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ASSESSMENT OF PROBLEMS AND THEIR POSSIBLE SOLUTIONS REGARDING RICE GROWING: A TRIANGULAR RESEARCH IN TEHSIL SHEIKHUPURA

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ABSTRACT

Rice is the staple food for more than half of the papulation and its importance cannot be ignored. Rice crop have important contribution in the food security. The main aim of the study was to explore the different problems faced by the rice growers and its possible solution to enhance the production of rice grower. The current study was conducted in tehsil Sheikhupura, Punjab, Pakistan from September 2016 to August 2018. Tehsil Sheikhupura comprises of 39 union councils. Out of 39 UCs five union councils were selected at randomly, from selected five UCs two villages were selected from each selected UCs, thus total 10 village was selected A list of registered rice growers was collected from the office of Deputy Director Agriculture (Extension) Sheikhupura. From registered grower 120 rice grower were selected randomly due to limitation of research time and resources. a well prepared and well-structured interview schedule was developed for quantitative research and a focus group interview guideline was prepared for focus group discussion. Results revealed that majority (37.5%) of the respondents were middle age. More than one third (35.8%) of the respondents education were above matric. Half (58.3%) respondents had small land. Majorities of the respondents were cultivated area up to 12.5 acres. Climate effects during crop harvesting were more as compared to crop protection with mean value 4.2. Correlation coefficient value which was .243 that showed significant and positive relation between information and low yield. $P < 0.05$, this mean that lack of information lead to low yield. During crop harvesting lack of finance was at rank 1st with mean 4.16 ± 1.13. Government should warn the farmers about the weather condition at proper time, so they arrange possible preventive measures. Provision of disease free seeds for the cultivation of rice by the government. There should be no adulteration in any inputs because it causes low production. Provision of good rates of produced crop. Market problems must be solved by market committee. Minimize the role of middle man.

KEYWORDS: Crop protection; rice; information; yield; alternative solution; Pakistan

INTRODUCTION

Agriculture is one of leading field and backbone of Pakistan economy. It contributes around 19.3% to the GDP of nation. Considered value addition of rice crop in agriculture is 3.1% and 0.6% in gross domestic products(GDP) in agriculture sector.About 38.5% of labor force of the country is directly or indirectly link with agriculture sector. In Pakistan rice is the second main crop after wheat. Pakistan is researching for high yielding varieties of rice to meet the high demand of population (GoP. 2020).

However, Javed *et al.* (2020) stated that Pakistan's farming community is facing many challenges regarding rice marketing due to poor governance and polices. He further concludes that costly transport facilities, low quality of produced crop, lack of awareness are the major issues faced by the rice growers. Furthermore, marketing, issues faced by growers, some of them are; poor infrastructure of roads from farm to market, discouragement of cooperative marketing, lack of regulation regarding weights, health and safety measures, limited storage capacity and lack of organized marketing system (Jan and Khan 2019).

Transplantation and direct seedling is major practices followed in Pakistan. In this method nursery is grown in a field after one month it is transplanted to other fields, this traditional method has several disadvantages i.e. line to line distance is not followed; recommended plant population may disturbed by which plant population can't be determined and result in low yield. In dry spell condition direct seeding is mainly practiced for rice sowing which evacuates all these conceivable troubles

(Bakhsh *et al.,* 2018). Rabi and Kharif cropping season is mostly followed in Punjab Pakistan. April- June is best for Kharif season to obtain high yield and favorable environment for Kharif crops harvesting is done in the long stretches of October and December; and Rabi season begins from months of October-December and end in April-May (GoP, 2017). Basmati rice is famous in all over the world for its special aroma. It is widely grow in the vast geographical area in the Sindh and Punjab territories of Pakistan (Wagan *et al.,* 2016).

Rice is the staple food for more than half of the papulation and its importance cannot be ignored. Rice crop have it importance contribution in the food security. Rice crops are grown over more than one hundred countries. Regarding the wider scope and highest yield in 2004 FAO declared the year of rice. Due to its wider scope and demand worldwide among cereal crop it is the 3rd largest crop grown in term of area. In Pakistan it is not consider as staple food considerable quantity of rice is exported to other countries to earn foreign exchange. In Pakistan 15.30 kg/year is the consumption (Ahmed *et al.,* 2016).

Low quality seed, seasonal variation of rain fall spell, lack of modern irrigational technique, poor quality of fertilizers, inappropriate research methodologies followed by extension field staff, limited resources and vast geographical area covered by extension staff, inadequate research efforts by researchers are also the main causes of low yield in Pakistan. Beside this improper cultivation method, high price of cultivation, shortage of canal irrigation system, lack of credit and facilities and high price of inputs are the major problem for the rice grower in the study area. Lack of knowledge toward innovative technology is the major factor effecting the crop yield and production (Alamyar and Boz, 2018).

The study explored the different challenges faced by the rice growers in study area and its effect on the crop yield and the possible solution for the problems faced by the rice grower was also identified. Study also helped the government official as well as policy maker to make the possible recommendation to overcome the problems with the collaboration of the other agricultural working department to enhance the rice crop production and to enhance their living standard and improve the per- capital income of the respondents.

MATERIALS AND METHODS

Researchers of social sciences opposed with the issue of notion (conception) and measurement. Khan (2007) reported that from the selection of suitable method for solving the issue was a main part of researcher's methodology. The research was survey and descriptive type in nature. The research is qualitative as well as quantitative. The cross-sectional research design was used in study. The observational study was conducted in tehsil Sheikhupura, Punjab, Pakistan from September 2016 to August 2018. Tehsil Sheikhupura comprises of 39 union councils. Out of 39 UCs five union councils were selected at randomly, from selected five UCs two villages were selected from each selected UCs, thus total 10 village was selected A list of registered rice growers was collected from the office of Deputy Director Agriculture (Extension) Sheikhupura. From registered grower 120 rice grower were selected randomly due to limitation of research time and resources. a well prepared and well-structured interview schedule was developed for quantitative research and a focus group interview guideline was prepared for focus group discussion. Research instrument was pretested on 20 respondents (that was not the part of final data collection) to check the validity and reliability of the research instrument. Further correction and changing was done by discussion with the experts in University of Agriculture Faisalabad. Two focus group discussions were conducted in research area for qualitative research. First focus group discussion was with the currently working agriculture field staff in their offices and second focus group was done with the key informant (local leader, social worker, contact farmer) in the study area. Each focus group comprised 8-10 members. Discussion time was 60-80 minute. The discussion was recorded with electronic device for further record. The quantitative data was analyzed by usisng computer software Microsoft excel and statistical package for social sciences (SPSS) while qualitative study was analyzed by sing content analysis method

RESULTS AND DISCUSSION

Demographic attributes has impact on the behavior and attitude of the respondents toward the farm practices (Issa and Hamm 2017). Issues and adoption of innovation related agriculture work. Table 1 indicated that mainstream of the respondents were of middle age. Agriculture was a laborious profession and it need young and energetic person. Less than one-third (31.7%, 57.5%) of respondent were old and young respectively according to their age category. More than one third (35.8%) of the respondent's education was above matric. Less than one third (30.8%) respondents were up to matric. Less than one fourth (20.8%) respondents were up to middle. Few respondents (3.3%) were up to primary, peoples were now aware the power of education so their first priority was to give education to their children. Few of them (9.2%) had no basic education. More than half (21.1%) respondents had small capacity of land holding which was up to

12.5 acres, followed by less than one third (36.6%) had medium capacity of land holdings which was 12.5 to 25 acres. Few (19.7%) had large land holding (more than 25 acres).

Table 1. Distribution of respondents according to demographic characteristics

Variable	Category	F	Percentage
Age	Young (18- 25)	37	30.8
	Middle (26-40)	45	37.5
	Old (Above 40)	38	31.7
Education	Illiterate	11	9.2
	Primary	4	3.3
	Middle	25	20.8
	Metric	37	30.8
	Above metric	43	35.8
Farm size	Small farmer (up to 12.5 acre)	15	21.1
	Medium farmer (12.5 to 25 acre)	26	36.6
	Large farmer (Above 25 acre)	14	19.7

Furthermore, Table 2 depicts factor wise comparison of crop protection and crop harvesting. Mean value 4.51 in case of crop protection was higher than crop harvesting which showed that lack of labour were major issue in crop protection as compared to harvesting. Similarly, lack of finance with mean value 4.17 showed that financial problems were more during crop harvesting as compared to crop protection. A climate effect during crop harvesting season was more with mean value 4.2. Overall results are significant beside lack of finance of crop protection and crop harvesting the study results were in line with (Aydin *et al.,* 2010) who concluded that the gap between probable production and actual production is dreadful. There is information gap among farming community, a path way towards adapting new technology, inefficient use of resources, and lack of inputs and funds due to high illiteracy rate that affect the production.

However, Table 3 revealed the association between lack of information and low yield. Correlation coefficient value which was .243 that showed significant and positive relation between information and low yield. $P < 0.05$, this means that lack of information lead to low yield. The study was in line with (Baloch and Thapa, 2018) who identified that lack of information or information gap about the production technology i.e. balance use of fertilizer, sowing time, cultivation practices, farm management practices, irrigation at proper time, pure seed, cultivation methods, post harvesting technology, adoption of innovation, environment variation and research methods directly affect the crop yield.

Focus group discussion with the farming community one of the respondents said that “low quality of pure seed and fertilizer was the major issue in our area. Farming community has less information about the seed rate, time of fertilizer application, farm management practices and crop rotation that are the major causes of their low yield in our area. Impurity of pesticides is the other major problem in this area.”

Moreover, Table 4 indicates that there were many problems faced by the farmers for harvesting of rice crop. They were ranked 1 to 5 as the problem of lack of finance were ranked at 1st with mean value (4.16 ± 1.13), unawareness about harvesting method ranked at 2nd with mean value (4.10 ± 1.19), (3.92 ± 1.11) and (3.90 ± 0.94) lack of labor, climatic effect, respectively and expensive machinery with mean value ranging from (3.70 ± 1.13), respectively. Lack of finance was a big issue which was faced by most of the farmers. For this reason they could not afford new machinery or even pay their rents. The lack of education, plant security measures, composts and land arrangement were the primary variables which influence the yield of rice. It is a troubling point that paying little respect to recognized increment in rice production, the nature of rice is as yet declining (Hassan and Maqbool, 2005). The lack of finance, less conspiracy and absence of awareness and inaccessibility of adequate measure of compost and insecticides were the variables that hindered the appropriation of enhanced agrarian practices which eventually influenced the production of rice (Ahmad, 2000). Although number of extension associations working under open and private area to disperse cutting-edge data with respect to rice to the farmers however comes about are not productive so for. Poor farmers frequently have a tendency to be excluded from the general population and private division agricultural extension administrations for a variety of reasons (Bajwa, 2004).

It depicted from the Fig. 1 that there were many alternative strategies for rice crop. Loan taking strategy was at the top $\bar{x} = 3.83$ because in the present situation it was necessary for the farmers to take loans from the banks but without any increment on money. For small farmers government gave the loans to the farmers without any interest by keeping the condition to have to return the amount after some time. In case of weeds attack $\bar{x} = 3.6$ growers agreed there should be good quality of weedicides and good quality of pesticides were having mean value $\bar{x} = 3.55$. To increase the farm system resilience the strategy of crop rotation were having mean value $\bar{x} = 3.5$, availability of inputs on time had mean value $\bar{x} = 3.40$. Another strategy information about weeds having mean value $\bar{x}$ =

Table 2. Factor wise comparison of crop protection and crop harvesting

Factor	Group	Mean	Std. Deviation	T	Sig. (2-tailed)
Lack of labour	Crop protection	4.51	1.303	3.402	.001
	Crop harvesting	3.98	1.119	3.402	.001
Lack of finance	Crop protection	4.12	1.298	-.318	.751
	Crop harvesting	4.17	1.133	-.318	.751
Climate effect	Crop protection	4.20	1.01663	2.764	.006
	Crop harvesting	3.9083	.94376	2.764	.006
Expensive labour/ machinery	Crop protection	4.0417	1.16961	2.297	.022
	Crop harvesting	3.7000	1.13463	2.297	.022

Table 3. Association between lack of information and low yield

Correlation		Lack of information source	Low yield
Lack of information source	Correlation coefficient	1.000	.243**
	Sig. (2-tailed)	0.00	.007
	N	120	120
Low yield	Correlation coefficient	0.243**	1.000
	Sig. (2-tailed)	0.007	.
	N	120	120

P < .05 ** = Highly significant (5%)

Table 4. Ranking of respondents according to the problems regarding rice crop

Factors regarding crop Harvesting	Mean ± SD	Ranking
Lack of finance	4.16 ± 1.13	1
Unawareness about harvesting method	4.10 ± 1.19	2
Lack of labour	3.97 ± 1.11	3
Climatic effect	3.90 ± 0.94	4
Expensive machinery	3.70 ± 1.13	5

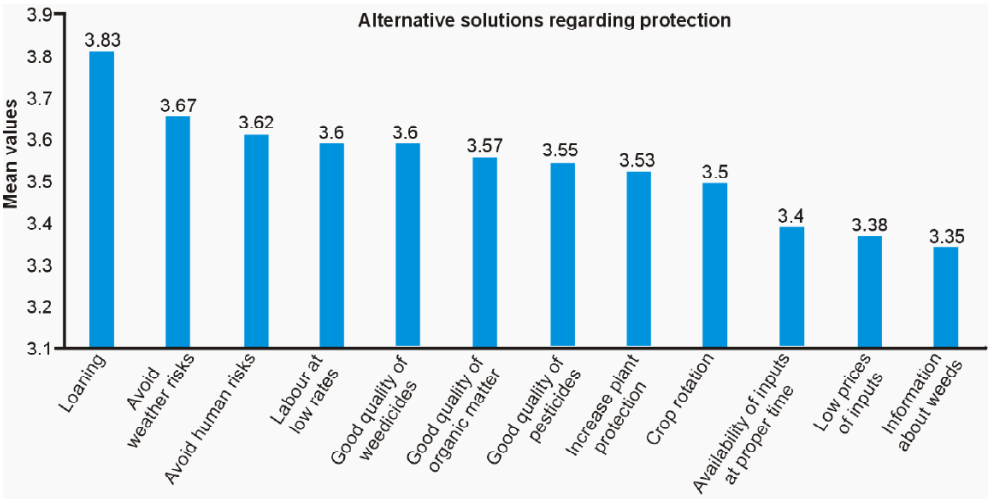

Fig. 1. Ranking of respondents according to the strategies for rice growers

3.35, which is the dire need for the farmers to help in protection of plants and increase in productivity. Haque (2002) concluded that it is necessary to advance the agriculture division rendering to the existing condition which was not at present day. It is very important for the department of agriculture that to find out the issues which are responsible for the declining of yield. There is a need to adopt new technologies regarding the all sectors for the production. Iqbal *et al.* (2001) expressed that suitable availability of proper inputs like pesticides seed, weedicides, increase quality, fertilizer and crop output. Certain physical features for example uncontaminated seed, land preparation, good quality of irrigation and protection of plant measures which expand the value of rice yield.

CONCLUSION

Mostly farmers were illiterate and had small land holdings. Mostly respondents argued that they faced shortage of canal water. Small farmers cannot afford new innovation due to financial problem, other than this they had less information about the latest innovation and information about the rice crop production technology. In focus group discussion they discussed that govt. should support to boost up this sector by subsiding the farming community. They should monitor and ensure

the inputs supply to the farmers and make access to the modern market. Furthermore extension field staff also suggested that policy maker should develop the policies according to framers demand and problems they are actually facing at gross root level and there should be strong triangulation collaboration among different agricultural institutes and farming community.

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CONTRIBUTION OF AUTHORS

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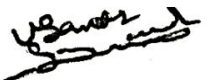
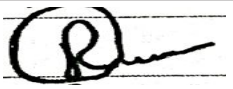
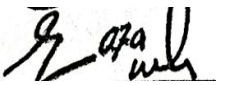
2.	Muhammad Usama Saeed	Designed the study and wrote-up the manuscript	
3.	Sohaib Usman	Collect the data	
4.	Rakhshanda Kousar	Proof read the mansucript	
5.	Raza Ullah	Helped in manuscript wrote-up	
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