www.irss.academyirmbr.com
International Review of Social Sciences
September 2020
Vol. 8 Issue.9

Understanding the Issues and Problems of Agriculture in Pakistan
(A Case Study of District Bahawalpur)

Mr. ADNAN JAMIL
Department of Anthropology, Quaid-i-Azam University Islamabad.
Email: adnanjamil2050@gmail.com

Dr. MUHAMMAD ILYAS BHATTI
Department of Anthropology, Quaid-i-Azam University Islamabad.

Abstract

Agriculture remained the backbone of Pakistan since its inception. Without any doubt the sector was under different circumstances that is why we still faced lot of issues to strengthen the livelihood activities. The present research article derived from PhD research work, particularly some of the issues faced by the farmers in Bahawalpur district discussed to make the reader understood about the actual situation and the ground based issues that is why we need emergency reforms in agriculture sector to sustain the growth and nutrition of the country's population. In the article two tools for the data collection discussed e.g. in-depth interviews and the FGDs with the stakeholders. The study concluded that, due to negligence of farmers and lack of available and standard facilities from different government departments the dream of prosperous and green Pakistan remained a dream under different circumstances. Farmers wanted to change but due to poor economic condition and other external influences they living very hand to mouth lives and all the time remained under debt. If government wanted to provide relief to the farmers she must have to maintain the watercourses as well as electricity services on standard rates. Otherwise the urbanization will increase the burden on cities which leads toward the decrease in agricultural products and increase in imports for the survival of masses.

Keywords: *Issues, Problems, Agriculture, Water.*

Introduction

Pakistan is the agricultural country, and the cultivating area increasing yearly (Zafer et. al., 2018). Significantly the area of cultivated land increases from 16.62 Mha to the 22.15 Mha from 1971 to 2003 (Zafer et. al., 2018) due to increase in population but the average ownership of land decreases as well. Due to major emphasis on the agriculture 48.4% of the working population engaged directly or indirectly with this sector. Aggregately 60% portion covered by the crops' production and reaming 40% consists of livestock and forestry (GoP, 2011). Now a day after the globalization and modernization of tools and cropping mechanism, Pakistan is in the transition phase, formalization of agrarian economy and overall modernization process in the society. Multiple factors are playing their role towards such change. The magnitude of the change in farming patterns, and change in production bring various diversities for the farmers in the Country. Agriculture remained the major livelihood strategy for the Pakistani population, but this sector facing lot of issues e.g. irrigation water, electricity, lack of coordination among government departments and the farmers are some of them which will be discussed further in this article.

The Bahawalpur district was selected to find out the agricultural issues and magnitude of such issues on the social and economic lives of the farmers. Currently, farmers leaving their cultivated lands for decrease in

average production, lack of financial resources to maintain loses, lack of government services to increase the sector which forced them to metropolitan cities e.g. Bahawalpur, Multan, Karachi, Lahore etc. for their livelihood. It has become difficult for them to cope with these changes which further emerge many socio-psychological and economic problems related to their agriculture activities.

The study majorly deals with the challenges of the farmers facing due to modern production mechanism, from conventional tools of production to the modern technology e.g. electric tube wells, watercourses, government soil and water testing labs etc. The study also deals with lack of training by the government stakeholders; less awareness and understanding of the actual situation by the farmers are some of the issues which need to be resolved. Some major questions were to find out the nature and dynamics of communal socio-economic cooperation, how the kinship system works to take care of local community to cope with the farming challenges are also the part of the study.

The Urbanization

A comprehensive definition of urbanization was given by Satterthwaite, McGranahan & Tacoli (2010) stated that it is the increasing number of population living in urban areas and reducing in rural areas nationwide. According to different studies (Cohen & Garrett, 2009) the average rural population was 6.7 % in 1900 worldwide, but now there is very less population living in rural areas and the number of population decreases gradually and will reached its least number in 2025 (Satterthwaite, McGranahan & Tacoli, 2013). In the study the term was utilized to measure the expansion of urban population and the use of cultivated land for construction of houses and other purposes. The proportion of urban areas are increasing day by day, people moved to the city centers for better future and focused on educational facilities, government civil services, lots of job opportunities etc.

Climatic Variability and Environmental Problems

Climate change and agriculture are inter-related processes both of which take place at global scale. Climate effects agriculture in number of ways including changes in average temperature, rain fall and climate extreme. Deficiency of water resource, management for production of crops has badly affected the agricultural production. Natural disasters interfere with economy and destroy infrastructure, resulting in a disruption of livelihoods, normal services and health care. Floods can be particularly disruptive, leading to widespread collapse of infrastructure. (Gioli, 2014).

Siddiqui et al (2012) consider the impact of climate changes on manufacturing of four major crops in largest province of Pakistan, Punjab. The authors conclude that short run changes in temperature negatively affect wheat production. The heavy rain fall damages crops in both short run and long run. The study interestingly finds that high temperature is good for rice productivity however, after some optimal level it ruins the rice production. Surprisingly, heavy rainfall proves better for rice production. Similarly, production of cotton is also affected by change in temperature and rain. The inverse relationship is found between cotton production and heavy rainfall. The study also provides evidence that rise in temperature ruin sugarcane production in the long run. The study concludes that impact of climate varies from crop to crop.

Social Organization in Rural Punjab

Social organization is culture specific phenomenon that represents an activity or process. So, the activities or processes performed represent social organization. These activities and process of activities are performed with reference to social relations and the network in the selected village. More specifically, farming activities, particular socio-cultural occasions, ceremonies, social dealing skills of *Biraderi* members represent the social organization.

There is the kinship system rather than caste which embodies the primordial loyalties with its social organization (Alavi, 1972). Pakistani culture encourages collective action over individual action, this cultural pattern has destined that Pakistanis have developed a culture of intervention in which problems are solved through the involvement of allies (Lyon, 2002). Kinship institutions are central to the ways in which political as well as social life in Pakistani rural community is organized. The central institution of kinship in rural West Punjab is the *biraderi* (spelled by some authors), which is usually a tightly knit corporate group and which typically is subject to the authority of a *biraderi*, or *panchayat* i.e. council (Alavi, 1972).

Social relations based the social structure of *Biraderi* system that facilitates to perform the farming activities within the social organization. The theoretical perspective of A.V Chayanov (1925) evidenced that peasant family farming system normally violate the profit making business because survival strategies of the peasant family, farming is systematically different from those of capitalistic enterprise. In other words, Vanclay (2009) argues that profit is not the main driving force contrary to the expectation of many economists, extensionists and agriculture scientists. Family farming carries with it a commitment to certain values; entirely independent of the pettiness of economics (Strange, 2008). Social relations among the *Biraderi* members determined the strength of social structure and social organization. Within the social organization of the village, *Biraderi* members performed their social, cultural and economic activities. *Vertan Bhanji*, *Seyp* system, *Mang* and *Wingar* played a significant role to strengthen the social organization. With the adoption of new occupations, the distance among the *Biraderi* members increased. Evidence shows that in the developed countries, modern farming system is being replaced by family farming system.

Material and Discussion

Methodology

Present research study derived from my PhD field work. A comprehensive 1.5 year field work has been done for dissertation. Three research tools were administered for the study e.g. In-depth interviews and FGDs and participant`s observations. Tools were utilized for the data collection and purification of collected data. After the establishment of rapport in the field, with the help of key informants the respondents will be selected as per the criterion derived from review of literature and keeping in mind the objectives of the study. For the selection of the respondents from the field and stakeholders from government department, two different sample methods were used. First, with the help of non-probability sampling method, purposely farmers were selected on the basis of two characteristics e.g. tenants and landowners who cultivated their lands. Government officials from Irrigation department selected on their connivance and were interviewed for their input regarding government policies and services provided to the farmers. Overall, 28 farmers (Tenants and landowners) and two officials from Irrigation department were included. One FGD was conducted for this study which included six farmers (three tenants and three owners) two irrigation department officials.

Recently, the Pakistan Council of Research in Water Resources (PCRWR) delivered a grave warning: if the government does not take action, the country will run out of water by 2025. Immediate coordinated planning and implementation is required to avert disaster (PCRWR.2017). A number of studies showed that the agricultural sector has the potential to boost the economy and decrease the poverty (Haque, 2002). Majority of the farmers are small landholder and their livelihood depends upon it (Bhutto & Bazmi, 2007). Government agricultural and irrigation departments have the responsibility for the actual performance and the coordination among govt. and local farmers (GoP, 2007).

Coordination of Govt. Staff and Farmers

Government of Pakistan since its inception to up till now lunched a number of agricultural extension programs (Abbas et. al., 2009) for rural development e.g. village agricultural development programs,

village cooperative movement are some of them. Training the villagers were the World Bank project which was initiated around the 50 developing nations around the world which were started in 1978 in Pakistan (Anderson et. al., 2006). Dawn (2013) shared an article on the eighteen 18th amendment the devolution of power to the provinces for the agricultural developments to reduce the risk of government department involvement at gross root level.

There was government's soil testing laboratory in the Bahawalpur district to strengthen the farmers' potential, which helped the farmers for water and testing their cultivating land soil. There were only two farmers who visited that lab for water and soil testing every year cycle. Six farmers conduct soil and water testing occasionally. All of the tenant farmers do not conduct this test. Two of the tenants informed that two private companies had visited two years back and they had conducted the soil testing of their land. When asked about the reasons for not conducting soil and water testing from those who had knowledge about this lab.

Majority response from land owners and tenants were that the lab is situated far away and it takes a lot of time and resources to reach their. They are also not aware of the protocols or sample to be produced for testing. Some small farmers were not aware of the benefits of soil and water testing and they don't consider it necessary. They use fertilizer on the basis of their and other farmers' experiences.

The land of the village is being cultivated for several years. Did my forefathers ever conduct soil and water testing? No it is just a misconception. Only give good fertilizer it will fulfill the need of soil nutrition. During FGDs all the farmers and tenants informed that they had never seen any advertisement in the village about Govt. laboratory situated at Bahawalpur. It is 55 KMs away and it is the only laboratory in the whole district. Most of the farmers are also not aware of the exact location of the laboratory. Nor had they any contact details of this lab available in the village. The FGDs respondents also informed according to belief prevailing in the farmers, the private companies which were visiting the village were basically producing results of the desired samples of soil and water in order to sell their own fertilizers.

Field Visits of Staff

There is a gap and lack of communication and cooperation between farmers' community and government staff. When asked about the effect, farmers shared it impact in two ways like the farmers are unable to share their current problems with agriculture experts and on the other hand agriculture staff and experts are unaware of the problems being faced by farmers.

During FGDs the farmers indicated that there are no visits made by government level field expert teams in the village and the farmers have to solve their issues at local level. They had not conducted any awareness session in the village where they had could get information about the problems and issues of the farmers. Almost all the land owners and tenants expressed desire to have the visits by Government Agriculture and Water Management Departments. Three farmers informed that they had contacts with Government officials from the Agriculture Department and they were seeking guidance from them. However it was on the basis of personal acquaintance. The narrative was conducted from Agriculture department of Tehsil office, due to the shortage of funds, vehicle and staff, it is not possible to arrange field visits village to village.

Scanty Monitoring

The study also indicated that on part of Government, inadequate monitoring of seeds, fertilizers and pesticides also the basic reason behind the low agriculture production as it puts negative impact on agriculture.

During the tenants and land owners FGDs the respondents informed that Government is unable to check uncertified dealers of pesticides, seeds and fertilizers due to which they have a free hand to sell whatever they want. Due to lack of monitoring in the local markets, there are many certified and uncertified

companies operating and selling low quality and uncertified seeds and expired insecticides. The low quality products are sold to the farmers over high prices. The products are also sold in the market with fake name, quality and label or by using the name of other companies and without stamps. One of the tenants present in IDI expressed his difficulty in these words, I have no tool to differentiate between original and fake seeds. I only know after I use the same that they were fake.

The other respondents also shared that the companies have fixed their own rates for different seed products. Some dealers and investors are involved in accumulation of the products and selling them openly on black rates. In the peak season, the farmers have no other choice than to buy these pure/fake seeds very costly. As quoted by a small farmer, *uncertified seeds and pesticides are being sold openly in the black markets but we cannot see Government taking notice of it.* From low quality products, farmers are unable to fulfill the needs and requirements of their crops. Another farmer opined that, *there is no check and balance over the private companies and dealers.* He further complained that *Government monitoring teams take monthly bribe from companies and dealers and give them a free hand to do whatever they like.*

Water Resources

According to the study of Ashraf (2016), a country with less than 1700 m3 per capita water resources is known as water-stressed country. The Falkenmar et. al., (1989) established the population and the water relationship to identify the human growth. So, if water availability reduces up till 1000 m3 mean water scarcity and the 500 m3 means the absolute water scarcity. Pakistan crossed the scarcity line and if the issue will not be solved at 2025 it leads towards the absolute-water-scarcity. In 2004 the short fall was 11% and according to the estimation it reaches up to 31% in 2025 (GoP, 2001). Pakistan has sufficient water resources which were destroyed in 2010, 2012, and 2014 floods, in current situation Pakistan is the water scare country and situation becoming worse.

The landowners and irrigation department both are equally responsible for the lack of watercourse maintenance and failure in the area. Government supposed to supply the materials such as concrete outlets (nakka), technical support and supervision meanwhile the landowners are responsible for the construction and installation (labor). The watercourse improvement program undoubtedly faces more than single problem on the installation of each single watercourse. It has been observed that political and ethnic disputes among the farmers and stakeholders have caused delay or postponement of these projects.

According to the rules, for the improvement program, all the landowners and farmers of concerned command area have to give combined application, bank draft fee and labor charges on sharing basis. But, some of the issues emerges the landowners often remained unable to afford bank fee or labor expenditure. They do not think seriously about the issues of water shortage and they are often involved in the cutting of their watercourses. The farmers, because of competition and clashes among them, become the cause of failure of projects.

Water Theft

It has been observed that water is one of the main reasons behind low efficiency and inability of the farmers to get their fixed water share. Many of the farmers have fixed illegal, open water pumps in the canals and watercourses to irrigate their crops. They remove those pumps after irrigating their crops. The water theft process, in most of the times, is done during night hours. The villagers, even knowing the persons involved in water theft, cannot complain to the concerned department because of Biradrism.

According to most of the farmers, if they complain then the complain office staff and officials leak the name of the complainer and the clashes start in the Biradri. Even some out of cast villagers had 3-4 complains and applications against illegal water pumping, but due to the political influence and bribe, there was nothing done against the water theft and persons involved in it. It has been observed that frequent and openly thefts of water are done by some most influential landowners on collusion with irrigation officials of

agriculture department. No one in the village dare to complain against them and the department also takes no serious actions against them. This inequitable water distribution results not only in inefficient use but also it reduces the crop production.

Inequitable Distribution

Other major reason behind the low water efficiency is the inequitable distribution of water. The big landowners have, in their watercourses, fixed Moghas which are bigger than regular size. The size of regular 'mogah' is 6 inches, but the big landlords, due to political influence and bribe, have got and fixed the 'mogahs' of 8-12 inches. The water flow in tail zones is low due to this inequitable distribution. With having equal time and water share, the small farmers are often unable to fulfill their requirements and get water from other sources. Impacts on Agriculture due to unimproved watercourses

According to the water irrigation department, in the Bahawalpur in the year of 2015, only 1411 watercourses out of total 3261 watercourses are maintained and improved. In this way much of water is wasted as more than half watercourses are still un-improved. This puts negative impacts for agriculture and as well as farmers.

Water Logging and Salinity

A huge quantity of irrigated water wasted due to un-improved watercourses which further spoils the land in which it gathers which leads toward the water logging and salinity land that has been increasing. The crop production is also effected in this way. According to the one official expert from the irrigation department, *the subsidy over water canal irrigation has been basic cause for water logging*. He further told that *subsidies make irrigation water a cheap commodity.* The farmers neither renovate nor take care of this precious resource within their command area watercourses.

Electric Resources

The electricity remained low from its demand in Pakistan, in 2008 it was 15% (ET, 2008) less than its actual demand and same case was recorded in 2014 when the shortage of electricity reached at 5000MW (Govt. of Pakistan, 2014). With the growing population from 79.89 m to 276.17 million, urbanization, industrialization and the average increase of electricity at household level contributed aggressively in the consumption of electricity and its demand (Kessides, 2013; Ponzo et. al, 2011; Naqvi et. al., 2016; SESRIC, 2014). Agriculture is the only way of sustainable development of the growing countries of South Asia like Pakistan, is playing very crucial role in the GDP development (Alauddin & Quiggin, 2008; Nawaz, Arif & Masood, 2014). Rural and urban areas connected to the electricity for their daily routine life; in rural areas they are more dependent on the electricity because due to lack of economic resources they are not able to purchase other items e.g. solar system and the batteries etc. for their use (Demirbaş, 2001; Purohit, Tripathi & Kandpal, 2006).

Flat Tariff Policy

The government has introduced meter tariffs for the farmers. With this tariff policy, electric company charges according to fix flat rate per month on horsepower motor usage. Different rate over the usage in different hours applied, and discount over per unit consumption during nights. Farmers are unhappy from this tariff policy. According to them, *this is just the show off policy of the government. There is 15-18 hours load shedding in 24 hours, and when electricity is available then farmers are able to use the tube wells due to certain sessional and personal reasons.* They have to irrigate the crops irrespective of whatever per unit tariff rate is at that time, because if you missed they must have to wait other 15-18 hours. The farmers have to use tractor during load shedding, and they pay flat rates per month even in case of nonoperation of electric tube wells. This may cause overburden on their sessional income and again the factor to force them to rural-urban migration.

Over Billing

WAPDA exploits the farmers by overbilling. The farmers owned private electric tube wells and faced an issue of over-billing from national electric department. Electric companies, often put the burden of extra units over the farmers in each six months or year to meet their target debit circle. The farmers have to pay the bills in the banks within given date even if they have not used and consumed those electric units mentioned in the bills. If they do not pay those bills, their tube well connections are cut.

According to the farmers, *often they receive the bill which is three times bigger from their total unit consume. They go to Tehsil electric offices for the correction of their electricity bills but they are not heard and responded and are told to pay the bills. They promise them that their extra bills would be adjusted in next month. The farmers have to pay that bill forcibly due to fear of cutting of their electricity connections. Farmers bear two types of loses from the over-billing. The first is that with the higher unit consume, per unit rates are also increased after 100 units. They have to pay the extra taxes in this way. The extra charges of units and additional tariffs have to be paid by the farmers.* The electric company completes its circle but the economic circle of the farmers is disturbed and they have to pay the bills by taking loans which leads them to psychologically imbalance in the family and external affairs.

According to an official from the WAPDA Tehsil Office, *the department is no more profitable due to lack of funds and energy crises. The salaries of the employs are also delayed. The task of unit's consumption is handed to Sub Tehsil Office by the Head office.* They ordered to fill and complete the circle. For the completion of their targets over billing is done which burden the farmers. And the falls hopes remained un-true that their overbilling will be adjusted in next months.

Load Shedding, Low Voltage

The prevailing energy crisis in the country has given birth to load shedding. In the last 10 years, the government has remained unable to solve the issue of load shedding and the duration is constantly increasing. The agricultural, rural areas are worst victim of load shedding. Due to load shedding, crops are not irrigated in required time and when this happens the crop production affected negatively.

The duration of load shedding in the selected village has been increasing from last 10 years to great extent. In the winter, this duration remains from 10-12 hours per day while in the summer this duration increased from 15-18 hours. The summer period remained very critical for the farming and agriculture sector in which the proper irrigation of crops is necessary. The infrastructure of the village is week, and when extreme weather conditions or dust storms come, the duration of load shedding further increased. In these conditions there is often no electricity for 2-3 days in the village. Due to the closure of water canals for 6 to 8 months, the private tube wells remain the single source of irrigation. The water requirements of crops are not met by the farmer in required time due to long hours and duration load shedding.

The energy crisis in the country has reduced business and economic activities in the country. The farmers who have electric tube wells and motors are major victim of load shedding. There is no schedule of electricity short fall in the village. The farmers have to wait for the electricity to run their tube well. The crops of farmers are not fully and properly irrigated and few portions of their land missed most of the time. According to the farmers, *the unscheduled and continuous load shedding has forced them to sleep alongside their tube wells during night in waiting the electricity. The routine and life of their households is also affected in this way.* Out of a total 1520 acre cultivated land in the village, the 995 acres are irrigated through private tube wells. Due to the serious electricity short fall the irrigation sources fail to work in optimum manners.

Tractors and diesel engines are alternative sources to run these tube wells, but due to higher diesel prices, the problems and expenditures of the farmers are increased to great extent. In the normal routine, the cost of irrigation through electric tube well is Rs 190/hour and during load shedding, this cost increased from

actual price to Rs. 380/- per hour if alternative sources of diesel engine utilized. According to a farmer, *those farmers, who do not have their own tractors, forced to get rented tractors and their expenses may increase 200 rupees per hour. The lot of time is also consumed along with increase in the expenses.*

If electricity is available the low voltage and tripping issues emerges which disturbed the routine life of farmers and they are unable to irrigate their crops in time. In these conditions, often the motors of tube wells are also burnt. The farmers have to afford and bear high maintenance expenditures over motors and tube wells. Tripping of electricity also increases the per hour expenditure cost of electric tube wells. Low voltage and tripping are common in the village. Because of tripping and low voltage, the expenses of electric tube wells are doubled and the tensions of the farmers are further increased.

Social Impacts

As a result of unimproved canals watercourses, the farmers have to face the challenges of conveyance loses, low cropping intensity, decreased cropped area, low crop yields and low farm incomes in the project area. The low income villager's community is not improving their livelihood. Besides this, water theft, farmer's clashes among themselves, psychological disturbance and low farm income have disturbed the social life of farmers and villagers.

Lack of Farmer's Organization

Another reason behind the problems of water irrigation system is that there are no farmer's organizations in the village. Baradarism and social inequality are the hurdles in the way of forming the organizations. The farmer's organizations at the village level helps the farmers convey the drawbacks and shortcomings in the irrigation system to the irrigation department. They can meet and discuss new strategies with them. Besides this, the implementation process over water thefts, illegal pumping from the distributaries or minor canals, inequitable distribution, political influence, department corruption related issues can be made easier. The lack of coordination between farmers and irrigation department increases the flaws in the irrigation system.

Rural Urban Migration

Due to the shortage of basic facilities in the village the trend of rural and urban migration is also increasing and affected the agriculture. According to the survey (done by the researcher), 11 households have permanently migrated from village to Bahawalpur City from last five years. 23 households have adopted seasonal migration from village to Tehsil Khairpur and Bahawalpur City. 08 households among these belong to agriculture labour and now they are doing alternative work in mills or factories in the City. Such families come back to the village in harvesting or cotton picking seasons when land owners faced shortage of labour. During FGD discussion, farmers told that due to skilled labour migration the available labour has low skill and they charge more per day wage from previous once. A land owner shared,

I have been cultivating land for the last 20 years, I never faced shortage of labour before that. Now for the last many years, rural-urban migration is in trend, so I have to call labour from the other village. It is expensive and I have to hire it as timely labour saves crop and the untimely one destroys it.

Some migrant land owners shared after their migration from their land to the city, they leased out their lands. However, some taking care of their lands. During FGDs their consensus was that in city their concentration gets diverted to other things and they cannot visit their lands themselves. A migrant farmer shared,

In city we have to run household affairs, we have to drop and pick school children, how can we visit cultivated land daily which is 60 miles away. It is not possible for me to taking care both at the same time, so I deploy a manager there he taking care of the land related affairs.

Impacts over farmer's health and livelihood

Serious electric short fall has badly affected the crop irrigation system. Most of the farmers told that they were often worried about electric shortfall and continuous load shedding. The low voltage and tripping issues also have made them psychological patient and their sleep and rest both the times are disturbed and affected. Both the agriculture and livelihood have been adversely affected by serious short fall of electricity. The daily 15 to 18 hours load shedding has destroyed the village and household's system. The livestock stuffs like milk, meat, yogurt and *lassi* deteriorated due to the closing of Refrigerators. In the village, the marriage events and ceremonies are also affected due to electricity short fall.

Water Market

Water market provides the most promising institutional mechanism for increasing access to irrigation from groundwater resources, especially for small farmers and Tenants. Because the surface canal water is not enough to meet the needs of the farmers. The farmers have become more dependent over groundwater for last few years due to the closure of most of the canals from the irrigation department. Sale and purchase of Groundwater is an informal business in which small farmers and Tenants get the opportunity to purchase and use the underground water.

The Flat tariff policy by the government regarding electric tube wells, have put deep impact over the water market. Now it has become as an opportunity for the small farmers to buy more and more electric tube well water. The prices of diesel engine and tractor operated tube wells are too high as compared to electric tube well because they consume more fuel.

So, most respondents give preference to electric tube wells and majority of the electric tube wells in the Village belong to high social cast *Isra Biradri.* There is a compulsion on the purchase of water that either the purchaser from the same *Biradri* or have good relations with that *Biradri*. The 45 percent tube well owners in the village sell the water from their pumps. The Seller of the water often charges more than regular per unit, and the rates of energy, labor and motor oil are also included it these charges.

Tube Well Sharing

There is a dominant trend of tube well sharing in the village. Due to the shortage of canal water in the village, the 80 percent farmers of the village are dependent over private tube wells. Because of low income and poverty, the small farmers cannot individually afford the installation of tube wells. That is why the 17 out of 25 tube wells in the village are on sharing basis among the same ethnicity *(Biradri)* farmers. On sharing and utilizing the Tube well, the meter reading and units consumed by a shareholder are noted and in the end electric bill is distributed among the shareholders according to the ratio of their usage and units. Other charges of maintenance, oil change etc. are contributed equally by all the shareholders. The clashes among many of the shareholders also have been observed relating to shortage of money, distribution of bills, delay in paying electric tube well bills, and maintenance expenditures. But these clashes are solved by them as they are mostly from the same Biradri and family.

Discussion

A government soil testing laboratory working in Bahawalpur district to facilitate farmers and provide them advices for more yield and new mechanism how to efficiently used water. Testing of soil is not being observed and practiced by the farmers. Fertilizers were used on personal experiences, without any scientific verification and testing of soil that which ingredient is needed the most. This was on the farmers' side, field staff of the laboratory and monitoring on the field visits may reduce the utility of the laboratory among the farmers. The study also indicated that inadequate monitoring of seeds, fertilizers and pesticides is the reason behind the low agriculture production as it puts negative impact on agriculture.

The landowners and irrigation department both are equally responsible for the lack of watercourse maintenance and failure in the area. It has been observed that water is one of the main reasons behind low efficiency and inability of the farmers to get their fixed water share. Many of the farmers have fixed illegal, open water pumps in the canals and watercourses to irrigate their crops. Other major reason behind the low water efficiency is the inequitable distribution of water. A huge quantity of irrigated water wasted due to un-improved watercourses which further spoils the land in which it gathers which leads toward the water logging and salinity land that has been increasing.

As per survey of (GoP, 2014) the electricity demand still more than its supply, overbilling and lack of electricity were the major problem which forced farmer to water selling/purchasing for irrigation that again forced economic burden. Provision of facilities at village level must be the policy of government (Abbas et. al., 2009; Anderson et. al., 2006), because villages provide living to the cities, without villages there are no cities, but lack of accountability and awareness among the farmers which must be due to less advertisement and visits of field officers reduced the effectiveness of government initiatives.

Discussion of the Alauddin & Quiggin, (2008), Nawaz, Arif & Masood, (2014) studies showed that agriculture is the only way for sustainable livelihood development, without government facilities from policy making to its implementation level (Purohit, Tripathi & Kandpal, 2006), political well it is not possible individually or through social organization that small scale farmers may add in GDP. Provision of electricity is the major issues, government introduced meter tariffs for the farmers. With this tariff policy, electric company charged flat rate per month. Different rate over the usage in different hours applied, and discount over per unit consumption during nights have been given to the farmers.

WAPDA exploits the farmers by overbilling. The farmers have to pay the bills in the banks within given date even if they have not consumed those electric units mentioned in the bills due to load-shading and electricity shortfall. The electric company completes its circle but the economic circle of the farmers disturbed and they have to pay the bills by taking loans which leads them to imbalance in the family and external affairs. The duration of load shedding in the selected village has been increasing from last 10 years to great extent. In the winter, this duration remains from 10-12 hours per day while in the summer this duration increased from 15-18 hours. The infrastructure of the village is weak, during extreme weather conditions or in dust storms the duration of load shedding further increased which leads towards burden over farmers.

Problems must be resolved with the help of other farmers, but in the selected village no farmer's organizations observed. *Baradarism* and social inequality are the hurdles in the way of forming the organizations.

Lake of provision of basic facilities e.g. health, education, transportation in the village the trend of rural-urban migration has on its peak which affected the agriculture. A respondents stated that, when I was young, the entire *Biraderi* worked together, harvesting the crops. According to the farmers, harvesting with the help of family or *Biratheri* labor was more beneficial than that of using harvester due to certain reasons e.g. economic help, well-being of the other farmers, cohesion among the ethnic groups etc. There were no hard and fast rules in the cooperative networks among the farming communities.

Conclusion

Study concluded that agricultural areas has the potential (Haque, 2002), but due to rural poverty majority of the farmers owned small land, lack of electricity, over-billing, load-shading, lack of watercourse maintenance, influence of big-land lords on the distribution of water, lack of awareness among the farmers regarding the facilities provided by the government for their soil and water are some of the important factors which forced them to left the profession for a batter survival strategy of their children.

Recommendations

Some of the recommendations have been extracted;

- Ethnic pride and representation may be included in the policy making and government initiative. In rural areas ethnic representation is more important that is why low-cater ethnic groups remained vulnerable and get less from government facilities.
- Provision of flat-electric-tariff and electricity is the need of hour.
- Rates of the electricity consumed units may be revised.
- Social work departments may facilitate farmers to established farmer's organization which may resolve water-distribution, water-channels up-gradation and other water related issues which may reduce the anxieties of the low scale farmers.
- Government must take serious steps to reduce the worries and issues of farmers for the sustainable independent agricultural product country.

References

Abbas, M., T. E. Lodhi., K.M. Aujla and S. Saadullah. (2009). Agricultural Extension Programs in Punjab. *Pak. J. Life Soc. Sci.,* 7(1), p. 1-10.

Alauddin M. & Quiggin J (2008). Agricultural intensification, irrigation and the environment in South Asia: issues and policy options. *Ecol Econ*, 65(1): 111-124.

Anderson J.R., G. Feder and S. Ganguly. (2006). The Rise and Fall of Training and Visit Extension: An Asian Mini-drama with an African Epilogue. *World Bank Policy Research Working Paper 3928.* Agriculture and Rural Development Department World Bank.

Ashraf, M. (2016). Managing Water Scarcity in Pakistan: Moving Beyond Rhetoric. Proceedings of AASSA-PAS Regional Workshop on Challenges in Water Security to Meet the Growing Food Requirement. *Pakistan Academy of Sciences*, Islamabad. pp. 3-14

Ashraf, I. S. (2006). RURAL POVERTY IN PAKISTAN: Some Related Concepts, Issues and Empirical Analysis. *Pakistan Social and Economic Review* , 259-276.

Bhutto, A. W. and A. A. Bazmi. (2007). Sustainable Agriculture and Eradication of Rural Poverty in Pakistan. *Natural Resources Forum*, 31, p. 253-262.

Cohen M. and Garrett J. (2009). *The food price crisis and urban food insecurity.* London, UK: IIED

Dawn (2013). *Social agenda with new federalism.* Daily Dawn, March 25, 2013. http://www.dawn.com/news/797732/social-agenda-with-new-federalism (accessed August, 2014).

Demirbaş A. (2001). Biomass resource facilities and biomass conversion processing for fuels and chemicals. *Energy Convers Manag*, 42(11): 1357-1378.

ET (2008). *Energy tribune*. Pakistan's ongoing electricity shortage (Accessed 15 July, 2020 from /http://www.energytribune.com/articles.cfm?aid=864S)

Flakenmark, M., J. Lundquist, and C. Widstrand. (1989). Macro-scale water scarcity requires micro scale approaches: aspects of vulnerability in semi-arid development. *Natural Resources Forum.* 13: 258-267.

Gioli, G. (2014). Migration as an Adaptation Strategy and its Gendered Implications: A Case Study From theUpper Indus Basin. *Mountain Research and Development*, 255-256.

GoP. 2001. Ten years Perspective Development Plan 2001-2011 and three year development program 2001-2004. *Planning Commission, Government of Pakistan.* 53 (1): 1-15.

Government of Pakistan, (2014). National power policy Pakistan.

Government of Pakistan. (2007). *Economic Survey of Pakistan 2006-07*. Ministry of Economic Affairs. Government of Pakistan, Islamabad, Pakistan.

Government of Pakistan. (2011). *Pakistan Economic Survey 2011-12.* Ministry of Finance, Islamabad.

Haque, U.I. (29 April - 5 May 2002). Uplift of Landless poor through Agricultural Reforms: WB. *Dawn Econ. & Business Rev.*, p.1-6.

Helbock, R. W. (1995). Differential Urban Growth and Distance Considerations in Domestic Migration Flows inPakistan. *The Pakistan Development Review,*, 58-84.

Irfan, M. (1986). Migration and Development in Pakistan: Some Selected Issues. *The Pakistan Development Review*, 743-755.

Kessides, I. N. (2013). Chaos in power: Pakistan's electricity crisis. *Energy Policy*, 55: 271-285.

Naqvi M, Yan J, Dahlquist E & Naqvi SR (2016). Waste biomass gasification based off-grid electricity generation: a case study in Pakistan. *Energy Procedia,* 103: 406-412.

Nawaz W, Arif M & Masood B (2014). *Energy crises mitigation through available energy potential in Pakistan.* Superior University, pp 1-10

Ponzo R, Dyner I, Arango S & Larsen ER (2011) Regulation and development of the Argentinean gas market. *Energy Policy*, 39(3): 1070-1079.

Purohit P, Tripathi AK & Kandpal TC (2006). Energetics of coal substitution by briquettes of agricultural residues. *Energy*, 31(8): 1321-1331.

SESRIC, (2014). *The statistical, economic and social research and training centre for Islamic countries.* http://www.sesric.org

Satterthwaite, D., McGranahan, G. and Tacoli, C. (2010). Urbanization and its implications for food and farming, *Philos Trans R Soc Lond B Biol Sci*., 365(1554): 2809-2820.

Zafar, F. K, Sagheer, M., Hassan M., Gul, T., Hassan, F., Manzoor, A. and Atif, W. (2018). Agricultural dynamics in Pakistan: current issues and solutions, *Russian Journal of Agricultural and Socio-Economic Sciences,* 8(20), 20-26.