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Research Article

Sociological Analysis of land disputes as an influencing social factor responsible for low agriculture productivity in Pakistani society

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ABSTRACT

The development of a society depends upon the social cohesion of all its institutions. Likewise, the growth of agriculture is also relying on the peaceful environment of the society. The purpose of this study was to investigate the detrimental consequences of land disputes on agricultural output in two districts (Charsadda and Mardan) of Khyber Pakhtunkhwa, Pakistan. A sample of 384 farmers were selected through multistage random sampling method. The data from these farmers were collected through a well-designed interview schedule adopted from the literature review, following the ethics of research and culture of the area. Findings show that the relationship between land disputes and net income from agricultural production was found to be non-significant and positive (p=0.992; T^c= 0.039) for the high socio-economic group, highly significant and negative (P=0.000; T^c= -0.204) for the middle socio-economic group, but non-significant and negative (P=0.523 & T^c= 0.162) for the low socio-economic group. For all three socio-economic categories, the degree of significance and Tc for the entire table demonstrate a very significant and negative (P=0.000 & T^c= -0.131) association between land conflicts and agricultural productivity, indicating a spurious relationship based on respondents' socio-economic statuses. The study recommended that correction, computerization, and regular updation of land records may overcome land disputes which would also aid in the avoidance of wastage of financial, social, and time resources and its positive utilization in agricultural production.

Keywords: *Land; Land Disputes; Agriculture; Agriculture Productivity; Socioeconomic Status*

1. INTRODUCTION

Most of the developing countries depend upon agriculture for their livelihood and economy. Land is the fundamental resource for rural people to increase their agricultural productivity. To supply food for the world's population, the existing agricultural land is important. Therefore, for agricultural productivity the availability of land is important. Land disputes occur between farmers, as the disagreement on possession, use as well as control of land among farmers is increasing day by day (Siyum et al., 2015). Throughout the world, land disputes are found in every society (UN-HABITAT, 2010). Land disputes

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whether solved or unsolved, result in losses for the household and have negative impacts on land productivity. On a large scale, land disputes ultimately slow the socioeconomic development of society. A pending dispute over a parcel may cause the landowner to lose access to their land, eventually leaving land fallow (Muawanah, 2018).

In traditional societies, the lands are owned and managed under customary practices. However, with the advancement of societies, various formal policies and laws are set to establish and exercise land rights. With the growing population and increase in land property worth, the quantum of land disputes is on the rise due to unclear tenural factors in developing countries like Pakistan. Land tenure refers to the ownership and use rights of men to land. These rights are explained under land tenure to clarify the ways and procedures of land ownership, exploitation, and use, etc. Land disputes are strongly linked to ambiguous land policies and laws with respect to land tenure. These disputes may range from ownership of land, boundary disputes, ownership of products, and distribution of benefits. It is perceived that the land disputes adversely affect the land production process due to the declining interest of farmers to manage these lands in terms of financial and physical investment. As a result, low agricultural productivity and reduced financial outcomes become obvious from these lands.

2. LITERATURE

Siddik et al., (2018) reported that almost 67 percent of disputes happened between neighbors and only 2 percent between buyers and sellers and between dwellers and government. After the disputes, 97 percent of the people wanted to resolve their disputes but cannot solve them easily. Thus, such disputes caused direct and indirect monetary loss. Direct loss includes the expenses of managing the leaders during the mediation process, court cases, and collecting documents from land offices, etc. while the indirect cost consisted of house rent, and profit loss of crop, etc. It was found that indirect cost was three times higher than direct costs.

The study revealed that caring of crops on disputed plots is decreased due to fertilizers application, and other inputs which lead to the decrease in productivity from 9 to 13 percent crops (Muyanga & Gitau, 2013), and in some areas it was found to be between 5.5 and 11 percent (Deininger & Castagnini, 2006), also in some extreme cases due to the disputes in family, relatives, landlords or governments, or due to armed conflicts (Stevens et al., 2011, Gorsevski et al., 2012; Eklund & Thompson, 2015), like one noticed between Azerbaijan and Armenia especially from 1991 to 1994 (Baumann et al., 2014) where land remains uncultivated that affect land productivity negatively (Deininger & Castagnini, 2006).

Muawanah (2018) revealed thatin Cambodia, farmers lost total access to their parcels because of land disputes. Profuse land disputes retard the socio-economic development of the area as well. Moreover, most farmers separate their lands through ditches, fencing, and the boundary where the roads to these lands are small, so farmers could not use modern machinery, and usually required manual work that decreased agricultural productivity of crops (Demetriou, 2014).

Similarly, in most cases, it has been found that farmers usually feel hesitant to invest in the disputed land, mostly reluctant to apply long-term improvement measures because of the fear that the benefits of the land will reap by the opponent party. Such a sort of attitude leads to the reduction of agricultural productivity in such lands (CEEPA, 2011).

3. MATERIAL AND METHODS

3.1. Research Design

This study was conducted through cross-sectional study design because it is the most appropriate approach for studying an issue or problem in depth (Babie, 1989).

3.2. Universe, Sampling Procedure, Sample size, and nature of respondents

The present study was conducted in Mardan & Charsadda districts of Khyber Pakhtunkhwa province. Only those respondents were selected for the study that were above 18 years and personally involved in the farming profession either as tenants, sharecroppers, or owners currently cultivating their fields. Through multi-stage random sampling technique was used for the selection of respondents. Three tehsils from each district were selected, secondly, 12 Union Councils each two from one Tehsil was selected, and lastly, a sample of 384 farmers was selected proportionally to all Union Councils.

3.3. Conceptual Framework of the Study

A conceptual framework was planned with an independent variable (land disputes), dependent variable (agricultural productivity) and one background variable (socio-economic status of the respondents) see Table 1.

Table 1. Study's conceptual framework

Background variable	Independent variable	Dependent variable
Socio-economic status	Land disputes	Agriculture productivity

3.4. Tools for Data Collection

A structured interview schedule/questionnaire was prepared in the light of the conceptual framework given in table 1. considering the research ethics and culture of the Pashtun society. The tools were pre-tested with 25 respondents to remove the ambiguities. Inconsistencies were altered; moreover, some statements were removed while others were added. Furthermore, some research investigators were trained to collect data. Data was collected in the fields, Hujras (Pashtun gathering places), pesticides, herbicides & fertilizers stores, and markets (places for selling of agricultural products) etc.

3.5. Reliability Analysis and Indexation

The reliability of the values was tested through Cronbach's alpha test which is given in table 2. Independent variable (land disputes) was indexed and cross tabulated with

dependent variable (agriculture productivity) at bivariate level. In the multivariate analysis, both variables, i.e., independent and dependent, were indexed, while the socio-economic status of the farmers was used as background variables.

Table 2. Scale's reliablity results

Variables	Cronbach's alpha
Land disputes	.710
Agriculture productivity	.870

3.6. Data Collection

Data were collected from November 2020 to April 2021 using an interview schedule/questionnaire by the research investigators under the supervision of the principal researcher from the farmers.

3.7. Data analysis

The association between dependent and independent variables was determined through the Chi-square test, as defined by Tai (1978). Multivariate analysis was also carried out for variation in agricultural productivity due to land disputes to determine whether the socio-economic status of farmers had an impact, as suggested by Ullah et al., (2020).

4. RESULTS

4.1. Association between land disputes and agricultural productivity

The association results show that for all those respondents who disagreed on the division of their family land, 24.4% earned above-average net income from agricultural produce compared to 37.3% of those who were not disagreeing on the division of family land and 28.6% of those who were uncertain with respect to disagreement on the family land division. The association of disagreement on the division of family land with agricultural production was highly significant (p=0.000), and negative (T^c= -0.102). Thus, a state of dissatisfaction with respect to the division of land at the family level was associated with below-average net income from agricultural productivity compared to those respondents that were satisfied from the division of their family land and therefore, earned high income as a result of high agricultural productivity. Moreover, 22.4% of all those respondents for whom caring for crops on disputes lands was low, earned above-average net income from agricultural productivity as compared to 37.8% respondents for whom caring for crops was not a problem and 30.8% of those respondents who were uncertain about it. Low caring of crops on disputes land exhibited significant (p=0.024) and negative (T^c= -0.112) association with agricultural productivity. land ownership is an important determinant of socioeconomic status inside a society. The area and quality of land have a direct relationship with agricultural productivity; therefore, large agricultural estates of good soil quality are preferred by farmers to produce better quality crops in enhanced quantities and increase agricultural earning. However, disputes on the inherited family property are common as every heir wants a better quality of land for themselves. As a

result, land ownership disputes arise which shatters the family integrity which is the main essence of labor-intensive conventional agriculture. The disputes lands are not properly cared-off in terms of all sorts of input resulting in reduced agricultural productivity. The same is evident from the above-mentioned negative association of disagreement on the division of family land and low caring of crops of disputed lands with agricultural productivity. These findings are in line with the results reported by Muyanga and Gitau (2013) stating that high prevalence of land disputes in Kenya on the land owned under both formal and customary systems. These disputes range from small-scale disagreements to large-scale ethnic conflicts. As a result of these conflicts, the farmers lose interest in agriculture, invest low in agricultural inputs and result in low agricultural productivity. Conversely, timely investment in dispute resolution not only controls the escalation of disputes into conflicts but also safeguards agricultural production from such lands (World Bank, 2010). Muyanga & Gitau (2013) further added that land disputes are discouraging for farmers to invest in such lands out of fear that the benefits of such investments might be taken away by others. the quantum of reduction in agricultural production may range from 9% to 13% depending upon the gravity of land disputes. A microanalysis of such a situation reveals that farmers tended to reduce fertilizers and other chemical applications to their fields when faced with the obstruction of land disputes (Muyanga & Gitau, 2013). Baker & Miceli (2005) further added that the extent of agricultural crop production problems is high in traditional societies when they face land disputes (Scalise, 2009; Deininger et al., 2010) especially when the land has clear distinction based on land productivity into low and high production rates (Agarwal, 1990 & 1994). Due to land disputes, the weaker segment of the farming community loses their interest in farming (Muyanga and Gitau, 2013) and sometimes change the farming profession to some other appropriate substitute (Siddik et al., 2018) to avoid any extreme situation like war or bloodshed (Siddik et al., 2018; Muyanga & Gitau, 2013; Bogale et al., 2006). Thus, the decline of agricultural production is particularly low for farmers from low socioeconomic backgrounds and small landholding especially when they are faced with land disputes (Muyanga & Gitau, 2013).

Furthermore, 19.2 percent of all respondents with land that was left uncultivated due to land disputes earned above-average net income from agricultural productivity, compared to 39 percent of those with land that was not left uncultivated due to land disputes and 48.3 percent of those who were unsure. Land that remained uncultivated owing to land disputes had a highly significant ($p=0.000$) and negative ($T^c= -0.117$) relationship with agricultural productivity. Escalation of land disputes is a gradual process that starts from minor disagreements to harsh exchange of words and even physical assaults. Societies with strong formal institutions have strong potential to intervene at this stage and resolve the issues while for traditional societies such formal institutions are not existing or are very weak to settle these issues. Moreover, the element of ego on part of both parties in the desire of face-saving in society further escalates the conflict. As a result, in some extreme cases, the fertile lands are left uncultivated by opposing conflicting parties with a huge financial loss to them and the society at large. The same is evident from the above results that an increase in the extent of disputes on the land property may render the

conflicting parties stop cultivating on disputed lands and result in overall low agricultural production. The history of the tribal system presents a gloomy picture where land disputes and their associated low agricultural production problems are transmitted from generation to generation. As result, the productive agricultural lands are left barren for years in addition to high human lives and financial losses (Deininge & Castagini, 2006). The sale of such lands is one solution to the problem; however, the prices it fetches are quite low compared to the land of the same soil quality with no disputes (Deininger & Castagini, 2006). Stevens et al., (2011) further added that agriculture on disputed lands is economically, politically, and socially non-feasible due to which the aggrieved parties, especially the weaker ones, are compelled to migrate (Gorsevski et al., 2012, Eklund Thompson, 2015; Baumann et al., 2014). Thus, disputes are as damaging to the production of fertile lands as are natural hazards like droughts, floods, fire, etc. (de Beurs & Henebry, 2008; Muawanah, 2018).

Furthermore, only 22.8 percent of farmers who were unable to invest in disputed lands had above-average agricultural productivity in terms of net incomes, compared to 41.4 percent of those who were not experiencing problems with non-investment on land due to land disputes and 24.4 percent of those who were unsure. Inability to invest in land was shown to be both significant (p=0.007) and negative (T^c= -0.100). Similarly, just 21.2 percent of those who felt their fertile lands were squandered owing to disagreements generated above-average net income from agricultural output, compared to 37.6% of those who did not believe their fertile lands were spent due to disputes and 38.2% of those who were unsure. A negative but significant (p= 0.01; T^c= -0.130) association was found between agricultural productivity and wastage of fertile lands due to disputes. Due to land disputes, the focus of the farmers is shifted from the land production system to disputes-related issues and a major chunk of their physical and economic energies are spent on fighting with the opponents. The interest of farmers in the improvement of lands and production of the crop through improved input supply is lowered down, as a result, the fertile lands are wasted, and the agricultural production is lowered to a greater extent as evident from the above significant and negative association. A series of studies reported a significant decline in agricultural production of important crops like wheat, rice, and sugarcane, etc. due to land disputes (CEEPA, 2011; Muyanga & Gitau, 2013; Deininger & Castagnini, 2006). The quantum of agricultural production decline increases with an increase in the intensity of land disputes with low investment in agricultural inputs as an intermediatory factor. As a result, a huge area of fertile agricultural land is wasted (Yamano & Deininger, 2005). Long-term non-resolution of land disputes are the major cause of opposition to agricultural development infrastructure. Thus, such underdeveloped arable lands can never be reached to their fuller potential of agricultural productivity due to land disputes. Binswanger et al. (1995) highlighted that investment of farmers on disputed lands is limited to short-term investment only as the fear of loss of ownership may deprive the farmers of long-term benefits as these benefits may go to someone else, resulting in low agricultural productivity in long run (Muyanga & Gitau, 2013; Kasanga & Kotey, 2001). The timely intervention of formal and informal organizations

in dispute resolution has proven worthy to reinstate agricultural production (Deininger and Castagnini, 2004).

Conversely, the association of elevated chances of selling disputed land parcels was non-significant (p=0.304) and very weak positive (T^c= 0.044) with agricultural productivity. A similar, non-significant association was found between leaving land uncultivated due to boundary disputes and agricultural productivity (p=0.343; T^c= 0.028). Whenever there is disagreement on the land property to such an extent that it is economically non-feasible or socially not possible to cultivate the lands, the farmers are constrained to sell their lands. However, in minor disputes, such extreme decisions have never been made and it is tried to resolve these disputes through dialogue or involvement of formal or informal institutions. The same is the probable reason for non-significant association in the case of sale of land due to disputes and non-cultivation of land due to boundary disputes with agricultural productivity. Deininger and Castagnini (2006) reported that low crop production is linked to land disputes. However, strong formal and informal institutions guarantee timely resolution of land disputes within the ambit of prevailing culture to restore agricultural productivity. The efficiency of such institutions is further elevated when the land disputes cases are minor (Siddik et al., 2018; Demetriou, 2014; Yamano & Deininger, 2005).

Clarity of ownership, interest in farming, and investment in land development and agricultural inputs are important correlates of agricultural productivity in the study area. The farmers who have clear land ownerships, free from land disputes are more interested in taking proper care of their agricultural fields and crops and investing in high inputs for the development of their fields. As a result, they earn high agricultural returns from the sale of elevated agricultural production. On the side, unclear ownership, use, or boundary rights result in lowering down farmers in agricultural output. Such farmers do not take proper care of their agricultural resources and are reluctant to spend on them. The quality of agricultural fields and crops of these farmers are gradually degraded. In some extreme cases, these farmers cease to crop in such lands. As a result, the land disputes are undermining the net income from agricultural productivity.

Table 3. Association between the status of land disputes and agricultural productivity/net income of the respondents

Attributes	Attitude	Agricultural productivity (in terms of net income)				Statistics X^2 (P-Value) T^c
		Above-average net income	Average net income	Below average net income	Total	
Your family members have disagreement on the division of land	Yes	60 (24.4)	89 (36.2)	97 (39.4)	246 (100)	X^2 =22.142
	No	41 (37.3)	49 (44.5)	20 (18.2)	110 (100)	(0.000)
	Uncertain	8 (28.6)	5 (17.9)	15 53.6)	28 (100)	T^c=-0.102
Chances of selling of disputed parcels are high	Yes	69 (30.1)	84 (36.7)	76 (33.2)	229 (100)	X^2 =4.845
	No	34 (25.8)	54 (40.9)	44 (33.3)	132 (100)	(0.304)
	Uncertain	6 (26.1)	5 (21.7)	12 (52.2)	23 (100)	T^c=0.044
Caring of crops on disputed land is low	Yes	50 (22.4)	87 (39)	86 (38.6)	223 (100)	X^2 =11.224
	No	51 (37.8)	48 (35.6)	36 (26.7)	135 (100)	(0.024)
	Uncertain	8 (30.8)	8 (30.8)	10 (38.5)	26 (100)	T^c=-0.112

Attributes	Attitude	Agricultural productivity (in terms of net income)				Statistics x^2 (P-Value) T^c
		Above-average net income	Average net income	Below average net income	Total	
Usually, land remain uncultivated due to land disputes	Yes	42 (19.2)	100 (45.7)	77 (35.2)	219 (100)	x^2 =26.499 (0.000) T^c=-0.117
	No	53 (39)	38 (27.9)	45 (33.1)	136 (100)	
	Uncertain	14 (48.3)	5 (17.2)	10 (34.5)	29 (100)	
Boundary disputes between the neighbors lead the land to remain uncultivated	Yes	66 (28)	96 (40.7)	74 (71.4)	236 (100)	x^2 =4.500 (0.343) T^c=0.028
	No	35 (27.8)	40 (31.7)	51 (40.5)	126 (100)	
	Uncertain	8 (36.4)	7 (31.8)	7 (31.8)	22 (100)	
Farmers cannot invest in disputed land	Yes	52 (22.8)	88 (38.6)	88 (38.6)	228 (100)	x^2 =13.975 (0.007) T^c=-0.100
	No	46 (41.4)	37 (33.3)	28 (25.2)	111 (100)	
	Uncertain	11 (24.4)	18 (40)	16 (35.6)	45 (100)	
Due to land disputes fertile lands are wasted	Yes	46 (21.2)	87 (40.1)	84 (38.7)	217 (100)	x^2 =13.259 (0.010) T^c=-0.130
	No	50 (37.6)	46 (34.6)	37 (27.8)	133 (100)	
	Uncertain	13 (38.2)	10 (29.4)	11 (32.4)	34 (100)	

Percentages *are given in parenthesis*

4.2. Association between land disputes and agricultural productivity (controlling the socioeconomic status of the respondents)

Table 4 shows that 45.1 percent of respondents with high socioeconomic level and high land conflicts earned above-average net income from the sale of agricultural goods, compared to 42.1 percent of those with moderate land disputes and 42.2 percent of those with low land disputes. Furthermore, among middle-income respondents with high land conflicts, 5.1 percent generated above-average net income from the sale of agricultural goods, compared to 40.7 percent of those with moderate land disputes and 52 percent of those with low land disputes. Furthermore, 16.7% of low-income respondents with high land conflicts received above-average net income from the sale of agricultural goods, compared to 31.8 percent of those with moderate land disputes and 29.4 percent of those with low land disputes. For the high socio-economic category, the relationship between land conflicts and net income from agricultural output was found to be non-significant (p=0.992) and positive (T^c= 0.039). For the medium socioeconomic group, the relationship between these factors was extremely significant and negative (P=0.000; T^c= -0.204). For low-income groups, however, the relationship between the aforementioned factors was non-significant and negative (P=0.523 & T^c= -0.162). For all three socio-economic categories, the degree of significance and Tc for the full table demonstrate a very significant and negative (P=0.000 & T^c= -0.131) relationship between land conflicts and agricultural productivity. Based on the socioeconomic statuses of the respondents, variation in Kendal Tc and chi-square significant values for all three socioeconomic categories revealed that the link between land conflicts and agricultural productivity is spurious.

Where respondents from the middle socioeconomic status group are worst affected in terms of agricultural production than high socioeconomic status groups due to land disputes as evident from the highly significant but negative association for the middle socioeconomic group. Land disputes negatively affect the agricultural production and

subsequently, the income received from the sale of different crops for all the farming community, however, it is badly affecting the middle socioeconomic status probably due to the reason that the land ownership and boundary disputes are more common in this class. The small size of agricultural land ridden with ownership and boundary disputes are the important reasons for the declining interest of farmers in agriculture. The middle socioeconomic status farmers with small-sized disputed land ownership are commonly more liable to reduce financial inputs for physical improvements of their farms or in terms of inducting improved agricultural inputs. A combination of low interest of such farmers reduced financial inputs, and application of insufficient agricultural inputs results in a substantial decrease in their agricultural production. On the other hand, the high socioeconomic status farmers have sufficient land in which a major chunk of land is free from land disputes, and therefore, efficiently utilized to get maximum output. The low socioeconomic status group, on the other hand, generally rent-in the land under various land tenure arrangements and are obliged to produce more to pay rent and for their survival as well. Land disputes retard the overall socio-economic development of a country and especially its agricultural sector due to its negative influence on agricultural production (UN-HABITAT, 2010; USAID, 2005; Muawanah, 2018). The benefits of various inputs and physical interventions in agricultural development are rapidly dissipated due to land disputes especially with respect to middle socioeconomic status farmers. The major energies, both physical and financial, of the farmers exposed to land disputes are wasted on dispute-related expenses and activities. the focus of attention of all farmers exposed to land disputes is diverted from agricultural production to mutual enmities, which result in their reduced interest in agriculture, low financial inputs in agriculture, and reduced production (Muyanga & Gitau, 2013; World Bank, 2010). The middle socioeconomic status farmers are afraid of investing in their agricultural fields out of fear that their investment along with the disputed land might be taken away by the rival. Thus, the middle socioeconomic status farmers owing disputed lands tend to reduce fertilizers and chemical applications and are the least interested in the farming profession. Such farmers readily shift to other professions when finding an opportunity and are characterized bya gradual decline in their agricultural production (Muyanga & Gitau, 2013; Deininger, Goyal, & Nagarajan, 2010; Baker & Miceli, 2005; Muyanga & Gitau, 2013; Siddik et al., 2018). Deininger & Castagini (2004) further added that the number, intensity, and duration of land disputes is comparably high in middle socioeconomic status farmers due to which their limited arable land resources remain uncultivated or improperly treated, resulting in low agricultural production (Eklund & Thompson, 2015; Baumann et al., 2014; Muawanah, 2018). Those countries that succeeded in resolving land disputes showed promising results in enhanced agricultural production (World Bank, 2010; Muyanga & Gitau, 2013; Siddik et al., 2018; Demetriou, 2014).

Table 4. Association between the status of land disputes and agricultural productivity (controlling the socio-economic status of the respondents)

Socio-economic status	Relationship with land disputes	Net Income				Statistics χ^2 (P-Value) T^c=	Level of significance for the entire table
		Above-average net income	Average net income	Below average net income	Total		
High socioeconomic status	High land disputes	23 (45.1)	16 (31.4)	12 (23.5)	51 (100)	χ^2 =0.261 (0.992) T^c=0.039	
	Moderate land disputes	8 (42.1)	6 (31.6)	5 (26.3)	19 (100)		
	Low land disputes	7 (41.2)	5 (29.4)	5 (29.4)	17 (100)		
	Total	38 (43.7)	27 (31)	22 (25.3)	87 (100)		
Middle socioeconomic status	High land disputes	6 (5.1)	69 (59)	42 (35.9)	117 (100)	χ^2 =55.960 (0.000) T^c=-0.204	χ^2 =30.064 (0.000) T^c=-0.131
	Moderate land disputes	35 (40.7)	19 (22.1)	32 (37.2)	86 (100)		
	Low land disputes	13 (52)	5 (20)	7 (28)	25 (100)		
	Total	54 (23.7)	93 (40.8)	81 (35.5)	228 (100)		
Low socioeconomic status	High land disputes	5 (16.7)	9 (30)	16 (53.3)	30 (100)	χ^2 =3.213 (0.523) T^c=-0.162	
	Moderate land disputes	7 (31.8)	8 (36.4)	7 (31.8)	22 (100)		
	Low land disputes	5 (29.4)	6 (35.3)	6 (35.3)	17 (100)		
	Total	17 (24.6)	23 (33.3)	29 (42)	69 (100)		

Percentages are given in parenthesis

4.3. Conclusions and Recommendations

It was depicted in the study that clarity of the ownership of land, interest in farming, and investment in land development and agricultural inputs are important correlates of agricultural productivity in the study area. Farmers free from land disputes were more interested in farming, eager to invest in their agricultural lands, and were taking proper care of their crops, as against the farmers who spoiled their resources and energies in land-related disputes. Farmers who were involved in land disputes were unwillingly cultivated their lands because of the fear of losing their lands at any time. Moreover, these farmers cannot use modern machinery for the cultivation of their lands because of small parcels and disputes on roads with other farmers due to which the agricultural productivity of these farmers was quite low as compared to their counterparts. Correction, computerization, and regular updation of land records (including maps and other registers/forms to clarify the demarcation, ownership, and use related rights of the individuals/groups can overcome land disputes. This would also aid in the avoidance of wastage of financial, social, and time resources and its positive utilization in agricultural production.

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