

Research Article



Informal Tenancy Contracts and Sustainable Agriculture Challenges in Rural Pakistan

Shahzad Khan^{1*}, Inayatullah Jan¹ and Syed Fahad Shah²

¹Institute of Development Studies (IDS), The University of Agriculture Peshawar, Khyber Pakhtunkhwa, Pakistan; ²Department of Rural Development, AMK Campus Mardan, The University of Agriculture, Peshawar, Khyber Pakhtunkhwa, Pakistan.

Abstract | The study was conducted through the aim to identify the role of tenants in informal tenancy contracts. Three villages of District Charsadda Khyber Pakhtunkhwa, Pakistan, were purposely selected for the study. A total of 30 respondents were interviewed with the help of a pre-tested questionnaire. The findings of the study reveal that skillful and experienced tenants were given preference by the landlord. But due to non-availability of extension department and its trainings, illiterate and untrained tenants are involved in agricultural practices. The physical inputs and investment efforts lead to long term duration for the tenants which usually make interest of the landlord to offer the land on fixed tenancy contracts. Thus, tenants are unable to provide proper investments efforts to their plots. In order to fulfill the gap in sustainable agricultural practices, proper training and policy implication is needed. Thus, policy makers in agricultural institutions must provide proper attention to the agricultural challenges in the region.

Received | April 10, 2019; **Accepted** | December 01, 2019; **Published** | February 01, 2020

***Correspondence** | Shahzad Khan, Institute of Development Studies (IDS), The University of Agriculture Peshawar, Khyber Pakhtunkhwa, Pakistan; **Email:** drshahzad99@aup.edu.pk

Citation | Khan, S., I. Jan and S.F. Shah. 2020. Informal tenancy contracts and sustainable agriculture challenges in rural Pakistan. *Sarhad Journal of Agriculture*, 36(1): 143-152.

DOI | <http://dx.doi.org/10.17582/journal.sja/2020/36.1.143.152>

Keywords | Tenancy contracts, Tenants, Contract duration, Sustainable agriculture, Pakistan

Introduction

The sustainable agriculture is based on natural environment and its improvement, social welfare and its promotion and economic sustainability which are based on economic capabilities (Smith and Mc Donald, 1998). However, the sustainable rural development categorizes five strategies which can be interpreted as responses towards the challenges of farm modernization, which include the importance of effective coordination, informal networks, bottom up initiatives, polycentricism, transparency and trust. These strategies are rarely discussed and practiced in effective policies to support regional development (Koopmans et al., 2018). Thus, rural and agriculture problems were measured to be nearly synonymous

and consequently agricultural sector for rural economies and its growth was considered to be the main instrument. The objectives of agricultural and rural development could be tracked through a set of policies to upsurge economic growth of agricultural regions (Shucksmith, and Ronningen 2011; Ward and Brown, 2009). Therefore, sustainable agriculture as a concept linked with dynamic and multifaceted definitions and acknowledgements. However, numerous classifications have been described and proposed in different periods (Pretty, 2007). Therefore, in order to understand sustainable agriculture problems, faced by tenants in rural areas in different regions of the world, we have chosen traditionally practiced contracts in Pakistan. However, studies from tenancy contracts has long history and suggestions for land tenure dis-

putes.

Moreover, small scale agricultural land farms lost their practices and functions. It has also, significantly reduced the importance of farm labour for its local and regional rural economy (Kristensen et al., 2014; Galdeno-Gomez et al., 2011). However, Eswaran and Kotwal (1985), discussed that sharecropping pushes towards resources and non-contractible inputs. For example, for managerial efforts and its provision the landlord can be better off, whereas in providing the supervisory efforts the tenant can be better off. Thus, to deliver these inputs both of the parties required to be given incentives and that is why the share contract is better option. However, in another research assignment, Ghatak and Pandey (2000) discussed that the tenant's effort supply can be encouraged through incentives by the landlord and discouraging the risk-taking which is due to the limited liability. Sharecropping contract is an optimal trade off and encouraging the tenant towards higher investment efforts and lower risk. In case of moral hazard towards efforts of the tenant only, then the optimal contract will be fixed rental contract. Sharecropping can be emerged when the moral hazard arises in both risk and efforts. Therefore, determining factors of agrarian contracts are different contractual choices and observed efficiency of different contracts in agrarian structure and its economy.

Contractual choices

Contractual choices are often decided by both the landlord and tenants, however contractual decision during oral commitments are usually important for both of the parties. In this research article we have discussed some of the contractual choices and its literature.

Fixed contract: With concerns to fertilization farmers treated owned land and rented land very differently because the uncertainty rises when the rental contract is insecure and short term. Findings from Austria suggested that long-term renting is usually secure and resulting soil conservation equally for both rented and owned plots (Leonhardt et al., 2019). Studies from rural Pakistan also, suggested that precise investment on land is lower for leased agrarian farms than owned farms or plots, for the same households, even if there is adverse selection in the rental market. However, in long term rental contracts, assurance of security for tenure may increase investment efforts and soil conservation on leased plots (Mansuri and Jacoby, 2006).

Therefore, sharecropping is considered to be the most inefficient method of cultivation and since long time has been much controversy subject in land tenure contracts and its studies (Chaudhuri and Maitra, 2000).

Share cropping contract: Eviction threats have a positive effect on investment effort which are unobservable. Tenants raises their investment efforts in the current period, which increases chances in the next period due to doing well and therefore, maintaining the contract in period after periods. However, evicton threat has a direct negative effect on the discount factor of the tenant (Banerjee and Ghatak, 2004). When there is riskiness of cultivation technique and supply efforts of the farmer, due to the joint moral hazard from farmer's side, therefore in such case we analyze the optimal contract choice. Thus, when there is limited liability, more powered incentive agreements for example fixed rent contracts will influence tenants, for the adaptation of cultivation techniques, which are riskier from the landlord point of view. Therefore, contracts with slight powered incentives will induce the tenant to supply small amount of efforts for contracts such as fixed wage. Consequently, to balance the conflicting situation in these two, sharecropping is the natural solution (Ghatak and Pandey, 2000). However due to distanced plots landlord are sometimes unable to monitor the input application such as fertilizers in case of sharecropping tenants. The main reason behind it is the cost of monitoring, if the plot is at a distance, landlords are unable to come and monitor the input applications due to their jobs or other businesses. Therefore, at that time the first best choice of the landlord is to give his plot on fixed rental contact. Consequently, if the tenants, have low endowments and unable to have modern technology and tools in such case again the landlord would give preference to wealthy, and experienced tenants in order to fulfill their rent. Moreover, studies from Sub Saharan African states suggested that share tenancy contract is even more common and dominant on land rent markets. Thus, it is also, practiced in Ghana and Malawi, especially for tobacco cultivation (Quisumbing et al., 2001; Holden, 2007; Lunduka et al., 2010; Bellemare, 2012). However, these informal tenancy rental contracts, has been common and extensive throughout SSA.

Both fixed and share cropping contract: As tenants involved in agricultural practices, therefore sometimes

both of the contracts are assigned, sometimes with one or two landlords. In order to increase productivity and staple food consumption household own use and for sale in the market both fixed rental and share contracts are given to the tenant. However, landlord is interested to share the risk in share contract and also, to provide a piece of plot for tenant's own interests, because in share cropping both the landlord and tenants take the decision in selecting the crop but in fixed rental contract the tenant has the choice to take the decision in crop cultivation. On the other hand, the incentive efforts also, from the tenant's side distribute for but his own rental decided plot and sharecropping. Natural and moral hazard are one of the main threats in agrarian studies because due to asymmetric information and non-monitoring efforts. Landlord is compelled to give his land both on share and fixed contract. Sharecropping is usually a land tenancy contract in which tenants cultivate some land or a plot for the landlord by investing their efforts and the produced output is shared on various ranges for about 25% to 50% share to landlord. Therefore, sharecropping is considered to be the most inefficient method of cultivation and since long time has been much controversy subject in land tenure contracts and its studies (Chaudhuri and Maitra, 2000).

Owner cultivation: As the farms in developing countries especially in South Asia are less than 5 hectares and are usually much more efficient than larger farms, due to family labor involvement and incentive efforts by the land owners in the area. Households in Pakistan who have their own family labor are usually interested to cultivate their land by themselves. Instead of giving their land on fixed or share tenancy contracts. In this research article households from the study area are also, interested in owner cultivation and perform very well in their productivity. However, studies suggested that households with small family labor, especially shorter family members are usually not interested to cultivate the land by themselves and mostly they give the land on either on fixed rental contract or on share cropping tenancy contract.

Since due to lack of funds, public policies, and extension trainings, the agriculture institutions are failed to provide modern technology and exercises for sustainable agricultural practices. The foremost reason behind the disappointment and failure in agriculture sector is non-availability of technical permanent trainers in extension departments and lack

of policy implementations. Therefore, to fill this gap public institutions, such as government agriculture sector must participate in policy implementation and must provide extension trainings to the farmers in these regions in order to fulfill the gap. Moreover, agriculture sector is the backbone of the economy of Pakistan, the illiterate and untrained tenants and its participation will decrease the importance of the agricultural practices in the region. However due to uncertainty in land tenancy practices both from landlord and tenant and other environmental and climate challenges, has attracted the illiterate people from low level of educational attainments.

The research will justify the gap in land and labor contracts or agrarian contracts. This study will elaborate the problems faced by the tenants and landlord during contract. It will also, investigate the decision-making approach among the two parties, while assigning contracts. Sustainable agriculture is the need of future generation and its implementation because small scale farm land can contribute in the socio-economic condition of an individual and the society as a whole. This investigation will elaborate the needs of the household towards sustainable development goals and sustainable agricultural practices.

However, the foremost determination of this research is to understand why the landlord is interested in fixed rental contracts and the tenant is willing towards it, and in case of failure all the risk goes towards the tenant side. Traditionally tenancy contracts in Khyber-Pakhtunkhwa, are very famous which are based on share, fixed, both fixed and share contracts and owner cultivation. Among these tenancy contracts in our research area the fixed-rent tenancy and share tenancy contracts were in large number because mostly tenants were involved in these two types of contracts. However, the owner cultivators are also, practicing their agricultural land by themselves and other tenancy exercises, like casual labor, permanent labor are contemporary in the region. Thus, study was designed to see the effect of land tenancy contracts agreement between the landlord and tenancy and understand the sustainable agriculture challenges. In order to identify major determinants of the study area, the more specific objectives of the study were intended: To know about land tenancy contract and sustainable rural development challenges. To understand the gap for sustainable agriculture and

its importance for policy implementation, to suggest recommendations based on findings of the study.

Materials and Methods

The research work was based on both quantitative and qualitative approach. However, the District Charsadda, from Khyber Pakhtunkhwa was selected as universe of the study. The total Area of District Charsadda is consisting of 996 Sq. Kms, according to census 2017 its population is 1.6 million (BOS, 2017). Three villages from District Charsadda namely Asfand Dairy, Sarfaraz Kaly and Kamran Kalay were selected. A purposive sampling technique was applied to the study and a baseline survey was conducted. The main purpose of the study was to know why the traditional land tenancy contracts are still practiced in the region and find the challenges for sustainable agriculture growth. However, a total 30 skillful households, who were already working on different tenancy contracts in District Charsadda were selected from the above three villages in order to understand the main issues and consequences faced by the tenants and landlords in the study area. Thus, a purposively sampling technique was intentionally imbedded because the skillful tenants and landlord from these villages were required to investigate for further elaboration of the study. An instrumental structure was designed in the light of objectives of the study, and face to face interview was taken from the 30 respondents in these three villages. Both tenants and landlords were selected for interview in order to understand the challenges for sustainable agriculture in the region. The total time duration on collecting data from these different villages in District Charsadda took two months and comprehensive information was collected from the selected rural households in the study area. Thus, each and every individual respondent was personally interviewed with a detailed questionnaire by asking them about their contribution and participation in agrarian tenancy contracts, different information related to land tenancy contracts were collected. Households who were working for long term were also, asked about the plot size they were cultivating and their endowments such, as bullocks, and technologies, such as tractors. Therefore, an open-ended questionnaire was designed and was pre-tested, in order to improve and integrate all the appropriate questions. The data was also, collected on number of household family members, households source of income, and household

structure. However, the study was also, based on focused group discussion, experts from policy makers and experienced agriculture officers and workers from extension departments were participated in discussion. The data was then manipulated through Ms-Excel and SPSS. The descriptive statistics of the data was then analyzed and different contract choices of the respondents were deeply investigated. However, the focused group discussion was discussed in the results to each and every table in the results and discussion section, in order to intensely, understand the main problems faced by both of the respondents such as landlord and the tenants.

Results and Discussion

This section is based on the results and discussion of the tenancy contracts between the landlords and tenants. In order to understand the main reason, why tenancy contracts have complex rules. Thus, results and discussion will give us an indulgent about the current study.

Table 1 described that the mean value of the age of the village Asfan dairy was 42 with their standard deviation 12.85. In Sarfaraz village the mean value was 46.85 with their standard deviation of 14.63, in Kamran Kaly it was 51.16 with the standard deviation of 10.57. The overall mean in the three villages was 47.13 and its standard deviation was 12.53. The data shows the maximum standard deviation of 14.63 in Sarfaraz kalay which was higher than the overall standard deviation of the three villages. Due to vulnerability and poverty rural households with their higher ages in Kamran village working hard in fixed rental tenancy contracts. However, the fixed rental contract is the dominant in District Charsadda comparatively to other contracts in the region. Household age was determined because the decision making during tenancy contract is taken by the both the tenant and landlords. Thus, due to social relationships, between the landlord and tenants upsurge, therefore landlord usually taking care of tenants, who is senior in age. However, [Eswaran and Kotwal \(1985\)](#), discussed that sharecropping pushes towards resources and non-contractible inputs.

The **Table 2** shows the classification of sample respondents with respect to their family members. In village Asfan Dairy the mean of the family members was 9.36 with its standard deviation 5.2. In the village Sarfaraz Kalay the mean of number of family

Table 1: Classification of respondents according to their age with tenancy contracts.

Classification	Age (Years old)				Total	Statistics			
	20-40	41-50	51-60	61-		Mean	Std	Max	Min
Asfand Dairy	5.00	3.00	2.00	1.00	11.00	42.91	12.86	61.00	24.00
Sarfaraz Kalay	1.00	5.00	0.00	1.00	7.00	46.86	14.63	70.00	20.00
Kamran Kalay	1.00	6.00	3.00	2.00	12.00	51.17	10.57	70.00	39.00
Fixed Contract	5.00	10.00	1.00	3.00	19.00				
Share Contract	0.00	1.00	0.00	1.00	2.00				
Fixed and shared contract	3.00	0.00	0.00	0.00	3.00				
Owner Cultivation	1.00	1.00	4.00	0.00	6.00				
Total	7.00	14.00	5.00	4.00	30.00	47.13	12.54	70.00	20.00

Table 2: Classification of sample respondents with their family members.

Classification	Total number of family members				Total	Statistics			
	0-5	6-10	11-15	16-20		Mean	Std	Max	Min
Asfand Dairy	3.00	5.00	2.00	1.00	11.00	9.36	5.28	20.00	1.00
Sarfaraz Kalay	1.00	5.00	1.00	0.00	7.00	9.14	2.34	10.00	4.00
Kamran Kalay	0.00	9.00	3.00	0.00	12.00	10.42	2.27	11.00	6.00
Total	4.00	19.00	6.00	1.00	30.00	9.73	3.61	20.00	1.00

Table 3: Classification of sample respondents with their family labor (Adult Male).

Classification	Number of adult male of the sample respondents				Total	Statistics			
	0-3	4-5	6-Above			Mean	Std	Max	Min
Asfand Dairy	7.00	2.00	2.00		11.00	3.18	1.99	6.00	1.00
Sarfaraz Kalay	4.00	3.00	0.00		7.00	3.29	0.76	4.00	2.00
Kamran Kalay	2.00	7.00	3.00		12.00	4.33	1.56	6.00	1.00
Total	13.00	12.00	5.00		30.00	3.67	1.65	6.00	1.00

Table 4: Duration as years of contract of the sample respondents in tenancy contracts.

Classification	(Duration years of the contract)				Total	Statistics			
	0-5	6-10	11-15	16-20		Mean	Std	Max	Min
Asfand Dairy	3.00	6.00	1.00	1.00	11.00	8.36	4.92	20.00	4.00
Sarfaraz Kalay	3.00	4.00	0.00	0.00	7.00	5.71	0.76	7.00	5.00
Kamran Kalay	2.00	6.00	2.00	2.00	12.00	10.00	4.88	20.00	5.00
Total	8.00	16.00	3.00	3.00	30.00	8.40	4.44	20.00	4.00

members was 9.14 with standard deviation of 2.34. While in Kamran Kalay the mean was 10.41 which was the highest one and its standard deviation was 2.27. The overall mean of the three villages was 9.73 and its standard deviation of 3.60, which means that there was a variation in the number of family members. Thus, studies suggest that high number of family member has a significant role in fixed rent contracts, share cropping contract and for owner cultivation, because family labor usually participate in field, help with their elders. Here Kamran village

is again having high mean value for its family labor. The main reason of high number of family labor is due to high rate of fertility and mostly these tenants are illiterate, therefore they believe in large number of family members in order to participate in their field as family labor. However, in Pakistan, India and Nepal large families are involved in agricultural practices and preference is given by the landlord as well. Thus these, if the landlord could monitor the land by themselves they usually higher permanent labor. However, these permanent labors belong to

poor family and considered to be lower caste and traditionally the poor large families with lower caste were prevented for land tenancy contracts due to their low assets and endowments (Binswanger et al., 1986; George, 1987).

Table 3 contained the number of family labors of sample respondents in the three different villages of district Charssada. In Asfand Dairy the number of Adult Male with the mean value was 3.18 and its standard deviation was 1.99. In Sarfaraz Kalay the Adult Male family labor's mean value consisted on 3.28 and in Kamran kalay it consisted on 4.33 and its standard deviation was 1.64. Male members of the family are considered to be the family labor and can contribute in the socio-economic condition of the household. Therefore, households give much preference to high number of family members. Studies also, suggest that large number of family labor has the significant effect on agricultural practices. However according to wealth initial endowments these agrarian contacts have a tendency to be rationed between potential tenants (Shetty, 1988). Consequently, the discussion of empirical research is based on the key factors for non-market endowments and inputs of the tenant's greater inheritances such as family labor, managerial ability, credits, and traditional technologies (Bliss and Stern, 1982; Pant, 1983). Additionally, the negligence of the landlord about the tenant's capabilities and assets is an unfortunate in rural communities (Eswaran and Kotwal, 1985).

Table 4 is based on the duration of the contract in Asfan dairy the average duration of the contact was 8.36 with its standard deviation 4.92, while in Kamran kalay its average duration of the contact was 10 years which was the highest in all the three village with its standard deviation with 4.880. However, agrarian community where social interaction is forceful and various transactions are inter-linked, reputation is likely to play a major role in contract enforcement in the context of long-term contracts. Thus, Indian's levy scheme of producer is also, an example of government intervention in market to reduce price incentives, especially for farm producers. It increases the average price of producer for short run through inelastic supply. Therefore, significant results in income supply can be obtained with a slight loss of economic efficiency, but in long run it can lead to market instability (Hayami et al., 1982). However, moral hazard or breach of contract is likely

to be detected in the long run when parties engage in regular transactions and, once detected, it will harm one's reputation in the community, which, in turn, reduces future contract opportunities and welfare. Traditionally it is stated that the lower castes were prevented from owning or leasing land by powerful social sanction (George, 1987).

The Table 5 is based on the classification of Cultivated Area of the sample Respondent with their Tenancy contracts condition which was based on the three villages Asfan dairy, Sarfarz kaly and Kamran Kalay. 17 respondents with their mean of 2.58 and standard deviation 0.955 were involved in 0-4 acres in cultivated area with different Tenancy Contracts, Fixed Con, Fixed and Share Contract and Owner cultivation. 12 Sample Respondents with their mean 6.12 and standard deviation 1.33 were involved in 5-10 cultivated area in acres. The findings of the study also, reveal that still small farm size is given preference compared to large farms, the main reason behind this is because the tenants belong to poor family and low socio-economic conditions, therefore small farm size can be cultivated, irrigated and comparatively minor investment efforts are needed to participate in these traditional tenancy contracts. However, the farms size in Latin America is completely different than the farm size in Asia because more than 70 percent of Asian farms are less than 5 hectares, which is based on 40 percent to 70 percent farm plots. Moreover, land in large sized farms are based on more than 50 hectares. Correspondingly, inequality in the measurement of Gini-Coefficient of farm size distribution is higher, which is about 0.80 percent for Latin America while for Asia it is less than 0.60. Thus, most of the farms in Asia are operated on family labor, however in Latin America it is operated by large farm and hired laborers (Otsuka et al., 2016).

Table 6 describes the classification of Tenancy Contracts of the Sample Respondents with their Education. 18 sampled respondents with mean of 0.58 and standard deviation 1.66 were based on education years were involved in fixed contract, which were the highest number of respondents. 8 sample respondents with mean of 10 years of education and standard deviation of 0.35 were categorized as 9-12 years of education group. Which was the second highest were involved in fixed contract as well as in both fixed and share contract. However, the results of this study show that most of the tenants who were

Table 5: *Cultivated area of the respondents and their tenancy contracts.*

Classification	Tenancy contracts and cultivated area				Statistics				
	Fixed contract	Share contract	Fixed and share	Owner cultivator	Total	Mean	Std	Max	Min
	(Number of respondents)				(Years)				
Asfand Dairy	6.00	0.00	2.00	3.00	11.00				
Sarfaraz Kalay	6.00	1.00	0.00	0.00	7.00				
Kamran Kalay	7.00	1.00	1.00	3.00	12.00				
Cultivated Area in Acres (0-4)	14.00	0.00	2.00	1.00	17.00	2.59	0.96	4.00	1.00
Cultivated Area in Acres (5-10)	5.00	2.00	1.00	4.00	12.00	6.13	1.33	8.00	4.50
Cultivated Area in Acres (11-15)	0.00	0.00	0.00	1.00	1.00	15.00	15.00	15.00	15.00
Total	19.00	2.00	3.00	6.00	30.00	4.42	2.87	15.00	1.00

Table 6: *Classification of tenancy contracts of the sample respondents with their education.*

Classification	Tenancy contracts and years of education				Statistics				
	Fixed contract	Share contract	Fixed and share	Owner	Total	Mean	Std	Max	Min
	(Number of respondents)				(Years)				
Asfand Dairy	6.00	0.00	2.00	3.00	11.00				
Sarfaraz Kalay	6.00	1.00	0.00	0.00	7.00				
Kamran Kalay	7.00	1.00	1.00	3.00	12.00				
Education Years (0-5)	13.00	2.00	2.00	1.00	18.00	0.59	1.66	5.00	0.00
Education Years (6-8)	1.00	0.00	0.00	1.00	2.00	7.50	0.71	7.00	8.00
Education Years (9-12)	4.00	0.00	1.00	3.00	8.00	10.00	0.35	9.00	10.00
Education Years (13-above)	1.00	0.00	0.00	0.00	2.00	17.00	1.41	16.00	18.00
Total	19.00	2.00	3.00	5.00	30.00	4.53	5.38	18.00	0.00

Table 7: *Classification of sample respondents with farm yard manure and tenancy contracts is an investment effort.*

Classification	Farm yard manure in kgs and tenancy contracts				Statistics			
	1000-4000	4500-8000	8000-12000	Total	Mean	Std	Max	Min
	(Number of respondents)				(Kgs)			
Asfand Dairy	1.00	10.00	0.00	11.00	7000.00	1870.83	8000.00	3000.00
Sarfaraz Kalay	7.00	0.00	0.00	7.00	3142.86	243.98	3500.00	3000.00
Kamran Kalay	3.00	8.00	1.00	12.00	6916.67	1831.96	9000.00	3000.00
Fixed Contract	9.00	10.00	0.00	19.00				
Share Contract	1.00	1.00	0.00	2.00				
fixed and Share	0.00	3.00	0.00	3.00				
Owner Cultivation	1.00	4.00	1.00	6.00				
Total	11.00	18.00	1.00	30.00	6066.67	2277.07	9000.00	3000.00

involved in these contracts were illiterate. Thus, the educated people did not participate in these farms, the main reason behind it was the household, who are educated mostly searching for their jobs. As lack of modern technology and its practices, and socio-economic condition of the household the educated households do not participate these

agrarian contracts. Because there are dynamic factors due to which quite their work in the field. The incentives and investment effort are needed but the output is comparatively less. Those households who are already involved in these tenancy contracts are benefited by houses and live for the last few decades.

Table 7 classifies the farm Yard Manure as well as the Tenancy Contracts. It is stated that in the village Asfand Dairy the mean of Farm Yard Manure in kgs was 7000 and its Standard Deviation was 1870.82. While in village Sarfaraz the Mean was smaller than the Asfan dairy because the Farm yard manure was used in a very little amount due to which it affects the productivity. While in Kamran Kalay the mean was almost the same with Asfand Dairy and with the same standard deviation, because the people of these both Villages were interested in investment of farm yard manure because they were feeling secure in their contract and had good production in the area. However, studies from Bangladesh by using plot level and household data, described that agricultural productivity during diverse contracts is different in poor households in rural areas. Therefore, the findings of their study described that sharecropping has the lowest productivity than the other multiple contracts and credit has no effect on productivity (Bidisha et al., 2018). The empirical results from different African Countries show that the most secure tenure systems have significantly positive impact on soil conservation and investment efforts of the tenants (Abdulai et al., 2011; Lovo, 2016). Moreover, studies from Pakistan also, suggested that both rental and share contracts in short term tenure decreases the manure on plots as an investment in soil fertility, however in longer contracts it increases for both of the contracts (Jacoby and Mansuri, 2008).

Conclusions and Recommendations

For sustainable agriculture practices it is important to redesign the complex rules and regulations which creates deficiency in coordination with government officials, and tenants to set up new practices. The uncertainty between the landlord and the tenant creates problems when the agreement is assigned. As in the past the incidents took place when the tenants who worked for years on fixed rent or shared contract has hold the land. Therefore, informal tenancy contracts lead to limited liability, eviction threat, lack of investment efforts, and property rights issues. The intricate and challenging rules designed by the landlord and lack of governmental policies implementation creates problem in achieving sustainable agricultural practices. Landlords who have large farms, invest in agricultural practices but due to family labor deficiency and monitoring efforts the landlord has not as much of interest to take decision for owner cultivation.

Moreover, the uncertainty in price fixing policy by the government is also, one of the main reason because unsubsidized prices are below the cost of production of the tenants. Therefore, current agricultural land is converting into urban townships and industrialization. This research was based on different tenancy contracts and its impact on the behavior of the tenants in rural Khyber Pakhtunkhwa Pakistan. Fixed Tenancy Contract was the dominant one in the region where the tenants were involved in agricultural practices. The tenant takes the decision in cultivating their field on fixed contract. While in share contract to cultivate the land the tenants waiting for the response of the landlord. Those tenants who were involved in the fixed tenancy contracts they were mostly illiterate and were having interest to work in the field. However, the non-participation of educated people in these contracts is due to the uncertainty and informal approach in these contracts. In this investigation, the findings suggested that the mechanism of the landlord for a piece of plot or land is different with reference to their contractual types. Thus, farmer's behavior for rented land is different than owner cultivated land. Therefore, to improve agriculture and sustainable rural development challenges. Public Institutions such as extension department and agricultural sector organization has to take initiatives and work for the current sustainable agricultural responsibilities and challenges.

Novelty statement

In this paper, the tenancy contract rights of the small farmers are highlighted.

Author's Contribution

Shahzad Khan developed the ideology of the study. He contributed in all sections of the papers. Inayatullah Jan contributed in analysis, results and discussion, and review of literature. Syed Fahad Shah contributed in formatting and referencing.

References

- Abdulai, A., V. Owusu and R. Goetz. 2011. Land tenure differences and investment in land improvement measures: Theoretical and empirical analyses. *J. Dev. Econ.* 96(1): 66-78. <https://doi.org/10.1016/j.jdeveco.2010.08.002>
- B.O.S. 2017. <http://www.pbs.gov.pk/sites/default/>

- files/PAKISTAN%20TEHSIL%20WISE%20FOR%20WEB%20CENSUS_2017.pdf
- Banerjee, A.V. and M. Ghatak. 2004. Eviction threats and investment incentives. *J. Dev. Econ.* 74(2):469-488. <https://doi.org/10.1016/j.jdeveco.2003.07.004>
- Banerjee, A.V., P.J. Gertler and M. Ghatak. 2002. Empowerment and efficiency: Tenancy reform in West Bengal. *J. Polit. Econ.* 110(2): 239-280 <https://doi.org/10.1086/338744>
- Bellemare, M.F. 2012. Insecure land rights and share tenancy: Evidence from Madagascar. *Land Econ.* 88(1): 155-180. <https://doi.org/10.3368/le.88.1.155>
- Bidisha, S.H., M.A. Hossain, R. Alam and M.M. Hasan. 2018. Credit, tenancy choice and agricultural efficiency: Evidence from the northern region of Bangladesh. *Econ. Anal. Policy.* 57: 22-32. <https://doi.org/10.1016/j.eap.2017.10.001>
- Binswanger, H.P. and M.R. Rosenzweig. 1986. Behavioural and material determinants of production relations in agriculture. *J. Dev. Stud.* 22(3): 503-539. <https://doi.org/10.1080/00220388608421994>
- Bliss, C.J. and N.H. Stern. 1982. Palanpur: The economy of an Indian village. OUP *Catalogue.* 7(1): 300-340.
- Chaudhuri, A. and P. Maitra. 2000. Sharecropping contracts in rural India: A note. *J. Contemp. Asia.* 30(1): 99-107. <https://doi.org/10.1080/00472330080000071>
- Eswaran, M. and A. Kotwal. 1985. A theory of two-tier labor markets in agrarian economies. *Am. Econ. Rev.* 75(1): 162-177.
- Galdeano-Gómez, E., J.A. Aznar-Sánchez and J.C. Pérez-Mesa. 2011. The complexity of theories on rural development in Europe: An analysis of the paradigmatic case of Almería (South-east Spain). *Sociol. Rural.* 51(1): 54-78. <https://doi.org/10.1111/j.1467-9523.2010.00524.x>
- George, A. 1987. Social and economic aspects of attached labourers in Kuttanad agriculture. *Econ. Polit. Weekly.* pp. A141-A150.
- Ghatak, M. and P. Pandey. 2000. Contract choice in agriculture with joint moral hazard in effort and risk. *J. Dev. Econ.* 63(2): 303-326. [https://doi.org/10.1016/S0304-3878\(00\)00116-4](https://doi.org/10.1016/S0304-3878(00)00116-4)
- Hayami, Y., K. Otsuka and K. Subbarao. 1982. Efficiency and equity in the producer levy of India. *Am. J. Agric. Econ.* 64(4): 655-663. <https://doi.org/10.2307/1240574>
- Holden, S. 2007. Growing importance of land tenancy and its implications for efficiency and equity in Africa. *Development Economics between Markets and Institutions. Incentives for growth, food security and sustainable use of the environment.* Mansholt Publ. Ser. 4: 387-405.
- Jacoby, H.G. and G. Mansuri. 2008. Land tenancy and non-contractible investment in rural Pakistan. *Rev. Econ. Stud.* 75(3): 763-788. <https://doi.org/10.1111/j.1467-937X.2008.00481.x>
- Koopmans, M.E., E. Rogge, E. Mettepenningen, K. Knickel and S. Šumane. 2018. The role of multi-actor governance in aligning farm modernization and sustainable rural development. *J. Rural Stud.* 59: 252-262. <https://doi.org/10.1016/j.jrurstud.2017.03.012>
- Kristensen, L.S., T. Plieninger, J. Primdahl and E. Andersen. 2014. Well-functioning landscapes—on re-coupling agricultural and rural development. In 11th European IFSA Symposium, farming systems facing global challenges: Capacities and strategies, proceedings, berlin, germany, 1-4 April 2014. *Int. Farm. Syst. Assoc. (IFSA) Eur.* pp. 1872-1880.
- Leonhardt, H., M. Penker and K. Salhofer. 2019. Do farmers care about rented land? A multi-method study on land tenure and soil conservation. *Land use policy,* 82: 228-239. <https://doi.org/10.1016/j.landusepol.2018.12.006>
- Lovo, S. 2016. Tenure insecurity and investment in soil conservation. Evidence from Malawi. *World Dev.* 78: 219-229. <https://doi.org/10.1016/j.worlddev.2015.10.023>
- Lunduka, R., S.T. Holden and R. Øygard. 2010. Land rental market participation and tenure security in Malawi. *Emerg. Land Markets Afr.* Routledge. pp. 125-143.
- Mansuri, G. and H.G. Jacoby. 2006. Incomplete contracts and investment: a study of land tenancy in Pakistan. *The World Bank.* <https://doi.org/10.1596/1813-9450-3826>
- Otsuka, K., Y. Liu and F. Yamauchi. 2016. The future of small farms in Asia. *Dev. Policy Rev.,* 34(3): 441-461. <https://doi.org/10.1111/dpr.12159>
- Pant, C. 1983. Tenancy and family resources: A model and some empirical analysis. *J. Dev. Econ.* 12(1-2): 27-39. <https://doi.org/10.2307/1240574>

- [org/10.1016/0304-3878\(83\)90029-9](https://doi.org/10.1016/0304-3878(83)90029-9)
Pretty, J. 2007. Agricultural sustainability: concepts, principles and evidence. *Philos. Trans. R. Soc. B: Biol. Sci.*, 363(1491): 447-465. <https://doi.org/10.1098/rstb.2007.2163>
- Quisumbing, A.R., E. Payongayong, J.B. Aidoo and K. Otsuka. 2001. Women's land rights in the transition to individualized ownership: implications for tree-resource management in Western Ghana. *Econ. Dev. Cultur. Change*. 50(1):157-181. <https://doi.org/10.1086/340011>
- Shetty, S. 1988. Limited liability, wealth differences and tenancy contracts in agrarian economies. *J. Dev. Econ.*, 29(1): 1-22. [https://doi.org/10.1016/0304-3878\(88\)90068-5](https://doi.org/10.1016/0304-3878(88)90068-5)
- Shucksmith, M. and K. Rønningen. 2011. The Uplands after neoliberalism? The role of the small farm in rural sustainability. *J. Rural Stud.* 27(3): 275-287. <https://doi.org/10.1016/j.jrurstud.2011.03.003>
- Smith, C.S. and G.T. McDonald. 1998. Assessing the sustainability of agriculture at the planning stage. *J. Environ. Manage.* 52(1): 15-37. <https://doi.org/10.1006/jema.1997.0162>
- Ward, N. and D.L. Brown. 2009. Placing the rural in regional development. *Reg. Stud.* 43(10): 1237-1244. <https://doi.org/10.1080/00343400903234696>