

Faculty of Natural Resources and Agricultural Sciences
Department of Urban and Rural Development
Rural Development and Natural Resource Management



**The socio-economic impact of local community
managed coal mines
A case study of village Qasam Khel, Darra Adam
Khel, FR Kohat,
Pakistan**

Kabeer Zaman

Uppsala 2011
EX0681 Master Thesis 30 hp
Swedish University of Agricultural Sciences

The socio-economic impact of local
community managed coal mines
A case study of village Qasam Khel,
Darra Adam Khel, FR Kohat,
Pakistan

Kabeer Zaman

Swedish University of Agricultural Sciences
Department of Urban and Rural Development
Rural Development and Natural Resource Management

**Keywords: coal mines, Common property, conflict,
socio-economic impact, Sharia Law, local
management committee, Pakistan**

Thesis No

EX0681 Master Thesis in Rural Development and Natural Resource Management, 30 hp, Master E, Uppsala, 2011

© 2011 Kabeer Zaman

Supervisor: Kjell Hanson, Department of Urban and Rural Development Swedish University of Agricultural Sciences, Sweden

Examiner: Örjan Bartholdson, Department of Urban and Rural Development, Swedish University of Agricultural Science, Sweden

E-mail: kabeer_zaman@yahoo.com

<http://epsilon.slu>.

Content

Acknowledgement.....	6
Abstract	7
1. Introduction	8
1.1. Aim and objectives	8
1.2. Research questions	8
1.3. Structure of thesis	9
2. Review of Literature.....	10
2.1. Common Property and Natural Resources	10
2.2. Conflict and Natural Resources	11
2.3. Rural livelihood diversification	12
3.1. Study area	14
3.2. Physical features	14
3.3. Methodology of study.....	16
3.4. Household interviews	17
3.5. Focus Group Interview	17
3.6. Key Informant Interviews.....	18
3.7. Research ethics	19
4. Specific conflicts over a common resource and its solution	20
4.1. Village elders (Mashran)	21
4.2. Role of the village elders	21
4.3. Political Administration.....	22
4.3. The Role of the Political Administration.....	23
4.4. Sharia Law	23
4.5. Jurist (mufti)	25
4.6. Role of Sharia law (Islamic law)	25
5. Local conflicts around common resource management	26
6. Economic and social impact of coal mining.....	30
6.1.1. Livelihood diversification	31
6.1.2. Arms and Ammunition business	31
6.1.3. Foreign Remittances	32
6.1.4. Transport business:	32
6.1.5. Small shops.....	33
6.1.6. Unemployment	33
6.1.7. Female share	33
6.2. Social impact of coal mining.....	34

6.2.1. Social Relationship:.....	34
6.2.2. Agriculture.....	35
6.2.3. Education:.....	36
6.2.4. Health	37
6.2.5. Marriage System.....	38
6.2.6. Housing structure.....	38
7. Conclusion.....	40
References	41
Appendix A	43

Abbreviations

DAK	Darra Adam Khel (studied area)
CPRs	Common Property Resources
DCO	Deputy Coordination Officer
FATA	Federally Administered Tribal Area
FR	Frontier Region
KP	Khyber Pakhtunkhwa (province in Pakistan)
PA	Political Agent
PKRs	Pakistani Rupees

Acknowledgement

First I am very thankful to almighty Allah for his beneficent, merciful and providing arrangement throughout my stay here in Sweden being a student in the Swedish University of Agricultural Sciences, Uppsala. I am thankful to the Swedish government for providing a free education environment for me as well as for other foreign students.

My special thanks go to Dr Kjell Hanson who has been supervising me all through the entire research process. Without his expert skill, guidance, suggestions and comments, my work would not be in the position it is right now. I would also like to express my appreciation to all the academic members of Urban and Rural Development (SLU) for their kind support throughout my study.

My sincere wish and respect go to Mr. Muhammad Mushtaq Khattak, Abdullah Khattak, Allah Noor Afridi, Sadaqat Khan, Shafqat Khan and Muhammad Irfan who helped me during the whole survey period. I wish them a shining and successful future.

I would also like to express my great respect and admiration to my beloved parents, brothers including Khalil ur Rehman, Saif ur Rehman, Qaisar Zaman, Haider Zaman and Muhammad Yaqoob for their support and encouragement throughout my study.

At last, I pay thanks to Badar Munir, Ikram Khan, Gul Mir Khan, Aliman Shah, Faisal Khan, Muhammad Tariq and Muhammad Kamran for fellowship during my stay in Sweden.

Abstract

The main purpose of this study was to analyze the socio-economic impact of local community managed coalmines of the village Qasam Khel, Darra Adam Khel, FR Kohat, Pakistan. The study is based upon in-depth qualitative methods. The thesis starts in presenting the historical background of a conflict among the villagers over the rights claims of the coalmines following its discovery in 1995. The conflict eventually was resolved in 2009 through the application of *Sharia Law*, accepted by all the villagers. After the conflict resolution, a local system for managing the coalmines, which distribute income from the coalmines on a per capita basis in the village, was developed. The analysis of the process shows that the income generated from the coal extraction has had positive impact on health, education, marriages, economic empowerment of women, livelihood diversification, local businesses and job creations, and improvement in the existing businesses. However, there is a negative effect on social relations and arid agriculture. The incomes from coal extraction provided opportunities for some household to abandon agriculture and switch over to new and, of course, more profitable businesses and jobs. The life of the village has become busy whereas physical interaction between the villagers has diminished. The elders of the village call this a reduction in social relationship. I noticed trust deficit among the villagers in relation to the local management committee managing the mines. A majority of respondents claim that the members of the local management committee are corrupt, using mutual funds for their personal business, and apply nepotism when it comes to job allocations. This lack of trust may lead into conflicts among the villagers, which may result in the dissolution of local management committee.

Keywords: coal mines, common property, conflict, socio-economic impact, Sharia Law, local management committee, Pakistan

1. Introduction

Natural resources are important to man's survival. Any natural material that can be used by humans is a natural resource. Examples are water, air, sunlight, oil, natural gas, coal, metal, stone, soil, animals etc. (SCDHEC 2010). Coal is one of the main natural resources, available in abundant form throughout Pakistan. In 1995, some villagers discovered coal in the mountain close to the village Qasam Khel, Darra Adam Khel, FR Kohat, Pakistan. Originally, the mountain was considered to be the village's common property, but this soon became a cause of disagreement among them. The conflict started in 1996 and after consistent efforts of, first, the tribe elders (*maliks*), then from the political administration, finally and most importantly, the village elders, the conflict was resolved under *Sharia law* (Islamic law) in 2009 (Survey, 2011). After resolving the conflict, the villagers developed a local system for managing the coal reservoirs and the distribution of its benefits among themselves.

There is no research paper that specifically described and discussed the ways in which local coal production and management influences a village's socioeconomic life in this area of Pakistan.

1.1. Aim and objectives

The aim of this study is to analyze the socio-economic impact of local community managed coalmines of the village Qasam Khel, Darra Adam Khel, FR Kohat, Pakistan.

Based on this, overall aim, I have formulated two sub-objectives, which cover the conflict over coal from 1995 to 2009.

- To describe and analyze a specific conflict over a common resource and its solution.
- To describe and analyze the socio-economic effects of the emergence of a new resource and the incomes it generates on the local level.

1.2. Research questions

The following questions will be explored to meet the above mentioned objectives

- What is the historical background of the conflict?
- How has the conflict been resolved?
- What is the existing management system of the coal in the studied village?
- What effects do the incomes from coal extraction have on local socio economic conditions?

1.3. Structure of thesis

This thesis consists of seven chapters. Chapter 1 is an introduction, which gives a brief description of the study area, research questions, aim and objectives. Chapter 2 gives a review of literature. Chapter 3 focuses on the characteristics and physical features of the study area and the methodology for the collection of data. Chapter 4 describes the conflict and its resolution. Chapter 5 describes the local conflicts around the common resource management, and discusses monitoring and evaluation of the local management committee by household members. Chapter 6 analyses the socio-economic effects of the coalmines, i.e. the changes in livelihoods and lifestyles that can be linked to the effects of the coal economy. While chapters 1 – 3 give a background to the study, chapters 4 – 6 constitute the empirical core of the thesis, and chapter 7 draws the conclusions.

2. Review of Literature

In this section, I discuss the central concepts used in this thesis: common property, livelihood diversification, conflict and natural resources. This review of literature includes three sections. The first section discusses the concept of common property. The second section is about conflicts over natural resources and the process of mediation to resolve them. The third section discusses the concept of livelihood diversification and its determinants.

2.1. Common Property and Natural Resources

Common property resources can be defined as the resources collectively held by an identifiable community of mutually dependent users in which these users have the right to exclude outsiders through regulations controlled by members of the local community. The rights to the resources are not likely to be neither exclusive nor transferable within the community. They are often equal rights of access and use (Fenny et al, 1998).

The publication of Garrett Hardin's article "The Tragedy of the Commons" has given birth to debates on common property resource degradation and property rights. In short, Hardin argued that in the absence of property rights, hardly anyone will bear the full cost of resource degradation. The result in such cases will be overexploitation, which he termed as "the tragedy of the commons" (Hardin, 1968). Hardin proposed that, in order to avoid this, the commons should be either controlled by the state, or privatized (ibid). The tragedy of the commons is usually caused not by any intrinsic breakdown of common property, but rather through the institutional breakdown in the ability to manage access to resources and to create and implement internal decision for collective use. Institutional breakdown might be due to internal reasons i.e. the inability of the users to manage themselves, or it might be due to outside reasons, for example an invasion of outsiders (Dove, 1993; Berkes and Folke, 1998). I will use this framework to discuss a conflict in which a central part is whether rights to the resources are common or private. However, one of the key contributions in the CPR literature is that it shows that individuals can collaborate and make institutional arrangements that can lead to overcoming the problems, and increase efficiency of collective resource usage (Gibbs and Bromley, 1989; Ostrom, 1990).

According to a rough estimation in India, common property is contributing about US \$ 5 billions, or 12 percent of the total income of rural poor households a year (Beck and Nesmith, 2001). In large parts of the developing world, the rural poor are dependent on shared or common resources for

their livelihood. For example, community forests contribute up to 29 % of the income of the poor rural households in India, which is close to US 5 billion dollar annual (Adhikari, B., 2005).

2.2. Conflict and Natural Resources

The endeavors to increase personal welfare tend to lead to competition over natural resources. Such competition often results in conflicts (Uprety, D. 2006). Verbal (or written) conflicts often have broader negative connotations and do from time to time lead to violence or threat of violence (Warner and Jones 1998).

It is common that conflict management and natural resources are linked in different ways, particularly in relation to ownership and management. In this respect, a number of authors have proposed remedies for long-term conflict solutions. Among them, the work forwarded by Robert A. Baruch Bush and Joseph P. Folger, *The Promise of Mediation* (1994), discusses *empowerment* and *recognition* as basic tools in conflict management. Moreover, it suggests the use of a mediation process as an instrument of a *transformative*¹ movement, and discusses how this is linked to emerging new relational visions of human nature and social interaction (Bush & Folger 1994). This approach assumes human being as a rational constituent involved in mediation processes. Bush and Folger's work illustrates four main accounts of mediation, which improve the potential possibility of lasting and commonly understood interactions in the future. These are the *satisfaction story* of a movement, the *social justice story*, the *oppression story*, and the *transformation story* (Bush & Folger 1994). In general, these four stories suggest two important points. Firstly, the mediation process is seen as a pluralistic movement with different approaches to mediation practices and with varied impacts. On the other hand, the existence of divergent stories implies that, while everyone sees the mediation movement as a means of achieving important societal goals, even though people may differ over what goal is important. Secondly, the stories represent and support different goals, each of them seen by people as the most important part of the movement to fulfil (ibid).

The concept of transformative orientation in mediation is another corner of the book (ibid). It deals with the response to conflict not only based on solving the existing problem, but also on

¹ The process of mediation comprises a unique potential for transforming conflict interaction, which, as a result, changes the mind set of the people involved in the process. The transformative potential generates two dynamic effects: empowerment and recognition. Recognition means the reinstatement to persons of a sense of their strength, value, and capacity to handle and decide the problems of life. Recognition means to understand and acknowledge the circumstances and situations of others. When together of these processes placed in the practice of mediation. Thus, as a result it can transform a conflict interaction from destructive to constructive mode (Bush & Folger, 1994).

helping disputants in working for good future relations. This means, it is an activity of bringing out the intrinsic goodness that lies within the parties as human beings. In order to manage conflicts, the authors claim, one has to focus on the flexibility, informality, and commonality that make it possible for the disputants themselves to see the full dimensions of the problem (ibid). This is imperative in the sense that mediation can help in reframing a continuous dispute as a manageable problem. This is different from the limitations of legal legislation procedure, and in fact reduces time and costs associated with it. One of the core ideas of the book is its great emphasis on the vital importance of mediation in facilitating collaborative and integrative problem solving, rather than antagonistic and distributive bargaining (ibid). Consequently, it can produce creative win-win outcomes that reach beyond formal rights, and solve problems and satisfy parties' genuine needs in a particular situation. Consequently, the authors argue that mediation can strengthen the weak by helping to establish alliances among them (to keep social justice).

2.3. Rural livelihood diversification

Rural livelihood diversification is defined as a mechanism by which households create a highly varied collection of activities and assets in order to maintain survival, and promote living standards (Ellis, 2000). Mainly, individuals and households pursue diversification due to two main reasons i.e. necessity and choice (ibid). Necessity refers to unintentional and despair reasons which trigger diversification (ibid). Examples might be land eviction, environmental degradation, natural or civil disasters. On the other hand, choice refers to voluntary and smart reasons for diversifying i.e. searches for off-farm and non-farm employment, educating children to better their possibilities to obtain non-farm jobs and saving income to put into non-farm businesses (ibid). In the literature, it is often argued that livelihood diversification that emanates out of necessity is the one most frequently pursued by poor households, yet with limited benefits. This is because diversification for distress reasons gives rise to undertaking casual and low productivity activities (ibid).

The necessity versus choice split can also be explained by underlying trends and processes, and by household strategies. This means that trends and processes in the macro economy can create general conditions that may cause livelihood diversification. But obviously individuals and households respond to these conditions in different ways, depending on income levels and asset profiles (ibid).

In this case study, people diversified due to choice rather than necessity. Extraction of coal in Qasim khel was essentially the result of villagers' free choice. In addition to the per capita revenue, the coal industry provided new jobs and business opportunities in the village.

Empirical studies from different countries show that rural households certainly engage in many activities and often are depended on diversified income portfolios. For example, in Sub-Saharan Africa up to 30 to 50 percent of the population depend on non-farm income sources, while it may reach 80 to 90 percent in Southern Africa. On the other hand, in South Asia the average is roughly 60 percent of rural households depend on non-farm incomes (Ellis 1999).

3. The area and the research methodology

In this chapter, I describe different characteristics of Darra Adam Khel with special references to the village Qasim Khel, where I conducted the study. The chapter also describes the research methodology.

3.1. Study area

Darra Adam Khel, FR (Frontier Region) Kohat is a part of FATA² (Federally Administered Tribal Area). PA (Political Agent) controls its administration and reports to the D.C.O (Deputy Coordination Officer). These are both governmental bodies for the administration of the region. During the British reign, the district administration of Kohat controlled the area, but reached its present status after the Pakistani independence (Ullah et al, 2010).

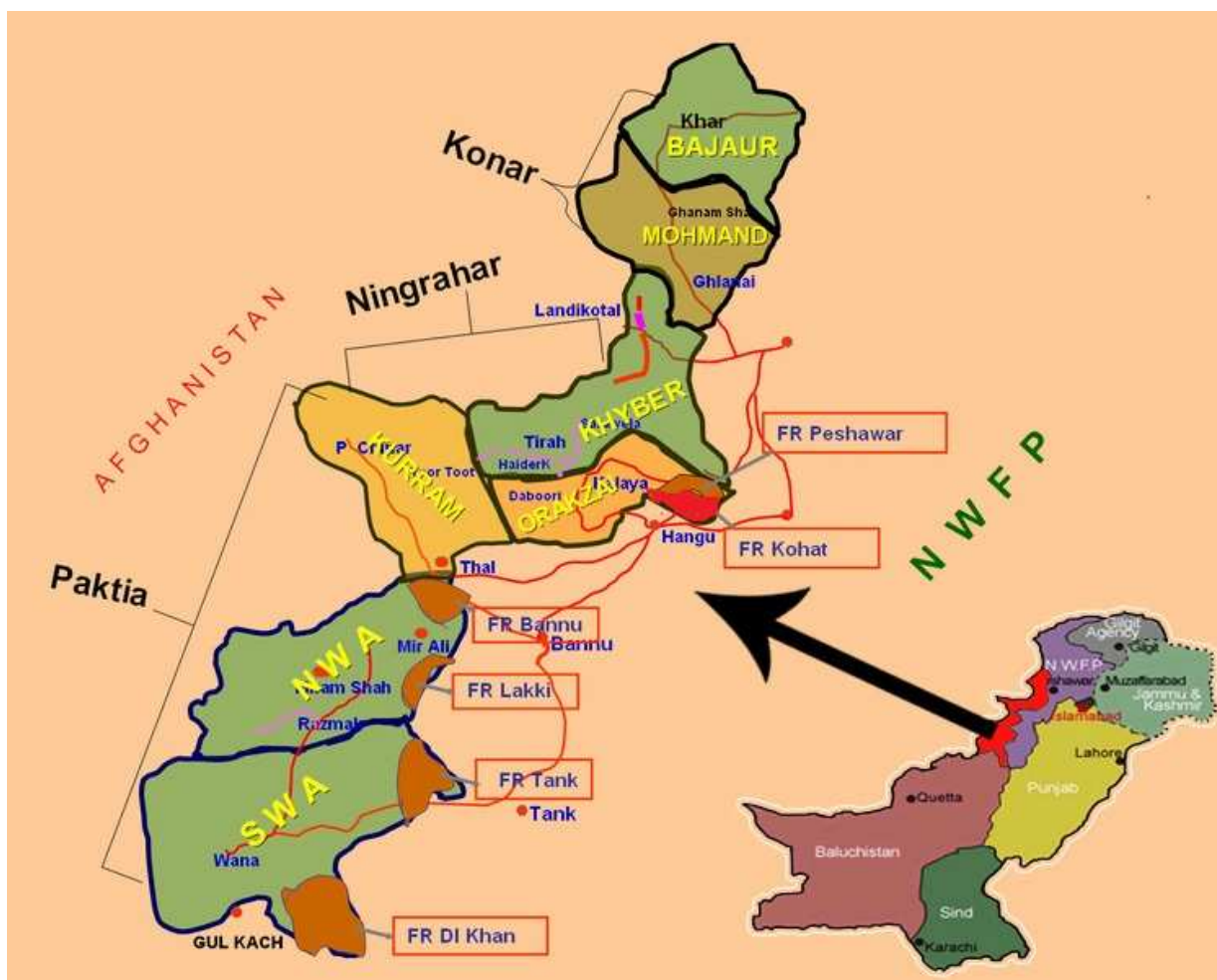
Darra Adam Khel is located between two cities; Peshawar and Kohat, in the province of Khyber Pakhtunkhwa. It is located at a distance of 40 kilometers from Peshawar and 25 kilometers from Kohat. The area is linked with Peshawar to the North, Kohat district in the East, and towards West, it is bounded with the Khyber agency and to the Orakzai agency in the South. It is a hilly area and its population is mainly concentrated in a valley between two mountains ranges. The inhabitants of this area belong to the Afridi tribe. The area is further sub-divided in to five sections i.e. Akhorwal, Zarghun khel, Sheraki, Torchapar and Bosti Khel. The total area of darra adam khel is 446 square kilometers, while the population is 88456 according to the 1998 census report. (Ullah, et al, 2010).

3.2. Physical features

Darra Adam Khel is a land of uneven mountains rising in some cases to a height of about 1500 meters. The hills are thinly wooded with shrubs and trees. On the hills, the main trees growing are traditionally called palosan, gorgora, kikar and wild olive. In the pleasant season of the year, there is also plenty of grass in these hills, which is mostly cut and hoarded for sale. The land depends on rainfall for its cultivation. Wheat, maize and barley are the common crops. The products of the farms are kept for home use. The weather varies from very cold in winter to burning hot in the summer season (Afridi, M. 2001).

² FATA stand for federally administrated tribal area. It is a semi autonomous tribal region in the Khyber Pakhtunkhwa province of Pakistan, comprised with seven agencies (areas) and six Frontier Regions. Lying with boarder of neighbouring country Afghanistan. People inhabited in the region belong to pakhtun tribe.

Map of FATA with red colored identified the study area.



Source: www.google.com

Figure 1.The Map shows seven agencies and six FRs.

As the map, shows that the area is situated close to the boarder of Afghanistan, and thus close to one of the world’s most heated geopolitical conflicts. The tensions of the conflict naturally are felt in the region, but are not a topic in this thesis.

Fieldwork was conducted in the five sub-villages of Qasim Khel, namely Abbas Khel, Rajwali Khel, Churgan, Gandeir Khel and Sher Alam Kaley. The five studied villages receive benefits from the coal extraction since it is the common property of these five sub-villages. The local people of the village manage the coalmines. The residents of the villages are actively involved in the management of the coalmines.

3.3. Methodology of study

This study uses qualitative research methods. This study concentrates on the local management system of the resource and its socio-economic effects on different wealth groups, i.e. poor, middle and rich. Primary data was collected through a focus group interview, key informant interviews, and household interviews.

First, I arranged a focus group discussion among villagers to collect information about the history of the village, the local management system, and the socio-economic effects of the coal extraction on different groups within the village. Wealth ranking exercise was carried out during the focus group discussion. According to the local wealth context, three different types of households were identified, i.e. poor, middle and rich. The characteristics of poor households comprised wages labor, unemployment, small amounts of land, small vehicles. This group also comprised small shopkeepers. The middle range households comprised schoolteachers, local landowners, owners of big vehicles (truck) and one or two members living abroad in the Gulf countries. The rich households consisted of doctors, people within the ammunition business, landowners with land both within and outside of the village, and persons working in the Gulf countries or Europe. One focus group discussion was carried out during field survey. By conducting the wealth ranking exercise, different household wealth categories were defined. Poor, middle, and rich categories were then interviewed during the twenty household interviews conducted in the five sub-villages. I did six key informant interviews with village elders, malik, traders and a teacher. The interviewees for the key informant interviews had been recommended in the focus group discussion as persons who could talk about the overall situation, and that had in-depth information about the village.

The primary data was collected in four weeks from 15th of April to 14th of May 2011 in field. All households were potential respondents of the study, but data was collected from a sample, comprising different social groups' i.e. poor, middle and rich household heads. The sample criteria was chosen to test whether or not poor, middle, and rich households received equal shares of the benefits from the coal production. For the household interviews, the sample consisted of 20 respondents, selected through a stratified random sampling method. The respondents were classified according to the members' characteristics and attributes, i.e. poor, middle and rich in each sub-village. The table shows the number of respondents depending on the households' numbers in each sub-village.

S#.	Name of Village	Households	Poor	Midde	Rich	Sample
1	Sher Alam Kaley	90	2	2	2	6
2	Rajwali Khel	70	2	2	1	5
3	Gandeir Khel	40	1		1	2
4	Abbas Khel	47	1	1	1	3
5	Chargan	49	1	1	2	4
Total		296	7	6	7	20

3.4. Household interviews

Before making the questionnaire, a survey with a covering letter was putted through in order to improve the foundation for the formulation of the purpose and problem of the questionnaire. The pre-testing of questionnaire was done before starting the household interviews that was not incorporated in the study. The questionnaires contained questions both regarding the socio-economic status of household before and after the start of the coal extraction, and questions regarding the local management committee (see Appendix A). Twenty household interviews were carried out with a detailed interview guide. The guide included both open and close-ended questions. Different household members were interviewed in order to get information about the socio-economic status of household before and after the coal extraction, as well as the monitoring and evaluation of the management committee.

3.5. Focus Group Interview

Focus groups are an efficient way of gathering information in a short amount of time because of their synergistic nature and the fact that they capitalize on group dynamics (Kamberelis & Dimitriadis, 2005). Therefore, this technique was used for triangulation of data collection throughout the survey. The focus group discussion was held with main stakeholders of the coalmines, i.e. village elder, members of the management committee, a schoolteacher, a businessperson, and common villagers and workers. The purpose of the discussion with these main

stakeholders was to gain in-depth information on a village level. One focus group discussion was conducted with detailed leading questions, i.e. introductory questions about the village, such as population, and the main occupations. The following questions were central in the discussions: how were the interviewees thinking about the discovery of the coal and the following development? What was the role of village elders, maliks, and religious scholars in resolving the conflict? What was the procedure of starting work in the first stage of mining? How did the committee come into being? In addition, questions were asked by highlighting the major social and economic contributions of coal on the lives of the villagers. The focus group discussion proved to be a gateway for the research. For instance, it helped me identifying key informants and different household's wealth categories. Audio recorder was used as an instrument for recording information.

Figure shows focus group discussion



Source: Author

3.6. Key Informant Interviews

The key informant interviews aimed at gaining in-depth information about topics, on which the informant was considered particularly knowledgeable. For example, six interviews with key informants (teacher, village elders, malik, and trader) were held because these members had participated in the conflict resolution from start until end, and thus held expert knowledge on this matter. I wanted to get detailed information about the history around the discovery of coal, the

conflict and its solution. That is why I conducted interviews with them. Open-ended questions were used to ask such as how the idea developed about the discovery of coal. What was the conflict based upon and among whom? What were the mechanisms of conflict resolution? During these questions, sub-questions were asked in order to get in-depth information about the issue. Audio recorder was used as an instrument for recording information.

3.7. Research ethics

Diener and Crandall (1978) identified four broad issues related to research ethics: “whether there is harm to the participant, whether there is a lack of informed consent, whether there is an invasion of privacy and whether deception is involved” (Diener and Crandall 1978). The research was conducted by considering the above-mentioned ethical issues. Informed consent is a process for ensuring that people understand what it means to participate in a particular research study so they can decide in a conscious way whether they want to participate. This issue was tackled by clearly explaining the purpose of the research and the participant was asked verbally to participate or not in the interview. Privacy and confidentiality was kept by not mentioning any names. The issue of deception arises when researchers represent their research as something other than what it actually is (Bryman 2004). This issue was handled by explaining the purpose of research without fabrications. I got consent for photography being a resident of the study area myself, and I used my personal support to convince the people for taking photograph.

4. Specific conflicts over a common resource and its solution

This chapter describes the historical background of the conflicts over a common resource and its resolution mechanisms.

In the study area, the mountain “Ranjo³ ghar” was held to be a common property of the village, and villagers used to cut trees there for household purposes, and made charcoal to sell in the market for their livelihood.

In 1995, an outsider came to the village as a guest in order to have a view of the village, he and his company visited the mountain. The outsider was an educated person and when he saw the black surface of the mountain, he guessed that there was a high amount of coal in the mountain (cp. The photo).



Source: Author (2011)

³ Ranjo is a black powder, natural form, used in eyes for aesthetic as well as to protect the eyes from diseases.

Based on his prediction, the villagers came to know that there is a high amount of coal in the mountain. In 1996, a group in the village started digging a mine without permission from the rest of the villagers. This was problematic since many saw the mountain as a common village property. Therefore, the villagers approached the group that was working on mining. The villagers told them that the mountain was common property, and asked them why they had started work on it without the permission of the village. The working group replied that the mountain was their property, and that nobody in the village had any rights in it. Thus, a conflict arose between the working party and the villagers.

The conflict escalated day by day. Everyone in the village, old, young, man and woman were aware of the conflict, and it became the talk of the whole area. In almost every conversation, the topic was the conflict over the coalmine. The news spread in the village like a fire in the jungle.

Therefore, dancing around the fire was not the solution of the problem, and the villagers found that they must try to reach beneath the surface, and found the basic cause of the problem. Thus the village elders, having good experience of life, mediated in the conflict in order to solve the problem between them. These village elders are called "*Mashran*".

4.1. Village elders (Mashran)

According to local culture, the elders are considered to be respectable, trustworthy, impartial, pious, and religious. People of the village consider them reliable, authoritative and wise enough to solve the conflicts. They attached great importance and value to their views. These *mashran* play a very important role in solving conflicts among the villagers and struggling to maintain peace.

4.2. Role of the village elders

The village elders belonged to the same village and watched each day how the conflict worsened. The village elders came together with the aim of resolving the conflict among villagers as mediators. They visited the working party and negotiated with them. They listened their views and demands, and then they met with the villagers (in-group) and negotiated with them.

The elders held expert knowledge about the history, property, and socio-economic relationship of the village. They decided to bring both the opposite parties together in one place. During this meeting, the elders presented compelling arguments and solid proof about the history of village, the mountain resources, the property, the social and economic relationship. Due to this, both of the opposite parties reached an agreement. In 1996, they made an agreement that the mountain and its resources had been used by the villagers for a long time, and thus it must be considered as a

common property of the village. Thus, the work stopped, and they signed an agreement in which the mountain and its resources were declared to be owned and managed jointly by all villagers, and that each and every individual have the same access, and equal rights to the resources. Thus, the agreement stated that the mountain was the common property of the village.

The time was passing and after some years one person among the villagers, having personal property at the foot of mountain claimed that the mountain in fact belonged to him, and no one had any right to interrupt in it. He was a resourceful and well-established person having employees, links with political administration, and economically he was more than strong.

In 2003, he started work on coal extraction without permission from the village. When the villagers came to know this, they approached the person and asked him how he thought that he could start mining just out of his own personal will. Villagers pointed out that it had been agreed upon in 1996 that the mountain was common property and they had signed an agreement stating this. However, the person replied harshly and told them that he was not ready to accept neither any agreement nor anything else. It is my personal property, he claimed, and no one has right to interfere.

Once again, a conflict arose and this time with a person, that was resourceful and proud. He was not ready to accept the idea of *Mashran*. Therefore, the people asked the *mashran* to go and discuss the issue with the Political Agent that is the “*Political Administration*”.

4.3. Political Administration

The Political Agent is a government agency, which controls the affairs of the area. They have no direct relationship with the public belonging to the area, but they have a proper registration of well-known and reputed people, called Maliks⁴ and who could control and solve problems of the people through Jirga⁵.

⁴ Maliks are people who have a high position in the community. They belong to rich families, highly resourceful, and with competent authority. They work as a medium between political administration and community. They play important role in order to maintain peace in the area.

⁵ The Jirga system is an integrate part of pukhtoon culture. It is a centuries old practice. It is basically a community system in which almost all sorts of dispute are settled it has its own rules and regulation. The elders and Maliks of an area are the members of a jirga. It settled a dispute between two or more persons or groups using it power of probing and submitting a decision. All parties must follow decision. In case of violation of it decision, it imposed certain sanction or penalties etc. Up to a large extent, this system has it efficiency, i.e. people can get a verdict quite quickly.

4.3. The Role of the Political Administration

The villagers turned to the Political Agent (PA) and reported their story. The PA then called the Maliks and sent them as a Jirga to solve the problem. As mediators, the maliks visited the coalmines, where the person was working along with other friends that belonged to other villages. They had a share in the mining, and therefore they supported the person of the village in every respect.

When the maliks met with him and made dialogues, they found him rude and that he was not ready to accept neither any agreement nor the right of any villagers. The maliks discussed with him on a number of occasions, but could not reach any solution. Finally, they declared that they were unable to solve the problem.

Now the people of the village became angry and united and established an organization to handle the conflict. They were ready to do anything now. The organization met with the person and his friends, they made it clear to them that the mountain was a common village property, and that everyone had equal rights in it. They accused him of using his power in starting the work and in making outsiders shareholders in it. The villagers also pointed out that he certainly could go on extracting coal, but he would not be able to sell it at the market, unless he wanted to carry the coal by crossing over dead bodies. The party continued to work but was unable to sell the coal in the market.

The village elders were in struggle in order to solve the dispute. They visited both parties many times. They were negotiating about the issue that the resource was not used; nobody could get any benefit from it, and tried to find a solution. The elders discussed with everyone involved trying to solve the conflict. Finally, after some years both parties chose the option of “*Sharia Law*”. Thereby both parties accepted that the decision would apply to every individual in the village.

4.4. Sharia Law

There is no problem in human life to which a solution is not available in Islam. If there is an Islamic system (sharia law) of government, it has the proper agencies and forces to implement its decisions, but if there is not a proper system of sharia law, then there is no physical force to implement its decision.

Religion is the integral element of the Pakistani society. People follow the laws and rules devised by religion willingly and happily. In this region, *Sharia Law* only applies when both parties of a dispute are willing to do so. In such a case, both parties are abiding any decision taken by the

Muftis, i.e. the *Sharia jurists*. These *Muftis* have a high regard in the society, hence, ignoring their decision in a religious society, such as ours, is not easy. Their conscience compels them to follow the rules even if there is no physical external force. A major reason for this is the role that religion plays in people's lives. In the absence of physical force, customs and tradition perform their duty that what the people will think and say about a person whether he follows or not the decision made by *Sharia law*.

The most important and remarkable thing is that when the *Sharia* makes a decision to solve any problem or issue, its judgment is congenial. The strong position stems from the fact that the decisions of *sharia* is based on Quran and Hadith, which is difficult to disobey if not impossible. Thus, the decision is binding on everyone because the opposing parties themselves approach to solve the problem by *sharia law* rather than the *Sharia law* imposes decision by force on them.

Sharia is an Islamic Law, which has four sources that are the following:

The Holy Quran, Hadith (Tradition), Ijma (consensus) and Qiyas (analogy)

a) Quran:

The holy Quran is considered as the basis of Islamic law. Every word of the Quran is regarded as the direct utterance of ALLAH almighty, communicated in actual words by angle Gabriel to the prophet Muhammad peace be upon him.

b) Hadith (Tradition):

The Sunnah i.e. Hadith consist of precepts, actions and sayings of the prophet Muhammad S.A.W., written down during his lifetime but preserved by traditions and handed over by authorized persons.

c) Ijma (consensus of opinion):

Ijma is the agreement of the jurist among the followers of Muhammad (P.B.U.H.) in particular age on a question of law.

d) Qiyas (analogy):

To cope with the fresh problems, jurists have to resort to pure reasoning (qiyas). Thus, the matter that is not provided for either by Holy Quran, Hadith, and Ijma are to be dealt by applying the principles of analogy deduction. However, the analogical deduction cannot change the law of text (Quran, Hadith and Ijma).

4.5. Jurist (mufti)

The jurist is a person who has a sound mind, well educated, and has an authentic knowledge of all Islamic sources of law. He can understand the meaning of Quranic words, hadith, ijma and Qiyas. He has a certificate of Islamic sharia from a recognized Islamic institution.

The villagers agreed upon the idea and became ready to solve the dispute in light of *Sharia law*. Therefore, the nominated members from both parties and village elders as well approached to a proper religious institution where highly qualified and religious scholars having good experience in the field of Sharia law (Islamic law).

4.6. Role of Sharia law (Islamic law)

The parties met with some jurists in order to present the dispute in front of them. The jurists carefully listened the claims and demands of both parties turn by turn. After hearing both parties, the jurists decided that, since villagers have used the mountain as a common resource for a long time, it should be considered as the common property of the village. This meant that there was no space for outsiders to make claims regarding property usage and to start work without the villager's permission. So, any natural resource discovered in the mountain, should be considered as the common property of the village, and everyone should have an equal share in it, whether old or young, man or woman, boy or girl. It should not be considered as a personal property of anyone, according to *Sharia law*. But, if there is any resource in the field of someone's personal property then no one has right to interfere, and this resource must be considered as the personal property of the owner of that field.

Other important aspect concerned outsiders, who had made investments in coal extraction. Villagers were to give them their invested money back, and they should then be excluded from the resource. Both parties agreed upon the decision of the *sharia law*, and committed themselves to follow it. The dispute was resolved in this way and thereafter the whole village started the project of coal mining as it had used other mountain resources (stones, wood) in the past.

5. Local conflicts around common resource management

This chapter discusses how different household members in the area talk about the performance of the local management committee.

When the conflict had been resolved, the committee was formed, based upon a mutual consensus of the whole community. The procedure adopted for creating the committee was that five elders were selected from each sub-village under the condition that whatever they decided will be a final decision with no amendments. The five selected elders from each sub village constituted a group that discussed and decided upon the formation of a committee to manage the coal extraction activities. Finally, the committee came into being and comprised seven members that in the beginning worked on a voluntary basis. After getting some benefits, they started paying their members and workers who had worked voluntarily.

The committee members are elected for a period of one year to manage all activities regarding coal extraction. After a period of one year, the committee is dissolved and new one elected, with or without members of the previous committee. The procedure is that each sub-village nominates a candidate via a mutual decision. After election, the candidates will start the management process. It is also noteworthy that it is not necessary that the committee should be composed of seven members. The number may vary and depends on circumstances.

As stated earlier, the mountain is the common property of the whole village, and every individual of the village has equal and like rights. Therefore, everyone in the village organized and formed a committee to start working on this beneficial resource (coal). The committee formally took an oath to promise good management and welfare for the whole village.

It is very difficult to manage a huge project of coal extraction without field specialist. However, the local management committee managed and supervised all the activities relating to coal extraction, and this gave the committee a strong position. Some of the interviewed households also accentuated that the committee is doing a great job regarding the coal extraction process, as they are managing all the activities related to coal.

The committee provided job opportunities to those who were unemployed before mining started. By taking this initiative, unemployment reduced to some extent within the study area. I interviewed

a 47 years old person, working as a middleman between the local management committee and the political administration (Malik). He stated that

“The most prominent and remarkable strength of the committee is that they started the construction of a maternity hospital in the village. That is a good step for the facilitation of people with a special reference to females’ health, and will solve a basic problem because there was no maternity hospital in the area. Beside this the committee also arranged an ambulance from the mutual fund which provided quicker transport to the nearby hospital, which reduced risk factor”

As it looks like in the picture



Photo by author.

It was also noted that the committee started work on a road construction to the top of the mountain for the purpose of getting easy access to the whole mountain, and to open the whole mountain for coal extraction. The committee also built a safety wall around the village graveyard, which made the land protected from soil erosion during rainy season.

However, my study also showed some weaknesses in the committee's performance, which seems to become a hurdle in achieving the desirable objectives or goals of the project. I observed and found during the survey that a majority of the villagers criticized the role of the local management committee and were not satisfied with their performance. During interviews, a majority of respondents stated that at the initial stage, the role of the committee was outstanding and they were doing a great job. However, with the passage of time, the committee could not perform the task as they had done in the initial stages of coal extraction accordingly. A change occurred in the behavior of the committee members, the critics claim, because they do not take interest in the welfare of the whole village. During the survey, one of the case household stated that

“The committee members considered themselves as the owners of the mountain resources, but in fact the committee members are the employees of the village, because they are getting salaries on a per month basis from a mutual fund”.

It was noted that the committee was going to start work upon a hospital construction in the village. However, they did not deliberate and consult among the elders or among the rest of the villagers. When the committee started the construction of the hospital, most of the people were displeased, because the villagers wanted education first. It was also noted that a majority of the sample respondents shared this kind of opinions:

“When sometime someone gets sick, he can easily go to the specialist doctor in a nearby city. We need quality education because there is no standard schooling system in the area”.

A 42-year-old person, who was doing coal business, stated that

“The local management committee provides opportunity to those who are their nearest friends, and who have kinship relations to the committee members, and they do not give work opportunities to educated people of the village. For example they do not allow computer and management experts to come in and improve the whole project for the welfare of the village”

While collecting data I interviewed a 37-year-old, schoolteacher, who stated that

“There is lack of skillful and qualified members in the local management committee. There is no computer work or data storage system, the work is still carried out in a manual form.

“He had a claim that whenever a skillful and qualified person offers his services to the coalmine project, the committee rejects him, and the committee has made it their personal monopoly. When a new mine is searching out then

they do not hire the service of an expert geologist or skilful mining engineer. Rather they prefer to carry out that important work by local ordinary coalmine workers, who have no skill and experience in this kind of work. This results in a waste of money and time. If the committee took the service of expert geologists and skillful mining engineers, then more progress can be made in a very short period by using less time and less money. There should be a proper computer operating system, which keeps the accurate records and saves a lot of time. However, the role of the committee was considered doubtful in this regard, and thus necessary modifications and evaluations of the committee are needed for the sake of betterment and reformation”.

Moreover, it was noted that there was no transparency and accountability regarding the mutual funds, because the committee keep them hidden from the villagers.

At the end, closed ended questions were asked regarding satisfaction about the performance of the management committee. According to my survey, a majority of the respondents were unsatisfied with the performance of the local management committee.

Another important aspect that creates uncertainty in the work and responsibilities of the local management committee is that, on one hand, the committee is trying to fulfill demands and wishes of two main external stakeholders (i.e. X & Y). The local management committee keeps it confidential to avoid any hurdles and difficulties that can be posed by any of the external stakeholders. These arguments are also supported in literature. Improper utilization of common resources is due to institutional breakdown or invasion from outsiders (Dove, 1993; Berkes and Folke. 1998).

In conclusion, on the one hand the local management committee has kept some confidentiality to avoid the risks of stoppage of mining avoiding to antagonize any of the two informal external stakeholders (i.e. X & Y). For that purpose, the local management committee keeps hidden the mutual fund and some other related things from the villagers. On the other hand, the above-mentioned claims by different sample respondents about the committee show a trust deficit between them. Trust deficit may lead to conflict, which may result in the dissolution of the committee.

6. Economic and social impact of coal mining

Every development project and policy has some economical and social impact upon the society. Development leads to new forms of governance, which may be considered good or bad depending on who is talking about it. Thus, it is clear that nothing is good or bad, thinking makes it so, nor any policy or theory of the world can give certainty in this matter. Like all developmental project, the coalmining also has both positive and negative impact upon the society, in respect of economical and social perspectives. Here I will discuss some positive and negative impacts of the discovery of coalmining and the following extraction in the study area.

6.1. Economic impact of coal mining

The coal extraction has had positive impact upon the economical condition of the village.

CHANGE IN THE ECONOMIC STATUS OF HOUSEHOLD

Table 2; Economic status of households before and after coal extraction

S No.	Average	Before Mining Activities/Coal Extraction	After Mining Activities/Coal Extraction
1	Sources of income	Transport, arms & ammunition, small shops, foreign remittances, farming,	Coal related activities (coal business, drivers, security guards, supervisors)
2	Daily Income	920 rupees	2793 rupees
3	Monthly Income	27600 rupees	83800 rupees
4	Expenditure	19150 rupees	53950 rupees
5	Saving	8450 rupees	29850 rupees

Source; Author (2011)

The table shows that before mining activities the sources of income were transport, arms and ammunition business, wage labor, foreign remittances, small shops and a few people were farming. After coal extraction most of the households reported that they diverted one member to coal related activities. Due to this, they diversified their sources of income by starting new businesses or jobs in the coal industry of the village. Similarly, before coal extraction, the average monthly income of a household was 27600 rupees and expenditure was 19150 rupees. However, after coal extraction the average monthly income of a household increased to 83800 rupees and expenditures also increased to 53950 rupees. Before coal extraction, the average monthly savings of a household was 8650 while after coal extraction the monthly saving increased up to 29850. This means, on one hand, the household members are getting their per capita shares, and on other hand they are involved in different coal related activities, i.e. coal business, security guards, supervisors, drivers etc.

From this it can be concluded that the coal have had a positive economic impact on the area, since the money was directly injected into each and every household according to their shares, and thus created different, new income opportunities.

6.1.1. Livelihood diversification

I noted that before coal (mining activities) there were different professions that villagers adopted for their livelihood. However, after coal extraction started, a majority of the villagers concentrated towards coal. When it comes to the rich and some middle class households' members, they turned toward coal business from ammunition business and work in the Gulf countries. From these households an average of one or two persons diverted to coal business, while poor and some middle household members were employment as workers (security guards, drivers etc). Due to this, positive changes occurred in the professions of people. There was a joint family system and most of the average household members were connected with one profession, which their ancestor had adopted for their livelihood. However, whenever their business were affected and bankrupted, this had direct effect upon all household members. After the introduction of coal excavation, households did diversify and working in the mines brought positive changes upon their economical condition.

6.1.2. Arms and Ammunition business

I noted that in the past, among the various professions, ammunition business was one of the most profitable sources of income in the study area. People were very happy in that profession and were earning satisfactorily. However, when the price of iron increased or some other factors affected the ammunition business, then this also affected the whole household. Because almost a majority of the

people were attached to the same business, they were all affected by the downfall. After the discovery of coal, the people who dealt with ammunition diverted to coal business, so that from an average household one member turned toward the coal business. One of the household cases illustrates this;

“Traditionally the main source of income for our households was the ammunition business. Before coal extraction, we had three brothers involved in running the business, but actually one person can manage this. When coal extraction started in the village, we decided to diversify our source of income and one of the brothers started in the coal business”.

6.1.3. Foreign Remittances

According to the survey in the past, many people from the village migrated to Gulf countries for work. They were used to do jobs or business over there for the sake of supporting their household members before coal extraction. They used to send money home from abroad. After the extraction of coal, a number of these emigrants returned to their own country. As one of the respondent explained as

“He was a bus driver in Dubai for the last ten years and was earning 50,000 PKRs per month. When the coal extraction started, he came back to the village in 2009 and started in the coal business. Now he is very happy in this business and earning double compared to Dubai”

6.1.4. Transport business:

Transportation was also one of the major sources of the livelihood of the people of the village in the past. People used to buy larger vehicles, like trucks, for goods and services, while others used to buy small vehicles like Suzuki vans and cars for local transportation. However, after the coal extraction the economical conditions of the people raised because they were getting money from the mutual fund on a monthly basis. According to my survey, those who possessed small vehicles renewed their vehicles and some of them bought a second vehicle (made it double), while those who had big vehicle were comparatively less affected. Those who were having no personal transport, bought a small vehicle for their personal household use, like a car, a bike etc. One informant, aged 39, described that

“Before coal extraction, I had one passenger vehicle to support my household, comprising 13 members. My average monthly income was round about 12,000 PKRs, which was not enough to support my household. After the introduction of coal

extraction, we are receiving our monthly income share. During the past two years, I saved some money and purchased another passenger vehicle for my brother. And now our average monthly income has increased to 30,000 PKRs”.

6.1.5. Small shops

In the study area, I noted that there were small shops, which were a source of income for the local people. However, after the excavation of coal a slight change can be seen; some of the owners of small shops have turned to coal mining in which they got employment and they gave up their shops, while others extended and made their shops bigger. A 34 years old respondent told his story like this:

“I have been doing shop keeping for the last seven years. Before coal extraction, I was not able to expand my business as the income I earned was used to support my household. Now I am getting 44,000 PKRs each month as my share. I have expanded my shop by investing the money, which I have received from my coal share. My business is getting better day by day”.

6.1.6. Unemployment

Before the coal extraction, some people had no jobs. There was unemployment due to unavailability of opportunities, and the unemployed were depended on their household members. The coal business also meant that previously unemployed now could find jobs in the mines, or in other sectors. Therefore, the resource played an important role in reducing unemployment in the study area. As 31 years, old person explained it:

“Before coal extraction, I was unemployed so my father put me in driving school in Peshawar to learn driving. After getting my driving license, my plan was to go abroad, but I did not have the money to buy the visa. My father was a daily wage labor and it was very hard to fully support all household members. During this hard time, the coal extraction started in the village, which proved to be a great blessing from Almighty Allah for my family. As I have a driving license, the local management committee decided to give me a job as a tractor driver. Now I am getting 13,000 PKRs/month along with 30,000 PKRs my family share in coal”

6.1.7. Female share

I noted that before the coal extraction, the women could not receive equal share from the property of their families. According to the decision of *Sharia Law*, women have an appropriate share in their family assets/resources. Because previously the decisions were based mainly on the local traditions

than any law, women were devoid of their share. After coal extraction, a drastic change seen in the attitude of people. Unlike in the past, this dispute now was solved under the *Sharia Law*, and this gave the women an equal share of the resources. Therefore, the women of the village got equal share from the common property resource like men. Most of the women have keen urge in taking interest in the development of their family they want to raised the standard of their family life and secure the future of their children. Therefore, for that purpose, they save their money, which they received from their share of the common. Before coal, extraction there was no trend of female shares in the economic activities. Now the women are getting equal shares as men from the resource. Therefore, the decision made a huge change in the trend of female economic condition. Now women of the village help their household in future policies and planning. Previously, women did not have money and hence they lacked a sense of planning. The researcher noticed that a new trend (called *committee* or *kasht* in local language) has emerged after the women got their share in the village common resource. They gather a handful sum of money every month, among some 15 to 25 women in the vicinity, pool it, and give it to one of them on turn. With a handsome money in hand, the beneficiary woman plans to uplift the socioeconomic status of her family. Thus, this could lead to empowerment of women in the future.

6.2. Social impact of coal mining

Like the economic impact, the extraction of coal also had some impact upon the social condition of the village.

6.2.1. Social Relationship:

I noted from the opinions of the participants of the focus group discussion how they see the effects of the coal discovery on their social relationships, they were not optimistic. They revealed that before the discovery of coal in 1995, the social structure of the village was much different than it is right now. The network of social relationship was immensely large. People used to express their opinion on each other's private matters like job, business and planning. The Mosque and Hujra was the centre of the world for the people in the village. People used to party among themselves. There was nothing as a common dispute, in general. After the introduction of coal extraction, the attendance in both the Mosque and Hujra has reduced significantly. People are now reluctant to express their opinion on other's individual lives, and tend to mind their own business. The network of social relationship has also diminished. The traditional partying of the village is a story of the past.

According to the people of the village, the reduction of the social network is because the economy of the village has become an industrial one. People doing jobs in the coal mines cannot work on their own sweet will. Working at coalmines is a full time job. Their participation in cultural or religious functions is subject to their availability, i.e. they can only participate on their own convenience. On the other hand, the well to do people adopted to coal related businesses, and they are now looking to extend their business beyond, not only the village but also, the province. Their visits to the village are now rare. Thus, all the rich, middle class and poor people are one way or the other, involved in the coal business.

I observed that the advent of money has changed the life style of the people significantly. Our younger generation is fond of electronic gadgets and, with the money from the coalmines; most of the people of this village can afford them. Thus, the younger generation, which previously used to be present in the Mosque and Hujra on every event, is now more interested in TV, cell phones, computers etc. Previously meeting in Hujra used to be the prime source of information and news exchange. Electronic communication has replaced this utility of Hujra. Thus, again it is the coalmines, which have enabled the people of the village to taste a touch of the urban life style, has affected the attendance at the social centers of the village to some extent.

6.2.2. Agriculture

The study area consisted of two types of land; one that is “arid” and another that is irrigated by tube-wells. People used to cultivate various crops on that land according to the season. However, after the coal extraction some bad impact has been brought upon agriculture. The people of the village gave up farming and confined themselves to the income of coal because coal extraction generated local businesses and job opportunities in the village, making the people less dependent on agriculture. With the passage of time, the arid land became deserted and only parts of the lands that were irrigated by tube-wells continued to be cultivated. Some of the previous farmers claimed that their lands were negatively affected by the roads being constructed to facilitate the transportation of coal and that this hindered their farming.



Photo by Author.

6.2.3. Education:

It seems to be generally agreed upon that education plays an important role in the development of a nation. Education is believed to help people in knowing how to use their resources in the best possible way for the future success. Many of the developing countries have realized that the education system is a key mechanism for developing the human knowledge of a nation. Accordingly, they invest a handsome amount of money on education not just for the reason to attempt to impart knowledge and skills, but in addition to impart values, attitudes, ideas and aspirations, which might be important in the nation's development interest (Olaniyan & Okemakinde, 2008). This is realized in the way in which the parents send their children to schooling. The researcher noted that before the discovery of coal, the poor class of the village did not send their children to school because of poverty and expenses of education were beyond to their reach. The middle class used to send their children to government schools. Others were able to send their children to local private schools, whose standard of education was comparatively better than the government schools. The rich class used to send their children to big cities and good educational institution. However, after the discovery of coal a positive change occurred in the field of education. According to the field survey, it was noted that the poor started to send their children to government school, the middle class send their children to local private schools and some send their children to city for standard education. The rich class sends their children abroad to standard educational institutions. Now an average individual is receiving a minimum of 4,000 rupees per month for each

member of the household. The average household comprised 11 members; it means that each household receives 44,000 PKRs per month⁵.

Thus, the discovery of coal brought very positive change in the education sector. Now people also start to give proper attention to female education stated by a sample respondent

“Giving the reason that now people are economically stable so that’s why people started to send their female children to schools. So the enrollments of female education became increased in the study area which was very low in the past as well as the number of male children enrolments in schools are double than the past”.

6.2.4. Health

Miners’ health is affected since coal extraction releases dangerous gases and dust, which the miners inhale. There is no proper attention and availability of safety equipments for their health to protect them from various dangerous diseases, especially lungs disease. It was noted in the study area that some of the miners were “asthma” patients. One of them stated, *“The asthma patient feels more difficulties during work”* as shown in the picture.



Source: Author (2011)

⁵ For example the price of one-kilogram rice is 100 rupees. The education cost in local private school is 1000 while in city’s schools the education cost is from 3000 to 6000 rupees of a boy/girl. The medium income of civil servant is 8000 to 12000 per month.

On the other hand, most of the sample respondents stated that *there is no disease spread in the community*. Moreover, it was noted that the attitude towards health of the people is changed by discovery of coal in the study area. Before coal extraction, poor people were used to getting medical treatment in the local dispensary and sometimes, in severe cases, borrowed money from someone to be able to consult a specialist. The middle class people were also used to getting medical treatment from the local dispensary and from government hospitals, while rich people were used to taking medical care in private hospitals. But after the coal extraction the financial condition of the people are enhanced because every individual is getting equal share from the coal as it is held as the common property of the village. Poor people have started to consult specialists and government hospitals, while middle and rich class people took their treatment in private hospitals with proper care and attention. One of the case poor household illustrated that;

“They all (poor, middle and rich) people are getting equal shares on per capita basis. Now he is able to make his household members treatment by a specialist doctor with fees”

6.2.5. Marriage System

Marriage is a social contract, which is an important part of every society. In the research area I found that before the discovery of coal, marriage was a personal and financial matter of everyone. Whenever they become able to afford it, they arranged it. However, after the discovery of coal, financial change took place and the status of people rose up to some extent because every individual has received share in the common property of community. Most of the sample respondents reported that;

“The trend of early marriage enhanced in poor households in order to give more births. So in this way they will get a larger share from the common property of coal, because the distribution of mutual fund is on per head basis While in the rich class it remained the same as it was, but they celebrate their marriage with more pomp and show”.

6.2.6. Housing structure

There was a proper and traditional housing structure in the research area. The researcher found out that almost every sub-village consisted of *Hujra*⁶, Mosque and houses for living purpose. It was

⁶ In Pukhoon culture, a Hujra is the centre of all religious, cultural and political activities of the village. At the same time it is a common guest house of the village, belongs to everyone and none.

found in research that the discovery of coal has had no major effects upon the housing structure of the study area. Some maintenance took place but the style and structure remain as it was.

7. Conclusion

Before 1995, the mountain and its resources were used commonly among the villagers. Generally, there was no dispute among them at that time. When coal was discovered in 1995, this naturally was an opportunity for the villagers, but it also led to conflicts among them. The analysis shows that conflicts focused on several different matters: stakeholders' interests, deprivation of government privileges, unemployment and how to value common property resources. Most of the traditional mechanism like Jirga through village elders and maliks and political administration on government's behalf were applied to resolve the conflict over the coalmines. Nevertheless, these mechanisms could not resolve the conflict. The mechanism that resolved the conflict was the *Sharia Law*, accepted by all villagers. Generally, mediation between villagers, political administration, malaks, village elders and the prominent role of the *Sharia law* all worked together to solve the conflict.

Before introduction of mining, the socio-economic condition of the people was poor. However, coal extraction has had positive effects on the overall socio-economic conditions of the villagers. The analysis has shown that the incomes generated from coal extraction have had a positive influence on education, health, the marriage system, and the general economic conditions of village households. On the other hand, coal extraction has had negative effect on agriculture and social relationships in the village. People are now less dependent on agriculture for their livelihood as they receive a regular monthly income from the coal extraction. Moreover, the coal extraction generates local businesses and job opportunities in the village, making people less dependent on agriculture. Social relations among villagers were also negatively affected, partly due to the earlier conflicts and partly due to urbanization/industrialization of the village.

Interviews also revealed that there was a trust deficit among the villagers in relation to the local management committee. A majority of respondents claim that the members of the local management committee are corrupt, using mutual funds for their personal business, and that they are involved in nepotism when it comes to allocation of jobs. This lack of trust may in the future lead to conflicts among villagers, which may result in the dissolution of the local management committee.

References

- Adhikari, B. 2005. Poverty, property rights and collective action: understanding the distributive aspects of common property resource management. *Environment and Development Economics* 10: 7–31.
- Afridi, M. 2001. Darra Adam Khel Past and present.
Available at: <http://www.qccs.8m.net/darra.htm> [accessed on 10 June, 2011]
- Beck, T and Nesmith, C, 2001. Building on Poor People's Capacities: The Case of Common Property Resources in India and West Africa. *World Development* Vol. 29, No. 1, pp. 119–133, 2001 Ó 2000 Elsevier Science Ltd. PII: S0305-750X(00)00089-9.
- Berkes, F. and Folke, C. (eds). 1998. *Linking Social and Ecological Systems. Management Practices and Social Mechanisms for Building Resilience*. Cambridge University Press, UK.
- Bryman, A. 2004. *Social Research Methods*. 2nd. Ed. Oxford University Press, Oxford.
- Bush, R.A.B. and Folger J.P. 1994. *The promise of mediation; Responding to conflict through empowerment and recognition*. Jossey-Bass publishers, San Francisco
- Daniels, E. and Walker GB. 2001. *Working through Environmental Conflicts. The collaborative learning approach*. Praeger Publishers.
- Diener, E., and Crandall, R. P. 1978. *Ethics in Social and Behavioral Research*. Chicago. University of Chicago Press, in : Bryman, A. (2004): *Social Research Methods*. New York. Oxford University Press.
- Dove, M., R., 1993. A Revisionist View of Tropical Deforestation and Development, *Environment Conservation*, 20, pp 17-24.
- Ellis, F., 2000. *Rural Livelihoods and Diversity in Developing Countries*. New York: Oxford University Press.
- Ellis, F, 1999. *Rural livelihood diversity in developing countries: evidence and policy implications*. Overseas Development Institute Portland House Stag Place London SW1E 5DP, UK
- Fenny, D., Berkes, F., McCay, B.J. and Acheson, J.M. 1998. *The Tragedy of the Commons: Twenty-Two Years Later*. In *Managing the Commons*. J. Baden and D. Noonan (eds.) Indiana University Press.
- Gibbs, J. N. and Bromley, D. W. 1989. *Institutional Arrangements for Management of Rural Resources: Common Property Regimes*. In: *Common Property Resources: Ecology and Community-Based Sustainable Development*. F. Berkes (ed.) Belhaven Press, 25 Floor Street, London, WC2E 9DS.
- Hardin, G., 1968. *The Tragedy of the Commons*. *Science* 162: 1243-1248.

- Kamberelis, G. & Dimitriadis, G. (2005). Focus Groups: Strategic Articulations of Pedagogy, Politics and Inquiry. In Denzin, N.K. & Lincoln, S. (Eds.) The Sage Handbook of Qualitative Research. Thousand Oaks, CA, Sage
- Kumar Ranjit. 1999. Research Methodology: A Step by Step Guide for Beginners
London: Sage.
- Olaniyan and Okemakinde, 2008. Human Capital Theory: Implications for Educational Development. European Journal of Scientific Research. ISSN 1450-216X Vol.24 No.2(2008), pp.157-162. © EuroJournals Publishing, Inc. 2008.
<http://www.eurojournals.com/ejsr.htm>
- Ostrom, E. 1990. Governing the Commons: The Evolution of Institutions for Collective Action
Cambridge University Press.
- Schlager, E., and Ostrom, E., 1992. Rights Regimes and Natural Resources: A Conceptual Analysis.
Land Economics Vol. 68, No.3, pp. 249-262
- SCDHEC 2010, South Carolina Department of Health and Environmental Control, Natural Resource, FYI. DHEC's Office of Solid Waste Reduction and Recycling, 2600 Bull Street, Columbia, SC 29201.
- Ullah, et. al, 2010. Traditional uses of medicinal plant in Darrra Adam Khel, Journal of Medicinal Plants Research Vol. 4(17), pp. 1815-1821, 4 September, 2010 Available online at <http://www.academicjournals.org/JMPR>. ISSN 1996-0875 ©2010 Academic Journals
- Uprety, D. 2006. Conflicts in natural resource management – Examples from community forestry. Institute for Sustainable Economic Development University of Natural Resources and Applied Life Sciences Vienna Feistmantelstr. 4, 1180 Vienna, Austria
eMail: dharam.uprety@boku.ac.at
- Warner and Jones, 1998. Assessing the need to manage conflict in Community-based natural resource projects. Overseas Development Institute 1998. ISSN: 1356-9228

Appendix A

QUESTIONNAIRES OF HOUSEHOLD SURVEY

I. Personal information

1. Household Head Name: _____
2. Name of village: _____
3. Age: _____
4. Marital status: Single = 1, Married = 2, Widower = 3
5. Family Type (a) Nuclear (b) joint (c) Extended
6. Main Occupation: _____
7. Main sources of income of your household
 - (a) Agricultural
 - (b) Government servant
 - (c) Business _____
 - (d) Wage labor
 - (e) Foreign Remittances
 - (f) Any other please specify _____s
8. Education status: (a) literate (b) Illiterate

If literate than Specify: _____
9. Household size and composition:

Particulars	Children		Adults		Old	
	M	F	M	F	M	F
Family Members						
Educational Status						

10. How many members of your household are working in mining activities?

Please specify _____

11. What is the approximately Monthly income of your household?

II. The effects of coal mining on the socio-economic condition on the people of the village.

(A) Businesses

(B) Health

(C) Education

(D) Marriage system

(E) Farming

(F) Female contribution

(A) Business

S No.	Average	Before Mining Activities/Coal Extraction	After Mining Activities/Coal Extraction
1	Sources of income		
2	No. of persons involved		
3	Daily Income		
4	Monthly Income		
5	Expenditure		
6	Saving		
7	Other		

A.1 Did you feel any change in business due to mining activities in your household?

A.2 What is the future of business in your area due to mining activities?

(a) Bright (b) Gloomy (c) Very gloomy.

(B) Health:

What was the health status of your household members before coal extraction?

What is the health status of your household members after coal extraction?

Is there any difference occur in the health status of your household members due to mining activities?

Is there any disease spread in the community due to coal extraction? Yes/No

If yes, specify the disease_____

C. Education

What was the education status of your household members before coal extraction?

What is the education status of your household members after coal extraction?

Do you feel any changed in the behavior of the parent towards the education of children after coal extraction?

- (a) parent prefer to sent the children to school in order to get education.
- (b) Parent prefer to send the children to coal extraction in order to earn money.

D. Marriage system

D.2. What was the pattern of marriage system before coal extraction?

D.3. What is the pattern of marriage system after coal extraction?

E. Farming

E.1. what was the farming status of the village before coal extraction?

E.2. Is there any change occurred in the farming status of your household after coal extraction?

F. Female contribution

F.1. What was the social and economic contribution of female in the uplifting of the family members before coal extraction?

F.2. What is the social and economic contribution of female in the uplifting of the family members after coal extraction?

III Questionnaires regarding the monitoring and evaluation of institution\committee

1. What is the existing institutional arrangement of managing the coal mines?

2. How the committee came in to being and by whom?

3. In your view point, what's are the main strength and weaknesses of the institution\committee?

4. What is the decision making process of committee regarding the management of the coal mines?

5. Are you satisfied from the performance of the management committee?

6. Did you find any problem (s) regarding the mining activities/management?

i. Yes

ii. No

- If yes, then specify

- Any suggestion :

i. _____

