring and weak linkages between research and extension department are the main causes of low productivity in the country.

In general, public extension activities are involved supply oriented activities and private institutions own rather demand oriented actions (Mirani and Memon, 2011). For example, the pesticide companies' representatives claim that they are providing much better advisory services to the farmers than the dealers and extension workers regarding profit and production but dealers are supposed to be more trustworthy among farmers. Keeping all this in mind, for this study the following objectives were developed to know the perceptions and practices of cotton farmers regarding extension services for their cotton crop. Specifically, (i) to investigate about the main sources of farm advisory services to cotton growers; (ii) To compare the cotton yield with different sources of farm advisory services; and (iii) to suggest policy prospects for sustainable agricultural development.

2. Methodology

In this descriptive research the perceptions were obtained on social issues and social facts concerning the current status of phenomena for describing the nature of existing conditions in a situation. Thus, district Tando Allahyar has been selected with the purpose to become the hub of cotton cultivation. The study area is fairly divided into three administrative regions or talukas i.e.

Tando Allahyar, Chamber and Jhando Mari, which contain a total of 19 union councils. The total area of selected district is 894 Sq.km and total population is 468442 as per 1998 census. Geographical area of district Tando Allahyar is 3775466.17 acres. Cultivated area is 245323 acres and uncultivated area is about 153160 acres (GOS, 2011).

Multistage cluster sampling technique was applied to select representative samples. Cluster sampling is economical and suitable for selecting a sample when the sampling frame of individual elements is not available (Anderson et al., 1993). After selecting the district Tando Allahyar, in following stage all the three talukas of district were selected for data collection. On the third stage, 60 respondents were randomly selected from three union councils (UC) of each Taluka. Thus, 60 cotton growers were selected as samples from each Taluka and finally worked out as 180 samples at 10 percent error rate and 95 percent confidence level.

This study was conducted as a social survey through structured and close ended questionnaire. For the purpose, predetermined questions were asked through a direct interaction process by the respondents in order to achieve the specific objectives. Mainly, data were collected during the cropping season of 2014-15, from the growers. Data was analyzed through SPSS (Statistical Package for Social Sciences). Descriptive and inferential statistical methods were used to achieve the meaningful results.

3. Results and Discussion

Results in the Table-1 presents the perception of cotton growers regarding occurrence frequency of different employees having the objectives to provide farm advisory services in the talukas of district Tando Allahyar. Furthermore, the overwhelming majority (75 percent) is FOs/TSOs/Agents from different pesticide companies has been mostly providing extension services to the cotton farmers in the study area. The frequent availability of different pesticide companies’ agents indicates enormous business activity of pesticides with huge competition.

Table-1. Taluka-wise Farm Advisory Services providers

| Tando Allahyar District | | | Advisory Services for Pesticides | | | | Total |
|-------------------------|----------------|---|----------------------------------|------------------|--------|------|-------|
| | | | Company Agents | Extension Worker | Dealer | None | |
| Taluka | Jhando Mari | N | 45 | 6 | 3 | 6 | 60 |
| | | % | 75 | 10 | 5 | 10 | 100 |
| | Chambar | N | 48 | 3 | 0 | 9 | 60 |
| | | % | 80 | 5 | 0 | 15 | 100 |
| | Tando Allahyar | N | 42 | 0 | 0 | 18 | 60 |
| | | % | 70 | 0 | 0 | 30 | 100 |
| Total | | N | 135 | 9 | 3 | 33 | 180 |
| | | % | 75 | 5 | 2 | 18 | 100 |

Besides that the most important department to provide extension services by the government i.e. the Agricultural Extension Department is not playing its due role in the study area as replied by the farmers, indicating a meager contribution of 5 percent in farm advisory services. However,

18 percent farmers informed that no any advisory agent makes them contact for farm advisory services. Non-availability of extension services might because of either remote area allocated for cotton crop by the growers or become defame of the farmer in the area. Nonetheless, no any farmer reported to refuse the application of pesticides to their cotton crop.

Table-2. Production wise cotton farmers' perception regarding best source of information

| Yield/Maund Per Acre | | Production wise Reliance of Farmers on Different Sources | | | | | | Total |
|----------------------|---|--|---------|--------|------------------|------|--------|-------|
| | | Company Agent | Company | Dealer | Extension Worker | Self | Farmer | |
| 61-70 | N | 6 | 0 | 3 | 3 | 0 | 0 | 12 |
| | % | 50 | 0 | 25 | 25 | 0 | 0 | 100 |
| 51-60 | N | 6 | 3 | 6 | 0 | 3 | 0 | 18 |
| | % | 33 | 16 | 33 | 0 | 16 | 0 | 100 |
| 41-50 | N | 21 | 3 | 9 | 0 | 3 | 0 | 36 |
| | % | 58 | 8.3 | 25 | 0 | 8.3 | 0 | 100 |
| 31-40 | N | 3 | 3 | 24 | 0 | 3 | 15 | 48 |
| | % | 6.3 | 6.3 | 50 | 0 | 6.3 | 31.3 | 100 |
| 21-30 | N | 6 | 6 | 36 | 3 | 0 | 3 | 54 |
| | % | 11.1 | 11.1 | 66.7 | 5.6 | 0 | 5.6 | 100 |
| Upto 20 | N | 3 | 0 | 6 | 3 | 0 | 0 | 12 |
| | % | 25 | 0 | 50 | 25 | 0 | 0 | 100 |
| Total | N | 45 | 15 | 84 | 9 | 9 | 18 | 180 |
| | % | 25 | 8.3 | 46.7 | 5 | 5 | 10 | 100 |

Table-2 shows the cotton farmers' production wise perception regarding the most reliable source of information in order to select pesticides. The results show in Table2 that the majority about 47 percent growers prefer dealers' implication for application of pesticides to their cotton crop. Followed by one fourth (25 percent) second majority of farmers rely on pesticide company agents for purchasing of pesticides. And exactly 10 percent (eighteen out of one hundred eighty) farmers believe in seeing to adopt the innovation. After that, slightly more than 8 percent farmers prefer to purchase the pesticide products of multinational companies or the company of repute. They showed their intentions of no compromise over the brands of pesticides even the representative of that company fails to contact them. Only 5 percent farmers feel that representatives of extension department are capable enough to handle the pest problems of their cotton crop. At the same time, the same quantity 5 percent (nine out of one hundred eighty) farmers do not rely upon any mentioned segment. They gather knowledge from other sources and use their logic to select the product.

Further investigation exposed that about 7 percent farmers claimed the highest average yield in between 61-70 maunds/acre, followed by 10 percent farmers got average yield in between 51-60 maunds/acre. The data revealed that majority about 77 percent of cotton growers claimed their

average yield in between 21-50 maunds/acre. The results of the study indicate that though the average yield of cotton has progressed as compared to last decade but not significantly enough.

Although majority of the cotton growers rely on dealers for different reasons but we can see in the Table-2 that 37 percent (sixty six out of one hundred eighty) farmers with high average production 41-70 maunds/acre consider the prescription of company agents. Among the sixty six farmers exactly half of them act upon company agents' advice followed by eighteen respondents have faith in dealers. While, six farmers have strongly believe in particular company product and same quantity of growers go with their own choice in selection of products.

Table-3. Perception of cotton growers regarding public and private agricultural facilitators

| | Agril. Knowledge | | Extension Services | | Credit Facility | | Reliability | |
|------------------------|------------------|------|--------------------|------|-----------------|------|-------------|------|
| | Mean | SD | Mean | SD | Mean | SD | Mean | SD |
| Dealers | 1.75 | 0.87 | 0.21 | 1.07 | 3.86 | 0.18 | 3.18 | 0.29 |
| Extension Worker | 2.63 | 0.95 | 0.21 | 0.36 | 0.00 | 0.00 | 1.16 | 0.97 |
| Company Representative | 3.87 | 0.69 | 3.80 | 0.21 | 0.13 | 0.86 | 2.83 | 0.52 |

Scale: 0=Nil, 1=Below Average, 2=Average, 3=Good and 4=Excellent

The cotton growers were asked about the knowledge, extension services, credit facility and reliability of pesticide dealers, extension workers and company representatives for cotton crop as provided in Table-3. The mean scores reported in the Table-3 were computed from responses on a 5-Point Likert-scale, ranging from 0 = Nil, 1 = Below Average, 2=Average, 3=Good and 4 = Excellent. The results revealed out that majority of the respondents (Mean=3.87, SD=0.69) perceive that different pesticide representatives have more knowledge than the extension workers (Mean=2.63, SD=0.95) and dealers (Mean=1.75, SD=0.87). Regarding extension services, representatives of various pesticide companies (Mean=3.80, SD=0.21) undoubtedly providing extension services with no comparison to other mentioned segments. Dealers (Mean=3.86, SD=0.18) are supposed to be a good source of credit facility to purchase pesticides for their cotton crop. As far as reliability of the different sources are concerned, dealers (Mean=3.18, SD=0.29) lead in this respect, followed by company representatives (2.83) and extension workers (1.16).

4. Conclusion and Recommendations

The study was mainly designed to know about the extension services provided by different sectors (Public and Private) through the perceptions of cotton growers of district Tando Allahyar, Sindh province of Pakistan. Using multi-stage cluster sampling, the data were collected directly through the cotton growers at 10 percent error rate and 95 percent confidence interval. The data were collected in July 2015 and recorded the information on the 2014-15 cropping season. It was disclosed during the survey that almost all the cotton growers were growing Bt cotton marketed

by different local seed companies and the majority of them showed their satisfaction over Bt cotton production as compared to Non-Bt local varieties.

An overwhelming majority (75 percent) is FOs/TSOs/Agents from different private pesticide companies has been regularly providing extension services to the cotton farmers in the study area. While, a public sector department is not in line in the study area as replied by the farmers, indicating a meager quantity 5 percent showing its share in farm advisory services. Interestingly, the highest majority about 47 percent, growers prefer dealers' inference for application of pesticides to their cotton crop. Followed by one fourth, 25 percent, the second majority of farmers rely on pesticide company agents for purchasing of pesticides for their cotton crop. Only 5 percent farmers feel that representatives of extension department are capable enough to handle the pest problems of their cotton crop. The results of the study revealed that a dealer is supposed to be a more reliable source for agricultural advices irrespective of their non-agricultural background. The honor is given to them because of credit facility that offered to farmers. As, only few farmers purchase pesticides on cash either from dealers or companies directly.

Only 7 percent farmers claimed the highest average yield in between 61-70 maunds/acre, followed by 10percent farmers indicated average yield in between 51-60 maunds/acre. Subsequently, 20 percent of cotton growers claimed the average yield in between 41-50 maunds/acre. More comprehensively, the thrashing majority about 77 percent of cotton growers claimed their average yield in between 21-50 maunds/acre. The results further revealed out that majority of the respondents (Mean=3.87) perceive that different pesticide representatives have more knowledge. Representatives of various pesticide companies (Mean=3.80) undoubtedly providing extension services with no comparison to other mentioned segments. Dealers (Mean=3.86) are supposed to be good source of credit facility to purchase pesticides for their cotton crop. And, dealers (Mean=3.18) are considered more reliable followed by company representatives (2.83) and extension workers (1.16).

To purchase pesticides on a credit system for their cotton crop is also supposed to be a cultural practice in the study area. Because, most of the farmers prefer to purchase pesticides on credit even they can afford the cash. So, the emerging role of pesticide dealers cannot be denied these days. Credit facility to growers last for 6-8 months, as cotton crop is sown in the area in April and picked up in December. Moreover, some farmers commented that dealers only pass on credit facility for farmers received by various companies for the same. Although, company representatives are more competent and have relevant background than the dealers yet the question arise "why the majority of farmers do believe in dealers than the representatives as a good source of information regarding pesticide selection?" The possible answer may be credit facility on flexible terms and conditions given to the growers. The other reason is a long list of prescriptions given by the representatives of different companies all at once leads the growers to confusion in the selection of appropriate one. While, consulting of cotton growers with the dealer is the simple way to solve the brand puzzle.

Effective operational collaboration with private organizations is suggested to strengthen the agricultural innovation mechanism. Dealers should be trained on a regular basis by the agricultural extension department and pesticide companies about the pest control strategies so they may be able to counsel farmers accordingly. Government must restrict the dealers to give

internship to the fresh agriculture graduates instead of appointing irrelevant employees. By doing so, all the stakeholders could be benefited at the same time.

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