

**Multidimensional Study of Irrigation Water Conflicts(A Case Study of Chotalahor, District Swabi)**

Waleed Imam<sup>\*1</sup>, Aman Ullah<sup>1</sup>, Hina Ashraf<sup>1</sup>, Waqar Ahmad<sup>2</sup>, Fayaz Ahmad<sup>2</sup>, Jawad Ali Shah<sup>3</sup>

<sup>1</sup>*Department of Sociology, University of Swabi-Pakistan*

<sup>2</sup>*Department of Rural Sociology, University of Agriculture, Peshawar-Pakistan*

<sup>3</sup>*Department of Agriculture, University of Swabi-Pakistan*

**Abstract**

The main theme of this study was to explore the nature of conflicts among farmers on water related issues in village chotalahor, District Swabi. The study further explored remedies and analyzed the role of Jirga in mitigation of such issue. For this purpose, six in depth case studies of farmers, irrigation employees and Jirga members were conducted. Results indicated that water shortage, low rainfall, vague watering schedules, water theft and shortage of cooperation between farmers as the primary causes of conflicts. In addition the role of Jirga in resolving water related issues was seen to be very weak while study also described irrigation authority's deficiencies like broken and blocked canals and water courses, also added to the intensity of water conflicts. Different sources of irrigation ground water sources and developing new watering schedules for all the fields of the area in order to minimize water numbering issues as well as cooperation and thinking of collective benefits are some of the recommendations.

**Keywords:** Irrigation, water, Jirga, Farmer.

\*Corresponding author address: Waleed Imam

Department of sociology, University of Swabi-Pakistan

Contact :+923139354626

Email: [iwaleed54@gmail.com](mailto:iwaleed54@gmail.com)

## **1. Introduction**

Water plays a vital role in both the nourishment and development of plants and animals on the earth. It is also a key factor for the weather change and the environmental conditions. However water scarcity is a very burning issue in current scenario both tropical and sub-tropical regions of the world are suffering badly due to the shortage of water from the earth's crust. However, water also plays a key role on the socio economic development of a country as well as the well maintenance of the ecosystem. Further, with the massive increase in population with the passage of time an increased shortage in water has occurred throughout the world which created a lot of tension and pressure upon the environment as well as raised conflicts at national and international level [1, 2](COAG, 2007; and UN-WATER, 2006). In current scenario most of the countries around the globe are having problems of fresh water. As Kamal (2009), Estimates about the population of Pakistan to be somewhat 165 million where 50 million are having water problems either for drinking or for irrigation purposes. According to Khan (2009) in 1981 when Pakistan was abundant in water while by the end of 2000 it was having water scarcity problems and it's expected that by 2035 there would be extreme condition of water scarcity in Pakistan [3].

## **2. Irrigation System of Pakistan**

The roots of the irrigation system of Pakistan relates back to 1859, when the UPPER BARI DOAB CANAL (UBDC) was built whose headwork now in India are placed upon the Ravi river. During the same time the sukkur barrage and its network of seven canals serving somewhat 3 million hectares of land was completed. The last installation of canals took place in 1962 with the completion of Guddu barrage on Indus River. Further, in 1972 and 1986, major head works were built on the Indus River all over the country. The thal canals from kalabagh head works was also constructed in 1947. This system of major canals constituted a large part of the irrigation system of Pakistan. But at the time of independence due to the uneven distribution and division of land a major water dispute was created between India and Pakistan, which was then resolved by the enforcement of the "Indus water treaty" in 1960 under the influence of the World Bank. The Indus Basin project that started from 1960-71 came-up with the completion of 5 barages, mangla dam, 1 siphon and 6 to 7 interlink rivers. Tarbela dam was also partially completed from 1975-76. The major asset of the irrigation system of Pakistan was the achievement of the Indus Basin Irrigation System. It is composed of 16 barages numerous inter-link rivers and approximately a network of 45 canals, 5 of which flows in the province of Khyber Paktunkhwa. The total length of canals in Pakistan covers approximately 60 thousand kilometers [4](Ahmad, 1993)

## **3. Water Conflicts in KPK**

Lahor is a town of Swabi District in Khyber-Pakhtunkhwa, Pakistan. The town serves as the headquarters of Lahor Tehsil and is administratively subdivided into two Union councils. The town is a settlement of 35,000 people and is located at 34°02'54"N 72°21'56"E with an altitude of 308 metres and lies west of Swabi and on the northern bank of the Indus River. Lahor is surrounded by YarHussain, Tordher, Ambar and the Indus River [5]. Seventy percent of the village area consist of open farms and are under the water of "pehor" canal that emerges from "Tarbela Dam". The land is highly fertile and the main crops grown are wheat, tobacco, maize, sugarcane and peanuts. Irrigation water conflicts are been a burning issues these which need government and the concerned authorities' frequent attention. As a matter of fact that most of the land is under the canal water that's why irrigation department is been unable to fulfill the farmers of the area with sufficient irrigation equipment and proper canal and water lane system due to the limited provision of resources from the government. Further, conflicts on water are getting more severe due to the poor cooperation between farmers. Due to poor system of irrigation sufficient water is not available to the farms and they are compelled to water their farms through illegal ways which in turn are generating more and more disputes among the farmers of the area. In addition, concerned dispute resolution authorities (Jirga) is not playing its proper role in resolving those conflicts which is why they are getting more worse. In this study I am going to view three main points about the irrigation water conflicts that are the farmer's perception about water conflicts, irrigation department limitations and the institutional role in resolving the water related disputes. Mainly in my opinion the major causes of water related disputes in the study area are water theft, improper watering schedule, least time management, water scarcity, poor infrastructure, poor canal system, unpaid water tax (aabiana) and the poor institutional role of the concerned dispute resolving institutions[6](Husnain, 2014).

#### **4. Statement of the Problem**

Irrigation water conflicts, in the previous few years have raised numerous disputes and many dangerous consequences in our society. These conflicts raised regardless of their causes behind are very devastating for the functionality of a social setup because these are been the basis of brutal disputes and enmities among farmers for decades. Studies have shown that dispute resolution centers like "Jirga" can play a key role in order to curb the effects of water conflicts and the impacts of these conflicts can be minimized to a great extent through Jirga's efficiency. Further, as the function of an institution greatly depends upon its partner institutions, keeping in view the above facts this study has been designed to explore the major cause which leads to irrigation water conflicts and the role of jirga and irrigation authority in study area.

#### **5. Material and Methods**

The sole purpose of this research study was to explore the nature of conflicts and disputes among farmers, on irrigation water, in ChotaLahor, District Swabi. The study further points out the dysfunctions of irrigation authority along with the role of Jirga as a judiciary body to resolve these conflicts. In depth interview method was used as a data collection tool. A sample size of six respondents was randomly selected through case study method. The data was then interpreted in qualitative nature under the umbrella of thematic analysis. Analyzing one theme, that relates the study towards The Conflict Sociological Perspective.

## **6. Results and Discussions**

### **6.1. Farmer A**

This case is about a farmer who himself is a religious scholar and runs a madrassa. Long time ago his father was in a conflict on water schedule issue with his neighbor farmers. The dispute got very severe and was not resolved by any one. As result farmer A's fathers was killed by the other farmers. According to farmer A, the demise of his father was a big tragedy of his life and the enmity is not yet resolved, though tried by Jirga members but farmer A was not happy with the resolution restrictions. In farmer A's views the main causes of water conflicts in the study area are vague water schedules, improper irrigation system, water shortage, blocked canals and "naakas" etc. suggesting the water authorities farmer A suggested that sufficient water should be provided to the farmers and the irrigation system should be improved according the modern standards. In addition Jirga needs to play their role in resolving water related conflicts in the study area.

### **6.2. Farmer B**

Farmer B is a young and talented graduate who belongs to East Lahore. He also had a water dispute with his neighbor farmer. Which lead both the farmers to point guns at each other but then things settled down due the efforts been made by Jirga members. This conflict cost farmer B socially and psychologically as well as economically. According to farmer B the cause of the dispute apparently was water theft but he thinks that the ground causes were water shortage and water salinity of the river Indus. The farmer further added that the main causes of water disputes in the study area are water shortage, salinity, water theft, vague water schedules and poor irrigation management. In addition at the role of the Jirga in resolving water related conflicts the farmer B pointed it as a key factor in resolving water conflicts. While the farmer suggested irrigation authorities to make the system proper and more advanced as well provide sufficient water and use chemicals for making water less saline.

### **6.3. Farmer C**

Farmer C is a 47 year old farmer who belongs to West Lahore. Few years ago he also had a water related dispute with his neighbor farmers and cousins. Both the parties were fighting at water turns of their farms with lead to severe injury of one of the farmer's cousins. The problem was put in front of the police and courts which cost the farmer C socially and economically. According to the farmer C the usual causes of water disputes in the study area are water shortage, improper irrigation system, no water schedules, blocked and broken canals water courses and lanes, water theft etc. Further the farmer pointed the role of Jirga in resolving water conflicts to be very poor in the study area. While suggesting the irrigation authorities the farmer asked them to make irrigation system according to new standards, reschedule water turns for each farm, repair canals and lanes and supply sufficient water. The farmer C further added that in order to reduce water issues, farmers need to self-help and cooperate as well as help other farmers for water sharing and ambiguities in water turns.

#### 6.4. Farmer D

Farmer D also belongs to West Lahore. Recently he has been part of a dispute regarding irrigation water. Farmer D and his brother was watering his field in the meantime another neighbor farmer broke water lane and was trying to water his own fields. As a result he and the farmer had a physical quarrel in which one of the farmers who tried to steal water turn got injured. The dispute was resolved by "Jirga masharan" at the initial stage and the injured was taken by the opponent farmers to the hospital. Farmer D added that the main causes of irrigation water conflicts in the area are water shortage, broken and blocked canals and water ways, salinity of water and unable irrigation officials. Further farmer D pointed the role of Jirga in water disputes to be very good and important. Farmer D thinks that if disputes are resolved initially by Jirga then there would be no need of courts and hurdles of police stations. The farmer also suggested the irrigation authority of the area to improve the irrigation system, supply sufficient water at canals, curb water theft, repair canals and lanes properly and employ able irrigation officials. While he also suggested the farmers of the area to be more cooperative and friendly as well as share the water resources equally with farmers in need.

### 7. Interview of Irrigation Official:

Inamullah khan is at the post of assistant SDO in the irrigation department. He is having six years of experience in the field. To know the causes and irrigation services provided by irrigation authority of the study area I interviewed Inamullah khan. In his view the major cause of water conflicts in the area are water theft, water scarcity and the insufficient resources with the department. He also added that we are not provided sufficient funds and modern equipment by

the government. Further he also told that water scarcity and water shortage is not just the problem of the study area but the whole world is under the situation of water scarcity. Further suggesting the government and the irrigation high authorities Inamullah asked for proper funds allocations, better and new equipment for making and repairing canals and more employees for the field work. He also revealed the role of private stockholders or privatization as the main cause of the decline of the irrigation system. In addition he also suggested the farmers community to be cooperative and friendly as well as share the water turns among other farmers in need. Similarly, Inamullah also requested the concerned NGO's to help us in improving the irrigation system due to shortage of resources with our government.

### **8. Interview of Jirga Member**

While testing the role of Jirga in water dispute resolutions, one Jirga member was also interviewed. For that purpose I requested the most experienced and inspirational member of the DRC, chotalahor. His name is Haji Zabar Khan; he is having 32 years of experience as a Jirga member. While asking about the irrigation conflicts he pointed the main cause as the water shortage and poor irrigation management in the study area. In addition he also pointed out water theft and the water schedules as the causes of water disputes. In a question about the elimination of water conflicts Zabar khan suggested the irrigation management to provide sufficient water, new schedules, repair canals and water lanes and stop corruption. While suggesting the farmer's community he asked about adapting other professions, using alternate sources of irrigation and co-operating each other in irrigating the fields. Similarly, Zabar khan also suggested the Jirga member of the study area for frequent resolution of water disputes without any consent and asked the farmers to co-operate and inform Jirga about water related conflicts.

### **9. Thematic Analysis of the Data**

As village chota Lahore is a comparatively big village in district swabi, while the water source been running through is only one big canal that emerges from tarbela dam and falls down into river Kabul at jehangira. Due to which water shortage is been the key farming problem of the village. Moreover the farmers of the village as shown in the case studies are less cooperative and also the irrigation authority of the study area is not performing its proper functions. Three research questions have structured this thesis, one the farmers perspective about the causes of water conflicts, second that of Jirga's role and lastly about the irrigation authorities limitations. These three questions have raised three different themes that are as below.

**Theme** is about the causes of water conflicts that is the most intense in the study. The major cause of the conflict as clear from the study is water shortage because of the global situation of water scarcity around the world. In addition as only one canal passes through the village the situation of water shortage is been doubled too. Further the most viral cause of the conflict as found in most of the cases is the ambiguous water numbering schedule. Due to the inability of the irrigation authority of the study area the water turns for the fields in the village are so from decades and causing brutal disputes between farmers. Similarly, water theft also is been the cause of conflict in many cases in the study conducted which notifies the idea of water scarcity in the area as farmers are not supplied sufficient amount of water that's why they are compelled towards water theft in order to save their crops from excessive dehydration. In addition poverty is also a cause of water conflict because farmers of the study area are poor and they cannot afford expensive ways of irrigation as well as due to shortage of skills and education they cannot adapt other professions. Analyzing the theme 1 of the study, if we look it from the view point of sociological perspectives, **Conflict Perspective** cannot be denied then. Because the study clearly illustrates the concept of conflict in the society, as every farmer is striving for "haves and have nots". Every farmers is trying to fulfill his water needs in anyway while sub ordinates the other farmers. Hence it's obvious from the study that the major causes of irrigation disputes in the study area regarding farming community are, water shortage, water theft, poverty, low education and skills as well as vague watering schedules for the fields.

Similarly, by analyzing the ideas of the irrigation official and that of the Jirga member if we study them under the umbrella of conflict perspective one thing is obvious under which the conflict, competition and cooperation terms as studied by *Ralf dahrendorf, Coser, Rex and Collins*, are never to be ignored. Because, in both the interviews the causes of water conflicts are due to continuous conflict between farmers and organization members. There always is a shortage of cooperation seen in the study conducted. In addition if we look at the structure of the irrigation authority that's been ruined by inter- departmental conflicts either to garb resources, designations or political interest which also predicts the idea of **Conflict Sociological Perspective**. As its obvious from "*Dahrendarf's theory of class conflict*" in which he describes modern societies as combination of two groups the one those suppresses and other those are suppressed, (sub-ordinates and super ordinates) which according to *Dahrendorf* is the median between functionalism and Marxism. The same situation exactly fits here in this study where there are the extreme influences of classes over the institutional performance either that of irrigation or Jirga. On the other hand the role of Jirga is been suppressed by the effects of formal organizations

like courts and police authorities on one hand while sub-ordinated by the shortage of cooperation from the farming community on the other hand.

## 10. Conclusions and Recommendations

It has been affirmed from the above study that there were severe water scarcity in the study area, which is the base of all the water related conflicts. Furthermore, the study also explored that water theft, irregular watering schedules, broken water canals and lanes, shortage of other sources of irrigation, poverty, low education, shortage of skills, blocked canals and water lanes were the major causes of disputes over the irrigation water. Moreover, dysfunctional of Jirga system and the role of irrigation authority further led to conflicts. The study recommended that government and the irrigation authority of the study area should work on different sources of irrigation like; ground water sources and develops new watering schedules for all the fields of the area in order to eradicate the ambiguous water numbers. Similarly, farmers of the area are recommended to cooperate and think of collective benefits. In addition, farmers of the area should cooperate with irrigation and Jirga “masharan” and involve them in conflict resolutions are some of the recommendations.

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