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Full Length Research Paper

An assessment of main problems faced by farming community in sugarcane production of district peshawar

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The present study is an assessment of main problems faced by farming community in sugarcane production of district Peshawar. The study was based on primary data gathered from randomly selected four villages namely Khazana Bala, Khazana Payan, Nasapa Bala and Nasapa Payan from district Peshawar. The main objective of the study was to highlight the problems of farming community in sugarcane production in the study area. The data was collected through well-structured interview schedule using a sample size of 80 farmers allocating proportionally to the villages. For analysis of data, SPSS software was used. The data shows that majority (51%) respondents were in the age group of 31-45 years. The illiteracy rate among the farmers was high as seventy six percent respondents were un-educated. It is concluded from the study that the main problems faced by the farmers regarding sugarcane production were; lack of irrigation water, non-availability of improved varieties of sugarcane, land preparation, high cost of inputs, diseases and insect pest, weeds and marketing problem. It is recommended that the provincial government should handle the water-management in the study area by allocating more funds for irrigational purposes to address the problems of the farmers. Agricultural inputs should be provided to the farmers on subsidized rates and provision of high yielding varieties of sugarcane at the right time and reasonable price in local markets must also be ensured.

Key words: Farming community, sugarcane, production, district peshawar, variety.

INTRODUCTION

Sugarcane (*Saccaharum officinarum*) is a crop of Graminae family. It is a perennial grass having tall height with culms consistently dispersed or gathered in stools of 5-10 inch in size or more. The size of the stem/stalk is 1-2 inches in diameter and might be 10-15 feet in height under tropical climatic circumstances. It is a tropical plant that generally needs 8-14 months to become mature. Sugarcane requires high temperature up to 8-12 months or may be more for its quick growth in a year (Jan, 2001). Sugarcane as a cash crop is of great importance in Pakistan and is grown on an area of approximately one million hectares with overall cane production of fifty eight million tons (PBS, 2013). The average yield of cane in the country stays about fifty five tons per hectare indicating a difference of 43% to 66% sugarcane yield compared to other countries like China, Brazil, India and USA. Sugarcane in Khyber Pakhtunkhwa (KP) province is cultivated on an area of 98,200 hectare, with overall production of 4.4 million tons respectively. In Khyber Pakhtunkhwa, the production of average cane yield is 44 tons per hectare which is less than 20% of the countrywide average yield (MINFAL, 2012). The importance of sugarcane crop cannot be ignored because it has a major role in uplifting the socio-economic standards

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of the farming community of Khyber Pakhtunkhwa and Central Punjab province consequently contributes to economy of Pakistan (Munir *et al*., 2009).

The problems that influence the sugarcane production are size of land, education, sluggish extension services and delivery of trainings, lack of finance with farmers, lack of latest agro-technical methods, hesitancy in adopting modern techniques, lack of knowledge regarding agricultural inputs and their un-availability, irrigational water, pesticides, good quality varieties of seeds, modern machinery, lack of information sources, little know-how regarding marketing, top down programs by government, political intrusion and numerous problems are confronted by the farmers (Iqbal, 2006). According to (Nazir *et al.,* 2013) there are several problems like increased rates of inputs, low return of output, payments delay and little knowledge about scientific methods which affects production of sugarcane.

The present study was conducted to highlight the main problems of the farming community in sugarcane production in union council khazana, Peshawar Khyber Pakhtunkhwa, Pakistan.

MATERIALS AND METHODS

The present study was conducted in Peshawar district of Khyber Pakhtunkhwa (KPK). Khazana is one of the union councils of district Peshawar. The union council khazana consists of 6 villages namely Khazana Bala, Khazana Payan, Nasapa Bala, Nasapa Payan, Wahid Garhi and Toda. The major crops grown here are wheat, sugarcane, and maize. Khazana was selected purposively as it has more number of sugarcane farmers. Sampling for the study was done by identifying the number and names of total villages in the selected union council, out of which four villages were selected randomly. In order to select respondents from each village, proportional allocation technique was used. The overall number of respondents was eighty (80). An interview schedule was organized keeping in view objectives of the study. Primary data were gathered by interviewing the respondents on their farms and hujras with the help of pre-tested interview schedule.

RESULTS AND DISCUSSION

Age

Table 1 reveals that majority (51%) respondents in the research area fell in the age group of 31-45. This was the dominant age of the respondents in the study area and hence were keenly involved in farming activities followed by (23%) in the age group of 46-55 and (19%) up to 30 years of age. According to Haruna and Kushwaha (2003) the upper age group that is 31-45 could be considered as productive age bracket.

Education

Table 2 reveals that 76% respondents in the study area were illiterate and rest of the respondents that are 24% were literate. Out of literate, 16% were up to primary and 8% respondents were up to middle level of education. No literate individual was available above middle level of education in the list of respondents. The data depicts that overall literacy level is disappointing.

Area under Sugarcane Cultivation

Table 3 shows that 63% of the respondents have cultivated sugarcane crop in an area below 5 acres whereas, 30% respondents have cultivated between 5-10 acres and 8% have cultivated on more than 10 acres. It was observed that majority of the farmers did not cultivate sugarcane crop in their whole land because of so many problems. According to Lodhi and Kamil (2000) who reported that area under sugarcane cultivation was reducing, as farmers are shifting to other crops cultivated in Peshawar.

As the P value 0.38 which is greater than 0.05, it shows that there is non-significant association between Educational Status of the respondents and area under sugarcane crop. It means the educational status has no relation between the area under sugarcane crop by the farmers of the study area.

Instruments/machines used for the preparation of land

The values given in Table 5 shows that 41% respondents were using old methods for the preparation of land i.e. bullocks and 59% were using tractors. The reason for this was the high charges of machinery, un-availability of machinery and unawareness about modern agricultural technology. It was observed that some farmers in the study area were not willing to adopt modern technology. They preferred traditional methods compared to modern methods. These findings are in line with Muhammad *et al.* (2001) that one of the causes for low yield per hectare of crops was the non-adoption of recommended agricultural technologies.

As the P value is 0.885 which is greater than 0.05, it shows that there is non-significant association between Educational status and use of Instruments / Machinery.

How long cultivating sugarcane/farming experience

The data presented in Table 7 shows that 6% of the total respondents were cultivating sugarcane crop from the last 5 years. However, 20% of the respondents were

Proportional allocation of sample respondents.

S.No	Name of villages	Total sugarcane growers	No. of sample respondents
1	Khazana Bala	80	26
2	Khazana Payan	52	17
3	Nasapa Bala	77	25
4	Nasapa Payan	37	12
Total		246	80

Table 1. Distribution of Respondents Regarding their Age.

Villages	Age in years				Total
	Upto30	31-45	46-55	Above 55	
Khazana Bala	1(4)	14(54)	8(31)	3(12)	26(100)
Khazana Payan	4(24)	10(59)	3(18)	0(0)	17(100)
Nasapa Bala	8(32)	12(48)	5(20)	0(0)	25(100)
Nasapa Payan	2(17)	5(42)	2(17)	3(25)	12(100)
Total	15(19)	41(51)	18(23)	6(8)	80(100)

Source: Field Survey 2013.
The values in parenthesis are percentages.

Table 2. Distribution of respondents regarding their Educational status.

Villages	Educational Status			Total
	Illiterate	Primary	Middle	
Khazana Bala	19(73)	4(15)	3(12)	26(100)
Khazana Payan	12(71)	4(24)	1(6)	17(100)
Nasapa Bala	19(76)	4(16)	2(8)	25(100)
Nasapa Payan	11(92)	1(8)	0(0)	12(100)
Total	61(76)	13(16)	6(8)	80(100)

Source: Field Survey 2013
The values in parenthesis are percentages.

cultivating it from last 6-10 years and 74% for more than 10 years. It was observed that maximum respondents (74%) knew the importance of sugarcane and sugarcane crop was one of the sources of income for them. According to Khushk (2008) sugarcane is main cash crop of Pakistan and a vital source of income and service for the agricultural community during the year.

Future prospects of farmers about sugarcane in their area

The data in Table 8 depicts that 43% respondents in the study area said that the future prospect/scope of sugarcane is good, 51% respondents said that the future prospect is average and 6% respondents said that the

Table 3. Distribution of respondents regarding their area under sugarcane cultivation.

Villages	Area under sugarcane cultivation			Total
	Below 5 acre	5-10 acre	More than 10 acre	
Khazana Bala	14(54)	7(27)	5(19)	26(100)
Khazana Payan	10(59)	6(35)	1(6)	17(100)
Nasapa Bala	17(68)	8(32)	0(0)	25(100)
Nasapa Payan	9(75)	3(25)	0(0)	12(100)
Total	50(63)	24(30)	6(8)	80(100)

Source: Field Survey 2013
The values in parenthesis are percentages

Chi-Square Test
Table 4. Relationship between educational status of the respondents and their area under sugarcane crop.

Educational Status	Area Under Sugarcane Crop			Total
	Below 5 Acre	5-10 Acre	More than 10 Acre	
Illiterate	37	19	5	61
	46.25	23.75	6.25	76.25
Primary	7	5	1	13
	8.75	6.25	1.25	16.25
Middle	6	0	0	6
	7.5	0	0	7.5
Total	50	24	6	80
	62.5	30	7.5	100

d.f=4
Chi square is 4.166 with P value 0.38.

Table 5. Distribution of respondents regarding their use of Instruments/Machines.

Villages	Instruments/Machines		Total
	Bullock	Tractor	
Khazana Bala	11(42)	15(58)	26(100)
Khazana Payan	8(47)	9(53)	17(100)
Nasapa Bala	9(36)	16(64)	25(100)
Nasapa Payan	5(42)	7(58)	12(100)
Total	33(41)	47(59)	80(100)

Source: Field Survey 2013
Note: The values in parenthesis are percentages

future prospect of sugarcane is less in their area. This shows the farmers interest and importance of sugarcane crop in the study area.

As the P value 0.17 which is greater than 0.05, it shows that there is non-significant association between farming experience and farmers' perception about future prospects

Table 6. Relationship between educational status of respondents and use of instruments machines for the preparation of land.

Educational Status	Instruments Machines		Total
	Bullocks	Tractors	
Illiterate	26	35	61
	32.5	43.75	76.2
Primary	5	8	13
	6.25	10	16.2
Middle	2	4	6
	2.5	5	7.5
Total	33	47	80
	41.25	58.75	100

d.f=2
Chi square is 0.244 with P value 0.885.

Table 7. Distribution of respondents regarding how long cultivating sugarcane crop.

Villages	How long cultivating sugarcane			Total
	From last 5 years	From last 6-10 years	More than 10 years	
Khazana Bala	0(0)	5(19)	21(81)	26(100)
Khazana Payan	0(0)	2(12)	15(88)	17(100)
Nasapa Bala	5(20)	7(28)	13(52)	25(100)
Nasapa Payan	0(0)	2(17)	10(83)	12(100)
Total	5(6)	16(20)	59(74)	80(100)

Source: Field Survey 2013
Note: The values in parenthesis are percentages.

Table 8. Distribution of respondents concerning future prospects about sugarcane crop in their area.

Villages	Future Prospects of sugarcane crop			Total
	Good	Average	Less	
Khazana Bala	11(42)	13(50)	2(8)	26(100)
Khazana Payan	8(47)	9(53)	0(0)	17(100)
Nasapa Bala	10(40)	12(48)	3(12)	25(100)
Nasapa Payan	5(42)	7(58)	0(0)	12(100)
Total	34(43)	41(51)	5(6)	80(100)

Source: Field Survey 2013
The values in parenthesis are percentages.

of sugarcane crop. It means the farming experience has no relation with the future prospects of sugarcane crop grown by the farmers of the study area.

Problems faced in Sugarcane Production

The data in Table 10 shows that (4%) respondents faced non-availability of improved variety problem in the study area whereas, (78%) faced lack of irrigation water, (94%) faced land preparation problem. Data depicts that all respondents i.e. (100%) faced high cost of inputs and marketing problem. Due to these problems, the land under sugarcane is decreasing which is affecting the socio-economic status of the farmers and also influence overall production of the country.

Diseases and insect/pest problem

The data in Table 11 reveals that 100% respondents were facing diseases and insect/pest problem in their

Table 9. Relationship between farming experience of the respondents and future prospects of Sugarcane Crop.

How long cultivating Sugarcane	Future Prospects of Sugarcane Crop			Total
	Good	Average	Less	
From Last 5 Years	1	2	2	5
	1.25	2.5	2.5	6.25
From Last 6-10 Years	9	7	0	16
	11.25	8.75	0	20
More Than 10 Years	24	32	3	59
	30	40	3.75	73.75
Total	34	41	5	80
	42.5	51.25	6.25	100

d.f=4
Chi square is 11.996 with P value 0.17.

Table 10. Distribution of respondents according to their problems faced in sugarcane production.

Villages	**Problems faced in Sugarcane Production**									
	Non Availability of Variety		**Lack of Irrigation water**		**Land Preparation problems**		**High Cost of Inputs**		**Marketing Problems**	
	Yes	**No**	**Yes**	**No**	**Yes**	**No**	**Yes**	**No**	**Yes**	**No**
Khazana Bala	0	26	17	9	23	3	26	0	26	0
Khazana Payan	0	17	12	5	15	2	17	0	17	0
Nasapa Bala	2	23	23	2	25	0	25	0	25	0
Nasapa Payan	1	11	10	2	12	0	12	0	12	0
Total	3 (4)	77 (96)	62 (78)	18 (22)	75 (94)	5 (6)	80 (100)	0 (0)	80 (100)	0 (0)

Source: Field Survey 2013.
The values in parenthesis are percentages.

Table 11. Distribution of respondents regarding diseases and insect/pest in their crop.

villages	**Diseases & insect/pests problem**		**Total**
	Yes	**No**	
Khazana Bala	26(100)	0(0)	26(100)
Khazana Payan	17(100)	0(0)	17(100)
Nasapa Bala	25(100)	0(0)	25(100)
Nasapa Payan	12(100)	0(0)	12(100)
Total	80(100)	0(0)	80(100)

Source: Field Survey 2013
Note: The values in parenthesis are percentages.

sugarcane crop. It shows that the diseases and insect/pests was a major problem in the study area. These are in agreement with result of Akhtar and Akhtar (2002) who reported that among the factors responsible to low cane yield at farmers` fields are high weed infestation, improper time of planting, water un-availability and insect pests damage to the crop.

Chemical measures to control diseases & insect/pest

The data presented in Table 12 shows that 36% respondents were using chemical sprays to control the diseases and insect/pests and 64% respondents were not using any chemical sprays.
As the P value 0.850 which is greater than 0.05, it shows

Table 13. Relationship between use of chemical measures and diseases and insect/pests effect on sugarcane crop.

Take Chemical Measures	Disease and insect/pest effect			Total
	0-10 %	11-20 %	21-30 %	
Yes	7	7	15	29
	8.75	8.75	18.75	36.25
No	14	14	23	51
	17.5	17.5	28.75	63.75
Total	21	21	38	80
	26.25	26.25	47.5	100

d.f=2
Chi square is 0.325 with P value 0.850.

Table 14. Distribution of respondents concerning their adopted/cultivated variety.

Villages	Adopted/Cultivated Variety					Total
	CO 11-48	CP 77-400	CP48-103	HSF 240	CP51-21	
Khazana Bala	13(50)	3(12)	5(19)	2(8)	3(12)	26(100)
Khazana Payan	13(76)	4(24)	0(0)	0(0)	0(0)	17(100)
Nasapa Bala	20(80)	5(20)	0(0)	0(0)	0(0)	25(100)
Nasapa Payan	9(75)	3(25)	0(0)	0(0)	0(0)	12(100)
Total	55(69)	15(19)	5(6)	2(3)	3(4)	80(100)

Source: Field Survey 2013
The values in parenthesis are percentages.

that there is non-significant association between Chemical measures and disease/insects, pest's effect on sugarcane crop.

Adopted/Cultivated Variety

The data in table 14 signifies that 69% of the respondents have cultivated CO11-48 variety which is inferior quality Indian variety followed by 19% respondents who have cultivated CP77-400 variety, 6% respondents have cultivated CP48-103 variety, 3% have cultivated HSF240 variety and 4% have cultivated CP51-21 variety. It shows that still in the study area, the farmers are not aware of the high quality varieties.

CONCLUSION

It is concluded from the research findings that although sugarcane was the main crop of the study area, but the farmers faced many problems regarding sugarcane production. Consequently, these problems in return cause low productivity of the crop due to which the area under sugarcane cultivation is decreasing which affect the socio-economic conditions of the farmers. The farmers of the study area also called increase in prices of farm inputs a big threat to sugarcane production and demanded an equivalent change in prices of canes by the government so that they can take equal return.

RECOMMENDATIONS

1. Agricultural Extension Department must encourage the farmers to bring more land under sugarcane cultivation. Farm visits, discussion meetings, demonstrations, published material, trainings concerning sugarcane production need to be given more attention. Importance of high yielding varieties of sugarcane should also be addressed to the farmers as well.
2. As the literate farmers have more inclination to new ideas and innovations, therefore there is a need to launch/strengthen the adult literacy programs in the rural areas. Also they should be informed about latest agricultural technologies and its uses. The extension agents need to change the attitude and behavior of the farmers in adopting modern technologies.
3. Inputs like seeds, fertilizers, chemical sprays and machinery must be provided to the farmers on subsidized rates by the government. Government also should fix the

4. sugarcane rates and should take serious steps to resolve the farmers' issues.
5. Trainings/workshops regarding losses caused by diseases, weeds and insect/pests should be arranged for farmers on monthly basis by agriculture extension agents to reduce/control the losses. Methods about selection of appropriate sprays and its timely application should also be taught to the farmers.

REFERENCES

Akhtar M, ME Akhtar (2002). Effect of different levels of potassium on agronomic traits, productivity and quality of sugarcane (Saccharum officinarum L.). Asian J. Plant Sci. 4: 349-351.

Haruna U, Kushwaha S (2003). Fadama Farmers Characteristics and Adoption of Agricultural Technology in Bauchi State. Niger. J. Agric. Technol. 11: 99 -104.

Iqbal M (2006). Effect of farmers field school on rice, sugarcane and tomato productivity in District Malakand. M.Sc (Hons) Thesis, The Univ. of Agric. Peshawar, Pakistan. pp.56-57.

Jan O (2001). The search of suitable sugarcane verity in Pakistan Valley. West Pakistan J. Agric. Res. 2(3): 91-95.

Khushk AM (2008). Sugarcane: yield and profitability. Oct. 13, 2008, http//dawn.com

Lodhi A, T Kamil (2000). The Pakistan Sugar Industry; An Economic and Policy Analysis, Special Report Series No.8, Pakistan Economic Analysis Network (EAN) Proj, Islamabad, Pakistan. pp.16-18.

MINFAL (2012). Economic Survey of Pakistan. Federal Bureau of Statistics, Islamabad.

Muhammad S, Garforth C, Malik NH (2001). Factors affecting the adoption of recommended sugarcane technologies by farmers. Pak. J. Agric. Sci., 38, 1-2, 78-80.

Munir MA, M Zafar, M Ysin, J Iqbal, MS Cheema (2009). Qualitative and quantitative characteristics of some autumn sown promising sugarcane varieties. Pak. Sugar J. 24 (04): 8-11.

Nazir MS, H Ali, M Saeed, A Ghafar, M Tariq (1997). Juice quality of different sugarcane genotypes as affected by pure and blend plantation. Pakistan Sugar J. 12:4, 12-14.

Nazir A, Jariko GA, Junejo MA (2013). Factors Affecting Sugarcane Production in Pakistan.

PBS. 2013. Area and production of important crops. Pakistan Bureau of Statistics.

http://www.pbs.gov.pk/content/area-and-production-important-crops.